

by

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# architectural forum

edition

July 1952

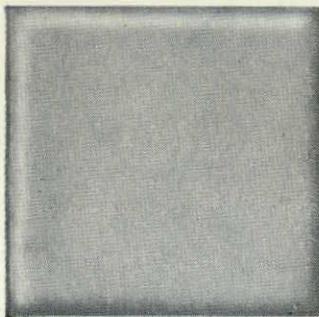
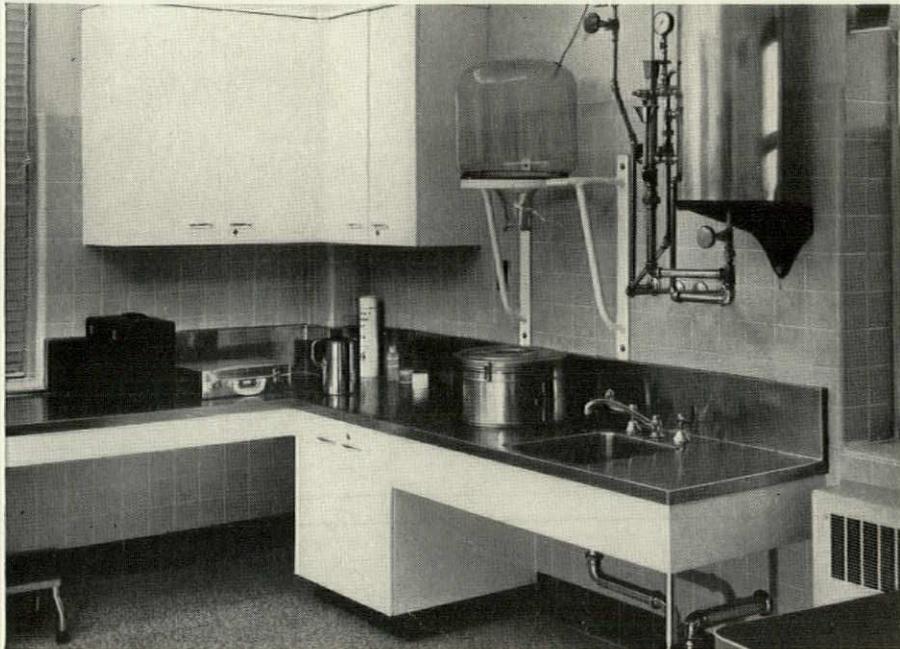
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- AIA Convention** Pictorial report of architects at work and play ( p. 60 )
- Waste in Building** BRAB's biggest research, initiated by this magazine's Round Table, points way to save many billions ( p. 114 )
- Zeckendorf's office** A roof-top triumph in design and theatrics ( p. 105 and below )
- S.S. United States** A new high in marine architecture introduces fireproof decor and all-aluminum superstructure ( p. 119 )
- Manhattan House** A new concept of big city living ( p. 140 )
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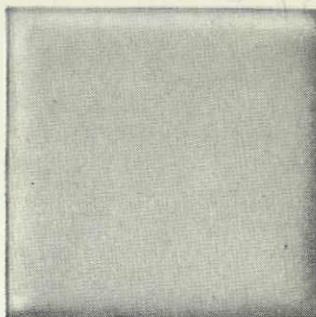


