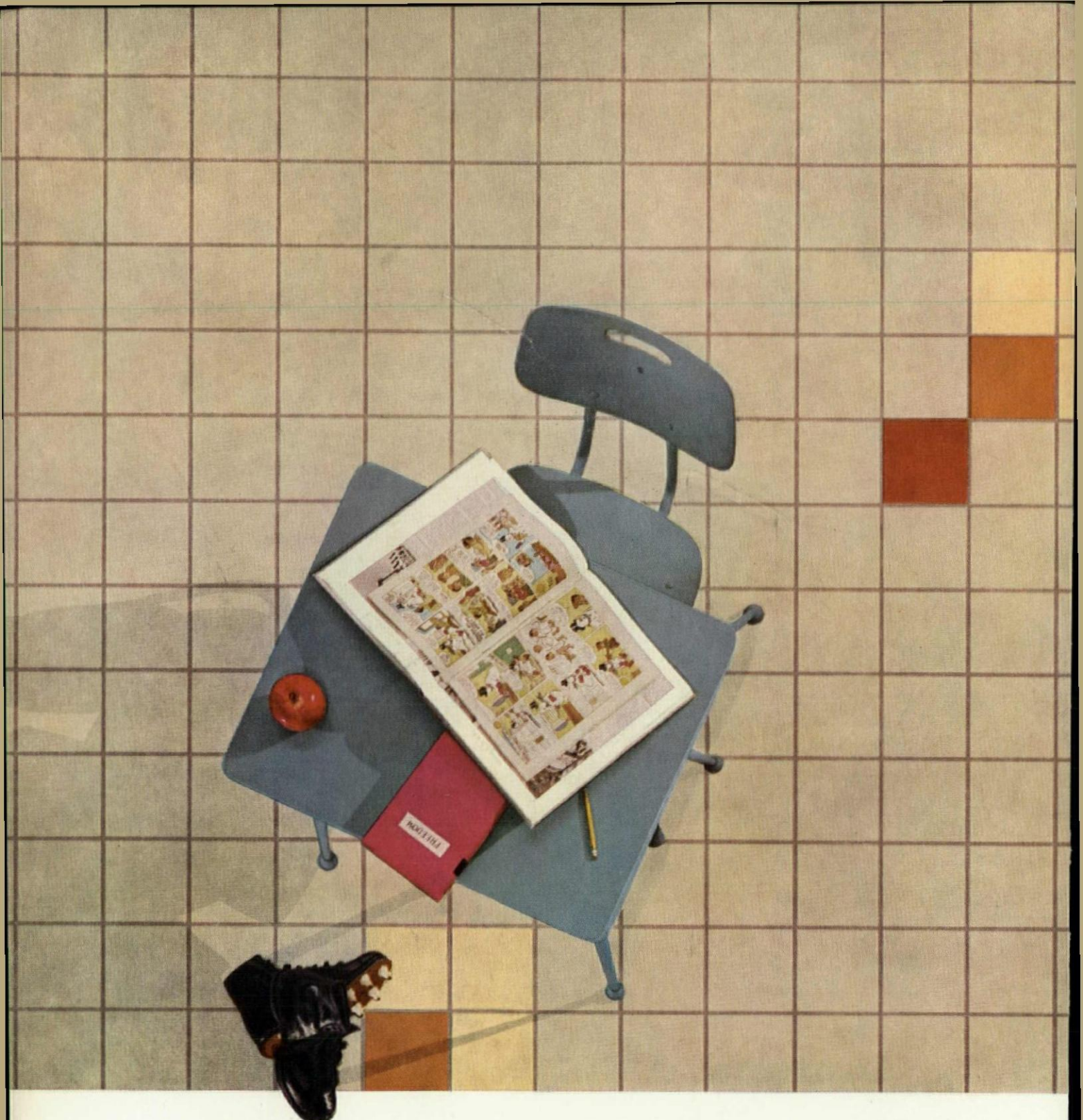
PA-1961-12

PROGRESSIVE ARCHITECTURE *December 1961*



LOW OVERHEAD
•••UNDERFOOT
SUMMITVILLE
QUARRY TILE

Wherever extreme durability and low maintenance are desired, nothing surpasses Summitville Quarry Tile. They are fire-proof, water-proof, acid-proof, never require waxing and the beautiful natural colors will never fade.

Summitville Quarry Tile is ideal for schools, institutions, commercial and industrial buildings. Available in six natural earth colors and a wide range of sizes and trim units. For full information check the yellow pages for your Ceramic Tile Contractor or write direct.

MEMBER: TILE COUNCIL OF AMERICA, INCORPORATED

For brighter, easier-to-maintain walls, it's Koroseal

In hospitals, motels and office buildings, Koroseal fabric-backed vinyl wall coverings have advantages, both immediate and long-range. Koroseal blends with other materials such as stone, tile, wood, marble and paint. Quality textures and rich colors add luxury. And, best of all, Koroseal wall coverings retain their sparkling beauty for years with a minimum of maintenance. They are washable with soap and water, resist scuffs and stains and are flame-proofed. Installed cost is surprisingly low. For more information or swatches, write Dept. PA-12. *B.F.Goodrich Industrial Products Company, Marietta, Ohio.*

Rotary Oildraulic®

the modern elevator for modern buildings

For vertical transportation in low-rise buildings, hydraulic power is today's best value.

Architecturally, the modern Rotary Oildraulic Elevator is an aid to design.

In the economics of construction, it's a money-saving item of building equipment because it reduces construction costs.

Building-owner value results from high efficiency of the Oildraulic Elevator power unit, dependability and smooth, quiet performance.

Design advantages—There's no need for a machinery penthouse since the elevator is pushed up from below by an oil-hydraulic plunger. Roof lines can be perfectly flat . . . or formed as desired for architectural beauty.

Within the structure, space is saved through absence of elevator counterweights; better utilization of space is achieved because of latitude permitted in location of the power unit.

Construction advantages—The expense of building an elevator penthouse is eliminated. Since the elevator is self-supporting on its oil-hydraulic plunger, lighter, less costly shaft sidewalls are possible. Installation of the Rotary Oildraulic Elevator involves minimum interference with the work of other building trades.

Owner advantages—The relative simplicity of the Oildraulic system reduces maintenance and assures dependable, economical operation. Rotary Oildraulic Elevators are available with speeds and controls to satisfy the traffic volume and pattern of any building to six stories. Modern cabs and entrances enhance any interior design.

For complete information, or assistance on plans and specifications, contact your Rotary Oildraulic Elevator Distributor listed in the phone book yellow pages. See our catalog in Sweet's Files.

DOVER CORPORATION, ELEVATOR DIVISION
Memphis, Tennessee • Chatham, Ontario
First name in oil-hydraulic passenger and freight elevators—industrial lifting devices—auto lifts.

Rotary Oildraulic Elevators – *Passenger and Freight*

Left: SOUTHERN GARDENS APARTMENTS, Denver, Colo. Architect: Leon Brin, A.I.A. Contractor: F. R. Orr Construction Co., Inc. Four Rotary Oildraulic Passenger Elevators sold and installed by Dover Elevator Company.

Below: ALLSTATE INSURANCE COMPANY, Dallas. Architect & Engineer: George L. Dahl. Contractor: Inwood Construction Co. Rotary Oildraulic Elevator sold and installed by Hunter-Hayes Elevator Company.

For more information, circle No. 374

MAIL FOR COMPLETE INFORMATION

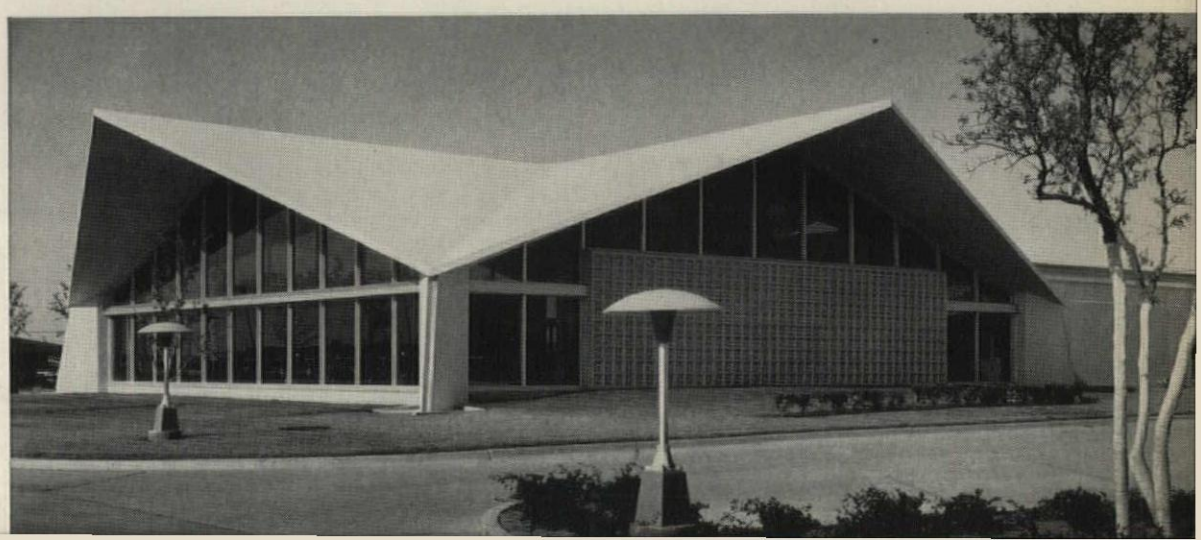
Dover Corporation, Elevator Division
1012 Kentucky, Memphis 2, Tenn.

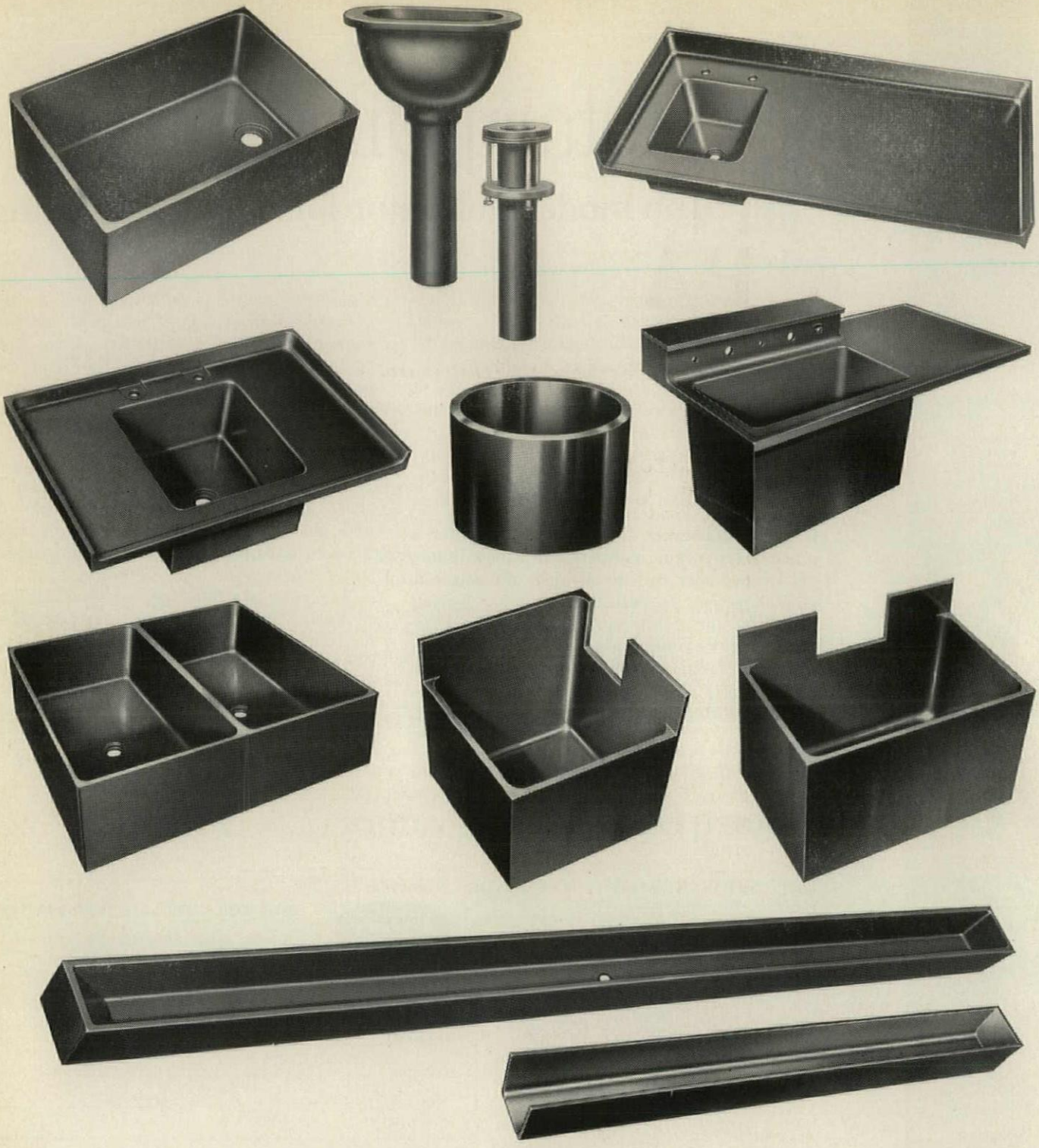
Please send information on Rotary Oildraulic Elevators to:

Name_____

Company_____

Address_____





Light in Weight, Esthetically Appealing, Corrosion Resistant, Heat Resistant, Shock Resistant, Easy to Install, Readily Available, and LOW IN COST. Why install anything but DURCON when it comes to chemical laboratory sinks?

THE DURIRON COMPANY, INC. DAYTON 1, OHIO DURCO

THIS MONTH IN P/A

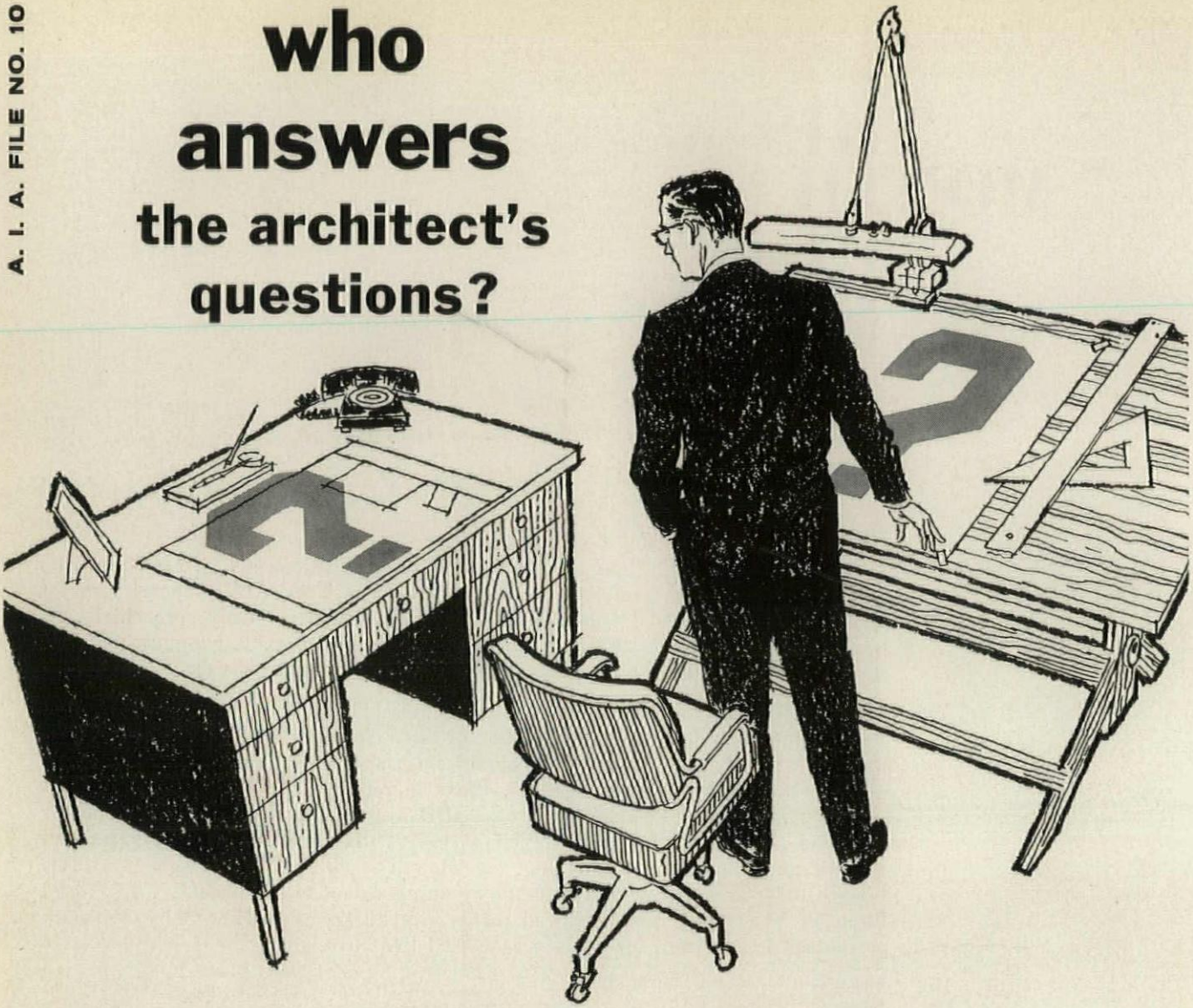
The World's Largest Architectural Circulation

PROGRESSIVE ARCHITECTURE published monthly by REINHOLD PUBLISHING CORPORATION, 430 Park Avenue, New York 22, N.Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President and Treasurer; Kathleen Starke, Secretary and Assistant Treasurer; Donald Hoagland, Merald F. Lue, Fred P. Peters, D. Bradford Wilkin, William P. Winsor, Vice-Presidents. Executive and Editorial offices, 430 Park Avenue, New York 22, N.Y. Subscriptions payable in advance. Subscription prices to those who, by title, are *architects, engineers, specifications writers, designers* or *draftsmen*, and to Government departments, trade associations, members of the armed forces, architectural schools and students—$5.00 for one year, $8.00 for two years, $10.00 for three years. Above prices are applicable in U. S., U. S. Possessions, and Canada. All *practicing architects* and *engineers* outside U. S., U. S. Possessions, and Canada—$10.00 for one year, $16.00 for two years, $20.00 for three years. All others—$20.00 a year. Single copy—$1.00; special issues—$2.00 per copy. Printed by Publishers Printing Company, New York, N.Y.

Indexed in Art Index, Architectural Index. Second-class postage paid at New York, N.Y. VOLUME XLII, No. 12

A. I. A. FILE NO. 10

who answers the architect's questions?



The answer: NADD salesmen. They reduce wear and tear on architects by providing accurate data for structural clay products. They bring new uses of clay products to the attention of designers. They keep abreast of technological advances via self-education and industry schooling. After a sale is made, they follow through on delivery dates and assume responsibility for client satisfaction.

Your NADD salesman is pledged to put into practice the NADD Code of Service. Call on him for conscientious help.

NADD

National Association of Distributors and Dealers of Structural Clay Products

WASHINGTON 7, D.C.

ALABAMA
Birmingham — Lovick L. Stephenson, Jr. Co.

CONNECTICUT
South Windsor — Clay Products, Inc.

DELAWARE
Wilmington — Robert F. Ingham, Assoc.

DISTRICT OF COLUMBIA
Washington — Cushwa Brick & Building Supply
Washington — Mt. Vernon Clay Products Co.

FLORIDA
Jacksonville — Smullian Building Supply Co.

GEORGIA
Atlanta — A. J. Bohn Co.
Atlanta — Cromer & Co.
Atlanta — Foy Brick Co.
Atlanta — F. Graham Williams Co.
Atlanta — Hill R. Huffman, Inc.
Atlanta — Robert K. Thrower, Inc.

ILLINOIS
Chicago — Thomas Moulding Brick Co.
Oak Park — Tile Craft Corp.
Wheaton — Gretna Material Sales Corp.

INDIANA
Bluffton — Shale and Fire Clay Products
Brazil — Glazed Tile Sales, Inc.
Fort Wayne — Fort Wayne Builders Supply Co.
Fort Wayne — Old Fort Supply Co.
Hammond — The Beckman Supply Co.

IOWA
Mason City — The Goodwin Companies

KANSAS
Kansas City — Sonken-Galamba Corp.

KENTUCKY
Louisville — Atlas Plaster & Supply Co.

LOUISIANA
Shreveport — Ruffin Brick Co.

MARYLAND
Baltimore — Baltimore Brick Co.
Baltimore — Monumental Brick & Supply Co.
Baltimore — Pen Mar Co.

MASSACHUSETTS
Boston — Ferguson Co.
Boston — Parry Brick Co.,
Boston — Spaulding Brick Co.
Boston — Waldo Brothers Co.
East Bridgewater — Bridgewater Brick Co.

MICHIGAN
Detroit — Belden-Stark Brick Co.
Detroit — Century Brick Co.
Detroit — Colonial Brick Co.
Detroit — Kurtz Brick Co.
Detroit — Frederic B. Stevens, Inc.
Grand Rapids — Lincoln Brick Co.
Lansing — Brick & Supplies Corp.
Lansing — Geo. P. Anderson Co.

MINNESOTA
St. Paul — Corning-Donohue, Inc.
St. Paul — Twin City Brick Co.

MISSISSIPPI
Corinth — Archie Structural Products Co.

MISSOURI
St. Louis — National Brick Co.
St. Louis — Hydraulic Press Brick Co.

NEW HAMPSHIRE
Lebanon — Densmore Brick Co.

NEW JERSEY
Collingswood — Diener Brick Co.
East Orange — Abby Hart Co.
Flemington — Merritt, Inc.
Newark — Tomkins Bros.

NEW YORK
Binghamton — Binghamton Brick, Inc.
Brooklyn — William Geier Brick Co.
Buffalo — John H. Black Co.
Buffalo — Buffalo Brick Corp.
Buffalo — Thruway Builders Supplies Corp.
New York — Appalachian Shale Products Co.
New York — Belden-Stark Brick Corp.
New York — Fredenburg & Lounsbury, Inc.
New York — Entwisle Corp.
Rensselaer — Mohawk Bldg. Materials Corp.
Rochester — Weckesser Brick Co.
Syracuse — Paragon Supply, Inc.

OHIO
Akron — John E. Cooper Co.
Akron — The Derr Co.
Akron — The Thomas Brick Co.
Cincinnati — Cincinnati Builders Supply Co.
Cincinnati — Smith Brick Co.
Cleveland — The Cleveland Builders Supply Co.
Cleveland — Ideal Builders Supply Co.
Cleveland — Kemper-Forbes Brick Co.
Steubenville — The Keagler Brick Co.
Toledo — Kuhlman Builders Supply & Brick

OKLAHOMA
Tulsa — Building Specialties Co.

PENNSYLVANIA
Altoona — Altoona Clay Products Inc.
Merion — Gerlach & Moranz Brick Corp.
Millerstown — R. C. Savercool Clay Sales
New Oxford — Alwine Brick Co.
Philadelphia — Industrial Materials Co.
Philadelphia — O. W. Ketcham
Philadelphia — Arthur A. Squier
Pittsburgh — Darlington Clay Products Co.
Pittsburgh — John R. Gloninger Sons
Pittsburgh — Haines Brick, Inc.
Pittsburgh — Kaegler Austin Clay Products Co.
Pittsburgh — Milliken Clay Products Agency
Pittsburgh — Natco Corp.
Pittsburgh — J. J. Schano Co.
Reading — Glen Gery Shale Brick Corp.
Willow Grove — Huston Clay Products Co.

RHODE ISLAND
Providence — P. L. Monroe & Son

TENNESSEE
Johnson City — General Shale Products Corp.
Nashville — Franklin Builders Supply Co.
Nashville — C. W. Kempkau, Inc.

TEXAS
Dallas — Macatee, Inc.
Houston — Brick, Inc.
Houston — Great Southern Supply Co.
Lubbock — Balch Brick & Supply Co.
Midland — A-1 Brick & Supply Co.
Teague — Teague Brick Sales Co.

VIRGINIA
Richmond — Eastern Building Supply Co.
Salem — Old Virginia Brick Co.

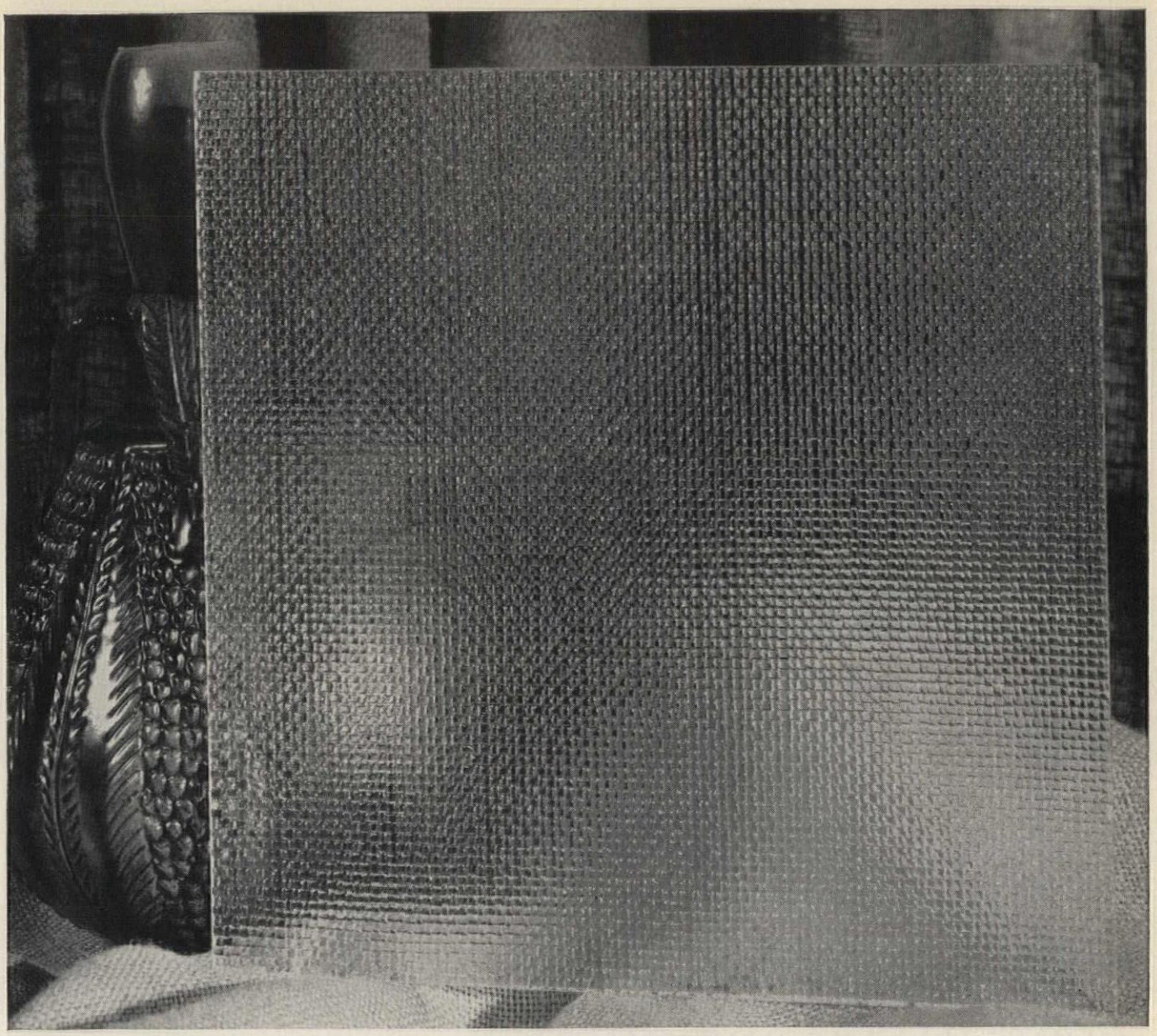
WEST VIRGINIA
Charleston — West Virginia Brick Co.
Parkersburg — Citizens Building Supplies Co.

WISCONSIN
Green Bay — The Gagnon Clay Products Co.
Milwaukee — Wisconsin Face Brick & Supply

CANADA
ONTARIO
Chatham — Watson Concrete Products, Inc.
Toronto — Webster & Sons, Ltd.

QUEBEC
Montreal — W. & F. P. Currie, Ltd.
Montreal — Ravary Builders Supply Co., Ltd.

In the interest of better service to the construction industry, these companies have contributed to this advertisement.



The Dramatic Texture of Fabric . . . The Gleaming Beauty of Glass . . . now artfully combined in

NEW BURLAP BY MISSISSIPPI

Exceedingly brilliant and sparkling, highly obscure, new Burlap, figured glass by Mississippi has excellent diffusing properties and its functional and decorative applications are limited only by the imagination. Use it lavishly or sparingly and gain light, drama, distinction. Burlap glass is available at your nearby quality glass distributor. Free sample on request.

MISSISSIPPI GLASS COMPANY

88 Angelica St. • St. Louis 7, Missouri

NEW YORK • CHICAGO • FULLERTON, CALIFORNIA

Thickness	Approx. Light Transm'n	Weight Unpacked Lbs.-sq. ft.	Maximum Sizes Untreated	Maximum Sizes G-R 2 Sides	Maximum Sizes G-R 1 Side
1/8"	87.5%	2.0	48 x 132	48 x 132	48 x 132
7/32"	85.9%	2.8	60 x 132	60 x 132	60 x 132

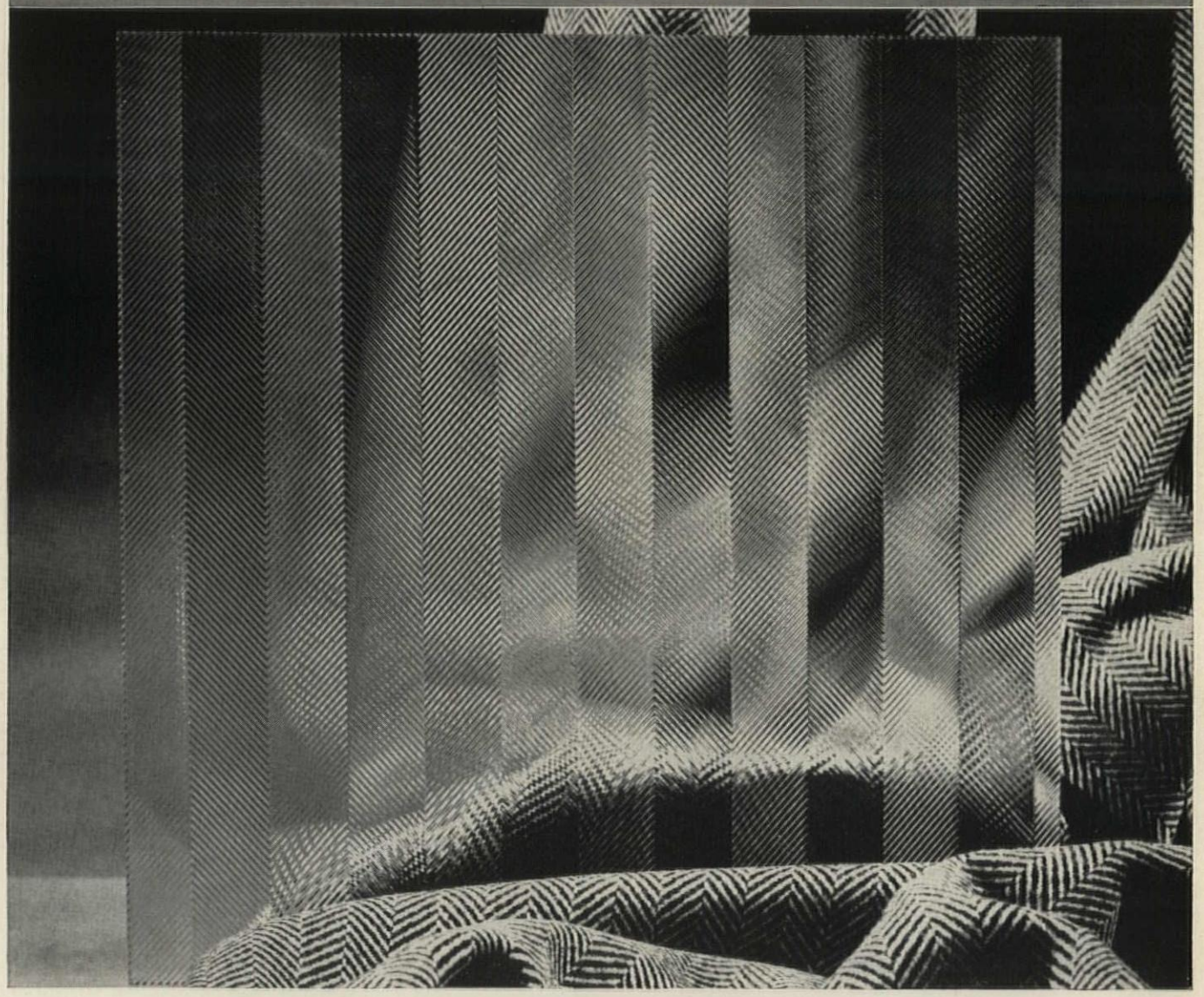
Recommended primarily for partitions; also shower doors and stalls, and kindred uses.

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

What the *Well-Dressed* GLASS will wear...

New HERRINGBONE *Pattern*...

Sets the Pace for the Smartest Interiors



A linear pattern of jewel-like radiance, the contrasting light and dark stripes and arresting diagonal configuration of HERRINGBONE* combine with perfection of finish as the finest achievement of the rolled glass manufacturer's art. Architects, designers and decorators will discover in its warm, glowing beauty a versatile glass that never loses its individuality and whose charm and freshness lift it out of the ordinary. Recommended for the separation of living areas in the modern home, commercial partitions and wherever else transmitted light should become a vibrant, interesting part of the decorating scheme.

MISSISSIPPI

GLASS COMPANY

88 Angelica St. • St. Louis 7, Missouri

Distributors in Principal Cities of the United States and Canada

Thickness	Approx. Light Transm'n	Weight Unpacked Lbs.-sq. ft.	Maximum Sizes
1/8"	84.5%	2.0	48 x 132
7/32"	82.0%	2.8	60 x 132

*Patent Applied For.

Free sample on request.

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

FENESTRA CHANGES CURTAINWALL

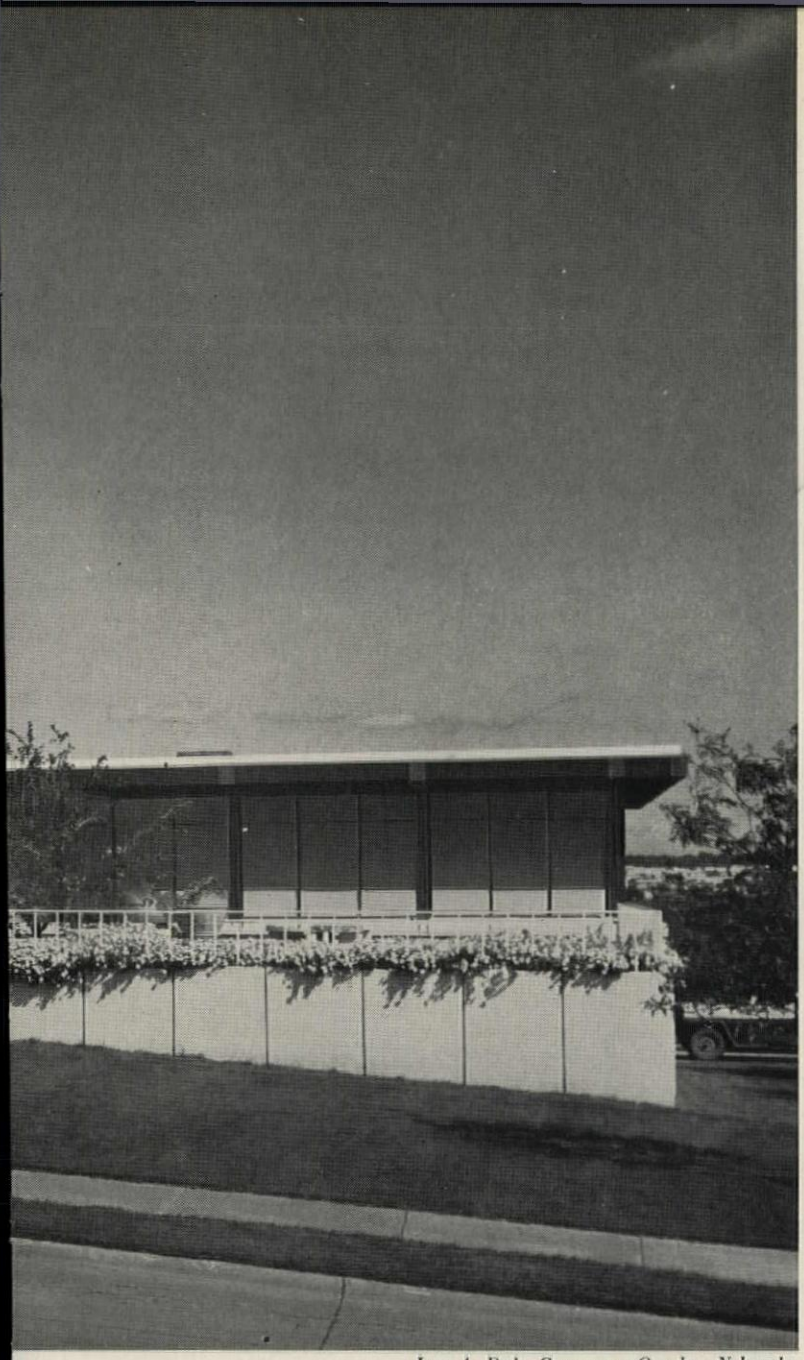
Change No. 1: A revolutionary new roof-curtainwall system that eliminates structural steel in one-story buildings

Loadbearing Fenmark® is a pre-engineered roof-wall system that combines Fenmark steel curtainwall with steel cellular roof panels. Together they form one structural element. Only sheer partition walls or end walls are needed to take the lateral load. Structural steel is eliminated. Design time is reduced and on-the-job labor costs are cut.

Change No. 2: A completely weathertight envelope. Because steel expands and contracts at half the rate of aluminum, sealing Fenmark steel curtainwall is greatly simplified. In fact, so successful has Fenmark been that there have been no reports of any leakage on any Fenmark structure.

Change No. 3: Narrow sight-lines. Fenmark mullions are steel, so they can be narrow without sacrificing needed strength. Aluminum curtainwalls require larger mullions to compensate for wind loading conditions.

Change No. 4: Stainless-steel beauty . . . at the cost of aluminum. The Fenmark steel curtainwall system may be completely capped with stainless steel. The cost complete;



Leo A. Daly Company, Omaha, Nebraska

CONCEPTS / with STEEL

near the price of aluminum curtainwall. The effect: elegant, durable stainless-steel curtainwall. Or you may choose plain or porcelainized aluminum capping.

Change No. 5: Extra-strength structure: Steel has three times the strength of aluminum. It will withstand wind loads that are simply not possible with similarly shaped aluminum curtainwall. Fenestra's Fenmark steel curtainwall also offers greater resistance to fire than aluminum.

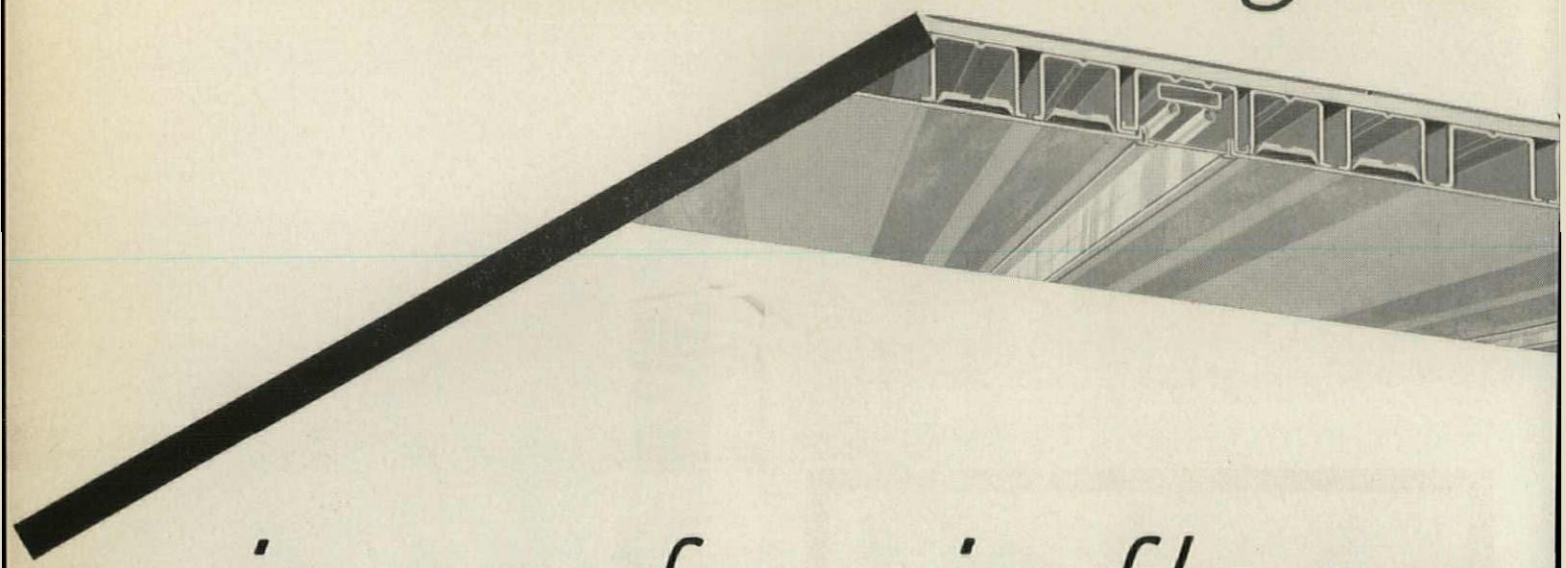
Fenmark is a proven curtainwall system. If you have not already investigated this better kind of curtainwall, call our local sales engineer (he's listed in the Yellow Pages), see Sweets File 3b/Fe or write: Fenestra Incorporated, Dept. PA-121, 220 Delaware Ave., Buffalo 2, New York.

For more information, turn to Reader Service card, circle No. 333

Fenestra
INCORPORATED

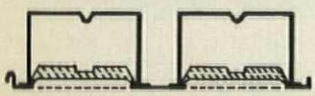
STEEL CURTAINWALL SYSTEMS • CELLULAR STEEL ROOFS
FLOORS, WALLS • METAL DOORS • GUARD SCREENS

FENESTRA *changes*



...in roofs...in floors

with longer span structural panels—to 35′—that double as acoustical ceilings



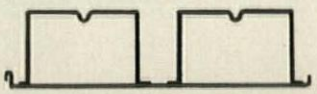
Acoustic "D" panel

This longer span "D" panel eliminates the need for bar joists. It cuts costs, too, by performing five different building functions: acoustical correction, insulation and roofing support, integral lighting, long-span structure, and finished ceiling. This ceiling is permanent; there is no tile to ever become loose or unsightly.

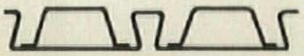
For spans up to 32′, Fenestra's "stiffened web" design LS deck gives you an exceptional weight-to-strength ratio for maximum economy. LS deck can be left exposed. Or the ceiling can be finished at any time after construction with recessed lights or lay-in acoustical tile.

"LS" deck with lay-in acoustical tile and recessed lights

with a "big cell" for electrical capacity many times larger than other systems



"D" Panel Electrifloor



Holorib Elect-Re-Form

Fenestra's big "D" cell gives architects an underfloor electrical system—up to 7½″ deep—that will accommodate the multiplying electrical needs of tenants.

Structurally, the concrete fill forms a natural "T" beam. This gives you a bonus factor of up to 8 times the design load . . . damping out vibration and requiring less structural steel. Flat bottom plate provides lateral resistance.

Or for economy, where electrical demands are smaller, versatile Holorib Elect-Re-Form (electrified concrete steel reinforcing form) can be supplied with one, two or three cells as the job requires. There are no wasteful "dead" cells.

Fenestra offers a full line of detention, protection and safety screens for hospitals, clinics, commercial buildings and schools. Frames can be either aluminum or steel. Screens are manufactured to any size.

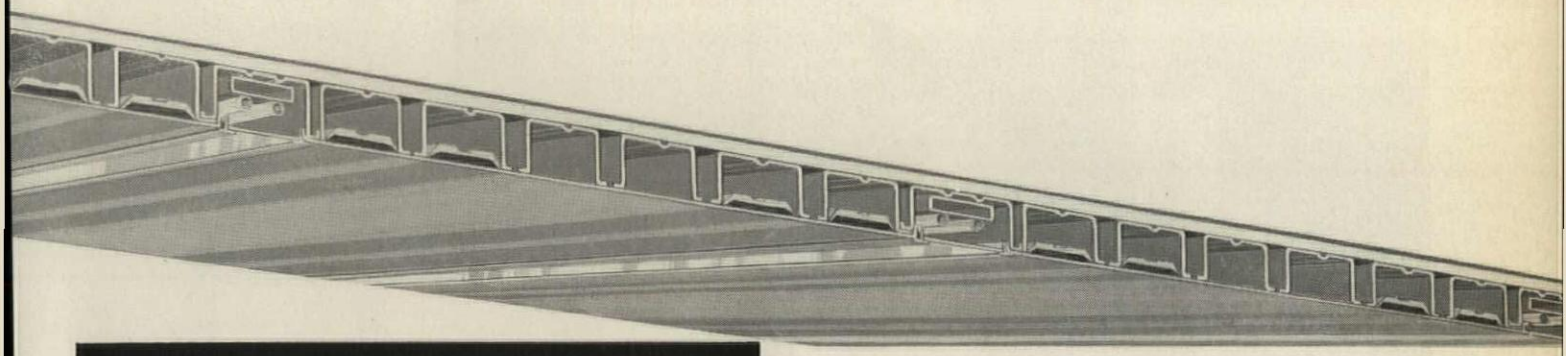
Look to Fenestra for new concepts in building materials. See Sweets File; call your Fenestra man (he's in the Yellow Pages); or write Fenestra Incorporated, Dept. PA-121, 220 Delaware Ave., Buffalo 2, N. Y. (Panels and Guard Screens); or 4040 W. 20th St., Erie, Pa. (Doors).

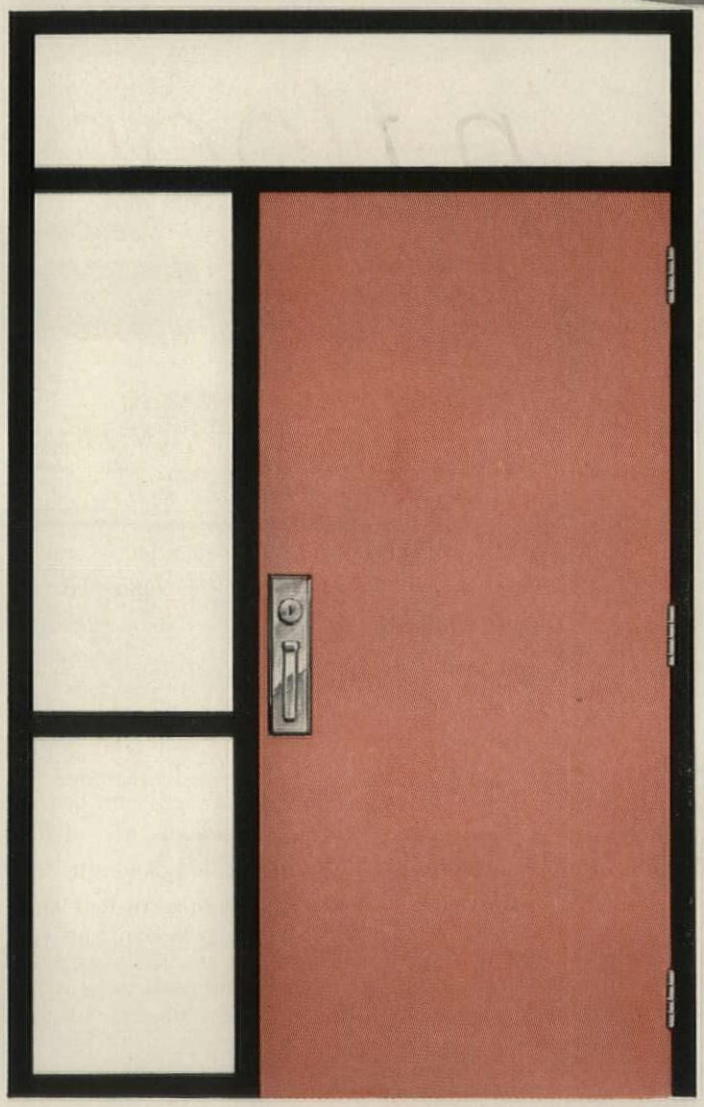
Fenestra
INCORPORATED

STEEL CURTAINWALL SYSTEMS • CELLULAR STEEL ROOFS, FLOORS, WALLS • METAL DOORS • GUARD SCREENS

For more information on roofs circle No. 334, for more information on doors circle No. 335

CONCEPTS +++



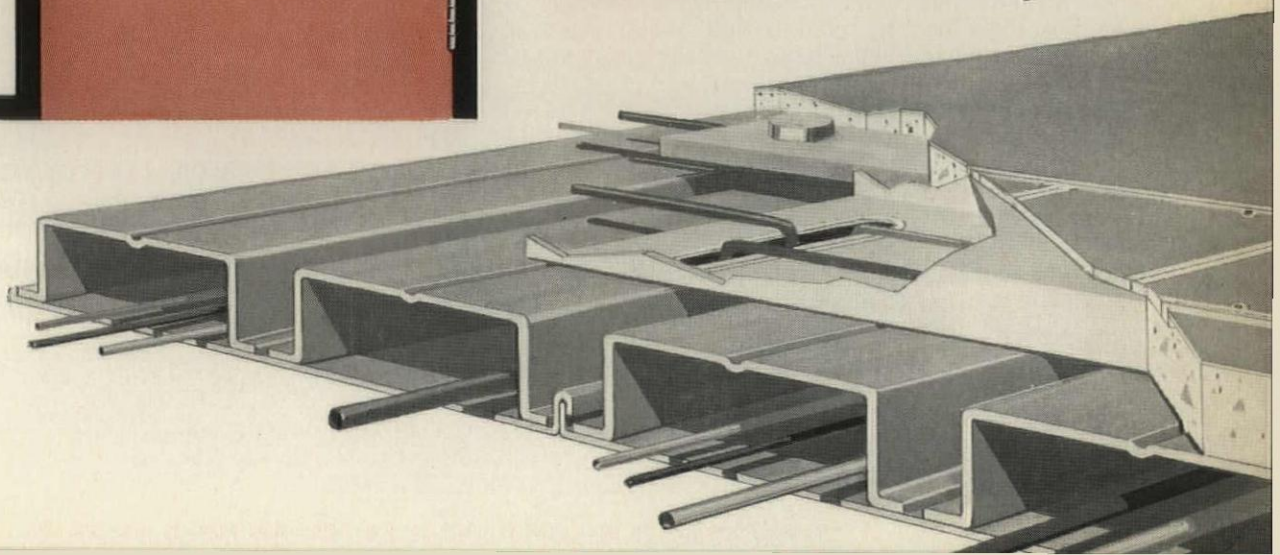


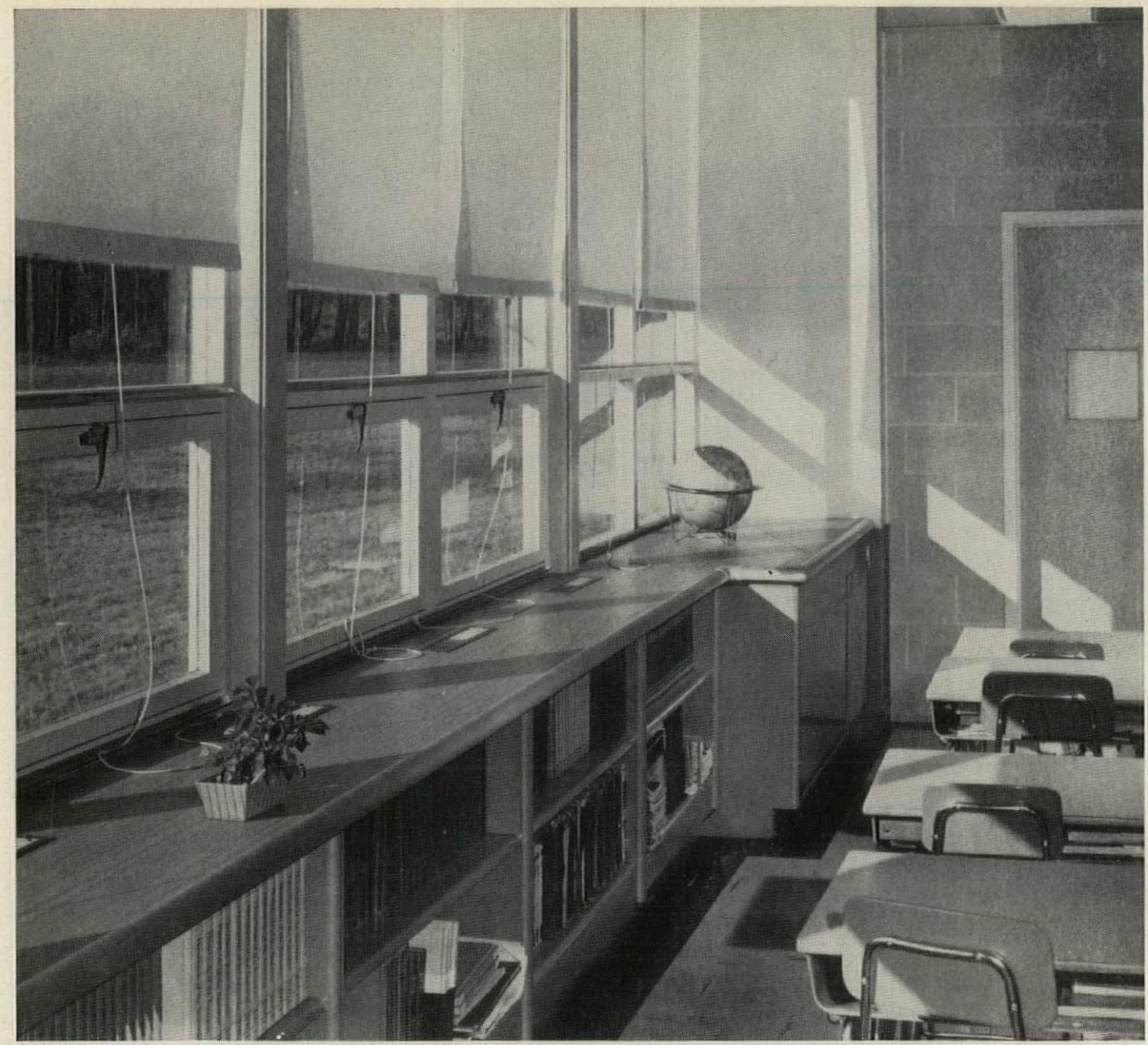
... in doors

with metal doors that can be delivered in 200,000 variations within days

The key is local distributor modification of doors and frames. You get the door and frame you want, the glass-light, louver, and hardware you want. Delivery is cut to a matter of days. You get quality and advanced design, too, because the basic doors—with seamless full-flush styling—are manufactured by Fenestra.

Revolution in size, too. New Fenestra 7′2″ modular door for masonry block construction matches courses exactly. Installation time is reduced up to 45 minutes per opening, because you never need to cut blocks to fit head space.





Individual room control! With gas-fired Norman Schoolroom Systems, teachers have complete control of the heat and ventilation in their areas. Units are attractively housed in functional work and shelf areas. Operation is independent of any central system.

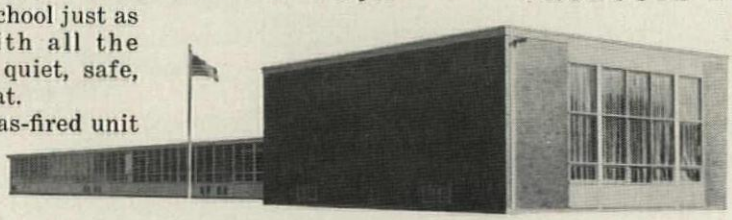
New school saves $18,000 in first cost with GAS-fired NORMAN SCHOOLROOM SYSTEMS

The lowest bid for the originally specified construction of the Ashton Elementary School in Cumberland, R. I., turned out to be 10% greater than the building appropriation. The School Committee solved this problem by changing their heating plan to individual, gas-fired Norman Heating and Ventilating Systems. Result: ideal heating within the budget appropriation.

The change to Norman Schoolroom Systems saved $18,000 in first cost and reduced estimated operating costs by more than 35%. These economies made it possible to build the school just as desired, and with all the benefits of clean, quiet, safe, dependable gas heat.

Each Norman gas-fired unit supplies heat rapidly when and where needed, blends fresh outside air with recirculated room air, and distributes tempered air evenly along and out from exposed walls. With individual units there's no need to heat the entire building when only a few rooms are in use. Thrifty gas keeps fuel cost low.

Complete information about gas-fired Norman Products for school comfort is yours for the asking. Call your local Gas Company, or write to NORMAN PRODUCTS CO., 1151 Chesapeake Avenue, Columbus 12, Ohio.



American Gas Association

FOR HEATING... GAS IS GOOD BUSINESS!

WHEN THE INVITING WARMTH OF CALIFORNIA REDWOOD is made an integral part of the architect's design, buildings such as hospitals and schools have a charming naturalness rather than a forbidding "institutional look". Budget-conscious building committees also look with favor upon CRA Certified Kiln Dried redwood's well justified reputation for durability and easy, economical maintenance. If you do not have an up-dated copy of "The Architect's Redwood File", write Department A-8 on your business letterhead.

Architects: Ricciuti & Associates

CRA

All the wonderful warmth of wood is best expressed in redwood.

LIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET • SAN FRANCISCO

CRA-TRADEMARKED CERTIFIED KILN DRIED REDWOOD

Suspended Roof for New College Gymnasium

"Column-free on the inside" is the way the architect describes this exciting and wholly utilitarian structure. It is the Physical Education Building of the Central Washington College of Education, Ellensburg, Washington. It is 150 ft wide by 390 ft long and contains, among other things, a main gymnasium, upper gymnasium, field house, swimming pool, apparatus room, two four-wall handball courts, two classrooms, 14 offices and, locker rooms, dressing rooms, etc.

The suspended roof is actually floating, being slip-fastened to the exterior walls. There are twenty-eight 80-ft high prestressed concrete pylons. Each supports two pairs of 1-5/16 in. prestretched, galvanized bridge strands, which suspend the entire roof structure. The 56 cables, averaging 404 ft in length, were prestretched and accurately marked for all attachment points at Roebling's plant. This resulted in an easy, economical field erection procedure.

Spectacular new Health and Physical Education Building, Central Washington College of Education at Ellensburg, Washington.
Architect: Ralph Burkhard, A.I.A., Seattle
Structural Engineers: Anderson, Birkeland, Anderson, Tacoma
General Contractor: Earley Construction Company, Tacoma
Prestressed Concrete Fabricator: Concrete Technology Corp., Tacoma

Its 99,500 sq ft of floor space cost $14.15 per sq ft, including architect's fee and 4% sales tax, which is below average for a building of this size.

These basic details are indicative of the wide and varied benefits common to all suspended roof structures. Airline terminals and hangars, plants, gymnasiums, civic auditoriums – all are enjoying the free space afforded by suspended roofs.

Roebling's great experience with steel in tension leads naturally to its active role in the suspended roof field. Our findings, theories and interest in its every phase are offered to you at any time. Should you wish further details on this particular structure, or information of any nature dealing with suspended roofs, please do not hesitate to write Roebling's Bridge Division, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities
John A. Roebling's Sons Division
The Colorado Fuel and Iron Corporation

luxurious towel bar
in sparkling chrome

HALL-MACK®

TOWEL
RINGS
LADDERS
& BARS

accessories

make the bath...

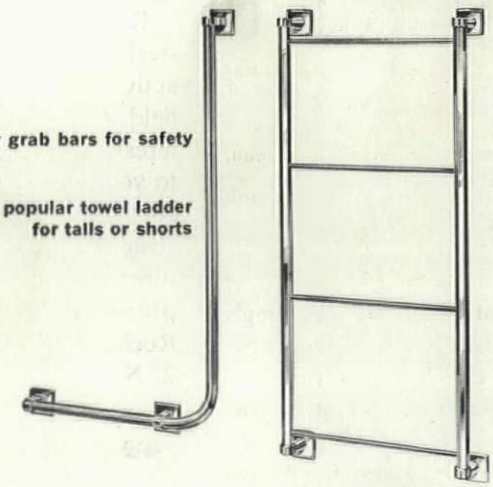
The matchless quality of Hall-Mack accessories strikes a tone of elegance and charm that makes your bath one of the most cherished rooms in your home.

And best of all, there's a Hall-Mack line of bathroom accessories to complement every style and decor . . . to fit any budget.

handsome
lucite towel
ring with
chrome base

heavy duty grab bars for safety

at right: popular towel ladder
for talls or shorts



Sold by leading plumbing, tile, and hardware dealers everywhere.

HALL-MACK COMPANY
division of Textron Inc. PA1261
1380 W. Washington Blvd., Los Angeles 7, Calif.

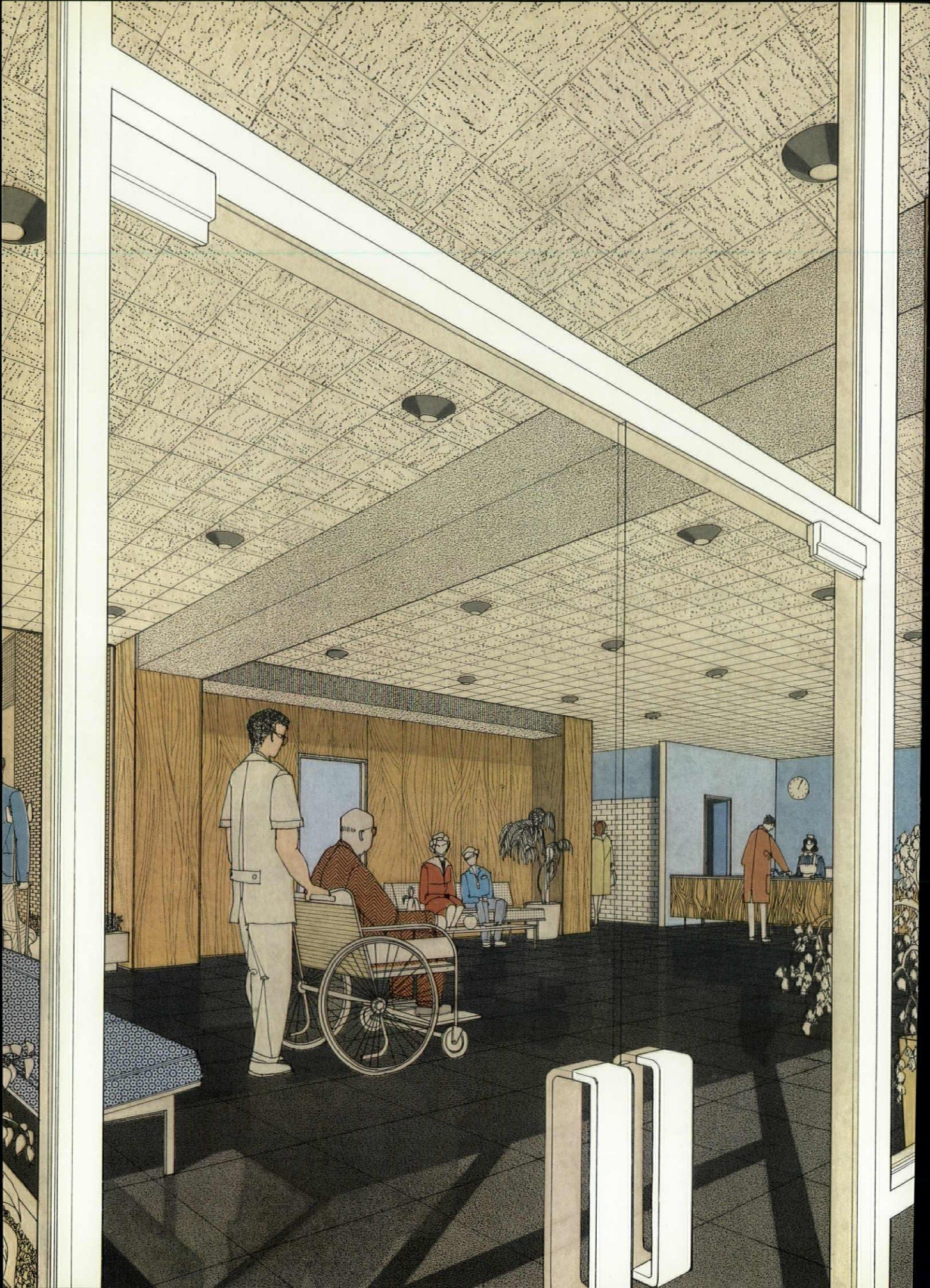
☐ Please send your free color booklet on bathroom planning.

Name_____
PLEASE PRINT

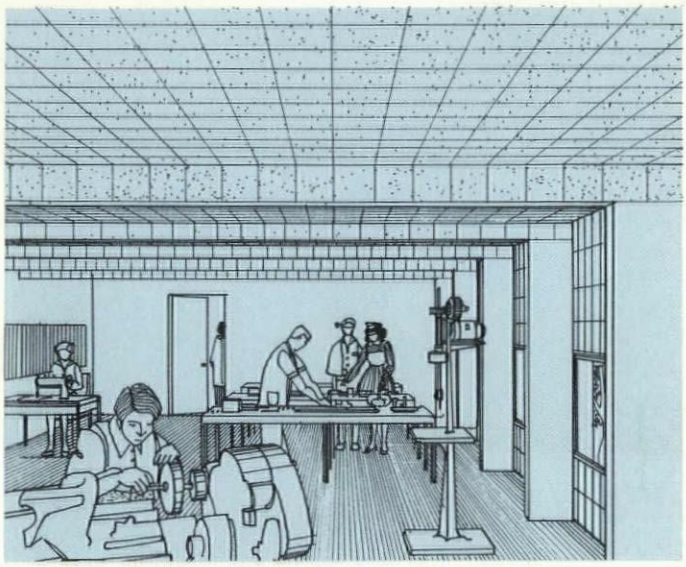
Address_____

City_____ Zone____ State____

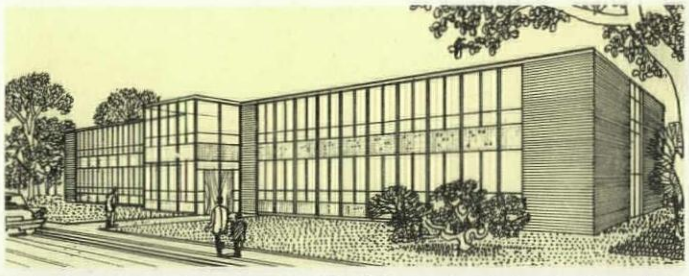
For more information, turn to Reader Service card, circle No. 340



4-Hour Fire Code met by Armstrong Acoustical Fire Guard Ceiling in Rehabilitation Center



Excellent fire protection was the prime reason the architects specified Armstrong Acoustical Fire Guard for this Treatment Building. Installed on a TDR Suspension System, this dense mineral-wool tile combines with the floor assembly to provide a 4-hour rating as required by the federal building code. Its noise reduction qualities are also of great value, as in the occupational therapy room above.



Adult Center Treatment Building, Crotched Mountain Foundation, Greenfield, N. H. Architects: Clinch, Crimp, Brown & Fisher, Boston, Mass. General Contractor: Caron Construction Co., Manchester, N. H. Acoustical Contractor: Kesseli & Morse Co., Worcester, Mass.

Entrance lobby at left.

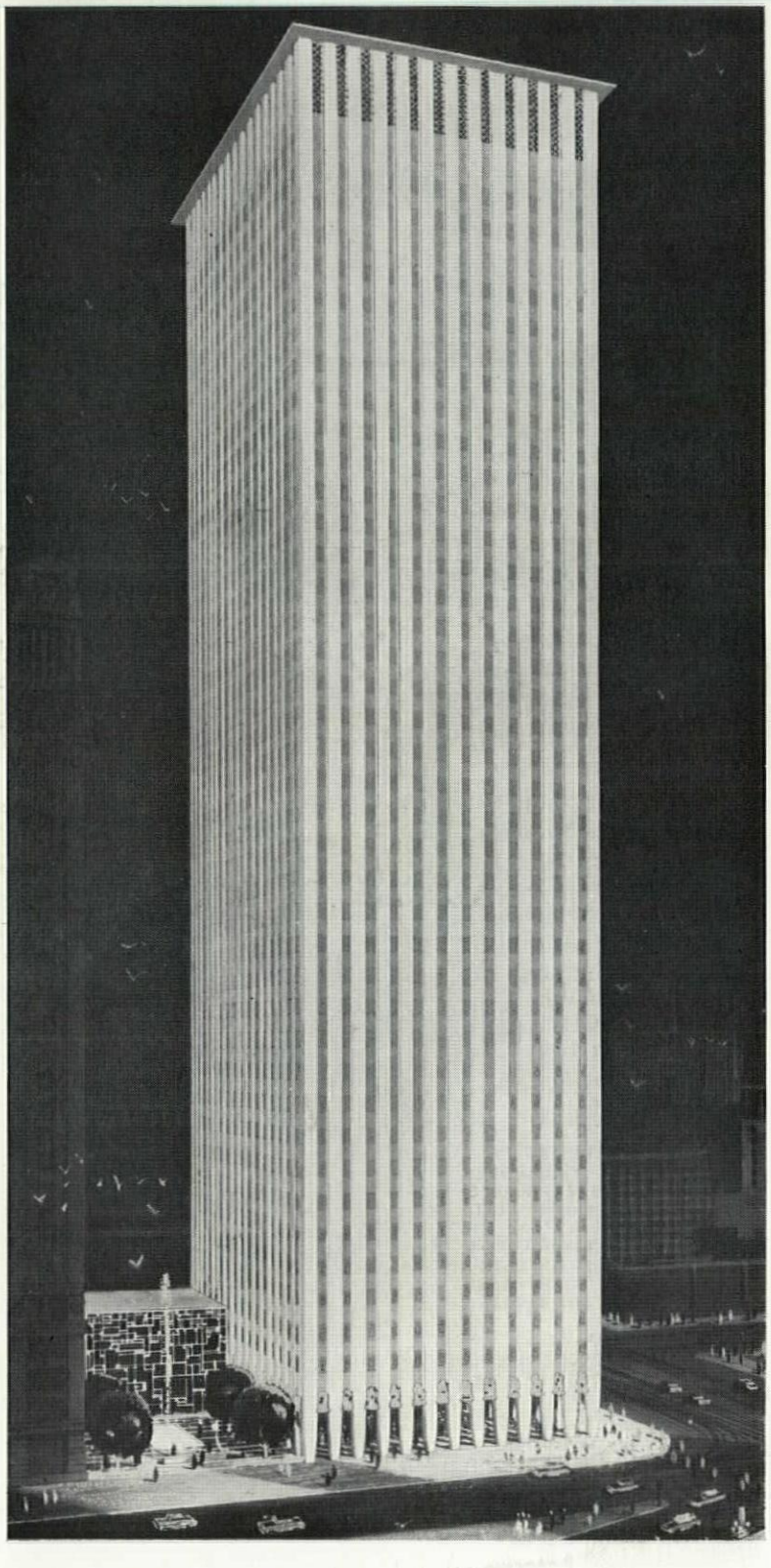
Armstrong ACOUSTICAL CEILINGS

First in fire-retardant acoustical ceilings

TECHNICAL DATA: U. L. RATED: Armstrong Acoustical Fire Guard offers one- to four-hour rated fire protection for structural components. **SAVES MONEY, CONSTRUCTION TIME:** Up to 30¢ per sq. ft. by eliminating intermediate fire protection; often earns lower insurance rates; up to two months' time through dry installation. **SUSPENSION SYSTEMS:** For tile: TDR, Zee; for new Lay-In units (24″ x 24″ x 5/8″ and 24″ x 48″ x 5/8″): Fire Guard grid system. **CHOICE OF DESIGNS:** Fissured (shown), Classic, Full Random. For full information, call your Acoustical Contractor, your Armstrong District Office, or write Armstrong Cork Co., 4210 Watson Street, Lancaster, Pa.

Renderings by Helmut Jacoby

GO FIRST CLASS
GO STAINLESS!



"Framed in stainless and topped with ColorRold" will be key words for Chicago's United Insurance Company of America Building now under construction. Approximately 200,000 lbs. of *lifetime* stainless steel is being fabricated for 1800 window frames, anchor plates for the marble siding, roof flashing, and installations in the first and observation floors.

The crowning touch of beauty in the exterior design is a series of ornamental stainless steel louvers around the four sides of the fortieth floor, providing fresh air for the air conditioning system. They are formed of Gray ColorRold® color-coated stainless steel.

No building is too large or small to benefit from the lustrous beauty and care-free life of stainless steel—the truly *first-class* architectural material.

Our catalogs are listed in SWEET'S

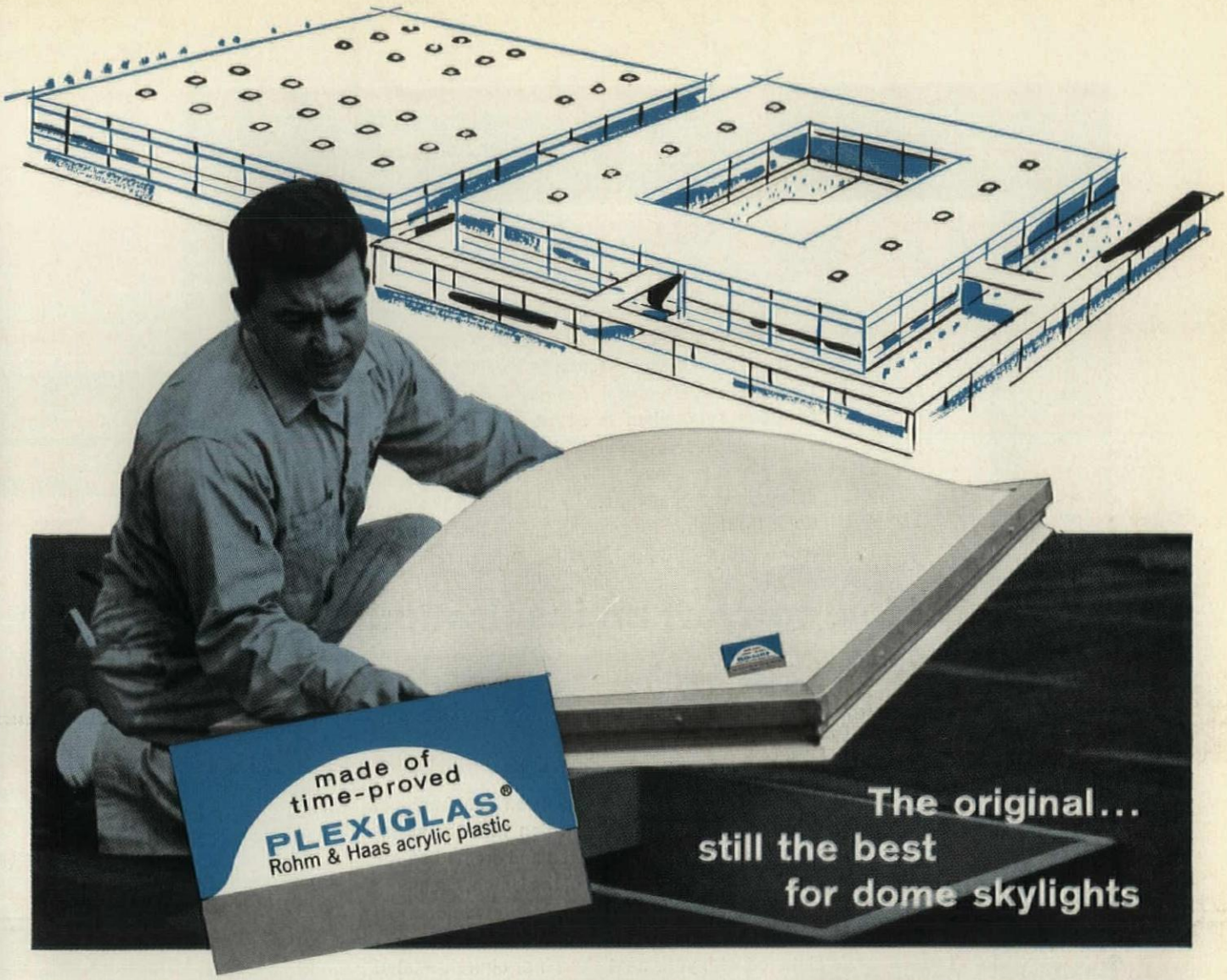
WASHINGTON STEEL CORPORATION

Washington, Pa.

Architect: Shaw-Metz and Associates, 208 S. LaSalle St., Chicago, Illinois

General Contractor: A. L. Jackson & Company, Chicago, Illinois

Fabricator: Flour City Architectural Division, Hupp Corporation, Minneapolis, Minn.



Let the label above guide you to dome skylights of highest quality and dependability. It's the mark of PLEXIGLAS® . . . the acrylic plastic that assures completely successful performance in light transmittance, daylight control, heat-light ratio, surface brightness and outdoor stability. Domes of PLEXIGLAS have been *time-tested* through years of service on schools and industrial buildings throughout the nation.

Insist on domes of PLEXIGLAS—approved as dome material by the Building Officials Conference of America (Report No. 54-12A) and the International Conference of Building Officials (Report No. 1084.1). PLEXIGLAS, made only by Rohm & Haas, is used by the dome skylight manufacturers listed below.

ROHM & HAAS

PHILADELPHIA 5, PA.

In Canada: *Rohm & Haas Company of Canada, Ltd., West Hill, Ontario.*

PLEXIGLAS DOME SKYLIGHT MANUFACTURERS

HOWE ENGINEERING CO. INC.
5800 E. Massachusetts Ave.
Indianapolis, Ind.

KIEKHAEFER CORP.
P. O. Box 608
St. Cloud, Florida

MID-SOUTH INDUSTRIES INC.
6000 Main St.
Columbia, S. C.

NATURALITE INC.
5115 E. Grand Ave.
Dallas, Texas

THE PAM CO.
Airport Drive
Hillsdale, Michigan

THE PAM CO.
1951 N.W. Wilson St.
Portland, Oregon

PLASTECO INC.
P. O. Box 9123
8721 Market St.
Houston 11, Texas

PLASTIC ENGINEERING CO. OF TULSA, 510 No. Sheridan
P. O. Box 15855
Tulsa 4, Okla.

PLASTICRAFTS INC.
2800 North Speer Blvd.
Denver 11, Colo.

SKYCO INC.
3210 Van Owen Blvd.
Burbank, Calif.

SOUTHWESTERN PLASTICS CO.
5615 Rice Ave.
Houston 36, Texas

E. VAN NOORDEN CO.
100 Magazine Ave.
Boston 19, Mass.

PLEXIGLAS

Throughout the centuries of Christendom, the church spire and the cross have served as an inspiration and an invitation to worship. Modern forms of architectural design, however, invite religious symbolism to adopt new shapes and still retain its traditional spiritual meaning. Overly has pioneered new fabrication techniques for spires and crosses, artfully combining the symbolic "welcome to worship" with the church's architecture—in effect, crafting an inspiration.

How to craft an inspiration

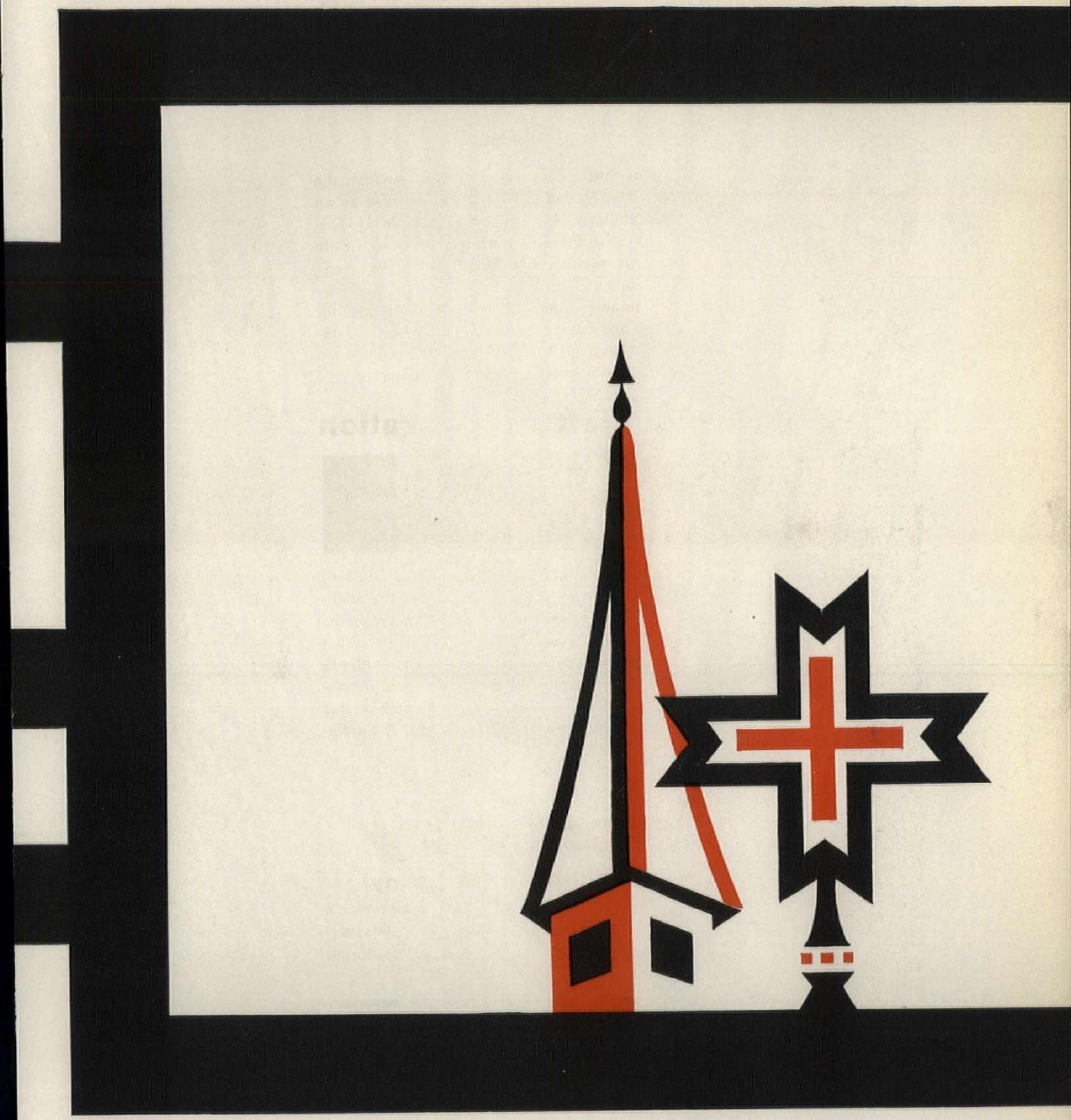
Creative craftsmanship has been the basis of Overly's 70 years of cooperation with the architect. Overly has pre-fabricated and erected spires and crosses in every State of the Union, each built to precise architectural specifications in order to harmonize with the church architecture. For assistance with your next church or church-related structure, you'll want to talk to Overly—*The Architect's Craftsman.*

Overly

Manufacturing Company

Greensburg, Pennsylvania
St. Louis 19, Missouri
Los Angeles 39, California

For complete references on Christian symbolism, send for the 36-page booklet, "The Cross, A Symbol of Faith," and a 28-page brochure on spires, "Pointing to God."
For more information, turn to Reader Service card, circle No. 365



Overly

Crosses and Spires

PPG SOLARGRAY® Plate Glass pays big dividends in new Harris Bank Building

MORE than an acre of PPG SOLARGRAY Polished Plate Glass is at work in the Harris Trust and Savings Bank Building in Chicago. Combining utility with beauty, PPG SOLARGRAY truly is "at work."

PPG SOLARGRAY is contributing to interior comfort in the Harris Bank Building because it is a heat-absorbing and glare-reducing plate glass. Its soft gray tint absorbs about 50% of the sun's heat and substantially reduces the amount of sun glare entering the building. Yet it permits plenty of light to come through, allowing a proper balance of natural and artificial lighting. And SOLARGRAY provides this glare- and heat-control with a neutral gray tint that requires no special interior color planning.

While SOLARGRAY was developed to control the sun's heat and glare, its delicate color adds beauty to any building. The use of PPG SOLARGRAY Plate Glass in the Harris Bank Building helps give the building its distinctive beauty.

Other PPG Glass Products in the building include ½" clear Polished Plate Glass and, for accent, white suede finish PPG CARRARA® Structural Glass that will retain its color and beauty permanently. Your Pittsburgh Plate Glass architectural representative will give you specific data on any PPG product. For a quick look, check the Pittsburgh Glass Products Catalog in Sweet's.

For more information, turn to Reader Service card, circle No. 391

Architects-Engineers: Skidmore, Owings & Merrill, Chicago, Ill.
Contractor: Turner Construction Co.
Glazed by: Hooker Glass and Paint Manufacturing Company

PITTSBURGH PLATE GLASS COMPANY
Paints • Glass • Chemicals • Fiber Glass
In Canada: Canadian Pittsburgh Industries Limited

PPG SOLARGRAY Polished Plate Glass does double duty in The Harris Trust and Savings Bank Building. It reduces glare and heat... and provides distinctive beauty.

Factory Balanced – Ready to Use

NEW ANEMOSTAT

Mechanical Constant Volume Boxes, Type HV

Designed and developed for today's high velocity dual duct air conditioning systems, the Anemostat single motor HV mixing box is unexcelled for material, quality and performance. Pre-balanced and factory calibrated to operate consistently within ±5% of required air quantities, the Anemostat HV unit is ready for immediate operation upon installation.