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JULY 1952

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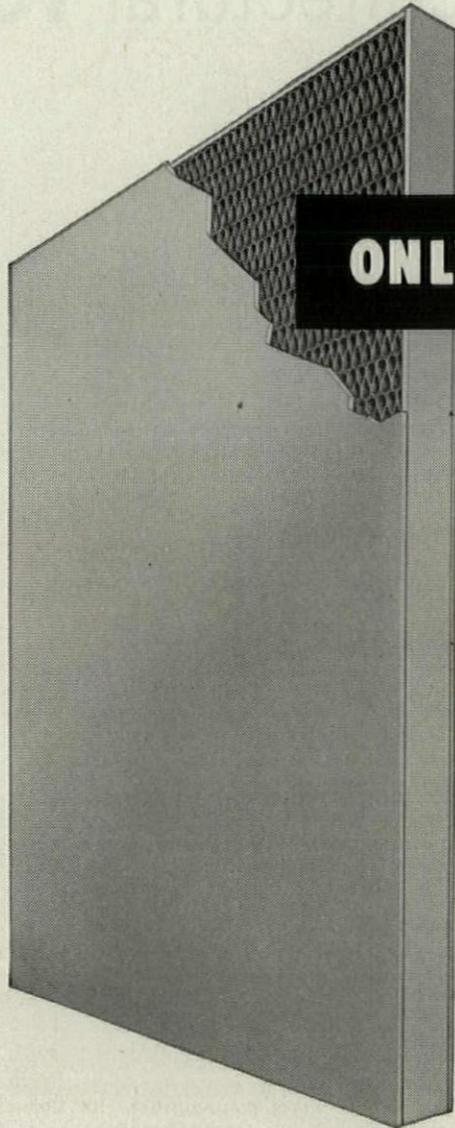
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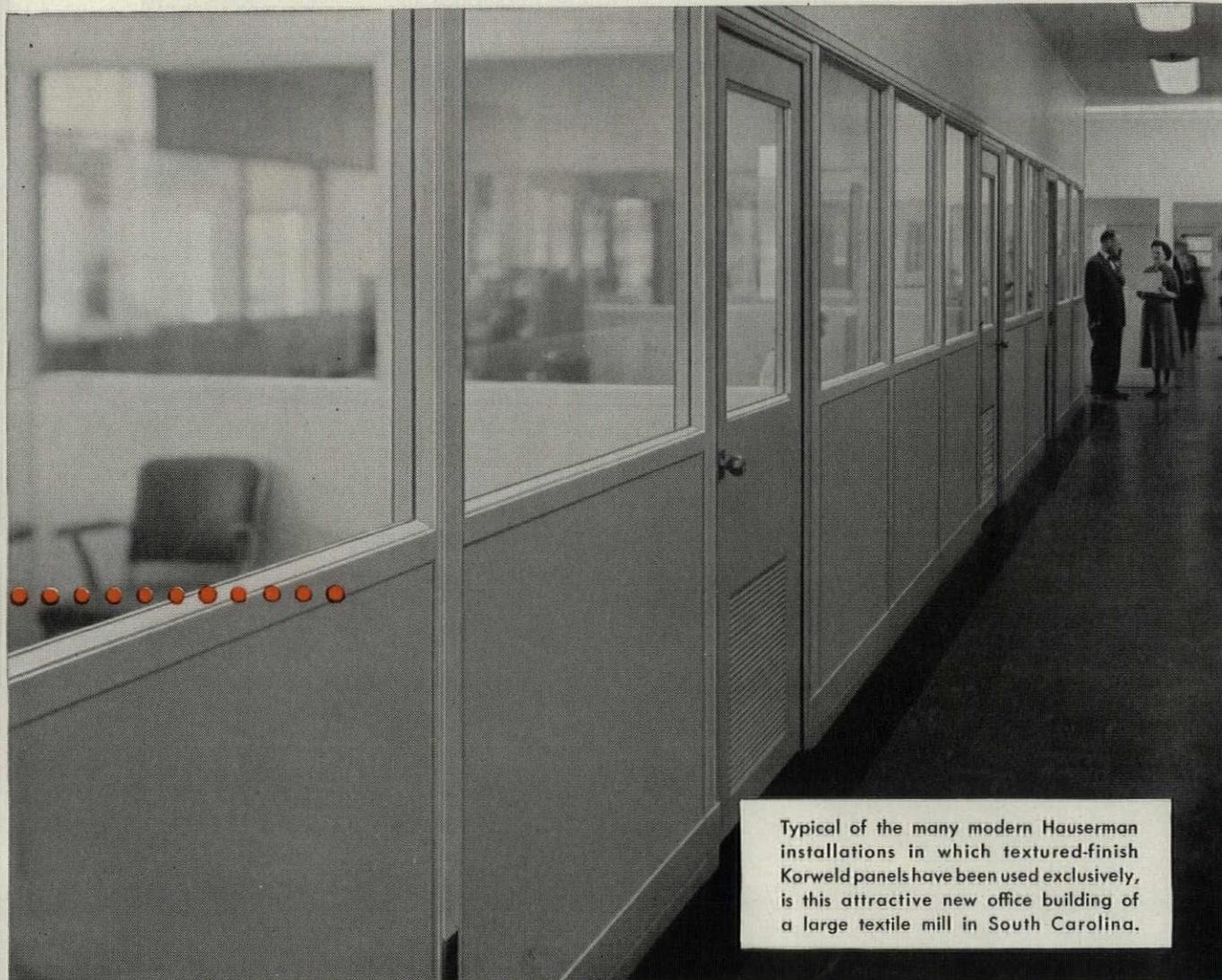