The Anemostat HV mixing box requires **only one** pneumatic operator; the mechanical constant volume device* does the rest. This all metal device offers these unique design and construction features:

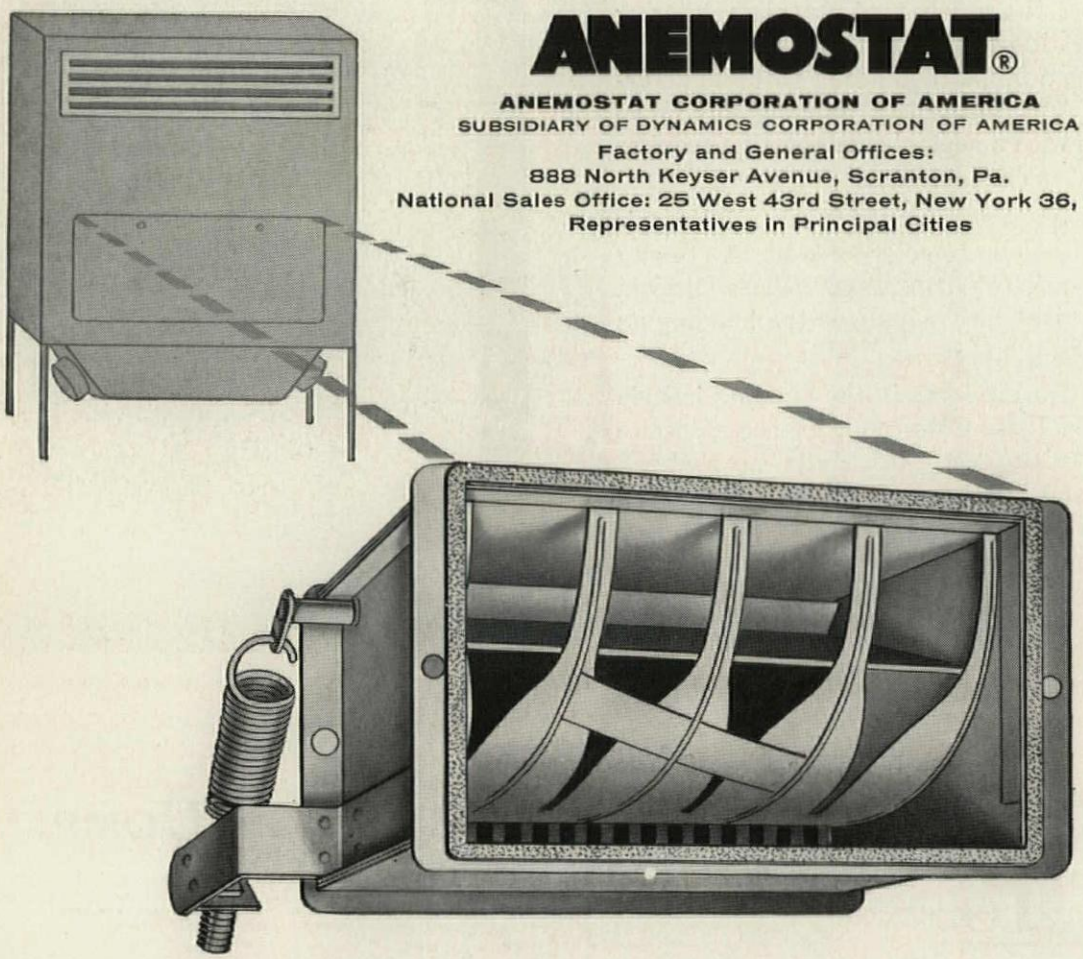
1 Built to last a life time, with corrosion-resistant parts, it requires no maintenance.

2 Allows for simple field adjustment to meet changing air requirements.

3 Operating engineers don't have to worry about replacing worn fabrics, nor is there any perforated metal to clog and impede efficiency.

The Anemostat HV mixing box is available for a wide range of air capacities. Write for Anemostat Bulletin Mech-70 today.

*Patent Applied For

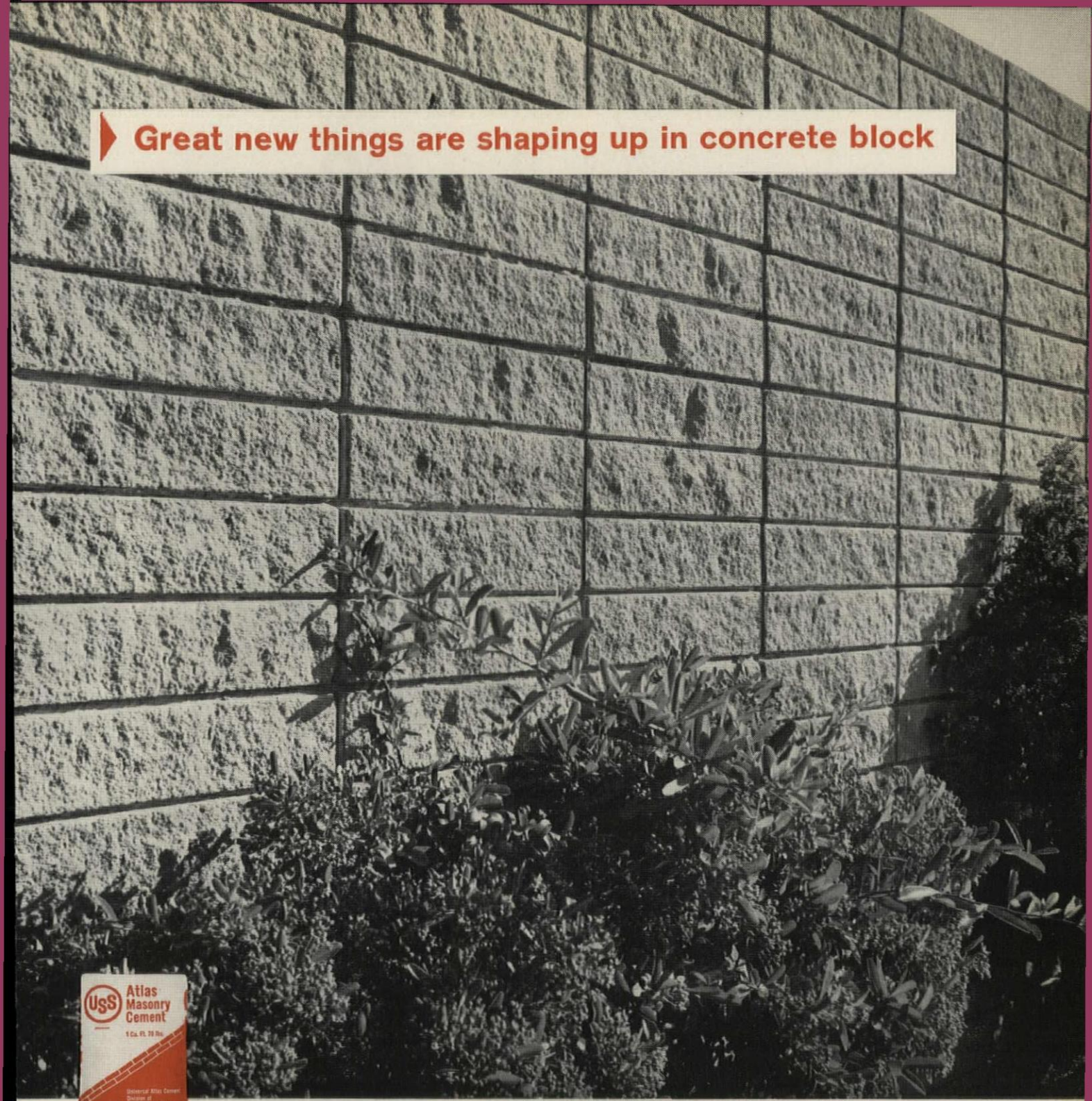


ANEMOSTAT®

ANEMOSTAT CORPORATION OF AMERICA
SUBSIDIARY OF DYNAMICS CORPORATION OF AMERICA
Factory and General Offices:
888 North Keyser Avenue, Scranton, Pa.
National Sales Office: 25 West 43rd Street, New York 36, N. Y.
Representatives in Principal Cities

AC1382

Great new things are shaping up in concrete block



For information on split block, see your local concrete block producer.

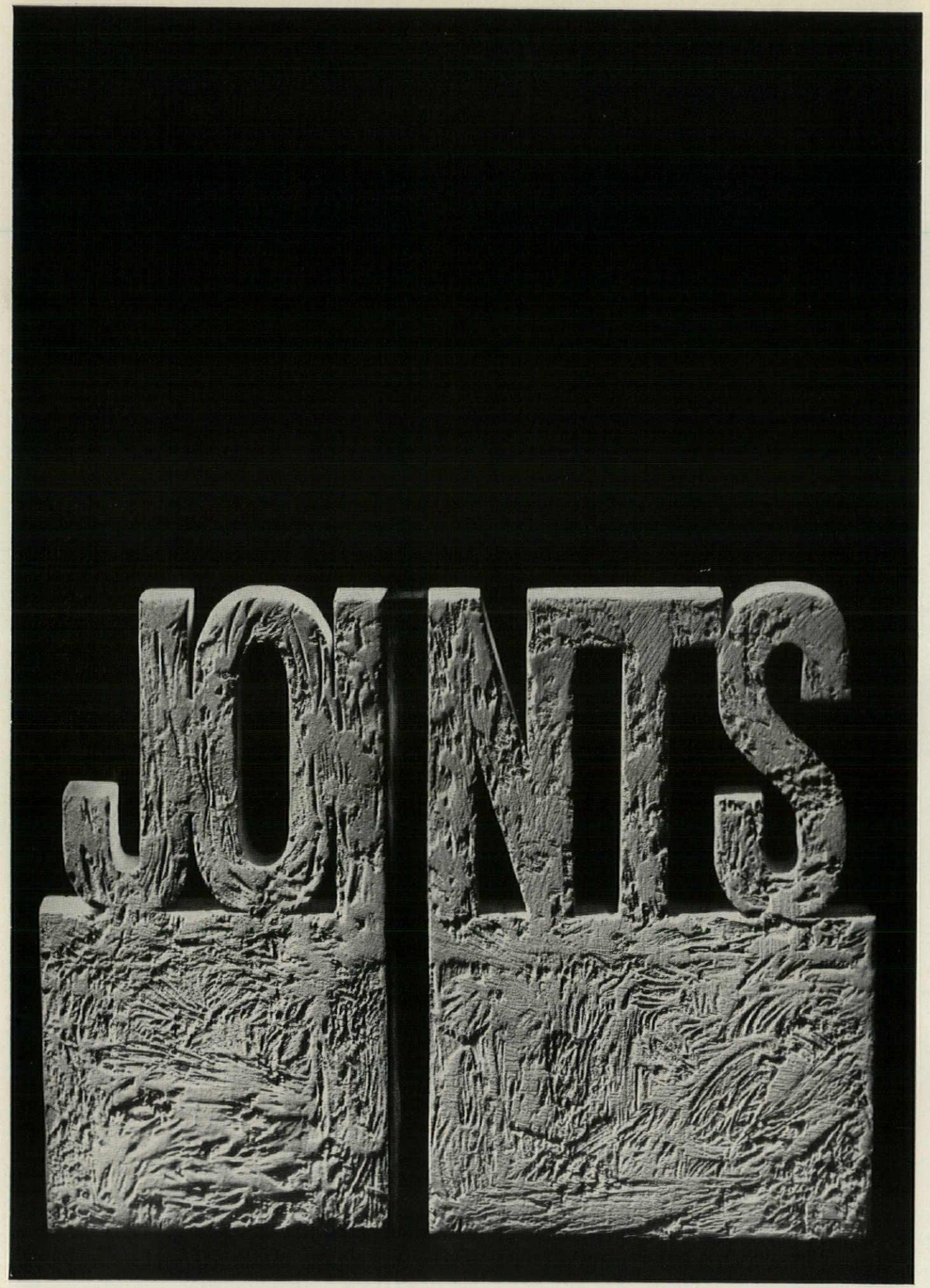
Atlas Masonry Cement provides the right mortar

Split block is one of the most popular of the decorative types of masonry, with its rough texture and rugged contours that so closely resemble natural stone. It is available as a veneer block or a load-bearing unit in various sizes and colors. Use it for exterior and interior walls, partitions, chimneys, fireplaces, planters, etc. □ To lay up split block or any type of masonry, ATLAS MASONRY CEMENT continues to be the preferred cement for mortar. It produces a smooth, workable mix . . . saves labor . . . cuts waste . . . helps assure a good bond . . . gives durable mortar joints that are uniform in color. Complies with ASTM & Federal Specifications. For information on masonry cement, write: Universal Atlas, Dept. M, 100 Park Avenue, New York 17, N. Y.

USS **Universal Atlas Cement Division of United States Steel**

M-86 "USS" and "Atlas" are registered trademarks.

OFFICES: Albany · Birmingham · Boston · Chicago · Dayton · Fort Lauderdale · Kansas City · Milwaukee · Minneapolis · New York · Philadelphia · Pittsburgh · St. Louis · Waco


JOHNS

TO SAFEGUARD YOUR REPUTATION, SPECIFY PRODUCTS OF FTI MEMBERS

Members of the FTI protect your reputation as well as their own by means of an enlightened program of quality control, and aggressive pursuit of improvement in structural glazed and unglazed facing tile.

Through standardization of colors, shapes and sizes, through cooperation with the Modular Building Standards Association, through provision of product information (including precise descriptions of physical properties, performance characteristics, and specifications), these *responsible* manufacturers save you planning time . . . help minimize installation time and waste.

By means of continual testing, rigid quality control is maintained. By means of research, quality is improved and new architectural needs are met. Institute engineers offer technical aid, help solve design installation problems. Increased production by Institute members meets job schedules and design needs.

Only members of the FTI underwrite the costs of this constructive program; only members of the FTI support this long-range point of view that helps architects perform efficiently, enables the building industry to deliver the best possible end product. Only members of the FTI merit *your* support.

For further information, contact the Facing Tile Institute or the sales offices of the member companies listed above. In the interest of better facing tile construction, these companies have contributed to this advertisement.

FTI
STRUCTURAL
FACING TILE INSTITUTE

F.T.I. MEMBERSHIP:

Charleston Clay Products Company
Charleston 22, West Virginia

McNees-Kittanning Company
Kittanning, Pennsylvania

Metropolitan Brick, Inc.
Canton 2, Ohio

Natco Corporation
Pittsburgh 22, Pennsylvania

Stark Ceramics, Inc.
Canton 1, Ohio

West Virginia Brick Company
Charleston 24, West Virginia

FACING TILE INSTITUTE
1520 18th Street, N.W., Washington 6, D. C.

Beauty • Sanitation • Low Maintenance • Structural Stability • Color Range • Thru-the-wall • Modular • Flexibility

Best way to provide service openings in any wall or ceiling: Specify Milcor Steel Access Doors. You have five styles and thirteen popular sizes from which to select. (Special sizes also furnished.) Each style offers maximum suitability for a particular type of surface. The new Style B door, for example, has a recessed panel with established plaster grounds so it can be covered by acoustical plaster. It thus contributes sound control and preserves the attractive texture of the surrounding plaster area. All styles are easy to install and operate. See Sweet's section 16j/In. Or write for catalog 210.

Milcor Metal Lath and Trim Products Member of the INLAND Steel Family

METAL LATH • CORNER BEADS • CASING BEADS • CHANNELS • STUDS
PARTITION SYSTEMS • ACCESS DOORS • WINDOW STOOLS • METAL BASES

Inland Steel Products Company, DEPT. L, 4069 W. BURNHAM ST., MILWAUKEE 1, WIS.

BALTIMORE, BUFFALO, CHICAGO, CINCINNATI, CLEVELAND, DETROIT, KANSAS CITY, LOS ANGELES, MILWAUKEE, NEW ORLEANS, NEW YORK, ST. LOUIS

3 Engineered Ceiling-Deck Systems..

with

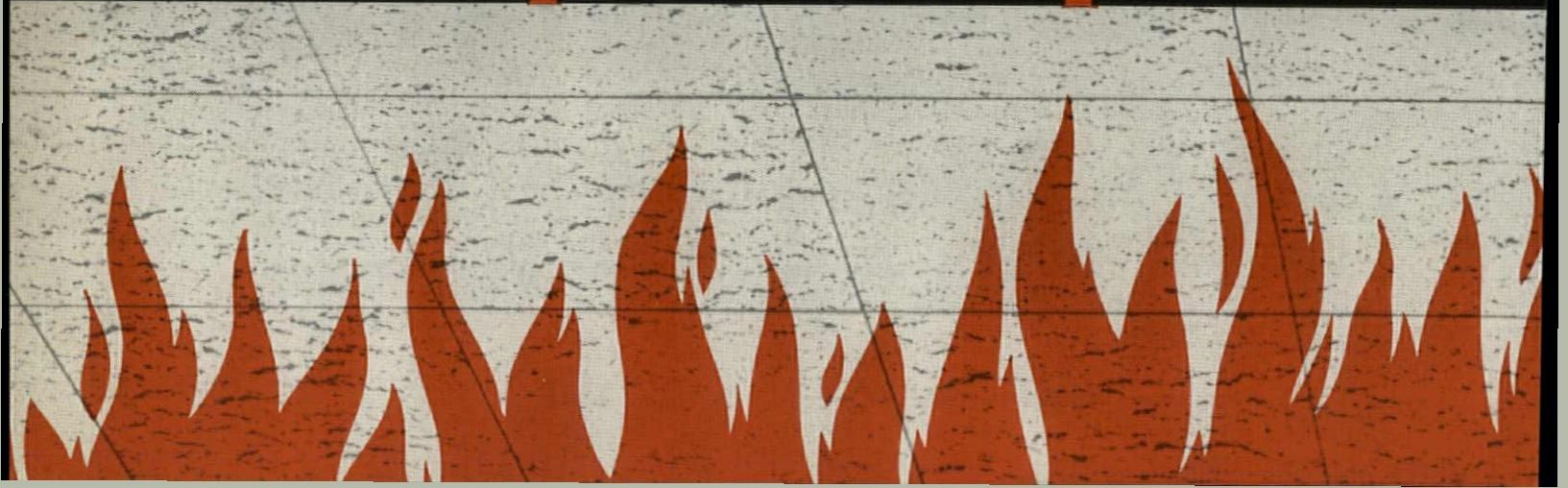
ACOUSTONE®

MINERAL ACOUSTICAL CEILING TILE BY U.S.G.

1-HOUR

1½-HOUR

2-HOUR

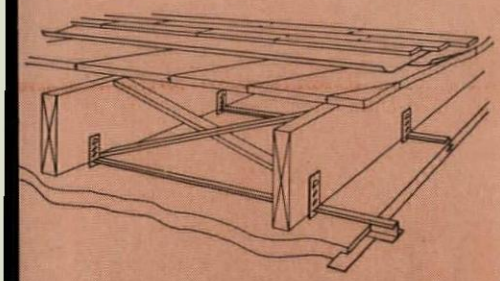


3 Fully-tested Fire Ratings...

It's Mineral! It's Fissured! It's Beautiful! A sure solution to your fire-rating problems is ACOUSTONE Mineral Acoustical Ceiling Tile by U.S.G. This handsome, economical, all-purpose tile is available in two styles for systems that are UL-rated for 1-, 1½- and 2-hour fire protection. It may be specified for wood-joist and bar-joist construction.

ACOUSTONE, the *original* incombustible mineral acoustical ceiling tile, is the standard of the building industry. It provides unmatched sound control. Clients admire its easy care. ACOUSTONE ceilings may be washed with ordinary cleaners—and may be painted, if desired, without noticeable impairment of sound absorption.

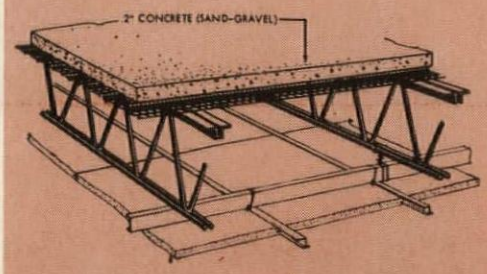
On your next project, specify one of the ACOUSTONE Ceiling Systems described here.



1-HOUR RATED

ECONOMICAL ACOUSTONE 90
FOR WOOD-JOIST CONSTRUCTION

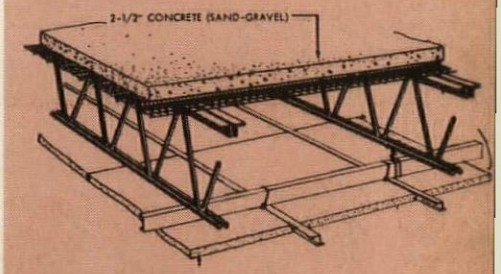
Good-looking, sound-absorbing ACOUSTONE 90 is easily suspended from standard wood-joist decks by the USG Concealed Z-Spline and Troffer Clip metal suspension assembly. When used below standard double oak flooring, passage of intense heat and flames is retarded for 60 minutes—precious time wherever people, material and property are sheltered.



1½-HOUR RATED

VERSATILE ACOUSTONE 90
FOR BAR-JOIST CONSTRUCTION

Fissured ACOUSTONE 90 may also be used with the USG Concealed Z-Spline metal suspension system in steel bar-joist constructions, with 2" concrete or gypsum concrete deck. Fire retardance increases to 1½ hours with this system, assuring utmost safety for property and personnel. Enduring design beauty and comforting sound control are also achieved.



2-HOUR RATED

FOIL-BACKED ACOUSTONE 120
FOR BAR-JOIST CONSTRUCTION

Beautiful, premium-quality ACOUSTONE 120 has the same surface appearance as ACOUSTONE 90—*plus* permanent foil backing that almost completely prevents passage of sound into the plenum or into adjacent partitioned rooms. Suspended on the metal USG Concealed Z-Spline assembly, with 2½" concrete or gypsum concrete deck, the system retards fire, heat for two hours. Foil back insulates against cold, heat.

CALL A SOUND-CONTROL EXPERT, your qualified acoustical contractor, for advice and technical information on ACOUSTONE fire-rated and sound-engineered ceiling-deck systems.

UNITED STATES GYPSUM

the greatest name in building

Get the facts on fire ratings

Mail this coupon today, or call your nearest U.S.G. acoustical contractor or U.S.G. representative.

United States Gypsum, Dept. PA-12, 300 W. Adams St., Chicago 6, Ill.
Please send my FREE copy of the new FIRE-RATED ACOUSTONE brochure.

NAME

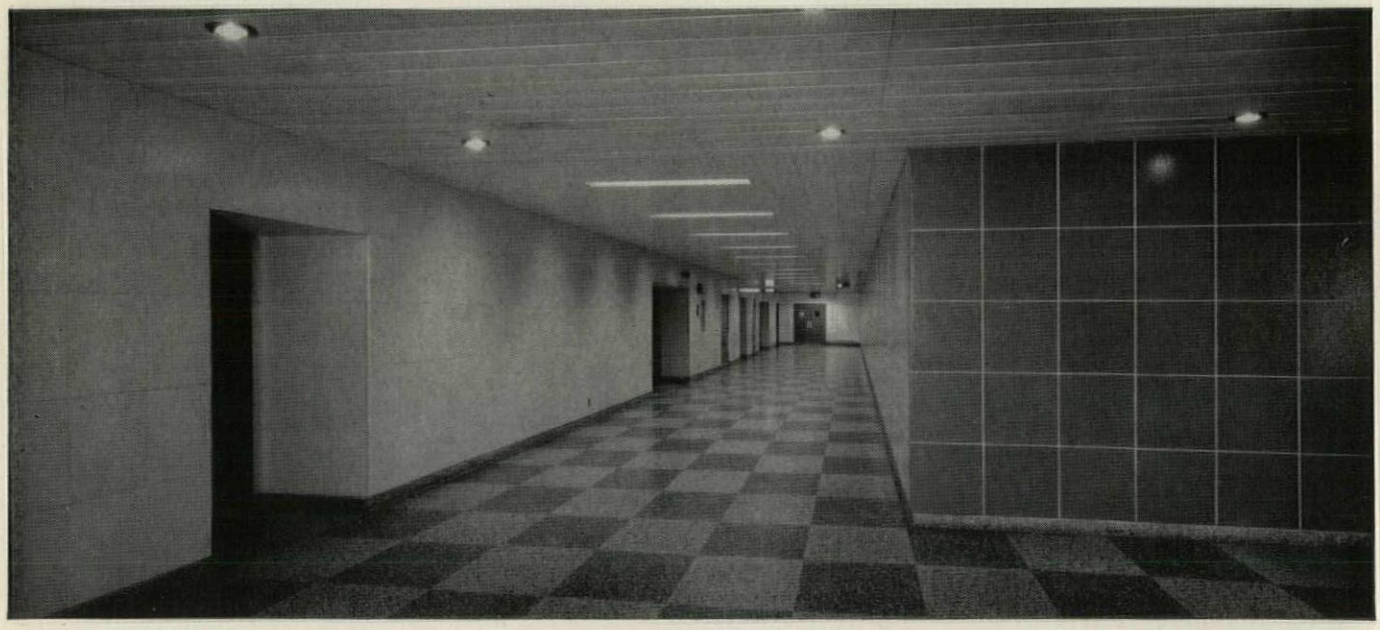
COMPANY

ADDRESS

CITY ZONE STATE

OLD AGE & SURVIVORS INSURANCE BUILDING
BALTIMORE, MARYLAND
Meyer & Ayers—*Architects*
Fischer-Nes-Campbell & Associates—*Architects*
McCloskey & Company—*Contractors*
Ceramic Veneer in units 20" x 24" x 1¼" was specified for cafeterias, dining areas, serving lines, lobbies and vestibules. Colors selected are gray, yellow, coral, blue-gray and blue.

With walls of Ceramic Veneer,



color and cleanliness are "designed-in" for generations

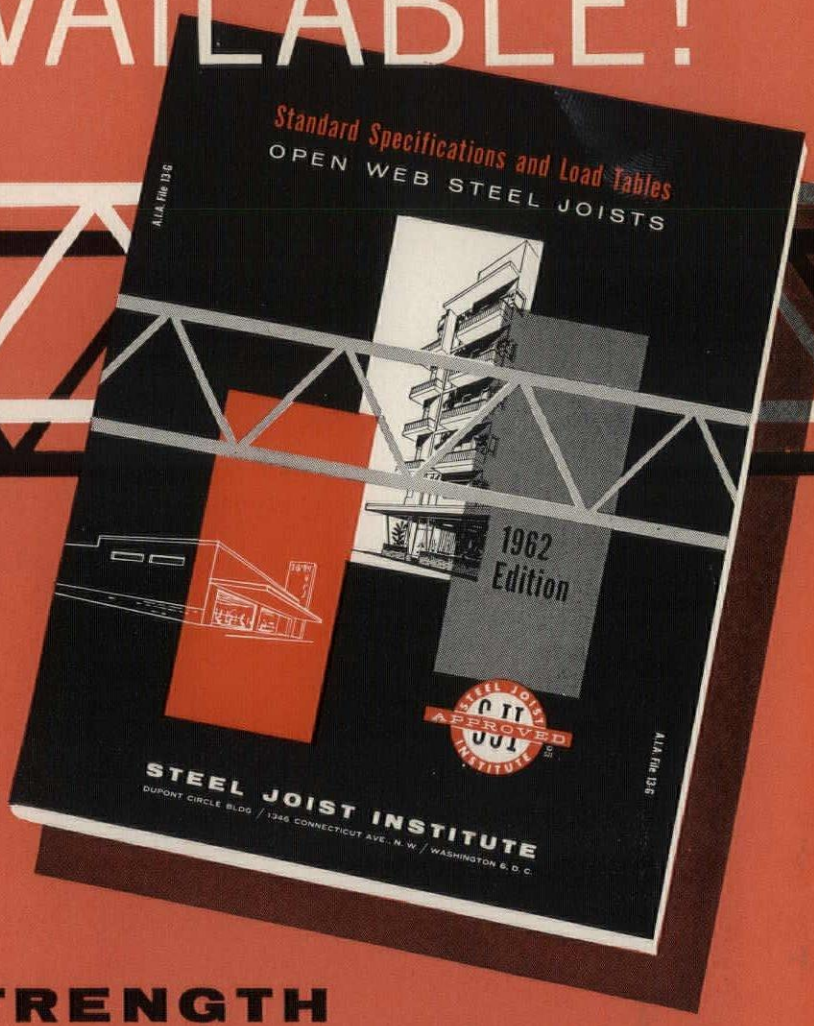
Time, traffic, dirt and grime have little effect on the fire-glazed finish of Ceramic Veneer. Interiors of this modern architectural terra cotta require only soap-and-water washings to retain their original richness and beauty indefinitely. Exterior treatments — plain surfaces, polychrome panels or sculpture need only normal rainfall to keep clean and colorful. Besides minimum maintenance, Ceramic Veneer provides other important advantages — moderate initial cost, proved permanence and unrivalled versatility of color, form and texture. Whatever your specifications, every unit, large or small, is custom-made and faithfully reproduced by Federal Seaboard craftsmen. For complete information including new solar screen and color guide brochures, write us today. Without charge we will gladly furnish construction detail, data, advice and estimates on preliminary sketches involving Ceramic Veneer.

FEDERAL
SEABOARD
TERRA COTTA
CORPORATION

F S T C

10 E. 40th St., N. Y. 16, N. Y.
Plant at Perth Amboy, N. J.

NOW AVAILABLE!



NEW, COMPLETE STANDARD SPECIFICATIONS and LOAD TABLES

FOR HIGH-STRENGTH OPEN WEB STEEL JOISTS

This 52-page reference manual, reflecting the recently adopted changes in specifications and load tables for three series of high-strength joists, ***replaces all previous standards.*** The new specifications and load tables cover three series of joists:

J-Series (replacing the old S-Series), based on a design stress in tension of 22,000 psi

LA-Series (replacing the old L-Series), longspan joists compatible with the new J-Series

H-Series (completely new), high-strength joists made from 50,000 psi minimum yield strength steel

This single edition contains all the information needed for the easy, accurate specification of joists to carry uniform loads on spans of up to 96 feet.

Complimentary copies are available on request.

STEEL JOIST INSTITUTE

ROOM 715, DUPONT CIRCLE BLDG.
WASHINGTON 6, D. C.

STEEL JOIST INSTITUTE APPROVED © SJI

STEEL JOIST INSTITUTE
Room 715, DuPont Circle Bldg., Washington 6, D. C.

Please send me a complimentary copy of the 1962 edition of the Standard Specifications and Load Tables.

Name_____

Address_____

Firm_____

City_____ Zone____ State_____

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

General Offices of Burns & McDonnell, Engineers and Architects, Kansas City, Missouri. Comfortably cooled at low cost with gas-operated Ready-Power Air Conditioning.

GAS-operated READY-POWER air conditioning costs less than one cent per ton-hour!

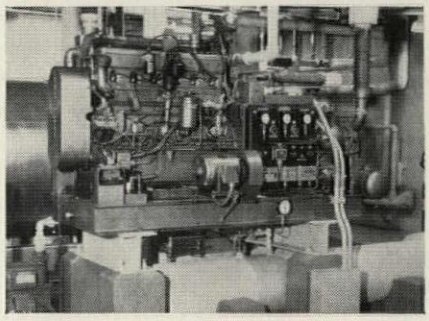
In office buildings, clubs, churches, theatres, bowling alleys, stores, factories . . . for every type of commercial and industrial air conditioning application . . . gas-operated Ready-Power units condition air with extremely low input per ton-hour.

All Ready-Power units average less than 13 cubic feet of natural gas per ton per hour. What's more, the total operating cost amounts to *less than one cent per ton per hour.* What makes this possible? Ready-Power air conditioning combines the unmatched fuel economy of gas with a unique variable speed operation. LOAD-MATCH CONTROLS automatically adjust output and fuel consumption to actual cooling requirements. Cooling is constant, as opposed to the ON-OFF operation of some systems.

Get all the facts on the unusual economy, dependability and efficiency of gas-operated Ready-Power Air Conditioning.

Call your local Gas Company, or write to The Ready-Power Company, Detroit 14, Michigan.

American Gas Association



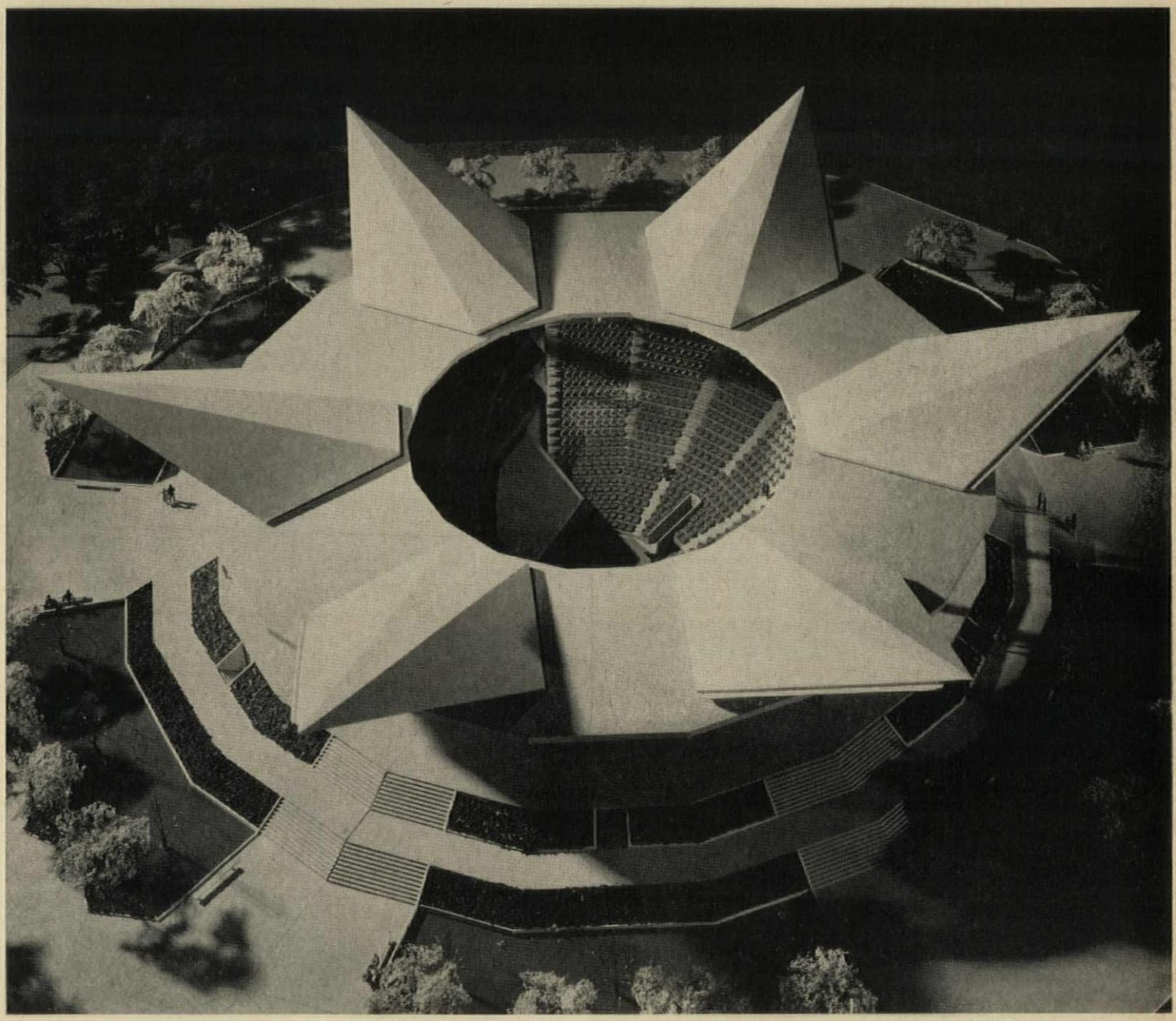
Gas-operated Ready-Power Air Conditioning uses natural gas engine-driven compressor units, condensing units or matched chiller-condenser units. Ready-Power offers packaged systems with capacities from 20 to 375 tons.

FOR AIR CONDITIONING GAS IS GOOD BUSINESS!

PROGRESSIVE ARCHITECTURE DECEMBER 1961

NEWS REPORT

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



Pavilion theater designed for Ford Foundation study by Edward D. Stone and Eldon Elder has movable roof for bad weather.

Architects: Perkins and Will, Chicago
General Contractor: A. L. Jackson Co., Chicago

Mutual Trust's new home office . . . sound planned with . . .

Bright facade in the Windy City is this new home office of the Mutual Trust Life Insurance Company. First to introduce colored porcelain-enameled steel curtain walls to downtown Chicago, it marked another first with Autotronic elevators — supervised with an electronic brain. An advanced, draft-free air conditioning system was also installed in this remarkable new building.

No wonder Webster Telecom was specified when modern intercommunications entered the planning! Linking the many departments, divisions and offices is a 135 phone system that provides fast, two-way voice contact — saving steps, time and increasing efficiency.

Telecom is a private dial telephone intercom. Its versatility can be extended with paging, code call, speaker phones, dictation adaptor, conference circuits. It's complete with its own self-contained, *automatic* switchboard which hides in a corner or closet. Operation is the same as your city phone, wiring is simple, maintenance is low.

Telecom can be purchased, or leased on a low-cost plan. See your Telecom dealer* for details and a demonstration in your office.

** Listed in the Yellow Pages under "Intercommunication Systems"*

COMMUNICATIONS DIVISION

WEBSTER ELECTRIC

RACINE · WIS

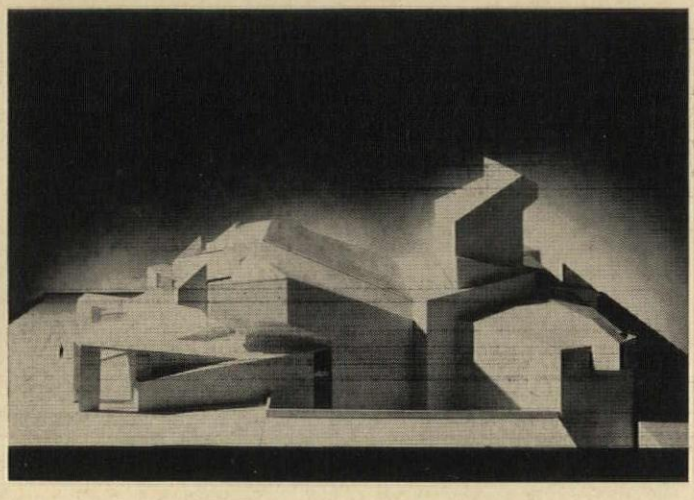
WEBSTER ELECTRIC

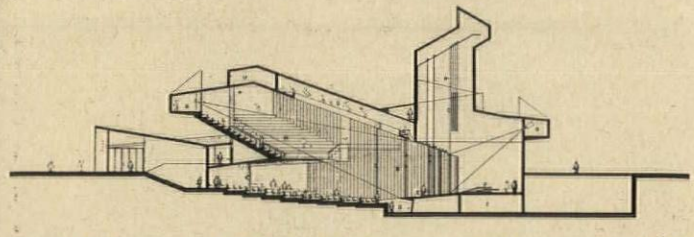
Telecom

Telecom — practical for small or large business, industrial use. Fine electronic craftsmanship, 12 beautiful decorator colors, 2 to 400 phone systems.

THE IDEAL THEATER: EIGHT CONCEPTS

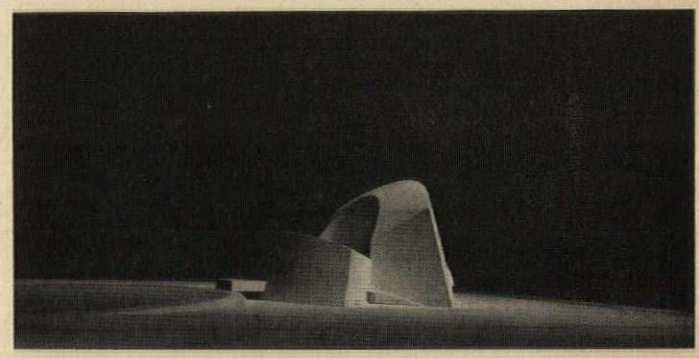
NEW YORK, N.Y. In 1959, the Ford Foundation announced a program "intended to assist architects and theater designers in carrying to the design and model phase their ideas for new theaters, including the stage and all technical facilities enhancing its adaptability to the theatrical medium." Under the program, a number of teams of architects and theater designers were to undertake design and technical research in order to produce plans for "the ideal theater." The teams chosen, as announced in early 1960, were: Paul Rudolph and Ralph Alswang, Edward L. Barnes and Jo Mielziner, Frederick Kiesler (alone), Peter Blake and David Hays, Edward D. Stone and Eldon Elder, Barrie Greenbie and Elizabeth Harris, Paul Schweikher and George Izenour, and Ben Schlanger and Donald Oenslager. The study by the last-named team, not shown here, was to determine the maximum number of useful and desirable viewing positions that can be included in a proscenium and a non-proscenium type theater. Several of these studies will be presented more fully in the FEBRUARY 1962 P/A. Next month, the Museum of Contemporary Crafts in New York will house an exhibition of the theater designs; an illustrated catalog will be available. The exhibition is sponsored by the American Federation of Arts.

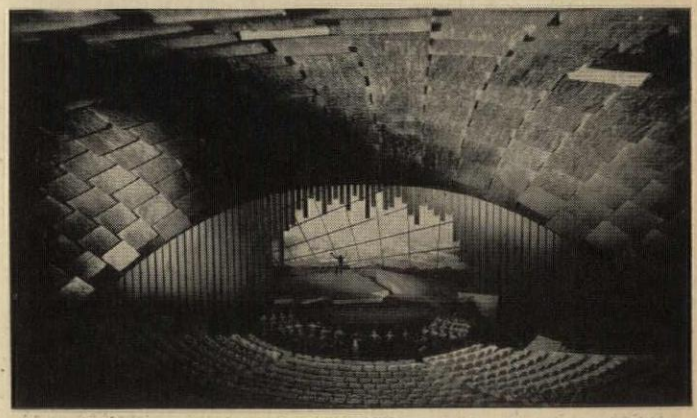




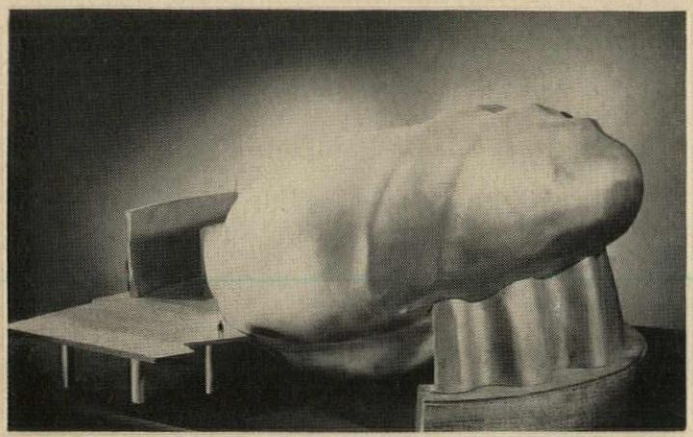
Paul Rudolph and Ralph Alswang designed a theater that makes possible combining various film-projection techniques with live action. The screens have been conceived as continuous surfaces within the theater in that they meld unnoticeably with the performing areas (where they function as projection surfaces or stage lighting) and with the audience area (where they contribute auditorium lighting). Film can be projected from any source—walls, floors, ceilings—to provide, together with the live actors, an exciting, constantly changing spectacle. Sight-lines and wall surfaces have been so arranged that attention is always where it should be: on the performance. According to the designers, "the external form of the building has been determined strictly by the requirements of the individual functions within. The various functional elements [including six projection booths for rear as well as front projection] reveal themselves on the exterior, for the concrete structure is conceived as a poured-in-place continuous concrete entity." Intimacy of spectators and stage is obtained by dividing the orchestra into a number of sections and the balcony into three sections.

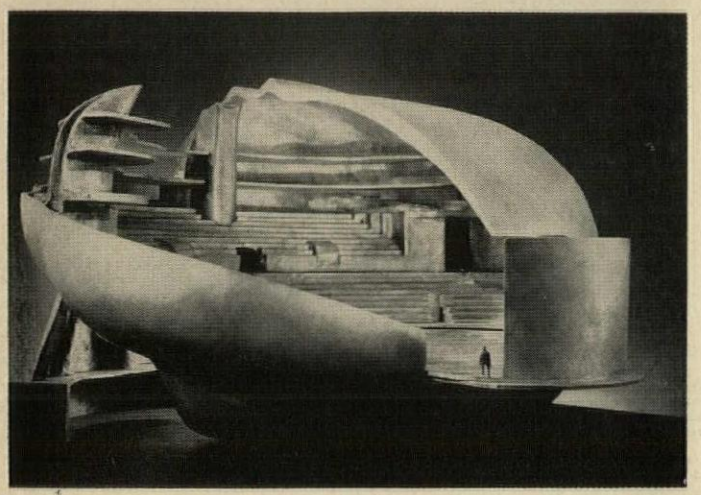
Model Photos: J. Alex Langley (Courtesy of American Federation of Arts)



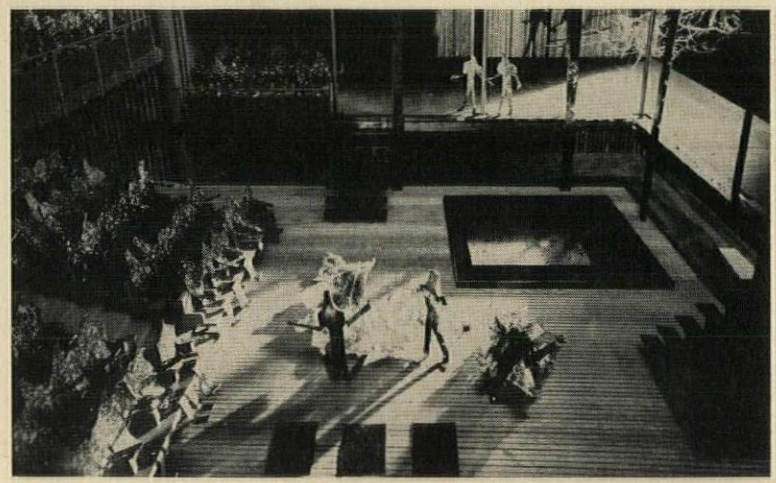


Edward L. Barnes and Jo Mielziner took as their problem the design of a theater for intimate music-drama (as opposed to grand opera, musical comedy, or operetta). The basic concept of their 1000-seat lyric theater is an acoustical canopy of walnut that holds the auditorium and the forestage in a sculptured sound-control envelope. The walnut was chosen for the bright resonance it affords, which is appropriate to a theater of this type. After passing through the high-ceiling lobby, the audience mounts a ramp to enter the auditorium half-way up the angle of seats in the center of the hall. The exterior form of the theater—conceived as two main masses that are truncated, tipped cones representing the stage house and the auditorium housing—reflects the interior by suggesting the lifting heights required for scenery, the cone shape of sight-lines, and the sweep of the stage. Walls consist of sloping columns with a precast concrete skin. Roofs are supported on light steel trusses.

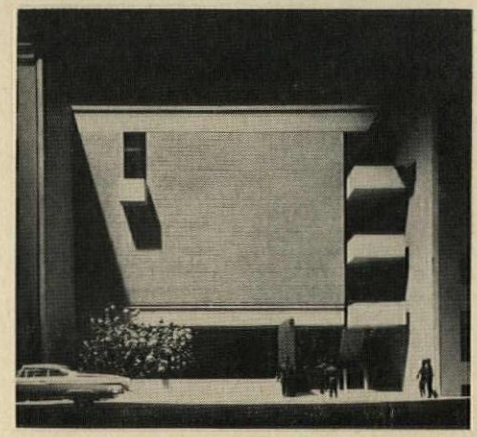




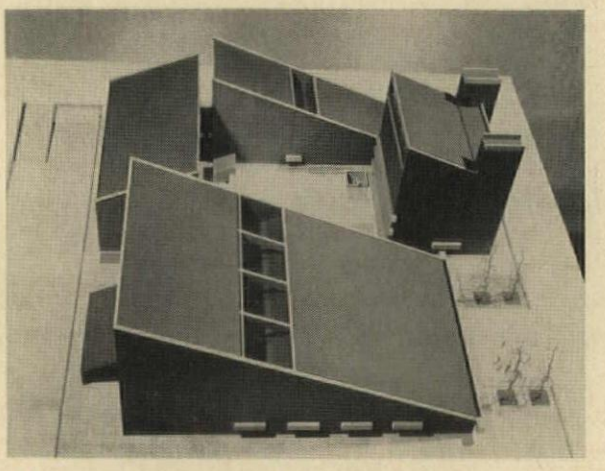
Frederick Kiesler designed for the study a theater-skyscraper complex, "The Universal" (model photos show theater exterior and cutaway interior). The main theater has a capacity of 1600; next to its stage is the foyer of a smaller, 600-capacity theater which, at the same time, can be used as the main lobby of the adjacent 30-story building. The high-rise building would contain a variety of small theaters, TV studios, radio stations, offices for publishers, record companies, and motion-picture producers, as well as seven floors of industrial or art exhibition space. The theater, structure of which is adapted in form from Kiesler's 1923 Endless Theater, has a ceiling which flows out from the proscenium arch to hood the audience like a shell. The designer states that "the Universal is an endless theater as far as vision and sound are concerned." Facilities and vertical transportation are carried in three major "communication towers" in the auditorium; one at left, one at right, and one in the rear. Kiesler has eliminated the traditional gridiron from which scenery is flown in favor of what he is certain will become the scene-showing methods of the future: projection, for instance. By mechanically rotating two sections of seats at the front of the auditorium, the stage can be provided with a projecting apron.

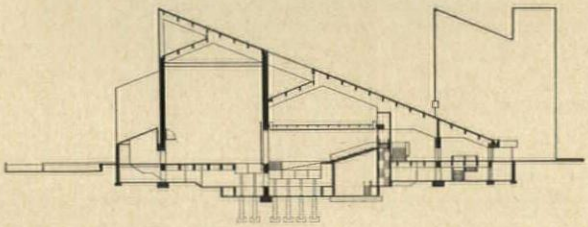


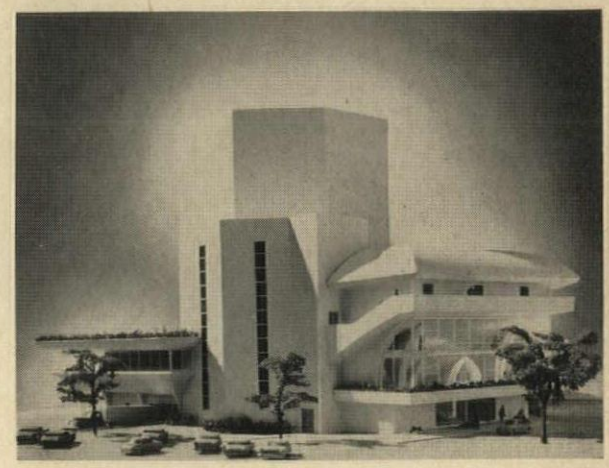
The Peter Blake and David Hays project is a flexible, small urban theater. Central concept is a system of related half-levels in the performing-audience areas. These levels, which differ in height by 6 ft, are all open to the entire area, and may be used for seating, acting, as lighting or projection galleries, or for several of these uses simultaneously. They may be bridged by movable stairs, opened to one another or sealed off, or given different heights by use of intermediate partitions. It is therefore possible, within this simple space, to approximate any form, from a theater-in-the-round to a proscenium production; to produce galleries as well as orchestra pits; and even to make the space a motion-picture theater or TV studio. For additional sources of income in a low-yield theater of this kind (maximum seating is 299), a restaurant-bar is provided that may be entered both from the lobby and from the street.

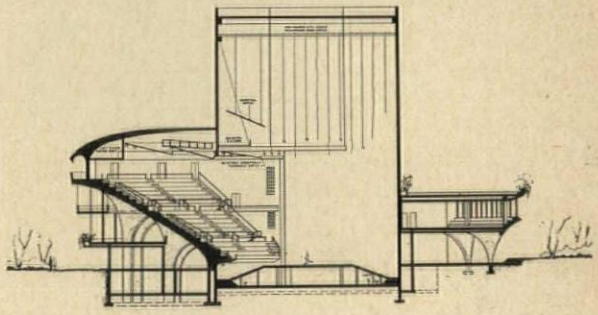


Edward D. Stone and Eldon Elder chose as their problem an open-air theater to meet the growing need for popular informal theater throughout the country. The 2000-seat "pavilion in a park" has steeply pitched arena seating designed to focus the audience's attention on the stage, the apron of which projects into the audience area and is surrounded by it on three sides. Audiences enter the theater from the ambulatory, which rings the public area at the top of the auditorium. Horizontal aisles are thus omitted, and the audience has a feeling of "converging" on the stage. In addition to the forestage, there is an inner, two-level stage, with two entrances separating the forestage from the inner stage. Two lifts increase the flexibility of staging possibilities, and several rows of front seats may be lowered to create an orchestra pit. The roof of the theater is composed of a fixed concrete canopy, 50 ft wide, around the circumference of the building, to which are attached six movable sections that may be opened or closed, depending on the weather.



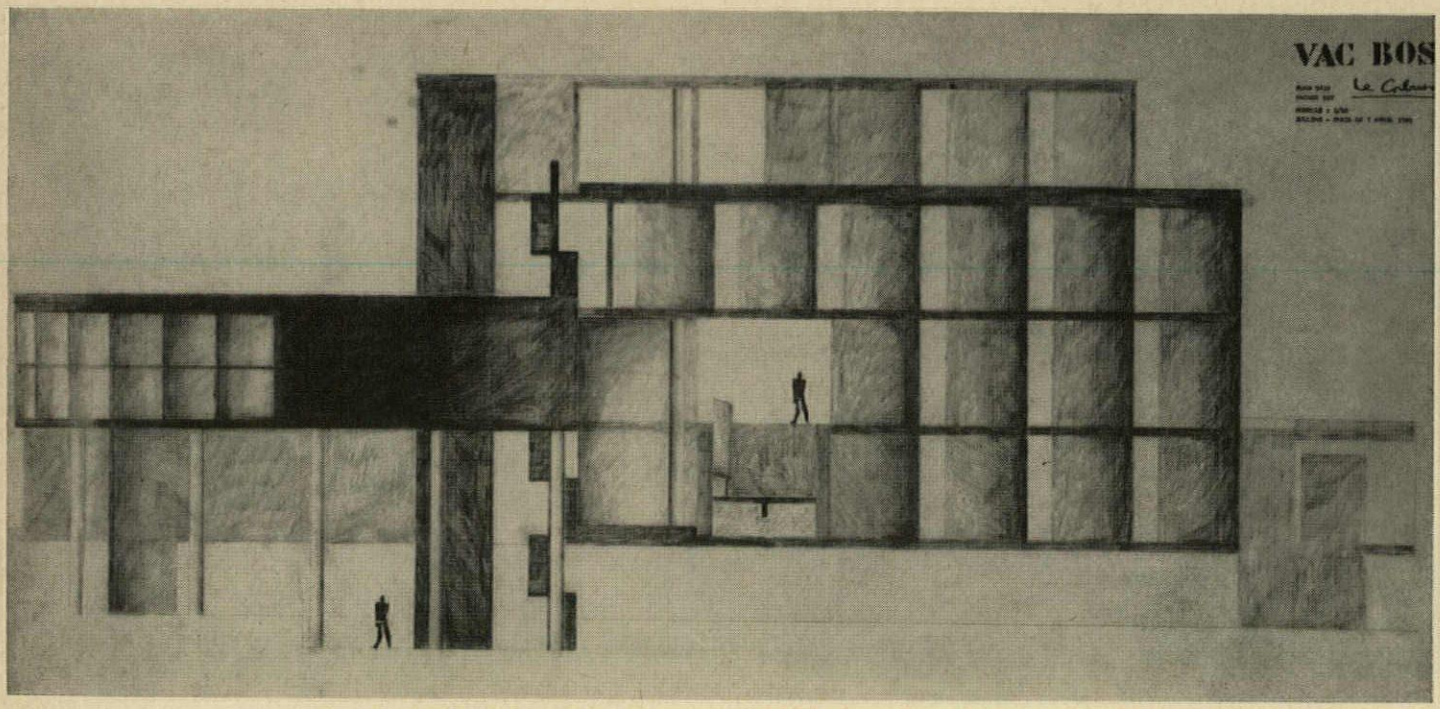






Barrie Greenbie and Elizabeth Harris, in designing a theater for the dance, employed an open stage and seated the audience in galleries overlooking the action on three sides. The stage is octagonal, with ramps leading from the basement to all eight sides. The three ramps closest to the viewers lead up from under the audience seating. A cyclorama is at the rear of the stage; unlike the conventional, curved form, it is set in three planes, which recall the angularity of the plan. The front ramps can be lowered to provide an orchestra pit, but permanent space for musicians has been provided above the top balcony. The musicians sit on a open-floor grating masked by "an acoustically-transparent ceiling baffle." Above them, an acoustical shell will reflect sound downward into the auditorium from a point equidistant from both dancers and audience. The conductor watches the dancers on a small TV screen. The theater has an open-air roof garden that may be used for refreshments or dining.

Paul Schweikher and George C. Izenour have the only design based on a specific client and site: the drama school complex for Carnegie Institute of Technology. For this program, Izenour developed a three-dimensional modular design for a flexible, mechanical theater. Schweikher modestly describes his contribution as "[housing] the mechanical and electrical systems proposed by George Izenour in a plain, direct way." Actually, his design has a vigor and dignity that will add even more to the luster of a famous drama school. The project is in five main elements: the main theater, the workshop, the studio theater, the experimental theater, and the classroom-faculty unit. The main and studio theaters, workshop, and classroom-faculty building surround an open court, and the experimental theater is underground. The main theater is convertible from arena to apron and to proscenium productions.



CORBU'S FIRST U.S. BUILDING: HARVARD'S VISUAL ARTS CENTER

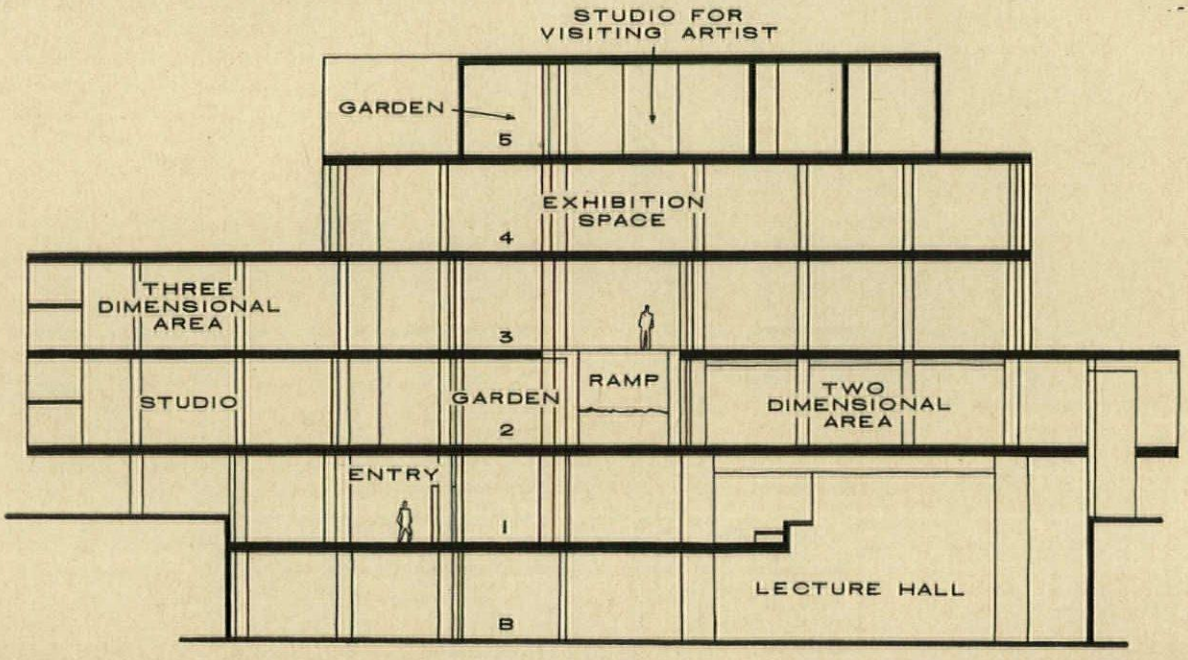
CAMBRIDGE, MASS. When Le Corbusier visited these shores last spring, he brought along plans of his first U.S. commission, the Visual Arts Center for Harvard University (p. 71, JUNE, 1961 P/A). The project has now been released, showing a design replete with such characteristic Corbu design elements as the ramp, sun-control baffles, roof terraces, concrete construction, and emphasis on flexible space.

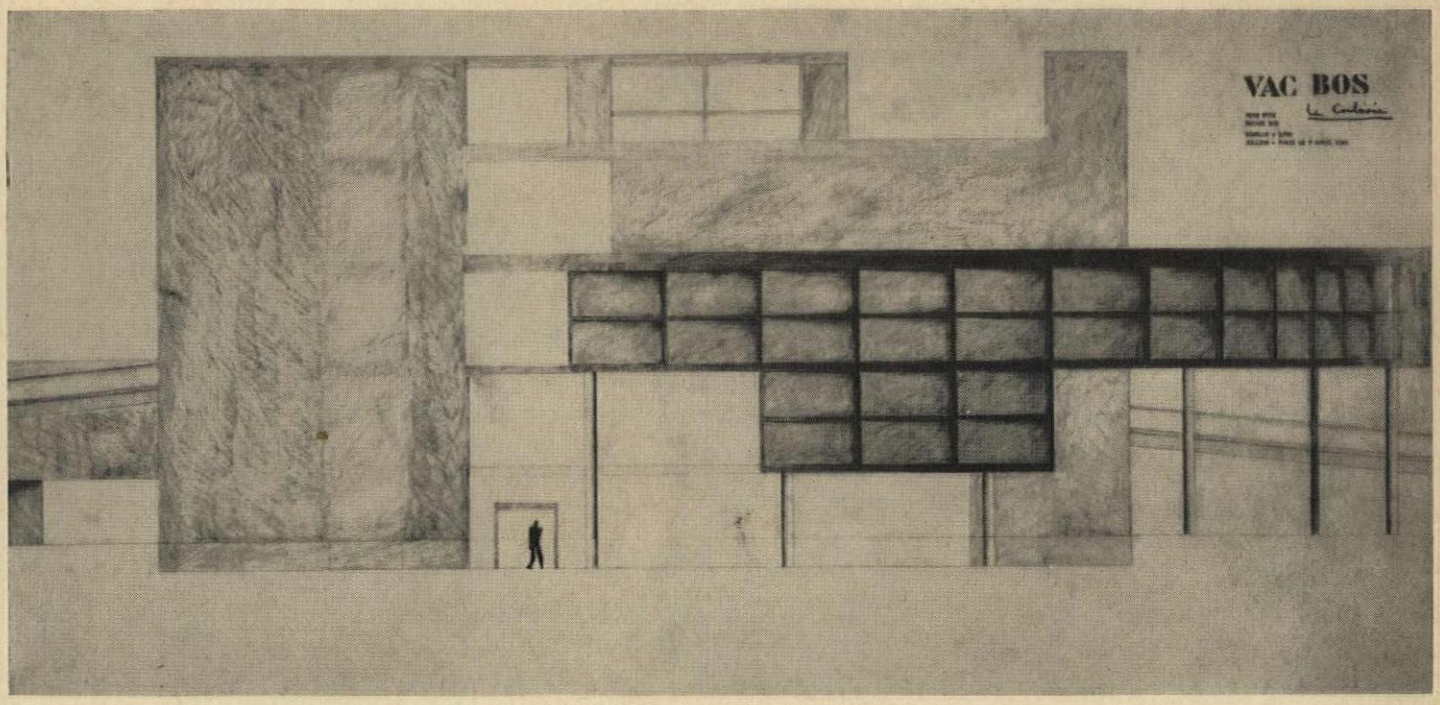
The six-level (including basement) building will house space for work in two- and three-dimensional art, plus work in "light and communication," i.e., sound, motion pictures, photography, etc.

The basement will contain the workshop for light and communications students, together with studios and a lofty lecture hall seating 180.

Main entrance will be on the first level above ground, and the two-dimensional and three-dimensional workshops and studios will be on the second and third levels.

The third level will contain a pedestrian ramp that will penetrate the building to connect Quincy Street to Prescott Street. Pedestrians thus will





pass through a planted terrace at the virtual horizontal and vertical center of the Visual Arts Center.

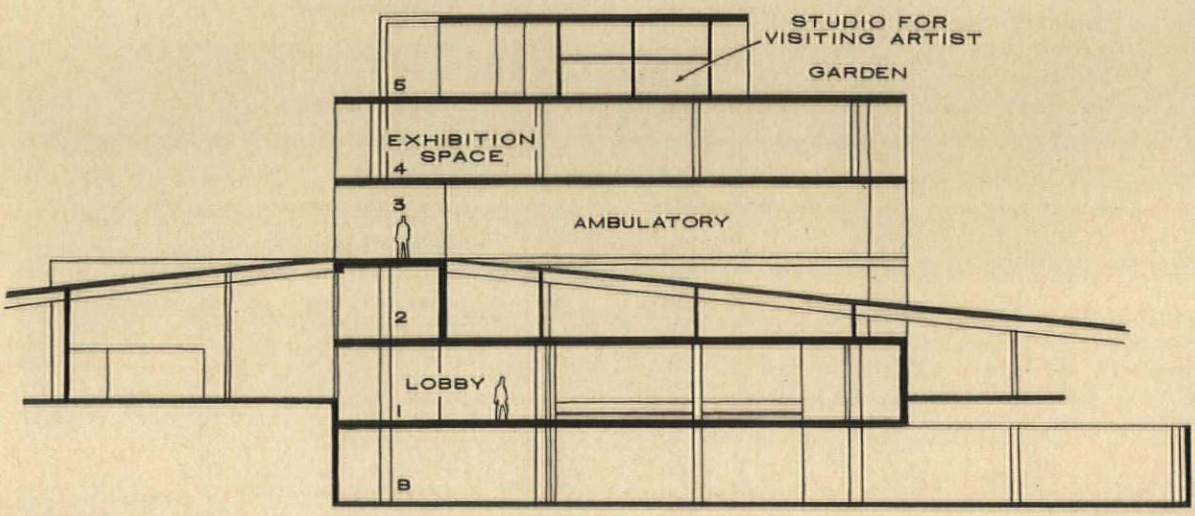
The fourth floor will contain space designed to provide a maximum of flexibility for seminars, exhibitions, and experimental projects.

The fifth—penthouse—level will contain the quarters of the director of the Center, studios for visiting artists, and a planted garden.

The entire building will provide about 50,000 sq ft for studies in the visual arts. Interiors will be characterized mainly by the use of movable partitions or cabinets for versatile arrangement of spaces. Exterior walls will feature deep concrete sun baffles that change according to the direction of the façade and that control natural daylighting in the interiors. Due to careful planning for cross-ventilation, it is hoped that air conditioning will be necessary only in the basement areas.

Commenting on his own early experiences and what he intends to do for Harvard, Le Corbusier emphasized the "indispensable, practical and beneficent relations *between the hand and the head*. The rupture of this collaboration...brought about by mechanism and bureaucracy, has fomented little by little a monstrous society which would be on the decline if no reaction interfered.

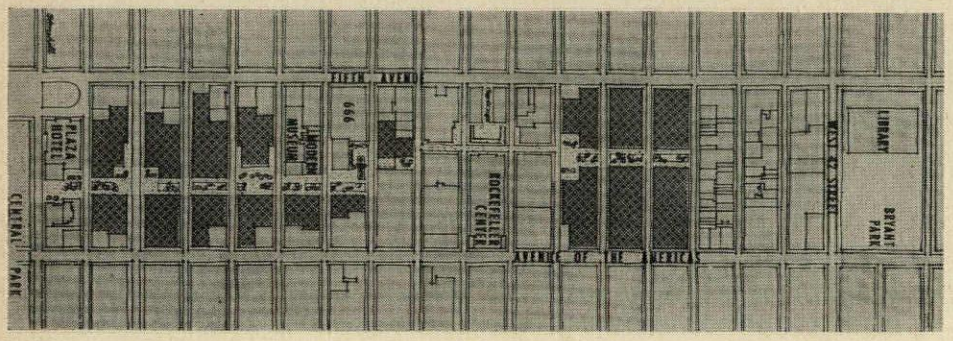
"Harvard University's initiative has therefore found in Le Corbusier a ground which is naturally favorable to the implantation of the ideas that constitute the present programme of this University."

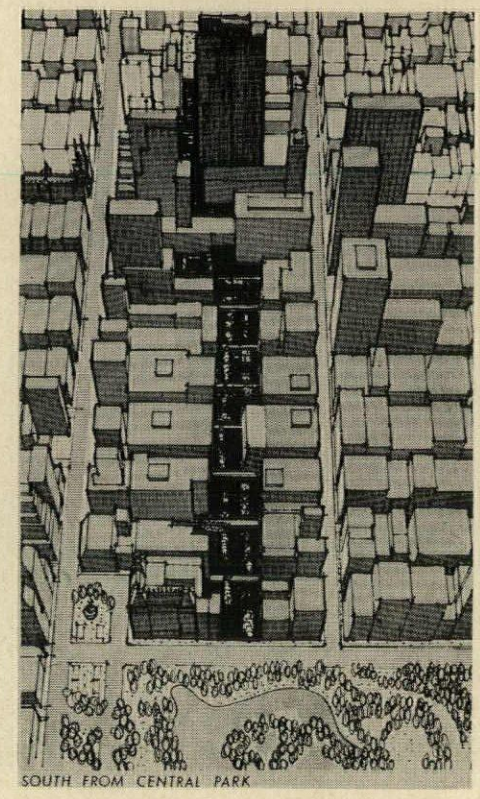


Architects Propose Plan to Aerate New York

NEW YORK, N.Y. The New York chapter of AIA, using plans by the firm of Pomerance & Breines, has proposed the creation of a long pedestrian mall in midcity, reaching from Bryant Park (42nd St.) to Central Park (59th St.) between Fifth Avenue and Avenue of the Americas. Support for the plan has been received from the Citizens' Housing and Planning Council, the Citizens' Union, and the Municipal Art Society. James Felt, chairman of the City Planning Commission, stated that the plan is "imaginative and deserves serious consideration and thorough study."

Basically the plan would create, through condemnation of low-grade business sites in the center of the extra-long block between the two avenues, a lengthy pedestrian walkway that would be lined with new shops, stores, cafés, etc. Thus an entire new business frontage would be created on what is now rather undesirable property. A state law now on the books would permit such proceedings. The promenade could be developed piecemeal, as property becomes available; it would not need to follow a direct course, but could follow a meandering route.



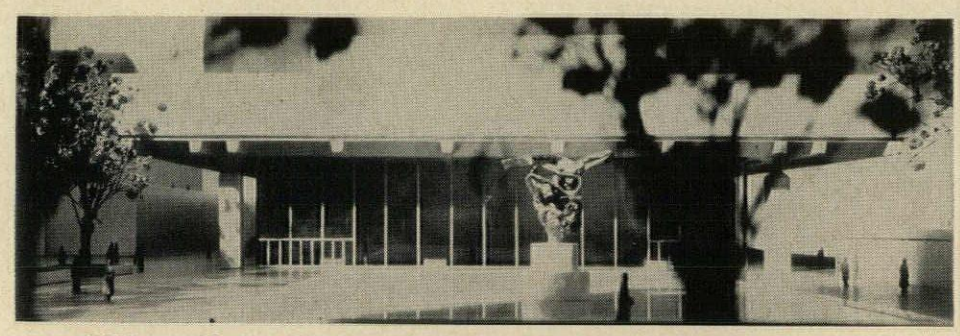

SOUTH FROM CENTRAL PARK

SINGLE SAARINEN STRUCTURE HOUSES THEATER, LIBRARY, MUSEUM

NEW YORK, N.Y. An example of an architect and scenic designer collaborating on an actually-commissioned theater is the repertory theater in the Library-Museum building of the Lincoln Center for the Performing Arts, designed by Eero Saarinen Associates with Jo Mielziner as Collaborating Designer. This project will receive complete presentation in FEBRUARY 1962 P/A.

Theater will have a capacity of 1100: 330 in the five-rowed loges, and 770 in the amphitheater-like orchestra. Innumerable sight-line studies were undertaken to assure proper vision from all seats. The stage will be by far the largest for the production of legitimate plays in New York, containing 11,000 sq ft. It will have an expandable proscenium capable of a maximum width of 58 ft. A turntable, 46 ft in diameter, will also be a feature. The stage will have an apron extending 12 ft into the orchestra, which will be joined, when desired, by a "thrust stage" 15 ft deep by 23 ft wide, which can jut into the auditorium further by replacing seven rows of seats.

There also will be a smaller, experimental auditorium in the building.


Skidmore, Owings & Merrill are Associate Architects for the building.

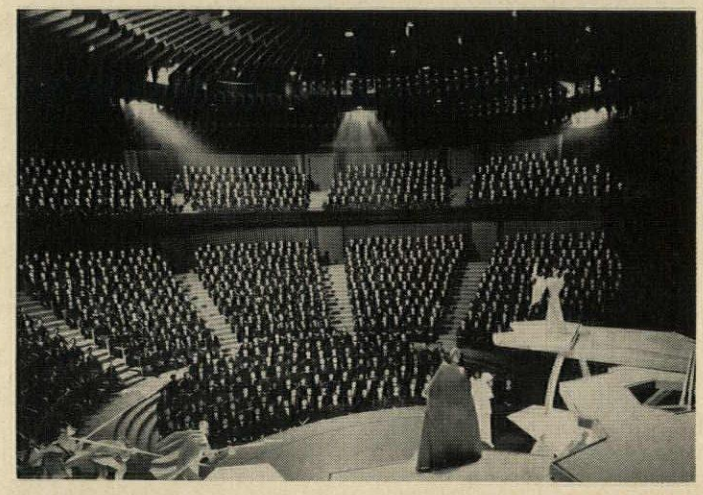


Photo: Ezra Stoller Associates

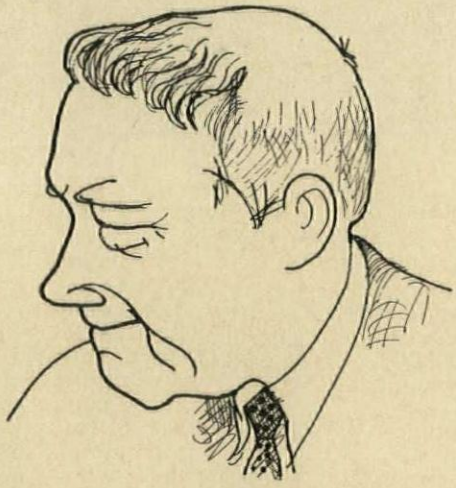
PERSONALITIES

When asked how she happened to become that rather unusual personage, a lady chief specifications writer for a major architectural firm, **Louise Rowell** of Sherwood, Mills & Smith, Stamford, Conn., replied: "I can tell you exactly how it happened. One day back in 1952, Willis Mills told me he thought I had the kind of mind that could turn out good specs. Then he asked me if I would like to become a spec writer. So I said yes first, and then asked him what a specifications writer did, and he told me, and I've been doing it ever since."

Graduated from the unlikely institution—for a spec writer—of Lowthorpe School of Landscape Architecture in Groton, Mass., (later incorporated into Rhode Island School of Design), Miss Rowell worked during the depression for the Historic American Building Survey. When World War II came along, she worked for the Boots Aircraft Nut Corporation, in Connecticut, becoming a draftsman while there. In 1945, during a weekend in Burlington, Vt., she asked for and got a job with the firm of Freeman, French & Freeman (another alumnus of which is P/A's Editor, Thomas H. Creighton). Returning to Stamford in 1947, she began with the year-old firm of Sherwood, Mills & Smith as a draftsman, and was eventually made chief specifications writer in 1955. She is a member of the metropolitan New York chapter of the Construction Specifications Institute, and two years ago was assistant instructor in a course on spec writing at Columbia University. She is deeply concerned with helping improve standards in architectural specifications writing. "I hate to think of those first specifications I wrote," she says. "I've learned so much since then."

DR. LEO L. BERANEK, president of Bolt, Beranek & Newman, received the Wallace Clement Sabine Award of the Acoustical Society of America for his "internationally recognized achievements in all phases of architectural acoustics" . . . FELIX CANDELA was the first of three structural savants delivering the 1961-62 Charles Eliot Norton Lectures at Harvard University; he will be followed by R. BUCKMINSTER FULLER and PIER LUIGI NERVI. . . WILLIAM W. WURSTER is the professional advisor for the competition of the design of a mansion for the governor of California; program is confined to architects resident in that state . . . KILLINGSWORTH, BRADY & SMITH got a first prize in the Sixth Sao Paulo Biennial for the design of an office building in Long Beach, Calif.; honorable mentions went to WEED-JOHNSON ASSOCIATES for their Coppertone office and warehouse, and PHILIP JOHNSON for his shrine in New Harmony . . . JOSEPH W. LUND of Boston is twelfth president of the Urban Land Institute . . . Speaking before New York's West Side Association of Commerce, ROBERT MOSES admitted, "I am not a professional showman or impresario" . . . New president of National Electrical Manufacturers Association is HOMER L. TRAVIS, Vice-President in Charge of Sales, Kelvinator Div., American Motors Corp.

Marcel Breuer was busy recently dividing his time between a major project reaching completion in Minnesota and another major one in France that is in its preliminary phases. The



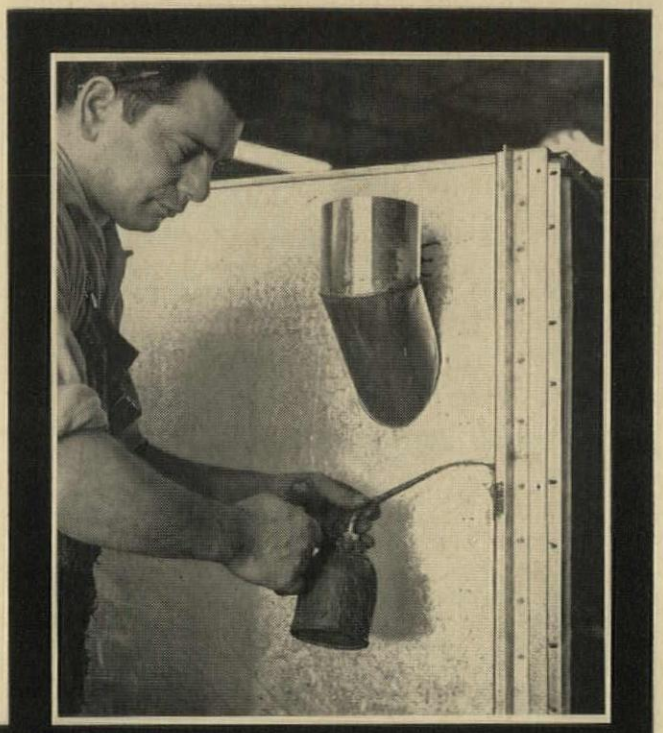
Midwest commission was the Benedictine St. John's Abbey in the lake region north of Minneapolis. Completion and dedication of the first main elements in the abbey complex (church, monastery, and dormitory) were honored with a handsomely mounted exhibition of the abbey designs and photographs at Minneapolis's Walker Art Center.

Meanwhile, overseas, Breuer has been commissioned to design large-scale office and garage additions for UNESCO Headquarters in Paris, also designed by him (with Zehrfuss and Nervi). He commented to P/A: "Again the architects are Bernard Zehrfuss, Pier Luigi Nervi and myself. In this case, however, UNESCO feels that the so-called advisory panel of five is not necessary."

New president of National Insulation Manufacturers Association is F. W. MULLER, veep of Gustin-Bacon Manufacturing Company . . . Elected New York State Association of Architects president at group's recent convention was FREDERICK H. VOSS, of Kiff, Colean, Voss & Souder . . . Building Stone Institute gave its annual architectural award to LLOYD MORGAN . . . Architect DONALD BARTHELME has been named director of the Contemporary Arts Museum in Houston . . . . . New dean of the faculty at Cornell University is THOMAS W. MACKESEY, former dean of the College of Architecture . . . 1961-62 committee chairman of Lake Michigan Region Planning Committee is PAUL FRANK JERNEGAN; the committee is composed of architects and planners aligned to keep an eye on plans for the Lake Michigan area . . . JOHN R. HAGELY is serving his first semester as assistant professor of architecture at the University of Cincinnati's College of Applied Arts . . . Architect BENJAMIN P. URMSTON was one of the winners of the recent competition conducted by Onan division of Studebaker-Packard Corporation to investigate new uses for electric generating plants . . . Gold Medal of the Illuminating Engineering Society went to Dr. DEANE B. JUDD of the National Bureau of Standards for his contributions in the field of color . . . FRITZ VON GROSSMAN of Milwaukee has been re-elected to the Board of Governors of the School Facilities Council of Architecture, Education, and Industry . . . BARCLAY G. JONES is associate professor in the Department of City Planning at Cornell, first appointee by College of Architecture Dean BURNHAM KELLY under new Dean's Fund in Architecture . . . VINCENT G. KLING received the Gold Medal of Philadelphia chapter AIA for the design of McNiel Laboratories, Inc., offices; he got a citation for his proposed Norfolk (Va.) Civic Center.

Sketches by Romeo Corbelletti

ANOTHER NEW 3M CONSTRUCTION PRODUCT!



ANNOUNCING: a competitively priced, high-performance sealer!

From the maker of duct sealers that safeguard some of the world's largest systems comes new 3M® Brand Duct Sealer Standard Grade. This new companion product of 3M Brand Duct Sealer 800 Premium Grade assures tough, flexible, trouble-free seals . . . meets critical established specification requirements . . . and at a competitive price.

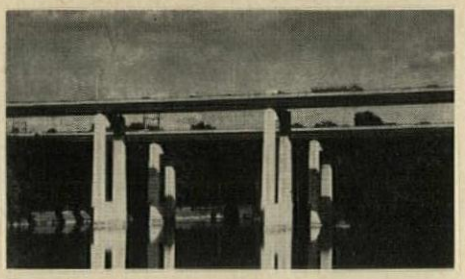
3M Brand Duct Sealer Standard Grade resists both oil and water. Films of ⅛″ thickness remain flexible, even over a 1″ mandrel at −20°F, and withstand continuous heat exposure as high as 200°F. This sealer may be applied by brush, caulking gun or pressure extruding equipment. Surfaces skin over in 5 to 10 minutes, become tack-free in an hour to avoid collecting dirt. 3M Brand Duct Sealer Standard Grade is recommended for both medium- and high-velocity systems.

For insulation, there are 3M Brand Adhesives for every bonding need. Included are a formulation that withstands heat up to 300°F, a non-flammable adhesive that eliminates fire hazards during application, and an economical high-coverage formulation for general use. In addition, 3M provides adhesive products for bonding ceramic, clay, vinyl and rubber tile, as well as wood, laminates and other materials . . . for sealing curtain wall, other external joints and surfaces. For data on the complete line of 3M construction adhesives, see Sweet's Catalog, your nearby distributor or write AC&S Division, 3M Company, Dept. SBC-120, St. Paul 6, Minnesota.

Adhesives, Coatings and Sealers Division 3M COMPANY

Most Beautiful Bridges

The American Institute of Steel Construction has designated, with the aid of a professional jury, the most beautiful steel bridges opened during 1960. Shown is the winner in Class II, for bridges with fixed spans under 400 ft and costing more than $500,000. It is the Roosevelt Boulevard Bridge over the Schuylkill River in Philadelphia, designed by Richardson, Gordon & Associates and fabricated by the Bethlehem Steel Company.



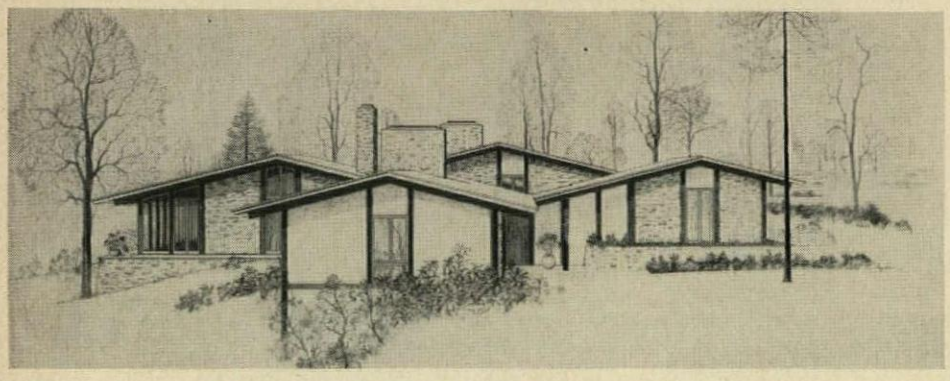
Jury was composed of Architects A. L. Aydelott, Geoffrey Platt, and George Lindstrom; Thomas S. Buechner, Director of Brooklyn Museum; and Professor Glen W. Holcomb, President of the American Society of Civil Engineers.

Independence for BRI

Architect Leon Chatelain, President of the Building Research Institute, and Dr. Detlev W. Bronk, President of the National Academy of Sciences-National Research Council, have announced that the Building Research Institute, until now a unit of the Division of Engineering and Industrial Research, will become an independent, nonprofit, technical society of building science during 1962.

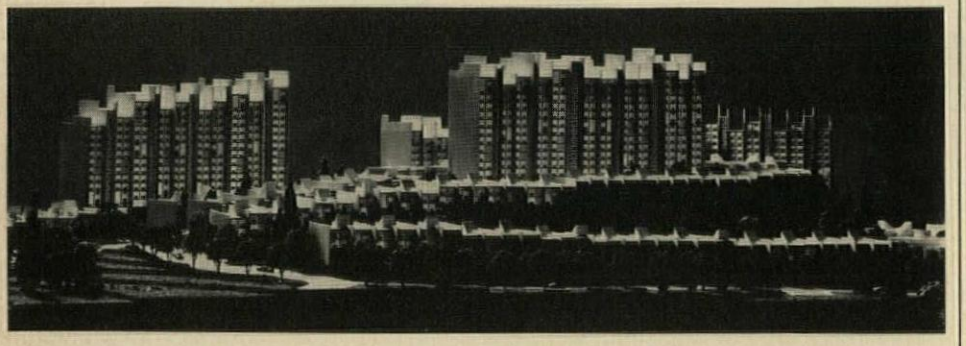
Traveling Exhibits

Current traveling exhibits on architecture arranged by the Smithsonian Institution Traveling Exhibition Service are: "Architectural Photography," "Swiss Industrial Architecture," "Irish Architecture of the Georgian Period," "Mies van der Rohe," "One Hundred Years of Colorado Architecture," "Contemporary Swedish Architecture," and "Arts and Cultural Centers."



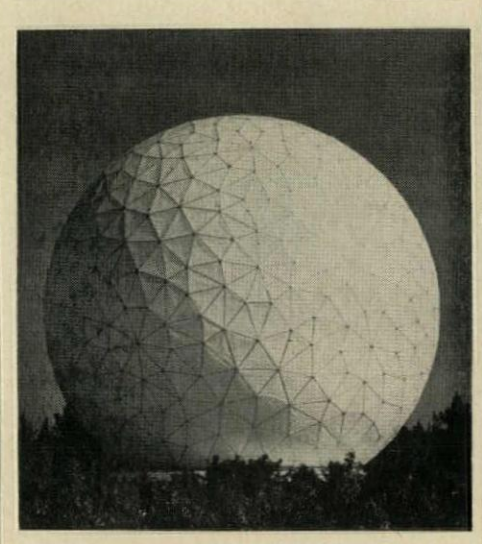
How to Go to the Dogs in Style

"This house was designed almost as much for five golden retriever dogs as it was for the people," said Architect Richard W. Snibbe to P/A at the recent opening of his new office in New York. He was speaking of his design for the residence of vacuum cleaner and electronics tycoon Alexander M. Lewyt, which will occupy a splendid site looking out over Long Island Sound to the towers of Manhattan in the distance. Reference to the dogs indicated the nature of the house: a planned and gracious informality (plus comfortable kennels). Separate pavilions—living room, master suite, dining-service, and guest rooms—will be grouped around a sunken garden. All major rooms will face the view. Landscaping by Paschall Campbell will include a 30′ x 60′ swimming pool. Basic structure will be wood post and beam with stone and stucco exterior walls. Inside, girders and plank ceilings will be exposed against white plaster in all major spaces. Floors will be Mexican tile with hardwood in selected areas. Interiors will be kept muted to act as background for Lewyt's extensive art collection. A stone fireplace dating from 1583 will be installed in the living room.



Successful Bidders Use Diamond Heights Plan

As instructed by the San Francisco Redevelopment Agency, bidders for the Diamond Heights project (p. 37, AUGUST 1961 P/A) based their proposals on four designs that had been screened by a professional jury. The low bidder for the 22-acre area was Peninsula Apartments, Inc., at $4,525,000. Architects on whose proposal the bid was based are B. Clyde Cohen and James K. Levorsen; they presumably will see the job through.

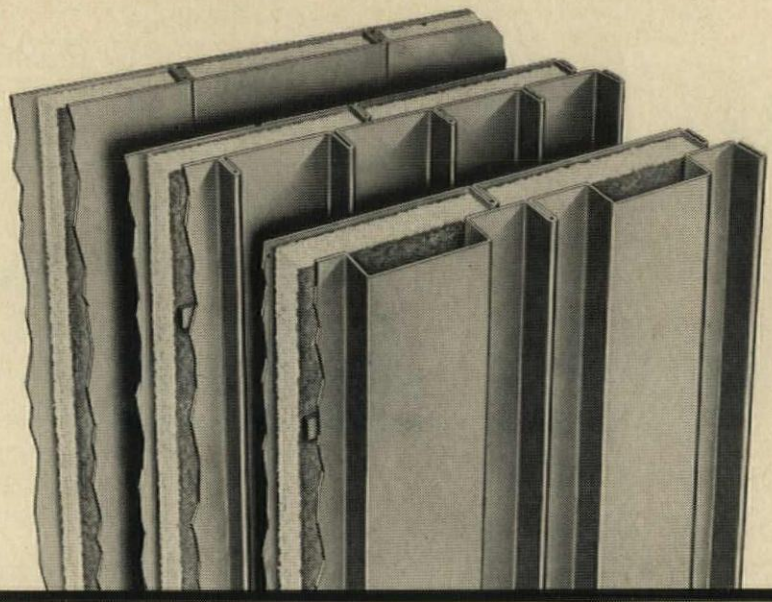


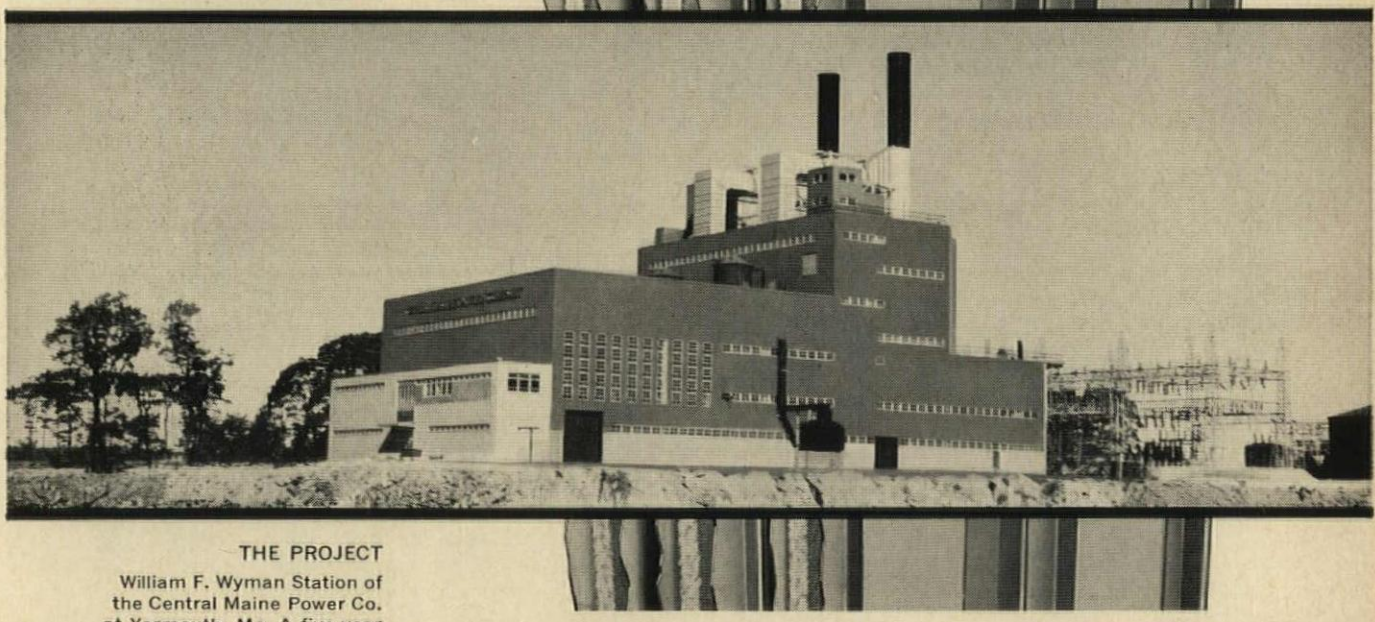
New England Gets World's Largest Radome

World's largest radome, based on the now-familiar principles of Bucky Fuller, has been erected on Haystack Hill near Tyngsboro, Mass. Designed for the Air Force by MIT's Lincoln Laboratory, the radome contains more than 1½ million cu ft of space, and will withstand winds up to 130 mph. The structure is 150 ft across at its widest point, and has a base 90 ft across. The frame is composed of hollow alu-

Continued on page 64

NOT NEW ...JUST PROVEN **MAHON CURTAIN WALL**





THE PROJECT

William F. Wyman Station of the Central Maine Power Co. at Yarmouth, Me. A five-year old project that retains its bright-as-tomorrow good looks. Engineers: Jackson & Moreland, Inc. Gen'l Contractor: Sanders Const. Corp.

THE SECTION

Mahon's field-constructed (3-6-3) fluted pattern in green baked-enamel 16-gage galvanized steel with Fiberglas insulation (shown in foreground of three-section photograph). Erection by Mahon.

Mahon Insulated-Metal Walls form a highly efficient wall system that is a far cry from flimsy 'low cost wall wraps'. When structural function, clean good looks, ease of erection and minimum maintenance are wall consideration, investigate Mahon. Available in various metals, diverse sections, different finishes, and a rainbow of colors to offer unlimited architectural-design freedom. What's more, Mahon Insulated-Metal Walls are quality-made, corrosion and fire-resistant, invisibly joined, easily sealed and are kept clean by rain showers. They mean true economy and lasting advantages. Write for informative Wall Catalog W-61, see Sweet's Files, or contact your local Mahon Building Products representative.

MAHON BUILDING PRODUCTS

Aluminum or Steel Curtain Wall • Rolling Steel Doors (Standard or Underwriters' labeled) • Fire Walls (Underwriters' rated) • M-Floors (Steel Cellular Sub-Floors) • Long Span M-Deck (Cellular or Open Beam) • Steel Roof Deck • Acoustical and Troffer Forms • Acoustical Metal Walls, Partitions, and Roof Deck

CONSTRUCTION SERVICES

Structural Steel—Fabrication and Erection • Steel Fabrication—Weldments • Geodesic Domes—Fabrication and Erection

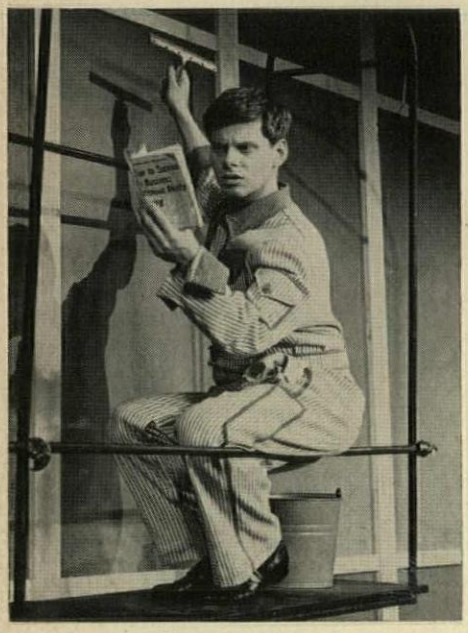
THE R. C. MAHON COMPANY *DETROIT 34, MICHIGAN*

MANUFACTURING PLANTS—
Detroit, Michigan and Torrance, California
SALES-ENGINEERING OFFICES—
Detroit, New York, Chicago, Cleveland, San Francisco and Torrance, Calif., Seattle, Wash. and E. Orange, N. J.
REPRESENTATIVES IN ALL PRINCIPAL CITIES.

SPEEDING AMERICAN CONSTRUCTION WITH METAL BUILDING PRODUCTS, FABRICATED EQUIPMENT AND ERECTION SERVICES.

MAHON

Continued from page 60
minum beams up to 15 ft long, and is covered with a skin of glass-fiber-reinforced plastic triangles that measure up to 15 ft on a side. The facility houses what is said to be one of the most sensitive research antennas ever built, a "dish" type 120 ft in diameter.

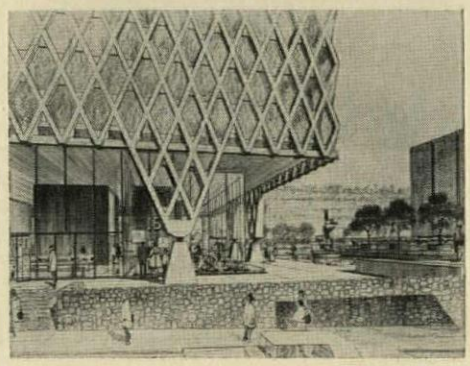


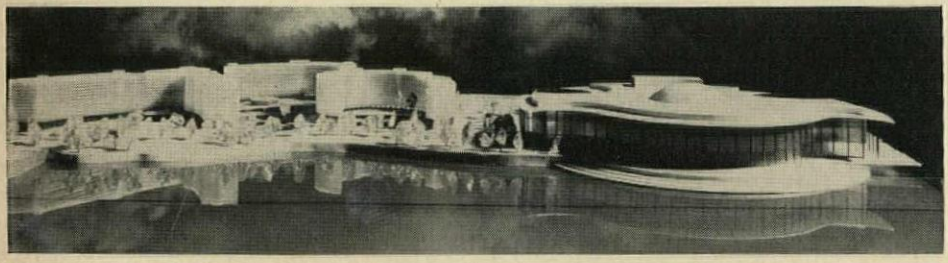
How to Succeed in Architecture, etc.

When the curtain goes up on New York's funniest, brightest new musical, "How to Succeed in Business Without Really Trying," it discloses a wry visual comment on the curtain-wall architecture now indigenous to Manhattan's midtown business district. This ultimate in curtain walls (it's a curtain, isn't it?) serves as the background for the introduction of our hero, J. Pierpont Finch (played goofily by Robert Morse), who goes onward and upward from window washer to chief executive of World Wide Wickets through unswerving pursuit of the main chance.

Diamonds for the Golden Triangle

Exposed structural steel framework will be the design highlight of the proposed IBM Building in Pittsburgh's Gateway Center, by Curtis & Davis. Frame will actually be four gigantic trusses, each covering one side of the building and resting on two reinforced concrete columns. Since the diagonal lines of the frame will direct stress to the concrete columns, all members will either be in compression or tension, a situation in which steel achieves its greatest strength. The X-shaped components of the frame will be factory-assembled in a number of larger sections for erection on site, thereby simplifying construction processes and reducing costs. Steel beams will be covered with a thin skin of stainless steel or aluminum, and the diamond-shaped openings will be filled with alternate rows of clear and opaque glass. The 13-story structure will have an adjacent, two-story underground garage to be topped by a landscaped park (*see detail*). Building is being financed by Equitable Life Assurance Society (its fifth building in the Center). Structural engineer is Worthington, Skilling, Helle & Jackson; electrical and mechanical engineer is Cary B. Gamble & Associates.





Curvilinear Community on the Potomac

In Washington, D. C., plans have been submitted for a community called the Watergate Development, on the Potomac River, adjacent to Edward D. Stone's proposed Cultural Center. The project will cover about 32 per cent of a more or less triangular site with semicircular and gently curved shapes, leaving room for some landscaped open space and a swimming pool. Three main shapes will make up the group: a semicircular apartment house enclosing two curved rows of town houses; a "semioval" apartment building behind it; and a group with apartment house, office building, and hotel linked in an L-shape. Three curved rows of town houses will be nestled between these three major shapes. The façades of the hotel and apartment houses will be broken up by curved balconies to create pleasing light and shade patterns. Designed by Professor Luigi Moretti of Rome and Milton Fischer of Corning, Moore, Elmore & Fischer of Washington, the project is being privately financed and sponsored mainly by developers called the Societa Generale Immobiliare of Rome. Parking for 1250 cars will be underground so that the ground level can be given over to pedestrians.

À Nous la Liberté

Many lucky visitors to Seattle's Century 21 Exposition next year will be able to sleep afloat on one of the world's grand old ships. The "Liberté," now on her last commercial voyage, will be tied up at a pier close by the fair grounds for the convenience of expected crowds. Until recently threatened with scrapping, the ship was purchased by a West Coast company with the promise to the French Line that she would never again sail as a commerical liner. Talks are underway with officials of the New York 1964–65 World's Fair to consider the "Liberté" for a floating luxury hotel there, also.

Continued on page 67

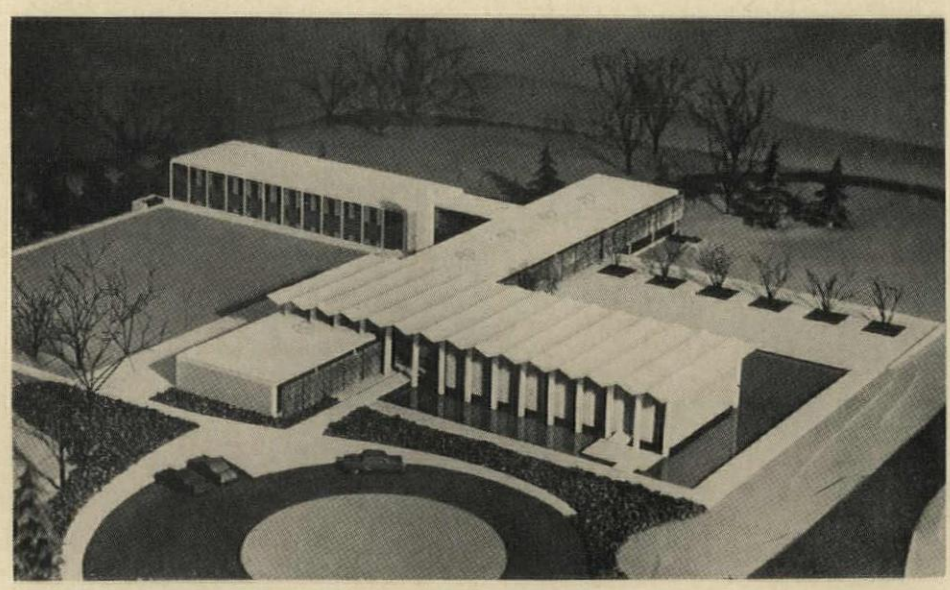
Continued from page 64

SUMMIT BACKS DOWN

The uninhibited décor of New York's new Summit Hotel, which one observer said was obviously designed to make you run for the bar after the first, stunned look, lost out to viewer criticism and is in the process of being toned down with more upholstery, larger rugs, more muted colors. Morris Lapidus (Morris Lapidus, Harle & Leibman), creator of the extravaganza, said most criticism came from "sidewalk critics" and not hotel patrons, and that, anyway, New Yorkers are "too rectangular-minded."

Ship-Shape Marina for New Orleans

Yachtsmen in Louisiana's Lake Pontchartrain can look forward to a new marina with easy access to the shrimp Arnaud and Sazeracs of downtown New Orleans. Four 420-ft-long piers will be constructed for "Orleans Marina," two for boats of the 30-ft class, and two for boats up to 70 ft long. The piers will have covered walkways carrying electrical wiring to each slip, and each pier will have toilet and shower facilities. A two-story, 4000-sq-ft building will be erected to house the harbor master and administrative personnel. The building will provide public toilets and lockers on the ground floor. Architect: Favrot & Grimball.



PLANT YOU NOW, DIG YOU LATER

National center for plant activities ranging from the most abstruse botanical research to meetings for garden clubs will be provided by projected National Arboretum Headquarters by Deigert & Yerkes. To occupy a 410-acre site on the Anacostia River in Washington, D. C., the building will have an auditorium and an administrative wing separated by an entrance lobby. The auditorium will stand in a moat, with visitors approaching it over a foot bridge. Slender structural columns and beams will be exposed.

New Film

A 22-½-minute film on professionalism and engineering entitled "George Spelvin, P. E." has been made available by the National Society of Professional Engineers. It may be borrowed from the society headquarters: 2029 K Street, N.W., Washington 6, D. C.

MERGER, NEW NAME

At a Scottsdale (Ariz.) meeting, the Aluminum Window Manufacturers Association and the Sliding Glass Door & Window Institute jointly announced that they would merge (effective January 15, 1962) into the Architectural Aluminum Manufacturers Association. Consolidation of the groups brings together 106 firms, manufacturing and associate members and approved laboratories.

CORRECTION

On page 66 of the NEWS REPORT [NOVEMBER 1961 P/A], the address of the Boston City Hall Competition was listed as 1 Church Street. The correct address is: Government Center Commission of the City of Boston, 1 *Court* Street, Boston, Mass.

OBITUARY

Chicago architect and civic leader Daniel H. Burnham was killed in an automobile collision on November 4. Mrs. Burnham died in the same crash.

CALENDAR

"New Materials and Better Home Building" is theme of 17th Annual Short Course in Residential Construction at University of Illinois, January 29 and 30 . . . 12th National Exposition of the Air-Conditioning, Heating and Refrigeration Industry is scheduled for Los Angeles, February 12–15 . . . Annual Conference of the Church Architectural Guild of America will take place in Cleveland, March 20–22 . . . To end on a jolly note: the Architectural Student Association of the University of Minnesota is presenting its first annual Beaux Arts Ball on January 20; theme is "Space Creatures."

ARCHITECTS AND HIGHWAY PLANNING

by E. E. Halmos, Jr.

The Washington uproar over construction of freeways within the downtown heart of the city is much more than a local battle. It has wide national implications.

This clamor is responsible for finally enabling the architect to participate — for the first time on such a broad scale — in highway planning; and it focuses attention, besides, on the great damage that can be done by blind insistence on considering nothing else except the movement of vast numbers of motor vehicles.

The idea that highway and traffic engineers alone shouldn't be left to decide the fate of an entire city and its residents is beginning to get some serious attention.

At immediate issue is a plan for an "inner loop" freeway of up to eight traffic lanes that would cut closely around the monument and business heart of the capital; and construction of freeway-type links to several new bridges that are either already under construction or in the planning stage.

The furor, by now, has come to involve the city's highway engineers, the Federal Bureau of Public Roads, the Congress, the National Capital Planning Commission and the Fine Arts Commission (the latter two both purely advisory bodies but with considerable influence), the newly formed National Capital Transportation Agency, various civic organizations, and even surrounding suburban counties.

At stake are plans to unravel the city's growing traffic snarls, millions of dollars in construction money, rapid-transit *vs.* motorcar transit proponents, a lot of red-hot tempers, property owners who would be affected. and even the Lincoln Memorial, (which would have a tunnel constructed beneath it to provide highway access).

One result has been witholding of approval by the Fine Arts and Planning Commission and the transit agency.

Part of the move for careful planning — with an eye toward effects on the city and its residents and visitors —has been led by architects. Principally, these are Mrs. Clothiel Woodward Smith, Louis Justement, and Alexander C. Robinson III of the Planning Commission; and Ralph Walker and William B. Perry, both architect-members of the Fine Arts Commission. The commission members have been instrumental in holding up approval of existing plans pending a further and more careful look.

Mrs. Smith, who is already heavily involved in planning the over-all appearance of the city's huge Southwest Redevelopment Area, got into the highway act via a commission from the city's consulting engineers (Rummel, Klepper & Kahl of Baltimore) in which she was given freedom to see if architectural planning could soften the blow of a traffic artery partly in open cut and partly in tunnel to connect a new bridge (the Theodore Roosevelt Bridge, now under construction) to the area of parks and monumental office buildings centered around the new State Department building.

She came up with a plan that was hailed by the Planning and Arts groups and by local newspapers (which unfortunately described it rather sparsely as a matter of landscaping, fountains, and fancy wall treatment).

Actually, the plan is much more than fountains and greenery: it is a conscious attempt to get the highway built on a scale and in a manner that will fit into the urban scene, rather than to permit a great, stark gash across this section of the city which would, incidentally, create hard-to-reach islands of buildings.

Says Mrs. Smith: "We have made recommendations for alternate materials and methods which we believe would better relate the [freeway] to the adjacent buildings and parks and minimize its impact. . . . The basic direction of the design is to create the maximum amount of surface at the same level as the surrounding areas—and, where this is not possible, to create a visual relationship that brings buildings in proper balance as the frame on either side of an avenue —with entrances visible and comprehensible, rather than cut apart and unrelated."

To P/A, she made the additional comment that architects haven't taken enough interest in highway and city planning, that too often they're concerned only with a single building or group—not with their impact on an entire area or city.

"This is an exciting challenge to me, and to most architects," she said.

Impact of highways on urban planning was also getting attention from another Government agency, the Housing and Home Finance Agency.

Urban Renewal Commissioner William L. Slayton told highway officials that urban transportation planning is a top problem in every city, and must be co-ordinated with renewal work. He repeated this admonition to urban renewal officials who had gathered in Washington for a meeting of the National Association of Housing and Redevelopment Officials.

In addition, HHFA Commissioner Robert Weaver announced the establishment of a transportation office.

FINANCIAL

With the calendar year pulling to a close, the construction sector of the economy continued to show great strength.

This was probably due to a mild fall and early winter, as well as the generally strong recovery made by business after last winter's very brief recession.

For the distant future, prospects are rosy indeed, if the Department of Commerce's most recent predictions are anywhere near accurate: Commerce said that, by 1975, construction should be grossing $107 billion annually; by the year 2000, annual business should hit $219 billion.

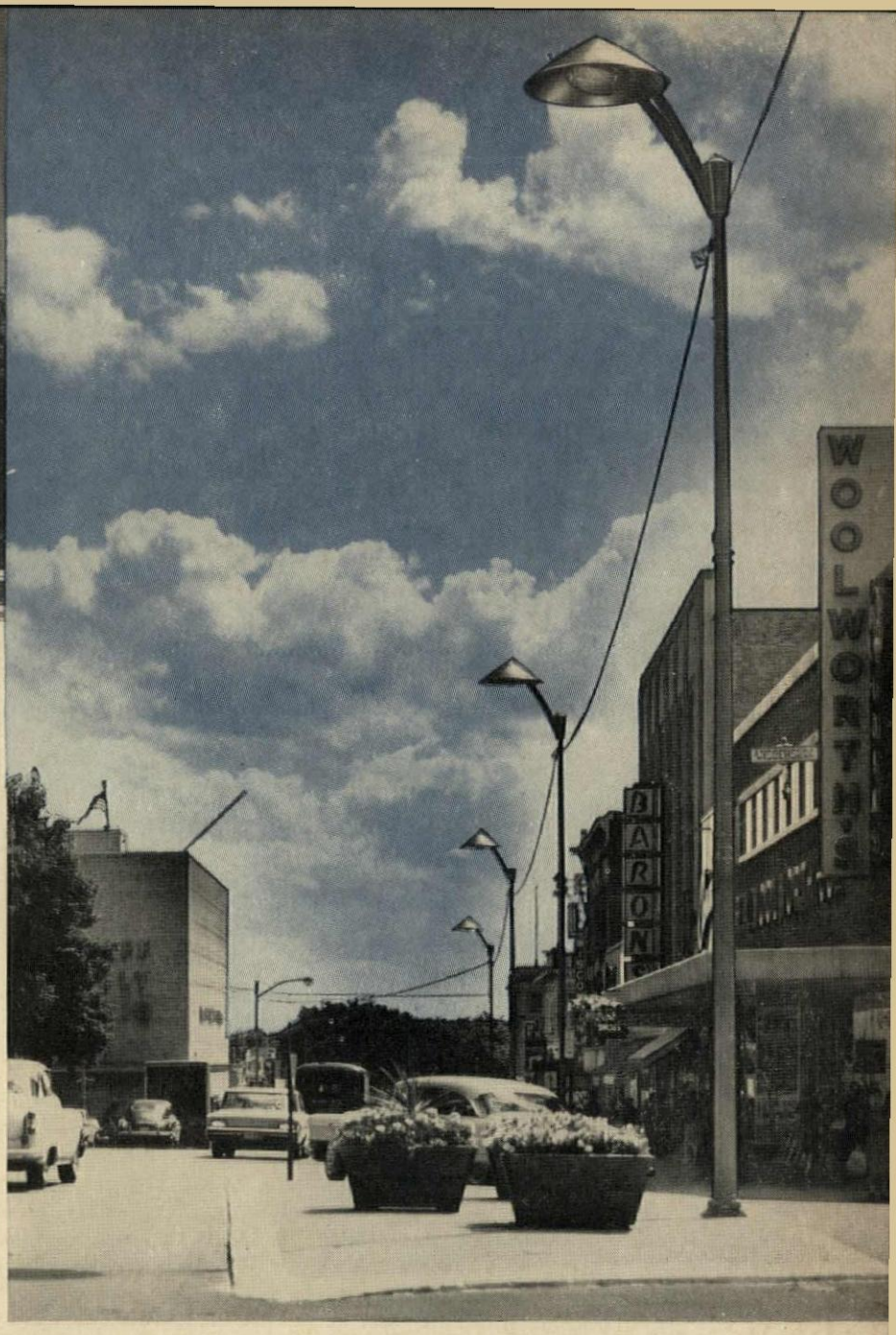
On a closer look, demand for construction work continued strong, despite the normal slackening off toward the end of the year. During October, for instance, electric utilities announced plans for $265.5 million's worth of work in 1962; gas utilities saw $165.4 million's worth; private buyers planned $9.8 million's worth of new construction, ranging from a $4.5-million hotel-motel and a $2-million heavy water plant to relatively minor enlargement programs.

In the field of municipal finance, voters continued to okay a far larger proportion of construction financing than they rejected—though they were still bearish on municipal office buildings and the like. But spending for schools, waterworks, and sewerage projects rated well with taxpayers: they approved some $5 billion's worth of bonds, mostly for these purposes, within the first nine months of 1961.

ADDED BEAUTY FOR LOCATIONS like this. The Styled Mercury unit directs the light downwards and eliminates glare. It illuminates 11,000 square feet to 3 footcandles. You need fewer and shorter poles, and less wiring, to get the desired level of light.

ANOTHER IN THE FAMILY of modern Styled Mercury luminaires. The entire line is all-aluminum, with Holophane® refractor. Choice of 1000, 700 or 400 watt ratings. Available in choice of brushed aluminum finish or five decorator colors.

FOUR OF THE LATEST design units provide excellent nighttime illumination for traffic and pedestrians on this busy street in a shopping section.



L-M Announces Another Graceful Design In The New Styled Mercury Light Family

Line Material's Styled Mercury luminaires are a family of high quality, high intensity lighting units. The latest addition to the Styled Mercury line is the upsweep design installed in the well-lighted street shown above.

These are large, handsome luminaires, styled for Line Material by a noted industrial designer. They will contribute daytime beauty and excellent nighttime lighting to any street, park, mall, public square, or parking area.

Line Material is a leading manufacturer of outdoor lighting designed specifically for the application. L-M also provides competent Lighting Application Service by experienced lighting engineers, available through Authorized L-M Distributors.

GET COMPLETE INFORMATION

Ask your Authorized L-M Distributor for bulletins, or mail the coupon.

LINE MATERIAL® Industries
McGRAW-EDISON COMPANY
Outdoor Lighting

McGRAW-EDISON

523

DISTRIBUTION TRANSFORMERS • RECLOSERS, SECTIONALIZERS AND OIL SWITCHES
FUSE CUTOUTS AND FUSE LINKS • LIGHTNING ARRESTERS • POWER SWITCHING EQUIPMENT
PACKAGED SUBSTATIONS • CAPACITORS • REGULATORS • OUTDOOR LIGHTING
LINE CONSTRUCTION MATERIALS • PORCELAIN INSULATORS • FIBRE PIPE AND CONDUIT

For more information, turn to Reader Service card, circle No. 394

Line Material Industries, Milwaukee 1, Wisconsin
Please send me details on L-M Styled Mercury family of luminaires, and name of nearest distributor. PA-121

Name_____
Company_____
Address_____
City_____ State_____
Type of Area To Be Lighted_____

These Three California Community Hospitals Achieve Life Long PERMANENCE & DEPENDABILITY With

Streamline® COPPER TUBE AND FITTINGS FOR SUPPLY AND DRAINAGE SYSTEMS

West Covina Hospital

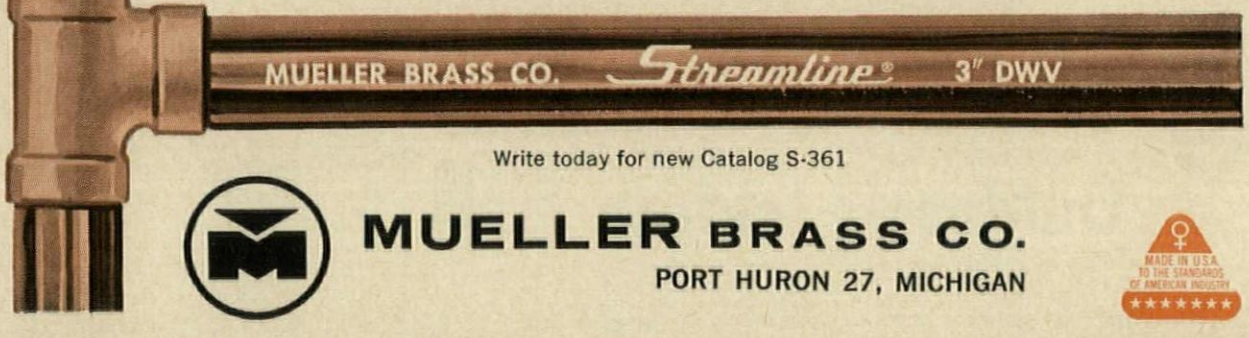
Parkview Memorial Hospital

"... in operation over two years ... the copper drainage system has been entirely trouble-free. We would recommend the use of your system and product in any modern structure."

—*Hospital Administrator*

In installations that must depend on clog-free, rust-proof, leak-proof, sanitary drainage, Mueller Brass Co. Streamline DWV tube and fittings are the logical choice. When compared with rustable materials, DWV Copper Tube and Fittings are MORE ECONOMICAL to install and will normally OUTLAST THE BUILDING ITSELF.

Woodruff Community Hospital



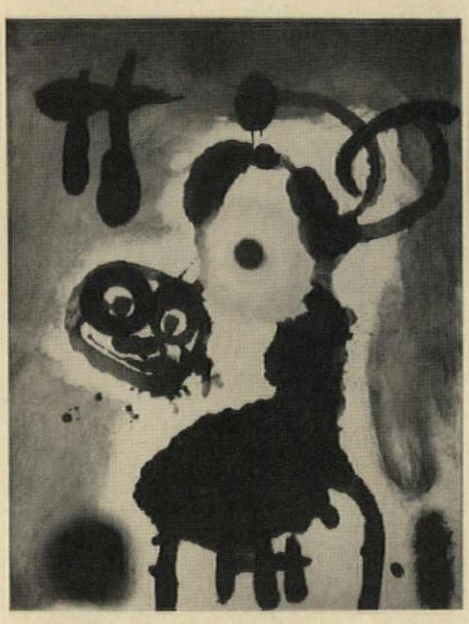
Write today for new Catalog S-361

MUELLER BRASS CO.

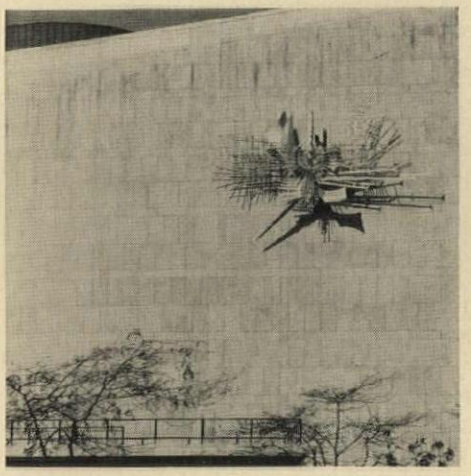
PORT HURON 27, MICHIGAN

MADE IN U.S.A. TO THE STANDARDS OF AMERICAN INDUSTRY

ART: RELAX AND ENJOY

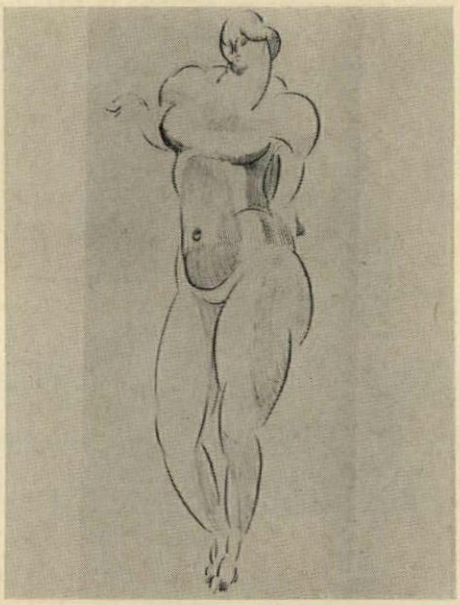


Joan Miró, who can introduce humor and movement into a vast blue canvas tenanted only by a long-tailed black creature resembling a *Spirochaeta pallida*, was the subject of a show of recent (1959–1961) paintings and ceramics at New York's Pierre Matisse Gallery. The 1959 "Woman and Bird" (*shown*) represents Miró in his fantastic bent, a tendency of the artist's well-documented in the exhibition. Observing Miró viewers during a recent visit to the show, this commentator was reminded by their dour miens of the famous story of the child at a Paul Klee exhibition: "Why is everyone so serious?" he cried; "Why aren't they enjoying the funny pictures?" Must we suffer to "appreciate"?



An abstract sculpture of gold- and bronze-anodized aluminum is the latest addition to the art of the United Nations. The piece, by Ezio Martinelli, has been placed on the outside of the east wall of the General Assembly building, overlooking the rose garden. The sculpture collection was a pet project of the late Secretary General Dag Hammarskjold, and includes two contemporary sculptures by Robert Cronbach and José de Rivera.

Elie Nadelman, best known for his bronzes of natty gents in bowler hats and demure ladies in long dresses, was shown in another medium—drawing—



at the Robert Isaacson Gallery, New York. The drawings are quick, concise studies; some of them are calligraphic in their simplicity and many are strongly reminiscent of the work of Modigliani. "Standing Female Nude," shown here, dates from the years between 1904 and 1910.

At the Otto Gerson Gallery, a retrospective exhibition of 50 years of sculpture by Jacques Lipchitz gives what is virtually a capsule vision of the development of modern art in this century. Compared to Reder (this season's *vieux terrible* whose work was noted in these pages last month), Lipchitz's art is more intellectual and more truly emotional than that of Reder and immensely superior to it. In a letter to Gerson on the retrospective show, Lipchitz gave his view of the cubist movement in sculpture: "The sculptors, not being any more satisfied with the existing patterns [than the painters], felt the need to

blow up the old forms in order to create another puzzle with these blown-up pieces." Shown here are the

earliest ("Head of Mlle. S.," 1911) and the most recent ("Lesson of a Disaster," 1961) sculptures in the show.

Chagall's stained glass windows for the Jerusalem medical center are being shown at the Museum of Modern Art. More complete review will be seen here next month. A preliminary view indicated that Chagall, in touching up the glass before its last firing, may have destroyed some of its more exciting translucent qualities.

Schweikher Space Frame for Pittsburgh International

PITTSBURGH, PA. Visitors to the Pittsburgh International Exhibition of Contemporary Painting and Sculpture, one of the most important continuing U.S. surveys of what is happening in current art, are seeing a new installation for the showing of art in the galleries of the Department of Fine Arts of Carnegie Institute.

Designed by Paul Schweikher, head of the Department of Architecture at Carnegie Institute, the installation utilizes a hung space frame based on the R. Buckminster Fuller concept. The space frame is hung 10 ft below the skylights of the high-ceilinged old gallery, and hovers 14 ft above the floor. Simplicity of construction features a series of "Unistrut" gusset connections. For mounting pictures, double-faced aluminum panels measuring 4 ft by 14 ft (including legs consisting of rubber-tipped jacks) extend between the space frame and the floor. The panels were developed by the architect with the Overly Manufacturing Company. Rearrangement of the lightweight panels is easy and flexible. The new installation has added 800 running feet to the exhibition space of the galleries, and will be retained for the permanent exhibit.

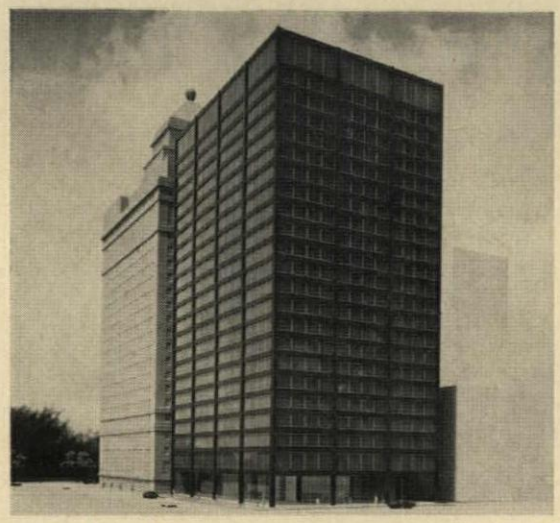
Reaction to the Pittsburgh International, which was assembled by Carnegie Fine Arts Director Gordon Bailey Washburn, has been mixed. Some critics viewing the show have chided it for a certain "safeness" of selection, particularly among the winners (there are a number of prizes and mentions given each time the International is shown). However that may be, Schweikher's provision for showing art deserves an award for good use of existing space for new purposes. The exhibit will continue through January 7, should you be in Pittsburgh.

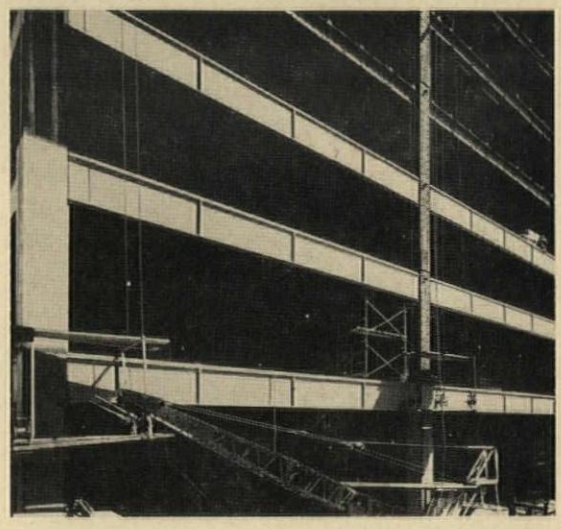
Chicago High-Rise Has Carbon Steel Exterior

CHICAGO, ILL. Columns and spandrel beams of the new Continental Center now under construction here are being sheathed in a curtain wall of ⅜"-thick carbon steel plate, welded and painted. Glazing is tinted glass framed in stainless-steel sash. The building was designed by Naess & Murphy of Chicago.

Carbon steel facing plates join high-strength "Man-Ten" columns and other steels for a major role in the economy and design of the building. Covering plates perform double duty: besides exterior frame design, they serve as backup to concrete for fireproofing. Studs are welded to outside of columns and spandrel beams and to back of facing plates; thus serving as reinforcement of concrete when it is poured and vibrated into place between plates and columns and beams. Structure has 42-ft-sq bays, allowing for duplication of sections for beams and cover-plated girders to permit economical fabrication of hundreds of identical floor beams. Extra-long spans provide column-free space. U.S. Steel Corp., 525 William Penn Pl., Pittsburgh 30, Pa.

On Free Data Card, Circle **100**





Life Can Be a Dome of Many-Colored Glass Fiber

NEW YORK, N. Y. A new acoustical ceiling unit, consisting of a shallow domed, 2-ft-sq shape of glass fiber fabric backed, with a binder, by a base of glass fibers, has been introduced by Johns-Manville.

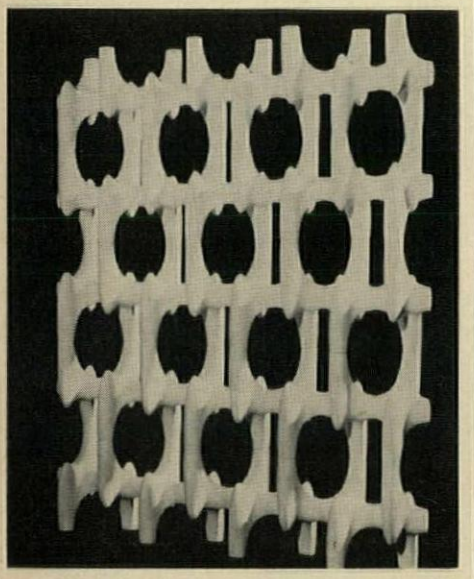
The units, which have also been described as rising "gently to a vaulted center," are of a thickness about one-third that of regulation flat sound-control panels. For all their thinness, however, they are quite strong and rigid. "Acousti-Shell" panels are said to absorb up to 80 per cent of room noise striking them. Acoustical properties are reportedly "unusually high" at all frequencies from 125 to 4000 cycles per second. Flamespread rating is zero. The panels are supported by a light grid section of formed metal sections, which are suspended from the overhead slab by wires or straps. System also includes flat panels for borders, for areas around columns and beams, for spotlight cutouts, and other uses. Standard colors so far are white, blue, and green. On special order, fabrics may be dyed in other colors or printed with custom designs. A J-M spokesman has stated that "many other shapes can—and no doubt will—be considered upon request." Mock-ups shown below illustrate use in different areas. Johns-Manville, 22 E. 40 St., New York 16, N. Y.

On Free Data Card, Circle **101**

New Technique: Marble and Metal

The main entrance to the new auditorium of New York's National Design Center is graced with walls sporting an interesting new design technique: marble embedded with aluminum strips. Designed by industrial designer Walter Dorwin Teague, the walls are of two different marbles—Loredo Scuro (*shown*) and Imperial Danby. The marble panels were cut to a thickness of ⅞", with vertical slots cut into the marble, into which metal strips were cemented, flush with the face of the marble. Other materials which can be stripped in include brass, stainless steel, wood, and plastic. Design variations are possible with combinations of inset strips. Marble Industry Board, 41 E. 42 St., New York 17, N. Y.

On Free Data Card, Circle **102**



Plastic Grilles for Interiors

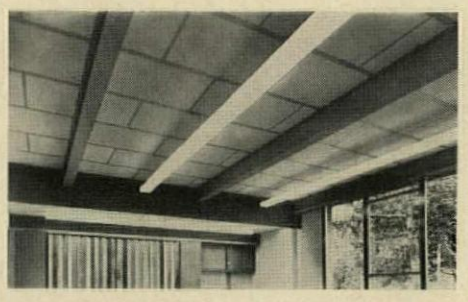
"Contemporary" Sculpta-Grille panel of Tenite butyrate is heavy-walled hollow construction that is impact- and corrosion-resistant. High strength-to-weight ratio permits fabrication of relatively large unbroken panels that possess rigidity, stability, and freedom from warpage. Colors and special services are also offered by the manufacturer: Harvey Design Workshop, Inc., 612 Merrick Road, Lynbrook, N.Y.

On Free Data Card, Circle **103**

Acoustical Curtains for School Partitioning

Vertical, electrically operated acoustical curtains are fabricated of vinyl and lead for a high degree of sound control. "LeadX" curtains can be raised out of sight for the creation of a large, unbroken space, or lowered to form smaller, acoustically private rooms. Top roller mechanism is housed in a ceiling enclosure that takes only 18" of space. Manufacturer's spokesman says ASTM tests have indicated that the greater weight per sq ft and "limpness" of the curtains provide low incidence of sound transmission. Torjessen, Inc., 209 25th Street, Brooklyn 32, N. Y.

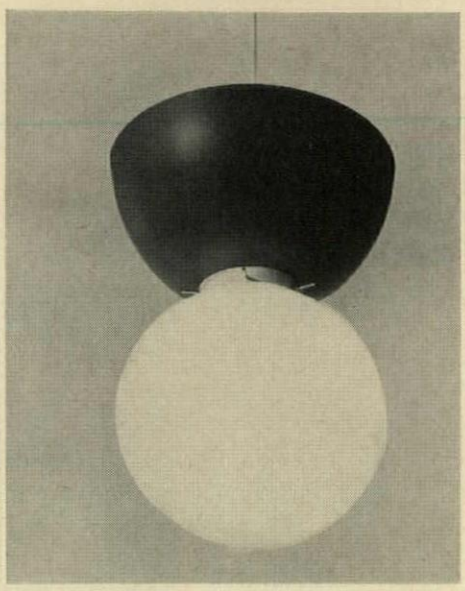
On Free Data Card, Circle **104**



Prefinished Form Board

New prefinished form board has an embossed white plastic film facing that requires no further field painting, giving a finished look to exposed ceiling areas where a permanent, decorative finish is wanted. The board, which serves as the form for poured-in-place gypsum and lightweight concrete decks, is available in thicknesses of 1", 1¼", 1½", and 2", and in 32" x 42" to 48" in ¼" increments of length, and 24" x 36" to 96" in ¼" increments of length. The sound-absorption value of the board is said to compare favorably with more expensive accoustical ceilings, and it provides light reflection of over 75% The surface may be cleaned with everyday soaps or detergents, clear water, and cleaning agents such as household ammonia. Recent application shown is Frances E. Connors Addition to Livingston Park School, North Brunswick Township, N. J., by Architect Woerner & Woerner. Owens-Corning Fiberglas Corp., 717 Fifth Ave., New York, N. Y.

On Free Data Card, Circle **105**



Bowl and Ball

A metal hemisphere available in six colors contains three reflector bulbs mounted on swivel bases, which can be concentrated on one spot on the ceiling or can provide an indirect wash. Below it is an opaline sphere that provides direct downlight. Wiring permits the illumination of both units at once or single units independently. Designed by Paul Mayen for Habitat, Inc., 336 Third Ave., New York 10, N. Y.

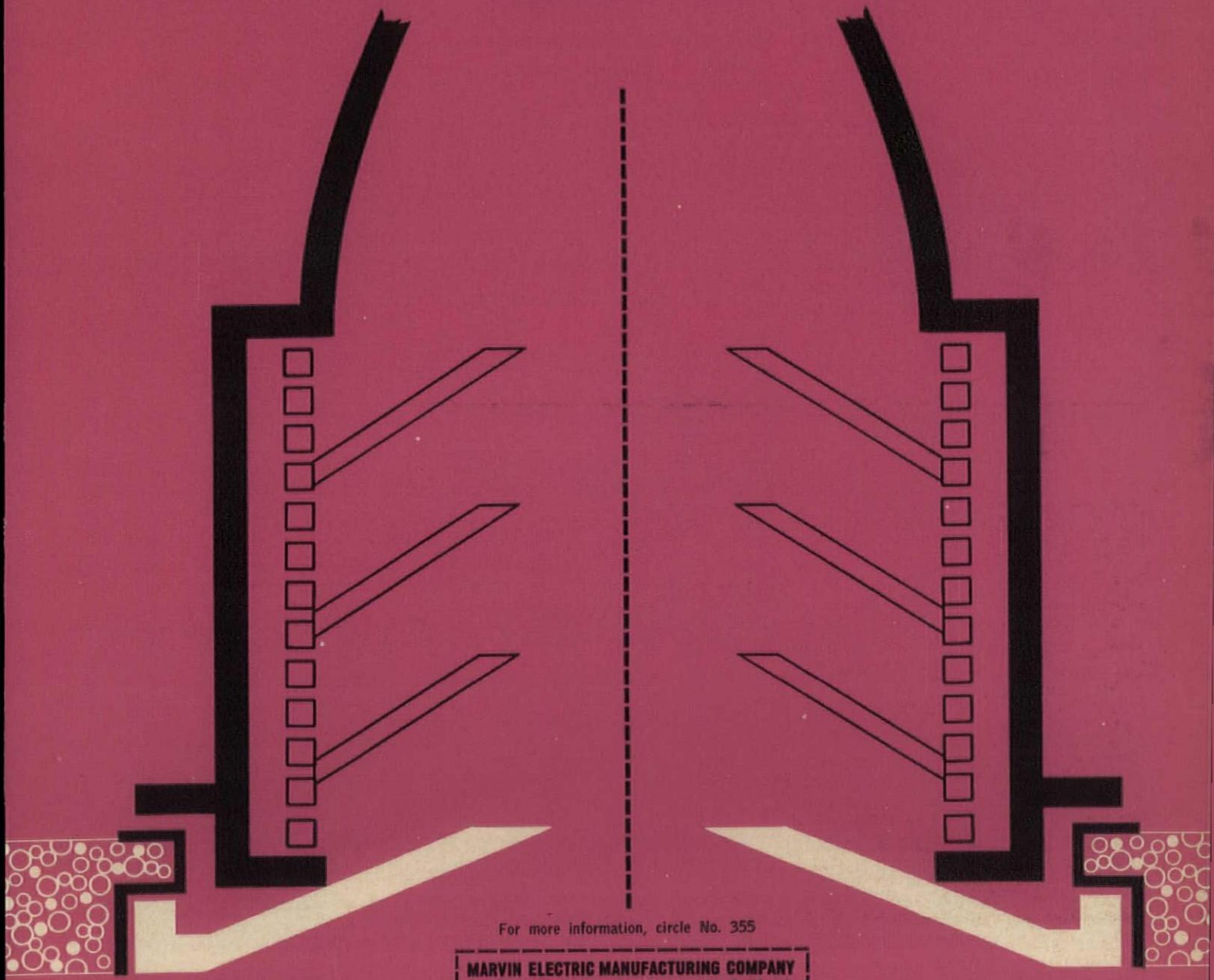
On Free Data Card, Circle **106**

Something New in Asbestos-Cement

"Permatone Flexboard Trim" is a plastic-coated asbestos and cement composition for use as battens, belts, eave trim, fascia, corner, rake, and skirt boards. Trim may be nailed or sawed, is noncombustible, termite-proof, and will not rot out, crack, or peel. It looks and wears like stone.

To avoid monotony in a series of ceiling-level lighting fixtures, Marco presents the "recessed recess" fixture. A minimum of trim confines the fixture which recedes upward towards aperture or lens. Result: an attractive, though unobtrusive light source performing its task with maximum efficiency. Use coupon below for handsome catalog illustrating over 100 new recessed lighting fixtures.

MARCO



For more information, circle No. 355

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*_____

PA12

Available in 8′ to 10′ lengths, in widths from 1⅝″ to 6½″. It is ⅝″ thick. Trim was originally intended for use as batten with "Permatone Flexboard," but obvious versatility has broadened applicability. It is available in six colors either pre-primed or with a factory-applied acrylic coating. Johns-Manville, 22 E. 40 St., New York 16, N.Y.

On Free Data Card, Circle **107**

Compact Work Lamp

Tiny, powerful incandescent lamp for close work is 10″ high, rests on a base just a bit larger than a packet of cigarettes. Lamp features a miniature reflector with a diameter of 2½″, cork insulated for heat control. A five-position switch allows control of intensities from 12.2 to 202 foot candles. Three 6-v General Electric bayonet-type bulbs are provided with each lamp. Another feature is an electrical outlet which may be used for appliances or small electrical tools whether the lamp is on or off. Price is $46.50, in black wrinkle or smooth white enamel. Tensor Electric Development Co., Inc., 1873-1877 Eastern Parkway, Brooklyn 33, N.Y.

On Free Data Card, Circle **108**

Gypsum Wallboard Has Vinyl Coating

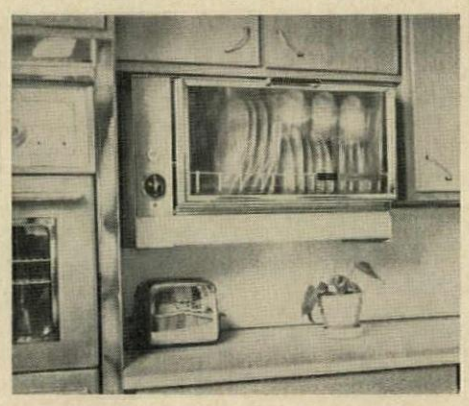
"Sheetrock" gypsum wallboard takes on a new look with the addition of a vinyl-coated line. Featuring a durable, laminated vinyl surface, the product is designed to provide prefinished, maintenance-free walls for residential, commercial, and institutional buildings. Eight decorative colors and two wood-grain patterns are integrally blended into the laminate to give a nonfading, washable surface. Panels are ⅜″ thick, 4′ wide, 8′ or 10′ long. New extruded-aluminum moldings have permanently bonded finishes to match the wallboard colors and patterns. United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

On Free Data Card, Circle **109**

New Unit Combines Gas Heat, Electric Cooling

"Econoair Year Round Conditioner" combines an air-cooled, electric, remote air conditioner and a horizontal type, forced-air gas furnace in a weatherproof cabinet measuring 2′ x 3′ x 4′. The unit has been approved for outside installation by the American Gas Association. Conditioner can be either slab-mounted on the ground level or rooftop-mounted. Presently, there are two models offered: Model 24/55 (2 tons cooling capacity, 55,000 Btu heating capacity), and Model 36/80 (3 tons cooling capacity, 80,000 Btu heating capacity); other models will follow as the line expands. The Payne Furnace Co., P. O. Box 2222, La Puente, Calif.

On Free Data Card, Circle **110**



Rectangular Dishwasher Installs Almost Anywhere

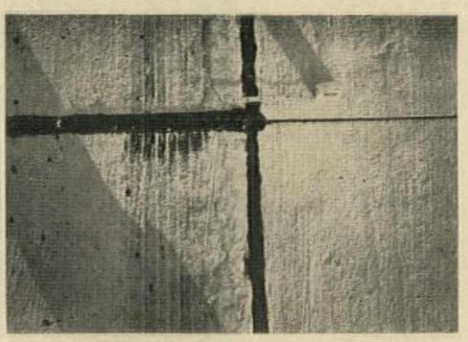
Ling-Temco Electronics, Inc., has designed a dishwasher with several innovations. Because of its rectangular shape, it can be installed under counter, on top of counter under cabinets, recessed in a wall, mounted on a wall, or can stand on its own rolling stand. It comes in three sizes, all 30″ long: for 6 settings, 13″ deep by 15″ high; for 10, 13″ x 18″; for 15, 23″ x 18″. It creates its own water pressure independent of the water pressure in the house, so that it can be used in the 32 states in which water pressure problems discourage the use of dishwashers. The washing cycle takes only 25 minutes, about half the usual time and uses a "wave of water" principle. The sheets of water washing back and forth slowly over the dishes are said to clean more thoroughly than jets or fountain-like action. At the end of the washing cycle, steam is sent over the dishes and turns to distilled water on contact. This rinses off minerals in the washing water which cause spotting, a fault of many dishwashers. Motor and controls are in a compact unit which can be removed for repair while a substitute unit carries on with the work. In brushed stainless steel, coppertone, woodtone, and various colors. Priced from about $200–$280. Ling-Temco Electronics, Inc., Temco Industrial Division, P. O. Box 6191, Dallas 22, Tex.

On Free Data Card, Circle **111**

Sleeve Filters Out Fluorescent Problems

"Filtersleeve," an entirely new lighting product, is a flexible plastic sleeve that fits over fluorescent tubes to eliminate many fluorescent-lighting problems. The sleeve filters out ultraviolet rays, thereby eliminating costly fading and degradation of merchandise, reducing glare and eye strain, and correcting color distortion. Filtersleeves are available for all standard sizes, are easy to install, and are reusable. They are particularly suited to the new high-intensity or power-groove tubes. The clear plastic film passes 90% of visible light, resulting in a soft, natural, white light. Infropake Corp. of America, Greensboro, N.C.

On Free Data Card, Circle **112**



Premolded Sealer Makes ⅛″ Joints

"Sealfastic" premolded sealing material is especially adapted to sealing narrow ⅛″ joints in concrete pavements. The 1″-thick, impregnated polyurethane foam is precompressed (or readily compressed on the job) to a thickness as narrow as $\frac{1}{16}$″. After

give plant washrooms a creative slant

Begin with Bradley

Industrial washrooms present a unique creative challenge to architects. Day after day, imaginative minds are exploring fresh approaches . . . creating function and beauty where only function existed before.

Bradley Washfountains and Showers are in the center of this quiet revolution. For no other fixtures give the architect as complete a variety of colors, shapes, and textures — as much creative flexibility. And certainly no other fixtures save more money, space, water, and washing time. Achieve the unique, the dramatic; specify Bradley in preliminary planning. Begin with Bradley!

Bradley Washfountains and Showers provide group facilities for as many as 8 and 6 persons, respectively, in schools and in commercial, industrial, and public buildings everywhere. Your Bradley representative will gladly supply additional facts and assist on specific applications. Or write for latest full-color cat. No. 6004 to: Bradley Washfountain Co., 2277 W. Michigan St., Mil. 1, Wis.

Circular, semi-circular, and Duo Washfountains serving as many as 8 persons simultaneously.

Column, partition, and wall-mounted showers serving as many as 6 persons simultaneously.

Bradley®

61-115

insertion into the joint, it expands laterally to prevent moisture seeping into the subgrade. No adhesives are required, and the sealer may be dropped into place immediately after the joint is sawed. (Photo compares a poured joint sealer and new Sealfastic installed in sawed joints.) Tests indicate that the material lasts almost indefinitely and resists even the heat of jet-aircraft exhaust. National Expansion Joint Co., 1601 Embarcadero, Oakland, Calif.

On Free Data Card, Circle 113

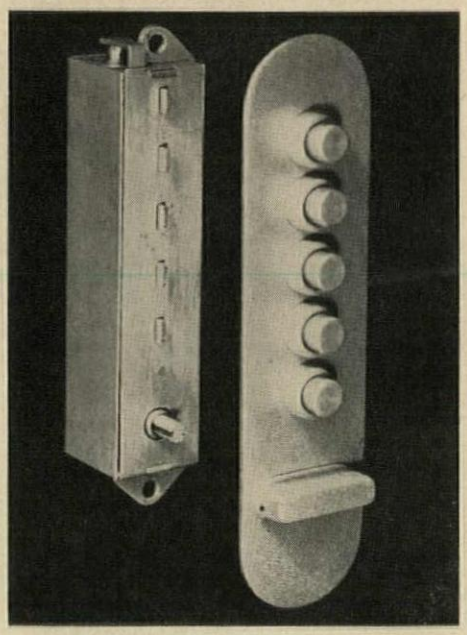
Hardboard Breaks the Color Barrier

For the first time, a hardboard panel is available with a scatter mosaic design in color. "Sandalite," made by an entirely new manufacturing process, has particles in three shades—white, gray, and blue—on a light-blond base tone. The product has a factory-sealed face to protect against stains and abrasion; it is a grainless wood material which is easily worked with ordinary hand tools or power equipment. Sandalite is available in plain panels, in "Forall" (Sandalite faces laminated to a hardboard core), in random plank with a V-groove, in tongue-and-groove panels, and in panels with punched holes. Forest Fiber Products Co., P. O. Box 68, Forest Grove, Ore.

On Free Data Card, Circle 114

Can't Pick a Pack of Push Buttons

Completely new locking device, the "Simplex Push Button Lock," consists of five push buttons and a knob, handle, or lever—and no key. It is operated by pressing one or more buttons that have been preset to one of

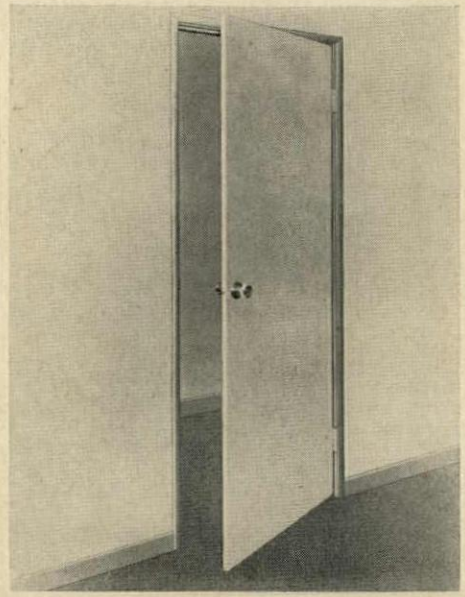


over 1,000 combinations. The device is virtually pick-proof—it cannot be opened by pick-lock, X-ray, stethoscope, or touch. Compact and flexible in design, the lock suggests a wide variety of applications: storage units, closets, medicine chests, liquor cabinets. The mechanism can be engineered to meet specific design requirements. Simplex Lock Corp., 150 Broadway, New York 38, N. Y.

On Free Data Card, Circle 115

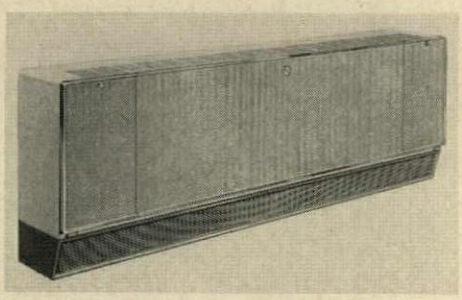
Acoustical Door Only ¾" Thick

Steel door-and-frame package features an acoustical door only ¾" thick. The slim steel door represents a major departure in door design and construction, and is said to offer the lowest cost, maintenance-free interior door-



and-frame combination on the market. The door is prefinished in off-white, baked-on enamel; special gate-type hinges permit it to be hung by one person in a matter of seconds. Sound-deadening foam gives the door a solid feel, insures quiet operation, and blocks out between-room noise. The new door is designed primarily for residential and apartment use; in tests, the door has been slammed 15,000 times—the equivalent of five generations usage—with no effect on door, frame, or surrounding wall. Republic Steel Corp., Truscon Div., 1315 Albert St., Youngstown 1, Ohio.

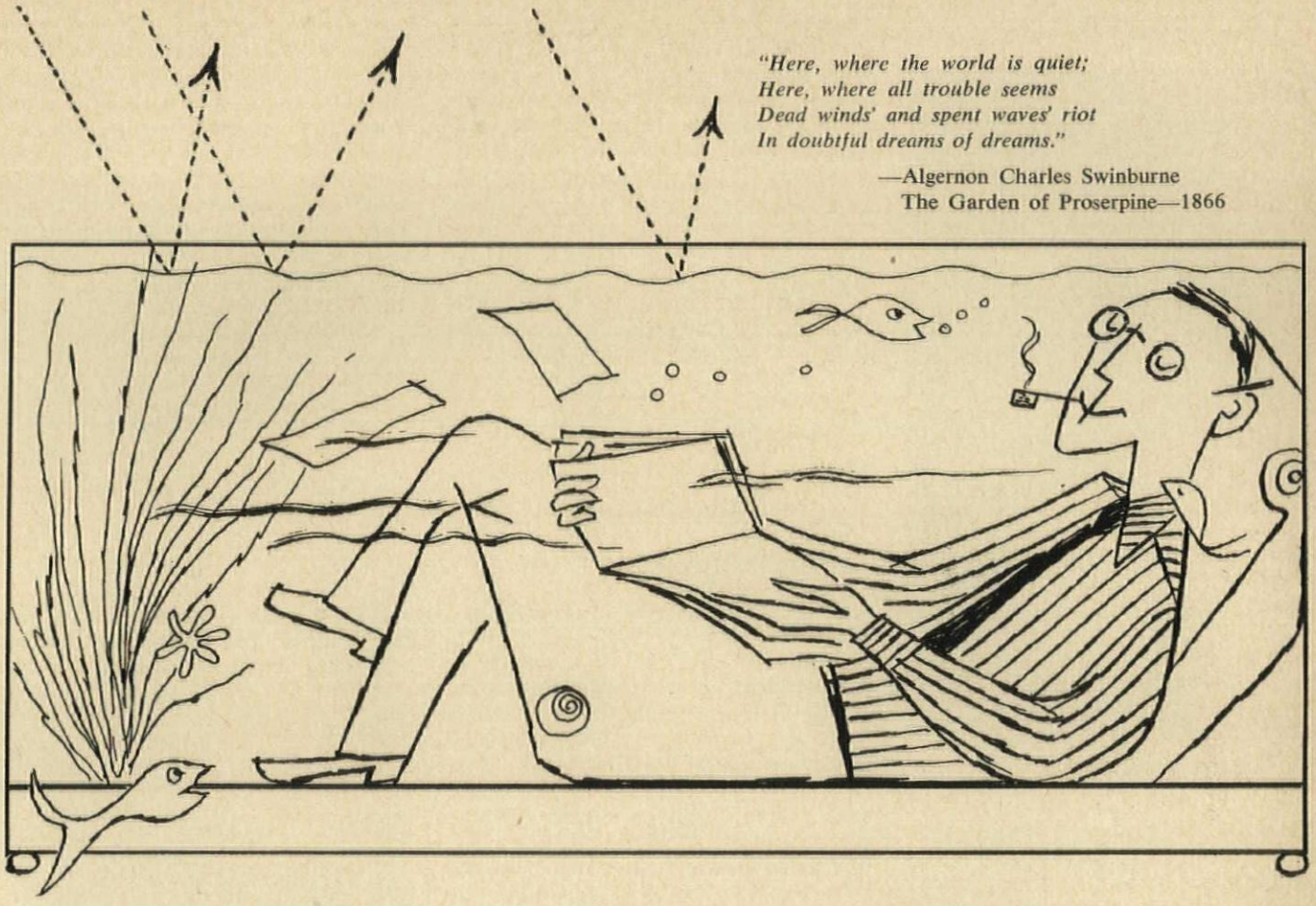
On Free Data Card, Circle 116



School Heating-Cooling System Controls Air

New concept in heating and cooling of classrooms controls air rather than steam or water. Through a unique full-damper system, Modine's "School-Vent" couples impressive performance with built-in economies. System consists of: (1) face-and-bypass insulated damper which directs air through and around heating coil according to comfort requirements; (2) insulated anti-wipe damper which permits complete isolation of coil, eliminating heat pick-up from the coil; (3) indoor and outdoor dampers which assure proper blend of fresh and recirculated air. When room is unoccupied, system operates primarily by convection. Face-and-bypass and anti-wipe dampers are open, and fan starts only when temperature drops below predetermined setting. Indoor damper is closed and outdoor damper open. During morning warm-up, fan starts and runs until room temperature reaches daytime setting. Throughout warm-up, all dampers remain in nighttime positins, recirculating room air for maximum heat gain. Eventually, the outdoor damper opens to blend proper amount of fresh with room air. Concurrently, face-and-bypass and anti-wipe dampers automatically adjust to maintain desired room temperature. Modine Manufacturing Co., 1500 De-Koven Ave., Racine, Wis.

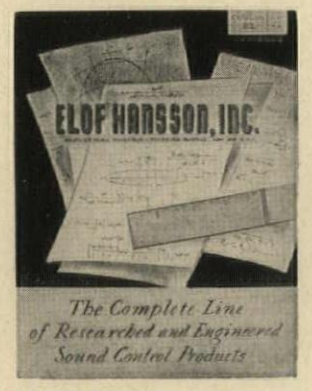
On Free Data Card, Circle 117



"Here, where the world is quiet;
Here, where all trouble seems
Dead winds' and spent waves' riot
In doubtful dreams of dreams."

—Algernon Charles Swinburne
The Garden of Proserpine—1866

Many a modern man finds himself over his depth in a desperate search for refuge from the harassments of noise. At Elof Hansson we prefer to be realistic and come up with functional solutions. Our engineers plunge into the most intricate acoustical problems and emerge with practical, professional methods of sound control for the world of today—and tomorrow.



NOW AVAILABLE! OUR NEW FREE CATALOG OF ALL ELOF HANSSON ACOUSTICAL PRODUCTS

This new 28-page catalog gives you full up-to-the-minute information and data on our complete line of researched and engineered sound control products.

It contains illustrations and descriptions of advanced products featuring the latest developments in acoustical engineering, including ratings, specifications and recommended installation methods.

Write for your free copy today—ask for Catalog 62.

- The complete line of researched and engineered sound control products
- Our Acoustical Engineering Staff is at your disposal—without charge or obligation

ELOF HANSSON, INC.
ACOUSTICAL DIVISION

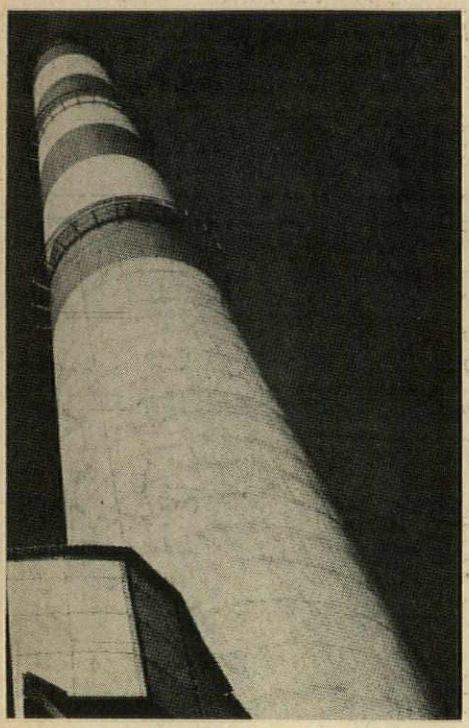
711 Third Avenue, New York 17, N. Y.

Authorized sales representatives in every major city in the U. S. and Canada

See our Catalog in Sweet's Architectural Catalog File.

For more information, turn to Reader Service card, circle No. 341

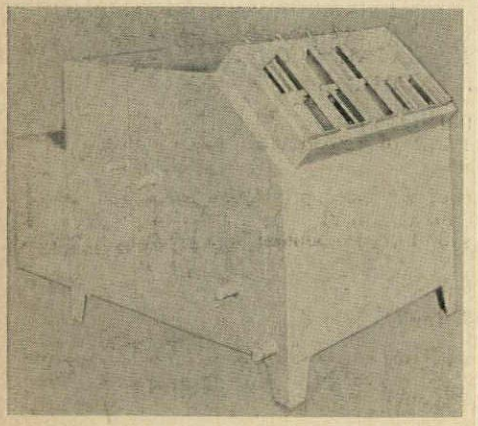
AIR/TEMPERATURE



Control of Air Pollution

Illustrated bulletin, 12 pages, describes the new line of American-Standard electrostatic precipitators for air-pollution problems in industry. Principles of electrostatic operation are described, and all components of the equipment are explained. Several photos of typical applications of the equipment are included. Industrial Div., American-Standard, 8111 Tireman Rd., Detroit 32, Mich.

On Free Data Card, Circle **200**



Varied Types of Multizone Central Units

Bulletin, 64 pages, presents Marlo line of multizone air-conditioning units, which are central-station units supplying heated or cooled air simultaneously and independently to several zones. The units are available in 34 sizes, and in two basic arrangements: horizontal air flow for minimum headroom requirements, and vertical for minimum floor-space applications. Three types of fan arrangements are possible. Bulletin contains numerous photos, drawings, charts, and diagrams. Detailed information is provided on construction and operating features, weights, dimensions, coil selection, fan performance, coil ratings, and other technical data. Marlo Coil Co., 7100 South Grand Ave., St. Louis 11, Mo.

On Free Data Card, Circle **201**

New Roof Ventilator Reverses Air Flow

Unique "Reversible Roof Ventilator," which can be converted from exhaust to intake at the flick of a switch, is one of several roof ventilators included in new 16-page bulletin. Other types described are two vertical discharge units ("Vertijet" and "Airjet"), and new low-silhouette "Mushroom Head" unit. Complete details, specifications, dimensions, and performance data are provided. Hartzell Propeller Fan Co., Piqua, Ohio.

On Free Data Card, Circle **202**

Written for Architects

Handbook of Year-Round Air Conditioning, 48 pages, has been prepared especially for architects (at the request of the AIA) by the Producers' Council. Air-conditioning topics considered of greatest interest to architects were incorporated in the booklet, after 75 firms across the country had been contacted. Subjects discussed include architect-client interests, air-conditioning fundamentals, equipment used in modern air conditioning, selection of equipment in relation to building design, factors affecting air-conditioning loads, loads related to glass areas and opaque areas, air distribution for comfort, and sound control. Editor, *American Air Facts*, American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

On Free Data Card, Circle **203**

Refrigeration Systems Are Compared, Analyzed

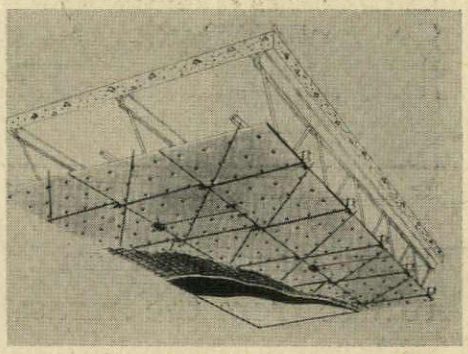
Informative 10-page article entitled "Which Refrigeration System Is Best for Your Job?" has been reprinted. The author is Industrial Refrigeration Consultant for Carrier; his discussion compares major refrigeration systems and gives a typical analysis of installed costs and annual expenses to determine optimum chilling system. Photos and charts accompany the text. Although technical, the article is intended for the experienced layman (building owner or manager) as well as engineer and architect. Carrier Air Conditioning Co., Carrier Parkway, Syracuse, N. Y.

On Free Data Card, Circle **204**

CONSTRUCTION

Fire-Resistance Data on Complete Assemblies

Fire Resistance Design Manual, 32 pages, is a well presented and valuable booklet. The designer is provided with data on a wide selection of re-

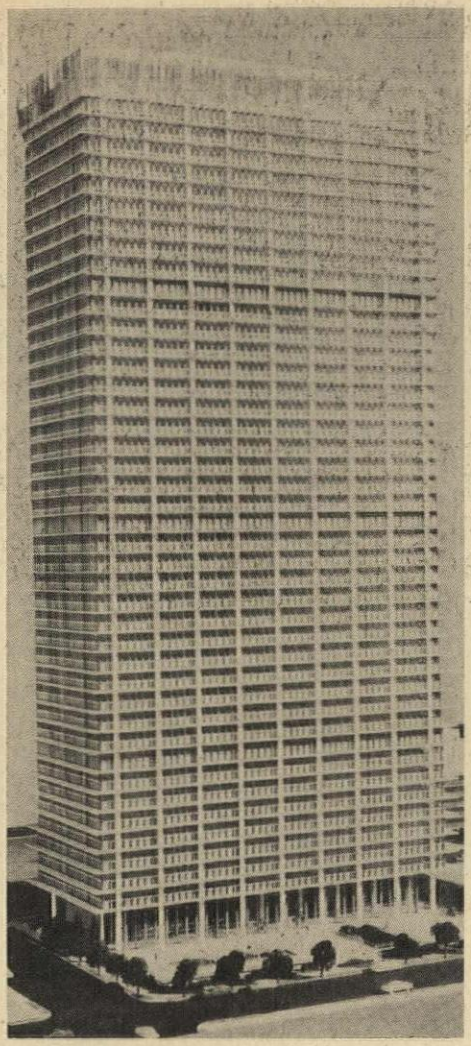


lated construction assemblies—rather than materials—so that he may see at a glance their relative performance characteristics. Since fire resistance is one of the basic considerations of design, the various assemblies are arranged in tabular form according to their hourly fire-resistance rating and construction use. In addition, the fire-test reference number is given. The tabular data also includes sound-transmission loss ratings, thickness, and weight of the construction assemblies. Gypsum Association, 201 North Wells St., Chicago 6, Ill.

On Free Data Card, Circle **205**

Those Astute'll Know About Butyl

Booklet on butyl rubber and its versatility in building applications is available. Covered in the 8-page booklet are butyl's use for roofing, roof coating, traffic decking, gasketing, weatherseals and void fillers, floor cushioning, shock- and sound-absorption pads, and water barriers. A



description of the various forms in which butyl is available is also included. Room 1222, Enjay Chemical Co., Div. of Humble Oil & Refining Co., 15 West 51st St., New York 19, N.Y.

On Free Data Card, Circle **206**

Elevated Flooring Has Great Rigidity

Brochure, 4 pages, presents "Strato-Floor," new type of elevated flooring that is designed for use in electronic computer installations, or where extensive cabling and wiring systems require under-the-floor space and immediate accessibility. Modular 24" x 24" panels are made of plastic (in any color) molded around cross-laminated plywood; it is claimed that panels have greater indentation- and wear-resistance than other types. Strato-Floor substructure is an engineered grid-support system which offers great strength and rigidity without excessive bulk or weight. Steel stringers are firmly bolted to the patented adjustable "Strato-Tri-Jack," which utilizes the strength of the triangle to give greater support to the stringer than the conventional type of jack. Strato-Floor, Inc., 795 East 152 St., Cleveland 10, Ohio.

On Free Data Card, Circle **207**

Design Data on Tubing

Handy data item for desk or drafting board is the square cardboard tube which gives pertinent design data on hollow structural tubing. Printed on its sides are tables giving such information as size, weight, area, moment of inertia, section modulus, and radius of gyration for square and rectangular tubing. Other data—lengths, mechanical properties, surface and end finish—are briefly outlined. An accompanying page suggests some of the advantages of hollow structural tubing. National Tube Div., United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.

On Free Data Card, Circle **208**

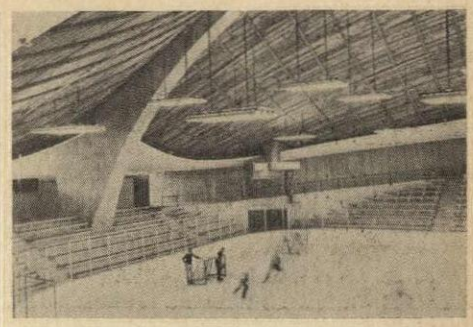
Colorful Concrete

Catalog, 4 pages, describes "Colorundum" a ready-to-use powder containing hardeners, coloring, dispersing agents, and binders. Dusted on and troweled into freshly poured concrete, it produces concrete floors that are hard and abrasion-resistant, decorative, and easily maintained. Discussed in catalog are the product's uses, methods of application, available colors, detailed specifications, and suggested after-treatments. A. C. Horn Companies, Div. Sun Chemical Corp., 2133 85th St., North Bergen, N.J.

On Free Data Card, Circle **209**

Protection of Wood Against Fire and Decay

New 6-page folder discusses "Non-Com" treatment by which lumber and plywood are pressure-impregnated with inorganic chemicals, not only protecting the wood against fire but also against attack by termites and decay. The bulletin shows Non-Com's economy and minimal maintenance for roof decking, partitions, and wall assemblies; case histories dramatically show the treatment's permanent advantages. Also cited is the recognition given by insurance, government, and building code officials. Specification and ordering information is provided. Wood Preserving Div., Koppers Co., Inc., 430 7th Ave., Pittsburgh 19, Pa.

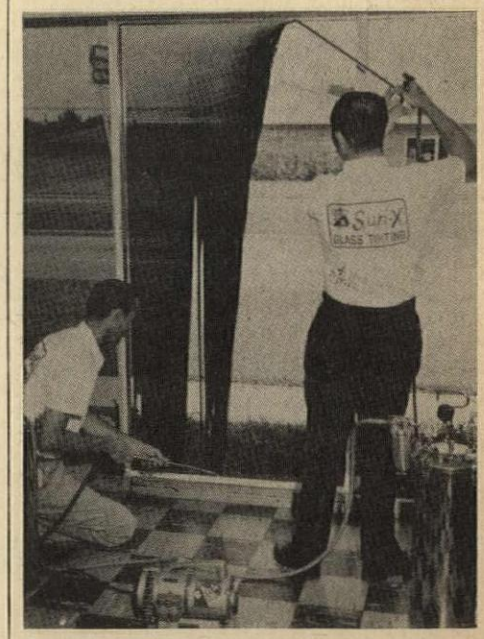


On Free Data Card, Circle **210**

DOORS/WINDOWS

Glass-Tinting Material Cuts Heat, Fade, Glare

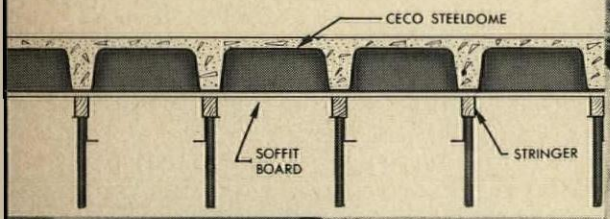
New folder on the uses and specification of "Sun-X" glass-tinting material has been made available by the product's distributor (manufacturer is du-Pont). Photos show how Sun-X is applied to existing glass areas: the liquid plastic is flowed on (not sprayed or painted) to form a permanent bond with the glass. Diagrams show the extent to which it reduces the transmission of heat, fade, and glare into such buildings as offices, schools, and homes. A list of U.S. dealers is included in the 4-page brochure. Sun-X International, Inc., P.O. Box 6565, Houston 5, Texas.