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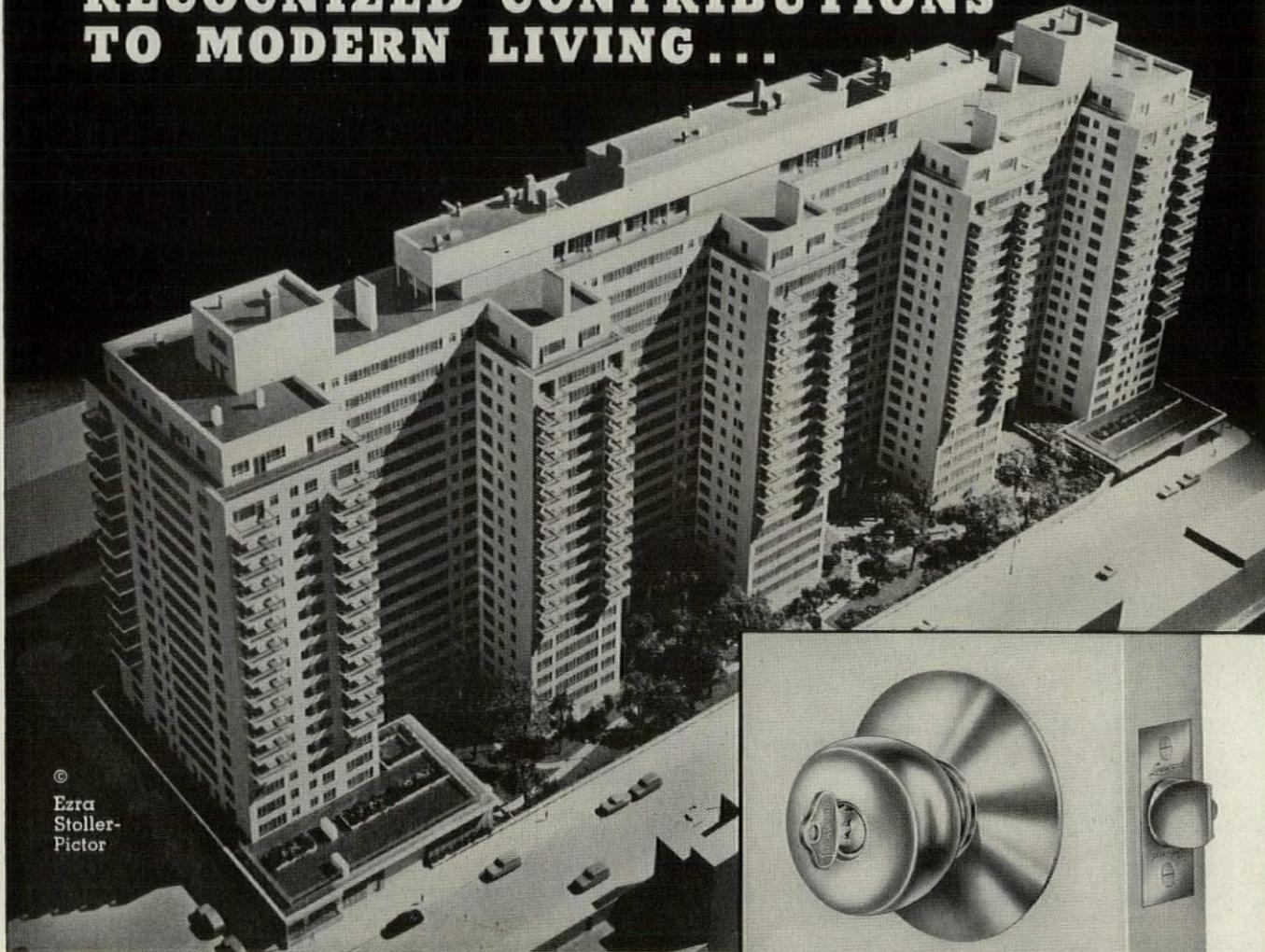
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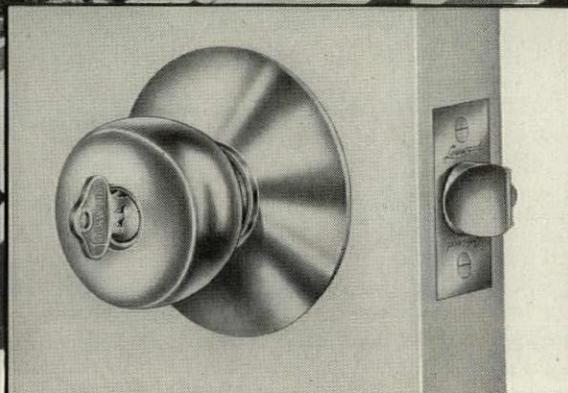
# RECOGNIZED CONTRIBUTIONS TO MODERN LIVING...