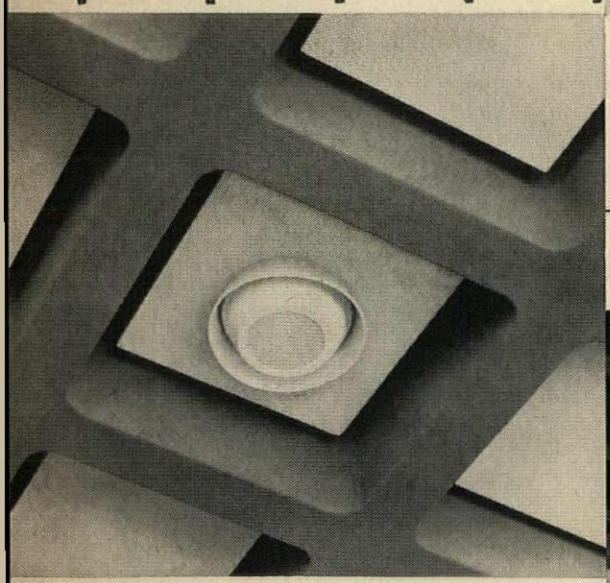


On Free Data Card, Circle **211**

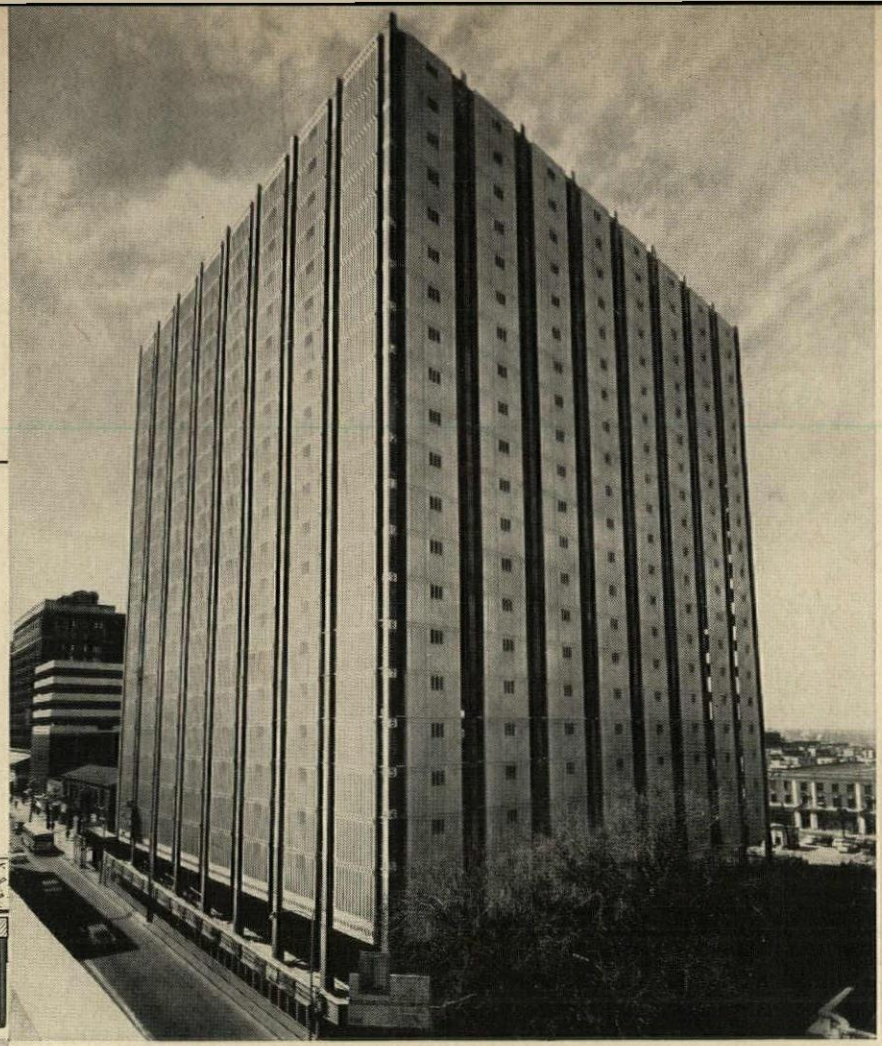
Continued on page 86

In construction products
Ceco engineering
makes the
big difference

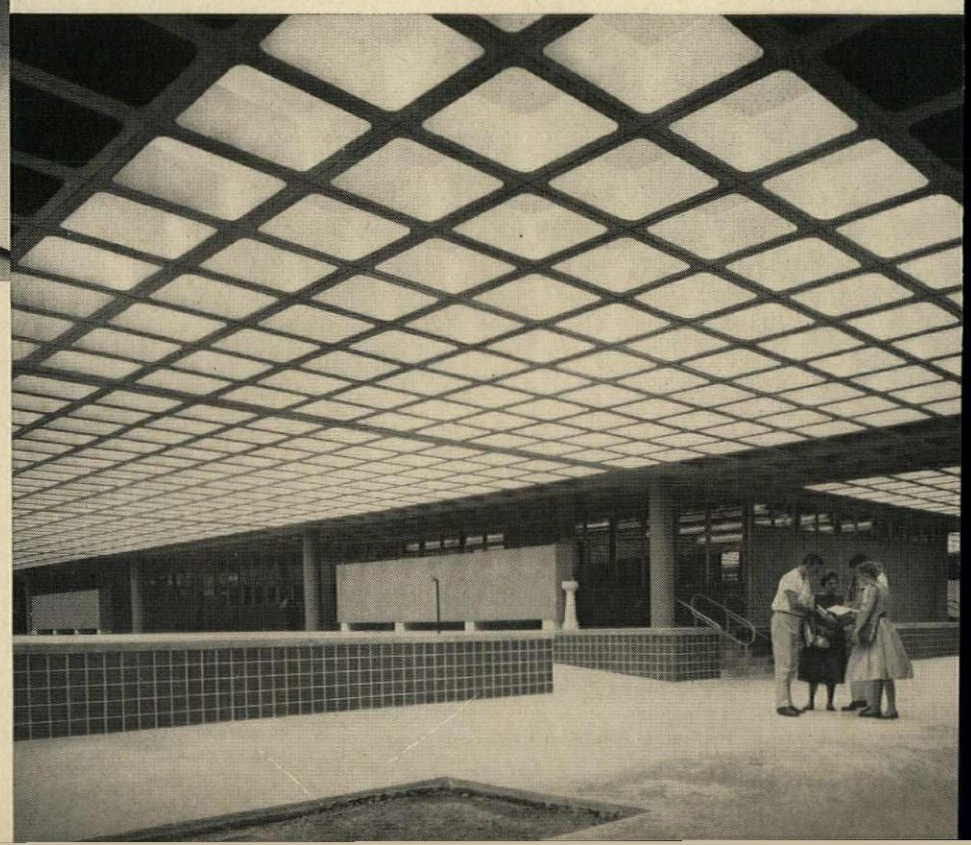




▲ *Typical Steeldome ceiling treatment with acoustical finish on exposed concrete, and acoustical tile in voids.*



New 20-story Merchandise Mart Building in Atlanta, Georgia, utilizes Ceco Steeldome construction.
Architect: Edwards & Portman
Engineer: Jack Wilborn
Contractor: Consolidated Realty Investments, Inc.



Dramatic effect is created with "open-grid" ▶ used for patio area of newly constructed North Central High School, Miami, Florida.
Architect: Polevitzky, Johnson & Associates
Engineer: H. J. Ross and Associates
Contractor: Thompson & Polizzi Construction Company

In Washington, D.C., the Riddell Building was designed with floors and ceilings of Ceco Steeldome construction.

Structure at left end is the Bank of Commerce, an earlier Ceco floor-framing project.

Architect: Corning, Moore, Elmore & Fischer | *Contractor: Standard Construction Co., Inc.*

You can achieve long spans, heavier loads, unusual ceiling decor when your designs call for...

Ceco Steeldome 2-way concrete joist construction

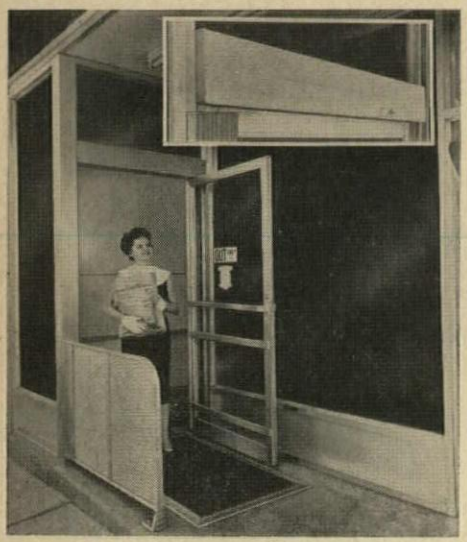
There's a trend to two-way dome slab construction. From coast to coast you see "waffle-type" exposed ceilings—in commercial buildings, banks, apartments, hospitals, schools, churches, parking garages . . . in new buildings of every description. Why? Two reasons: (1) two-way dome slab construction permits economical long spans and heavier loads, and (2) the Ceco Steeldome way of forming this construction offers opportunities for unusual interior styling. You can create special ceiling effects at low cost by painting the smooth concrete surfaces, or spraying on acoustical material. You can apply acoustical tile—or design for "open" treatment. There are many possibilities awaiting your skill.

For additional information about Ceco Steeldome construction, as well as one-way construction with flangeforms, adjustables and longforms, ask for your copy of newly published 72-page manual 4002-C, "Monolithic Reinforced Concrete Construction with Ceco Service."

Ceco Steel Products Corporation | *5601 W. 26th Street, Chicago 50, Illinois*

steelforms • concrete reinforcing • steel joists • curtainwalls, windows, screens, doors • steel buildings • roofing products • metal lath

Continued from page 83



New Door Operator Is Electric

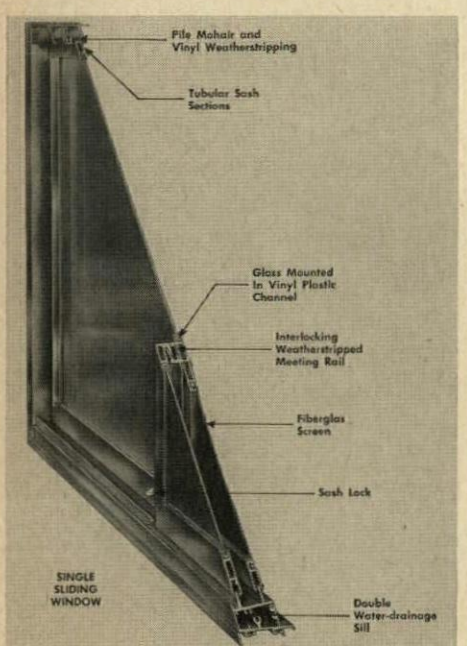
New electric automatic door operator has been added to Stanley's line of pneumatic and hydraulic operators. Features of the "Magic-Door" are presented in 6-page folder. It is compact and economically priced, designed for in-the-header mounting as well as visible mounting, applicable to new or existing doors from 30″ to 42″ wide. Magic-Door Sales, Dept. PD, Stanley Hardware, Div. of the Stanley Works, 195 Lake St., New Britain, Conn.

On Free Data Card, Circle 212

Single-Glazed Aluminum Windows

Four basic styles of single-glazed aluminum windows have been developed by Fleet for areas and applications where the high-insulating value of its double windows is not required. Units consist of horizontal sliding sash and glass-fiber screening in an extruded-aluminum frame. Styles, as shown on 4-page folder of details, are Twin Slide, Triple Slide, Quad Slide, and Picture Slide. Largest size is 12′-0″ x 5′-1″. Fleet of America, Inc., 2015 Walden Ave., Buffalo 25, N.Y.

On Free Data Card, Circle 213



ELECTRICAL EQUIPMENT

Underwater Lighting

New catalog, *Section G*, includes full data on entire line of cast-bronze, low-voltage, swimming pool lights. The various fixtures are for use in new or existing pools of concrete, gunite, tile, steel, or glass fiber. Also included are fountain, cascade, and pond lights, deck boxes, and fully submersible junction boxes. Specifications and dimensional data are provided. Stonco Electric Products Co., 333 Monroe Ave., Kenilworth, N.J.

On Free Data Card, Circle 214

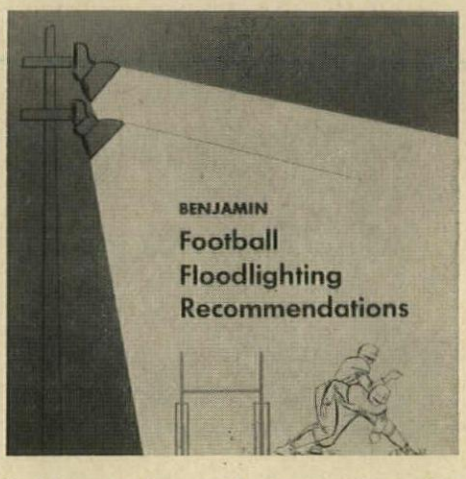
Portable Lamps for Contract Interiors

Illustrated booklet, 12 pages, shows Nessen portable lamps used in commercial and institutional interiors. A number of examples show how the scope and flexibility of the standard collection can be expanded—to satisfy specific contract lighting requirements, to overcome space restrictions, to provide extra durability, or to meet budget limitations. Photos and drawings depict these "special" lamps in which design and construction have been modified for contract interiors. Nessen Studio Inc., 317 East 34 St., New York 16, N.Y.

On Free Data Card, Circle 215

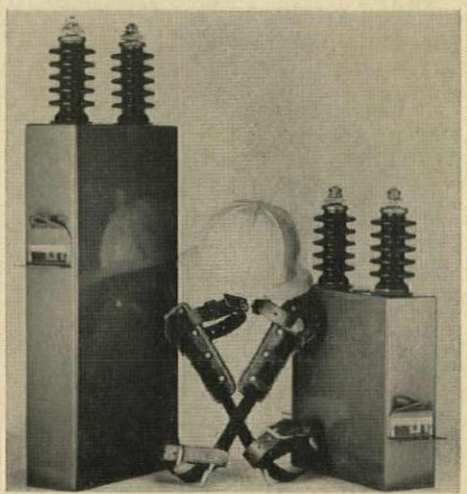
Football Floodlights

Special manual, 32 pages, contains specifications and installation data on football-field lighting. Included are minimum mounting heights, recommended distances for installation of



lighting poles, and suggestions for type and number to suit specific seating capacities. Described and illustrated are all components needed for complete installation. Benjamin Div., Thomas Industries, Inc., 207 East Broadway, Louisville, Ky.

On Free Data Card, Circle 216



Switchgear Savings

Catalog, 16 pages, introduces "revolutionary" low-voltage power switchgear. Completely new from its frame to its ingenious trip device, the "FP" line provides substantial dollar savings in electrical system application. Increased interrupting capacity of 50,000 and 100,000 amp gives benefits of fully rated systems without price penalty; gives low price previously available only in a cascade system, but without the inherent dangers and breaker damage resulting from full

Continued on page 90

$3.00

PER SQ. FT.

COST OF NEW HOSPITAL WALL SYSTEM

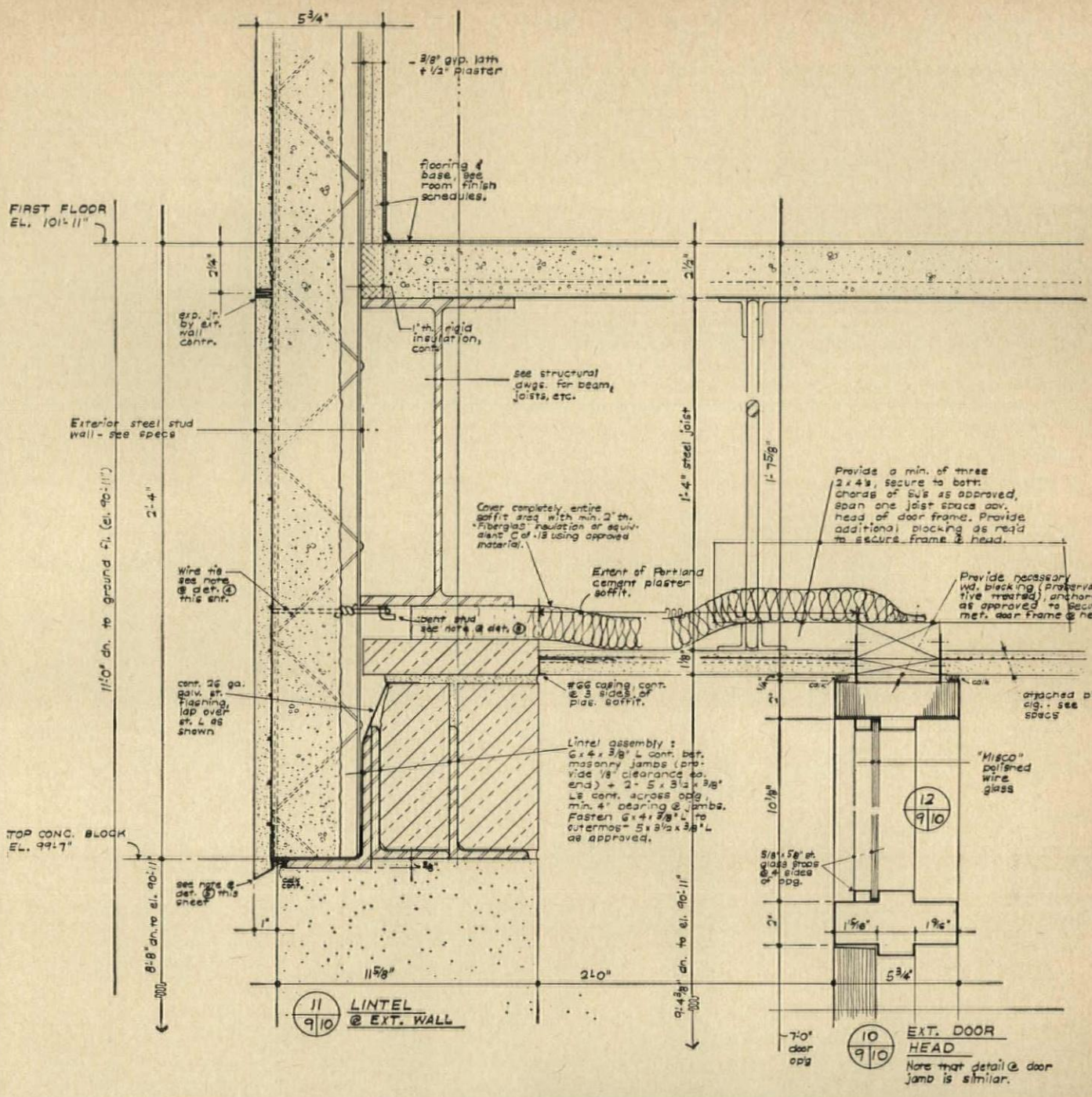
new construction method utilizes simple system of metal studs, KEYMESH® Paperbacked Lath and spray-on exterior wall; gets 2-hour fire rating.*

*This wall meets the 2-hour fire rating for hospitals.

Architectural and engineering ingenuity create an exciting new development in low-cost wall construction for buildings where fire safety is a prime factor. Schools, hospitals, offices and valuable industrial buildings can all use this method of construction—utilizing Keymesh Paperbacked Lath—profitably. Wall surface is flexible to meet any design requirement: Texture, color and finish. For complete information about applying this simple system to your next job, call your Keystone representative, or write

KEYSTONE STEEL & WIRE COMPANY • Peoria, Illinois

MAKERS OF KEYCORNER • KEYSTRIP • KEYWALL • KEYMESH® AND KEYMESH PAPERBACKED LATH • WELDED WIRE FABRIC • NAILS



Eureka Hospital addition,
Eureka, Illinois

Architect: Evan A. Thompson, A.I.A., of Foley / Hackler / Thompson / Lee, Peoria, Ill.

Plaster Development: L. H. Hobson, *Plaster Development Center*, Chicago, Ill.

Mechanical Engineer: S. Alan Baird, *Peoria, Ill.*

Structural Engineer: Edwin A. Lampitt, *Peoria, Ill.*

General Contractor: O. Frank Heinz Construction Co., Inc., Peoria, Illinois

Plastering Contractor: J. J. Kinsella & Son, Peoria, Ill.

(Note: Construction costs in Eureka, Ill., are approximately the same as those in Chicago, a high-cost construction area.)

Continued from page 86

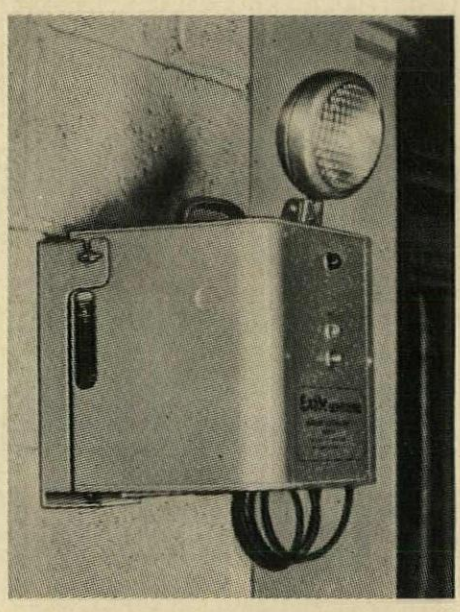
fault duty. Many other new construction and operation features are illustrated. Federal Pacific Electric Co., 50 Paris St., Newark 1, N.J.

On Free Data Card, Circle **217**

Simplicity of Design in Luminaires

Brochure, 12 pages, illustrates some of the fluorescent and incandescent luminaires for architectural application produced by Gotham. Each luminaire is the result of intensive optical development and photometric testing; manufacturer's stated aims are design simplicity and excellence of performance. Among the fixtures shown are recessed downlites, recessed accent lights, and recessed fluorescent troffers. Full dimensional data is given. Gotham Lighting Corp., 37-01 31st St., Long Island City 1, N.Y.

On Free Data Card, Circle **218**

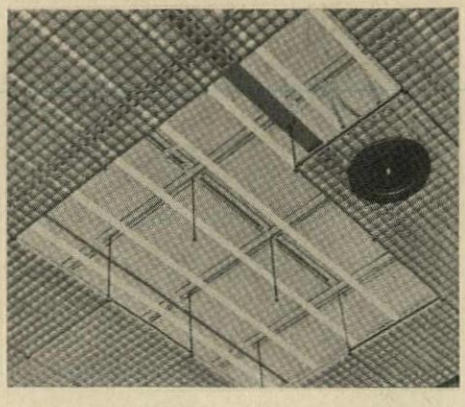


Emergency Lighting

Illustrated technical handbook is available on Exide's line of automatic battery-powered "Lightguard" equipment that provides emergency lighting automatically and instantaneously when normal electrical power fails. The 8-page handbook gives complete descriptions of the equipment. Methods are suggested for providing emergency lighting in two adjacent areas, in stairwells, or in separate rooms by means of a single emergency unit and remotely connected lamps. Also valuable in planning adequate lighting protection is a graph of a typical installation showing the light intensities of a single Lightguard lamp at various dis-

tances. Exide Industrial Marketing Div., The Electric Storage Battery Co., Rising Sun and Adams Aves., Philadelphia 20, Pa.

On Free Data Card, Circle **219**



Fixture Support Systems

Catalog, 24 pages, describes the "Power-Strut" system of surface raceways and electrical supports. The complete line includes many economical features: a broad range of continuous slot channel that assures perfect alignment and fits any need, heavy or light; an adjustable nut that makes assembly quick and simple; a wide variety of electrical fittings that provide maximum holding strength and are designed to minimize installation time. Catalog illustrates the various fluorescent fixture hanging systems, typical electrical support applications, and all the accessories and fittings. Power-Strut Div. of Van Huffel Products, Inc., Warren, Ohio.

On Free Data Card, Circle **220**

FINISHERS/PROTECTORS

Avoiding Wet Basements

Use of "Jennite J-16" to eliminate wet basement walls is described in new technical bulletin. Applied in conjunction with fabric on the outside of foundations, Jennite forms a tough, waterproof, seamless membrane that will not rot or deteriorate. Curing of the sealed membrane requires 24 hours before backfilling of soil can begin. Maintenance Inc., Wooster, Ohio.

On Free Data Card, Circle **221**

Paint Products and Specs

New catalog on "100% Pure Paints" has been issued. Comprising 50 pages, the catalog gives complete product information, as well as architectural specifications, suggestions for good painting, and a Federal specifications chart. Products are indexed for easy reference by use: interior finishes (flat, semigloss, high, floor finishes) and exterior finishes (wood, metal, masonry, primers, solvents). Staley Paint Manufacturing Co., 5243 Manchester Ave., St. Louis 10, Mo.

On Free Data Card, Circle **222**

All About Epoxies

Those Fabulous Epoxies, an 8-page article, analyzes the epoxy-coating field objectively, pointing out the advantages and disadvantages of epoxies as compared with conventional paints. It explains to the architect what he can expect of epoxies, and where he should (and should not) specify them. The five "Proco" systems for various film thicknesses and desired results are outlined, and sample specifications are provided. Protective Coatings, Inc., 807 North Fremont Ave., Tampa 1, Fla.

On Free Data Card, Circle **223**

SPECIAL EQUIPMENT

Latest Standards for Open-Web Joists

Standard Specifications and Load Tables: Open-Web Steel Joists, 1962 edition, is a 52-page revision and expansion or previous data. During the past year, extensive research has culminated in several important new standards—for H-series high-strength joists based on minimum yield of 50,000 psi; for a new J-series (supplanting the former S-Series) based on a minimum yield strength of 36,000 psi; and for a revised L-series (to be known as LA-series) providing the structural and design advantages of A36 steel. Descriptions and uses are presented, along with comprehensive specifications and load tables. Steel Joist Institute, DuPont Circle Building, 1346 Connecticut Ave., N. Y., Washington 6, D. C.

On Free Data Card, Circle **224**

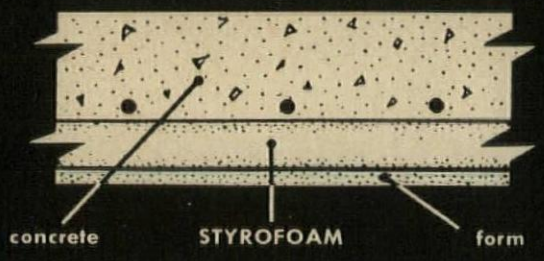
PROGRESSIVE ARCHITECTURE NEWS REPORT

REINHOLD PUBLISHING CORPORATION

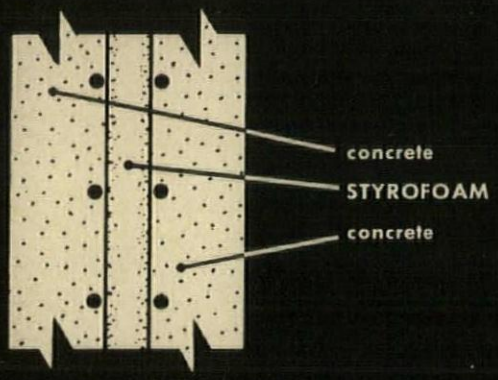
430 PARK AVENUE NEW YORK 22, N.Y.

Publisher.....D. Bradford Wilkin
Editor.....Thomas H. Creighton
News Editor.....James T. Burns, Jr.

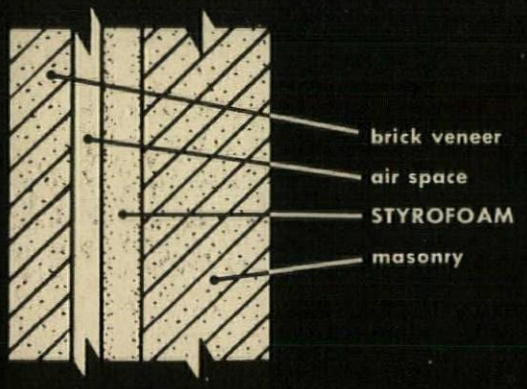
Form liner for poured roofs



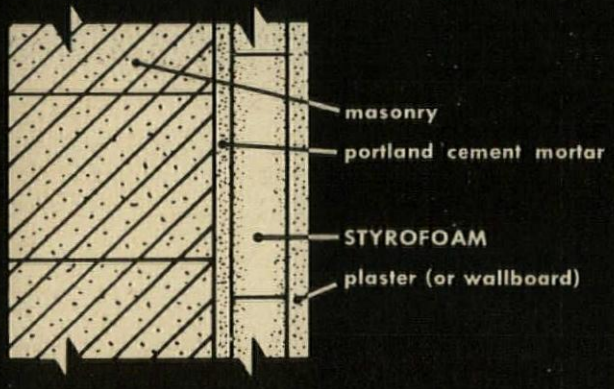
Insulating core for curtain wall panels



Insulation inside cavity walls

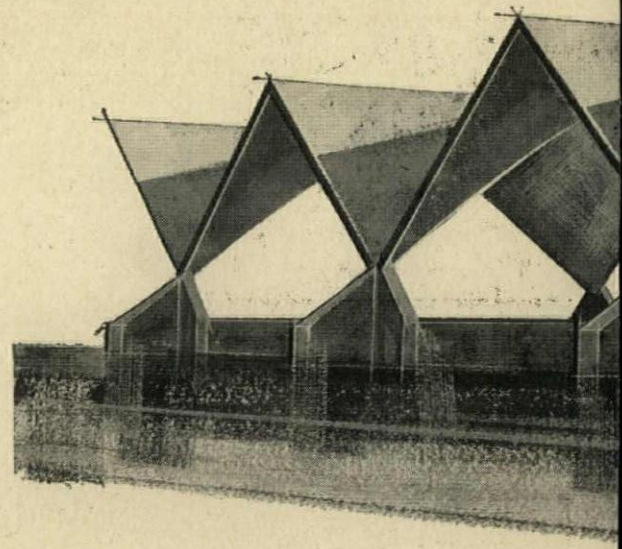


Insulating base for plaster



Styrofoam simplifies construction of insulated . . .

- **THIN-SHELL ROOFS**
- **CONCRETE CURTAIN WALLS**
- **CAVITY WALLS**
- **POURED CONCRETE AND BLOCK WALLS**



STYROFOAM®

solves design problems, speeds construction ... and adds permanent insulating values!

Styrofoam brand insulation board provides triple benefits for commercial building construction. Proved by long use, Styrofoam retains superior insulating values year after year . . . permits use of new, more efficient techniques . . . and cuts the time and cost of insulated construction.

Styrofoam insulation is both a superior insulating material and a rigid structural material. Styrofoam has a low "K" factor that stays low, because water and water vapor don't penetrate it and build up inside. Buildings stay more uniformly warm (or cool) and dry in any weather, saving on heating and cooling costs.

Styrofoam insulation makes new techniques practical. For example, lightweight, insulated concrete curtain walls can be produced quickly using Styrofoam as the core. Positive keying action to concrete minimizes need for fasteners or ties. The final concrete-insulation-concrete "sandwich" is strong, lightweight and economical.

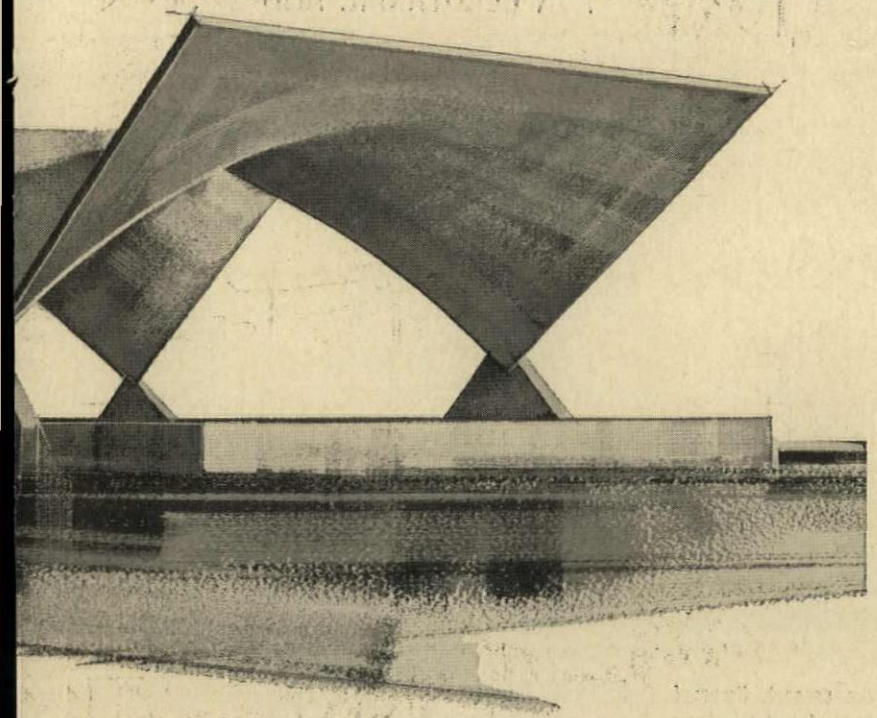
For thin-shell application, Styrofoam insulation is a valuable construction material and insulation. For form work of all kinds, it serves as form liner, permanent insulation, and vapor barrier applied in a single step! The use of Styrofoam in this way provides a minimum 70% reduction in heat loss.

Insulating plasterbase—Styrofoam insulation eliminates the need for furring and lathing when insulating masonry walls. Just adhere Styrofoam to the wall with portland cement mortar, then apply plaster . . . or wallboard, if you wish. The use of Styrofoam as an insulating plasterbase provides 35 to 45% reduction in heat loss.

Cavity-wall buildings stay warm and dry when Styrofoam insulation is in the cavity. Simply adhere it to the outside face of the inner wythe. Because of its high resistance to water vapor, Styrofoam eliminates the need to build in a separate vapor barrier. The addition of Styrofoam to cavity-wall construction provides a 50 to 60% reduction in heat loss.

Low-cost Styrofoam has no food value to attract insects, and will not rot. Installation and handling are quick and easy. For more information on Dow Building Products, write THE DOW CHEMICAL COMPANY, Midland, Mich., Plastics Sales Dept. 1502EB12.

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.

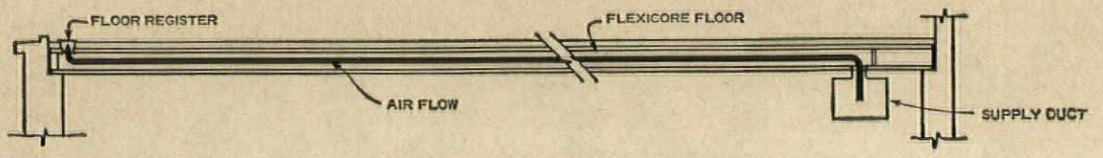


This unique h-p roof was poured over Styrofoam, which was finished on the underside with two coats of plaster and a sprayed acoustical finish.

Styrofoam is laid over wood form and covered with reinforcing.

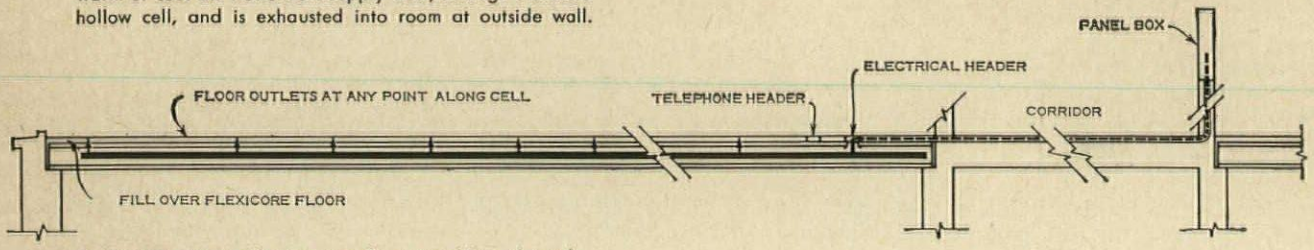
After removing form boards, the Styrofoam in the ceiling is ready for finishing.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

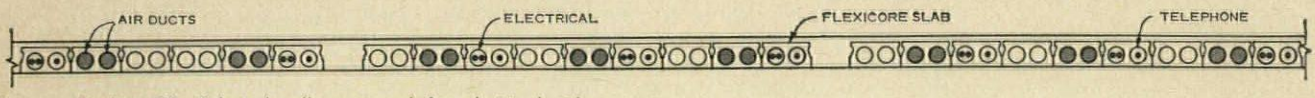


Ask for Flexicore Facts No. 82

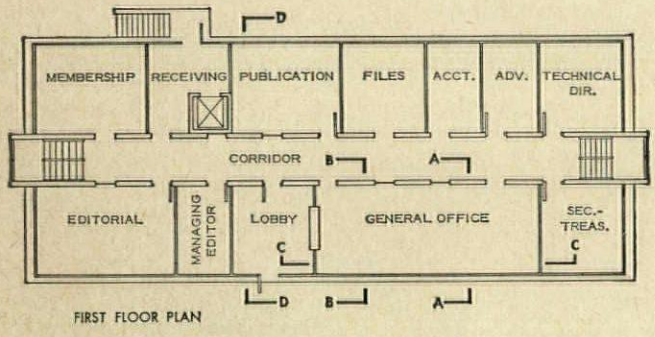
Section AA. At American Concrete Institute in Detroit, warm or cool air flows from supply duct, through Flexicore hollow cell, and is exhausted into room at outside wall.



Section BB. Electrical wiring runs from panel box, through header, then through Flexicore hollow cell to floor outlet. Similar system is provided for telephone.

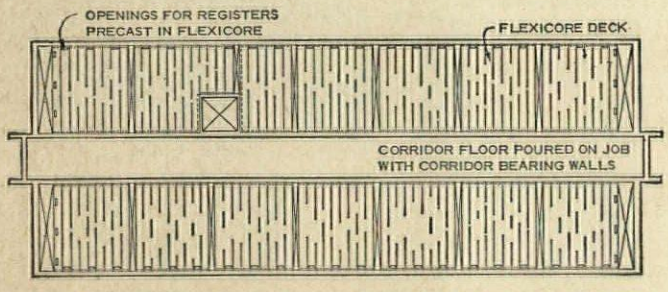


Section CC. Selected cells are used for electrical, telephone, and for air ducts. Electrical fittings by Conduflor Corp., Cleveland.

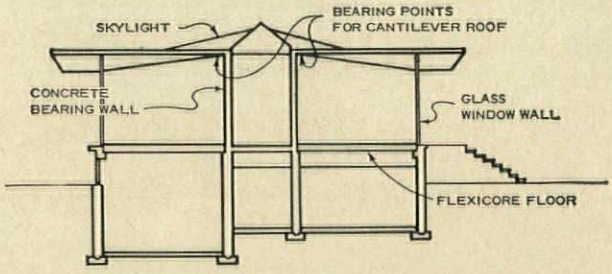


FIRST FLOOR PLAN

HOW TO USE CELLULAR CONCRETE DECKS FOR ELECTRICAL AND AIR DISTRIBUTION



First Floor Framing. Corridor floor was cast in place with corridor bearing walls. Flexicore clear-spans from corridor walls to outside walls.



Section DD. Corridor walls are sole support for roof.

Minoru Yamasaki & Associates, Architects, Birmingham, Michigan

Hollow cells in Flexicore precast, fireproof floors are used for electrical and telephone wiring, and as air ducts for warm air heating, air conditioning and ventilating at American Concrete Institute Headquarters, Detroit.

For more information on this project, ask for Flexicore Facts No. 82. Write The Flexicore Co., Inc., Dayton, Ohio, the Flexicore Manufacturers Association, 297 S. High St., Columbus 15, Ohio or look under "Flexicore" in the white pages of your telephone book.

Ceilings unlimited!

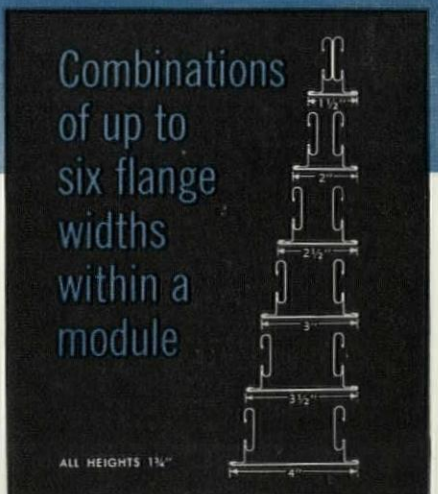
Eastern's new exposed Modular-Grid suspension system provides new worlds of design opportunities!

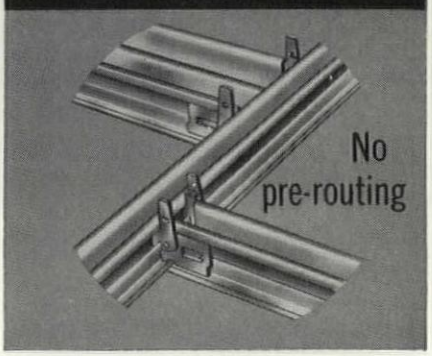
Boxed in by ordinary ceiling grid patterns? Eastern's new Modular-Grid offers virtually limitless pattern specification, providing choice of six flange widths, every half-inch from 1½" to 4", and cross tee attachment at any point along the runner. Different flange widths can be combined within the same module. Partition and mullion design can be carried into the ceiling area, where desired. In addition, Modular-Grid's double-web design means greater structural support . . . and Eastern's dual cam action end-clips eliminate tools, literally make tee members a *snap* to install. Detailed specs and prices yours on request; write Eastern today!

See our catalog in Sweets $\frac{\text{IIb}}{\text{Ea}}$

Eastern Products Corporation

Eastern Products Corporation, Acoustical Division 1601 Wicomico Street, Baltimore 30, Md.





WALLS

MUNICIPAL AUDITORI
The huge main auditorium enclo
is formed of big light-colo
incombustible Transite she

COLLEGE BUILDI
J-M Transitop forms the window wall spandr
On the exterior, the Transitop is painted a unifo
blue-green; on the inside, the Transitop is pain
to suit decorative schemes of individual classroo

Here are a few of the many buildings which make imaginative use of Johns-Manville materials for exterior walls. In each case, beauty and efficiency were achieved economically. Not visible in these photographs – but there, all the same – are such important benefits as fast, easy installation and permanence in service.

For more than a century, Johns-Manville research has led in the development of quality building materials. If you are planning a new building . . . modernizing an old building . . . or putting up new additions to an existing building . . . you will find many solid advantages in J-M products.

Donald J. Prout & Associates, Archite

AIRPORT BUILDING J-M Corrulux provides a translucent shield for the walkways at either end of this unusual building. This is a unique and imaginative use of Corrulux for sun control

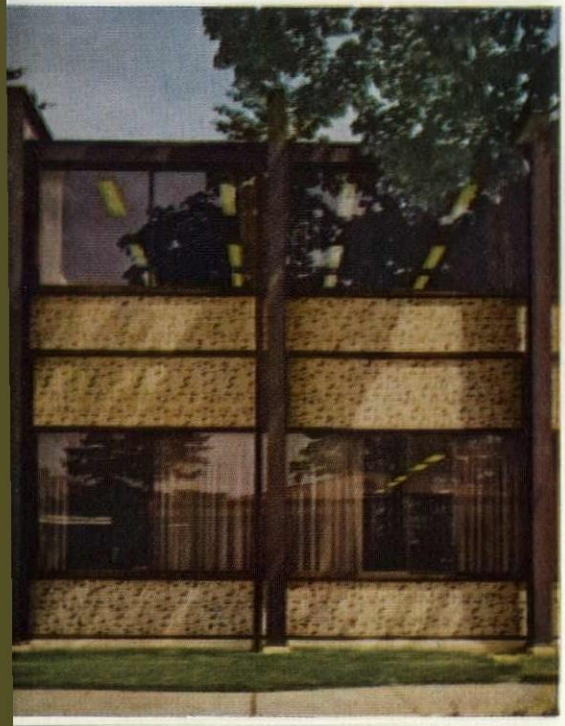
Donald R. Goss Associates, Architects & Engin

Eaton W. Tarbell & Associates, Architects

Sargent-Webster-Crenshaw & Folley, A.I.A., Architects & Engineers

UNIOR HIGH SCHOOL
-M Corrulux attached to the outside of the building columns and eams create a continuous band of translucence above each vision trip of clear glass.

FFICE BUILDING Window wall panels are of Transitop, eneered with mosaic tile on the outside, painted on the inside. ransitop accepts these and virtually any other finish you specify.



These modern buildings use one of the following Johns-Manville materials for exterior walls.

J-M TRANSITOP®—a "3-in-1" panel that serves as outside wall, inside wall and insulation. Between facings of asbestos Flexboard® is a rigid, durable core of insulation. Transitop panels are 4 ft. wide by up to 12 ft. long, thicknesses to 2 in.

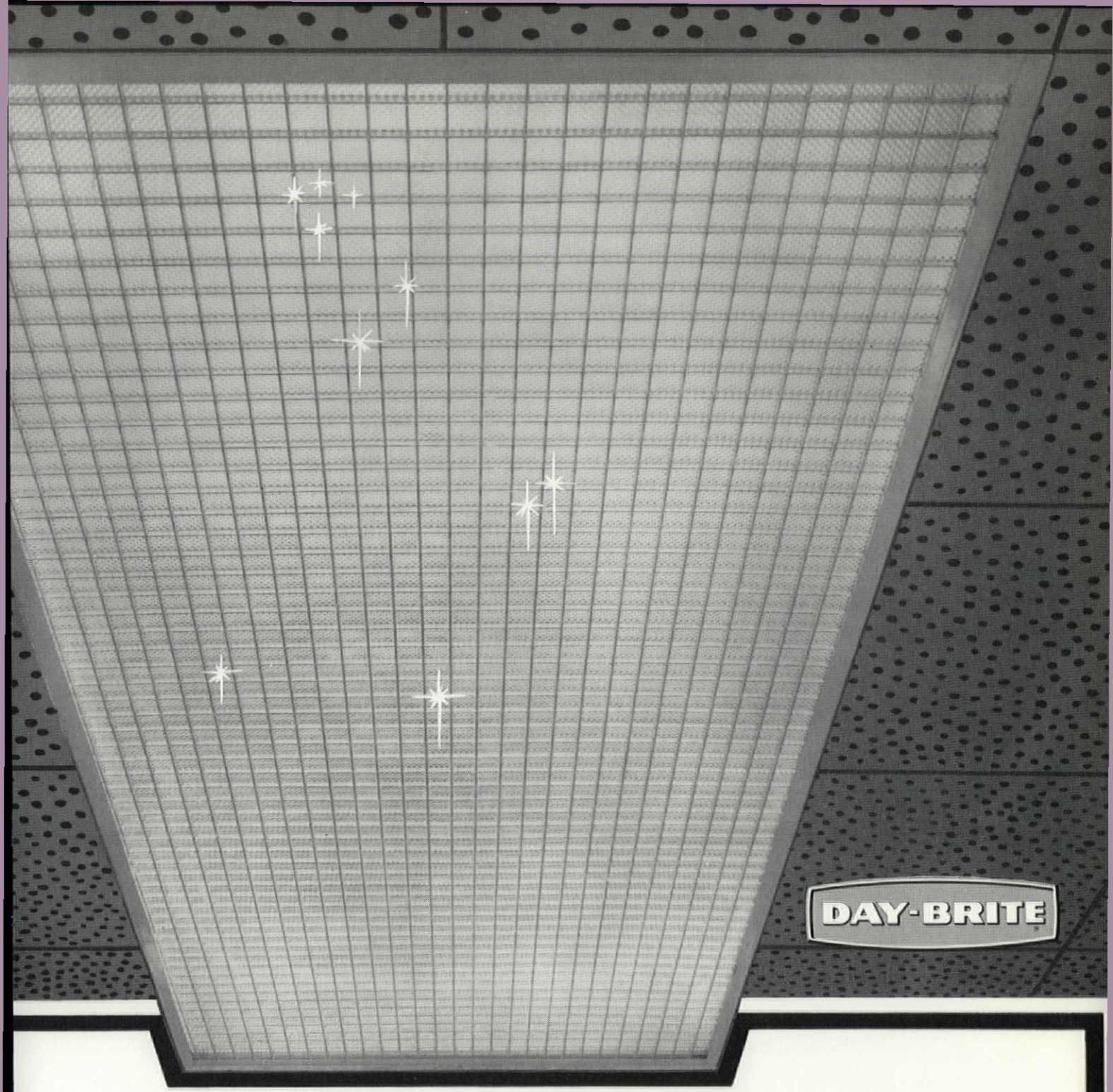
J-M CORRUGATED TRANSITE®—a corrugated asbestos-cement sheet that has stone-like resistance to fire, weather and wear. It is decorative and requires no painting or similar maintenance. Sheets are 42 in. wide and up to 12 ft. long.

J-M CORRULUX®—a translucent building panel of fiber glass-reinforced plastic. Shatterproof . . . either corrugated or flat . . . in wide range of colors. Widths up to 42 in., lengths up to 12 ft.—even longer, on special order.

For more information, write to Johns-Manville, Dept. PA-12, Box 158, New York 16, New York. In Canada, address Port Credit, Ont. Offices throughout the world. Cable: Johnmanvil.

JOHNS-MANVILLE

JOHNS MANVILLE JM PRODUCTS



ALL THE FEATURES OF EGG-CRATE LOUVERS...

PLUS

✶ NO FLAT, WASHED-OUT LOOK—there's just a hint of sparkle in WAFFLETEX . . . just enough to bring refreshing new life to monotonously pale ceilings. The aluminum tinting on the bottom edges of WAFFLETEX thin louvers avoids that egg-shell look and gives WAFFLETEX a distinctive modern coloring more in keeping with today's interior decorating trends.

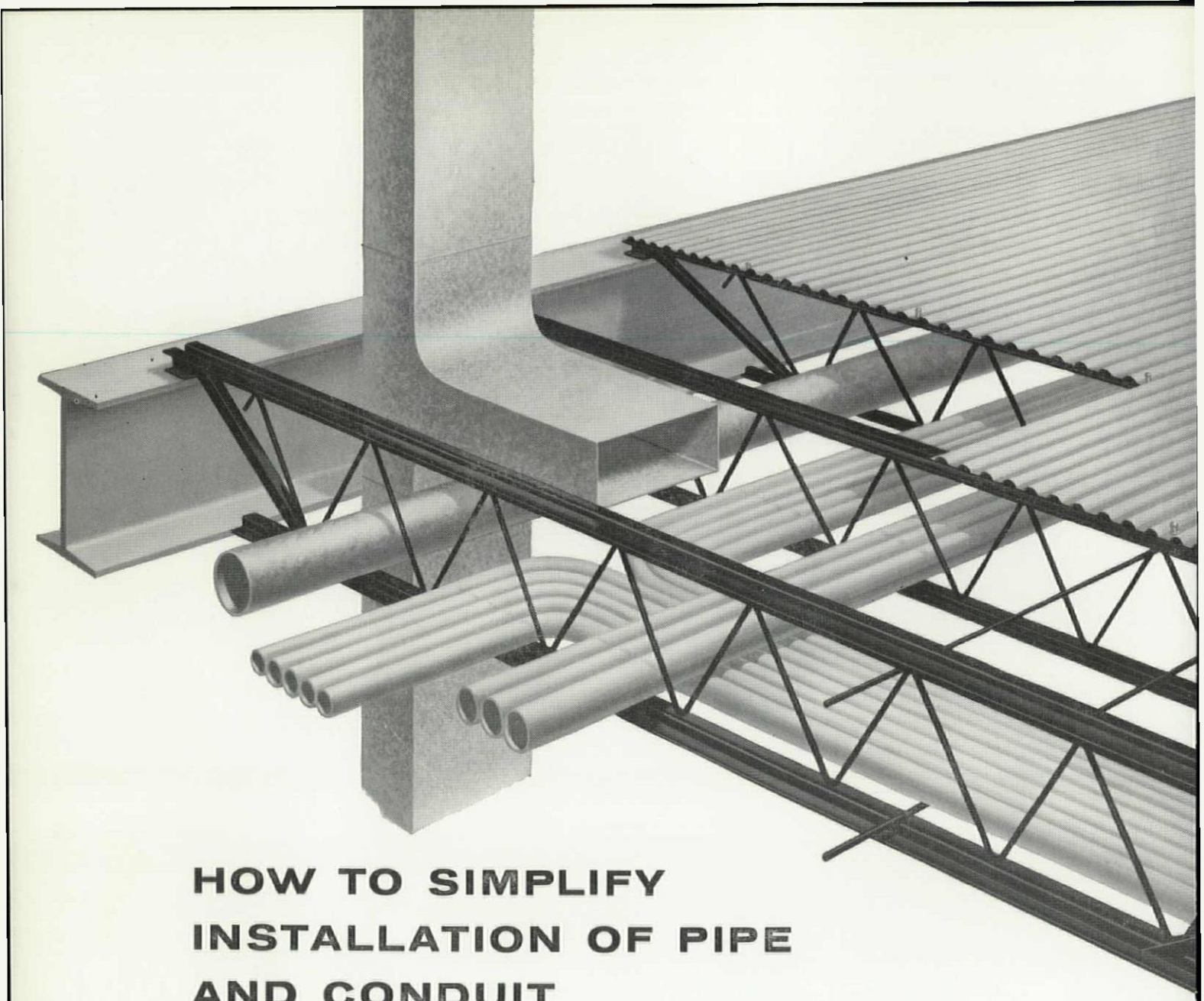
✶ WAFFLETEX KEEPS FIXTURES CLEAN, too, because the lamps are completely enclosed! No dust accumulates on the lamps. Light can get out but no bugs can get in.

✶ NEAT, CLEAN APPEARANCE—small, all-over pattern suggests texture *subtly* without attracting attention.

✶ MINIMIZES DIRECT GLARE with small dimension louvering. Lamps are well shielded for minimum brightness.

✶ PRISMATIC CONTROL OF REFLECTED GLARE—thousands of tiny prisms diffuse lamp images and assure comfortable, evenly distributed light.

✶ FLEXIBILITY OF DESIGN—pattern is *non-directional* so you can place WAFFLETEX-enclosed fixtures perpendicular to one another without destroying simplicity of appearance.



HOW TO SIMPLIFY INSTALLATION OF PIPE AND CONDUIT

One of the many advantages of designing with Bethlehem open-web steel joists is the ease with which you can install pipe and conduit. As shown above, the open-webs make it so simple to pass through pipe, wires, heating lines—*in any direction*. And installation of recessed lighting fixtures, plus their wiring, is also simplified.

Steel joists are incombustible, and they can't warp or sag. Termites can't eat them. Bethlehem joists are completely fabricated in the shop, reach the job site ready for immediate placing.

Full details on steel joists, and Slabform, Bethlehem's solid steel centering that can save you money and material, are available at any Bethlehem sales office. We'll be glad to talk over your building plans with you.

Steel

for Strength
. . . Economy
. . . Versatility

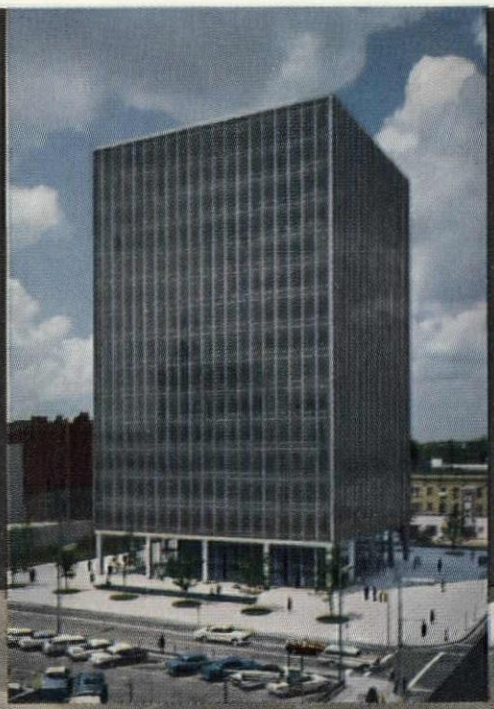
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Sales: Bethlehem Steel Export Corporation

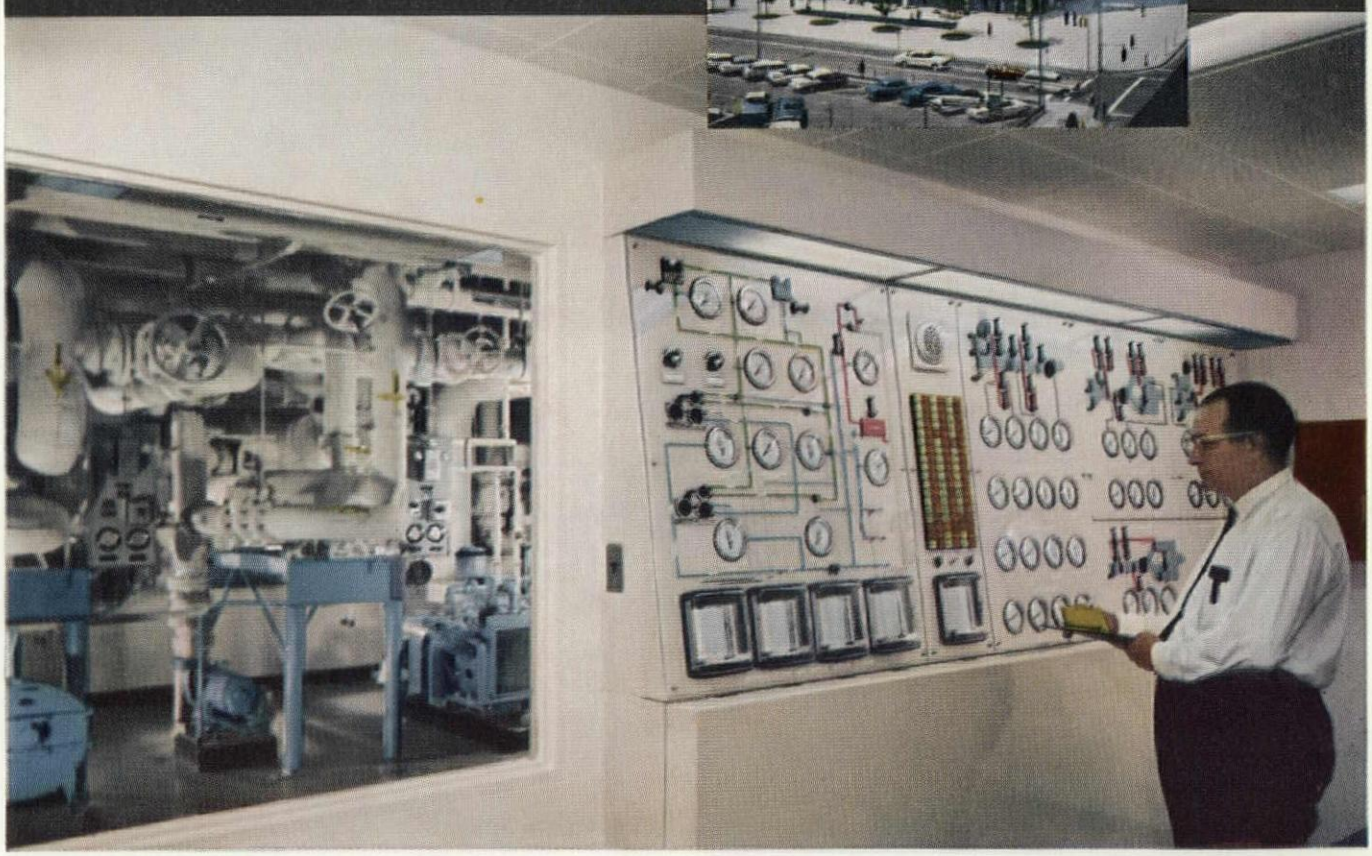
BETHLEHEM STEEL

BETHLEHEM STEEL

comfort control
by Johnson assures an

ideal climate for business





An especially fine example of modern commercial architecture, the Libbey-Owens-Ford Building* in Toledo is equipped with a specially planned Johnson Air Conditioning Control System. Within the new glass-clad structure, Johnson thermostats provide personalized comfort control for the occupants of each office.

For centralized supervision of the six central fan air conditioning systems and related equipment, there is a Johnson Control Center in the engineer's office. The panel provides continuous visual indication of fan and pump operations and of air and water temperatures at all key control points in the systems. Selected data are automatically recorded at the center.

Such precise supervision and control assure a consistently ideal thermal environment for business efficiency and make possible operating economies that substantially reduce air conditioning costs.

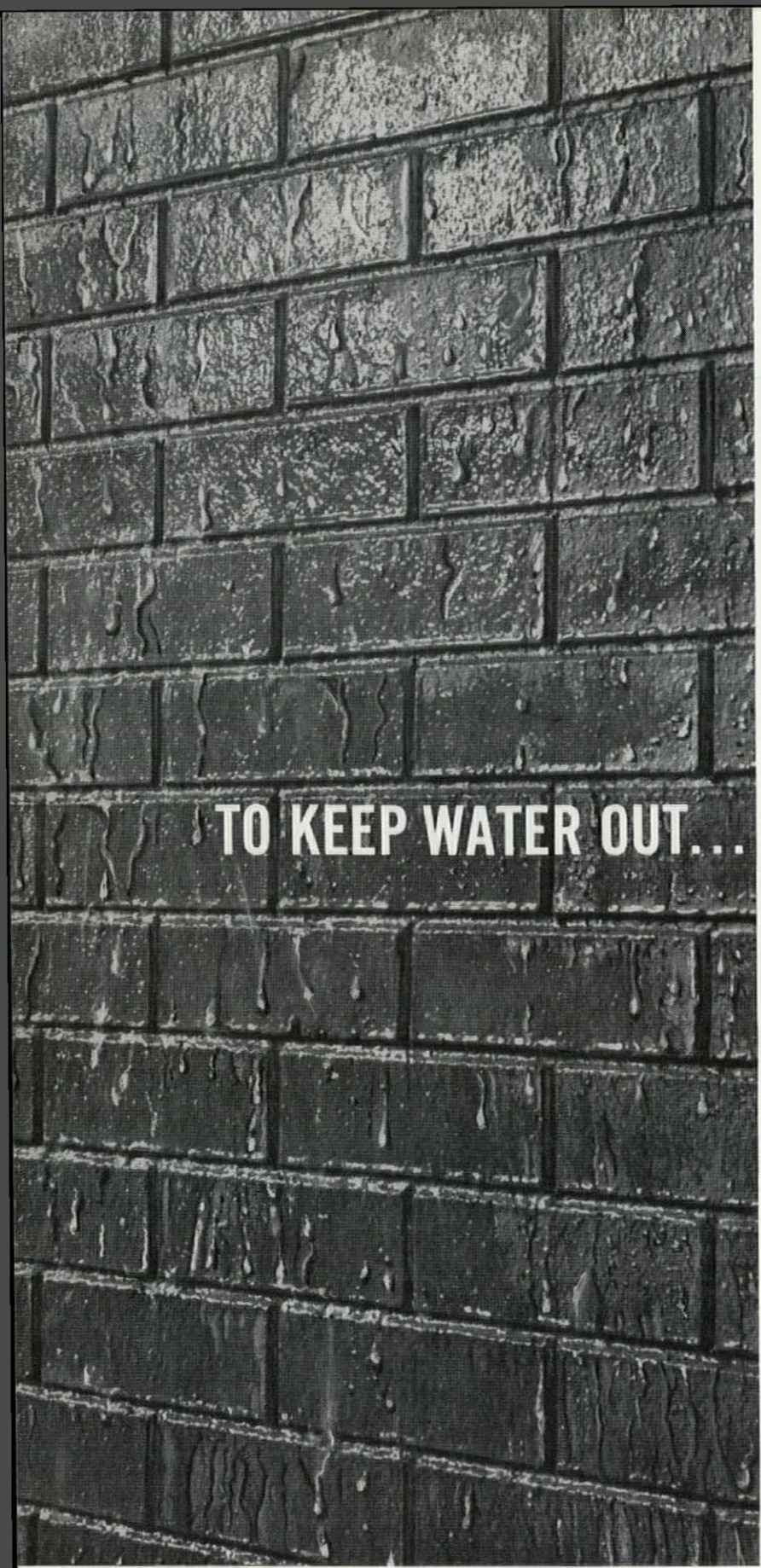
For 76 years Johnson Pneumatic Control has been first choice among leading buildings of all types and sizes. Next time you have a control problem, ask your local Johnson representative for his recommendations. There is no obligation. Johnson Service Company, Milwaukee 1, Wisconsin. 110 Direct Branch Offices.

*Skidmore, Owings & Merrill, architects, New York; Guy B. Panero, mechanical engineer, New York; George A. Fuller Co., general contractor, New York; Stanley Carter Co., mechanical contractor, Toledo. Top photo by Hedrich-Blessing.

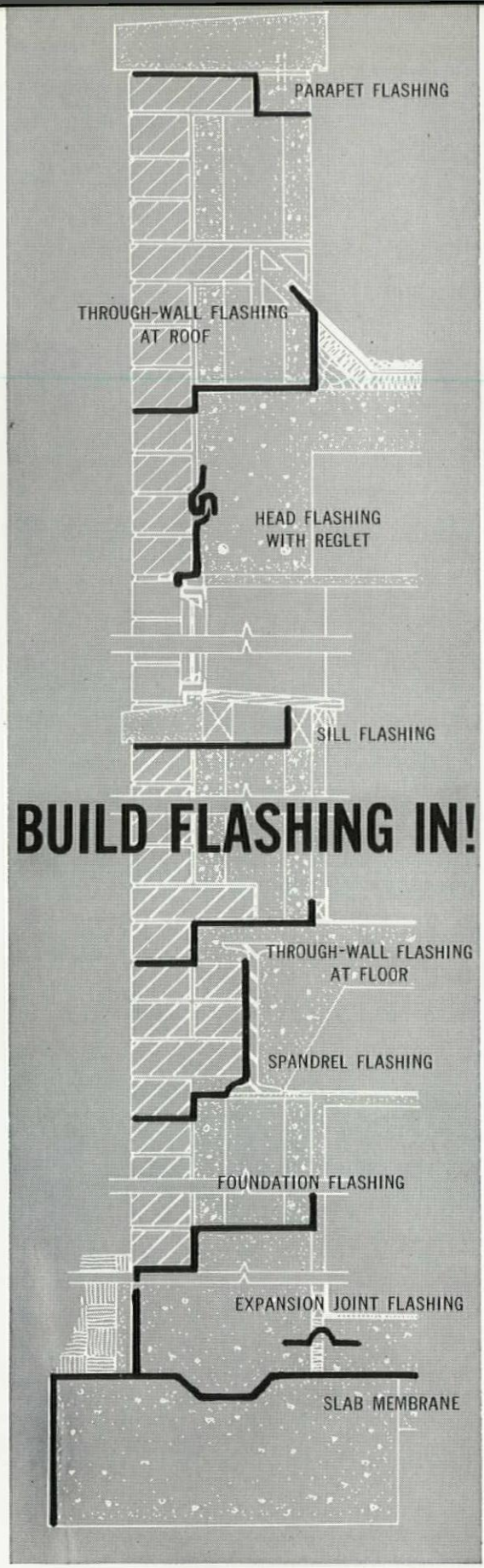
JOHNSON CONTROL

PNEUMATIC SYSTEMS

DESIGN • MANUFACTURE • INSTALLATION • SINCE 1885



TO KEEP WATER OUT...



BUILD FLASHING IN!

Moisture constantly seeks the fatal point of access into every type of construction. Wasco Flashings bar the way. Today, buildings can be permanently protected against water damage . . . at a cost rarely exceeding five hundredths of one per cent of total construction investment . . . with Wasco Flashing.

Wasco's complete line of flashing materials covers all through-wall and spandrel applications. You may specify from among Wasco's 14 different flashings including copper-fabric, copper-asphalt, copper-lead, fabric, plastic and aluminum. For exceptional flashing problems you are invited to consult Wasco's engineering staff.

WASCO FLASHINGS

WASCO PRODUCTS DEPARTMENT

CYANAMID

AMERICAN CYANAMID COMPANY
5 BAY STATE RD., CAMBRIDGE 38, MASS.

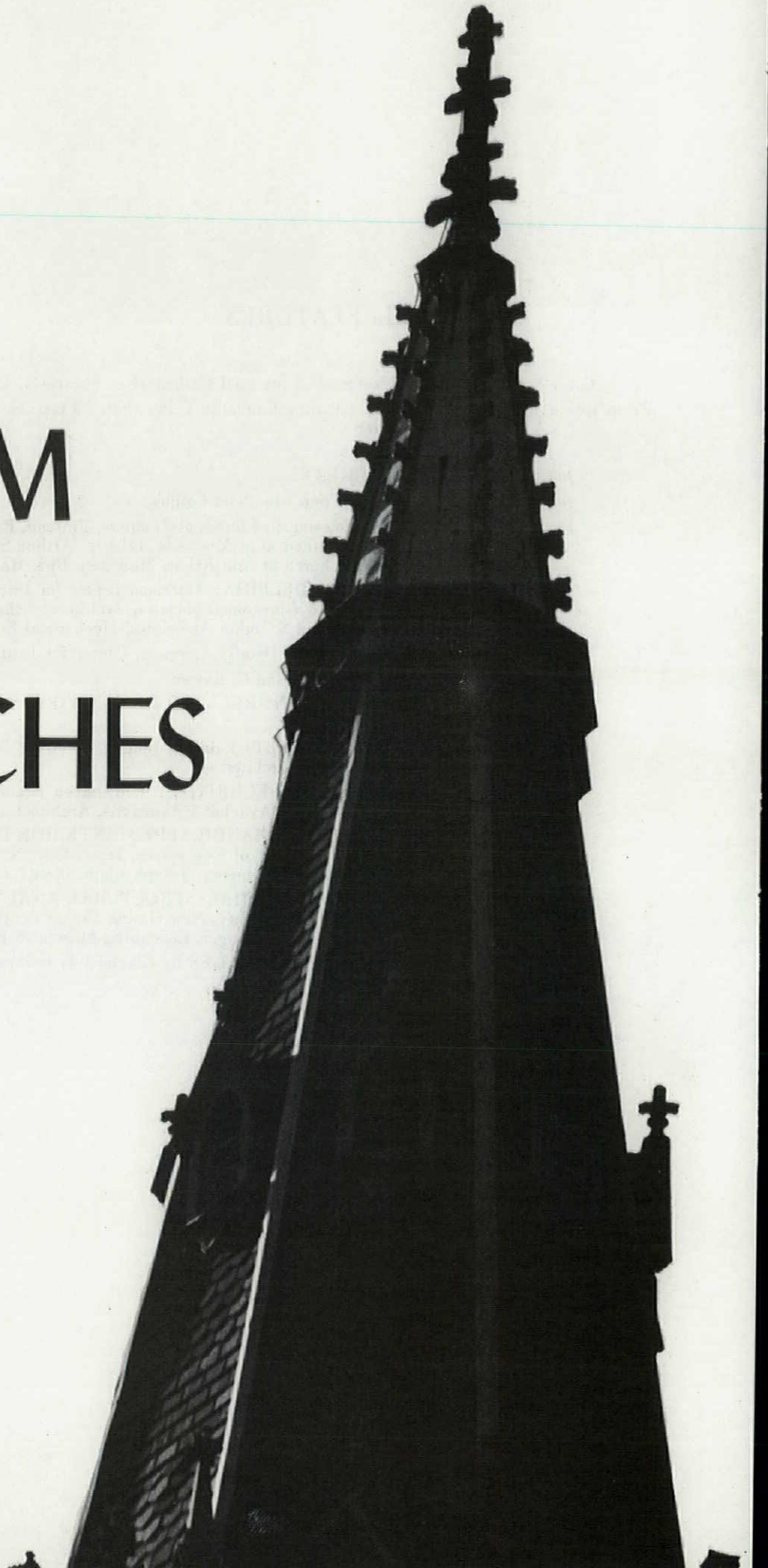
For more information, turn to Reader Service card, circle No. 384

December 1961 **PROGRESSIVE ARCHITECTURE®**

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

EDITORIAL FEATURES

FORM IN CHURCHES



What Is Significant Form?

BY PETER COLLINS

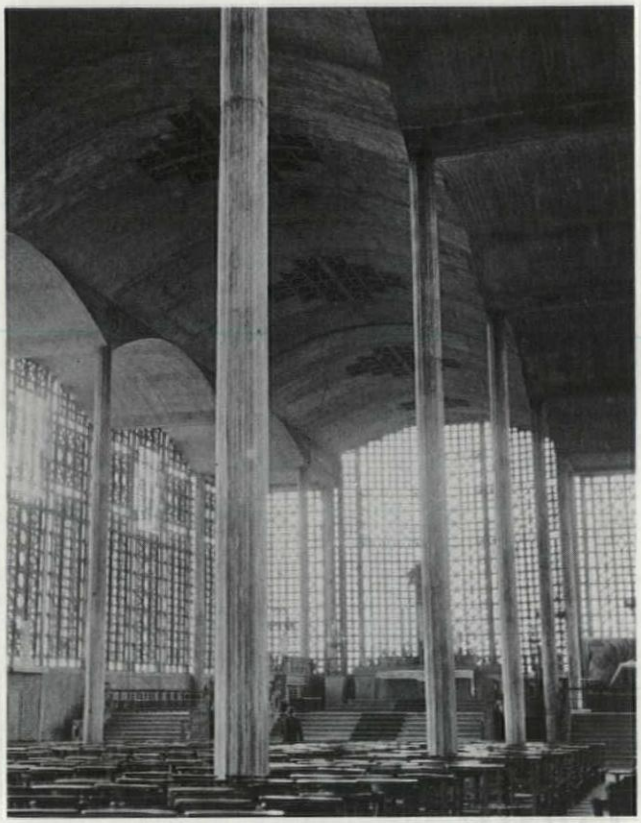
A widely published critic and Associate Professor of Architecture at McGill University, Montreal, discusses the several ways in which the form of a religious building may be significant. He raises many challenging questions concerning the validity of symbolism, structural expression, and functional planning in the design of churches.

If the term "significant form"—so popular in the jargon of art criticism—means anything in architecture (and there is no guarantee that it does, since buildings, unlike painting and sculpture, are a necessity, and thus derive all their essential significance from the mere fact that they are there), it may presumably mean one of four things. First, it may mean that the form is "expressive" of the structural system and materials used. Second, it may mean that the form is "suggestive" of the activities which go on inside. Third, it may mean that the form "symbolizes" some spiritual value. And last, it may mean that the form "invites attention from a select and initiated group of people." All these meanings of "significant" are implied in the *Oxford Dictionary*, and I propose to examine each one of them in turn.

First: church architecture as deriving significance from the expression of structure. This might appear to mean that to satisfy the standards of modern architecture, a church should display its structural surfaces internally, and wherever possible externally, and that the structural system and materials should be exploited to the absolute limits of resistance, as ascertained by calculation. But this is not the case. Perret's church at Le Raincy fulfills these conditions admirably, yet in the May 1960 issue of the *Architectural Review* (p. 329) it was described as being drenched in historicism, and "certainly not modern." A true example of what orthodox opinion regards as "modern" ecclesiastical architecture, if one can judge from the extent it is publicized, is the chapel at Ronchamp, where thick rubble walls are covered with stucco, and the shape of the vault was, according to Le Corbusier, inspired by a crab shell he picked up on a Long Island beach.

It may even be questioned today whether the "expression of structure" really means, for the practicing architect, even the expression of an actual structure, or whether we are not reverting, so help us, to the old and much derided method of imitating "ideal" structural systems in other materials, like McKim, Mead & White, or, if one prefers it, the ancient Greeks. One needs a keen eye to distinguish which of the walls at Ronchamp is of rubble, and which is a two-inch-thick, sprayed-concrete shell on a reinforced-concrete frame. Similarly, it is not uncommon to see what appear to be "folded plate" roofs constructed of steel trusses, and in one recent example in Montreal (a synagogue), the steelwork suporting the timber "folded plates" was disguised on the outside by false windows that appear to butt against the underside of the "slab."

This sort of subterfuge stems inevitably from the fact that by "significant" most architects really mean "contemporary," and by "contemporary" they really mean, as regards structural fashions, the forms which engineers like Nervi are currently constructing. But Nervi and his colleagues are mainly concerned with spans of the order of two or three hundred feet, it not more, whereas, except in the most unusual circumstances (such as the new subterranean basilica at Lourdes), churches rarely need larger spans than St. Peter's, Rome. As a result, if "contemporary" structural virtuosity is to be exploited aesthetically, it must be by imitation, and "significant form" then becomes formalism, which is of no real significance at all. Probably the only way today's church architects have any chance of emulating medieval feats of structural daring, without sacrificing their

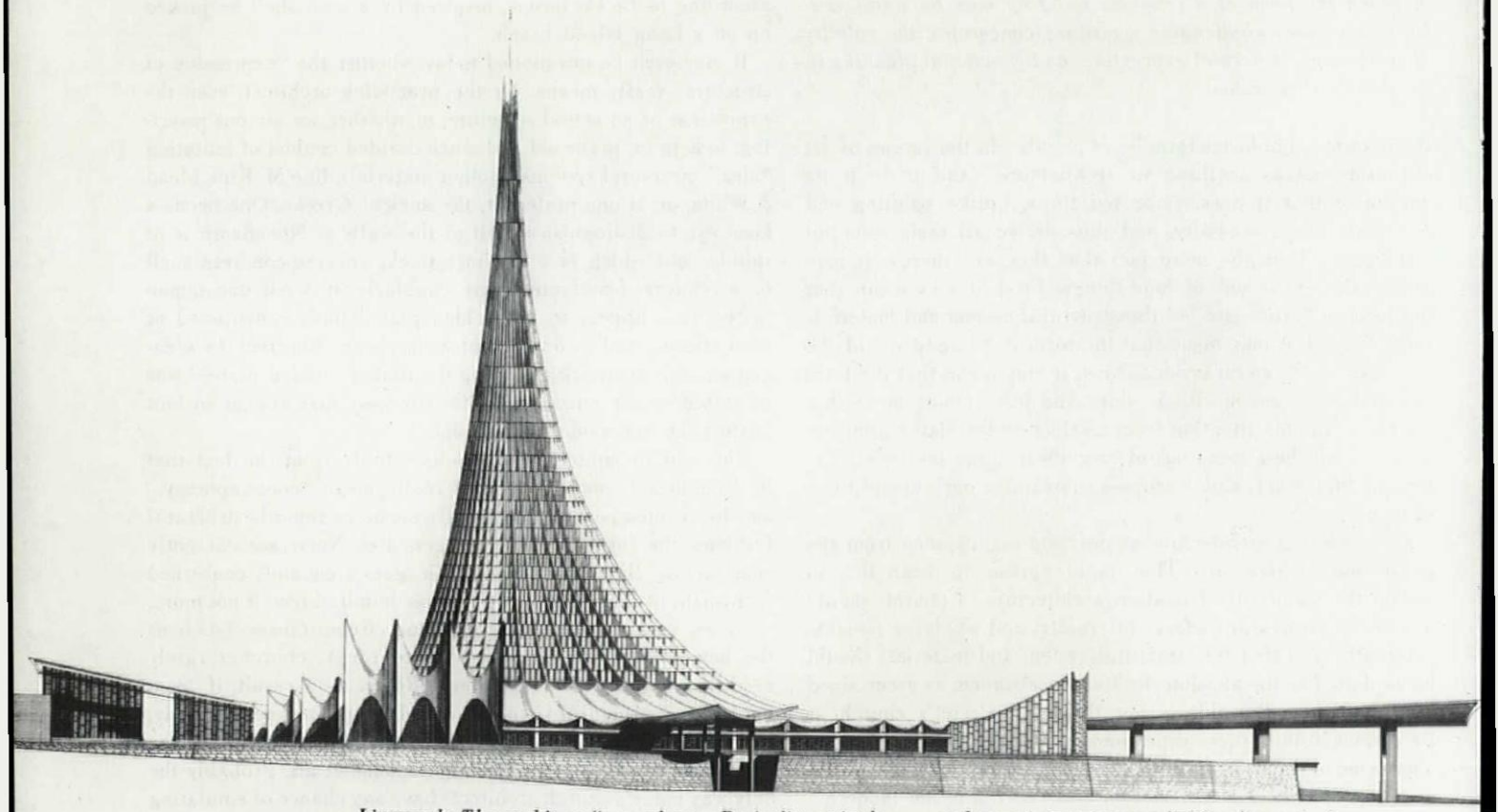


Le Raincy: "... drenched in historicism."

legitimate desire to do something genuinely contemporary, is by using medieval materials in new ways, as by employing laminated wood. There is clearly no structural virtuosity displayed in the roof at Ronchamp, even though Le Corbusier wrote that "the dear faithful concrete was shaped perhaps with temerity but certainly with courage"; for as Nervi has pointed out, the essence of tectonic virtuosity is correctness and economy. Genuine contemporary architecture not only uses every technological advantage appropriate to the circumstances, but excludes both wasteful structural systems and systems more appropriate to structures of greater span. The concrete roof at Ronchamp is certainly daring, but so is the show at the Folies Bergère.

The second way by which churches can have "significant form" is when their exterior compositions suggest the ceremonies which go on inside. This type of expression, unlike the last, probably had little meaning for medieval architects (who even seem to have been relatively indifferent toward the artistic unity of their church exteriors, as compared with the interior spaces), but it is still very much part of the philosophy of modern design. Some theorists, such as Sir John Summerson, have even gone so far as to suggest that the expression of new planning arrangements is the very essence of modern architecture, and that the revolutionary changes which have occurred in architecture since 1920 derive essentially from the changes which have occurred in modern planning needs.

The dilemma which this philosophy presents to the contemporary church architect is twofold. Firstly, since no structural partitions are needed in churches, and their planning



Liverpool: The architect "can adopt a Revivalist attitude . . . and revert to a more primitive form of plan . . .

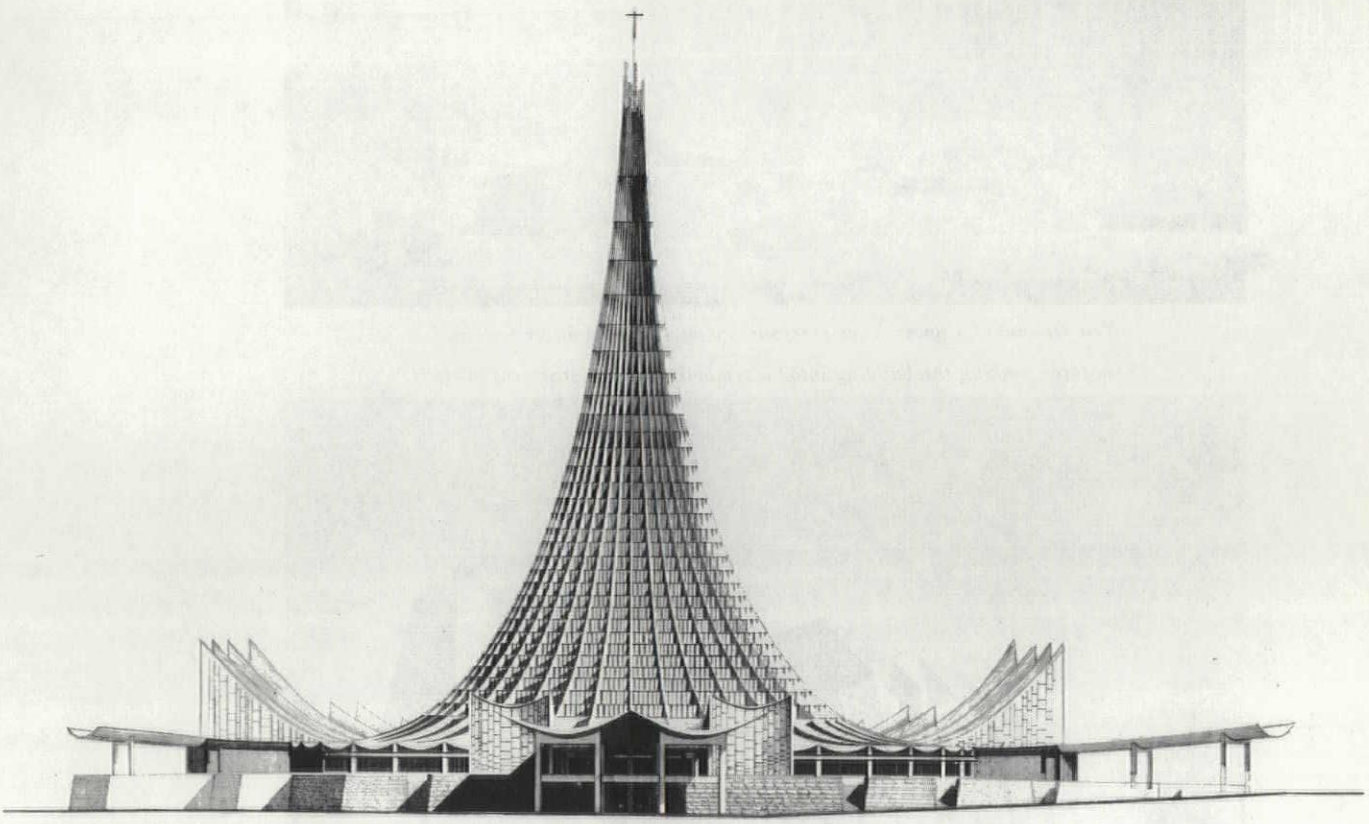
requirements are imprecise, it is impossible to draw up any program which will give an unequivocal lead as to the volumes and proportions needed. A number of textbooks have been written, of course, that explain the various regulations laid down by Canon Law, but these concern more properly what is called "church furniture," and have little decisive influence on tectonic compositions. The second aspect of the dilemma is that the function of a church is essentially traditional, whereas the "functionalist" theory is only valid on the assumption that the planning requirements of all buildings have radically changed within recent years. How then can a church avoid being "drenched in historicism," or be unequivocally modern, when nave and chancel, altar and congregation, have been in the same relative position for fourteen centuries, and the ceremonies performed there are, from the very nature of religious dogmas, always the same?

The architect who wishes not only to be contemporary, but to demonstrate that he is a member-in-good-standing of the avant-garde, has two choices. Either he can make arbitrary changes in the traditional arrangement, by deliberately disposing the congregation and altar asymmetrically, or placing both in positions and spaces they have never, for good, practical reasons, occupied before. Or he can adopt a Revivalist attitude comparable to that in vogue in the early 19th Century, and revert to a more primitive form of plan.

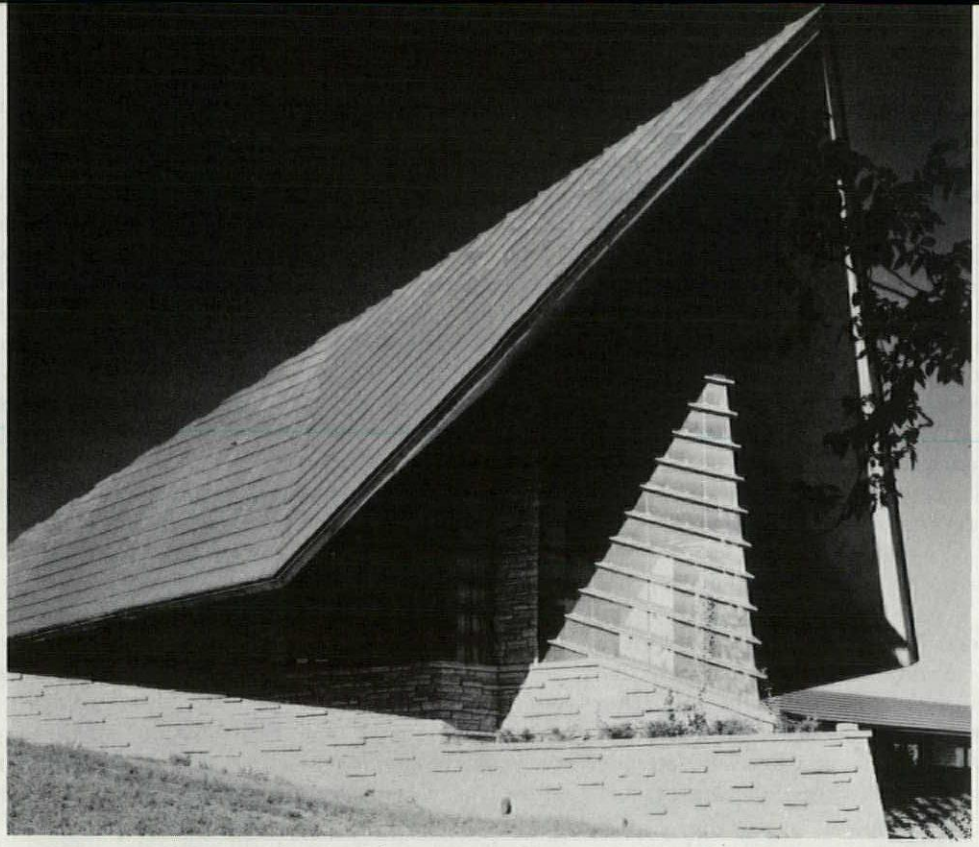
This latter approach is the one most usually adopted because it is supported by many priests and laymen who believe in a return to a more primitive liturgical arrangement so as to integrate public worship more fully into the mystical life of the Church. Architecturally, it is quite valid, and in several instances (among the most notable being the recent competition for Liverpool Cathedral), has provided the opportunity for some novel compositions. It does not, however, solve the problem of how to create "significant form" for congregations that still prefer a way of worship they are accustomed to, and which is in fact "contemporary" in the strict, evolutionary sense of the term.

A third sense in which the forms of church architecture can become "significant" is by symbolically expressing some spiritual value. Symbolism is obviously an important feature in religious painting and sculpture; indeed, according to Susanne Langer, symbolism is the key to all philosophy and all the arts. Moreover, since the iconological researches of Erwin Panofsky have brought to light so many examples of symbolism hitherto unrecorded in art history, it may be thought that Mrs. Langer's theory is fully substantiated, and that symbolism is a key to architecture as well. Yet nothing could be further from the truth, for it is a fatal mistake to copy the Renaissance error of treating painting, sculpture, and architecture as interchangeable disciplines with common values, or to assume that one can evolve a universal and all-inclusive "theory of art."

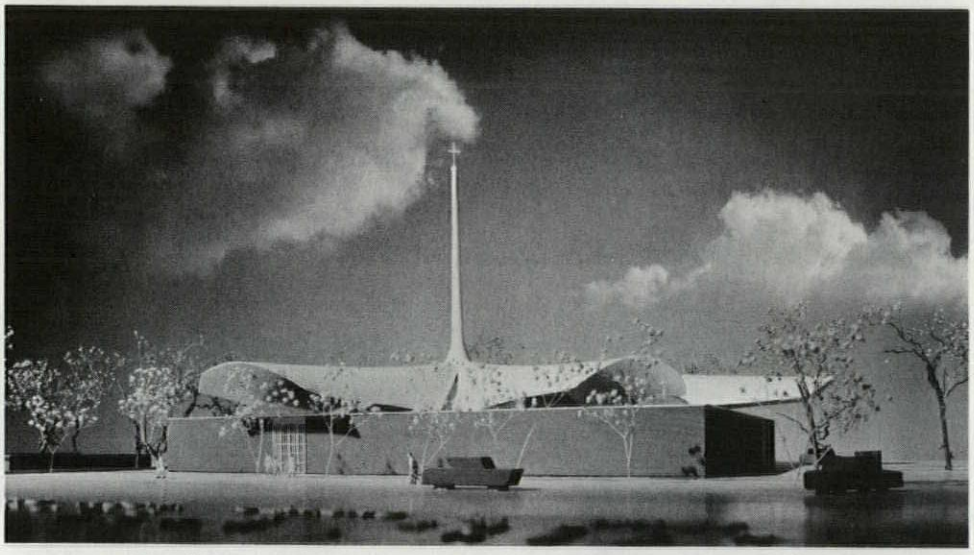
Symbolic compositions have no valid architectural significance for the simple reason that they are meaningless in terms of the phenomenological appreciation of space. Symbolic plans are of course of very great antiquity, although the most obvious (namely the cruciform plan) was only used in the larger medieval churches, and probably originated, not in places of worship, but in sepulchral chapels, such as the tomb of Galla Placidia at Ravenna, or the Church of the Holy Apostles in



. . . This approach . . . is quite valid . . . and has provided the opportunity for some novel compositions."

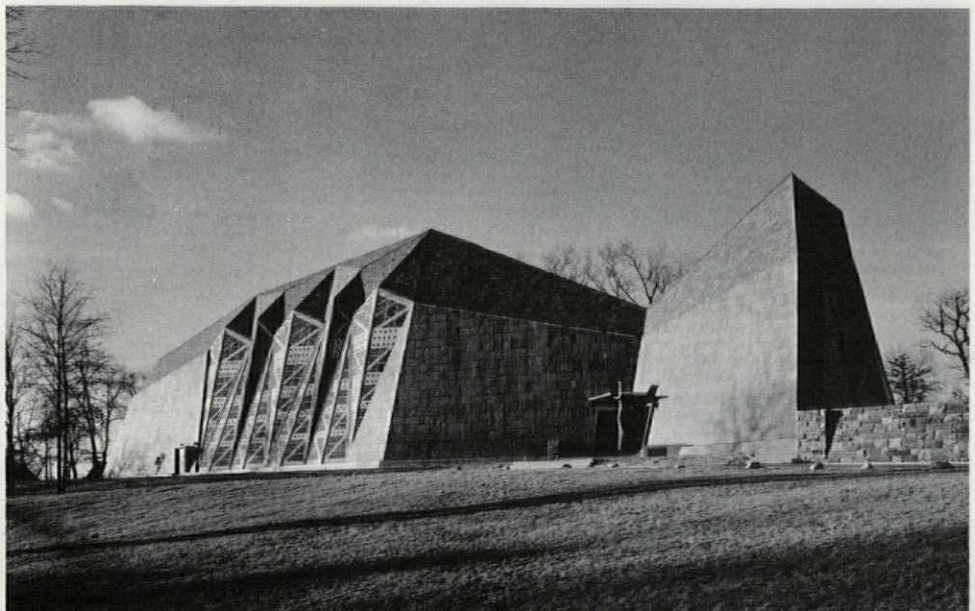


Madison: a church roof may express "the attitude of hands in prayer."



New Orleans: "a tower . . . as everyone knows, 'points a finger to God.'"

Stamford: making the building into "a symbolic abstract ornament in itself."



Constantinople (on which St. Mark's, Venice, was based). Symbolic planning was popular in advanced intellectual circles during the Renaissance, when Platonic philosophers and amateur theorists like Alberti fostered the adoption of "ideal shapes," such as circles and spheres, irrespective of the function the buildings were to serve. But the real popularity of such plans occurred after the introduction of *Prix de Rome* competitions, when even the most obtuse members of a jury could savor the significance of a symbolic design. McGill University recently acquired—as a curiosity—a drawing for "A Temple for the Holy Trinity," which is almost certainly a student project for the French Academy school's design program of January 1783, and in which three porches are arranged equilaterally around a central rotunda in the most approved Boulléesque manner. Two years ago, one of the thesis designs submitted at McGill was for a star-shaped synagogue planned on the basis of a "shield of David." *Plus ça change, plus c'est la même chose.*

Symbolic detailing, like cruciform planning, is also of very great antiquity, but less of a tradition than might be supposed. During the initial era of persecution, it was not uncommon for Christians to adorn the subterranean quarries, in which they secretly worshipped, with crudely drawn pictorial symbols; but once church architecture began to flourish, isolated symbols vanished, and in no period before our own would it have been thought an act of creative genius simply to scrawl "Mary" on a sheet of glass. During the Middle Ages, and after the Renaissance, symbolic ornament was rare, if by this term we exclude wall-painting, statuary, and colored glass. In the Gothic period, detailing consisted either of moldings or (in very lavish churches) carved enrichments of more or less conventionalized natural forms. In the post-Renaissance period, symbolic ornament was rarely feasible except when using the Doric Order (i.e., on the metopes), and this was seldom employed because of the difficulty of achieving an orderly arrangement of triglyphs when turning corners, or when using double columns. The one symbol most sedulously avoided by the architects of all periods before 1800 was the cross, which was considered both too sacred and too obvious to be proliferated over the surfaces of walls. Today, the cross is the only decorative motif which architects ever adopt (probably because it can be drawn with a tee-square) and is, as they say, a "must" in patterned brickwork or precast concrete screens. The most valid reproach one can make concerning Notre Dame du Raincy is that instead of emulating the sophisticated abstractions of medieval tracery, Perret followed Early Christian precedents by incorporating cruciform elements in his *claustra,* and even made cruciform assemblages of these elements within the over-all pattern of his translucent walls.

The only symbolic alternative to detailing is to make the composition of the building into some sort of a symbolic abstract ornament in itself. "Abstract Art," wrote Le Corbusier, "which rightly nourishes so many passions in these days, is the *raison d'être* of Ronchamp, the language of architecture, the compass needle pointing to that space which is beyond written description." Such a justification is intellectually unchallengeable, for as Paul Rudolph pointed out: "The important thing about Ronchamp is that it speaks to many kinds of people, as a chapel should." In other words, it says everything to everybody, and anything to anybody, and as one character said to Alice in Wonderland, ". . . means exactly what I want it to mean, neither more nor less." A church roof may express, as Frank Lloyd Wright said of one of his last churches, "the attitude of the hands in prayer"; and if an architect cannot think of a symbolic roof-shape, he can always introduce a tower, which, as everyone knows, "points a finger to God." The Toronto City Hall points two fingers to God.

My own view as regards all this is that if the term "significant form" means anything at all in contemporary architecture, it means that the forms "invite attention from a select and initiated group of people," namely the editors of architectural magazines. In this sense, "significant form" for architects means the same thing as "style" for the readers of *The Motorist* or *Vogue:* an arbitrary shape designed by a professional stylist as the accepted image of how a thing ought to look next year. "Significant form" in house design corresponds to what the real-estate salesman calls "The House of the Future," just as "significant form" in dress design means simply "next year's dress." There is no doubt that one has to be a genius to be able to forecast what next year's dresses will look like; but everybody knows what next year's chasubles or copes will look like, because the shapes have remained virtually unchanged for a millennium.

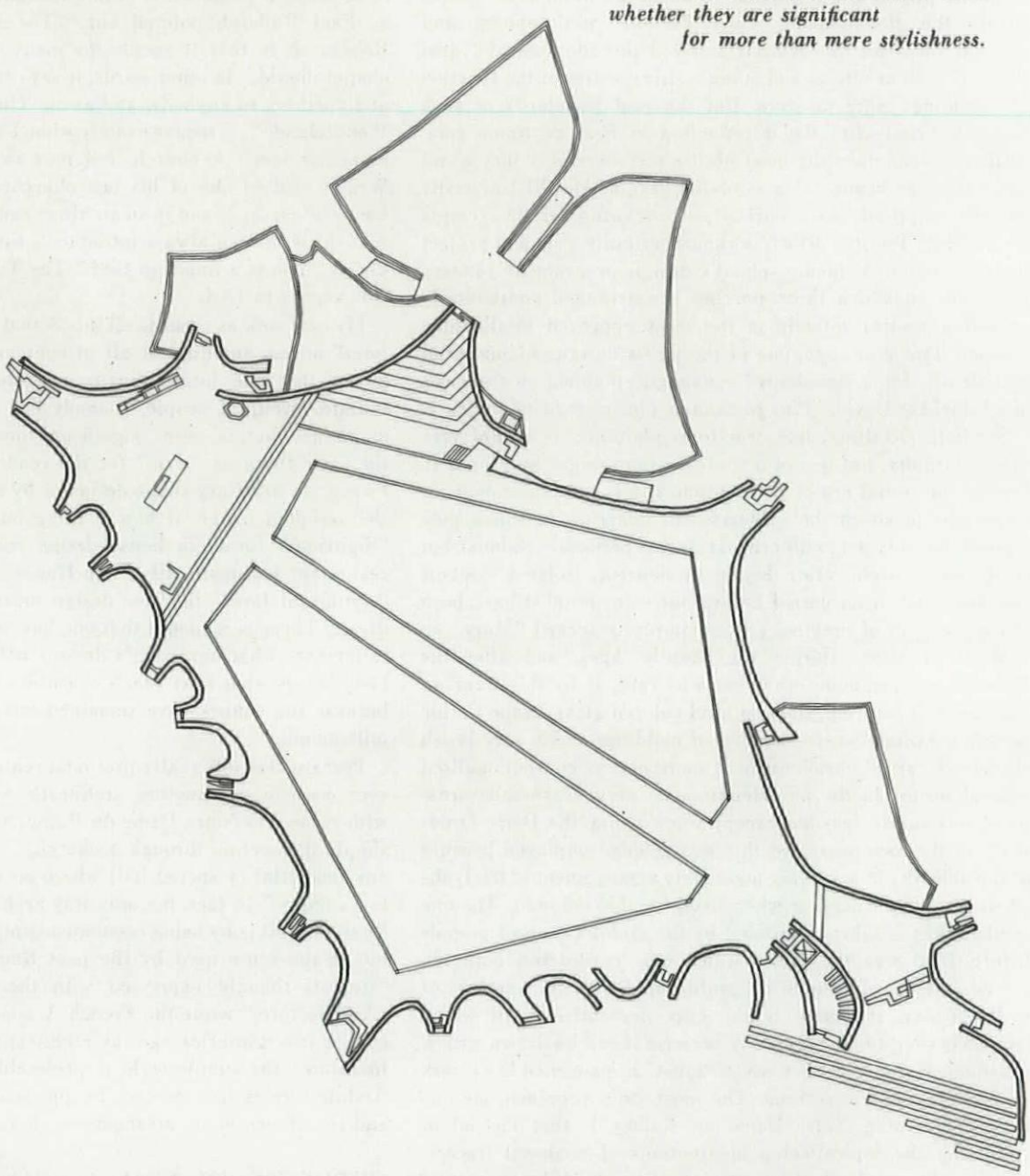
Perhaps the only really profound remark which Le Corbusier ever made about another architect's work was his comment with respect to Notre Dame du Raincy that the section was not simply the section through a church, "but the section through any industrial or sacred hall where economy has been pushed to its limits." In fact, the only way architectural form can ever be significant is by being economical; not in the sense of cheap, but in the sense used by the poet Racine when he said that "style is thought expressed with the minimum of words." "Architecture," wrote the French Academy Professor of Architecture two centuries ago, as architecture was dying, "is like literature: the simple style is preferable to an inflated style. Architecture is like poetry: by the beauty of its proportions, and the choice of its arrangement, it is sufficient unto itself."

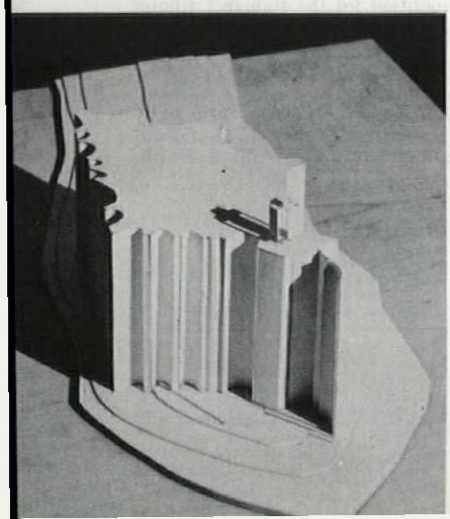
CREDITS *Page 108:* Steeple, Grace Church, New York, James Renwick, Architect (Photo: Robert Pastner); *Page 110:* Church of Notre Dame, Le Raincy, France, Auguste Perret, Architect (Photo: Yves Guillemaut); Entry in the competition for the Roman Catholic Cathedral, Liverpool, England, by Clive Entwistle (not the winning design); *Page 113:* Meeting House of the First Unitarian Society of Madison, Wisconsin, Frank Lloyd Wright, Architect (Photo: Ezra Stoller); St. Frances Cabrini Roman Catholic Church, New Orleans, Louisiana, under construction, Curtis & Davis, Architects (Photo of model: Frank Lotz Miller); First Presbyterian Church, Stamford, Connecticut, Harrison & Abramovitz and Sherwood, Mills & Smith, Architects (Photo: Joseph Molitor).

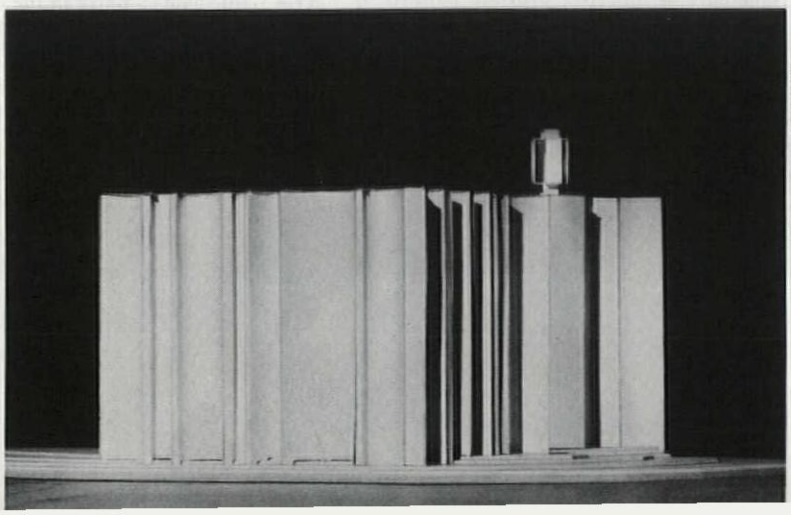
Three Significant Examples

In the foregoing discussion, Peter Collins has concluded that architectural form is significant if it "invites the attention" of the editors of architectural journals.

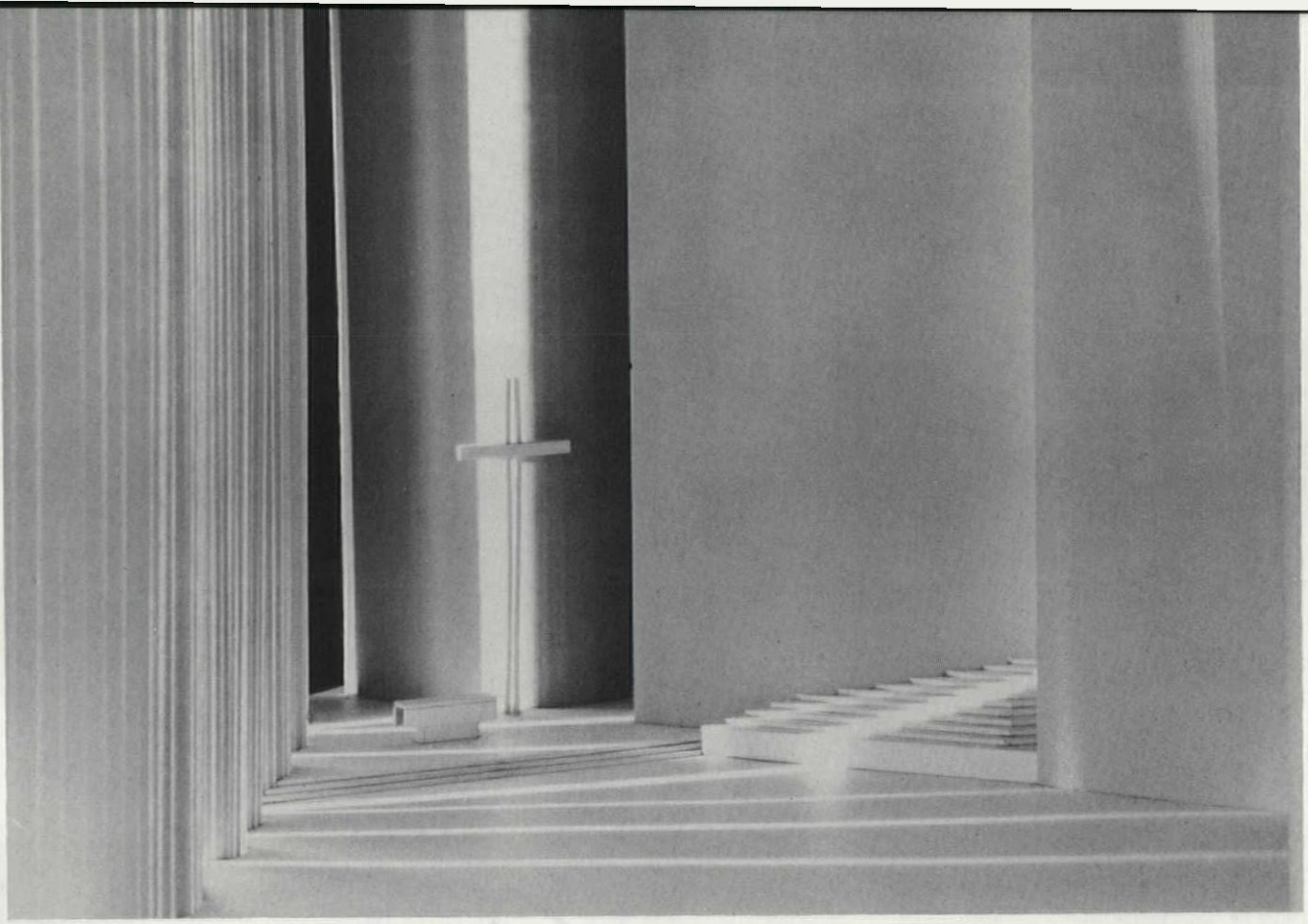
We present here a few projects that invited—and held—our attention; we leave it to the reader to decide whether they are significant for more than mere stylishness.







Photos of model: Pertti Ingervo



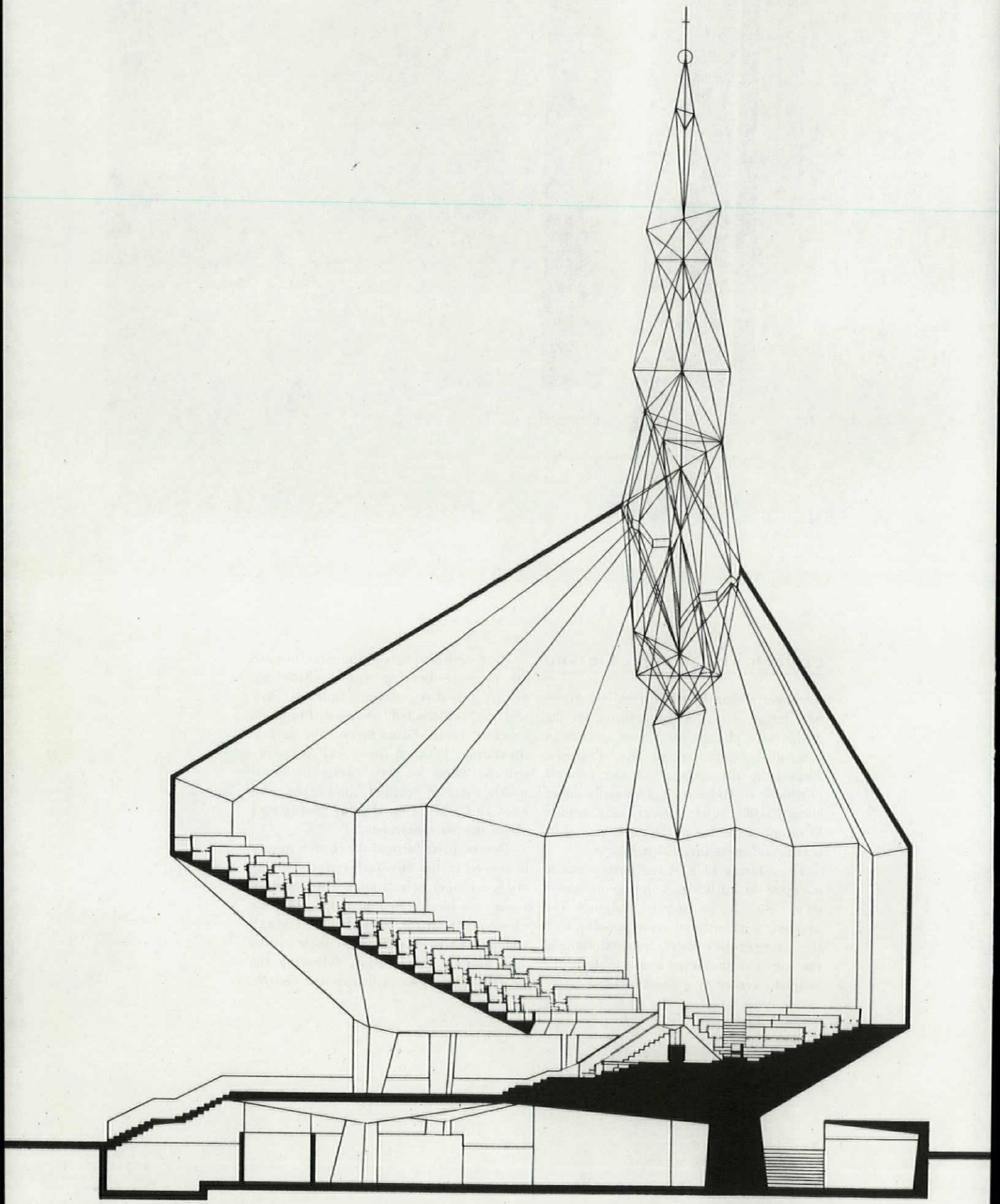
Church at Tampere, Finland

Architect Reima Pietila's novel yet dignified design won the competition for the design of a church for a new quarter of Finland's second largest city. Tampere, located in the interior of the country northwest of Helsinki, has a population of about 120,000; it has been growing steadily in recent years due to the expansion of its textile and metallurgical industries.

The guiding idea of the design was to conceive the building as an organic whole, as one conceives a piece of sculpture. The architect concentrated on expressing both the nature of the construction material and the spiritual character appropriate to the religious center of a neighborhood.

The major elements of the structure are the concrete bearing walls, which are divided into short, curving segments. They will be constructed of poured-in-place concrete, using sliding forms. The narrow separations between these wall segments will be filled in with compositions of wood, concrete, copper, and glass. An open belfry is set on the flat copper roof above the main entrance.

The irregular form of the church proper is echoed in the auxiliary spaces. A sacristy, a chapel, schoolrooms, and meeting rooms are housed in low-roofed elements clustered about the base of the 70-ft-high concrete walls. The floors of these rooms vary slightly in elevation, following the gentle slopes downward from the church.



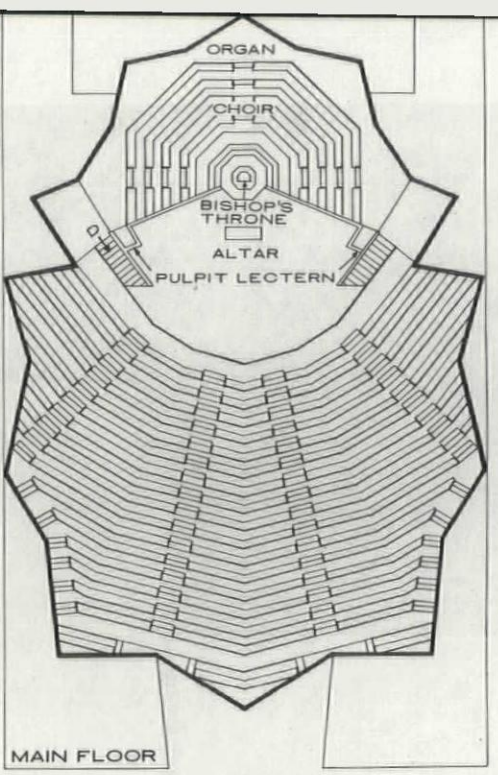
Protestant Episcopal Cathedral at Monrovia, Liberia

Architects Arthur Swift and Partners of London drew their inspiration for this design from a statement by American engineer Mario Salvadori, which characterizes the ideal church as "a jewel which represents the integration of feelings, of form, of structure, of all that makes for a complete expression of religious feelings in the materials of architecture."

A strong practical factor in determining the form of the building was the limited size of the downtown site—82 ft x 132 ft. To meet the program requirements, the architects planned space for the congregation on two levels: a tiered seating area for the 800 people expected at ordinary services and an area below it to accommodate 200 more on special occasions. The location of the altar between the two levels of seating, at the geometrical focus of the plan, tends to create a feeling of unity in the space.

The entrance from the main street will be by a flight of stairs passing over a reflecting pool. The lower level, reached by stairs from the secondary street, contains a chapel, a baptistry, classrooms, and rooms for the clergy.

The cathedral will be constructed of poured-in-place reinforced concrete and will be surfaced with mosaic tile on the exterior and continuous bas-reliefs on the interior. The spire, which will extend up from the peak of the building and down inside to a point above the altar, will be constructed of metal with an infilling of colored glass. It will provide the primary source of light for the interior.



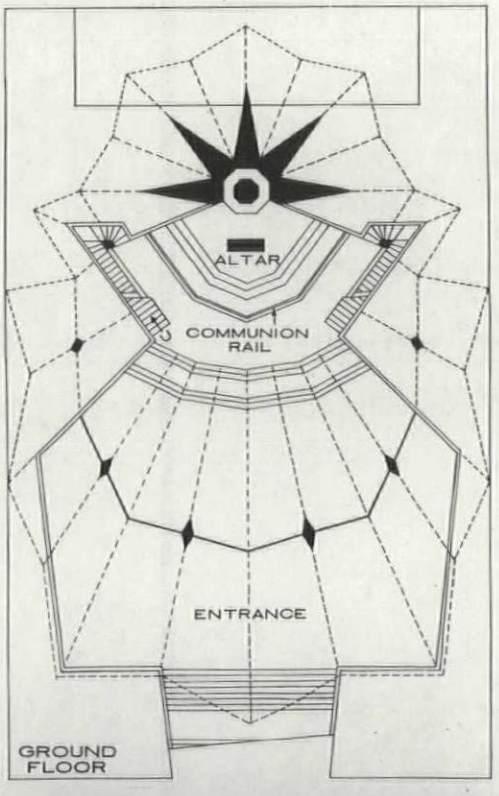
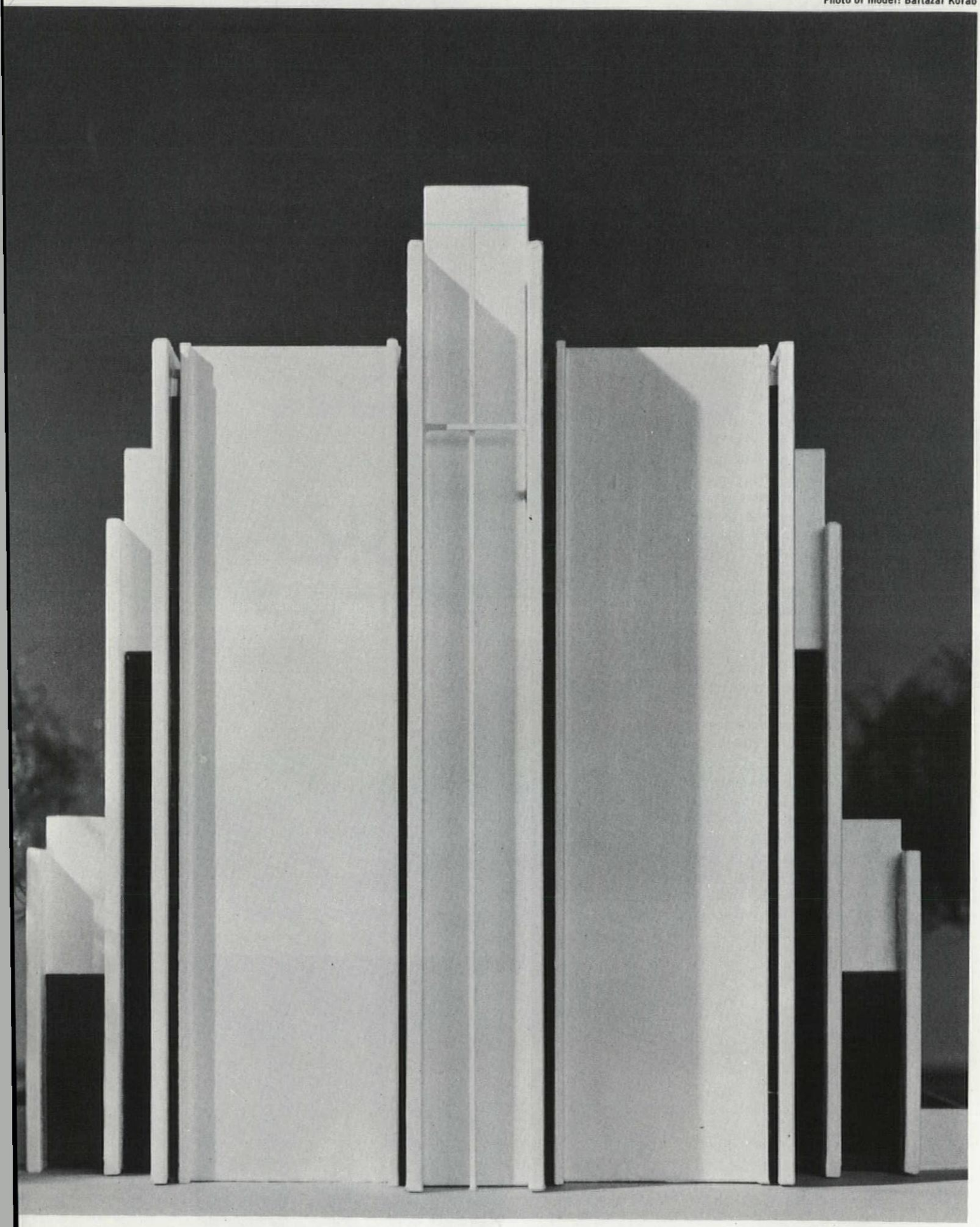
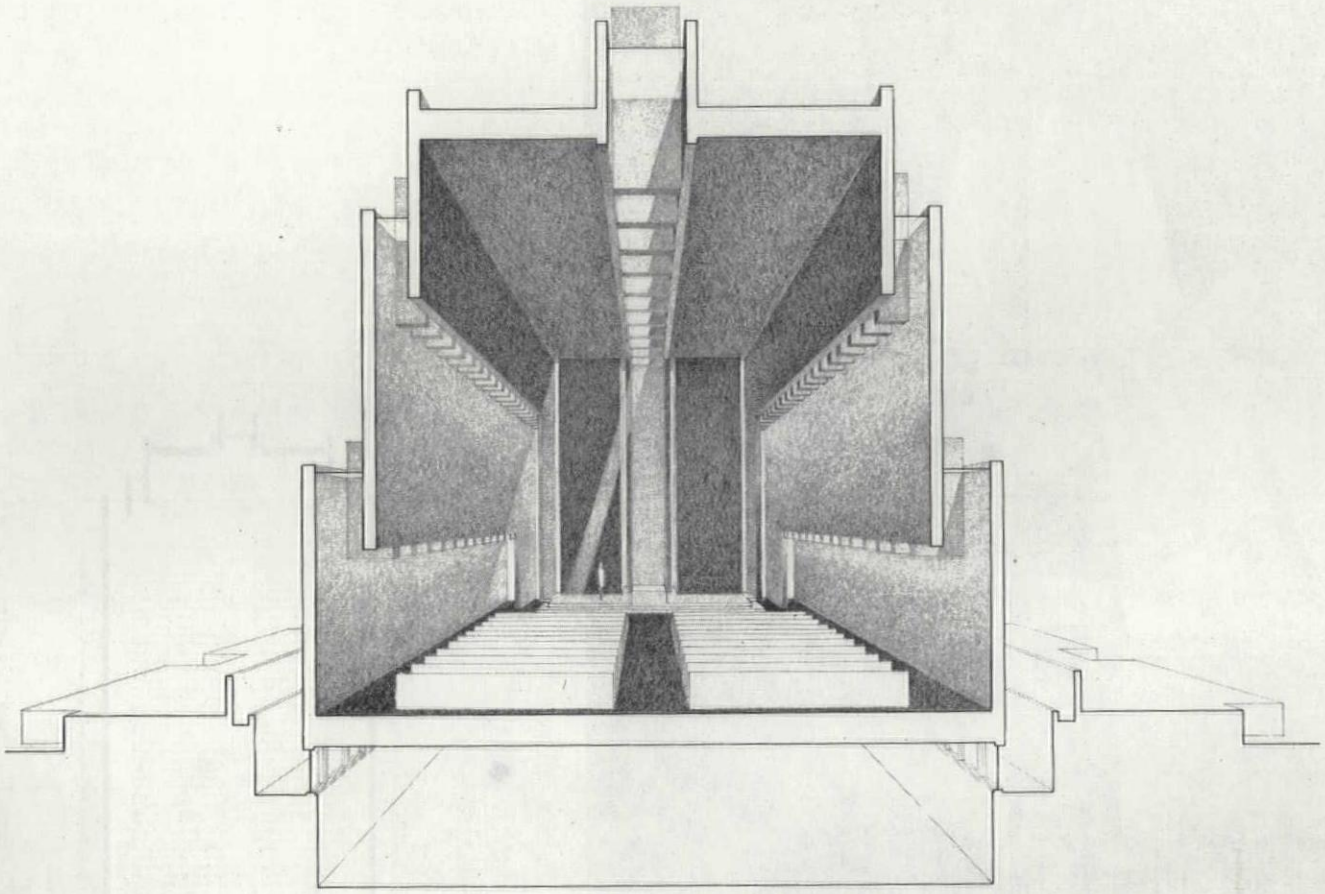


Photo of model: John McCann

Photo of model: Baltazar Korab





University Reformed Church at Ann Arbor, Michigan

For a location on the periphery of the University of Michigan campus, Birkerts & Straub have designed a church of classical serenity. The site runs through a block occupied mainly by large university buildings, one end facing toward the center of the campus and the other adjoining a residential neighborhood; major streets run along both ends.

The entire plan will be symmetrical about the axis of a street leading to the church from the university. The tall form of the church proper will be located at the head of this street and the lower Sunday school wings will occupy the other end of the site.

Those who approach from the campus will walk around the body of the church to an entrance foyer located between the two main sections of the building. Those who come from the nearby residential area or from parking areas at that end of the site will reach the entrance through a court extending along the main axis between the two wings of the Sunday school.

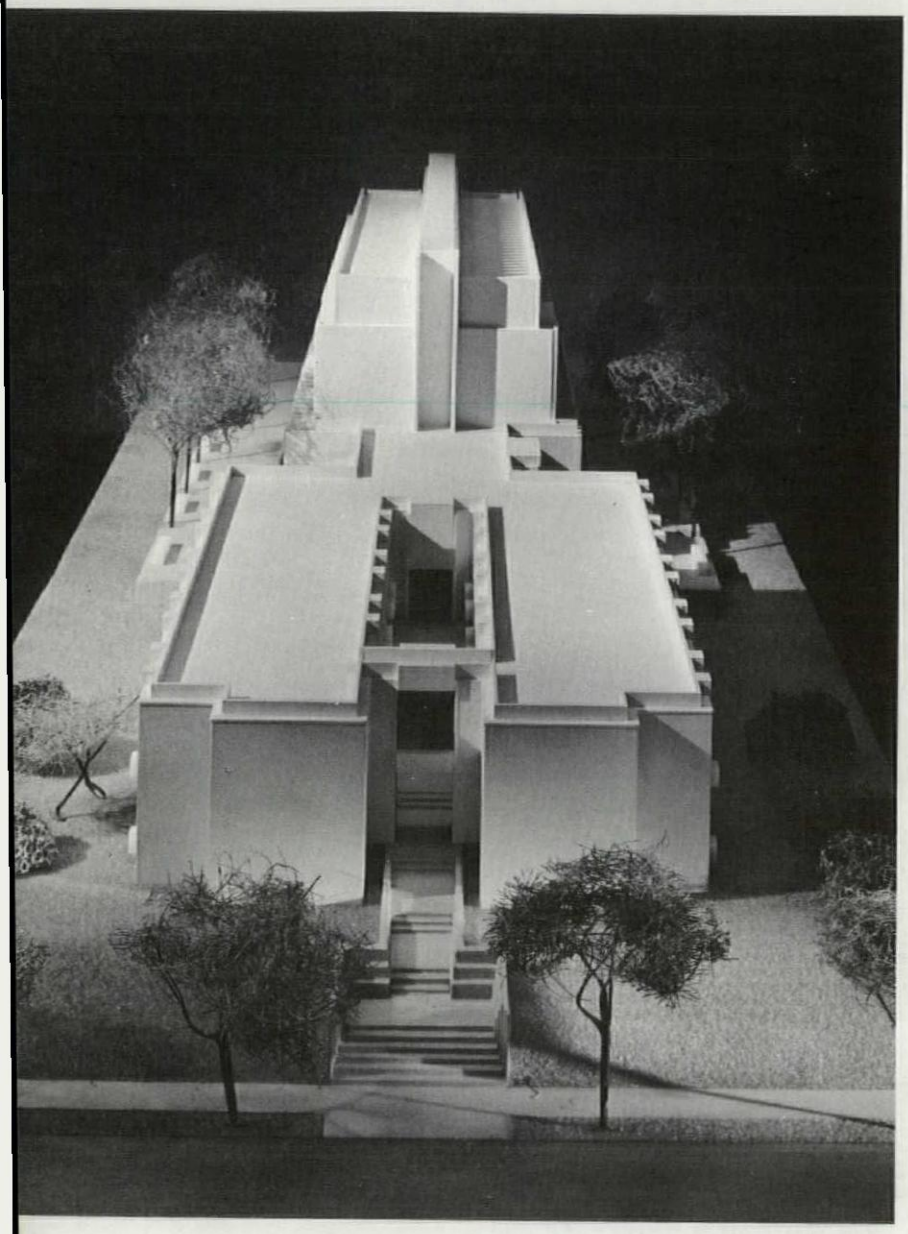
The program required church seating for 500 worshipers, a social hall, and 16 rooms for classes and meetings. Since a large part of these facilities were required for university students, who contribute relatively little financially, the church had to be economical to build and suitable for construction in stages.

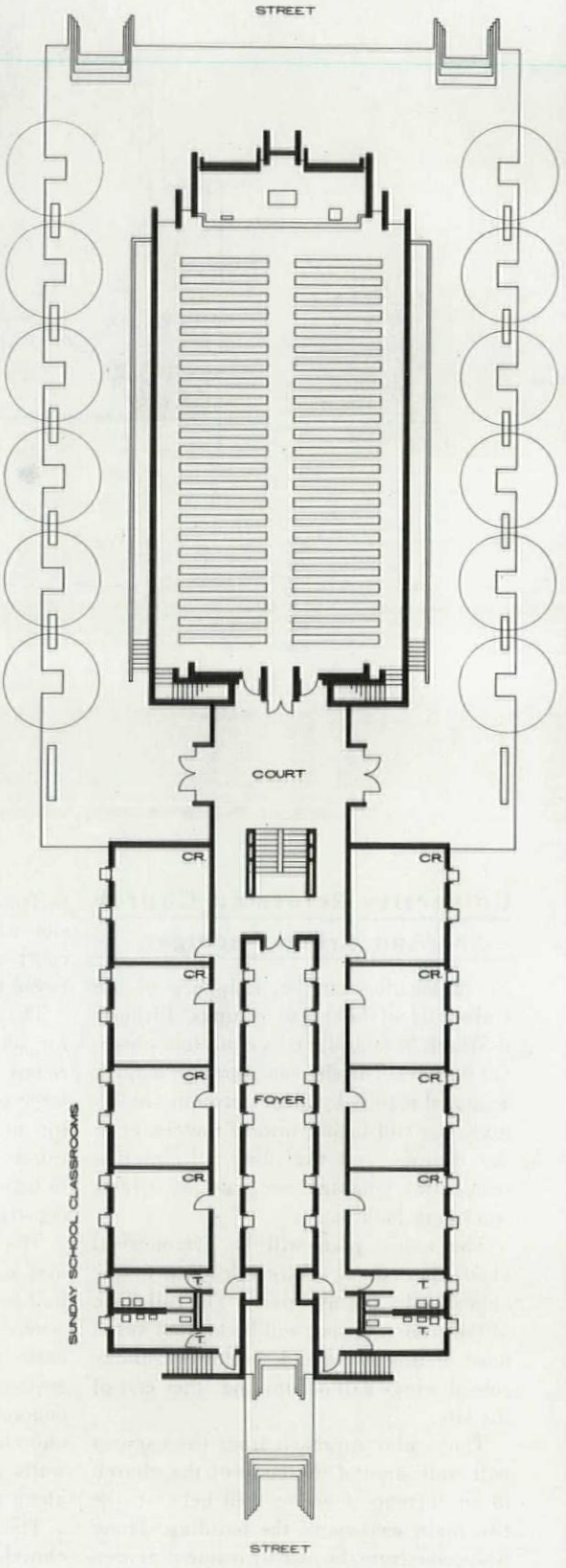
The church proper will be built in the first stage of development, with the social hall beneath it used temporarily for classrooms. This block will be constructed entirely of poured-in-place concrete. The structure will be supported by a series of concrete bents running the length of the church, rising in steps from the bearing walls along either side to a high point along the central axis.

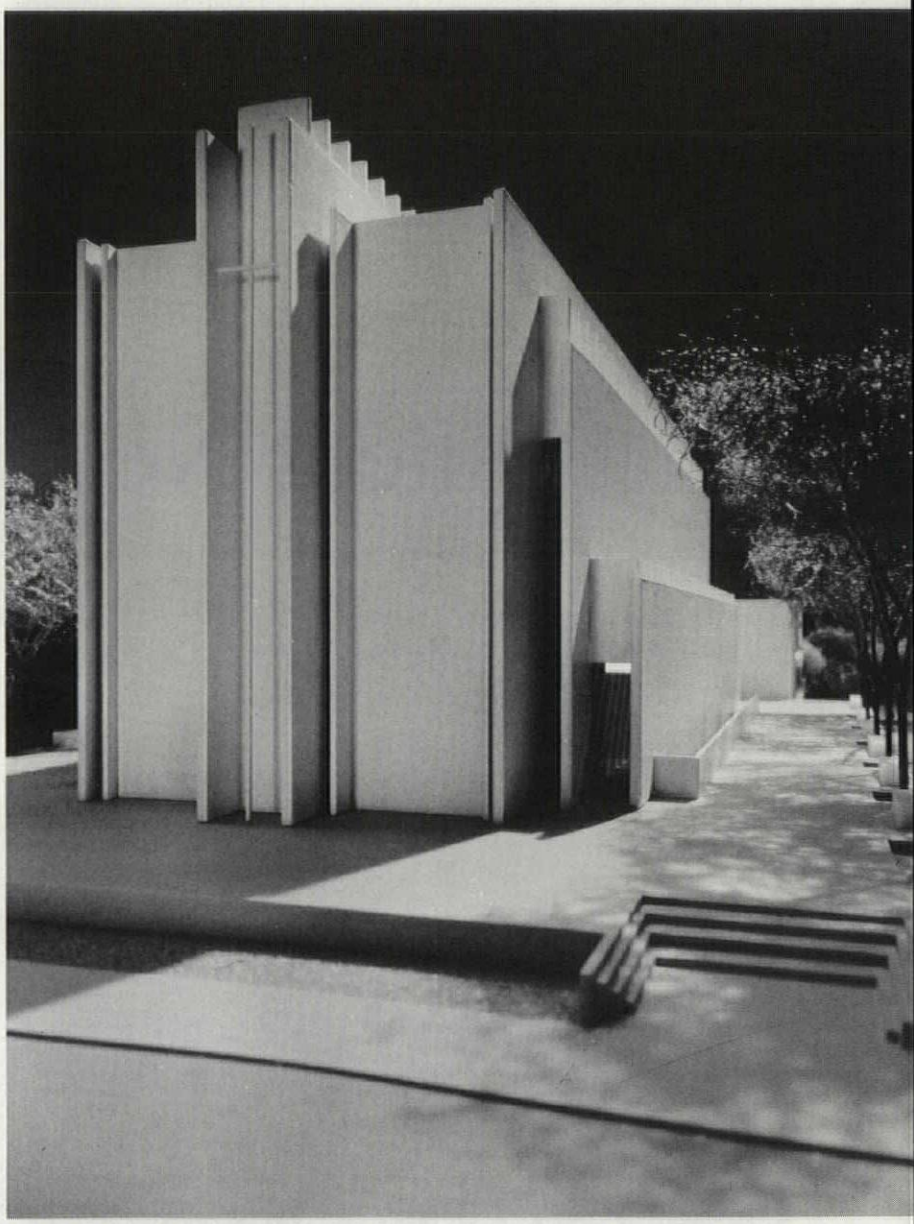
The sections of these bents spanning the church are exceptionally deep and narrow. Concrete fins between them will act as stiffeners to prevent horizontal deflection. The entire system will actually function organically as a structural honeycomb.

There will be no windows in the church except for thin vertical openings, filled with colored glass, in the front wall. (The wider openings at the corners are for required fire-exits.) Skylights between the fins will be composed of a plastic enclosure on the outside and decorative glass on the underside. Artificial lighting will be located between these two planes. The exterior will have an exposed concrete surface with controlled aggregate; the interior will be of whitewashed concrete.

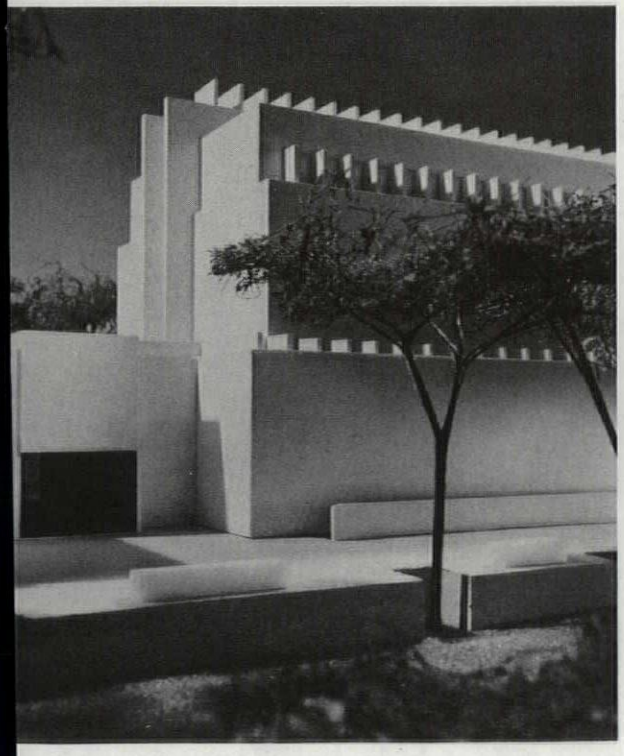
The Sunday school will include two floors, similar in layout. It will have bearing walls of concrete block. The exterior will be faced with brick, with contrasting precast concrete fascia and window trim that will recall the forms of the concrete fins on the church proper. The interior will be of exposed brick and concrete block.



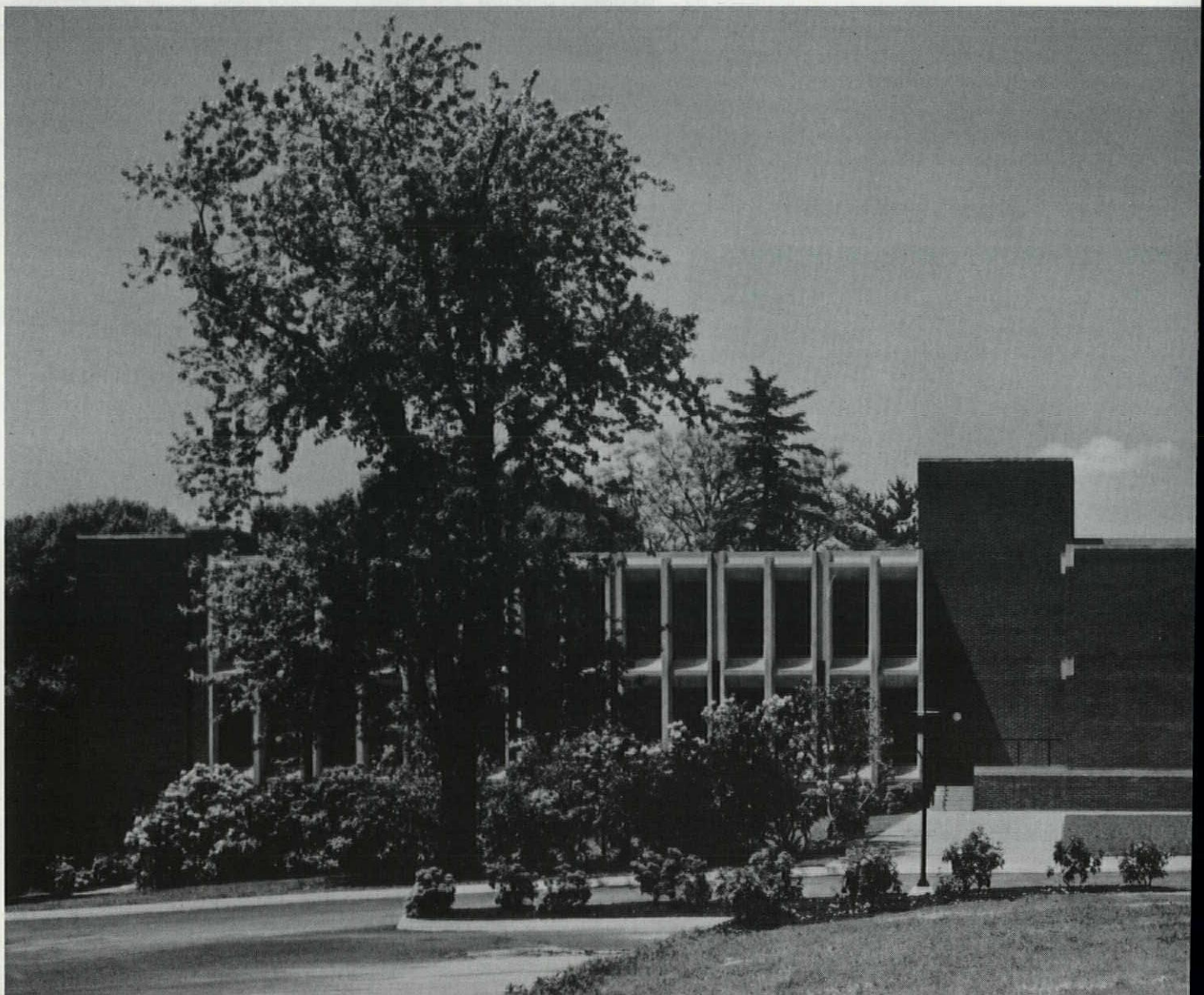

STREET
COURT
CR.
CR.
CR.
CR.
CR.
CR.
CR.
CR.
FOYER
SUNDAY SCHOOL CLASSROOMS
T.
T.
T.
T.
STREET



There are entrances from major streets at both ends of the church. Approaching from the town, one enters through an axial court between the wings of the Sunday school (photo on facing page); *coming from the university, one faces the tall back wall of the sanctuary* (right), *then follows shaded walks to the entrance doors* (below).



Offices Near Philadelphia



AMERICAN CENTER FOR INSURANCE EDUCATION • BRYN MAWR, PENNSYLVANIA • MITCHELL & GIURGOLA ASSOCIATES, ARCHITECT • SCHULCZ & PADLASKY, STRUCTURAL ENGINEERS • FRED S. DUBIN ASSOCIATES, MECHANICAL ENGINEERS

The designers of this building hope that its "appearance and substance stem from the observance of the order of the building's operation, from the architectural identity of the component parts expressed also in their hierachy, and from the appropriate employment of precast-concrete technology."

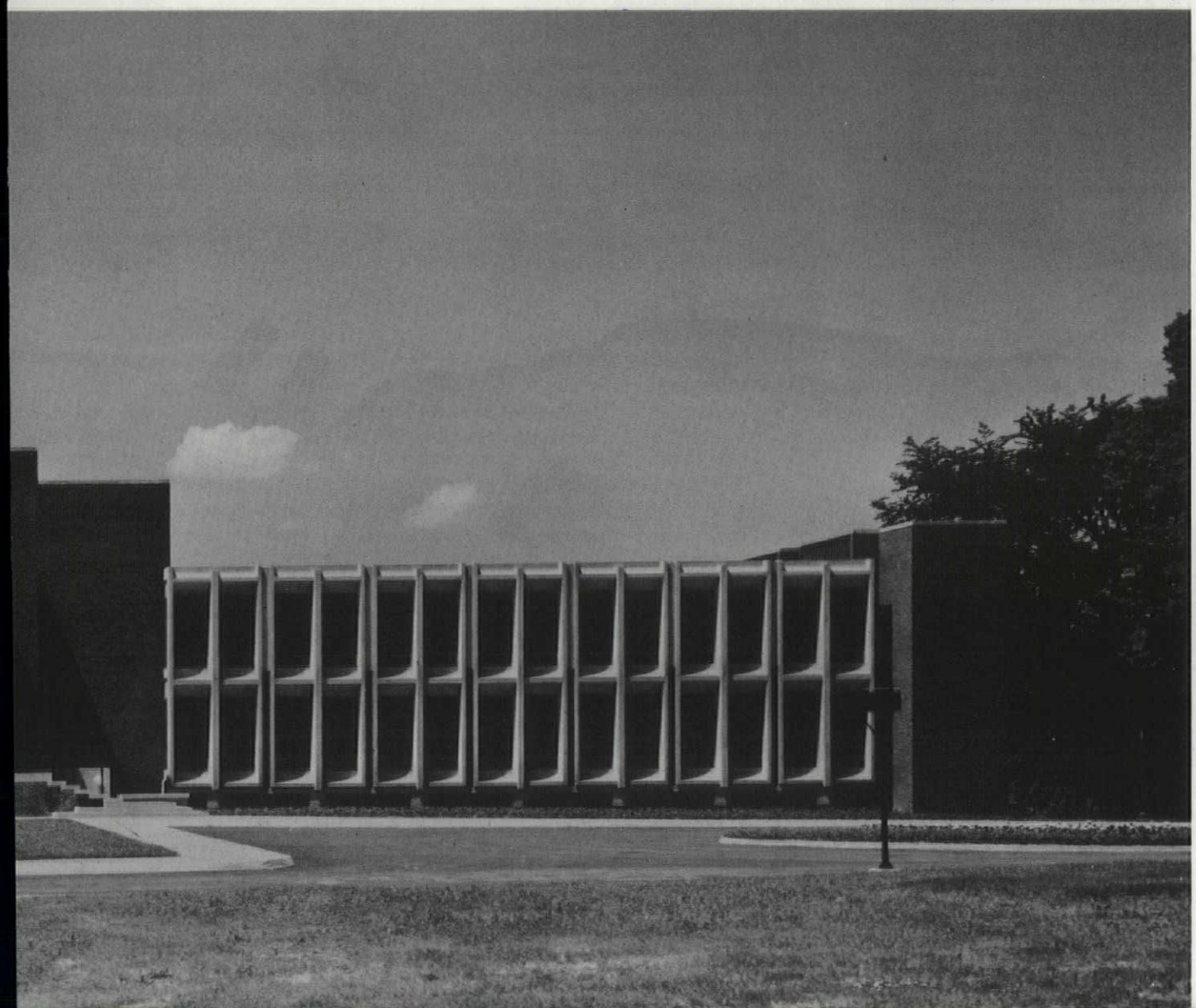
The building houses offices of several organizations, whose function is to administer, promote, and regulate educational programs and professional societies of the life and casualty insurance industry. The four floors of the two-story wings were apportioned among the different organizations. The wings are terminated by service spaces and stair towers, around which future expansion can take place. The center core contains spaces that are used jointly, and serves as both a link and a separator between the organizations.

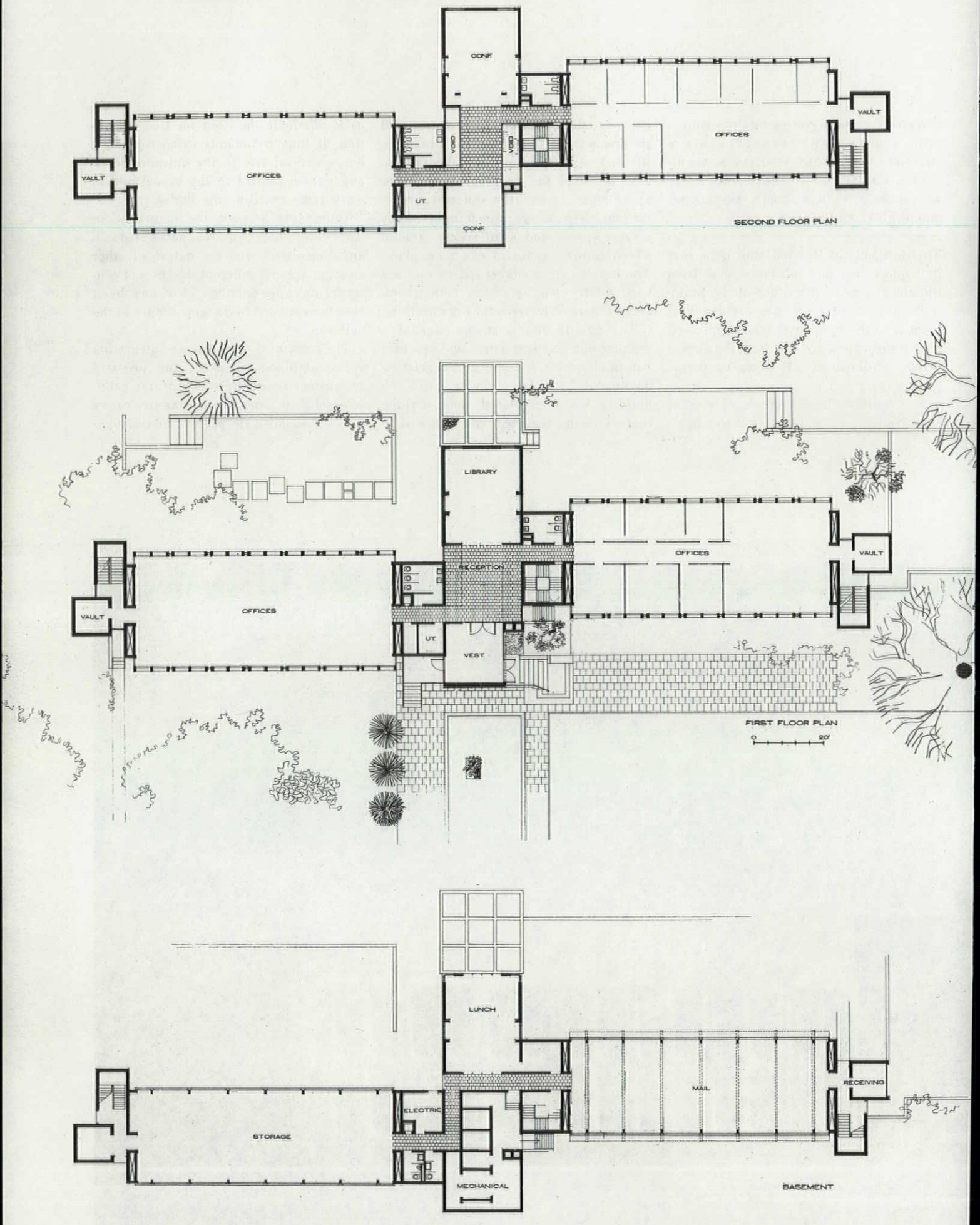
The 10-acre site is at the edge of a high-income residential area and is suburban in character. It boasts rich vegetation dominated by a large linden tree. The building has been placed along a ridge that dominates the site, and positioned so as to eliminate the need for tree demolition. It thus commands extensive views, has a natural rise to the entrance level, and is also related to the topographical mark represented by the linden tree.

Differences between the nature of an office area, which requires spaces of standard dimensions, and the nature of other areas, suggested different design and construction approaches. This has been clearly expressed in the appearance of the building.

The structural system is an integration of cast-in-place-, precast-, and precast/pretensioned-concrete components; cellular-steel floor panels; and masonry cavity walls. A small-scale process of construc-

Photos, except as noted: Alexandre Georges



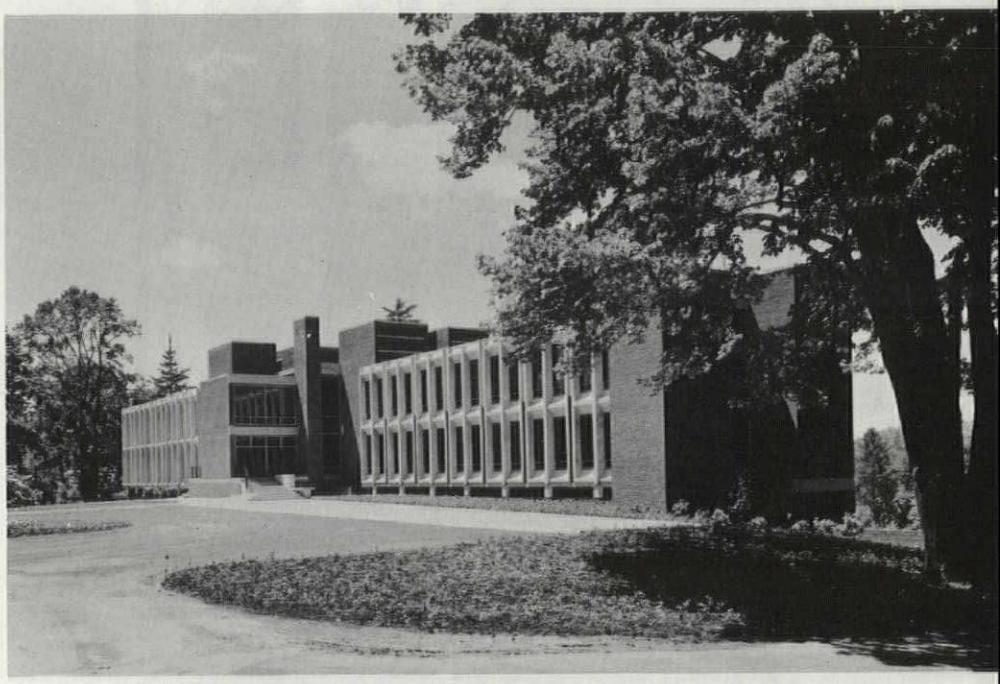

CONF.
VAULT
OFFICES
VOID
VOID
OFFICES
VAULT
UT.
CONF.
SECOND FLOOR PLAN
LIBRARY
OFFICES
VAULT
OFFICES
VAULT
RECEPTION
UT.
VEST.
FIRST FLOOR PLAN
0
20'
LUNCH
STORAGE
ELECTRIC
MAIL
RECEIVING
MECHANICAL
BASEMENT

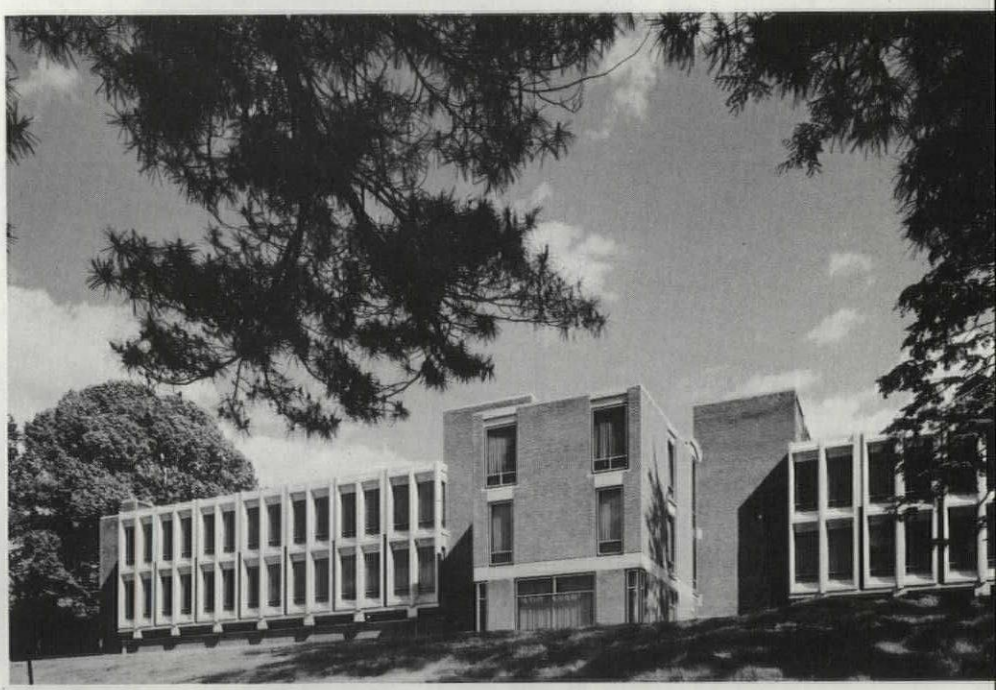
tion was used for the core elements and for the end towers, where manual fitting operations were required; there, concrete floor slabs bear on brick-masonry cavity walls. Office areas, on the other hand, which are column-free loft spaces, have walls of precast-concrete structural units which also serve as window frames. These were designed to provide rigidity with a minimum of weight for ease of forming, transportation, and erection. Continuity was achieved by poured-concrete filler and dowels extending between the upper halves of the 10′ x 25′ framing units. To insure proper weathering, flat surfaces were avoided. In addition to carrying precast-pretensioned floor beams, the unit frames contain gray glass held in place by metal channels sealed with a polysulphide compound.

Second floor and roof construction in office wings is cellular-steel decking placed longitudinally. This structural system was chosen because it could easily be integrated with the heating and air conditioning and also offered advantages in terms of erection, trade use, and maintenance. Further, due to their loftlike character, the office areas were appropriate for an industrialized-type construction resulting in the achievement of an architectural character through expression of the basic members of construction.

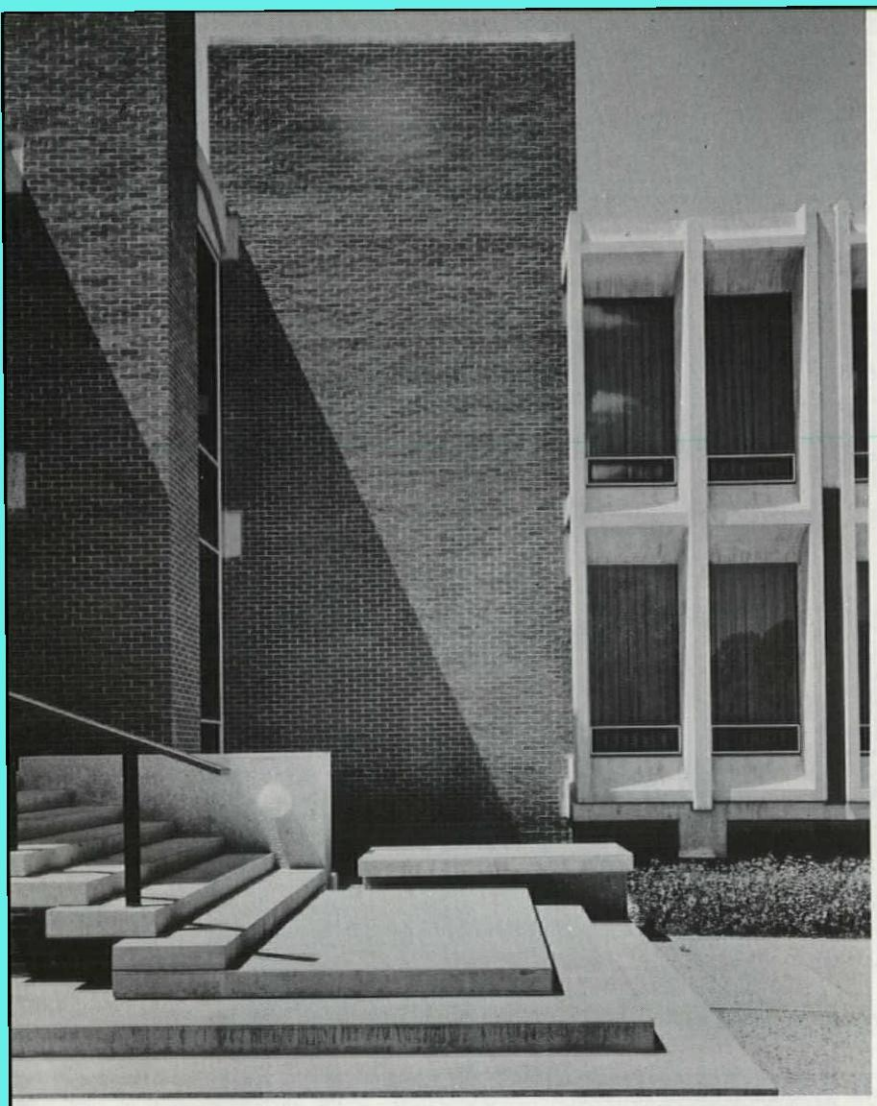
Although there were no departures from standard erection procedures, the complementary practices produced a balanced timing of the differing processes of construction. Most of the materials used were traditional ones, but were applied in accordance with advanced technology. Precast structural/window units have hard-smooth surfaces made possible by the use of steel forms and intense vibration of the mix. Majority of exposed cast-in-place, reinforced-concrete elements on both the exterior and the interior, including bottoms of floor slabs, have bush-hammered surfaces which weather evenly and reveal the aggregate character of the material.

The cellular panels of the second floor and roof, the hollow-insulated masonry columns on the outside of the structure, and the horizontal masonry chases running around the building, were basic building units which readily served as means of transporting air to various sections of the building. The cellular decking provides direct conveyance of air without need of

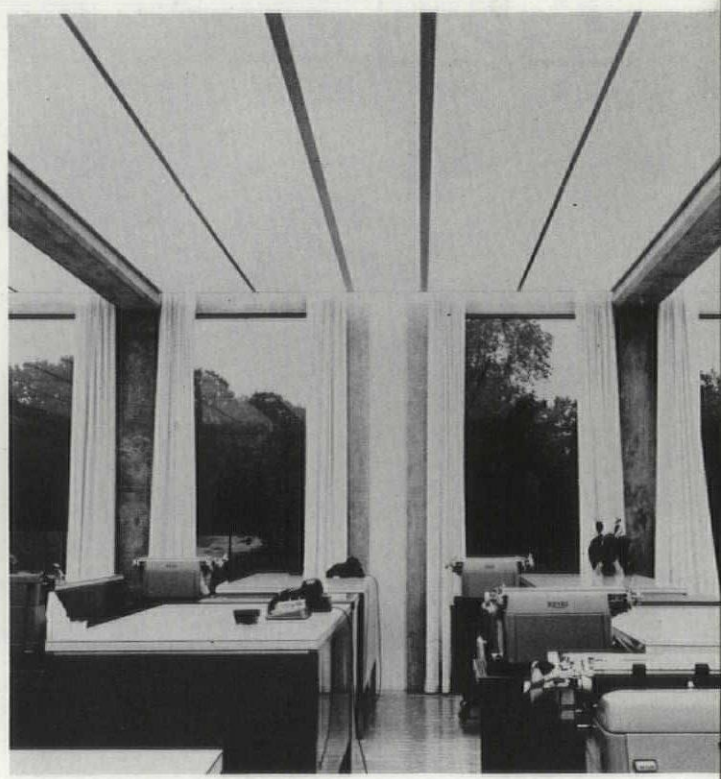




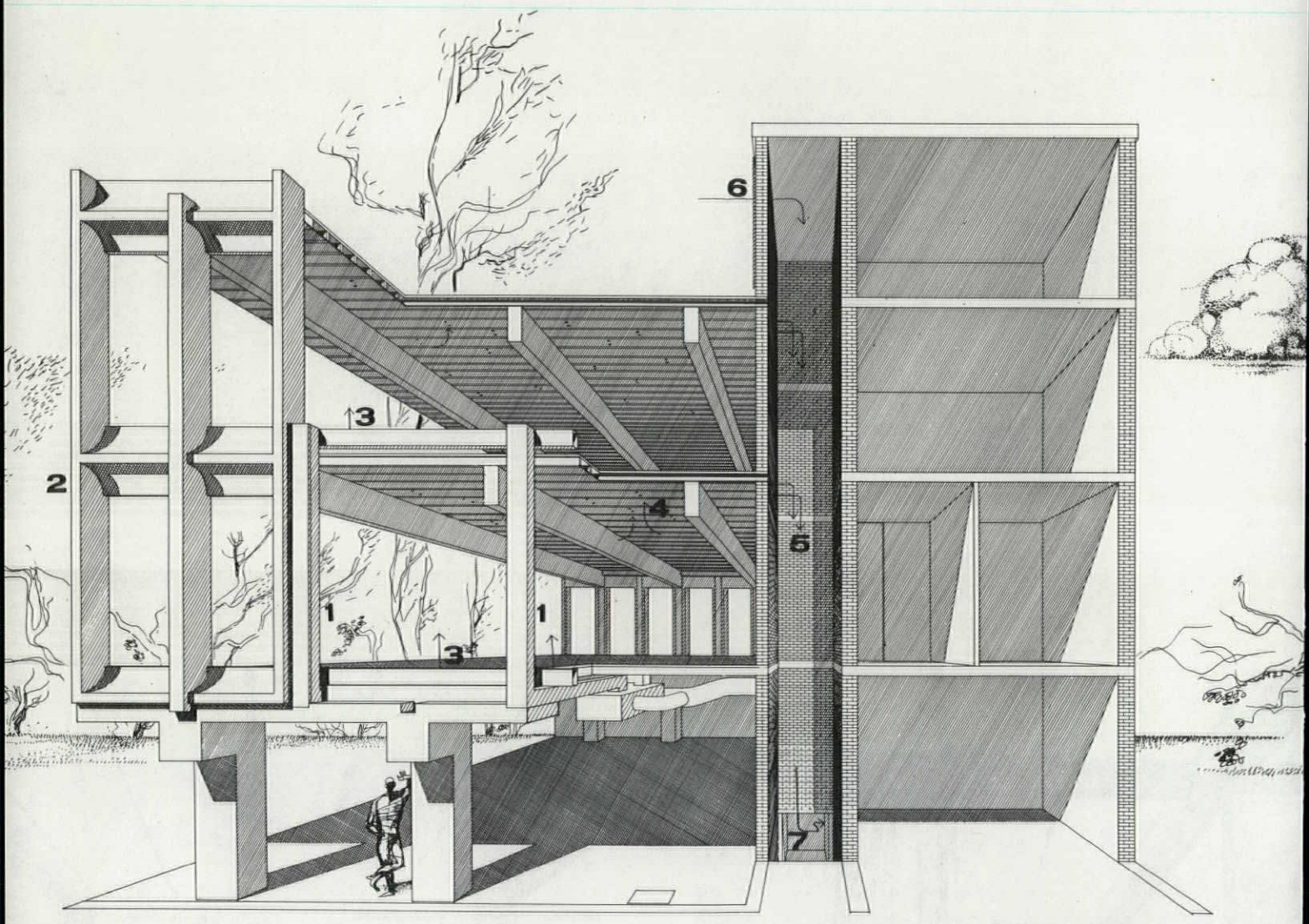
Both views, front (above) *and rear* (below), *show compositional balance of all elements.*



The several construction systems employed have been expressed on both the exterior and the interior. Views of the main entrance (left) *and reception area* (below) *show load-bearing cavity walls of dark red brick and bush-hammering of most areas of cast-in-place concrete components. Precast-concrete wall panels of the office wings* (left *and* facing page) *were cast in metal forms and have a smooth finish. Acoustically treated luminous ceilings and movable metal partitions with acoustical fillers are used in the offices. Window glass is tinted solar gray. Metal window mullions are painted gray, charcoal gray, and blue. Exterior metal cover plates for the vertical air ducts are also painted blue.*



Photos this page: Giurgola



1 *Air-distribution vertical duct*
2 *Precast-concrete unit 10' x 25'*
3 *Air-distribution horizontal duct*
4 *Air return*
5 *Air-return shaft*
6 *Fresh-air intake*
7 *To air filters*

ductwork above the suspended ceiling. Ductwork is, however, installed in the masonry columns and chases. The advantage of using it in the latter is that both of these architectural/structural features are arranged on the modular scheme determined by the office layout. The location of air-supply outlets, in order to complement the flexibility of the modular scheme, should also be located on a similar modular pattern. Consequently, the fusion of these two concepts lends itself well to the delivery of supply air to rooms via these masonry chases.

To reduce the noise level produced by this high-velocity air system, the main supply-fan cooling chamber and heater chamber are located in the basement in a reinforced, insulated, concrete room. Major equipment consists of a direct gas-fired heater, a 76-ton direct expansion refrigeration unit, and an evaporative condenser located on the roof and concealed by an open-brick screen.

In the basement, the high-velocity hot- and cold-air ducts run exposed at the ceiling to blender boxes, also exposed in the ceiling. Separate blender boxes serve the various zones. Single ducts run from blender boxes through masonry columns and chases, and furnish air to rooms through induction-type floor diffusers. These air-to-air induction diffusers use the primary air supply to pull a predetermined percentage of ambient room air into the diffuser, to be mixed with the primary supply and introduced into the room at a desirable temperature and quantity. By using this type of diffuser, smaller quantities of high-temperature air (or cold air on the cooling cycle) are handled by the ductwork system; this results in smaller duct sizes and facilitates their integration with the architectural design.

A suspended louverall ceiling is used to light the main office areas; however, no ductwork runs above this ceiling. Return air rises through the louvers, picking up a large portion of the heat from the lights, and passes through openings in the cellular floor. It is then conveyed by the cellular floor to the masonry column shafts. A portion of the air in these shafts goes to the main return-air masonry trench under the basement floor, which brings the air back to the main circulating fan. Excess air is exhausted directly from the shafts at roof level. Fresh air is also brought in at roof level through one masonry shaft which conducts the air to the main supply fan in the basement.

The cost of the building was $21.20 per sq ft for a total bid of $579,568.

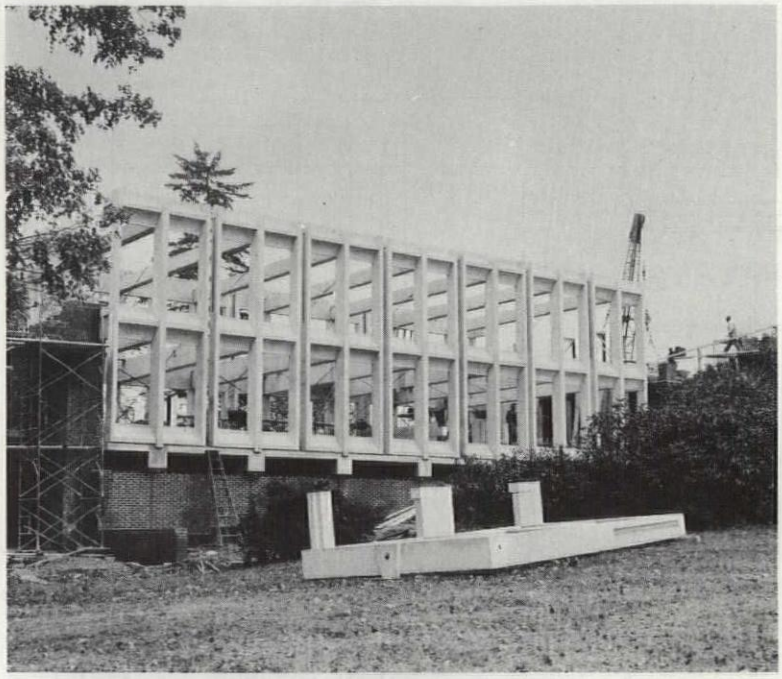


Photo: Photo Research

Ten-in. wide chase between precast-concrete framing units holds supply-air duct in lower half while upper half contains concrete filler for continuity.

Photo: Giurgola

AMERICAN CENTER FOR INSURANCE EDUCATION: Bryn Mawr, Pa. MITCHELL & GIURGOLA ASSOCIATES, Architect	SELECTED DETAIL WALL SECTION

NEW GERMAN TOWN

BY JAN C. ROWAN

Although much has been written about several "new towns," especially the post-war British satellite towns, there exists one "new town" that seems to have been ignored. In this article, P/A's Managing Editor reports on his recent visit to the West German town of Wolfsburg.

In the northern part of Germany, in the State of Lower Saxony, lies a rapidly growing manufacturing town called Wolfsburg. Its population today is 65,000. It has only one industry—a huge factory producing Volkswagen cars. It was founded 23 years ago, but most of the buildings were constructed within the last ten years. It is not an outgrowth of a larger town, but was built as a separate entity away from metropolitan areas. It is the only independent town planned and built in the 20th Century—and therefore the only truly "new town"—in West Germany.

The beginnings of the town can be traced to Adolf Hitler's craze for motorcars—one of his less harmful obsessions. In 1933, he commissioned Ferdinand Porsche, the automotive genius, to create the impossible—a "people's car" that would have a cruising speed of 60 mph (and thus be suitable for the new "Führer's motorways"), that would consume not more than one gallon of gasoline every 40 miles, that would seat four to five people ("for we cannot part children from their parents"), that would have an air-cooled system ("for not every country doctor owns a garage"), and that would cost not more than an average motorcycle. Impossible as the assignment was, Porsche submitted one year later a sketch of a car that in all essentials resembled the future Volkswagen. In spite of the industry's skepticism about the economic feasibility of the car, the project was pushed further by Porsche's dogged determination to achieve the impossible and by Hitler's equally dogged propaganda about a car in every German pot. In 1936, Porsche delivered the first prototypes. In 1937, Hitler gave orders to start planning a new car factory. It was to be financed by the German Labor Front, and the newly formed "Strength-through-Joy" automobile society began selling "saving coupons" to prospective purchasers.

Since Hitler's plans envisioned an ultimate production goal of 1,000,000 cars a year, both the size of the factory and the number of workers needed to produce the cars had to be considerable. In the congested industrial areas of Germany, there was not enough room for an enterprise that required some 15,000 acres of land for extensive manufacturing facilities

First master plan: 1938

Final master plan: 1956

and for living accommodations for thousands of workers and their families.

The site finally chosen was in Lower Saxony: a relatively sparsely populated, partly agricultural and partly wooded flatland, nearly 200 miles east of the iron and coal district of the Ruhr. Some 150 people living in a small hamlet, and a count living in an ancient castle named Wolfsburg, were the only residents in the area. There were within the site, however, an important canal, a railroad, and an existing network of roads; and a proposed "autobahn" was to run nearby. Moreover, the site was fairly centrally located within the prewar boundaries, just north of densely populated Central Germany, and there was a desire to industrialize this undeveloped northern hinterland.

Peter Koller, a young planner (30 years old at the time) who was chosen to design the new town, also defended the isolation of the site by pointing out that one can build a new town only where a town does not already exist and where no nearby town would interfere with its growth. Within a few months, he jelled the master plan. In May 1938, the foundations for the factory were laid and the new town began.

In 1940, the factory started production —but of military vehicles instead of "people's cars." In 1941, after only a small portion of Koller's plan was executed, construction of permanent buildings was stopped.

Thus at the end of World War II, the "new town" consisted of a bombed-out factory, a small area built in 1938–41, and a group of barracks erected for slave labor during the war. It also found itself eight miles from a new border between the two Germanys. Since none of the Allies were interested either in the ruined factory or in Porsche's automotive concept, the sudden popularity of the Volkswagen car and the tremendous growth of the company (today, production is fourth-largest in the world: over 1,000,000 cars a year) makes a fascinating success story. But the town itself is also of considerable interest, as it exhibits all the symptoms of both the planned and the unplanned city-scape.

Koller's 1938 master plan (facing page) was for a town of 90,000 inhabitants. The basic concept consisted of creating a fascist acropolis on the highest point in the landscape—a centrally located hill and thus a natural topographical mark. He proposed to build there the Nazi party buildings, a theater, a great hall, and a palace of culture. Terraces were to lead down to the parade grounds (a monumental street 300 feet wide) and to the town hall. Other major streets followed the contours in a U-shaped pattern and embraced the strength-through-joy acropolis. Built-up areas were to be developed in a conventional city-block pattern with uniform-height, similar-looking, neo-classic, brick structures forming street façades. A considerable amount of wooded land, however, was to be devoted to parks and recreation areas.

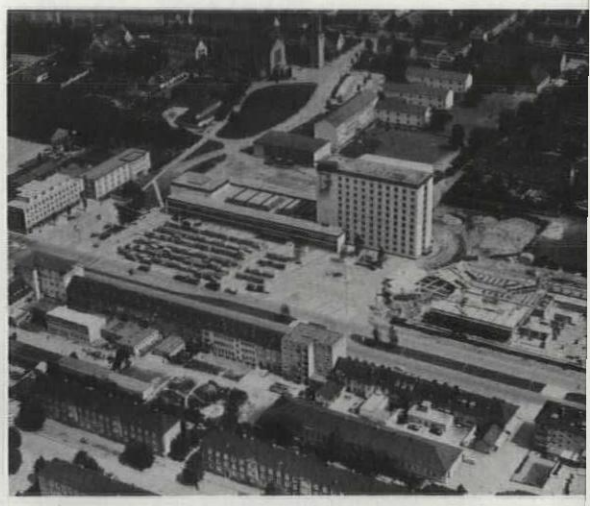
The 1938 plan was, therefore, a strange mixture of political and urban philosophies. It envisioned a barrack-like, classless, green city dominated by a monumental pseudocivic center. Although the town was to supply every German with a car, its major streets were designed more for viewing the party headquarters from every angle than for dense and fast auto traffic. Nor was the separation of traffic and pedestrians considered in the layout of both the major and minor streets.

The plan, however, did have a central idea. In spite of the inevitable visual conflict with the mile-long "Chinese wall" of the factory north of the canal-railroad lines, the group of major buildings on the crest would have served as a powerful fulcrum giving identity and cohesion to the urban ensemble.

The postwar decade (1945–55) was a period of uncertainty. The potential growth of the town, now named Wolfsburg, was underestimated, and the master plan was revised twice: first for a city of 35,000, then for a city of 65,000. In the meantime, the town grew faster than anticipated. It was during this period that much construction unrelated to any definite urban concept took place.

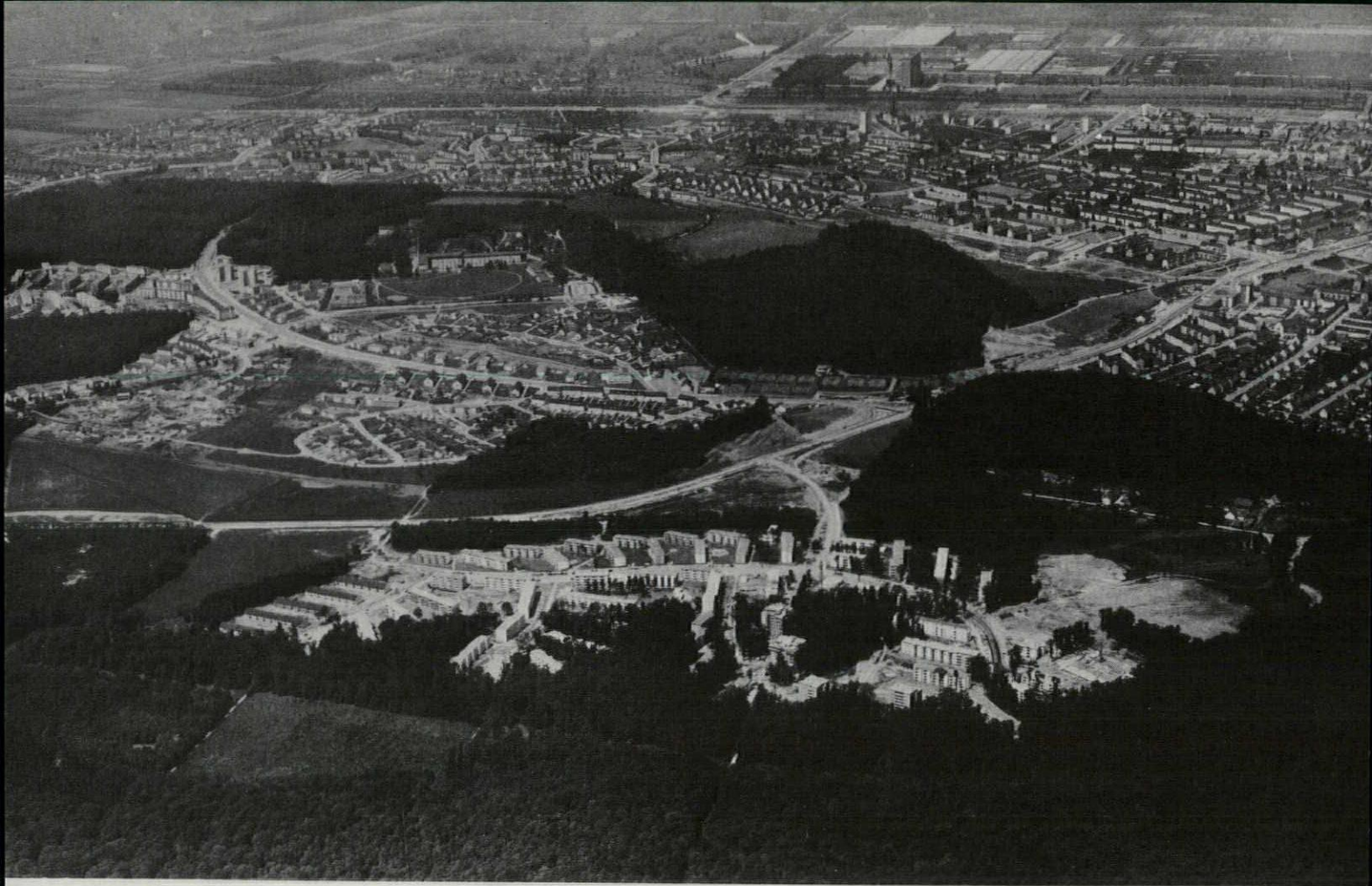
In 1955, Koller was called back and prepared the final master plan. Events somehow caught up with the original dimensional concept, and the final plan resembles the first one in the ultimate number of inhabitants considered as the ing population to this size, the existing maximum desirable, i.e., 90,000. By limitforest and the "green city" concept could be preserved. Except for this, the planning approach was changed considerably.

The dominating cluster of civic buildings on the hill and the concentric street system were abandoned; instead, the town hall and a community building were placed around a plaza on the "main street," a commercial strip that developed during the hectic, postwar growth and where all the principal stores are located (photos this page). The major streets follow the old layout only where topography justified it; otherwise they were repositioned to suit the needs of fast auto traffic between the various parts of town and were treated mostly as limited-access parkways. Minor streets branch off from

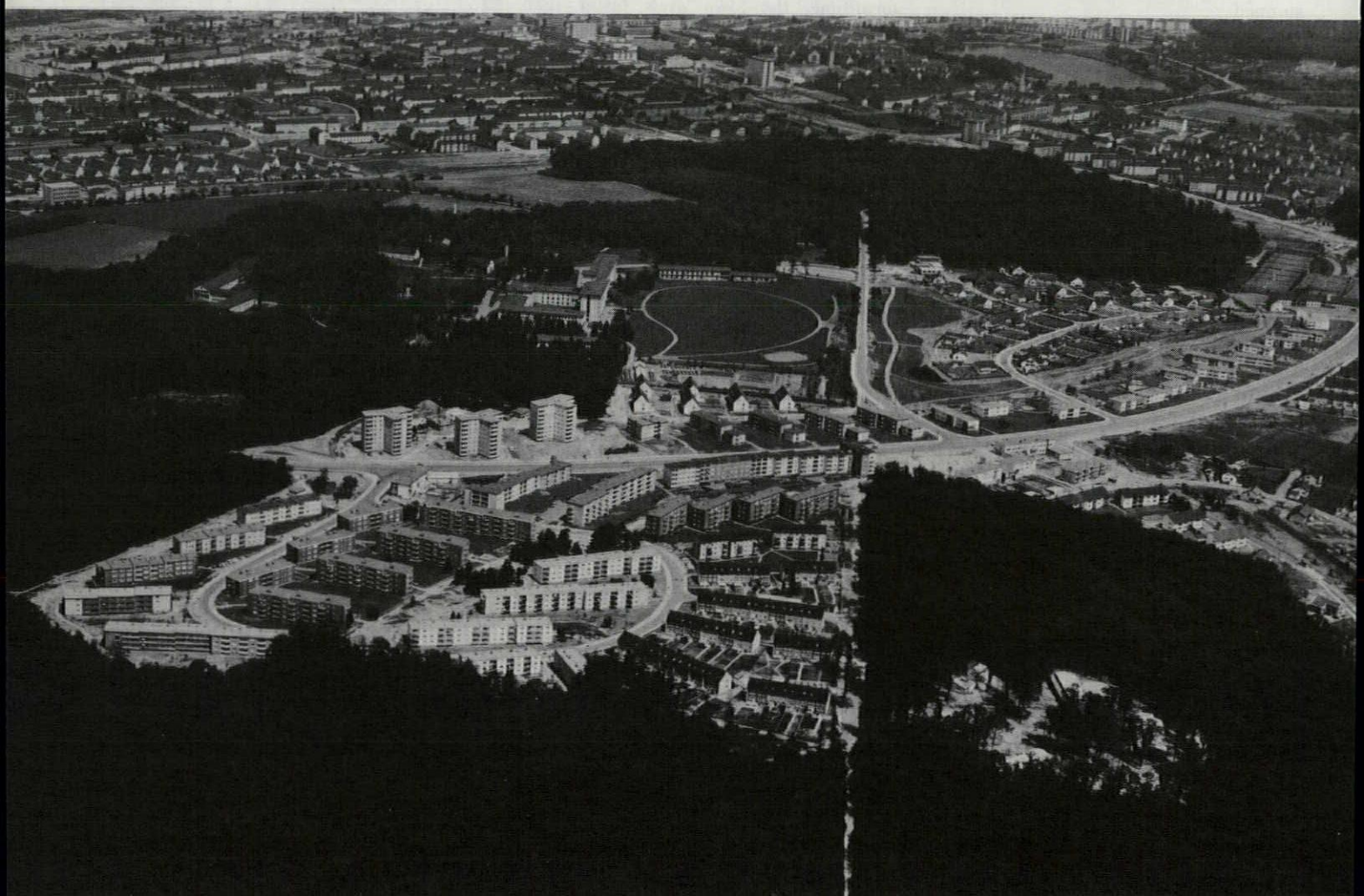


On some days, Wolfsburg's new civic plaza is used as a market place; at right of Town Hall, by T. Taeschner, will be a Community Center by Alvar Aalto, seen here under construction; buildings dating from 1938–41 period are at top and bottom of photograph.

Other views of Wolfsburg's "main street" show a wide, haphazardly planned commercial strip.



Typical aerial view (above) *shows parkways and residential neighborhoods surrounded by preserved woods; center of town and older sections are to the right; factory is at top of photo. Closer view* (below) *shows character of a new neighborhood and the hospital placed at highest point in the landscape; "main street" is at top of photo.*



these parkways to feed self-contained residential neighborhoods.

Each neighborhood is designed for about 5000 people. The buildings are mostly low-rise, with some high-rise apartment houses. In most cases, an attempt has been made to separate pedestrians from autos and to create continuous greenways within each neighborhood. Extensive parks, mostly preserved woods, flank the parkways and meander between the neighborhoods.

Therefore, in its latest phase, Wolfsburg, developed in a pattern considered ideal by current urban design standards: a spread-out parkland crisscrossed by parkways and dotted by islands of loosely built, garden-like residential communities. Now that 75 per cent of the town has been completed, one can sense already the visual and social results brought about by this design approach.

According to Koller, the decisive point of the new plan was the "omission of the crest with its party buildings, which were to overlook, imperialistically, the town." This is true. But the decision for the omission seems to have been prompted more by the new political climate than by a strong urban concept.

In Wolfsburg, as well as in other German cities, most of the people making major decisions today were reared in the Bismarck-Hitler tradition of a socially oriented but regimented society with strong overtones of monumental bureaucracy. This tradition was reflected in a tendency toward pompous classicism. In the postwar denazification ("let's be democratic") period, the old values were eagerly discarded. In terms of political philosophy, this is all for the good. But is it all for the good in terms of urban planning and of architecture.

Berlin, for instance, used to be a city with character. It was not a friendly city, but its wide, symmetrical, uniformly built, monumental avenues, radiating from equally symmetrical and monumental circles, gave it a strong urban skeleton and created a rigid pomposity that was typical of prewar Berlin. Today this pattern is being broken up. New superhighways fight with old avenues, and the old avenues themselves are being destroyed by new buildings that seem intent on negating as much as possible the formality of the original concept (photo right, above). From an aesthetic point of view, the destruction of an existing urban structure could be justified only if the new structure replacing the old one were not only more desirable, but also at least equally positive. This, however, does not seem to be the case in Berlin, or in other German cities including Wolfsburg; nor is it the case in numerous other towns being rebuilt throughout the world.

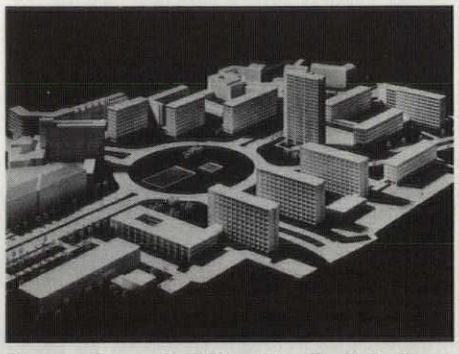
The most prominent landmark in Wolfsburg today is the factory, now considerably expanded; its new 14-story administration building, crested by a neon sign, dominates the landscape both day and night (photo page 132). The old castle and hamlet are engulfed by and unrelated to the urban spread that surrounds them. The "main street," with its extreme width, open ends, and the lack of any consistent architectural idea, is a sort of elongated shopping center with off-street parking (photos page 135). The central topographical swell, now topped by a spread-out hospital—a building with a social but not visual significance—has lost its value as an urban fulcrum (photos at left), and the new civic center, now thinned out and located on the "main street," is not a significant enough substitute (photo page 135). This leaves only the residential parklands—these airy, sunny, and verdant neighborhoods.

Thus Wolfsburg is a city without true urbanity, without exterior rooms so to speak. It is, one might say, a suburb that has no city—a classless community of middle-class citizens devoted to the ideals of mass industrial output and mass fresh-air life.

Statistics confirm this: Wolfsburg has higher wages and a greater number of cars per capita than other towns in Germany; it also has the greatest number of births and the greatest number of children. Wolfsburg, therefore, is a healthy, booming, well-to-do town; but it is also a town where the major daytime recreation is a stroll in the woods, and statistics would indicate its major night-time recreation.

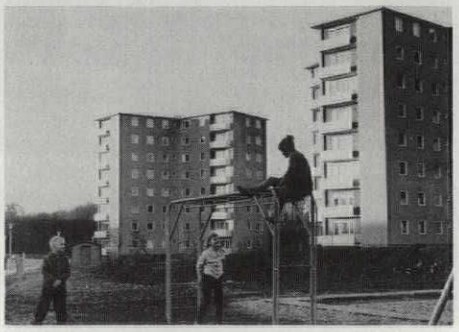
Although a considerable amount of cultural activity, such as art shows and symphony concerts, is *imported* into Wolfsburg, a question seems to pose itself: in the days to come, will Wolfsburg ever *export* some other contribution to civilization besides its excellent cars. The same question could be asked of other cities throughout the world, including those in the U.S.A., whose urban character results from a philosophy that places economic wealth, automobile traffic, and verdant spaces as ingredients to be most valued in life.

Therefore, those whose ideal of urban life is antiurban would find Wolfsburg to be a most pleasant town in which to live. But those who feel that an urban environment should be truly urban would find Wolfsburg to be hardly a city at all; and they would go back home with another strong case of "new town blues."



Proposed new buildings for Berlin's Ernst-Reuter-Platz completely disregard prewar formality of the circle and radiating avenues.

Typical new apartment buildings in Wolfsburg.



Portrait of a Garden

Several years ago Lawrence Halprin and Associates designed a garden for photographer Morley Baer in Berkeley, California. The planting is now settled in and photographer Baer has made a series of pictures that give a sense of mood and show the poetic images that landscape architect Halprin feels gardens should generate. The photographs give the over-all feeling of the garden, and then focus on intimate, small-scale, atmospheric details—the things a person feels and sees as he walks around in a garden. P/A presents this photographic essay by the garden's owner along with a verbal description by the designer.

The garden is in Greenwood Common, a development we designed which has 12 small properties surrounding a central green. A part of each property was taken off to make up the common, which is kept for children's play and general openness. Each property has its own small garden; the Baers' garden is at the end, among some tall, 75-year-old pines, and looks out toward the view of San Francisco.

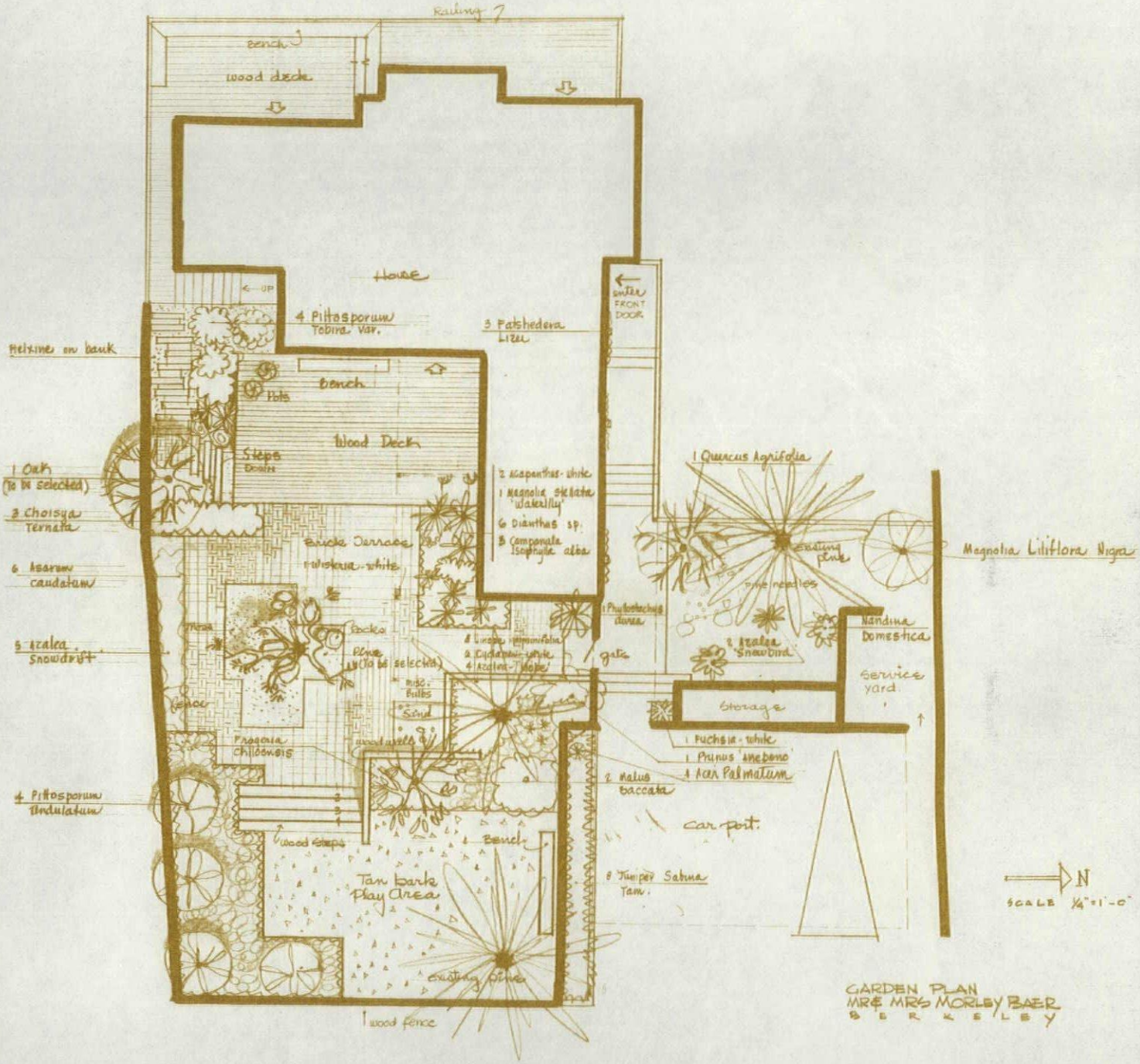
We designed the carport as a gateway — not only as a shelter for automobiles. After the openness of the common, this closes you in — a shaft of sunlight comes down only between the canopy and the fence that secludes the garden.

You walk down under a covered passageway to the front door through a small entrance court that is shaded and mysterious.

The floor is paved with gravels and small-leafed ferns and azaleas, and is canopied overhead with the dappled shade of leaves.

Inside the garden the scale changes: part of it explodes out toward the great view of San Francisco and the Bay...

...but part of it is very closed— toward the back are the great pine trees.



GARDEN PLAN
MR & MRS MORLEY BAER
BERKELEY

1

2

As a person walks around in the garden, he sees and touches small-scale, intimate details. ***(1)*** *White azaleas, strawberry leaves, and dew-covered ginger leaves (Asarum caudatum) crop out of the brown tanbark and arch over the redwood.* ***(2)*** *Spikey-leafed Liriope graminifolia fight their battle of spears over the redwood planting beds. Rocks from the beaches and delicate, found objects are placed on the brick in the court to bring a sense of other worlds into the garden.* ***(3)*** *An Asparagus fern (Asparagus plumosus) resembling a water plant has an affinity with a sea-washed stone.* ***(4)*** *An evergreen California live oak (Quercus agrifolia) shelters a transparent bird bath and a bonsai Japanese split-leaf red maple about 30-years old.* ***(5)*** *In the springtime, under the great pine trees, the hanging umbrellas of cherry blossoms are not only a visual but an olfactory delight. Flowering cherry (Prunus Akebono) blossoms are pale pink fading to white; beneath them, small-leafed cyclamen with white flowers arch out toward the light.* ***(6)*** *Next to the house, a covered trellis makes a transition with its white wistaria, which drapes over the 2 x 6's darkened by the wind.* ***(7)*** *The garden is paved in red brick laid in sand, and like a rug in the middle of it, Irish Moss carpets the center. A small gnarled pine was planted here to echo the tall, old ones and to bring them down to garden scale.*

3

5

4

6

New Face on 14th Street

Photos: Gottscho-Schleisner

PAINTING INDUSTRY WELFARE BUILDING • NEW YORK, NEW YORK • MAYER, WHITTLESEY & GLASS, ARCHITECTS • WILLIAM J. CONKLIN, ASSOCIATE PARTNER IN CHARGE

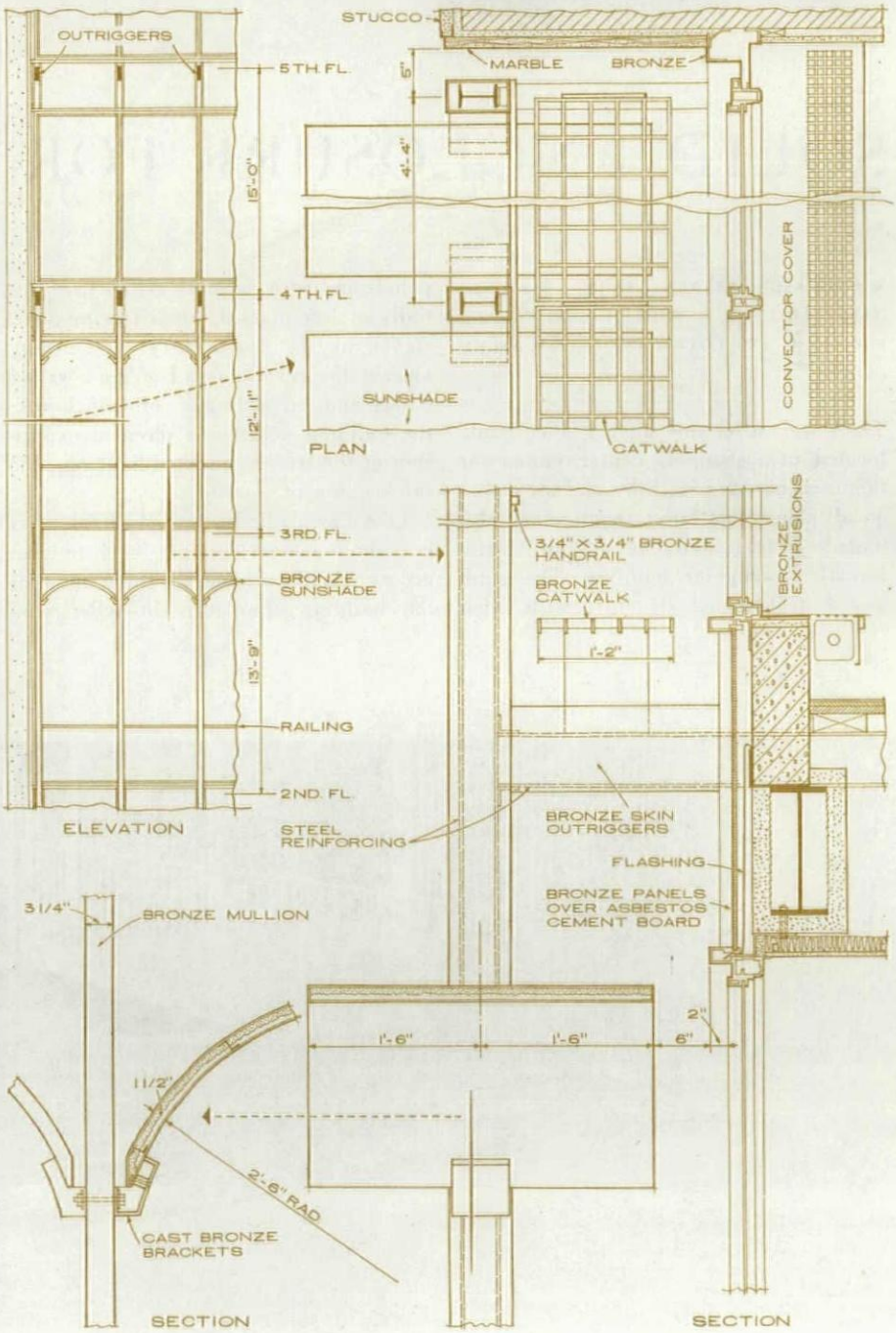
A single narrow building in a row of shabby discount houses on a deteriorating commercial street has been thoroughly remodeled to reflect the architects' belief that "the first function of every urban building is to play a constructive role in the city."

Behind its new face, the building houses organizations sponsored jointly by the painting industry and the painters' unions. The first floor is devoted to a dental clinic and the upper floors to office space. The rebuilt interior includes new first and mezzanine floors of flat slab constructions; existing wood framing was retained for the upper floors.

Before remodeling, the building looked exactly like its neighbor to the west (to the left in photos). The new south façade consists of a curtain wall of bronze with gray glass windows and an outer structure, entirely of bronze, supporting sunshades and catwalks. Circular windows of red glass and panels of Verde Antique marble, exposed on both sides, are incorporated in the first floor wall.

The frame of the inner wall is made up of extruded sections; the outer members are formed from bronze sheet and reinforced with steel. All bronze has been given a medium statuary finish with a clear lacquer protective film, which is expected to last for years if treated periodically with lemon oil.

The design of this curtain wall is related to the style of the old cast-iron buildings of lower Manhattan, some of which face it across the street. It is the architects' hope that, by recalling their qualities, they can stimulate greater respect for these older neighbors.



Photos: Alexandre Georges

SOLID ENCLOSURE FOR SECURITIES

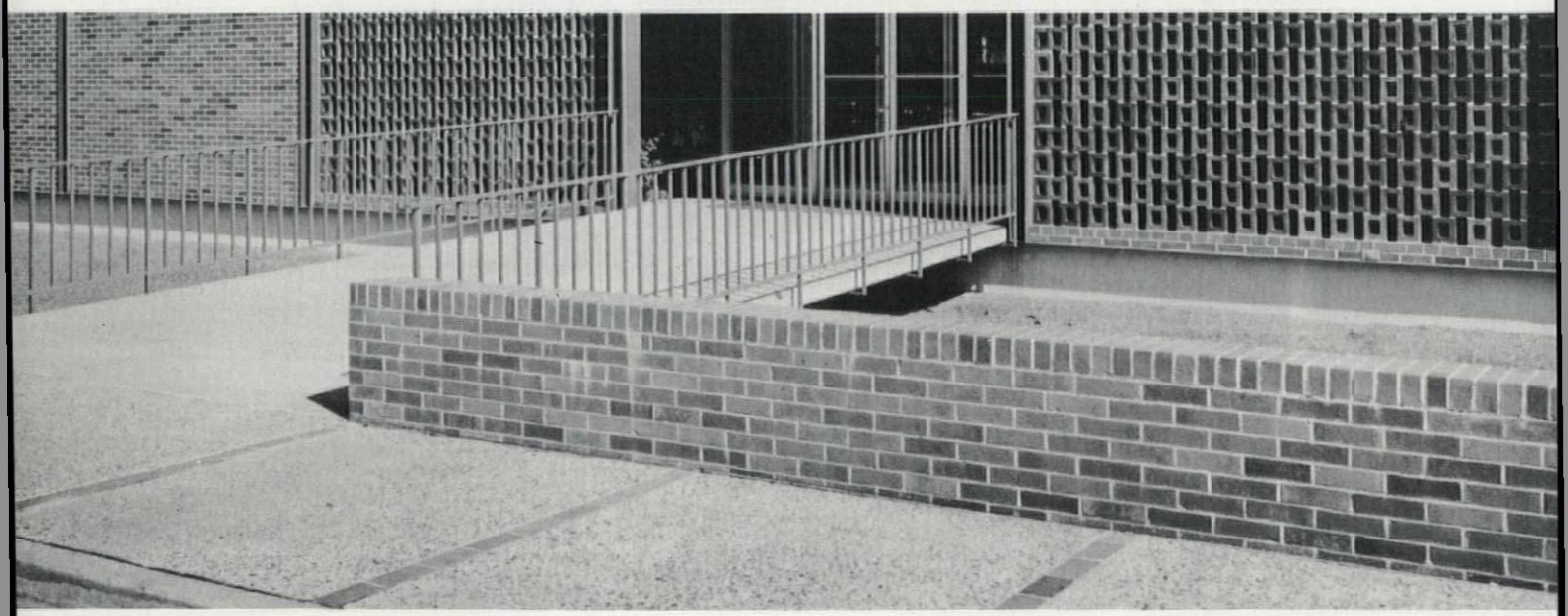
WHITEHAVEN BRANCH, UNION PLANTERS NATIONAL BANK • WHITEHAVEN, TENNESSEE • A. L. AYDELOTT & ASSOCIATES, ARCHITECTS

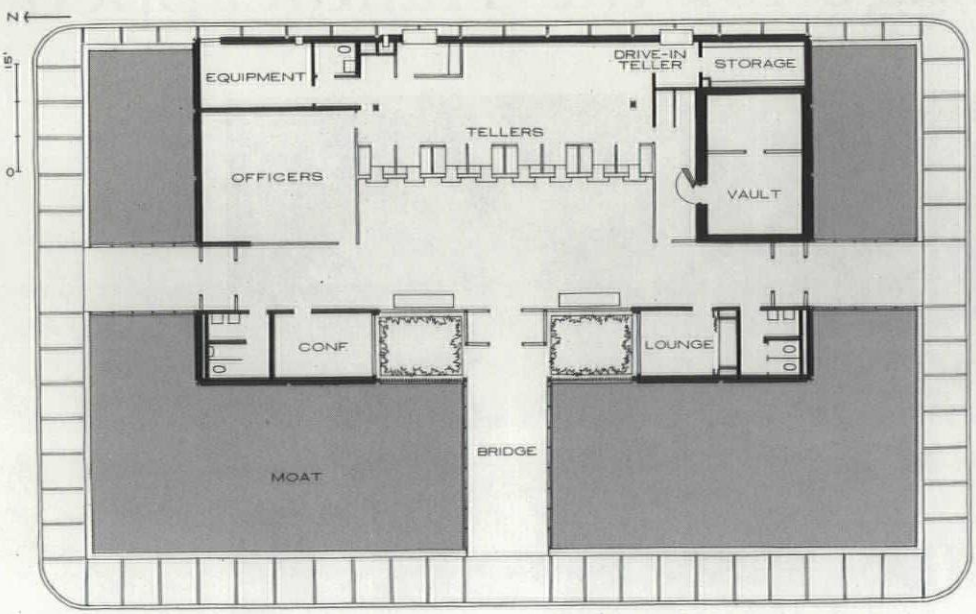
The program for this small branch bank, located in a shopping center, called for the usual banking facilities and for access on all sides; this latter requirement ultimately determined the design of the formal, rectangular building. The bank has a steel-framed structure with brick panels and with masonry grilles that partially enclose planting areas (*facing page, right*) at the main entry. By turning against the current trend of glass-walled banks and presenting a solid enclosure, the building achieves a physical expression of the true business of banking—the safekeeping of wealth.

Like a symbolic fortress, the bank is set in a shallow moat; bridges for pedestrian access span the moat on three sides of the building. Two drive-in teller windows are located on the shopping-center side.

On the interior, warm wood paneling and patterned terrazzo flooring give an appearance of some affluence that should inspire confidence in the bank's customers.

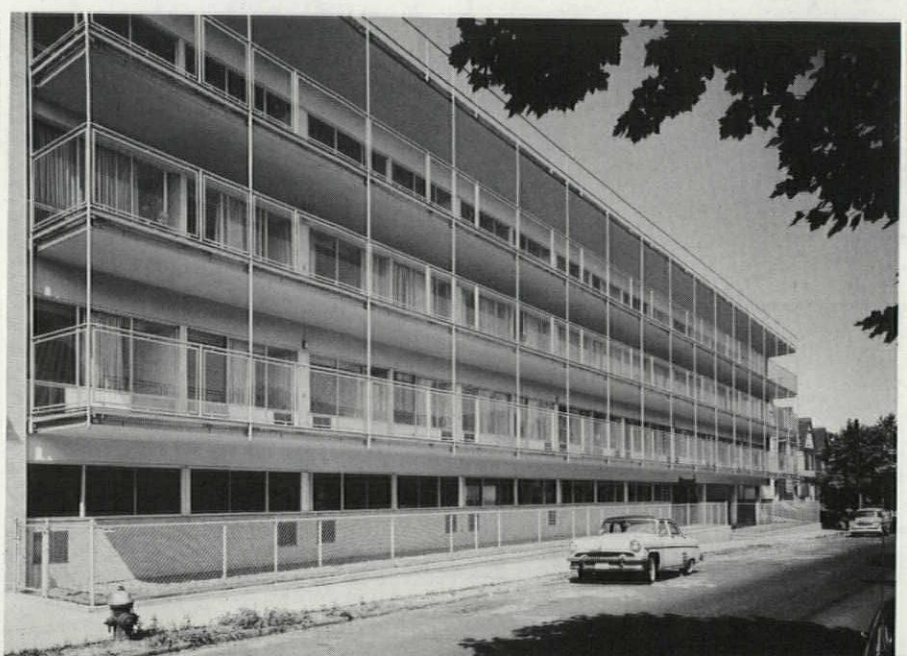
A folded, lightweight concrete roof floats above a clerestory that admits light to the main banking area. From the outside, the roof defines the public interior space and also adds a modern crenellation to the small keep.




N
15'
0
EQUIPMENT
DRIVE-IN TELLER
STORAGE
TELLERS
OFFICERS
VAULT
CONF
LOUNGE
BRIDGE
MOAT

Open Passage for the Handicapped

Photos: Ben Schnall

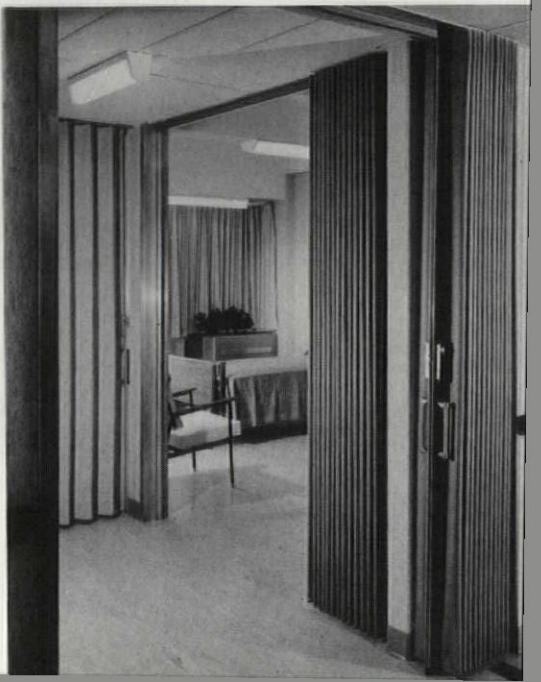


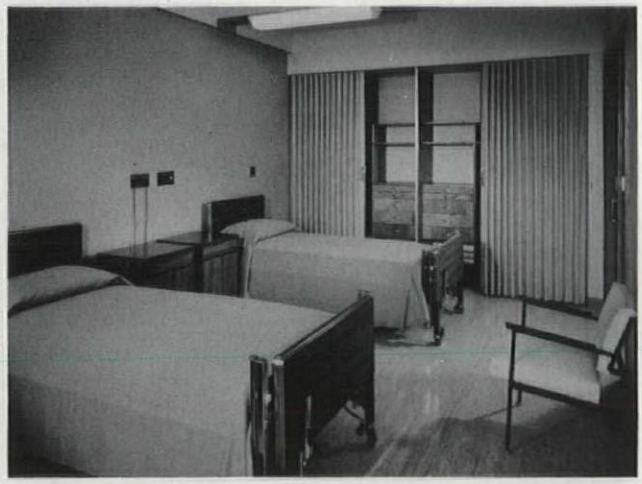
JOSEPH GROSS PAVILION, THE HEBREW HOME AND HOSPITAL OF NEW JERSEY • JERSEY CITY, NEW JERSEY • KATZ, WAISMAN, WEBER & STRAUSS, ARCHITECTS-ENGINEERS • JOSEPH BLUMENKRANZ, CONSULTANT • CEIL FENTON, INTERIOR DESIGN CONSULTANT

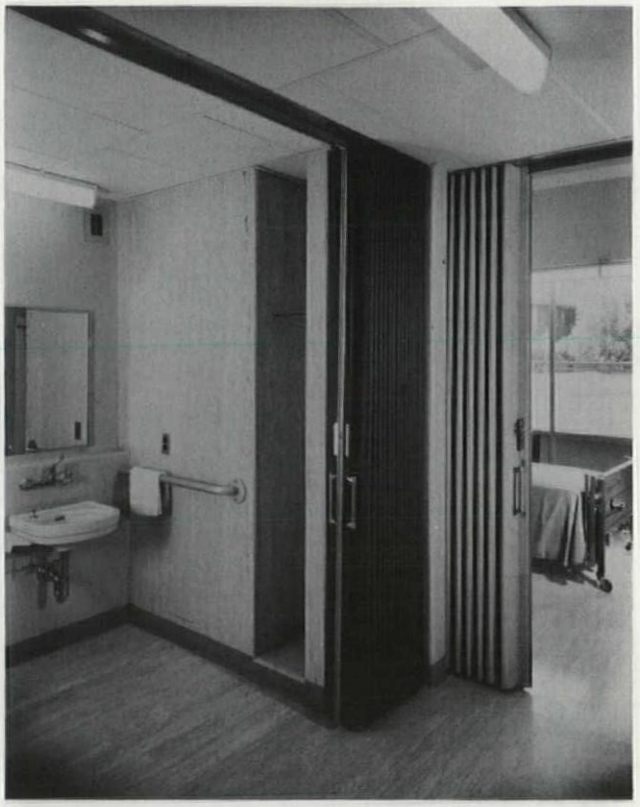
One of the initial decisions concerning the hospital shown on these pages was that it be planned to facilitate the utmost mobility of handicapped persons. The majority of patients are old people with physical or mental handicaps whose chronic illnesses require treatment for extended periods. The program, therefore, required a combination of hospital and hotel planning and of housing for the aged. Every effort was made to create an environment that would offset the handicaps of patients by providing for their physical safety and emotional security.

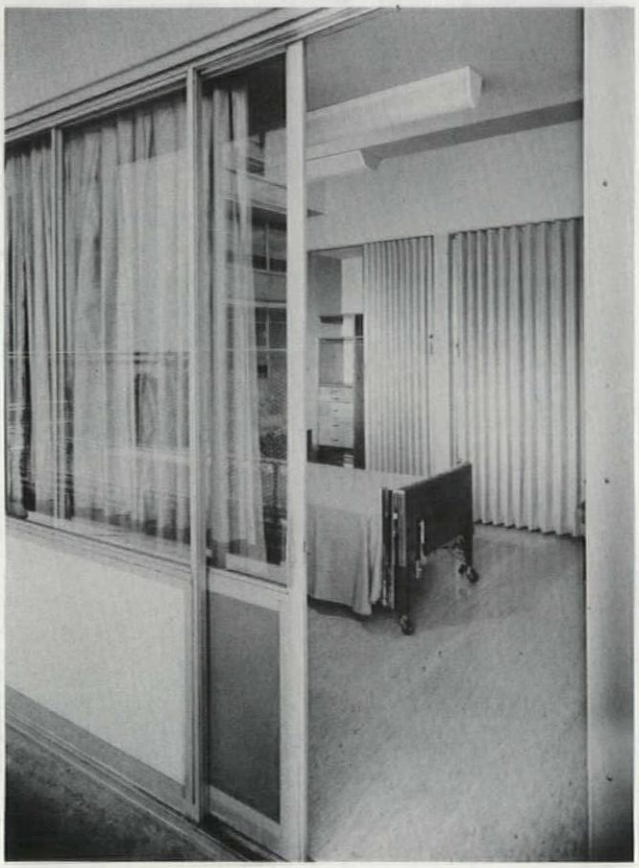
All patients' rooms open onto balconies (*facing page*) that provide protected outdoor recreation areas for walking and visiting neighbors and for pot gardening. A recessed sill at the sliding balcony doors facilitates the movement of bed and wheelchair patients to the outside.

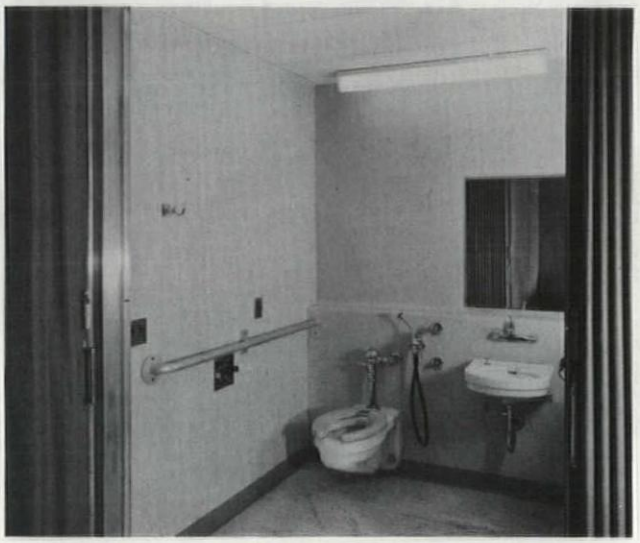
On the interior, patients' rooms are grouped into suites of one single and one double room with a shared toilet area. Several suites with a sitting area have been provided for married couples. The











Folding doors, which will stay open at any position and which can be locked, cover ample closets for long residency. The toilet areas have an open closet (top right) *with adjustable hooks.*

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

PATIENTS' ROOMS

Floors: sheet rubber/marbleized white/RCA Rubber Co. **Walls:** plaster/painted/white; wall area behind beds color co-ordinated with draperies. **Windows:** aluminum frames/fixed and sliding glass panels/M. Klahr, Inc.; Ador Mfg. Co., Inc. **Ceilings:** acoustic plaster/off-white/ National Gypsum Co.; underneath side of beams painted/ color co-ordinated with wall behind beds. **Doors:** folding/floor-to-ceiling/vinyl/beige, green, deep green, yellow, mustard, rust/Modernfold Door Co., Inc. **Equipment:** air-conditioning unit/heating and cooling/Warren-Webster Co.; two-way intercom/DuKane Corp. **Lighting:** fluorescent strips/beam-hung/Work-O-Lite. **Built-ins:** wardrobe fittings/drawers, dressing counter, luggage and shoe rack/birch/custom-made/Baldwin Lumber Co. **Furniture and Fabrics:** draperies/ceiling-hung, traverse/canvas/yellow, mustard, green/sprayed-on Milium outside/Ansonia Draperies; beds/metal/teak Formica/ Simmons Co.; chairs/steel frames/vinyl/Thonet Industries, Inc.; bedside tables/metal/teak Formica/Simmons Co.; planter tables/birch/custom-made/Baldwin Lumber Co.

TOILET AREAS

Walls: sheet rubber/marbleized white/RCA Rubber Co. **Mirrors:** Ketchum Mfg. Co. **Handrails:** aluminum/ tubular/Ment Bros. **Toilets:** American Radiator & Standard Sanitary Corp. **Basins:** maritime type/American Radiator & Standard Sanitary Corp.

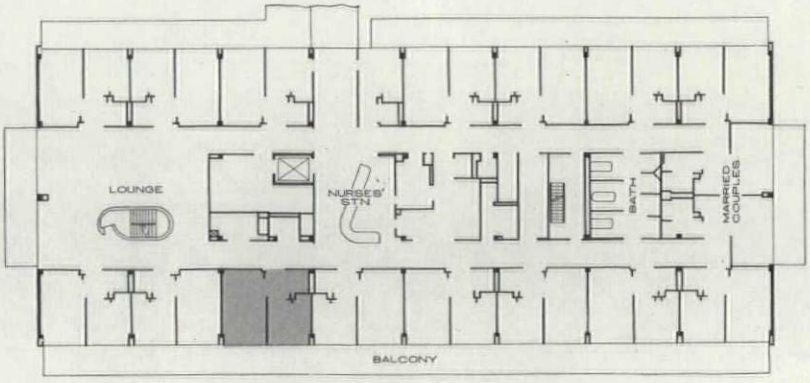
plan of the suite is spacious and open with wide doorways that permit constant but unobtrusive supervision of patients, and easy passage of beds and equipment.

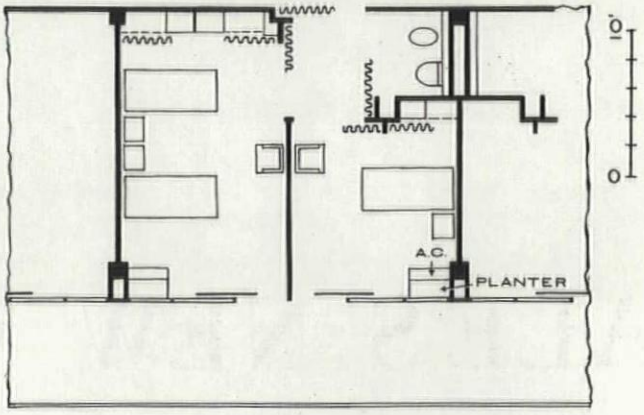
To take maximum advantage of these wide openings, floor-to-ceiling folding doors are used in all areas that are accessible to patients. They permit wide doorways without wasting the space required to open a swinging door; they eliminate the ever-present danger of pushing a door into the path of an approaching patient; and they are easier to open for patients on crutches or in wheelchairs. Doors to rooms have acoustic liners for sound control and two see-through panels—one set at a convenient height for standing persons and a lower one for patients in wheelchairs.

For easy orientation, each suite is color-keyed so that patients need not remember numbers. The key color—beige, green, yellow, mustard, deep green, or rust—is carried throughout the suite on the door to the hallway, the door to the double room, the outside panel of the balcony door (*facing page, below left*), and in some cases the draperies and the wall behind the beds. The doors to all toilet areas are blue to facilitate finding them anywhere in the building.

Physical safety and general comfort of patients has been insured also by the choice and placement of equipment. Every room is wired for telephone, for bedside night lights and call buttons, for two-way speaking intercom between patient and nurse, and for the installation of television cameras to monitor patients from the nurses' station. In the toilet areas, wash basins and mirrors are set at a height convenient to wheelchair as well as to standing patients; grab bars are provided on the side walls. The basins have rounded corners so that wheelchair patients will not bump their elbows. Faucets are controlled by a single lever that can be operated by wrist or arm as easily as by fingers, and a ball finial on the lever is provided to make the operation more comfortable for arthritic patients. There is a nearby emergency call button.

When there is sympathetic understanding of older people, such as this planning demonstrates, the hospital directors feel that medical services can be a satisfying experience both to the physician and the patient.

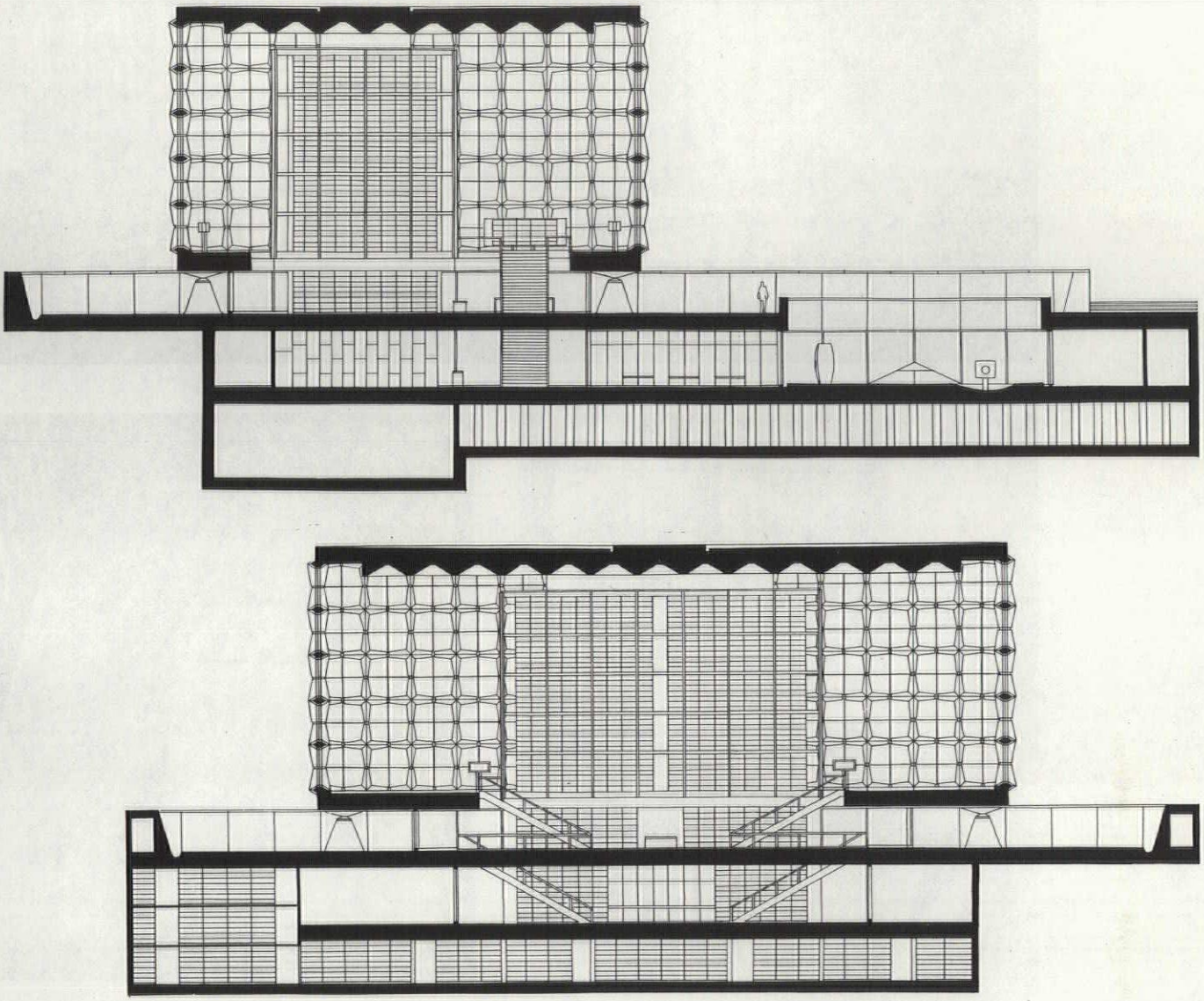




PATIENTS' SUITE

YALE'S NEW VAULT:

Material/Structural Analysis



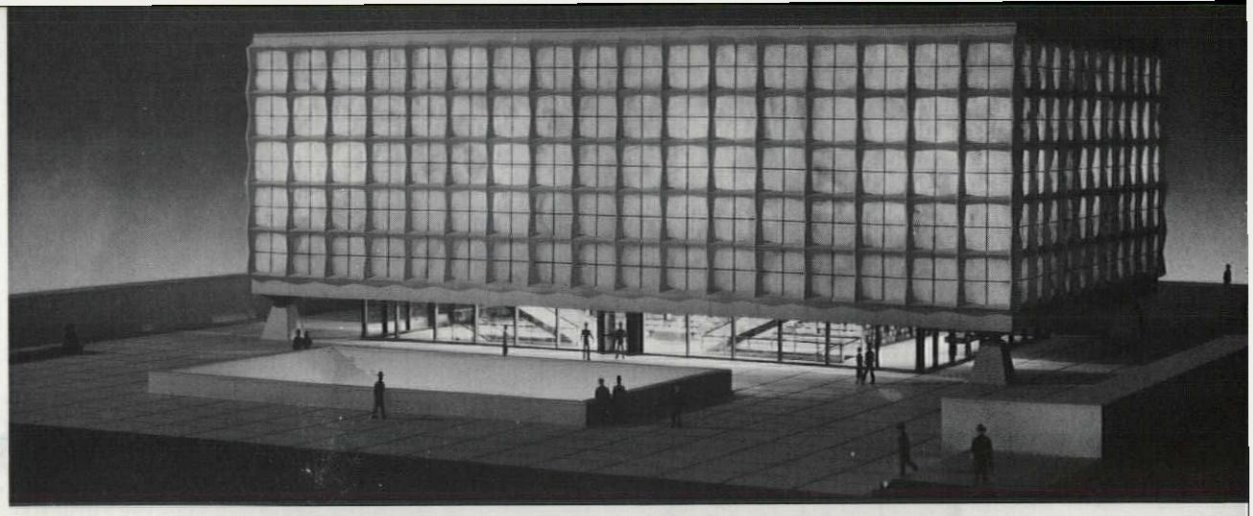
Since the approval of preliminary designs for Yale University's rare book and manuscript library (announced in NOVEMBER 1960 P/A), *considerable refinement in planning and structural design has taken place. This report brings the reader up to date on the final selection of materials and presents a detailed analysis of its unique structural design.*

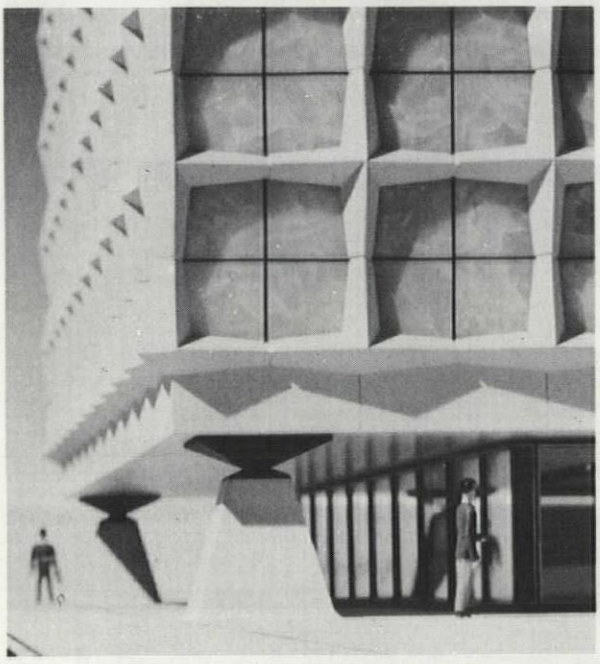
Foundation work is now well under way for The Beinecke Rare Book and Manuscript Library, one of the most significant buildings in Yale's internationally known program of postwar contemporary structures. The commission for this unusual vaultlike structure was awarded to Architects Skidmore, Owings & Merrill. Their solution reflects the closest kind of creative collaboration between architect and consulting structural engineer, which has resulted in a contemporary design complementary to the diverse eclectic styles found in its venerable nearby neighbors.

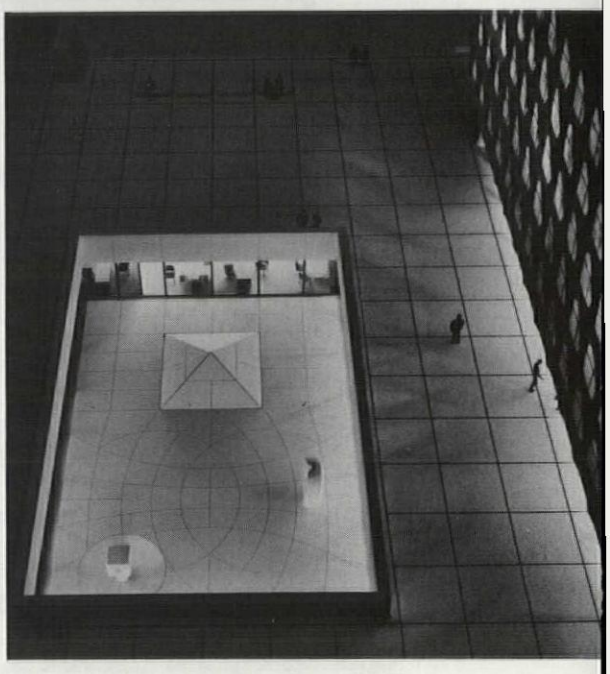
The library has been placed on a 200′ x 350′ plaza, surrounded by the freshman dining hall, student dormitories, law-school buildings, and a secret-society temple, all neo-classic or gothic in character. Although fresh in architectural concept, the library has been designed primarily of components that have been around for a long time, some for eons. The five basic materials are: Vermont granite, translucent marble from an ancient Aegean island, cast stone, bronze, and structural steel.

The parti is a simple one. In addition to storing and protecting Yale's prodigious collection of priceless books, manuscripts, and maps, the day-to-day use of the building will be as an exhibition area and research center. People coming to the library will enter the building at ground level. Casual visitors will walk up one flight of stairs to an exhibition hall where glass-enclosed stacks, containing one quarter of the library's 800,000 books, are visible, as are individual small display cases located around the periphery of the hall at floor level. Seating arrangements are found at both ends of the hall. Researchers and proven scholars with legitimate claims to use the rare documents proceed directly to court level, one flight below ground, where, after being screened for identity, they are permitted entrance to the guarded reading room. Also found at court level are administrative facilities, curators' offices surrounding three sides of the sunken court and lightwell (to contain sculptural forms carved of marble that are currently being developed by Isamu Noguchi), spaces for staff functions, card-index files, additional stack areas, lavatories, and so on. The basement level is devoted entirely to storage of books.

The predominant mass of this design is the voluminous exhibition hall: a



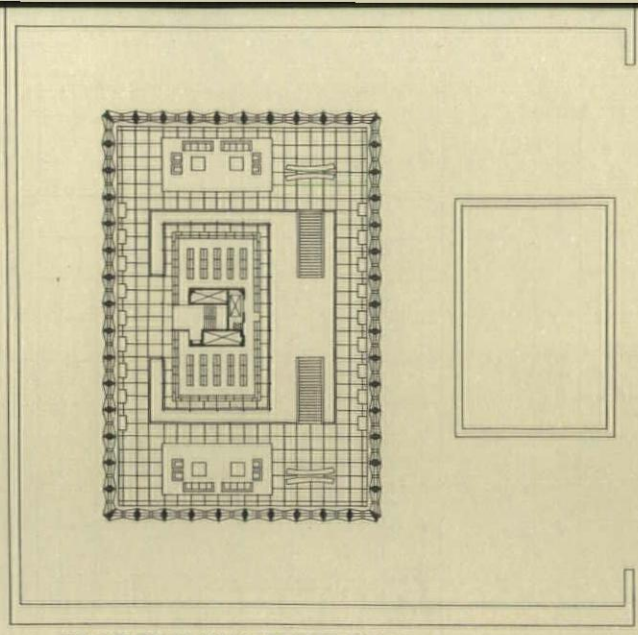




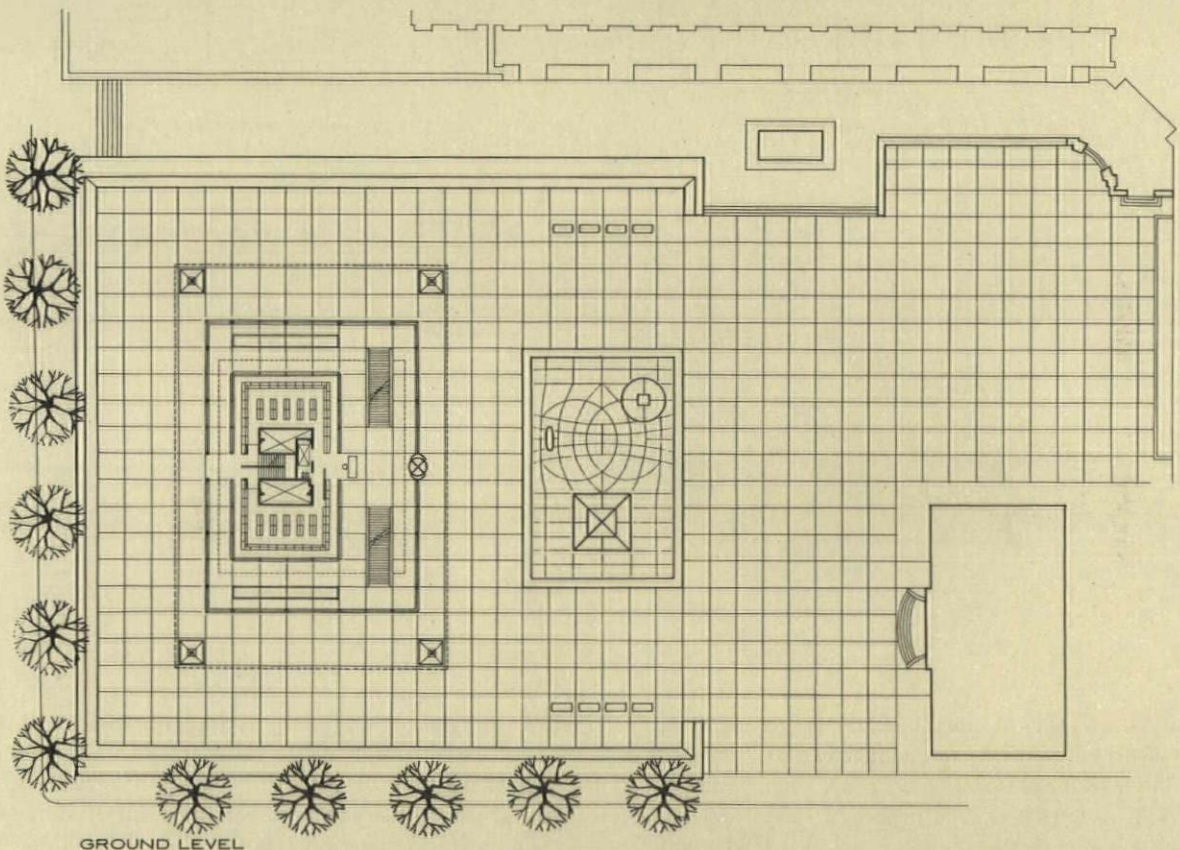
cathedral-like enclosure extending 130 ft in length, 86 ft in width, and 58 ft in height. This reticulated, rectangular prism, which at night will release a soft emanation of light, has only four corner points of support, which terminate in steel cylindrical pin connections. These are located 8 ft above plaza level atop reinforced-concrete piers that extend to bedrock some 50 ft below grade. The major architectural characteristic of each elevation is a network formed by Greek-type crosses whose over-all dimensions are 8′-8″ x 8′-8″. The length of each arm was determined by the basic module of the building and surrounding plaza, which in turn was established by the 4′-4″ spacing of the stack ranges. Framing for each façade is a structural-steel, multilayered Vierendeel truss that supports live and dead loads coming from the roof and floor of the exhibition hall, as well as carrying its own weight plus that of its fireproofing and protective materials for the steel.

Woodbury White granite—the same material that will be used to pave the 70,000 sq ft plaza as well as its surrounding enclosing walls—has been specified to cover the exterior of the steel framing. Specimens of this stone, obtained from a quarry in northern Vermont that has not been worked in many years, have been found to be extremely durable, and well satisfy aesthetic requirements of color and texture established by the architects. The quarry will be reopened solely for the purpose of providing the facing and paving material for this monument.

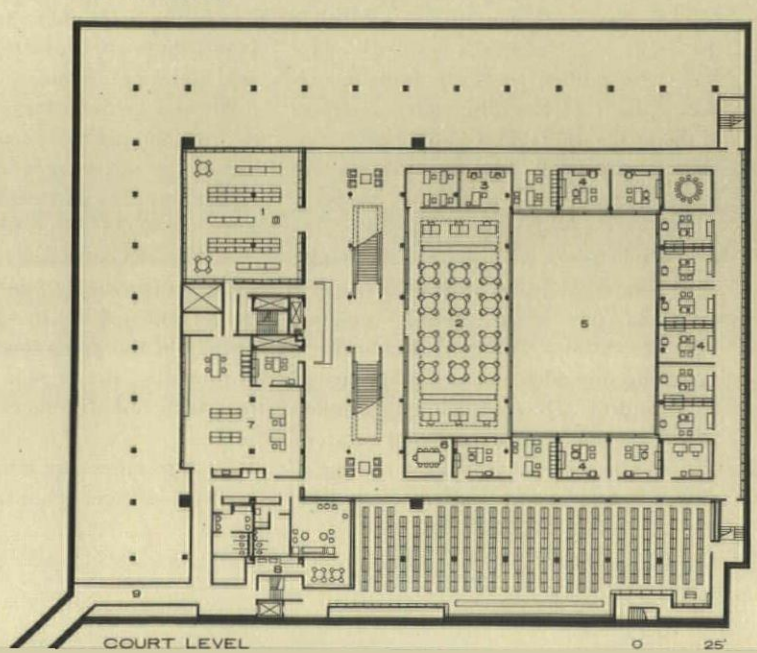
Translucent marble, the glazing material to be set within the octagonal voids established by the Vierendeel grid, has been chosen for the warm-white, soft light that it will provide, for the visual delight of its golden-cloud pattern, and for the useful property it possesses of eliminating direct light rays that can have a damaging effect on the books. Onyx samples from Turkey, Mexico, Peru, and Algeria were considered for specification, but all were found to have limitations in color, pattern, size (four 4′ x 4′ panels are considered optimum for the infill between crosses), or availability, as in the case of the quarry in Algeria that is located in an active combat zone. Most promising marble to date has been located at the island of Naxos, which undoubtedly provided building stone for many of the temples of antiquity, as well as the great sculptures of ancient Greece. Metal sash for the translucent panels will be bronze anodized aluminum with a liquid polysulfide sealant. Aluminum was specified in place of bronze, since oxidation from the latter would have discolored the marble. Interior surfaces of the trusses are protected by cast stone with exposed white granite aggregate. A full-size, two-bay mock-up is currently being observed and tested at



EXHIBITION HALL FLOOR PLAN



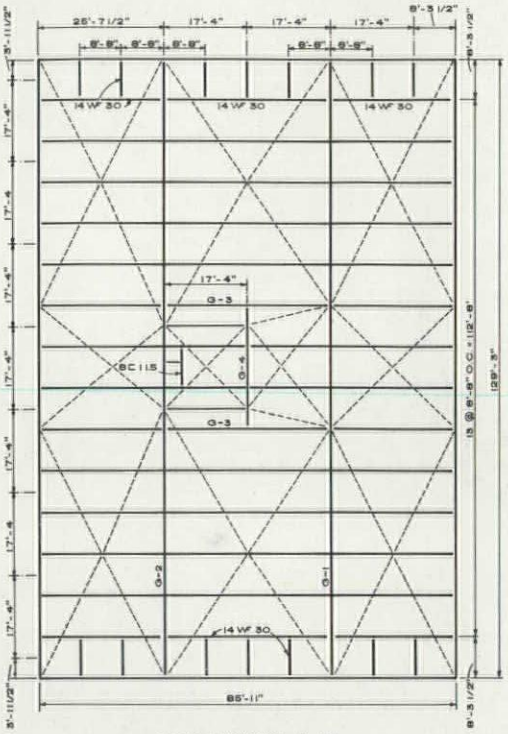
GROUND LEVEL

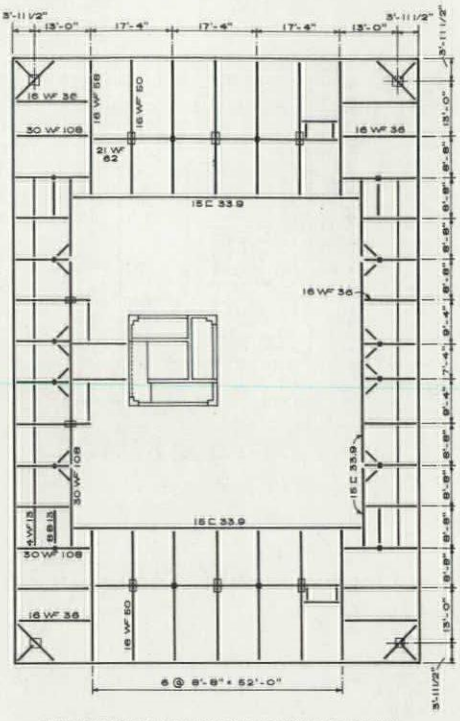


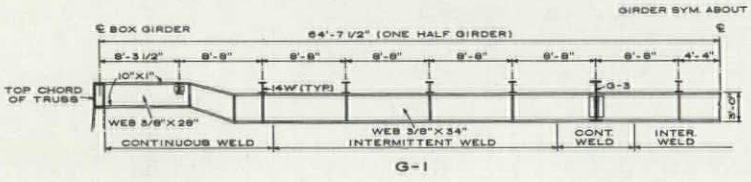
1-CARD CATALOG
2-READING
3-MICROFILM
4-CURATORS
5-SUNKEN COURT
6-CONFERENCE
7-BIBLIOGRAPHIC TOOLS, MANUSCRIPT CATALOGING
8-PANTRY
9-TO STERLING LIBRARY

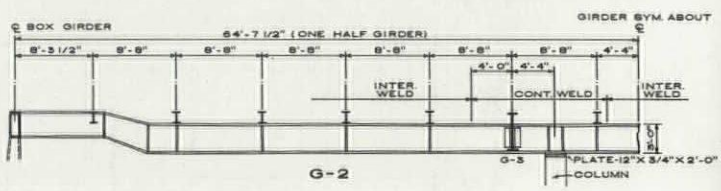
COURT LEVEL

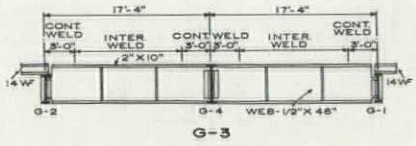
0 25'

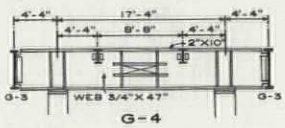












Long Island City. Among other factors to be determined will be the final thickness of the marble specifications: ¾ in., 1 in., or 1¼ in. for the desired degree of light transmission—day or night.

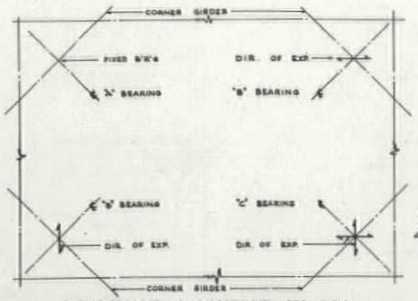
Six stories of the stack tower rise within the center of the hall and surround a reinforced-concrete core. This enclosed shaft, which measures 35′ x 60′ and is 50 ft above ground-floor level, will have a constant relative humidity and temperature of 50 per cent and 70 F respectively. Its surrounding curtain wall is of polished plate glass held in place by extruded bronze frames and neoprene seals encasing steel mullions. Lighting, air conditioning, and acoustics are controlled in the coffered ceilings. Optimum acoustic qualities, as one might wish for an auditorium, were not essential. Instead, a "stonelike" quality, as described by the architects and their consultants, Bolt, Beranek & Newman, was achieved. Downlights within the coffers can provide a variable lighting intensity, depending on the time of day and the requirements of individuals using the hall. Night lighting will in general be soft. Forty-watt recessed lights located in the decks of the central stacks will cause the stack column to gleam from the reflected light of the illuminated bindings of the books. Individual display cases containing rare books and manuscripts will provide small jewels of light at eye-level.

As the reading room is the only area where scholars have access to the books, it will have the same controlled environment as the stacks. Wood egg-crate lighting provides 90 ft-c of illumination; carpeting provides the necessary acoustical control. Glare, which might otherwise enter the reading room and curators' offices surrounding the sunken court lightwell, is reduced by the installation of gray insulating glass, and vertical blinds.

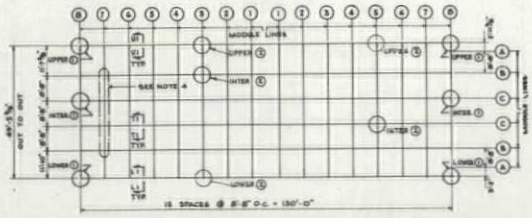
Structural Analysis

From the point of view of the structural engineer, Paul Weidlinger, the design of the framing offered many challenges. After intensive investigation, the all-welded frame system was adopted, since it allowed great latitude in the selection of the component structural members required to satisfy economically the architectural requirements. Dimensional limitations precluded the application of bolted or riveted construction that would have resulted in unwieldy joint details. Welding further allowed the designers to take advantage of the gross steel section, as well as providing the benefit of rigid connections with full structural continuity at all joints.

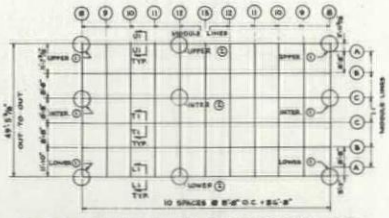
Truss members are welded box sections: top and bottom chords are prismatic,



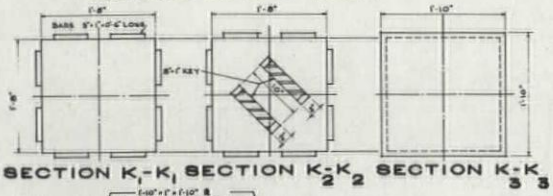
BEARING LAYOUT PLAN



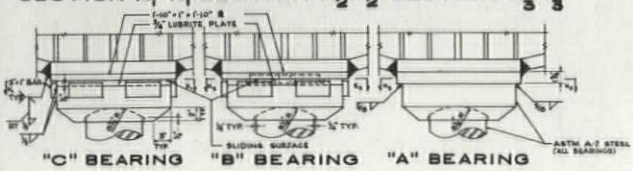
SCHEMATIC ELEVATION OF EAST & WEST TRUSSED WALLS



SCHEMATIC ELEVATION OF NORTH & SOUTH TRUSSED WALLS

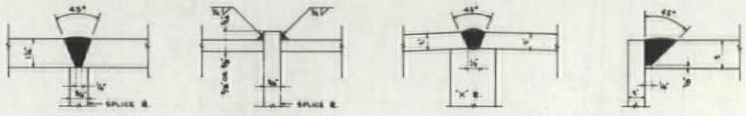


SECTION K_1-K_1 SECTION K_2-K_2 SECTION K_3-K_3



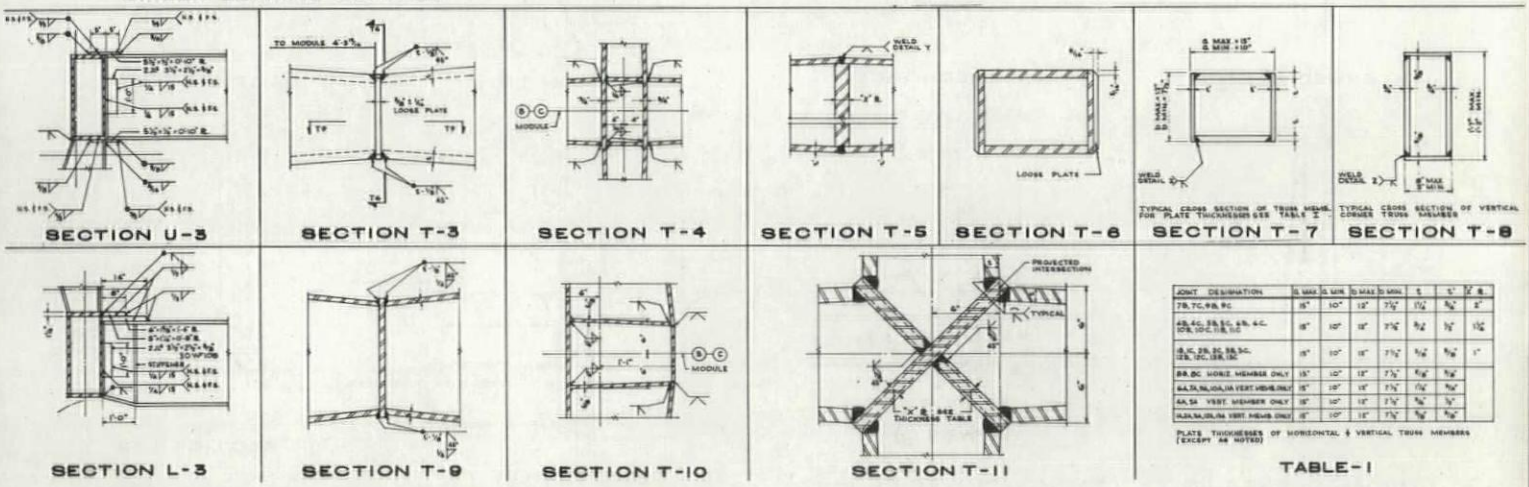
"C" BEARING "B" BEARING "A" BEARING

GIRDER BEARING DETAILS



DETAIL W DETAIL X DETAIL Y DETAIL Z

TYPICAL WELD DETAILS



JOINT DESIGNATION	G. MAX	G. MIN	S. MAX	S. MIN	$\frac{t}{2}$	t'	$\frac{t'}{2}$ &
7B, 7C, 9B, 9C	15"	10"	12"	7½"	1¼"	⅝"	2"
4B, 4C, 5B, 5C, 6B, 6C, 10B, 10C, 11B, 11C	15"	10"	12"	7½"	⅞"	½"	1½"
8C, 2B, 2C, 3B, 3C, 12B, 12C, 13B, 13C	15"	10"	12"	7½"	⅞"	⅝"	1"
8A, 8C HORIZ. MEMBER ONLY	15"	10"	12"	7½"	⅝"	⅝"	
6A, 7A, 9A, 10A, 11A VERT. MEMBERS ONLY	15"	10"	12"	7½"	1¼"	⅝"	
4A, 5A VERT. MEMBER ONLY	15"	10"	12"	7½"	⅝"	½"	
12A, 3A, 12B, 13A VERT. MEMB. ONLY	15"	10"	12"	7½"	⅝"	⅝"	

PLATE THICKNESSES OF HORIZONTAL & VERTICAL TRUSS MEMBERS (EXCEPT AS NOTED)

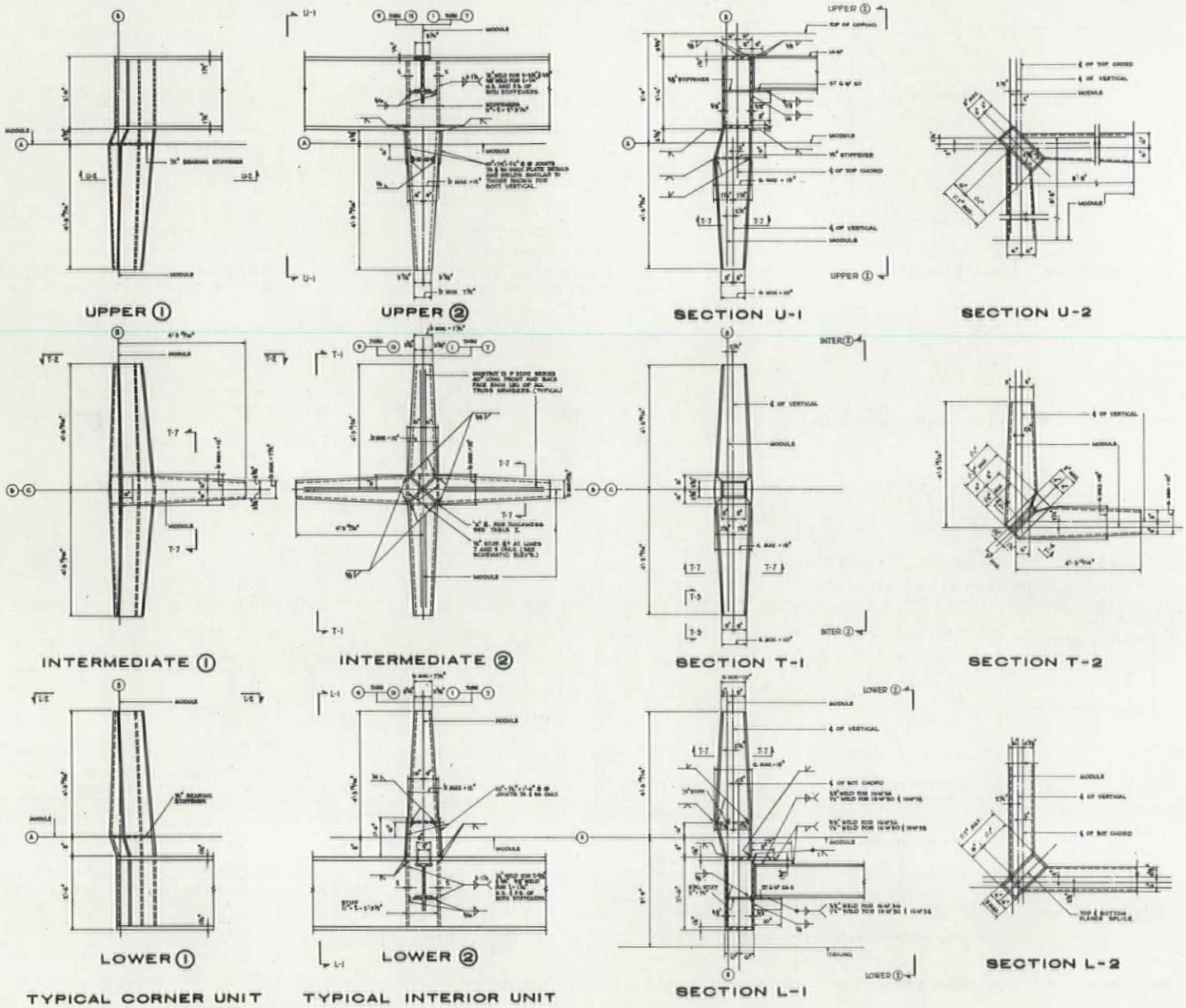
TABLE-I

while the horizontal and vertical members of the crosses are tapered. As the truss system is indeterminate, the magnitude of internal forces and moments can be modified by the shape of the components. The tapered shape provides a relatively uniform distribution of moments and shears and allows the design of modular units. Furthermore, the shape approaches the optimal distribution of materials for the desired form of the truss. In a typical cross, the forces in adjacent flanges are approximately equal and the resultant of these forces therefore acts at about 45 degrees. Diagonal stiffeners assure the most direct transfer of forces without introducing high shears in the web.

The indeterminate character of the multilayered Vierendeel trusses makes analysis extremely difficult. Each truss is supported by a short girder, one-half bay in from the corner, that extends diagonally to identical locations on the adjoining trusses. Each girder, in turn, is supported by a single column fixed at its base and hinged at its top. Since the reactions of adjacent trusses on the girder must be equalized, the difference in loads is absorbed by shear forces acting at the ends of each truss. To minimize this transfer of shear, the roof's framing system was designed so that the total load imposed on both the long and short trusses is nearly equal. Since the reactions and end shears can be determined independently of the internal forces, each side of the structure can be analyzed separately.

In the preliminary analysis, the approximate dimensions of structural components were determined by an elastic analysis employing simplifying assumptions. In the final analysis, two separate analyses were made due to the highly unusual character of the trusses. An elastic analysis based on moment distribution was made first. Secondly, a plastic analysis was made to determine the collapse load.

In the elastic analysis, advantage was taken of the fact that the number of unknown redundants is reduced by one quarter because of symmetry of the truss about a horizontal and vertical axis. Loading of the truss is symmetrical about the center line and the loads at a panel point were split into a symmetric and antisymmetric load. The symmetrical load causes only axial forces in the verticals. It is the antisymmetrical load that results in bending moments. Moment distribution, considering sidesway (antisymmetric) mechanisms corresponding to the number of degrees of freedom of the quarter truss, was used to solve for the moments in each member. The system was reduced to seven equations with seven unknowns.



Electronic computers were used for some of the calculations.

In the determination of the collapse load, loads applied at each panel point were taken in proportion to the actual loads. Since these loads were assumed to be concentrated at panel points, only antisymmetrical mechanisms had to be investigated. The plastic capacity moment in each member was found, and by using the upper bound theorem all collapse mechanisms were examined and the actual collapse load was found. The factor of safety against collapse in terms of this load is 2.6.

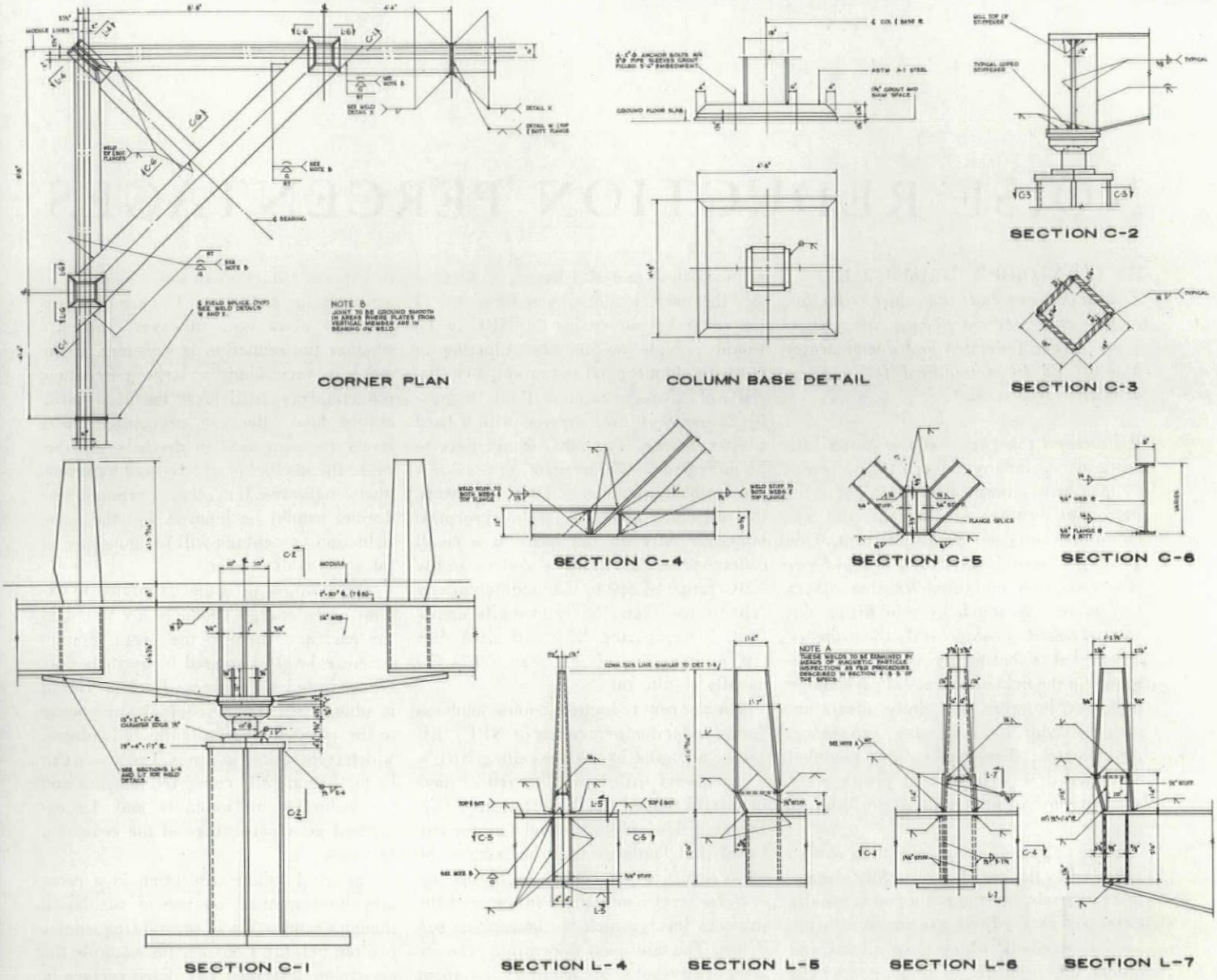
Truss deflections were calculated by applying the conjugate beam method to the lower chord. For the long truss, the live load deflection is only ½ in., or 1/2500th of the span.

Detailed consideration was also given to stresses due to settlement of a support, buckling both in the plane of the truss and out of the plane of the truss, and wind loading and its effect on the buckling load.

Although temperature stresses that would be present in the trusses due to the restraint supplied by four fixed supports would not be excessive, the design of the supporting columns for the resultant bending moments proved to be uneconomical. Therefore, bearings under three of the four corner girders were designed to allow expansion of the trusses (see bearing layout plan).

Preliminary design computations indicated that excessive plate thickness would have been required in the highly stressed regions of the truss if a structural steel such as ASTM A7 or A373 were to be used. The higher yield strength and correspondingly higher allowable working stress for both base metal and welded joints, available through the use of a high-strength, low-alloy steel similar to ASTM A242 or A441, reduced these thicknesses to sizes that can be more easily fabricated and would result in reduced welding costs. Furthermore, use of this type of steel would allow a significant reduction in total steel tonnage.

An important consideration in the fabrication of any steel structure is that, in addition to the desired strength properties, the erected structure possess the characteristics of elastic behavior assumed in the design. In a structure such as this one, however, it is impossible to calculate all secondary stresses, particularly in regions of stress concentrations. This is true of most structures, whether the stress concentrations arise as a result of design or of fabrication procedures. Thus it is implied that the material employed in a structure such as this one will behave in regions of high-stress concentration in a



plastic manner by yielding locally to relieve and redistribute the stresses.

In order to provide assurance that the material used in fabricating the truss will exhibit sufficient notch toughness (to permit plastic yielding at critical points of stress concentration and restraint under the most adverse service conditions), and hence not be easily subject to brittle fracture, the chemical requirements of ASTM A441 steel were modified for the material of this structure. Minimum amounts of manganese and silicon have been specified for all plates over 1 in.

Fabrication of the truss and details of design are, in general, governed by the following AISC specs: *Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings; Code of Standard Practice for Steel Buildings and Bridges.* All welding and welding materials are required to conform to the American Welding Society *Specifications for Welded Highway and Railway Bridges.* Because of the unusual nature of the welded connections in the truss, the use of a base material not covered by existing welding specifications, and the large number of critical field welded connections, the above specifications have been supplemented by project specifications that contain more specific detailed requirements for the welded fabrication and erection of the structure.

All welding will be done by the manual shielded metal-arc welding process or by submerged arc welding. Before actual fabrication of the truss is undertaken, the contractor will submit for approval a complete program of the sequence of welding for each typical interior truss unit, and for the welding of these units together to form the completed structure.

In order to reduce the necessary field welding to a minimum, it is proposed to erect the truss in large sections: (1) corner section with upstanding legs; (2) top and bottom chords with upstanding legs; (3) vertical units of four crosses. In this way, the only required erection welds are the chord splice and the typical joint between crosses.

Credits. Those having primary responsibility for the library in the firm of SOM are: Gordon Bunshaft, Partner in Charge of Design; David H. Hughes, Partner in Charge in Co-ordination; and Sherwood Smith, Design Assistant. Builder is George A. Fuller Company.

Structural data in this report has been adapted from a paper *All Welded Grid Trusses*, which won an award in the recent "Award Program for Progress in Arc Welded Design" sponsored by The James F. Lincoln Arc Welding Foundation. Matthys P. Levy, Associate, and John Tierney, Engineer, of Paul Weidlinger's office were the award-winning authors of the paper.

NOISE REDUCTION PERCENTAGES

BY CLAYFORD T. GRIMM, P.E.

This author contends that noise reduction may be expressed more comprehensibly as a percentage reduction and demonstrates how it can be determined for a given acoustical treatment.

It has been reported that the Aetna Life Insurance Company reduced typing errors 29 per cent, absenteeism 37.5 per cent, personnel turnover 47 per cent, and machine operators' errors 52 per cent. This accomplishment is attributed to a 14.5 per cent reduction in noise. Whether others can achieve as much by minimizing unwanted sound is conjectural; the evidence is not yet scientifically conclusive. Research in the field of acoustical psychology indicates, however, that noise affects human behavior by producing annoyance, physiological disturbance, and modified efficiency. It is evident that people want a quiet environment and are willing to pay for it.

Some degree of sound reduction can be achieved by the use of acoustically absorptive materials, but the reduction is usually expressed as a reduction in sound pressure level in decibels, which most clients and others find difficult to understand. The knowledge that acoustically absorptive materials reduce noise loudness has led to the unfortunate architectural practice of too much emphasis on the NRC (noise reduction coefficient) of the absorptive materials. Noise reduction may, however, be expressed more comprehensibly as a percentage reduction. This article shows how noise reduction percentage (NRP) is determined for a given acoustical treatment. Graphs, which enable one to make the determination quite readily, are included.

Once sound has been propagated, absorptive materials can theoretically reduce noise loudness by 45 to 60 per cent; however, only 20 to 45 per cent reductions are usually obtained. In general, the ear does not perceive a change in loudness of less than five per cent. In a typical classroom, if a hard plastered ceiling is covered with an acoustical material having a NRC of .55, the noise loudness is reduced by 24 per cent; but increasing the NRC to .65 would provide no audible reduction in loudness. In a typical restaurant, a ceiling NRC of .55 reduces noise level loudness by 22 per cent, as compared with a hard plaster ceiling. The NRC would have to be increased to .75, however, to provide a discernible improvement. Thus, in general, the selection of acoustically absorptive materials only on the basis of a small difference in their NRC is useless. In the NRC range of .40 to .55, a difference in NRC of less than .15 is not usually significant. In comparing NRC's of more than .70, a difference of less than .30 is not usually significant.

The per cent reduction in noise loudness (noise reduction percentage or NRP) that can be achieved by various ceiling NRC's, as compared with hard-plastered ceilings in several typical rooms, is indicated **(1)**. In using this graph, it should be remembered that loudness must be reduced by more than five per cent to be significant.

Noise level is measured in terms of the pressure levels which the human ear can detect. The minimum discernible pressure level (threshold of hearing) is about .000000003 lb per sq in. The threshold of pain on the other end of the scale is about .005 lb per sq in. Since these are such small numbers, and because the range is so great, it is more convenient for acoustical engineers to work on a logarithmic scale. Thus, the decibel scale was invented to express the range of audibility from 0 to 120 decibels.

Acoustical references invariably express noise pressure level and reduction in noise pressure level in decibels. Because of the logarithmic relationship between decibels and pressure, loudness reduction cannot be expressed by percentage reduction in decibels. A drop in noise level from 50 decibels to 40 decibels is not a 20 per cent reduction in loudness, nor is it even close. Since the decibel is a rather abstract quantity, its usefulness in expressing reduction in noise is limited. It is, however, possible to express reduction in noise loudness as a percentage reduction. The use of a percentage does not, however, indicate whether the reduction is sufficient. If the noise is very loud, a large percentage reduction may still leave the noise intolerably loud. Because acceptable noise levels are expressed in decibels, and because the decibel is widely used by acoustical engineers for other purposes, the decibel cannot be ignored, but the noise reduction percentage will be found useful for general discussion.

The loudness of sound is related to the total nerve energy produced by sound in the ear, and then to the brain. Sound-pressure level expressed in decibels may be converted to loudness level measured in phons. But the psychological response to the physiological stimulus is loudness, which is measured in sones. The phons can be mathematically converted to sones and the reduction in loudness may be expressed as a percentage of the reduction in sones.

The total sound absorption in a room may be computed by use of the NRC, though examination of several frequencies is often helpful. Consider for example the classroom described **(3)**. Each surface in the room is itemized. For each surface the area and the NRC are given. The product of the area and the NRC gives the total average absorption for the material in sabins. The absorption of all the materials are added to give the total average absorption for the room in sabins as shown (*line 10*). Note (*in line 9*) that a hard-plastered ceiling was used. If this item were replaced with an acoustical material having an NRC of .55, the total absorption would be increased from 342 to 791 sabins. This increase in absorption is conventionally expressed as the ratio of absorption after treatment to absorption before treatment. In this example, the absorption ratio would be 791/342 or 2.31.

Using this absorption ratio, the noise reduction percentage (NRP) can be determined **(2)**. Enter the graph on the lower abscissa with the ratio of sound

absorption after treatment to that before treatment. Proceed vertically to the solid NRP curve and then horizontally to the left ordinate to read the average noise reduction percentage. In the case of the classroom example, the absorption ratio of 2.31 provided a NRP of 24 per cent. A scale is also provided on the lower abscissa to read the noise reduction in decibels. Absorption ratio of 2.31 provides a noise reduction of about 3.5. In the usual case it is more intelligible to say the noise loudness was reduced 24 per cent than to say the sound pressure level was reduced 3.5 decibels.

The acoustical absorption of materials varies with frequency and the NRC is the average of the absorption at 250, 500, 1000, and 2000 cycles per second. If the absorption ratio is computed on the basis of the NRC, then the noise reduction in sones can also be averaged at these four frequencies. The per cent reduction in sones at several frequencies is illustrated (2). The average reduction in sones at frequencies of 250, 500, 1000, and 2000 cycles per second is almost identical to the reduction at a frequency of 500 cycles per second. Thus, the NRP curve coincides with the 500 cycles per second curve.

The case studies shown are for typical rooms having the following properties:

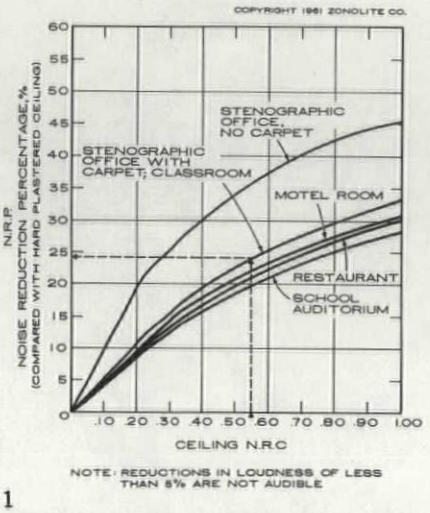
Classroom: 864 sq ft of asphalt tile, 140 sq ft of windows, 280 sq ft of blackboards, 32 pupils, 940 sq ft of concrete block walls.

Stenographic office: 1000 sq ft of floor area with 1400 sq ft of hard plaster walls, and 15 secretaries.

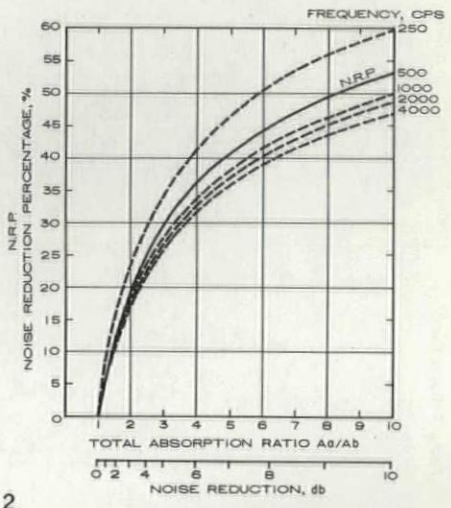
Motel room: Carpeted floor area of 190 sq ft with 437 sq ft of plaster wall and appropriate furniture.

School auditorium: 600 occupied and 50 unoccupied seats, 1152 sq ft of painted concrete block wall, 2010 sq ft of wood wainscot, and 5660 sq ft of asphalt tile floor.

Restaurant: 1225 sq ft of tile floor, about as much wall, wainscot, window, and door area, 100 occupied and 20 unoccupied tables.



1



2

SOUND ABSORPTION IN A TYPICAL CLASSROOM

ABSORPTIVE MATERIAL	Area in sq ft of Units	NRC	Absorption in Sabins
Floor, asphalt tile	864	.04	35
Glass windows	140	.03	4
Blackboard	280	.03	8
Wood door	60	.10	6
Pupils	32	4.00	128
Unoccupied desks	8	.35	3
Misc. furniture			10
Concrete block walls, painted	940	.13	122
Hard plaster ceiling	864	.03	26
Total before treatment			342
Total less ceiling			316
Zono-Coustic ceiling	864	.55	475
Total after treatment			791
Absorption Ratio (791/342)			2.31
NRP			24%

3

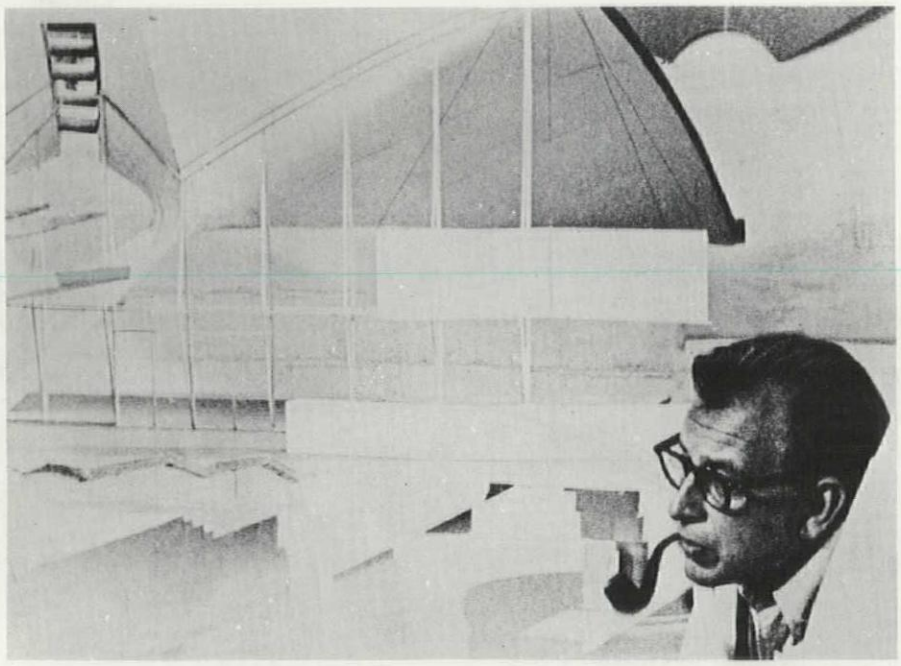


Photo: Baltazar Korab

Tributes to Eero Saarinen

Dear Editor: Earo Saarinen founded the first true architectural laboratory. His creative, analytical methods of synthesizing architecture are a challenge that all of us should seek to emulate. Although the products of his process will remain and be admired by generations to come, it is the methods of the process that are the more significant. Wright's message and work had been fulfilled; Saarinen's had only begun.

DENIS C. SCHMIEDEKE
Dearborn, Mich.

Dear Editor: The loss of Frank Lloyd Wright signified the end of an age, but the end had been in sight to all of us, and the sense of loss at his death was buffered by a sense of completion in his life and work. The great sense of loss at the death of Eero Saarinen is not so softened, and the shock and dismay of those who knew him will dissipate slowly—for some, not at all.

Some architects say that Eero was a man difficult to know, remote and self-sufficient; and perhaps this is true. But his work spoke eloquently for him, and I could never dissociate the man from his work. During the difficult and busy time immediately following the Second World War, we worked together on a campus plan and women's dormitory for Antioch College, and I often stayed at the Saarinen office for days at a time, spending my nights at the Saarinen home. Eero's schedule amazed me. He worked on trains, planes, while standing, sitting, talking to associates, and often he worked far into the night. What's more, it was never too late for him to begin again on a certain job. I remember in particular one night, after a couple of hours of "checking" the completed design for the G.M. Technical Center, he announced excitedly that he thought he had a better design and that it would probably save G.M. $200,000 or $300,000. Although the next morning would produce a "here we go again" from some of his men, his habit of constant restudy, of seeking the best parti, regardless of personal effort and office cost, was the only way he knew.

He was a great draftsman. His skillful left hand could, and frequently did, draw quick, accurate perspectives of any area or feature under discussion. More important, it drew the new form in architecture —a form capturing the architectural essence of our culture.

Once, in a discussion regarding the appropriateness of mixing modern architecture with traditional, Eero stated his belief that the only problem was to do the modern buildings well. He pointed to Venice's famous Piazza San Marco as an example of many styles built over a period of many centuries. He believed that the architecture of San Marco was good because each new architect considered and respected the scale, materials, textures, and design of the existing structures.

Another time I remember, one of his men thought he had developed a good fenestration arrangement of continuous windows. Eero's comment was, "Let's try placing the windows where they are needed, like a good carpenter would, and see how that looks."

He believed that all man-made environment, such as parks, roads, and housing, was the concern of the architect, and no architect ever concerned himself with this environment more. On the Antioch job, for instance, he studied and made numerous drawings of the whole village. He personally knew the town street pattern so well that he could draw it from memory. He made it a point to know the future plans of railroad, industrial, and village officials and to relate this information to his campus master plan. He once told us that every town of over 5000 people in the United States could have been rebuilt completely with the money spent on the Second World War. He hated such tragedies of human waste.

For Eero, architecture was the most important of all professions. He believed that only dedicated and talented persons should be architects. He also believed that the architects should personally involve themselves in every commission in the office, instead of delegating the design to an employee. He felt that honesty in materials and structure should be demanded from all of us and that the people should be educated to demand and expect it—for example, builders or material manufacturers should know and care enough about their environment not to manufacture or use nail-on simulated brick and stone siding.

Although Eero was a tremendously talented and hard-working architect, he believed and practiced teamwork. After he had developed a scheme that he felt satisfied the program, he personally checked it with his consultants (landscape architect, structural and mechanical engineers, illumination consultants, and so on). Any solid and significant criticisn was fully reflected in the final prelimi naries. He understood that modern architecture is a compilation of all the planning professions.

It is the recollection of the man himself that makes his passing so meaningful to me. He died before his work was done, before the end of his era. The question now is—can we complete it for him?

MAX G. MERCER
Yellow Springs, Ohio

Detroit: Exceptional Coverage

Dear Editor: Your account of our Detroit "New Generation" [AUGUST 1961 P/A] was exceptional and perceptive. Its presentation reminded me in many ways of your January issue. There are, however, two additional important aspects which

should be included in any introduction of the past decade's history of Detroit. First, lest the profession gain the impression that Detroit is an economic mecca of architectural opportunity, it is necessary to mention that, as the number of new architectural firms increased, the amount of available work decreased at a faster rate. The national economy had much to do with this, but the slowdown and decentralization of the auto industry and its allied suppliers was significant in this decline.

Second, and related to this, there has been a change in the cultural fabric of the metropolitan area. Where once it was the mass-production center of machine products, it is becoming the administrative, technical, and engineering center of product development. This aspect of growth is bringing into the area people of greater education and wider intellectual interests than those of the factory workers. This cultural change is fostering the acceptance of better design, not only in architecture, but also in graphic and industrial design as well. In time, we may even witness a maturity of automobile design.

In lieu of wide economic opportunity, the general incentives to the establishment of so many new firms has been the desire to do better work, to cast off an inhibiting yoke, and to achieve freedom of individual expression.

DENIS C. SCHMIEDEKE
Dearborn, Mich.

Dear Editor: I want to congratulate you on the wonderful coverage of the work of the young architects in the Detroit area. Many local people hardly realized the collective impact of the group's work until they saw your most impressive presentation.

I consider this resource of talent, much of it unfortunately underused in relation to its great potential, as one of our greatest assets in the shaping of a finer city and metropolitan area. It was an unexpected pleasure to find the generous remarks about my efforts to work effectively with the architects of the community.

While I am on this subject, I would like to pay tribute to the almost universal response of the private practitioner, young and old, to the willingness of the city to co-operate with the private practitioner toward a common goal of a broader attack on the design of the community as a whole. It is my conviction that the future image of the city as a whole is the fundamentally important challenge before us at this time.

CHARLES A. BLESSING
Director of City Planning
City of Detroit, Mich.

Dear Editor: I liked very much your presentation of "Detroit's New Generation." If there is anything in your beautiful book that one should particularly mention, it is that Olav Hammarstrom's designs seem more of Scandinavian than Detroit origin. However, I have always been struck by how "international" an architecture based on the use of a certain material can be. Wood, for example, whether used in Scandinavia, the Alps, Russia, Japan, or the West Coast, gives these "regional" expressions a shared meaning.

H. H. WAECHTER
Creswell, Ore.

The Training of Young Architects

Dear Editor: Your "P.S." [SEPTEMBER 1961 P/A] is indeed interesting. The problem of training young architects in practical experience is certainly one that requires deep consideration. I have not tried your dual system of apprentices at low salary plus old-timers at high salary, mainly because my firm is not that large. Perhaps it would be wise for the larger firms to do that; I believe it could have been satisfactory in the several large firms where I once worked before opening my own small practice.

However, the problem is more basic than that. The restlessness of youth is not due to lack of teaching by their master, but to not being able to come in contact with the main activity of architecture. Here in New York, when a student graduates architectural school and applies for a job, employment agencies, many firms, and chief draftsmen often feel that if he has not had any practical experience he cannot even draw a straight line.

A good architect and a good assistant should benefit from one another. Neither should expect that the architect will sit down and always give formal instruction to his staff. There just is not time. The architect should teach by example. He should realize the potential in each assistant and create situations where each individual can develop his own abilities. The assistant should learn by absorbing the activity around him. He should become familiar with all phases of the work.

In our office all doors are open, except in ultraconfidential matters. My assistants know at all times all phases of each project. Each has an entire picture of each problem. The files are available to all.

Because of the ups-and-downs of most firms—and we have both, just like others—many assistants feel insecure. They should not expect ridiculously high salaries. The architect, for his part, must develop confidence in long-term relationships that would in the end develop better architecture and greater professional ability from his assistants. The AIA log book is unnecessary in situations like this.

We believe that a professional approach with each staff member doing his or her own work as an equal on a team—but with the principal having the final say only because the client entrusted him with that responsibility; and somebody has to make decisions anyway—is the best way.

As an indication of the support of the two main members of our team, all of whom have been with me most of the time in my five-year private practice, they have subscribed their names to this letter.

JEFFREY ELLIS ARONIN
TERESITA CANLAS YERRE
HON-KIT LAU
New York, N. Y.

Standardization of Test Procedures

Dear Editor: I read with considerable interest in the AUGUST 1961 P/A the plea by Harold Rosen for the adoption of performance standards in the field of cold-glazed wall surfacings, as well as the article "Cold Glazed Cements" by Albert Swerdlow. These articles raise a problem that concerns the contribution to the field of architectural design of the coating industry as a whole. The need for standardization of test procedures is paramount if architects and owners are to receive the quality products they so desperately need.

Substitution under the "or equal" clause of similar appearing but less expensive products opens a Pandora's box of confusion for the architectural specifications writer. The contributions to architectural design made possible by the chemical industry can be severely retarded when inferior products are "guaranteed for life" by a manufacturing firm soon to go bankrupt.

Recently, when I participated on the Applied Coatings Panel of the National Cinder Concrete Manufacturers conference in Atlantic City, I made a suggestion that is pertinent to the issues raised in this letter. I recommended "that a committee be formed with representatives from among the coatings industry, concrete products industry, and the American Institute of Architects, to select from among recognized test procedures standards of performance to protect the user when specifying and purchasing on-the-job facings."

I pledge my services and the services of the B. B. Chemical Company to the establishment and industry acceptance of suitable standardization.

CHARLES M. FOSGATE
Manager, Product Development
B. B. Chemical Company
Cambridge, Mass.

Our Structural Achievement

In the 19th Century . . .

BY LEONARD K. EATON

A two-volume history of American building techniques and structural art is reviewed by an associate professor of architecture at the University of Michigan.

American Building Art: The 19th Century. *Carl W. Condit. Oxford University Press, 417 Fifth Ave., New York 16, N. Y., 1960. 370 pp., illus. $12.50;* American Building Art: The 20th Century. *Carl W. Condit. Oxford University Press, 1961. 426 pp., illus. $15.*

American Building Art: The 19th Century is an important book. Written by Carl Condit, Professor of the History of Science at Northwestern University, it presents a prodigious amount of original research and places the development of American building in a better historical context than any previous work. It is also written from a strongly defined point of view, and is likely to give rise to lively discussion in a good many quarters.

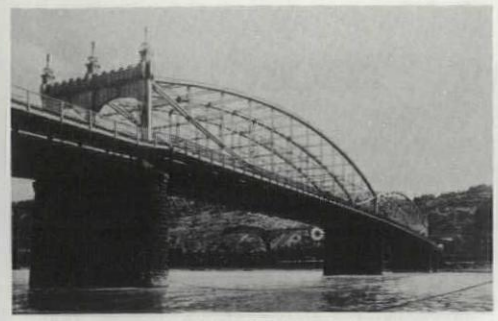
Considering technology as one of the great historical movements of the 19th Century, Professor Condit breaks his treatment of the building art into five categories: (1) the interior building frame consisting of wood, metal, concrete, or combinations thereof; (2) trusses or rigid frames—flat, polygonal, or arched, usually of wood or metal; (3) the reinforced-concrete slab, flat as in a floor or bridge deck, or curved into a shell or dome; (4) the arch rib of metal or concrete; and (5) suspension by wire cable. As the list indicates, Condit pays very little attention to the traditional forms of masonry construction. Hence he devotes almost no space to the substantial achievements of the Greek Revival architects in this area. Their buildings have, after all, been well covered by Talbot Hamlin. Instead, his focus is upon the technological innovators: men who used materials in new ways and solved problems that had not hitherto been posed. Quite naturally, his heroes are men like James B. Eads and John A. Roebling. To these must be added a host of creative personalities whom Condit himself has brought to light: men like Daniel Badger and George Herbert Wyman in architecture, and Timothy Palmer and Albert Fink in bridge construction. Among the exponents of reinforced concrete, he properly gives first place to Ernest Ransome, whose achievements are coming to be more and more widely appreciated.

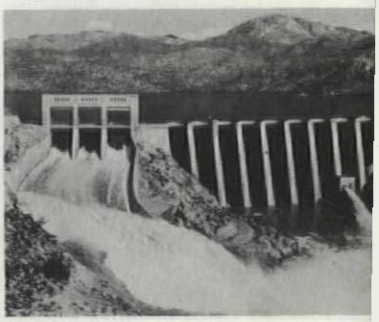
For architects, the chief interest of this volume will lie in the author's treatment of the contributions made by the best-known figures in their profession in the 19th Century. It is based on the contention, remarkable at first glance, that buildings of aesthetic distinction rarely display true structural innovations. What, the irate reader is likely to ask, of the technological mastery shown in Adler & Sullivan's Auditorium, in Burnham & Root's Reliance Building, and in Holabird & Roche's Tacoma Building? Condit's answer is that the really crucial discoveries in the history of iron framing were made in a host of almost anonymous structures, such as the amazing tower built by James Bogardus for the McCullough Shot & Lead Company of New York in 1855; it anticipated William Le Baron Jenney's skyscraper construction by almost thirty years! Seen in this light, the fine old structures of the Chicago school appear as refinements of an existing building technology rather than as radical innovations. The thoughtful reader will be led to ponder the exact status of certain contemporary curtain-wall structures; many are likely to appear downright "conservative."

Quite naturally, Condit is led to a most provocative discussion of the relationship between architect and engineer. Here his key figure is unquestionably Louis Sullivan, who in his finest buildings sought not only to incorporate engineering advances but also to symbolize the overwhelming energies released by 19th-Century science and technology. Structures like the Prudential Building in Buffalo and the Carson, Pirie, Scott Store unquestionably pointed the way to the finest works of 20th-Century architecture, and yet still exhibited a crucial deficiency: they did not display "a symbolic image of a cosmos, an encompassing order, civic, natural, or divine." Sullivan's problem is, indeed, still very much with us today; an architecture based solely on technological virtuosity is always, as Condit points out, in danger of ". . . degenerating into a sterile geometry for the very reason that it loses itself in the material culture it ought to transcend."

The book is beautifully bound and handsomely printed, with a multitude of drawings and scarce photographs. It will well reward every architect interested in the history of the structural art.

In *American Building Art: The 20th Century*, Carl Condit carries forward his able history of American building technology. Undertaking to control a tremendous mass of material, he tells the story



. . . and in the 20th Century

of American structural achievement in steel and reinforced concrete, with minor attention to wood and the light metal alloys. He treats these materials as they occur in buildings, bridges, dams, and metropolitan parkways. Although architects will be particularly interested in the chapters on "Steel Frames" and "Concrete Building Construction," everyone who has ever thrilled to the sight of a great suspension bridge or been awe-struck by the powerful contour of a monolithic dam will enjoy the author's material on these colossal structures.

Although the book is very tightly constructed, certain chapters inevitably emerge as particularly noteworthy. For this reviewer, the section on steel frames, with its close analysis of welded and riveted structures, was especially convincing. Condit's treatment of the progressive development of this technology in the hands of a series of gifted architects and engineers is fascinating. His summary of this evolution is truly admirable. "The main tendency in structural design," he writes, "has been the progressive simplification of the frame and wind bracing for the purpose of reducing the bearing members to a minimum, standardizing their form as much as possible, and increasing the area of the individual bay." It should be added that the author clearly recognizes the aesthetic failure of most curtain walls built since World War II. Like a number of other critics, he refuses to accept the street of mirrors as a valuable feature of the urban scene.

Also noteworthy is his description of American achievements in the design and construction of our great steel arch and suspension bridges. The dominant impression one receives from these pages is a sense of the heroic. Although the statistics of such an imposing structure as the Golden Gate or Mackinac Bridge are sufficiently striking, even more impressive are the genius and determination of their designers and builders. In this connection, it can be said that one of Condit's accomplishments is to make clear the need for a series of biographies of outstanding American structural engineers. Where, for example, is the much-needed book on Othmar Ammann, whose name constantly recurs in this narrative? We are dealing here with a class of men whose works have literally transformed America, particularly urban America, and yet we know almost nothing about them as individuals. It is impossible to think of cities such as New York, Pittsburgh, and San Francisco apart from their bridges, and yet we are unacquainted with the men who built them. The engineer, standing midway between the artist and the scientist, has received less than his due from the historian.

The entire picture of American engineering and architectural achievement is a curiously uneven one. On the one hand, it is perfectly clear that American dam builders have developed their concrete form "... into installations of such number, size, and intricacy that their supremacy in the field is clearly beyond challenge." Quite understandably, American civil engineers are in demand in almost every noncommunist country in the world today; their only competitors in this line of work are the Dutch, with their hard-won skills in the building of dikes. On the other hand, it is also perfectly clear that the atmosphere of American culture has not been conducive to experimentation in the structural arts. Given the sheer quantity of American construction, the number of truly creative designers is unhappily small. In this respect, the contemporary work of R. Buckminster Fuller is particularly notable. In contrast to the timidity of most contemporary engineering work, the daring of Fuller's geodesic domes is remarkable, and Condit quite properly gives him full credit. He is obviously one of the few American engineers whose name can be mentioned in the same breath with Maillart in Switzerland and Freyssinet in France. The only omission from the roster of creative American engineers is the name of Paul Nelson; more might have been said about his remarkable series of experiments with suspended structures during the 20's and 30's, but some omissions in a book of this scope are, after all, inevitable.

The aesthetics of this excellent work are both its strongest and its weakest point. We might expect Condit to evaluate structures on the basis of the traditional engineering categories of economy and elegance, and he does employ these standards in many cases. Thus, after a brilliant discussion of Frank Lloyd Wright's cantilever slab construction in the Johnson Wax Administration Building, he forthrightly declares that, "All these factors indicate an extreme structural redundancy in the internal design of the building." He also, however, uses the currently unfashionable concept of "empathy," the ability of an object to evoke a feeling of identity and sympathy in an observer. Hence, writing

Continued on page 174

Specifications Writing Procedures

BY HAROLD J. ROSEN

This column concludes the series of articles in which the author has discussed the "Tentative Proposal for a Manual of Practice for Specifications Writing Methods" promulgated by the Construction Specifications Institute. Rosen is Chief Specifications Writer for Kelly & Gruzen, Architects-Engineers.

In previous articles, we have described recommendations that call for completely new concepts in the presentation of specifications: first, a new format and arrangement of specifications into 20 standard divisions; second, a new Division No. 1, General Requirements, which outlines the general clauses of the specifications that govern the technical divisions; and third, Construction Documents, which create three main elements, namely, the "Bidding Documents," the "Contract Forms," and the "Specifications" that constitute the new arrangement of specifications material.

In this article, we will discuss specifications writing procedures contained in the manual which are, for the most part, restatements of earlier concepts of good specifications writing practice.

To begin, there is a section devoted to the language of specifications. To quote the manual: "A good specification contains the fewest words that can be used to complete the description and make sense." Verbosity and repetition lead to ambiguity. A specification must be precise; quality specifications can be achieved if the writer is clear, correct, and concise. Avoid ambiguous "escape" phrases such as: "in the opinion of the architect"... "to the satisfaction of the architect"... "as directed by the architect"..."as approved by the architect." To the contractor, the above terms mean, "Guess what I will make you do?"

The one essential requirement in writing specifications, aside from technical know-how, is the ability to write good English. Although the "Specifications" is one of the contract documents that becomes a legal document, legal phraseology is not necessary. A statement in good, clear English may be even more definite, unequivocal, and understandable to the superintendent and foreman than legal wording. A more complete discourse on specifications language is contained in H. Griffith Edwards' *Specifications*.

Another section of the manual is concerned with specifications writing procedures. This includes the work preliminary to the actual writing of the specifications, the outline specifications, the sources of information, the form and arrangement of specifications, and the reproduction and binding of specifications. Again, these procedures deal with time-tested methods such as the use of guide specifications, check lists, work sheets, and catalog files.

Reduced to their simplest form, specifications should be written following some organized system. A good draftsman will develop systematic methods of laying out his drawings. A good office will have logical standards for indication of doors, windows, and the other countless elements of the drawings.

Similarly, a specifications writer must have a system for the preparation of specifications, especially since they must be written after the drawings have almost been completed and the time available is scant. The pressure of time makes a systematic approach essential.

One of the first documents that the specifications writer must have is preliminary, or outline, specifications. This is generally prepared by the project architect or designer, and briefly lists materials and finishes without describing workmanship or fabrication.

The next step is to prepare a complete take-off of every item from the working drawings and, in conjunction with a standard check list, establish the trade sections. The specifications writer can then begin such sections as earthwork, concrete, ceramic tile, and resilient flooring, which are not likely to change during the development of the drawings.

To write these sections, many specifications writers will have their own "guide" or "master" specifications, which they have carefully developed over the years. To be truly effective, these "guides" should not be static, and should be revised as dictated by experience and new developments. Some people refer to these "guides" as "canned specifications." However, it is difficult to see how any specifications writer can do without such a valuable tool, which comprises in essence the sum total of his experiences and his best efforts to write better specifications.

Form and arrangement of specifications material is essential to a workable system. Divisions will be numbered with Arabic numerals 1, 2, 3, 4, and so on. Sections will be numbered with a composite number and alphabetical letter (described in SEPTEMBER 1961 P/A), such as 1A, 1B, 1C, or 2A, 2B, 2C. Articles start with number 1 and go on consecutively. Personally, I take issue with this. I prefer to use a combination of the section number and the article number so that the article number is a composite, such as 3A–08. Page numbers are noted in the upper-right corner containing the section number, section title, and page number as, for example: Section 3B, Forms for Concrete, Page 3. I prefer that the page number be at the bottom of the page and that it combines the section number and page number, such as 7–3.

As a concluding remark to this series of articles, I feel it is of the utmost importance that specifications writers adopt a nationally recognized system of specifications writing methods, inasmuch as no uniform system exists today. The tentative manual is a step in the right direction, and any comments on the proposed manual will be welcomed by the Specifications Methods Committee.

Only by using uniform specifications writing methods, techniques, procedures, arrangements, and language will we advance the cause of CSI's goal—"Better Specifications."

GENERAL OFFICES BUILDING
ATLANTIC COAST LINE RAILROAD
Overlooking the scenic St. Johns River,
Jacksonville, Florida

KEMP, BUNCH & JACKSON
architects

VAN WAGENEN & VAN WAGENEN
mechanical engineers

DANIEL CONSTRUCTION COMPANY
general contractor

HENLEY & BECKWITH, INC.
plumbing contractor

ALL STATE PIPE SUPPLY COMPANY, INC.
plumbing wholesaler

Performance records of millions of Sloan Flush Valves indicate that when COAST LINE's building is 50 years old its Sloan Flush Valves will still provide dependable service.

Moreover, Sloan Flush Valve maintenance costs are likely to be among the lowest in the building maintenance budget...(as little as 1½¢ per valve per year!)

• • •

Because the Sloan ROYAL is acknowledged as the world's most successful flush valve, attempts have been made to imitate some of its most important features. But why gamble with substitutes when you can plan for the life of the building confidently with Sloan? Specify and insist upon performance-proven, time-tested Sloan Flush Valves.

SLOAN VALVE COMPANY • 4300 WEST LAKE STREET • CHICAGO 24, ILLINOIS

SLOAN
FLUSH VALVES

Architect's Role Defined: Part 1

BY JUDGE BERNARD TOMSON AND NORMAN COPLAN

P/A's legal team discusses the lack of understanding that exists in the definition of the architect's role and function.

At a public hearing of the Virginia Advisory Legislative Council, which was considering proposed changes in the architectural licensing law of that state, an attorney for a homebuilders' association was reported to have stated that "the architects' function had only to do with the aesthetics in connection with a building and since the customers of his clients were not interested in aesthetics, there was no need for the services of architects." At an administrative hearing in New Jersey involving a complaint of the New Jersey State Board of Architects against a licensed engineer, the attorney for the engineer, according to a leading engineering magazine, was reported to have argued to the New Jersey Special Board of Architects and Professional Engineers and Land Surveyors that an exclusive right claimed for architects to design dwellings and other similar buildings is a "concept untenable in law; untenable historically, ethically, and competitively; impractical and contrary to public policy and public interest." Do statements of this type indicate a lack of understanding of what the architect's role and function is and should be?

The continued practice of architecture by the unqualified and incompetent in states which do not have effective licensing laws, the weakening of existing licensing statutes through judicial or administrative interpretation, and the ineffectiveness of enforcement procedures in some states certainly point up and emphasize the need for an articulation and clarification of the architect's appropriate role and function to make clear to the public the significance and importance of the architectural profession.

What is the practice of architecture, and why should it be restricted to duly licensed practitioners? These are two questions often asked and seldom adequately answered to the satisfaction and understanding of the public. Many state licensing laws define the practice of architecture and the practice of engineering. These definitions are seldom in terms that differentiate between the two professions, or which furnish specific guidelines to distinguish between the practice of those respective professions. For example, the New York licensing law, which has served as a model for several other states, defines a person practicing architecture as one who "does perform any professional service such as consultation, investigation, evaluation, planning, design . . . or responsible supervision of construction, in connection with any private or public buildings, structures or projects, or the equipment or utilities thereof, or the accessories thereto, wherein the safeguarding of life, health or property is concerned or involved, when such professional service requires the application of the art and science of construction based upon the principles of mathematics, aesthetics and the physical sciences."

The New York statute defines a person practicing engineering as one "who does perform any professional service, such as consultation, investigation, evaluation, planning, design, or responsible supervision of construction or operation, in connection with any . . . structures, buildings . . . wherein the safeguarding of life, health, or property is concerned or involved, when such professional service requires the application of engineering principles and data."

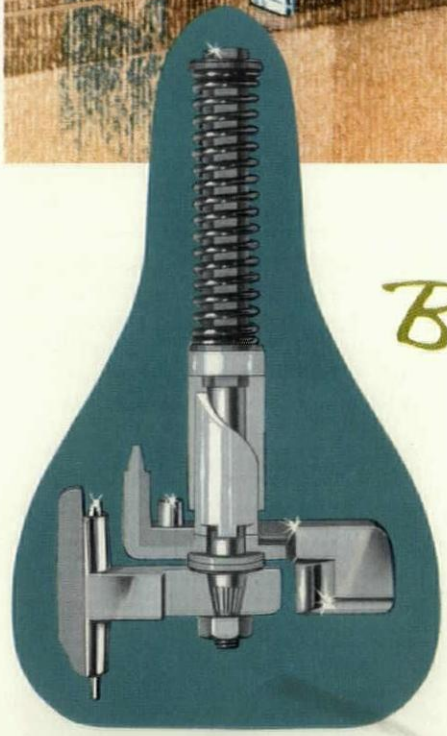
The application of the art and science of construction by an architect is based in part upon engineering principles, and the application of engineering principles by an engineer includes the application of the art and science of construction based upon the principles of mathematics and physical sciences. Thus the definition of the practice of architecture in this form not only fails to differentiate that practice from engineering, but fails to give full recognition to the architect's functioning as a master planner, co-ordinator, and chief of the construction team.

The National Council of Architectural Registration Boards has been concerned with the usurpation of the practice of architecture by other professional and nonprofessional persons. It was their belief that if a definition could be made that would distinguish between the practice of architecture and engineering, this would be helpful to both professions and would avoid continuing controversy. During their 1961 convention, the Council adopted a model definition of the practice of architecture that seeks to reflect the true role and status of the architect. This definition is as follows:

"In order to safeguard life, health, and property and to promote the public welfare, the practice of architecture in this State is reserved to those persons who have the proper qualifications and have been registered by the Board after examination.

"The practice of architecture is defined as the professional activities of a registered architect. This includes advice concerning and preparation of necessary documents for the design and construction of buildings and their environment, with the principal purpose of providing space for human use whether interior or exterior, permanent or temporary, and including, but not limited to, structures for social, political, and economic service in fulfilling domestic, religious, educational, recreational, memorial, financial, commercial, industrial and governmental needs and the like."

In next month's column, we will discuss the *McCamy* case in New Jersey in the context of the definition of architecture and engineering as contained in the New Jersey licensing laws as compared to the model definition adopted by the National Council of Architectural Registration Boards.



Wholly concealed bottom hinge is engineered so that door does not rise or lower when opened. Weight of door is fully supported on Zytel bearing, not on cam . . . a million test openings without wear. Opposing journalized Zytel cam units assure accurate and positive preselected door positioning.

THE Sanymetal PRODUCTS CO. INC. CLEVELAND, U. S. A.

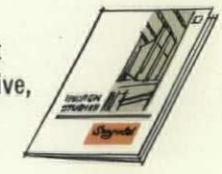
Nameplate identifies every compartment

EXCLUSIVE ENGINEERING OF *Bottom* HINGE MEANS *Top* PERFORMANCE

Why is a hinge so important? Simply because no other compartment component gets as much wear. Door hinges are the real key to long life and low maintenance.

Sanymetal hinges are fully recessed and flush to facilitate cleaning, factory installed for economical compartment installation, engineered for exceptionally long tamper-proof life and along with Sanymetal's integral hinge brackets present the most beautiful appearance.

These are the reasons for Sanymetal's highest quality at lowest in-place cost. If you would like the new imaginative, full-color "Design Studies" just call your Sanymetal representative or write direct.



Sanymetal®

world's leading

producers of toilet partitions

1721 Urbana Road, Cleveland 12, Ohio

"For information turn to reader service card Circle No. 302"

Controlled Lighting

BY WILLIAM J. McGUINNESS

Light-level flexibility in a recently completed commercial building—simplified by the use of autotransformers and fluorescent tubes capable of being dimmed—is discussed by the Chairman, Department of Structural Design, School of Architecture, Pratt Institute.

Control of lighting intensity by the use of dimmers has been increasing rapidly. Reasons for this are not hard to find. On-off operation of a lighting system may be compared to the use of a sound system without volume control. Dimmers provide a flexibility that permits maximum illumination for important seeing tasks, and yet allows the use of subdued lighting when brightness would be undesirable. Modern control equipment using transformers instead of rheostats actually achieves a saving of energy at the lower intensities without generating excess heat. The extension of this facility to the dimming of fluorescent tubes now allows control of all general and special lighting. Wiring for the control of fluorescents uses three wires instead of two because of the interconnection with the ballast.

Dimming has long been standard in spaces where mood is important: cafés, night clubs, and theaters. Increasingly used for residences, it is now also found useful in commercial buildings. Skidmore Owings & Merrill chose it for appropriate use in executive offices, conference rooms, and the directors' board room in the recently completed building for the Harris Trust and Savings Bank in the Chicago Loop. The new structure, which is 23 stories high and 400,000 sq ft in area, just about doubles the facilities of this institution, whose old building stands adjacent. Extensive modernization of the existing structure contributes to a new and efficient banking unit.

Lighting for the new building, even in general work areas, is of interest. Maintaining a level of 65 ft-c, one fluorescent troffer is used in the middle of each 5′ x 5′ ceiling module. Aluminum dividing and support bars mark off this convenient module for office partitions which can be fixed to the bars. The light fixtures have two 40-w tubes each and are furnished with integral ports for the distribution of warmed or cooled air. Surrounding the luminaries are prefinished glass-fiber panels.

Dimmers are used in executive offices (as illustrated). Fluorescent lights are adjusted by autotransformer light controls. They may be turned up full during a work session, or dimmed to a lower level usually more suitable for private conferences. In either case, the personal taste of the executive may be the guiding factor for the specific light level chosen. When the office is unoccupied for long periods, the lights may be kept on at very low intensity—an economic saving over full brightness and much preferred to the choice of leaving the room dark, suggesting an abandoned space.

On the top floor, a long conference table used by the directors for meetings and for dining is illuminated by concealed incandescent downlights. These are dimmer controlled, as are the lights directly above the marble wall in this room. Thus, attention may be given to adjustment of light level at the table and also that of the architectural features of the room.

Some conference rooms are provided with floating hung-ceilings above which bullet-type incandescents wash the walnut-paneled walls with light. In the hung ceiling, recessed incandescents illuminate the working area of the conference table. Both fluorescent and incandescent systems are separately controlled by dimmers.

In this bank building, fluorescent fixtures are by Benjamin Division of Thomas Industries and incandescents by Century Lighting. Dimmer controls are made by The Superior Electric Company.

Recessed fluorescent troffers, in addition to supplying lighting, serve as heating and ventilating outlets. They can be dimmed or brightened by light control unit at left of door.

lasting low-cost moisture barriers

"ELECTRO-SHEET"

Copper-bonded products

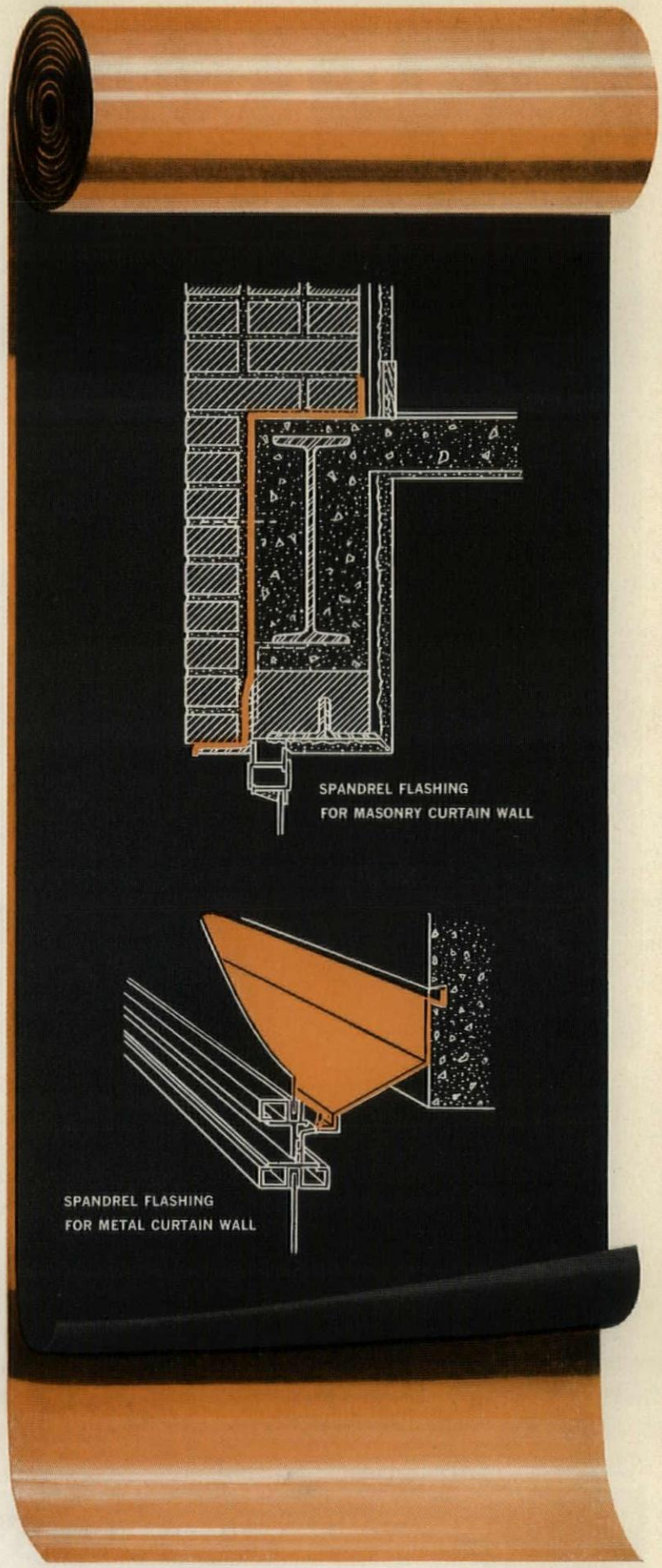
"Electro-Sheet" is pure, thin copper produced in long, wide rolls by electrodeposition. It won't rust and resists most forms of deterioration. Bonded to high-grade building papers or fabrics . . . or to asphaltic compounds . . . it makes concealed flashings you can trust.

"Electro-Sheet" Copper-bonded products are widely used in the hidden trouble spots of buildings: spandrel beams, door and window heads and sills, shower rooms and stalls, parapet walls, etc. They are flexible, easy to handle, and available in rolls up to 60" wide from building supply dealers throughout the United States and Canada.

For more information about Anaconda "Electro-Sheet" and a list of manufacturers of the flashing products, write: Anaconda American Brass Company, Ansonia Division, Ansonia, Connecticut.

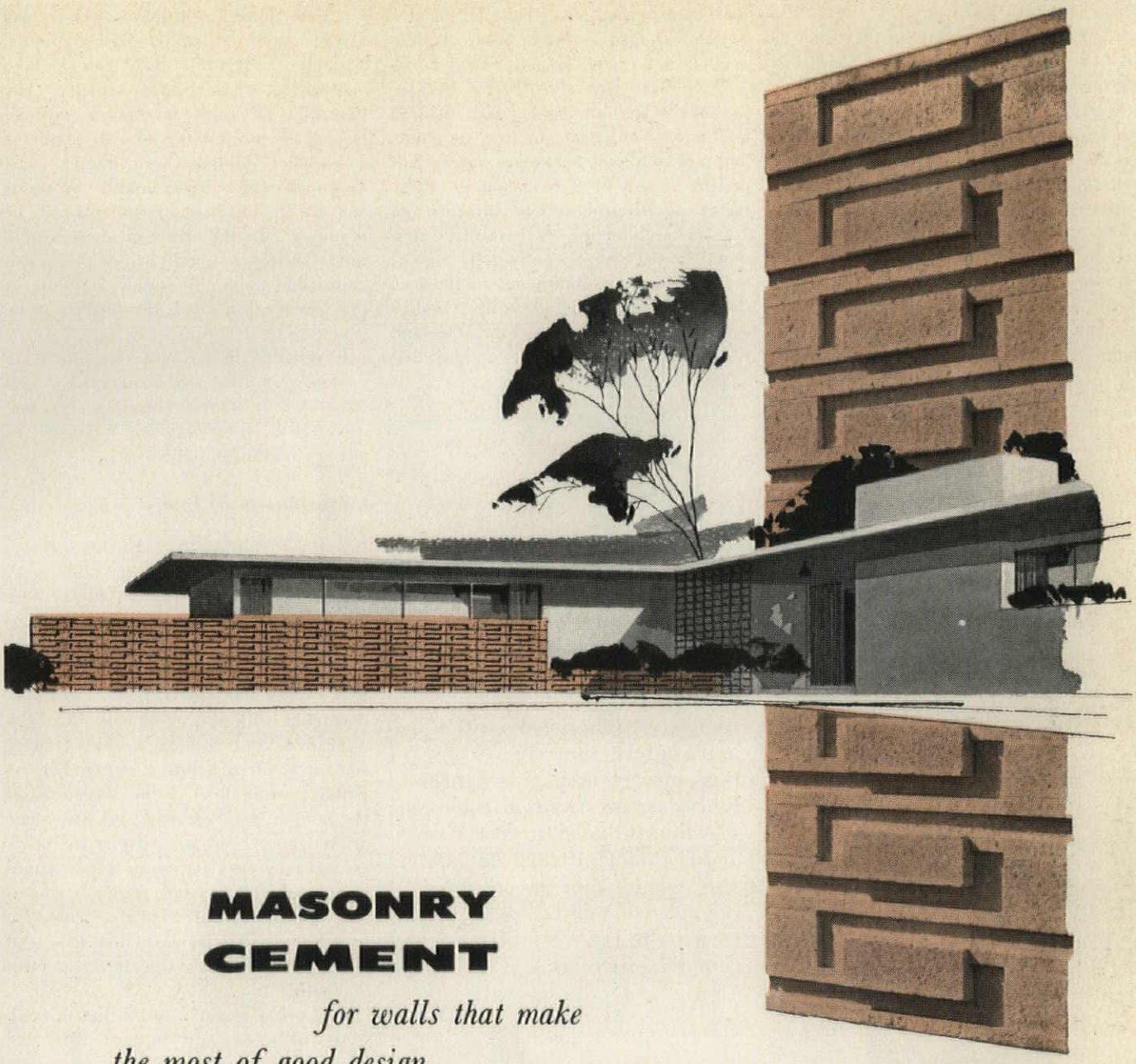
61-1024A

ANACONDA®
AMERICAN BRASS COMPANY



"Electro-Sheet" Copper is available bonded on one or both sides.

For more information, turn to Reader Service card, circle No. 319



MASONRY CEMENT

for walls that make the most of good design

Better walls start with better mortar. To be sure of top quality, specify mortar made with masonry cement. This cement is a blend of materials that gives a good balance of the desirable properties in mortar. Except for sand and water, everything is delivered in one bag. Mixing calls for no special skills . . . when workability is right, water content is right. It makes a "fat" mortar that promotes better workmanship. Tighter joints, uniform color and dependable strength are assured. For the best in wall performance with any masonry unit—concrete, brick, tile, stone or glass—architects everywhere specify masonry cement. Write for free literature. (U.S. and Canada only.)

PLAN TO ENTER 1962 Concrete Industries HORIZON HOMES Program

PORTLAND CEMENT ASSOCIATION Dept. A12-25, 33 W. Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete

Continued from page 165

of the great suspension bridges such as the George Washington and Golden Gate, he observes, "We measure the rest against these, quantitatively and emphatically, and we are right to do so, for they stand as the ultimate mastery of structural techniques in steel. As pure empirical form, there is nothing that can quite match them." On a number of occasions, the reader is uncertain as to what criteria the author is using, and this is a great shame, since he handles both sets with great skill.

This confusion is all the more unfortunate because Condit has a vital message for contemporary architects. His contribution is suggested (but not worked out in detail) in the last chapter, entitled "An Architectural Appraisal." Here he analyzes the structural dilemma of the modern architect. The art of building, he points out, now oscillates between a narrow formalism based on a reduction of architecture to its structural constituents and "the nonarchitecture of the Great Salesroom" based upon a profoundly amoral attitude toward structural design. Between the two extremes, incidentally, Condit's sympathies obviously lie with Mies and the neo-Miesians. He has nothing but scorn for those who think of architecture as a variety of packaging. With fine irony, he quotes the late Robert R. Young on the construction of Grand Central City. "The Central," said this far-sighted railroad tycoon, "is progressing with its plans for a new office building above Grand Central Terminal which every public relations and advertising man in America will be proud of." To the criticism of contemporary architecture Condit brings a technical knowledge and a philosophical equipment that are much needed. He deserves to be widely read.

It remains to be said that the book possesses an attractive format and is well illustrated. In short, it is an important and essential work for any one interested in modern building problems.

Cannibalism of Ideas

Hospitals, Clinics, and Health Centers
Editors of "Architectural Record."
F. W. Dodge Corp., 119 W. 40 St., New York 18, N.Y., 1960. 264 pp., illus. $9.75

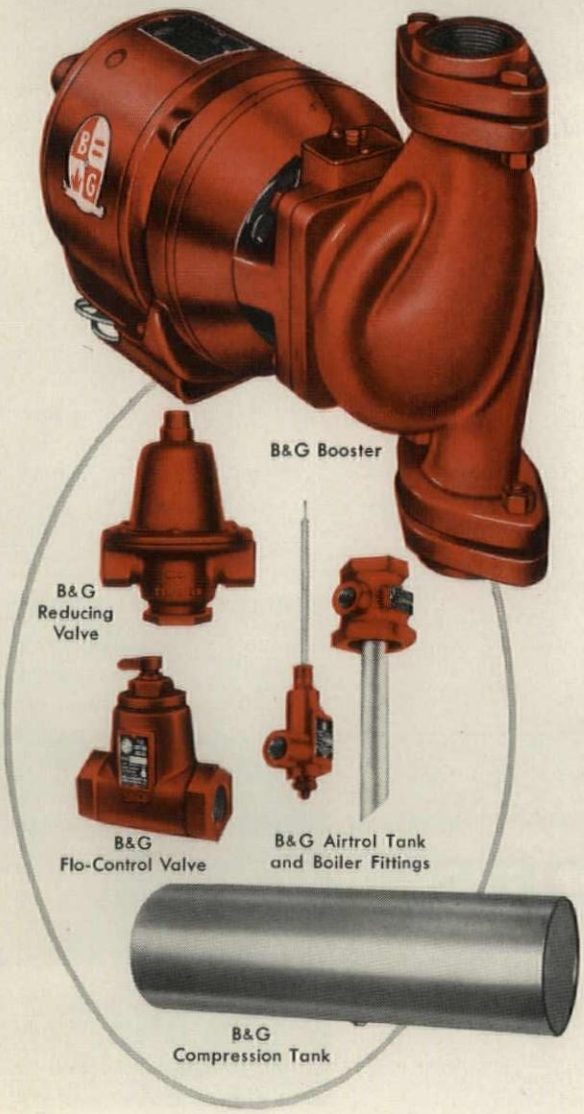
Every office tries to keep its files up to date; but with the quantity of material published, and without a skilled librarian, it is often a losing battle. The republication in book form, therefore, of the best crop of current work has some attractiveness. But attractive as the proposition may be—gathering a few pages of this and that from recent years—it does not necessarily make a book. No introductory article, no matter how well written, can increase the intrinsic form or worth.

Perhaps it is naïve to ask that a book represent a concept—in particular, one dealing with as complex a matter as hospital planning—at a time when there has scarcely been an issue of a hospital journal or a planning seminar in the last ten years that has not exposed the inadequacies and confusion of current thinking.

Hospitals, Clinics, and Health Centers states on the jacket that it presents "the newest and most effective ideas for planning of hospitals and other medical facilities." Further on it adds that the book is "the clearest and most complete source of information available today." Unfortunately, one must disagree with these statements. At best, the book succeeds in encouraging a kind of cannibalism of ideas, leading to further outrages of planning in a field already full of dismembered organs. No serious architect can afford to indulge in this, and no

Continued on page 186

Architects: Sargent-Webster-Crenshaw & Folley **General Contractor:** Joseph E. Bennett Co., Inc. **Plumbing, Heating & Ventilating Contractor:** Northern Mechanicals, Inc.



NINE B&G® BOOSTER PUMPS PROVIDE CONTROLLED COMFORT IN ST. LAWRENCE SEAWAY CORPORATION'S ADMINISTRATION BUILDING, Massena, N.Y.

The forced circulation hot water equipment in this outstanding office building is made by B&G... Booster Pumps, Flo-Control Valves, Airtrol Systems and Reducing Valves.

The building is divided into nine zones for better temperature control, with each zone served by a B&G Booster. A bronze Booster is used for circulating domestic hot water.

Over 3,500,000 Boosters are in service today...clinching evidence that their superior quality and performance has never been challenged. The reasons why they so completely dominate their field are not hard to find. Above all they are *quiet—vibrationless*...the prime essentials of a forced hot water circulating pump. They are dependable and profitable —not a cause of endless service and customer dissatisfaction. Sound design and sturdy construction of best materials assure efficient performance for years.

B&G *Hydro-Flo* Products are made by a company which offers help in any problem of design or installation—and with nation-wide distributors and service organizations.

Hydro-Flo® SYSTEM

BELL & GOSSETT

COMPANY

Dept. GX-37, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

What's in a name?

L. S. Donaldson Dept. Store, Edina, Minn. ▲
Architects: John Graham & Co.

the unseen

but all important factor...

DEPENDABILITY...

the reason

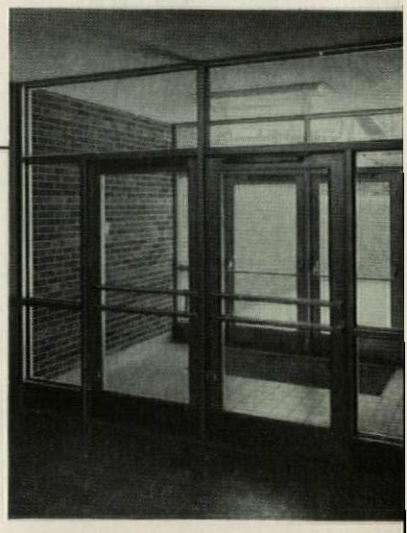
leading architects

specify

Cupples

ALUMINUM DOORS
AND ENTRANCES

Hope College, Holland, Mich.
Architect: Ralph R. Calder ▼



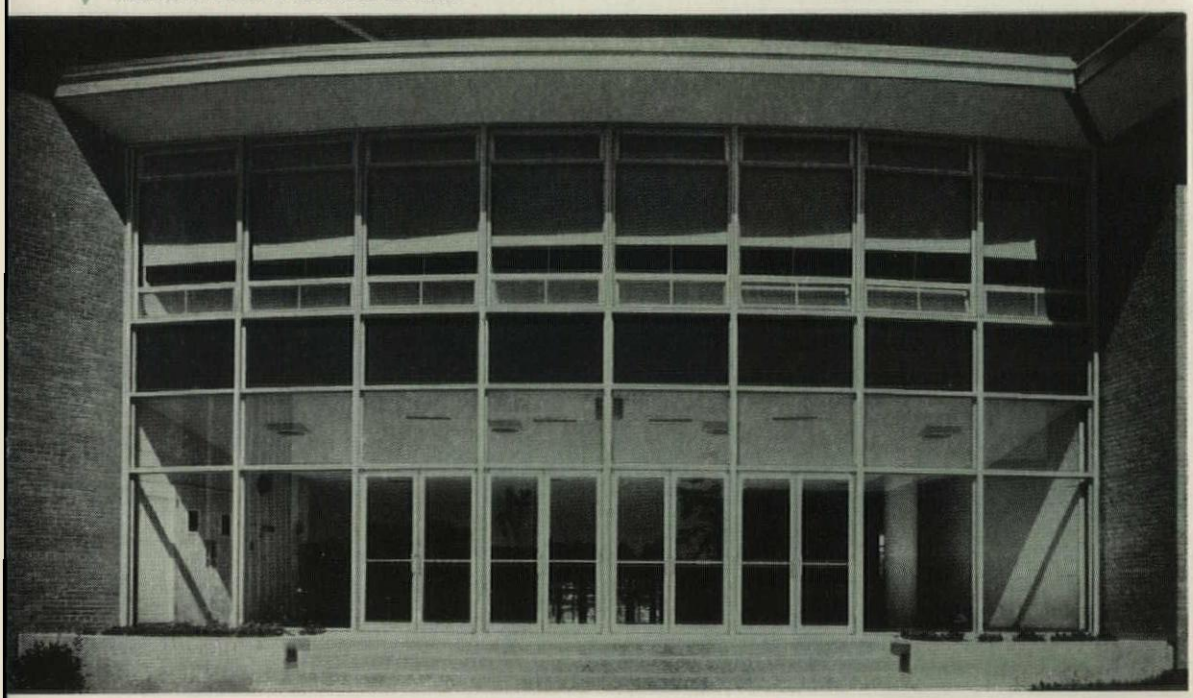
▲ Holiday Inn, Jackson, Mich.
Architect: William W. Bond

When you need entrance doors and frames and want dependability of product and service as well as a dependable company behind the product, the name to remember is "*Cupples*"... a division of ALCOA.

Cupples aluminum entrance doors and frames—both custom and our new "40 line" of stock units—have captured the plaudits of both architects and owners. Precision made from heavy gauge extruded aluminum sections, with hairline joints and a beautiful anodized finish that is guaranteed under bond by Cupples, they are the type of products you'll be proud to specify for any job. And, what's more, they're priced competitively to fit any building budget.

Available as single or double doors with many variations in frame, you have complete design flexibility. Choose from new style offset pivots, butts or concealed overhead closers. Double acting doors on floor closers, as well as stock panic device doors are also available.

▼ Elizabeth Seton H. S., Bladensburg, Md.
Architects: Thomas H. Locraft & Associates



ALCOA
CUPPLES PRODUCTS DIVISION
ST. LOUIS, MO.

Other outstanding features include: Complete flush glazing... No exposed screws... Simplified installation and anchoring... 100% vinyl glazing, front and back ... Vinyl sealed expansion mullion... Stock push-pull hardware, interchangeable with custom styled hardware.

Investigate Cupples today and see for yourself why your clients get more for their money when you specify "Entrance Doors and Frames by Cupples." Write for our catalog or see Sweet's, Section 16a/Cu.

CUPPLES PRODUCTS CORPORATION

A DIVISION OF ALUMINUM COMPANY OF AMERICA
DOWAGIAC, MICHIGAN

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

Round Concrete Columns...

beauty and brawn for modern buildings

Money-savers, too, when formed with

SONOCO

Sonotube®

FIBRE FORMS

Cleveland Engineering and Scientific Center, Cleveland, Ohio
Architect: Garfield, Harris, Schafer, Flynn & Williams
General Contractor: Gillmore-Olson Co.
Photos: Courtesy of CLEVELAND ENGINEERING SOCIETY

Impressive in appearance . . . wide range of surface finish possibilities . . . strong, low in cost, little or no maintenance. These are good reasons why *round concrete columns* make ideal interior and exterior supports in modern buildings.

Increasingly popular from a design standpoint, round concrete columns are economical, too—especially when formed with SONOTUBE Fibre Forms. Available in several types to meet various requirements, these versatile forms save contractors time, labor and money in a dozen ways!

Include round concrete columns in designs often, and specify the fastest, most economical forming method–SONOTUBE Fibre Forms. Available 6″ to 48″ I.D., any length.

See our catalog in Sweet's

For complete information and prices, write

SONOCO

Construction Products

5925

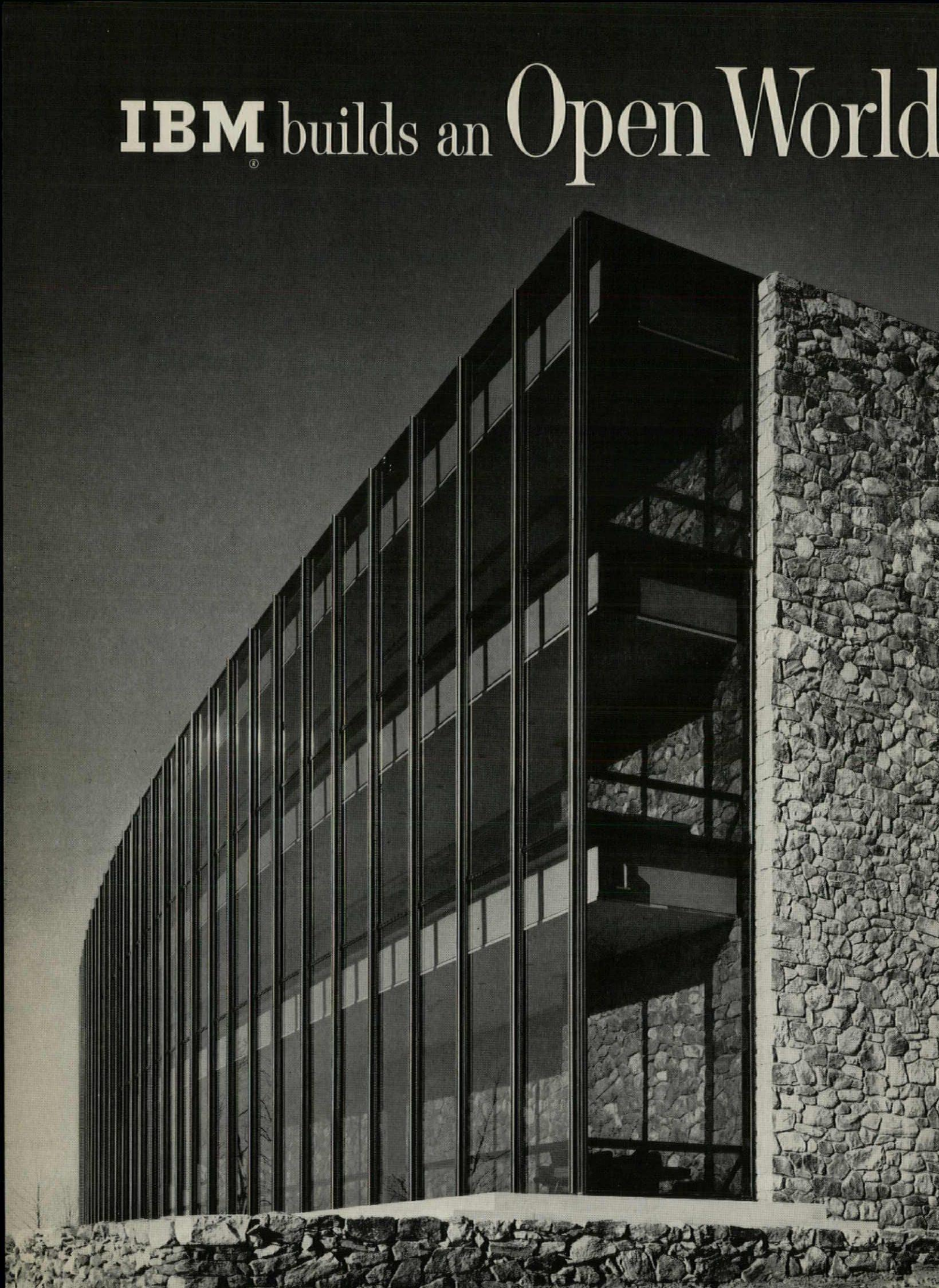
SONOCO PRODUCTS COMPANY, Hartsville, S. C. • La Puente, Calif. • Fremont, Calif. • Montclair, N. J. • Akron, Indiana • Longview, Texas • Atlanta, Ga. • Ravenna, Ohio • **CANADA:** Brantford, Ont. • **MEXICO:** Mexico City

For more information, circle No. 381 ➤

Builder: Dominion Construction Corp., New Orleans.
Design and Fabrication by: Milan Engineering Co., New Orleans.

This lightweight structural framing system cost, in place, 30% less than conventional methods. Key to the economy was the engineer's novel design...combined with lightweight Jones & Laughlin 10-inch Junior Beams, and channels and angles. The combination achieved lightness and ease of construction in Studio Arms IV, a luxury apartment dwelling in Jefferson Parish, a New Orleans suburb. Here's how the designer slashed costs: 1) Girders are Double-Warren trusses fabricated with standard J&L channels as top and bottom chords and standard J&L angles as diagonals. 2) J&L Junior Beam joists are supported in the vertex of the triangle formed by the diagonals of the truss. 3) Beams are spaced on 3-foot centers, spanning 24 feet from truss to truss. Results: Reduction in weight of steel per square foot, flexibility in interior planning, saving of one foot of height per floor. For details call the J&L representative or contact J&L direct.

IBM® builds an Open World



eft) IBM—Thomas J. Watson Research Center
orktown Heights, N. Y.
chitects: Eero Saarinen & Assoc.

or creative thinking

It's an inspiration to the scientists, engineers and technicians who work here . . . a building that's exciting to look at, inviting to enter, and pleasant to work in. There's a built-in atmosphere of freedom that stimulates creativity.

The graceful curving face of the building is L·O·F *Parallel-O-Grey*® Plate Glass. Huge lights rise uninterrupted from ground level to roof. The neutral grey plate glass blends with the native stone. On bright, sunny days, when its mirrorlike surface reflects changing cloud patterns, the new building seems a part of the landscape.

Natural Viewing

But the beauty of *Parallel-O-Grey* doesn't stop there. Its surfaces are twin ground to make them more parallel, thus minimizing waviness for better looking, outside and inside.

And from the inside you are not aware that the glass is tinted. The world you see through it looks natural, the true colors unchanged.

Glare and Heat Reduction

Viewing the open world from within is more pleasant because sky glare is reduced to relieve eyestrain. Yet daylight is abundantly sufficient to flood large areas. *Parallel-O-Grey* transmits approximately 44% of average daylight. And it screens out about 40% of the sun's heat to make interiors more comfortable . . . to reduce the load on air-conditioning equipment.

Unusual Glass Partitions

For certain partitions in the IBM Research Center, the architects chose a new kind of L·O·F plate glass (see photos). It's the same basic glass used in the facade of the building—L·O·F grey plate glass—so it blends with the outer wall. But only *one* surface of the partition glass has been ground and polished. Configurations on the other surface give the glass a pleasing, shimmering texture that provides privacy. Yet the glass is translucent enough to borrow and utilize light from adjoining areas.

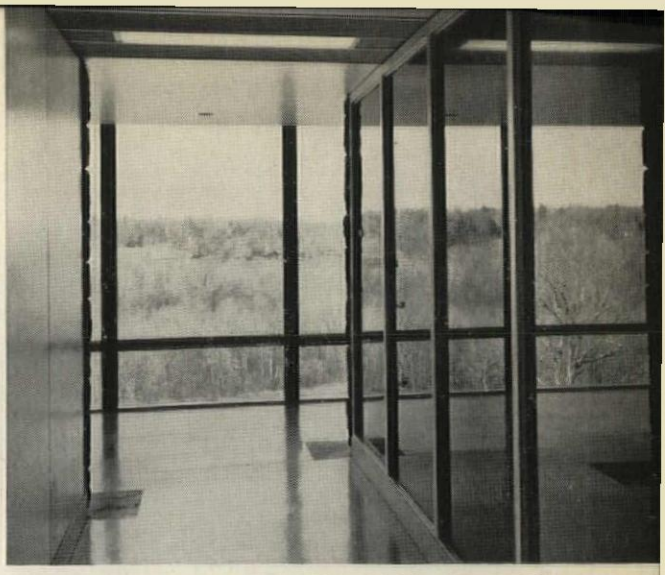
These glass partitions require no maintenance except occasional washing to keep them attractive.

For more information on *Parallel-O-Grey* Polished Plate Glass, Rough Grey Plate Glass and other kinds of L·O·F glass for construction, refer to Sweet's Architectural File 26-A, or call your L·O·F Distributor or Dealer (listed in the Yellow Pages). Or write to L·O·F, 45121 Libbey·Owens·Ford Building, Toledo 1, Ohio

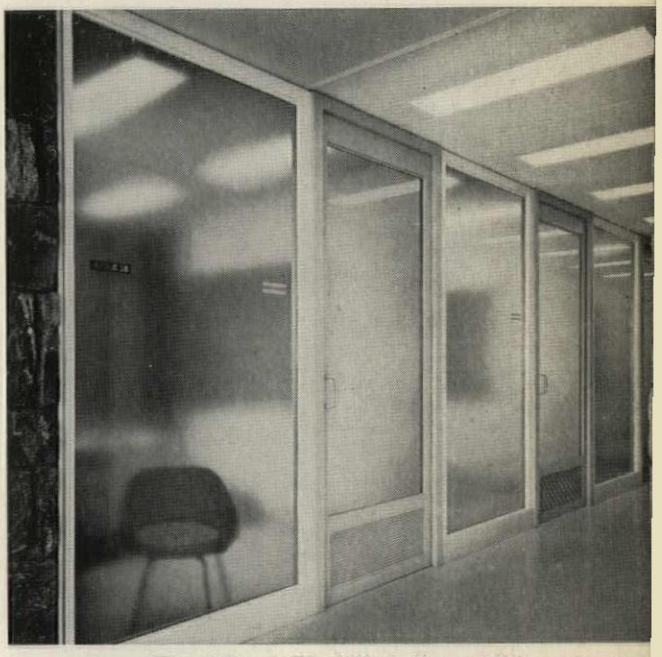
LIBBEY
OWENS
FORD

Toledo 1, Ohio

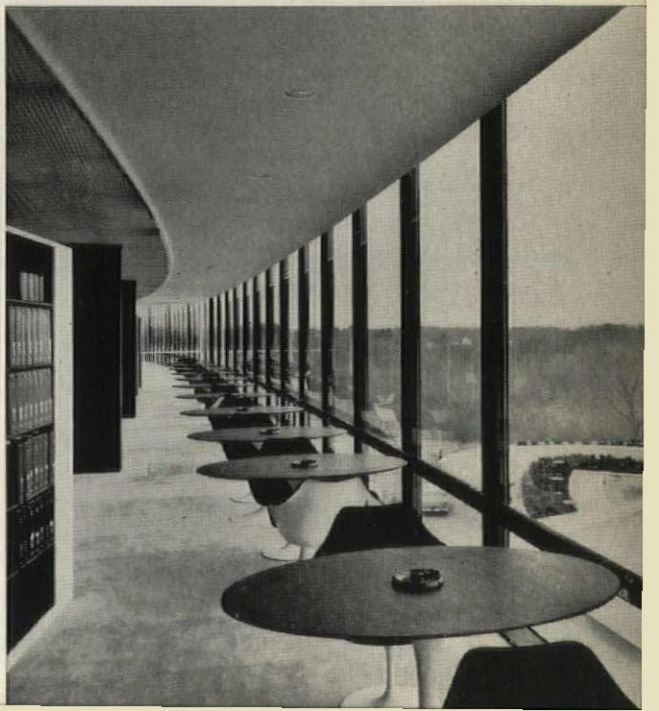
MADE IN U.S.A.
L O F GLASS
THE QUALITY MARK TO LOOK FOR



Above—Partitions of Rough Grey Plate Glass polished on one side give a space-creating reflection. *Below*—Unfinished on the outer surface, these partitions transmit soft office light, but assure privacy.



Below—The "Open World" feeling of this perimeter corridor comes from panels of *Parallel-O-Grey* Plate Glass. They're polished plate glass for clarity . . . tinted a soft grey to reduce sky glare and sun heat.



Continued from page 186

formation is from detailed survey made by the International Association of Auditorium Managers.

The Australian Ugliness. Robin Boyd. F.W. Cheshire Pty., Ltd., 338 Little Collins St., Melbourne C1, Australia, 1960. 230 pp., illus. $3.50

Contemporary Houses Evaluated by Their Owners. Thomas H. Creighton and Katherine Morrow Ford. Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y., 1961. 224 pp., illus. $10.95

The First Book of Architecture. Lamont Moore. Franklin Watts, Inc., 575 Lexington Ave., New York 22, N.Y., 1961. 82 pp., illus. $1.95

Some 40 outstanding works of architecture —from Stonehenge to the UN—discussed by former Director of Education at the National Gallery of Art, Washington, D.C.

A History of Architecture on the Comparative Method (17th Edition). Sir Banister Fletcher. Revised by R.A. Cordingley. Charles Scribner's Sons, 597 Fifth Ave., New York 17, N.Y., 1961. 1366 pp., illus. $16.75

Extensive revision of the standard work, with new text (all text has been reset) and an additional 100 pages of illustrations. The previous brief accounts of architecture since 1830 have been replaced by three full-length chapters on 19th- and 20th-Century architecture in Britain, Continental Europe, North and South America. Cordingley, who directed the six-year revision, is professor of architecture at the University of Manchester.

Interiors for Contemporary Living: An International Survey in Color. Edited by J.E. Schuler. Introduction by Cathrin Seifert. Text by Franz Bauer. Architectural Book Publishing Co., Inc., 151 E. 50 St., New York 22, N.Y., 1961. 204 pp., illus. $15.95

Penn's Great Town: 250 Years of Philadelphia Architecture. George B. Tatum. Sponsored by The Philadelphia Art Alliance and The College of Fellows of the AIA. University of Pennsylvania Press, 3436 Walnut St., Philadelphia 4, Pa., 1961. 352 pp., illus. $12.50

The Training, Placement and Utilization of Engineers and Technicians in the Soviet Union. Engineers Joint Council, 29 W. 39 St., New York 18, N.Y., 1961. 112 pp., illus. $1

Provocative report based on a recent tour of the Soviet Union by six U.S. engineers. Each member of the delegation evaluates a different aspect: type of engineering education, manpower planning, continuing study, Governmental-incentives, industrial research, and utilization of specialists. A concluding section discusses the implications of the Soviet emphasis on engineering education, particularly the impact on underdeveloped countries. Photographs and statistical data included.

Window Display. A Graphis Book. Edited by Walter Herdeg. Frederick A. Praeger, Inc., 64 University Place, New York 3, N.Y., 1961. 269 pp., illus. $17.50

Display techniques discussed as an art form, with more than 500 illustrations showing the best work in 20 countries.

Cut $20 from the ultimate cost of a school building with every square foot of

TERRAZZO

Savings in floor maintenance will more than pay entire school construction cost.

A recent study[1] shows that the ultimate cost of Terrazzo is $20 less per square foot than asphalt tile, or *more than enough to pay for the entire school construction cost.*

Lower maintenance costs of Terrazzo are responsible. The initial cost of floor finishes represents from 1 to 4% of ultimate cost.

A survey[2] of a number of schools reveals that the annual maintenance cost of Terrazzo is 21c per sq. ft. less than vinyl tile, 53c less than asphalt tile.

Maintenance cost is one of six factors considered in the complete study. The others: (1) value of money (2) price increases (3) initial cost (4) replacement (5) speed of construction. These costs and their incidence over an anticipated life of 50 years were determined and converted to present value[3] for ready comparison. The study is summarized in the chart shown at right.

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

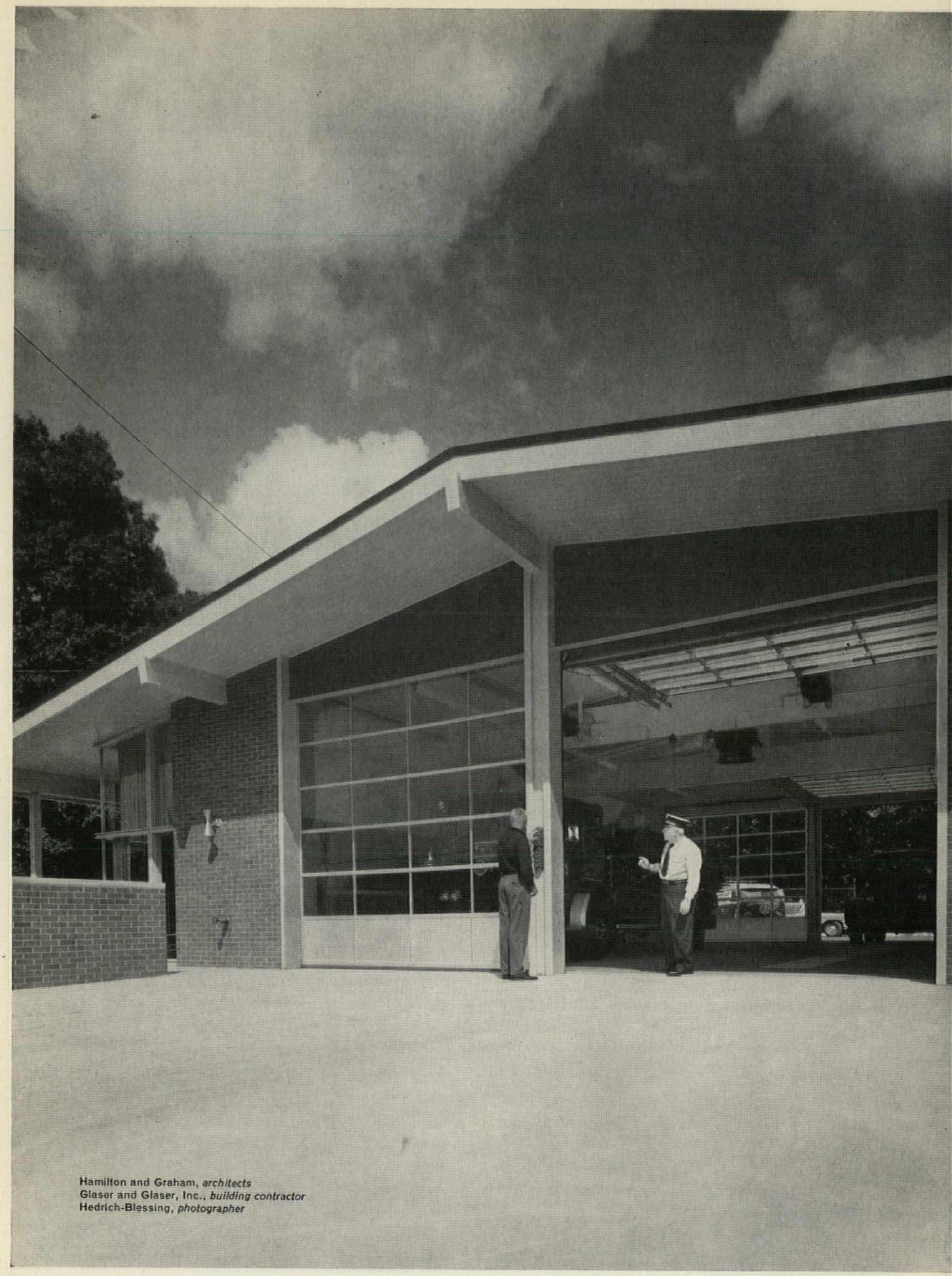
For a free copy of the complete study of ultimate cost write: The National Terrazzo and Mosaic Association, 2000 K Street, N. W., Washington 5, D. C.

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.

Member Producers' Council

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION

N.A.D.A. Building, 2000 K St., N.W., Washington, D.C.



Hamilton and Graham, *architects*
Glaser and Glaser, Inc., *building contractor*
Hedrich-Blessing, *photographer*

"OVERHEAD DOOR" opens a new door to space control

Doors permit maximum use of space . . . inside, and outside

"OVERHEAD DOORS" make the most of space by making it *accessible*. They are virtually *movable walls* that can open the front, back, and sides of a structure – multiply the use of both the building and the land around it.

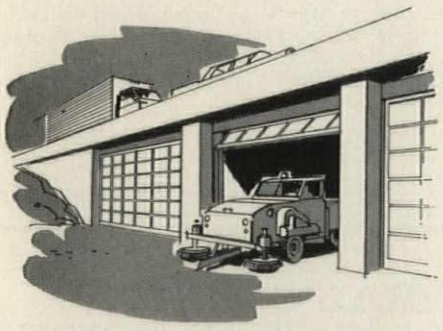
As exits, "OVERHEAD DOORS" can make every part of the lot immediately accessible from the building, allow more design freedom in placing the building on the lot, and permit full development even of a poorly shaped lot. *As entrances*, "OVERHEAD DOORS" supply light and ventilation, as well as access to the inside, making the structure more useful, more adaptable for additional functions. *As movable partitions*, "OVERHEAD DOORS" instantly divide or enlarge rooms to fit varying interior space requirements.

A typical space control application is in the Muncie, Indiana, fire station shown at left. "OVERHEAD DOORS" in the front and back of the building provide access to a paved area in the rear, which is used to turn, park, and service the fire engines and other vehicles. In other buildings, this ready access, plus the admission of light and air, can give space valuable extra usability.

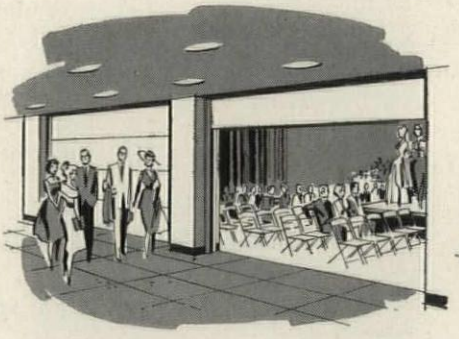
Many other new ideas in space control have been developed and tested by Overhead Door Corporation engineers – ideas that result from this company's 40 years of experience in the garage door field.

Get detailed information from your local distributor (see "OVERHEAD DOOR" in the white pages) for an application you may now be planning, or write to Overhead Door Corporation. *General Office:* Hartford City, Indiana. *Manufacturing Distributors:* Dallas, Tex.; Portland, Ore.; Cortland, N.Y.; Hillside, N.J.; Lewiston, Pa.; Nashua, N.H. *In Canada:* Oakville, Ont.

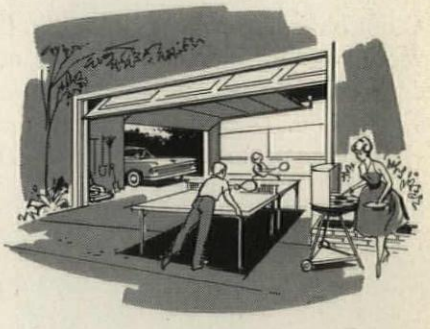
To solve many space control problems—



Viaduct garage. "OVERHEAD DOORS" help make more efficient use of space by providing *enclosure* as well as *access*. For example, the addition of doors and block walls can convert unused space beneath a bridge or viaduct into an inexpensive garage for public vehicles.



Movable partitions. Interior "OVERHEAD DOORS" can be used to convert small rooms quickly into a large auditorium area—and back again. Special flush panel doors that rise into a false ceiling are available with hinges, struts, and jambs concealed.



Convertible-garage-room. An extra "OVERHEAD DOOR" in the back or side wall of a residential garage supplies light and ventilation to make the space livable. With the car removed, the garage quickly becomes a warm-weather workshop, play pavilion, or covered patio.

THE "OVERHEAD DOOR" TRADE MARK

the original upward-acting sectional door . . . made only by

OVERHEAD DOOR CORPORATION

Special Pre-Publication Offer on One of the Most Important Books for Architects Ever Published

MATERIALS FOR ARCHITECTURE

An Encyclopedic Guide by CALEB HORNBOSTEL, A.I.A.

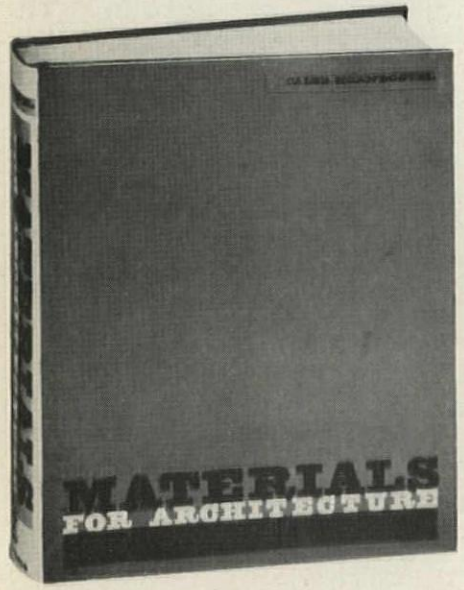
Here, complete in one volume, is the basic technical and scientific data on all materials employed in modern architecture. In a lucid and encyclopedic format, this new reference lists physical and chemical properties... describes types, uses, application methods, history, and manufacture . . . and analyzes the advantages and limitations of all the major and minor materials of building. Thorough, authoritative, up to date, this eagerly awaited reference work is destined to become an indispensable working tool for every architect and engineer.

624 double-column pages, handy 8¼ x 10¼ size, with numerous tables, charts, diagrams, and photographs. *Special pre-publication offer – price through December 31, 1961: $18.50.* (Price after December 31, 1961: $20.00) Mail the coupon to receive your copy for 30 days' free trial.

A Sampling of the 274 Major Categories in this One-Volume Reference Library:

• Abrasives • Acoustic Materials • Aluminum • Aluminum Alloys • Asbestos • Asphalt Roofing and Siding • Beryllium • Brass • Brick • Caulking • Cement • Ceramic Tile • Cobalt • Color Pigments • Concrete, Artificial Stone • Concrete, Reinforced • Copper • Dampproofing • Expansion and Expansion Joints • Feldspar • Glass Block • Glass, Laminated • Hardware • Insulating Materials • Iron • Lead • Linoleum • Magnesium • Mesh and Wire Cloth • Monel • Nickel • Paint • Piling • Plaster • Plastics • Radiation Protection • Rubber • Sandblasting • Soldering • Steel Pipe • Steel, Structural • Tin • Vanadium • Weatherstripping • Wood • Wood Siding • Zinc

plus cross references (over 900) to help locate any material, process, finish, etc.



30-DAY FREE TRIAL OFFER AT SPECIAL PRE-PUBLICATION PRICE

REINHOLD PUBLISHING CORPORATION
Dept. M-919, 430 Park Avenue, New York 22, N. Y.

Send me _____ copy (copies) of Hornbostel's *Materials for Architecture* for 30 days' free trial at the special pre-publication price of $18.50 each. (Special price offer expires Dec. 31, 1961. List price of $20.00 prevails thereafter.)

☐ Purchase price enclosed
(Reinhold pays regular delivery charges)

☐ Bill me (plus delivery charges)

NAME _____
(please print)

ADDRESS _____

CITY & ZONE _____ STATE _____

SAVE MONEY! Enclose total payment with order and Reinhold pays regular delivery charges. Same return privilege guaranteed. Please add 3% sales tax on N. Y. C. orders. Send check or money order only – *do not enclose cash!*

For more information, circle No. 363 ➤

COMPARE EVERY FEATURE OF

SARANSPUN

WITH ANY OTHER DRAPERY FABRIC MADE

- Permanently flameproof
- Luxuriously beautiful
- Resists hardest wear
- Never fragile—won't crack or flake
- No "hiking" when weather changes
- Unmatched for maintenance-economy

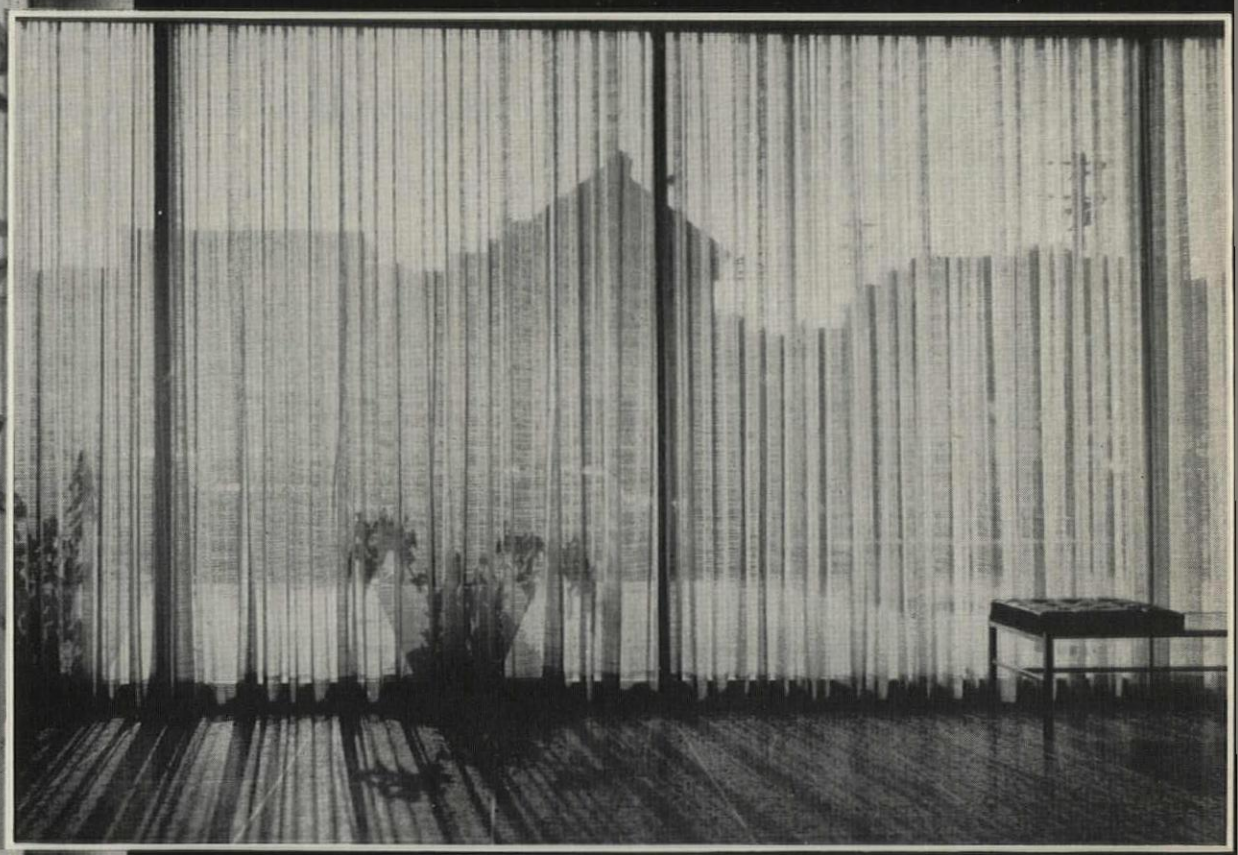


PHOTO: IMPERIAL OIL COMPANY, VANCOUVER, B. C

Saranspun is rapidly going into public places everywhere—hotels, restaurants, hospitals, institutions—installations where draperies are subjected to roughest treatment. Noteworthy for its strength and abrasion-resistance, Saranspun has a soft, linen-like hand that makes it wonderfully workable. It may be laundered or dry-cleaned according to instructions. It is available in modern and traditional prints as well as richly-textured solids. Why settle for anything less than Saranspun?

SARANSPUN
TRADE MARK

80% SARAN
20% VISCOSE RAYON

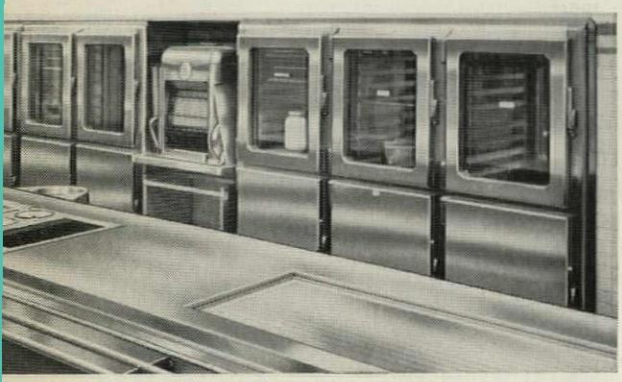
SARANSPUN WOVEN BY: J. P. STEVENS & CO., INC.

SARAN FIBERS PRODUCED BY THE FILAMENT AND YARNS DIVISION OF

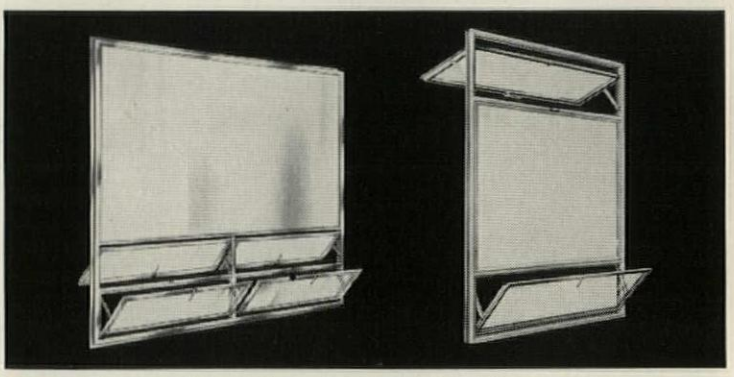
NATIONAL PLASTIC PRODUCTS COMPANY, INC.

ODENTON, MARYLAND

MANUFACTURERS OF NEVAMAR



UTIFULLY BRIGHT for care-free cafeterias, kitchens, trim. Republic URO® Stainless Steel is practical, durable, and attractive. Even worn aces have high bacterial cleanability equal to glass. Lends sparkling, orative beauty anywhere—interior or exterior. Withstands abuse—high dent resistance. Send coupon for application ideas.



BEAUTIFULLY RIGHT for schools and commercial buildings. Truscon Aluminum Windows are offered in the most complete range of types and sizes—a design to complement every architectural style. Polished white bronze hardware. Tight-sealing vinyl weatherstripping around entire vent perimeters. Send for specifications.

DESIGNED WITH KIDS IN MIND

...Republic Steel Lockers

Begin with crisp, modern lines. Add functional design features—extra roominess, free-flow ventilation, snag-proof construction, positive latching. Built to last with double-leaf 2″ hinges, Bonderizing, baked-on enamel finish.

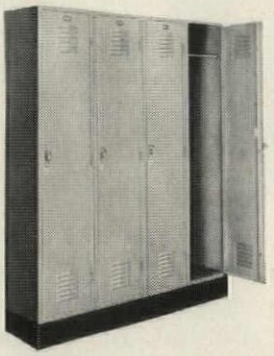
The result: Republic Steel Lockers—the lockers that are designed with kids in mind—the lockers you can specify with full assurance that they'll stay new looking, perform beautifully for years to come.

Steel

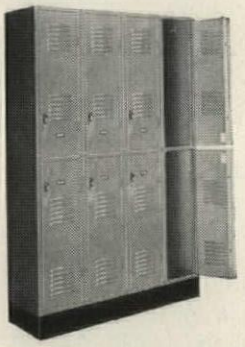
Strong,
Modern,
Dependable

COMPACT OR FULL-SIZED MODELS

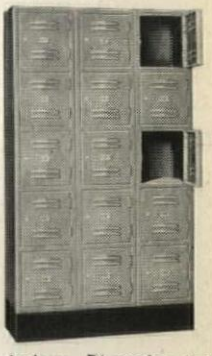
Beautifully built for every type of school requirement, too. Republic lockers are offered in the most complete range of sizes and styles available anywhere. Pictured are three of the most popular types.



Single-tier lockers. Sizes up to 18″ x 24″ x 72″ with a single door, or 24″ x 24″ x 72″ with double doors.



Double-tier lockers. For limited space locations. Sizes up to 15″ x 18″ x 42″.



Box lockers. Dimension variations depend on whether 3, 4, 5, or 6 tier styles are selected.

REPUBLIC STEEL

REPUBLIC STEEL

REPUBLIC HAS THE FEEL FOR MODERN STEEL

REPUBLIC STEEL CORPORATION
DEPT. PA-2225-A
1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send additional information on:

☐ Republic Steel Lockers
☐ Free Locker Planning Assistance
☐ Republic ENDURO Stainless Steel
☐ Truscon Aluminum Windows

Name_____ Title_____

Firm_____

Address_____

City_____ Zone____ State_____

New Addresses

ENGINEERS JOINT COUNCIL, United Engineering Center, 345 E. 47 St., New York 17, N.Y.

LEWIS S. GOODFRIEND AND ASSOCIATES, Acoustical Engineers, 48 Notch Road, Little Falls, N.J.

HOWARD R. MEYER, Architect, 2727 Oak Lawn Ave., Dallas 19, Texas.

EDWARD H. NOAKES & ASSOCIATES, Architects, 7805 Old Georgetown Road, Bethesda 14, Md.

Elections, Appointments

JAMES V. BONOMO, named Supervisor of Drafting Room Production in firm of LEACH, CLEVELAND & ASSOCIATES, Architects-Planners-Engineers, Los Angeles, Calif.

CARL S. MEYER, appointed Architectural Consultant for ALLIED CHEMICAL'S BARRETT DIVISION, New York, N.Y.

WILLIAM E. COX, appointed to architectural design staff in firm of THE BALLINGER COMPANY, Architects and Engineers, Philadelphia, Pa.

CRICHTON C. CALLAWAY, JR., named Vice-President in charge of the Office Building Division in firm of CHARLES LUCKMAN ASSOCIATES, Planner-Architects-Engineers, Los Angeles, Calf.

SHERIDAN G. STANTON, appointed Staff Designer of Architectural Products Division in firm of GLADDING, MCBEAN & CO., Los Angeles, Calif.

HENRY VAN LOON joined the firm of PERKINS & WILL, Architects, White Plains, N.Y.

Expansion

WELTON BECKET AND ASSOCIATES announces a major expansion of the Houston, Texas, office. The 4000-sq-ft addition will provide space for 40 additional draftsmen and six project architects.

P/A Congratulates . . .

ROBERT F. HAYES, appointed to Sales Promotion in firm of BUENSOD-STACEY, INC., a division of AERONCA CORPORATION.

CRAMER W. LAPIERRE elected Executive Vice-President in firm of GENERAL ELECTRIC COMPANY.

GERALD L. PHILLIPPE elected President, ROBERT L. SKAGGS, promoted to manager of form and metal roof deck sales in firm of GRANCO STEEL PRODUCTS COMPANY.

GILBERT L. SMITH, appointed General Sales Manager in firm of REFLECTAL CORPORATION.

J. P. WEYERHAEUSER, III, made Manager of Marketing Research and Merchandising of WEYERHAUSEN COMPANY.

DUDLEY DE SOUSA, named Manager of the Commercial Products Division in firm of GRANT PULLEY & HARDWARE CORPORATION.

ROBERT T. EAKIN, appointed Vice-President in the Engineering and Construction Division of KOPPERS COMPANY, INC. FRED H. EDGAR, appointed Division Vice-President, Aluminum Sales, of the Metals Division in firm of OLIN MATHIESON CHEMICAL CORPORATION, succeeding DEREK RICHARDSON, who has been named Vice-President, Marketing, of OLIN's Chemicals Division.

WHEN YOU CHANGE YOUR ADDRESS

Please report both new and old addresses directly to P/A five weeks before you move.

PROGRESSIVE ARCHITECTURE
Circulation Department
430 Park Avenue, New York 22, N. Y.

Modern Door Control by *LCN* • Closers Concealed in Head Frame

CITY HALL, LANSING, MICHIGAN

•

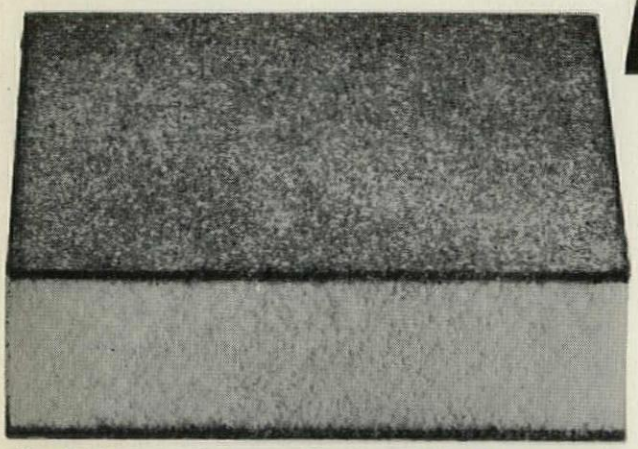
LCN CLOSERS, PRINCETON, ILLINOIS

A DIVISION OF SCHLAGE LOCK COMPANY

Construction Details on Opposite Page

Lee Black and Kenneth C. Black, *Architects*

NEW BARRETT URETHANE ROOF INSULATION PROVED TO BE TWICE AS EFFICIENT AS ITS NEAREST COMPETITOR!



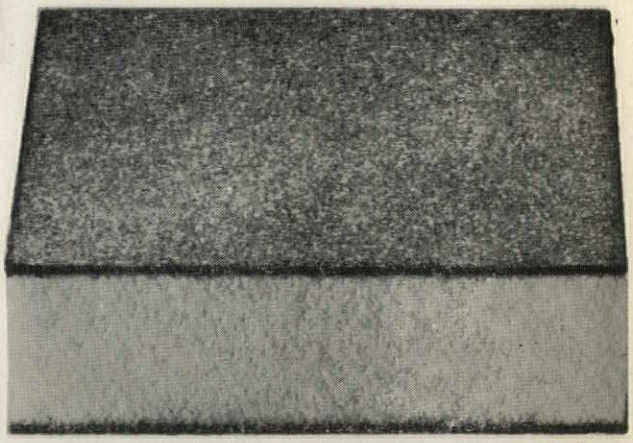
And these 7 benefits will tell you why: 1. BARRETT urethane roof insulation has a C value of .13* (average values of its competitors range from .27 to .40). 2. BARRETT urethane is recommended where roof insulation requirements must be the best (such as air conditioned, cold storage and electrically heated buildings). 3. BARRETT urethane, sandwiched between two Barrett asphalt coated and impregnated base sheets, provides roofers

*Insulating efficiency based on 1 inch of foam plus roofing base sheets.

BARRETT DIVISION
40 Rector Street, New York 6, N. Y.

Allied Chemical

NEW BARRETT URETHANE ROOF INSULATION PROVED TO BE TWICE AS EFFICIENT AS ITS NEAREST COMPETITOR!



with a walk-on, work-on surface (also, helps the urethane retain its insulating value). 4. The only urethane designed for roof insulation. 5. Does not absorb water. 6. Won't bend, buckle, or melt when mopped with hot pitch or asphalt. 7. Acceptable as a base for Barrett bonded roofs! If interested in free samples and more information, write in today!

Allied Chemical

BARRETT DIVISION
40 Rector Street, New York 6, N. Y.

ELECTRIC HOT WATER HEAT

TO 2,500,000 B.T.U. OUTPUT

PRECISION

ELECTRIC HOT WATER HEATING BOILER

COMPLETE UNIT READY FOR INSTALLATION
with circulation hot water system and water chiller for year-round air conditioning.

CONVERSION EASILY ACCOMPLISHED
where other type fuels now used. Suited for home, churches, motels, apartments, hotels, hospitals, commercial buildings, swimming pools, snow melting and domestic hot water for large users. Temperature range — 60 to 250 degrees. Equipped with Sequence and Proportional Controls when desired.

- **Every unit tested and inspected 40,948 to 2,500,000 B.T.U. Output.**
- **All Boilers meet the requirements of the ASME Boiler and Pressure Vessel Code. Natl. Board approved.**

No chimney! No odors! No flame! No ducts! No noise!

Write for complete specifications and prices

PRECISION parts corporation
400-PA NORTH FIRST STREET
NASHVILLE 7, TENNESSEE

For more information, turn to Reader Service card, circle No. 370

planning a school or library?

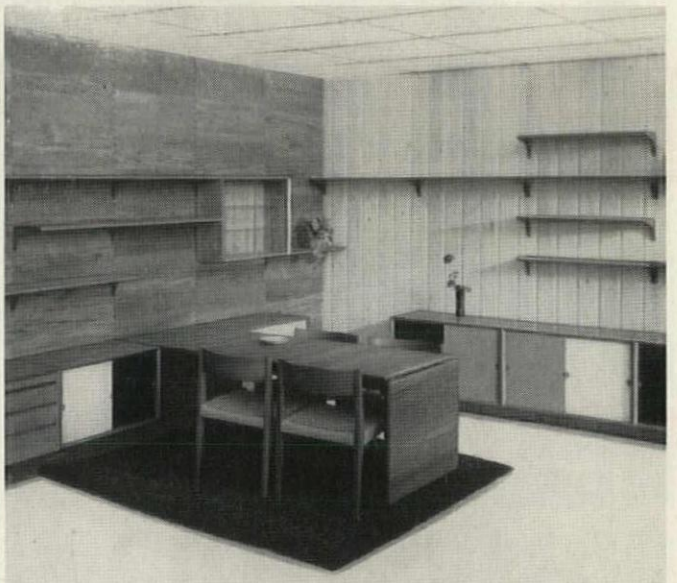
get help from these 2 STACOR equipment catalogs

They show space-saving, economical, attractive units . . . ways in which to use them . . . features that have made the Stacor name famous for well designed, well made, well accepted equipment.

WRITE, WIRE, PHONE FOR YOUR COPIES TODAY.

STACOR EQUIPMENT CO
Manufacturers of Lifetime Quality Drafting Equipment for Schools, Libraries & Industry
341 Emmet Street, Newark 14, N.J. • Bigelow 2-6600

For more information, turn to Reader Service card, Circle No. 395



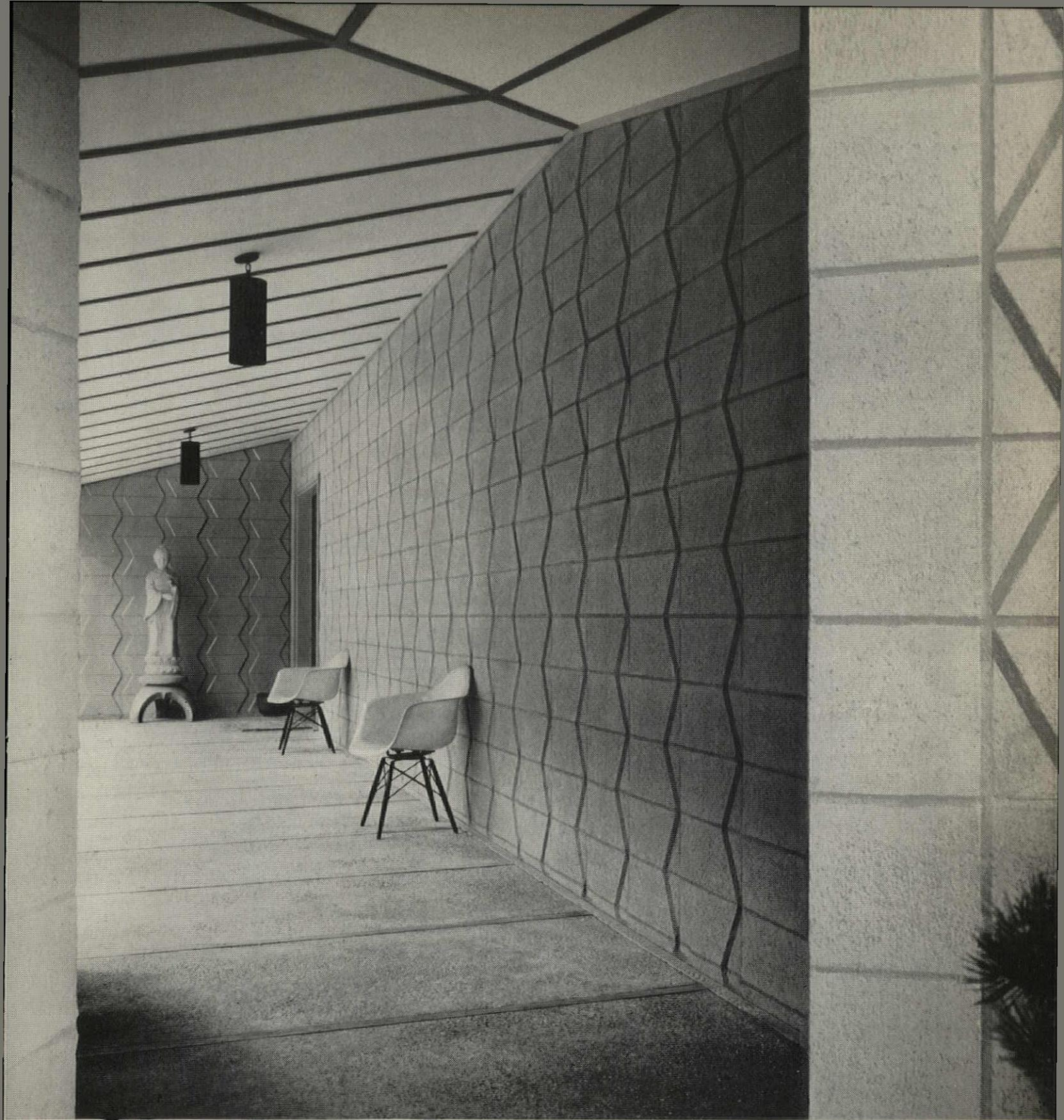
from denmark

System Cado

a new approach
by poul cadovius
to designing interiors
write for catalog
or see the first U. S. installation at

System Cado
1130 Third Avenue, New York
other locations:
Royal System, 9400 St. Lawrence Blvd., Montreal, Canada
S. Christian of Copenhagen, Inc., Jackson & Sansome, San Francisco

For more information, turn to Reader Service card, circle No. 375



Shadowal® BLOCK

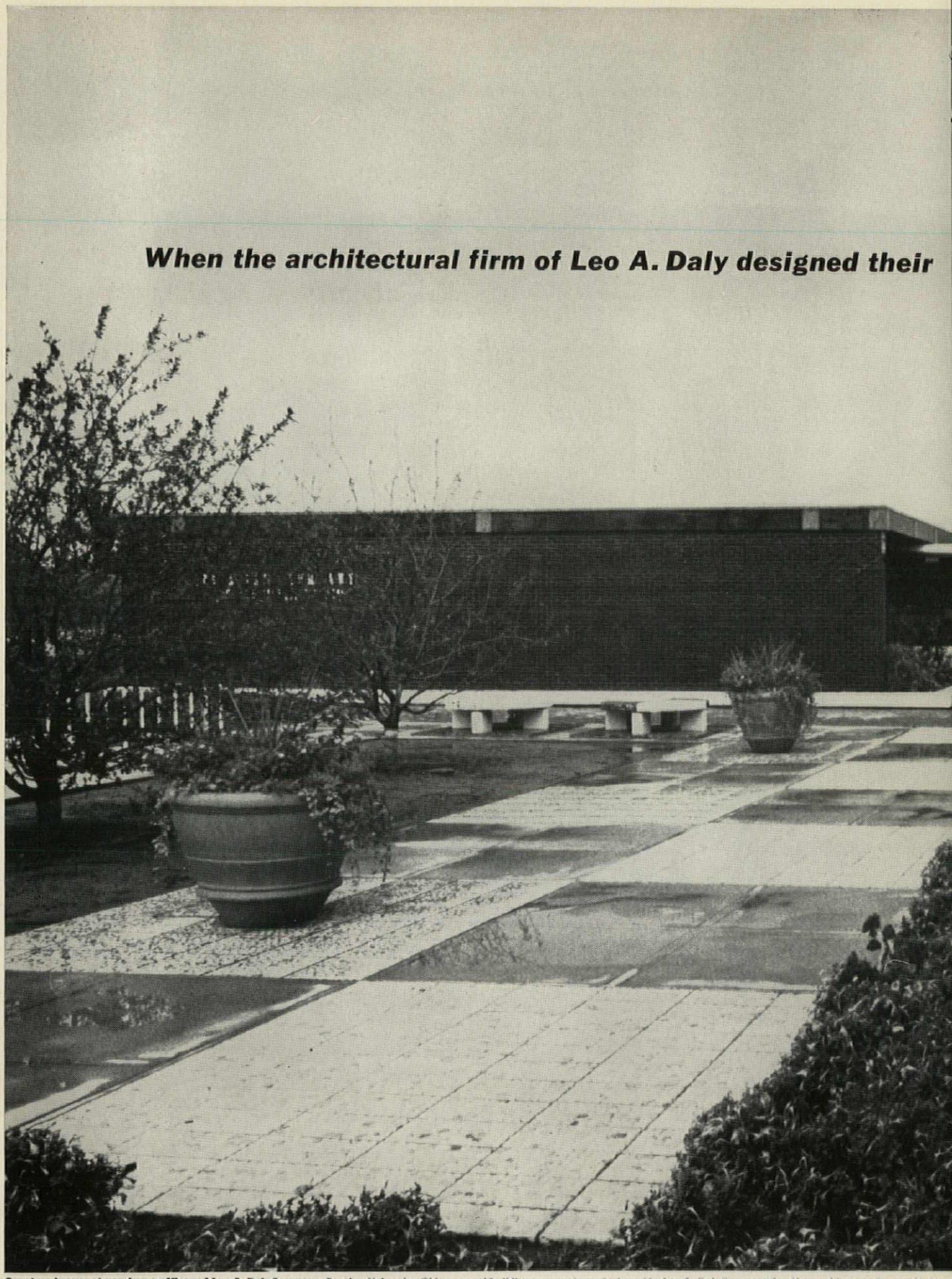
Here Shadowal Block adds its special accent to a long unbroken wall.

THE WONDERFUL WIZARD OF WALLS: What looks like magic, is really quite simple. Shadowal Block has the pattern built right into the face of the block itself. Ingenious wall patterns, practical as they are beautiful, can be fashioned from just one basic unit. Need some help? Any NCMA member block producer can supply details. And Shadowal Block is available only through him.

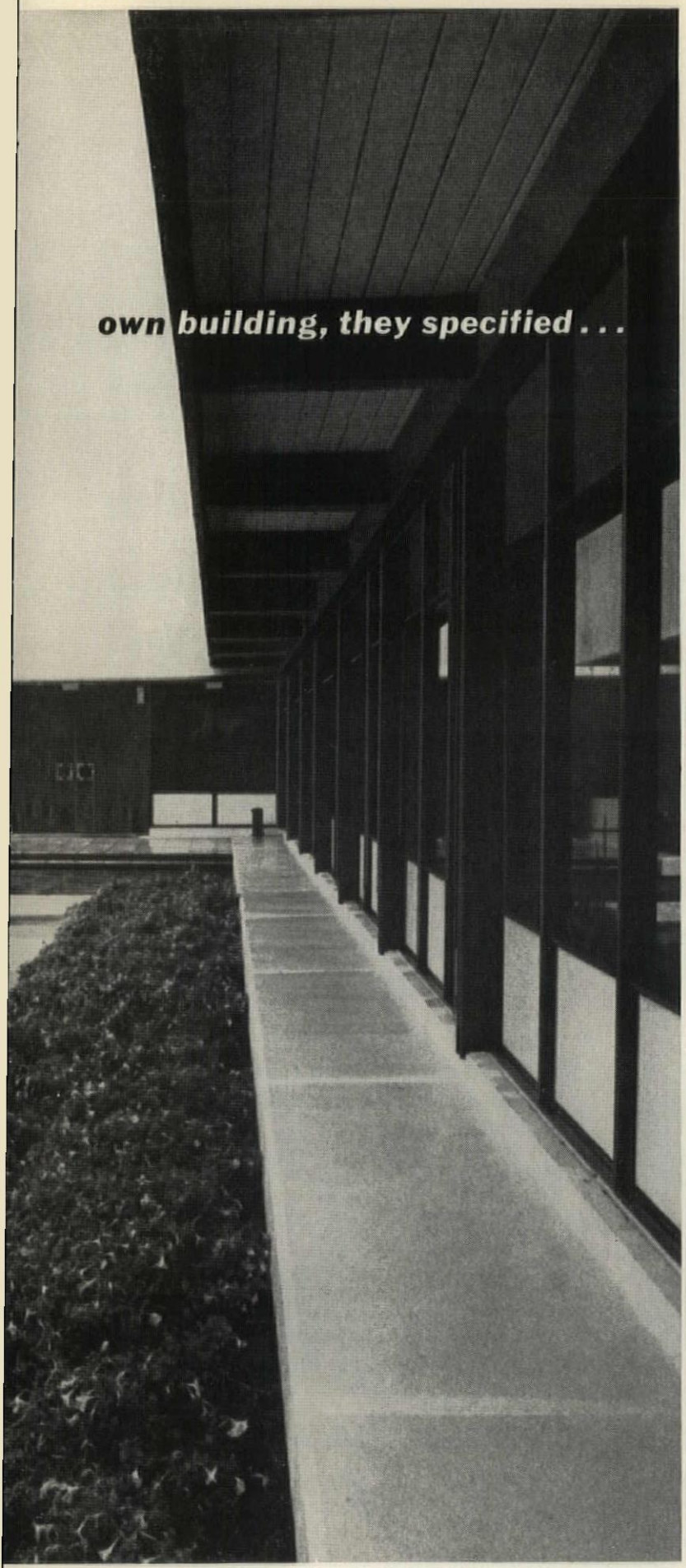
NCMA

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

When the architectural firm of Leo A. Daly designed their



Courtyard scene at new home offices of Leo A. Daly Company, Omaha, Nebraska. This unusual building was custom-designed by Leo A. Daly Company for the working needs, comfort



and stimulation of its staff. Year-round air conditioning by Gas and Carrier absorption refrigeration.

GAS and CARRIER
absorption refrigeration for full-time efficiency in year-round air conditioning

The Leo A. Daly Company, having specified gas air conditioning for many of their clients, took their own advice when they designed their spectacular new home offices. For summer cooling, they chose Carrier absorption refrigeration, energized by the same gas-fired boiler that heats in winter.

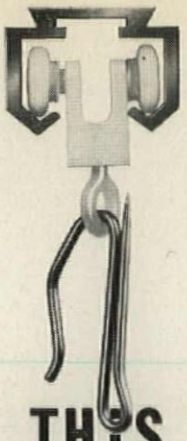
This puts their gas-fired boiler on a year-round paying basis. Full-time efficiency. The Carrier unit converts low pressure hot water into chilled water for cooling. Operation is quiet, vibration-free, automatic. And thrifty gas keeps fuel costs low.

New high in efficiency at partial loads! An exclusive Carrier solution-capacity-control gives partial load efficiency unsurpassed by any other type of cooling system. Add to this all the advantages of modern gas air conditioning: clean, circulated air, safety, dependability and unbeatable fuel economy.

For full-time efficiency in year-round air conditioning, specify *gas* and Carrier absorption refrigeration. Call your local Gas Company, or write Carrier Air Conditioning Company, Syracuse 1, N. Y.
American Gas Association

"I like the way this unit automatically adjusts itself to varying loads. I really can't think of an easier system to maintain," says Fred Lodes, Stationary Engineer, shown here at the 80-ton, gas-operated Carrier absorption unit, Leo A. Daly Building, Omaha, Nebraska.

FOR HEATING & COOLING GAS IS GOOD BUSINESS!



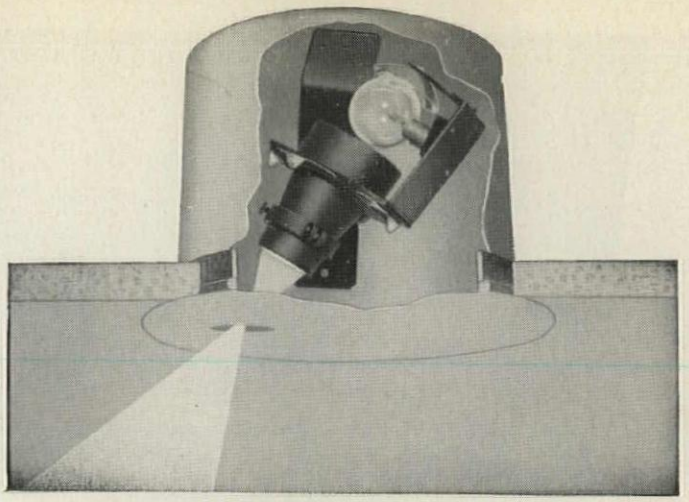
THIS IS THE HARDWARE THAT TOOK THE JAMMING, STICKING, RUBBING, BINDING, CLUTTER, CLATTER & "WHAT'S THE MATTER?" OUT OF DRAPERY INSTALLATIONS.

GRANT 2200

GRANT PULLEY & HARDWARE CORPORATION

Eastern Division/ 49 High St., West Nyack, N. Y. ■ Western Division/944 Long Beach Ave., Los Angeles 21, Calif.
Sliding Door Hardware ■ Drawer Slides ■ Drapery Hardware
Pocket Frames ■ Pulls ■ Closet Rods ■ Special Sliding Hardware

For more information, turn to Reader Service card, circle No. 338



Pinhole Downlights with Designed Optics by Kliegl

. . . the Great Name in Lighting!

Designed optics . . . properly controlled accent and picture lighting from an inconspicuous light source. Kliegl Pinhole Downlights are equipped with adjustable four-way shutters and are fully focusable. They feature a precision, three lens, optical system for high efficiency illumination and sharp beam control without spill light.

Every feature of this outstanding Kliegl unit has been specifically designed to enhance and dramatize the natural beauty in a picture or other objets d'art.

Plan to use Kliegl Pinhole Downlights in your next project. In the meantime, for complete information, write for our Architectural Lighting Catalog.

lighting

KLIEGL BROS.

UNIVERSAL ELECTRIC STAGE LIGHTING CO., INC.
321 W. 50th ST., NEW YORK 19, N.Y.
ORIGINATORS AND MANUFACTURERS OF KLIEGLIGHTS

International Arrival Building of New York International Airport. Arch is sheathed with 24-gauge, No. 2D special finish, Type 302 Nickel Stainless Steel. Architects: Skidmore, Owings and Merrill; General Contractor: Cauldwell Wingate Company; Roofing Contractor: Overly Manufacturing Company; Owner: Port of New York Authority.

New Front Door To America

Nickel Stainless Steel arch at New York International Airport makes a first impression last.

In they come to Idlewild...tourists, businessmen, royalty and refugees.

One of the first sights to catch their eye is this gleaming parabola of Nickel Stainless Steel.

To the visitor, this majestic structure is an outstanding foretaste of U. S. architecture. To the businessman it suggests the exciting things being done today with Nickel Stainless Steel in modern construction.

What's more, with every re-entry through the International Arrival Building, their favorable first impressions will be reinforced...for years to come.

Perhaps this is the most important fact to remember about architectural forms of Nickel Stainless Steel. Their beauty, their utility are lasting...almost everlasting.

Take the 26,000 square feet of Nickel Stainless Steel sheet that roofs this arch. Ten, twenty, fifty...who knows how many...years from now it will still look beautiful, still defy all that the elements and industrial atmospheres can do to corrode it.

And hardly a moment will pass during all those years that the properties of this Nickel Stainless Steel roofing will not contribute to the beauty and protection of the building. It has the strength to resist wet snow loads and high wind stresses. It has a coefficient of expansion that keeps it well adjusted to contiguous materials, brick, stone, cement. It resists corrosion by leaching mortars. It's virtually self-cleaning in rain. Never needs painting, lacquer, varnish, wax, cleaning nor maintaining, and never shows white corrosion products.

All this with a material so strong, and with such a favorable modulus of elasticity that it may be used in light gauges with safety at low cost!

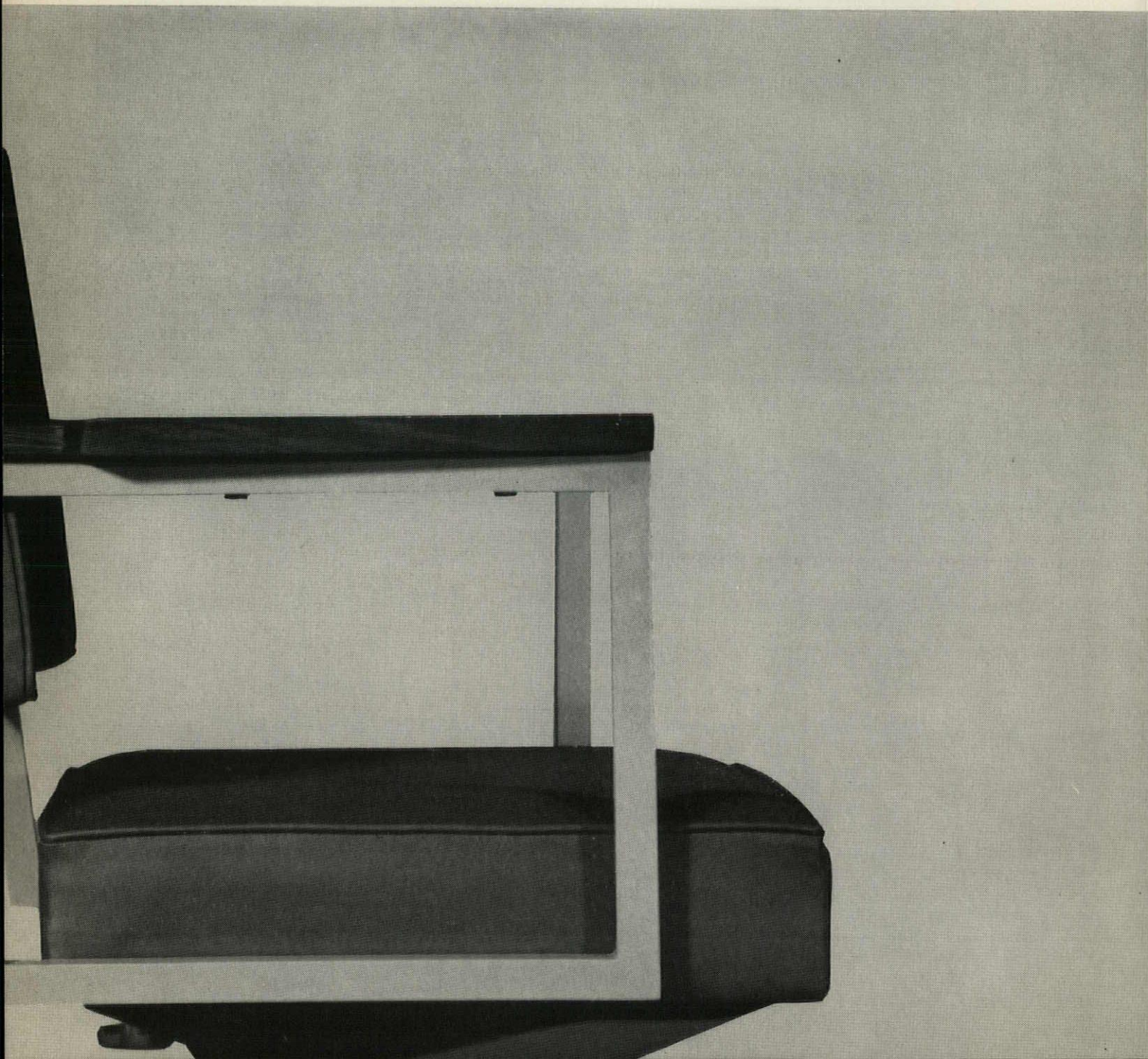
What are the architectural forms of Nickel Stainless Steels? How can you make the most of them? Get the answers in our new booklet "Architects Guide to Nickel Stainless Steel Flashings."

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street INCO New York 5, N. Y.

INCO NICKEL

NICKEL MAKES STAINLESS STEEL PERFORM BETTER LONGER

MADE FOR EACH OTHER
THIS CHAIR
THIS DESK



The smooth, clean, sharp lines of an outstanding desk deserve complimentary lines in the chair to which it is mated. This necessary co-ordination is the reason for the new Doric Chair. It was made for the Doric Desk.

The same combination of simple line and plane with top quality craftsmanship is to be found in both chair and desk. Both have a wide, tasteful range of finishes: desk tops of fine grained woods, marble or modern plastics; chair arms finished in wood or matched upholstery, with an assortment of high fashion color fabrics or leathers.

A fine range of office components completes the look of contemporary design—the look that won Doric the 1960 AID Citation of Merit for design achievement. The CJ dealer listed in your yellow pages can give you the complete details on Doric—or write to Corry Jamestown Corporation, Department PA-121, Corry, Pennsylvania.

CORRY JAMESTOWN

For more information, turn to Reader Service card, circle No. 387

SITUATIONS OPEN

ARCHITECT—Permanent position for graduate, registered architect with good all-around background in production, working plans, specifications and some design. Position open immediately with the Navajo Indian Tribe at Farmington, New Mexico. Send information including education, experience, personal qualifications and salary requirements to Head, Design & Construction Department, Navajo Indian Tribe, Window Rock, Arizona.

ARCHITECTURAL DRAFTSMAN—Prefer one that has had some hospital experience. Send reply to 932 Royster Building, Norfolk 10, Virginia, giving age, education, experience, references and salary expected.

ARCHITECTURAL JOB CAPTAINS—DETAILERS—DRAFTSMEN—Permanent positions with established architectural firm doing contemporary architecture. Require graduates of accredited architectural schools with minimum of two years experience under registered architects. Send resume and photograph to Frankel, Curtis & Coleman, 130 Barr Street, Lexington, Kentucky.

ARCHITECTURAL SPECIFICATIONS WRITER—Permanent position now available with established architectural firm for thoroughly qualified and experienced man. Moving expenses paid. 3 week vacation. Salary open. Resume and photo to G. Melzer, P. O. Box 793, Cincinnati 1, Ohio.

STRUCTURAL ENGINEER—Architectural, Civil, or Mechanical Engineer interested in conducting research on uses of light-gage steel in commercial and residential structures and associated building applications. Work involves development of program, design analysis, production techniques and performance testing. Background in research or product development desirable. M.S. or B.S. degree required. Large Research Laboratory, Pittsburgh, Pennsylvania. Submit resume and salary requirements to Box #310, PROGRESSIVE ARCHITECTURE.

STRUCTURAL ENGINEER (P.E.)—Min. 5 yrs. experience designing building frames and foundations. Send resume, salary expected, references, availability to Snyder & Troxel, Consulting Engineers, 300 Denison Bldg., Syracuse, N. Y.

STRUCTURAL ENGINEER (P.E.)—Min. 10 yrs. experience incl. indeterminate analysis building frames and foundations, preferably with M.S. degree, for Associate status with eventual partnership possibility. Send resume, salary expected, references, availability to Snyder & Troxel, Consulting Engineers, 300 Denison Bldg., Syracuse, N. Y.

SITUATIONS WANTED

ARCHITECT—A.I.A. registered in New York, NCARB processing, degree. Age 38, married. 10 years varied experience in leading architectural offices. Responsible for production of some outstanding buildings. Desires responsible position with possible association or partnership. Metropolitan New York or Philadelphia preferred. Resume upon request. Box #311, PROGRESSIVE ARCHITECTURE.

ARCHITECT—Bach. of Arch., Reg. in several states with NCARB, 33, married, capable of undertaking any position or responsibility with confidence backed by eight years diversified experience and satisfied clients, four years in own practice. Desire to leave depressed area for active, progressive community—stateside or overseas. Box #312, PROGRESSIVE ARCHITECTURE.

ARCHITECT—Own office in Queens, N. Y., licensed Eastern States, extensive experience entire office production and coordination of all trades, can produce excellent working drawings himself, seeks association or partnership with active small or expanding office in the Metropolitan area. Box #313, PROGRESSIVE ARCHITECTURE.

ARCHITECT—Ten years experience as creative designer in progressive firm with executive capacity as chief of design; strong ability at sketch level. Seeking associateship or partnership in contemporary minded Midwest firm. 36, married, family, Univ. of Illinois degree. Registered in two Midwest States. Dossier upon request. Box #314, PROGRESSIVE ARCHITECTURE

ARCHITECT—31, degree, almost married. Returning to U.S. after year of work and study in Brazil. Looks for creative position. Seven years of varied and international experience. West Coast. Johan Van Lengen—Rua Sa Ferreira 228/921, Rio de Janeiro, Brazil.

ARCHITECT—35, registered in Conn., NCARB, Master of Arch. Harvard University, married, family. Experienced in design and working drawings for wide variety of projects with top firms. Desires responsible position leading to associateship or partnership with office doing creative design. Will consider relocation anywhere. Resume on request. Box #315 PROGRESSIVE ARCHITECTURE.

ARCHITECT—38, registered in Indiana, Illinois, Kentucky and Ohio, married. Over ten years experience in all phases of professional practice. Desires responsible position leading to associateship or partnership. Will consider relocation anywhere. Resume on request. Box #316, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN—Desires position with Architect in Florida or Southwest United States. 11 years experience which includes that of job captain on several projects, checking shop drawings, running levels on building sites, and field supervision. Can give excellent references including present employer. Box #317, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN—36, degree in architecture, with well rounded experience in Europe & North America, desires position in small or medium size office. East Coast location preferred. Resume of experience on request. Box #318, PROGRESSIVE ARCHITECTURE.

EXPERIENCED ARCHITECT—Registered, graduate in Architecture & Liberal Arts, several years experience assuming full responsibility for medium sized firm office, including client contact work. Interested in responsible connection with progressive firm. Wish personal interview. Box #319, PROGRESSIVE ARCHITECTURE.

GRADUATE ARCHITECT—Leaving 6 years as AF Installations Engr. Offers project design, estimating, drafting, electrical and mechanical engineering, and management experience to smaller West Coast architecture or planning office in exchange for responsible position meeting registration requirements. Age 32, married. Resume upon request. Box #320, PROGRESSIVE ARCHITECTURE.

GRADUATE ARCHITECT—5½ years comprehensive experience, 31, married, family, graduate University Illinois. Capable of handling all phases of Architectural practice. Experience includes positions of Chief Designer and Chief of Production. Desire responsible position in ethical, progressive, architectural firm doing contemporary work. Resume on request. Box #321, PROGRESSIVE ARCHITECTURE.

GRADUATE STUDENT—Architecture, Carnegie Tech. Work finished February 1962. Interested in the varied aspects of a small practice. Wishes to join firm offering work and opportunity. East of Mississippi and at a location with an engaging natural environment. Three years experience. Age 30, family. Harold S. Moore, 928 Lilac Street, Pittsburgh 17, Pa.

REGISTERED ARCHITECT—29, married. Six years experience in all phases of design, engineering, construction, project coordination and client contacts. Industrial and commercial projects. Resourceful and capable of complete project planning and coordination. Seeks challenging administrative position with busy executive in professional organization or corporation. Northeastern states. Box #322, PROGRESSIVE ARCHITECTURE.

RENDER & MODELMAKER—Sketches or full color renderings in all mediums, architectural, topographical & experimental models. Work in own studio or can work in clients office part time if required. Samples mailed on request. John Guerin, 111 No. Broadway, White Plains, N. Y.

STRUCTURAL ENGINEER - ESTIMATOR - SPEC. WRITER—Thorough supervisory design experience with top engineering and construction firms. Large industrials, chemicals, power plants, bridges, airfields, dams, waterfront structures, etc. Excellent estimator, spec. writer. Sound contact and negotiating experience. Presently contractors chief estimator. Engineering position preferred. Investment desirable. Box #323 PROGRESSIVE ARCHITECTURE.

MISCELLANEOUS

ARCHITECTURAL & DESIGN PERSONNEL AGENCY—A personalized placement service for top-level architects, designers, engineers, draftsmen, estimators and interior designers; selective contacts arranged in a confidential and professional manner. Interviews by appointment. 58 Park Avenue, New York. MUrray Hill 3-2523.

CAREER BUILDERS - RUTH FORREST—Since 1947 a Personnel Agency specializing in Architectural, Interior, and Industrial Designers; all Home Furnishings and related personnel. Trainees to top executives. 515 Madison Ave., New York 22, N. Y. Plaza 2-7640.

HELEN HUTCHINS PERSONNEL AGENCY—Specialist Architectural, Industrial, Interior, Design; Decorative Arts and Trades; Home Furnishing Field, Architects, Designers, Draftsmen, Administrative Personnel, Interviews by appointment, 767 Lexington Ave., New York 21, N. Y. TE 8-3070.

Advertising Rates

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.

Notre Dame High School, Trenton, N.J. Architect: Wm. W. Slack & Son, Trenton. Floor of MFMA Northern Hard Maple

ANOTHER "MIRROR" to "MAPLE" REFLECTS

the finest floor that grows

Wise Planning
Sound Building
True Thrift

as explained by the architect:

"The Northern Hard Maple flooring in the gymnasium has been satisfactory in every way. It shows no signs of wear and we would not hesitate to give it highest recommendation. It is truly a beautiful floor and we have had only favorable comments on it."
—L. W. Slack

**consensus of coaches (90-to-1):*

"MAKE YOUR PLAYING FLOOR MAPLE OR YOU MAKE A MISTAKE!"

Write for Coaches' Survey Summary, available to all Architectural and School People . . . and for MFMA Revised Specifications Manual.

See SWEET'S 13j-Ma.

Beneath the genial glow of a Northern Hard Maple floor are time-proved virtues, enormously important to *coaches and players, to building committees, to taxpayers. No other floor, natural or synthetic, has ever matched this *finest floor that grows.* It is fast under foot, non-slippery, warm and dry.

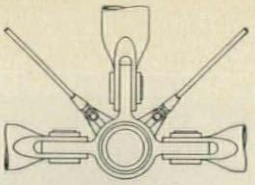
Its brightness emphasizes court lines, for sharper peripheral vision. It's ultra-smooth, for least-possible abrasion in case of tumbles. It's "live," not "dead"—has the *true* resilience for better bounce, greater resistance to scuffs, scars or dents that gouge or splinter lesser floors.

With easy, routine maintenance, a floor of MFMA Northern Hard Maple will outlast the building ("always a new floor underneath"). In standard strip for nailing and in block and patterned designs for laying in mastic. Write —

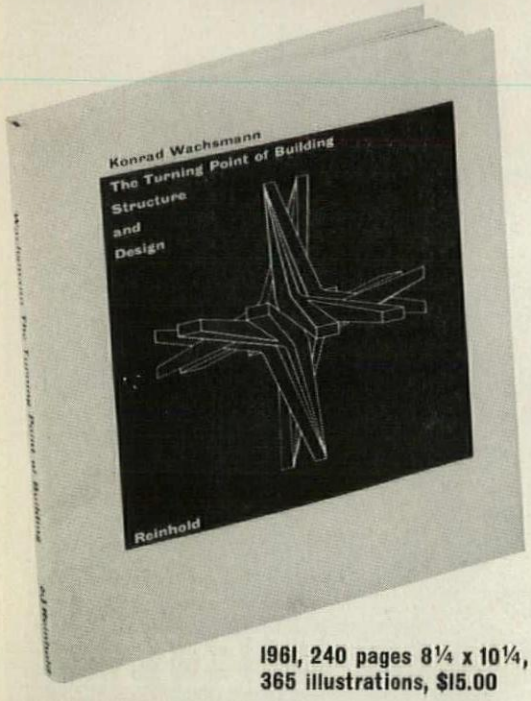
MAPLE FLOORING MANUFACTURERS ASSOCIATION
583 Pure Oil Building • 35 E. Wacker Drive • Chicago 1, Illinois

NORTHERN HARD MAPLE
BEECH and BIRCH

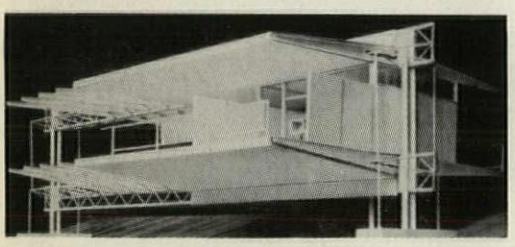
Just published! A fascinating and important guide to the industrialization of building techniques

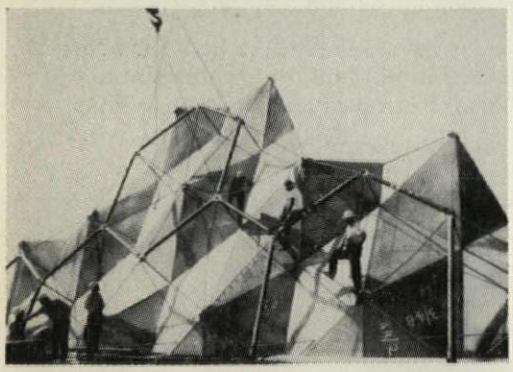


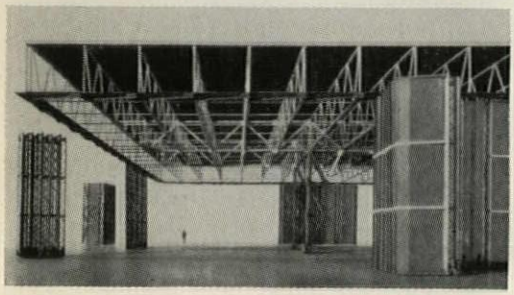
THE TURNING POINT OF BUILDING
Structure and Design



1961, 240 pages 8¼ x 10¼, 365 illustrations, $15.00







by KONRAD WACHSMANN

Widely hailed throughout Europe, this significant new book is a thorough exposition of mass prefabrication techniques, and the new concepts of planning and building which must be mastered to realize their full potential. Written by a pioneer in prefabrication building techniques, the book will prove of great value to architects, builders, and engineers, as well as to all industries interested in the exciting future of today's revolutionary new construction methods.

PART ONE describes the absorption of industrial techniques into building, accompanied by striking illustrations of the Crystal Palace, the Eiffel Tower, the Brooklyn Bridge, and other important nineteenth-century structures that foreshadowed the new techniques.

PART TWO is devoted to modular coordination and standardization in relation to industry, and stresses what building must become if it is to realize the exciting possibilities of industrialization. Comprehensive chapters cover the new machines, the new factory techniques, and automation; the effect of the new production techniques on site organization and on labor; the engineering aspects of incorporating heating, electrical installations, plumbing, etc. into modern structures; and some of the new techniques of building construction.

PART THREE stresses the adaptation of training, study, and research to emphasize teamwork, and describes and illustrates a number of projects conceived in this "team spirit," including the building panel system, the partition wall system, and space-frame structures.

"A truly modern building simply cannot be built with conventional means," writes Prof. Wachsmann. "Only when [conventional] attitudes have been put aside and the new working tools now offered brought under complete control, will it be possible for buildings to emerge as works of art, born of rational premises, true knowledge, and the genius of the master." This stimulating and indispensable book—lavishly illustrated with both photographs and drawings—surveys the many problems to be solved, and helps point the way to possible solutions.

30 DAYS' FREE TRIAL!

REINHOLD PUBLISHING CORPORATION
Dept. M-901, 430 Park Avenue, New York 22, N. Y.

Send me a copy of Wachsmann's THE TURNING POINT OF BUILDING for 30 days' free trial (in U.S.A. only) under the following terms:

☐ Purchase price enclosed (Reinhold pays regular delivery charges)
☐ Bill me (plus delivery charges)

NAME_____

ADDRESS_____

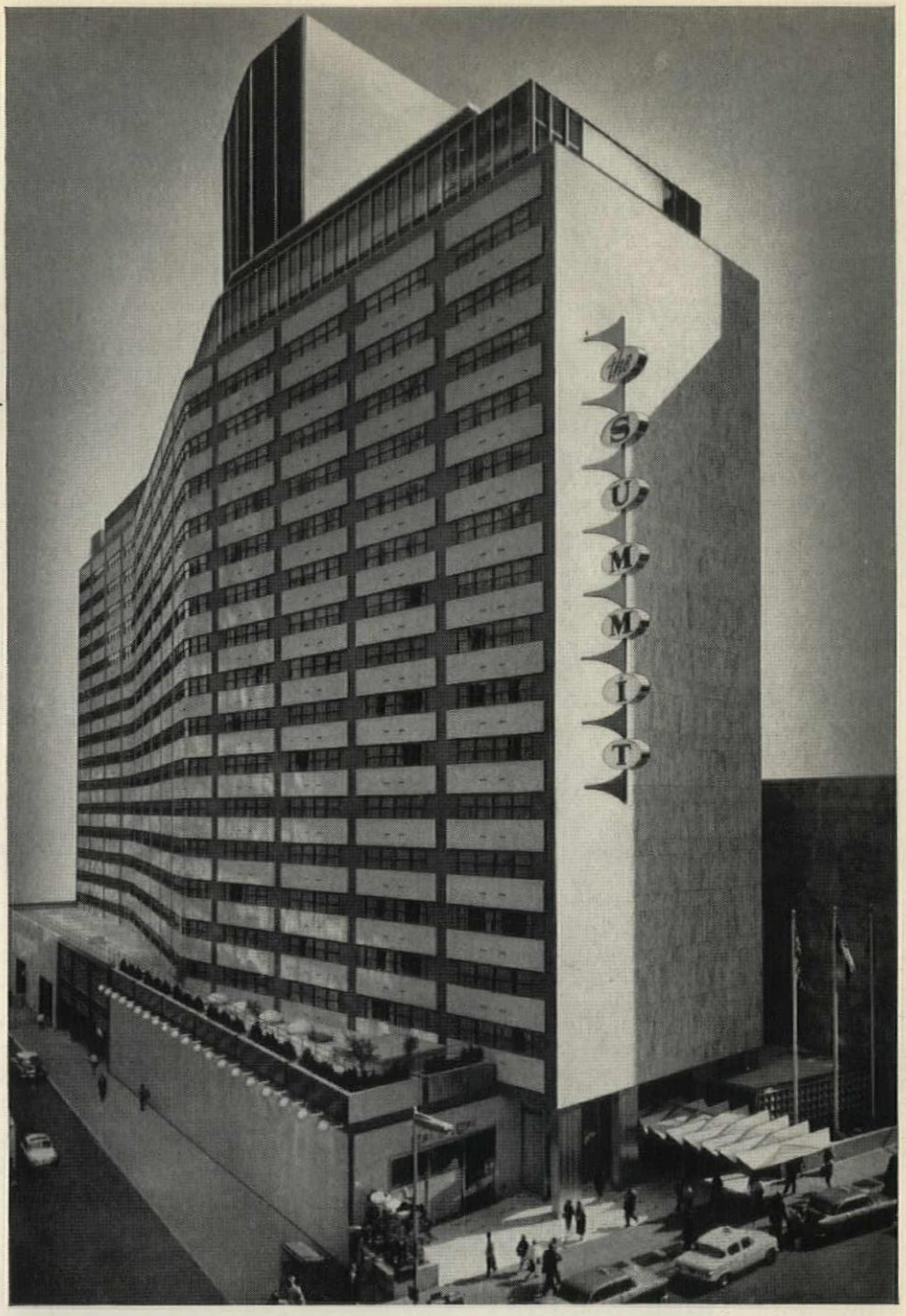
_____

CITY & ZONE_____ STATE_____

SAVE MONEY! Enclose $15.00 with order and Reinhold pays regular delivery charges. Same return privilege guaranteed. Please add 3% sales tax on N. Y. C. orders. Send check or money-order only —*do not enclose cash!*

New York's Summit Hotel

A Creative Design in Monolithic Reinforced Concrete

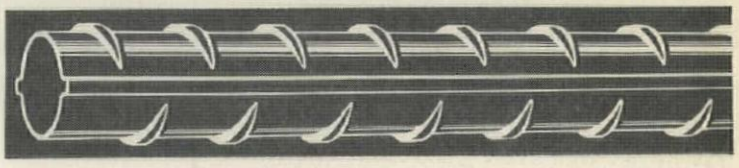


New York's first new hotel in 30 years The Summit, Lexington Avenue and 51st Street / Owners & Operators: Loew's Hotels, Inc. / Architect: Morris Lapidus—Harle, Liebman. New York City / Structural Engineers: Farkas & Barron, New York City / Contractors: Diesel Construction Company, New York City

Monolithic reinforced concrete helped achieve this dramatic, 21-story—800-room, contemporary addition to Manhattan's hotel scene. By utilizing this versatile construction method, the architects were able to create the unusual S shaped facade and provide greater room flexibility. For every type of building, monolithic reinforced concrete offers unlimited structural advantages. On your next project, utilize the superior design features of this extremely creative material.

Concrete Reinforcing Steel Institute
38 South Dearborn Street
Chicago 3, Illinois

CONCRETE REINFORCING STEEL INSTITUTE CRSI FOUNDED 1924



12-61

DIRECTORY OF PRODUCT ADVERTISERS

SALES, SERVICE, AND CIRCULATION

PROGRESSIVE ARCHITECTURE — REINHOLD PUBLISHING CORPORATION
H. VICTOR DRUMM — ADVERTISING SALES MANAGER
WILLIAM R. EVANS, JR. — ASSISTANT ADVERTISING SALES MANAGER
SAM H. PATTERSON, JR. — RESEARCH AND PROMOTION MANAGER
JOSEPH M. SCANLON — PRODUCTION MANAGER
DAVID N. WHITCOMBE — CIRCULATION MANAGER
SUE FELDMAN — SUBSCRIPTION MANAGER

NEW YORK OFFICE
430 Park Ave., New York 22, N. Y.
MUrray Hill 8-8600
ROBERT L. BASSINETTE — DISTRICT MANAGER
DONALD W. THOMPSON — DISTRICT MANAGER

PITTSBURGH OFFICE
Porter Bldg., 601 Grant St., Pittsburgh 19, Pa.
ATlantic 1-9421
ALBERT E. McCLIMANS — DISTRICT MANAGER

CLEVELAND OFFICE
East-Ohio Building, 1717 E. 9th St., Cleveland 14, Ohio
PRospect 1-4011-12-13
JOHN F. KELLY — DISTRICT MANAGER

CHICAGO OFFICE
111 W. Washington St., Chicago 2, Ill.
RAndolph 6-8497
CHARLES A. ULLRICH — DISTRICT MANAGER
RALPH E. PETERSEN, JR. — DISTRICT MANAGER
CARL J. NOLTE, JR. — DISTRICT MANAGER

WEST COAST ADVERTISING REPRESENTATIVES
Duncan A. Scott & Company
85 Post St., San Francisco 4, Calif.
GArfield 1-7950
DUNCAN A. SCOTT, CYRIL B. JOBSON

Duncan A. Scott & Company
1901 W. 8th St., Los Angeles 57, Calif.
DUnkirk 8-4151
PETER SCHULZ

SOUTHERN ADVERTISING REPRESENTATIVE
Robert L. Watkins Associates
505-805 Peachtree Bldg., Atlanta 8, Ga.
TRinity 4-6427
ROBERT L. WATKINS

EXECUTIVE-ADMINISTRATIVE

DAVID BRADFORD WILKIN — VICE PRESIDENT AND PUBLISHER
THOMAS H. CREIGHTON, FAIA — EDITOR
H. VICTOR DRUMM — ADVERTISING SALES MANAGER

Thomas H. Creighton

P.S.

The Nature of Cities is a subject that will be of increasing concern to the architectural profession as it moves more and more into the design of large urban areas in addition to the design of individual buildings. And the nature of cities is the subject of much discussion and debate at the present time. It seems to me that there are two risks facing the architect-planner: one, that he might arbitrarily decide what seems best to him as an urban environment, and foist an unconsidered solution on a citizenry that doesn't seem to care much right now what sort of surroundings it lives in; two, that he might confuse present use for proper use, and insist on maintaining intolerable conditions because "this is the way a city is."

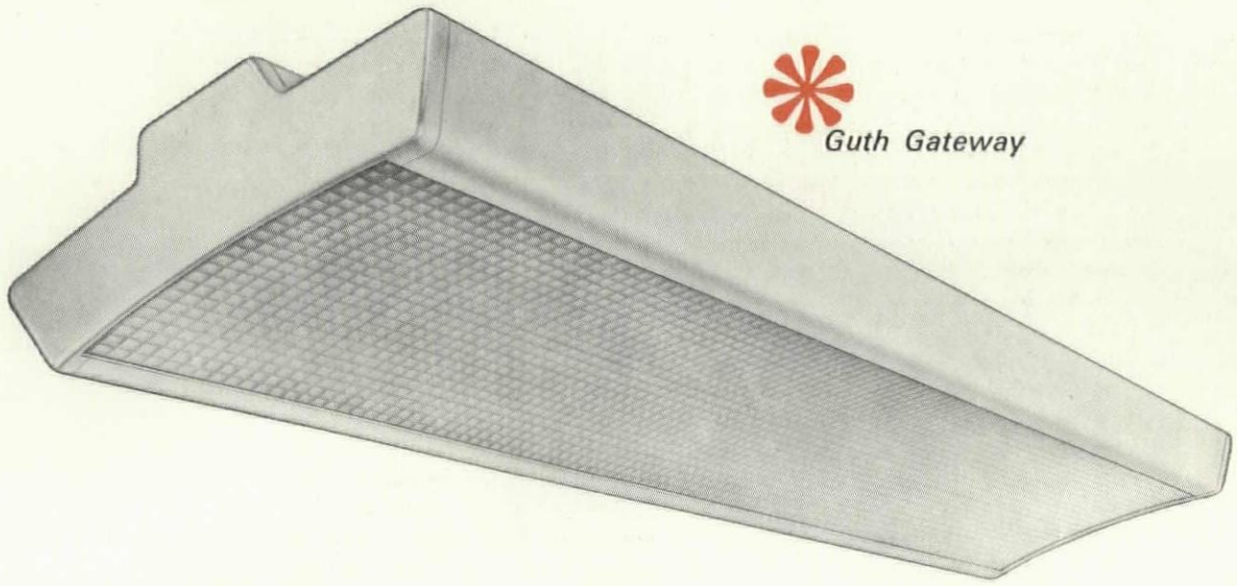
This is not a new problem in architectural design, at any scale. The development of a program, based on a thorough analysis of the way a given space is going to be used, is the normal first step in any design problem. There are always the same two risks I mentioned in the first paragraph: proposing a new, presumably better way to use the space without sufficient objective study; and being unduly influenced by the way the client tells you he uses the space right now. The trick is to find a way to progress (how, otherwise, could schools, hospitals, office buildings, have advanced beyond their 19th-Century forms?) without losing the lessons of history and experience. Most architects reject the role of "giving the client what he wants" (the client usually wants what he has been used to, or what he has seen someone else have) when it is a problem of an individual building; but in city planning, a new and difficult field, they are often tempted to do just that.

There are plenty of sociologists, professional and amateur, to tell us how a city works. The great contribution architects can make to the field of urban planning, it seems to me, will be to devise ways for cities to work better. So the question, "What is the nature of a city?" becomes a terribly important one. Whether the character of a city, as contrasted with nonurban communities, is Megalopolis, a center of culture, a beehive of diverse activities, a series of contrasts of open and closed spaces, an opportunity for unity, a building up from low to high buildings, an aggregation of tall buildings separated by greenery, a series of corridor streets connecting nuclei, a criss-cross of streets and avenues existing in their own right—these are interesting, debatable, unresolved questions to which a great deal of design imagination could be applied right now.

Design imagination. The greatest risk, I think, is to be frightened by the magnitude of the problem into doing obvious things—what the client wants. And the problem is magnified not only by its physical size, but also by the diversity of types, interests, and ways of life of its inhabitants. I would agree to just one premise in the programing of a city: it must provide many productive ways to live. Jane Jacobs, in her book *The Death and Life of Great American Cities*, describes one way—the way she likes, which is a busy, crowded, extroverted way. I prefer another: a more quiet, introspective manner of living and working in the city. I disagree with Jane's arguments only because she starts from the premise that hers is the only right way. I would hope that an ideal urban environment would let each of us—and many others, with different manners of living—find a satisfactory spot in the city.

There is no doubt that redevelopment plans have begun to fall too much into a pattern—a pattern of large-scale design, which can easily become monotonous. But the answer to that, I think, is not to eliminate planning, or to design to the living conditions that have grown up without planning, but to apply every bit of design talent and imagination of which the architects are capable to the finding of better ways—and many ways—to live in the 20th-Century city. The big job ahead is to discover the nature of the city that we can build—not the nature of the city that is falling apart all over the country.

Somewhere along the line in the production of last month's issue, two numbers related to photographs of sculpture on this page were transposed. The result was to credit Noguchi with an assemblage of sewer pipes rather than one of his recent anodized aluminum compositions. Sorry. After this I'll leave the coverage of current gallery shows to the new column in the NEWS REPORT.



Sure it looks good, but why specify it?

Gateway's intrinsic beauty is obvious. But that's only half the story. Here is the other half — engineering and construction features that make Gateway worthy of your specification. Gateway is *not* a wrap-a-round. The concave bottom actually hinges separately from the rugged 20-gauge steel ends. Simplifies relamping considerably — one strong panel, not an unwieldy basket, to hinge down.

The steel ends won't warp; also they add extra rigidity to the fixture in continuous-row mountings, or as individual units. (No glue or piano wire holding it together.) The 4′ or 8′, one-piece *tubular* plastic side wings with capped ends (minimize dust and dirt from holding conventions therein) offer greater strength and lower side-brightnesses.

The *concave* Gratelite* bottoms (choice of Prismoid** or Standard Gratelite) are solidly molded with built-in ultra-violet resistant additives. Both Gratelites feature ⅜″ open cubicles — dust and dirt filter thru — doesn't mar beauty.

All the steel parts, including the channel, are formed from electrolytic, *zinc-coated* and phosphatized steel. There's hardly any chance of their rusting regardless of humidity or climate. Each steel part is finished in the new super hard, super efficient *Acrylic* enamel. This is the finish automakers use, and say "never needs polishing". Paint people tell us "it most closely approaches the physical properties of porcelain enamel"

Of course, each unit includes a CBM/ETL Ballast, plus — we heat test Gateways to insure that ballast-case operating temperatures will not exceed 90°C in a 75°F room ambient temperature. (Add these last 13 words to every specification and watch competitors back away!)

Gateway is available in *2, 3 or 4 lamps* — in the same "full-width" fixture — not a corridor looking unit in a carload.

For the final test, write us on your letterhead. We'll have our salesman show you a "live" demonstration of Gateway. If you just don't like salesmen, write us and we'll send our Gateway Brochure. In either case, you'll like Gateway, a fixture that proves itself.

Guth
LIGHTING
since 1902

THE EDWIN F. GUTH CO., 2615 WASHINGTON BLVD., BOX 7079, ST. LOUIS 77, MO.

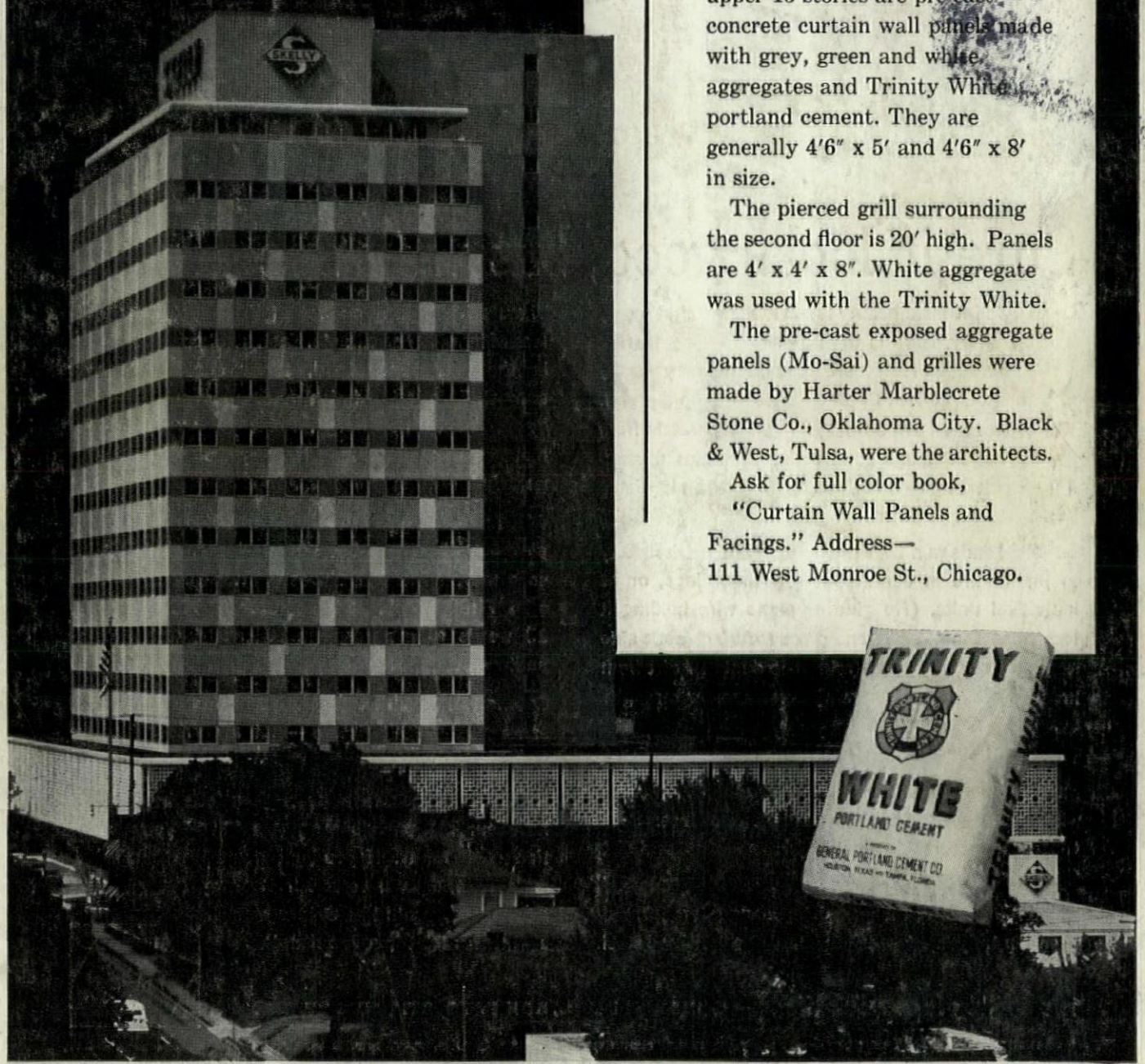
* ® U.S. PAT. NO. 2,745,001 — CAN. PAT. 1957, NO. 538,245 — ** ® U.S. PAT. NO. 2,904,673

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

PRE-CAST CONCRETE CURTAIN WALLS OF

Trinity White

PORTLAND CEMENT



This is the recently completed Skelly Oil Building, Tulsa. The upper 15 stories are pre-cast concrete curtain wall panels made with grey, green and white aggregates and Trinity White portland cement. They are generally 4′6″ x 5′ and 4′6″ x 8′ in size.

The pierced grill surrounding the second floor is 20′ high. Panels are 4′ x 4′ x 8″. White aggregate was used with the Trinity White.

The pre-cast exposed aggregate panels (Mo-Sai) and grilles were made by Harter Marblecrete Stone Co., Oklahoma City. Black & West, Tulsa, were the architects.

Ask for full color book, "Curtain Wall Panels and Facings." Address— 111 West Monroe St., Chicago.

A Product of GENERAL PORTLAND CEMENT CO.

Chicago • Chattanooga • Dallas • Fort Worth • Houston • Fredonia, Kansas • Jackson, Michigan • Tampa • Miami • Los Angeles