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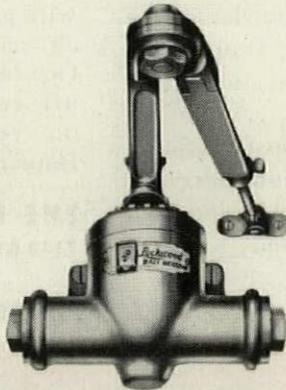
winner of the A. I. A. Award as the outstanding apartment building in New York City and recognized as a definite contribution to modern living — was skillfully conceived and developed by associated architects Mayer & Whittlesey; Skidmore, Owings & Merrill; and G. Harmon Gurney, Chief Architect for the owner — the New York Life Insurance Company. Contractor was Cauldwell-Wingate Co., New York City.



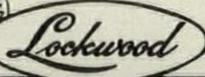
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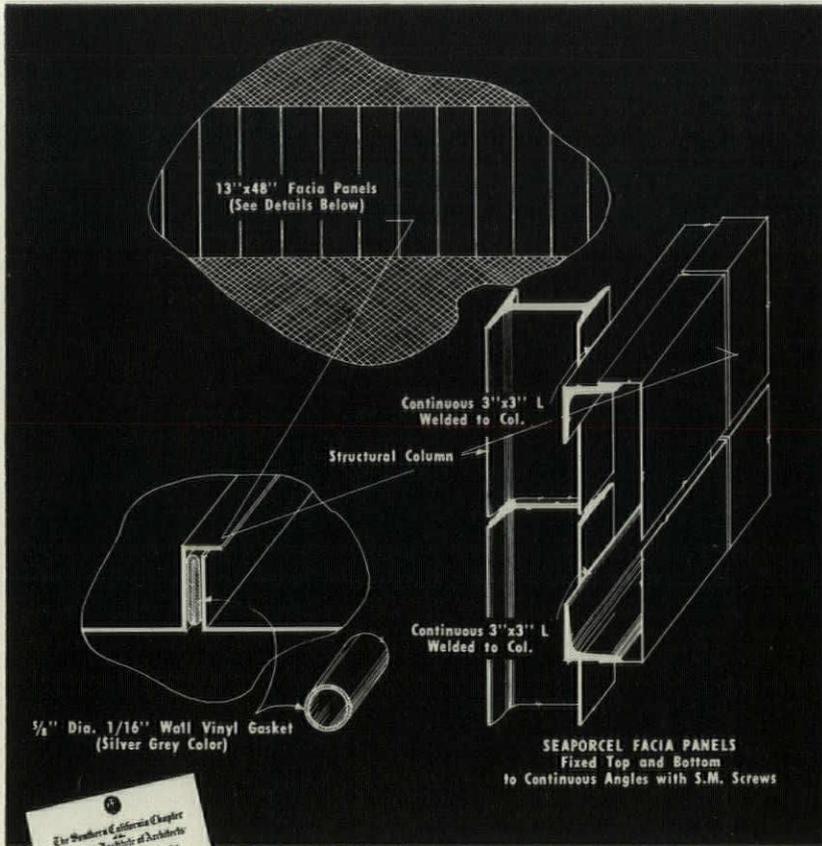
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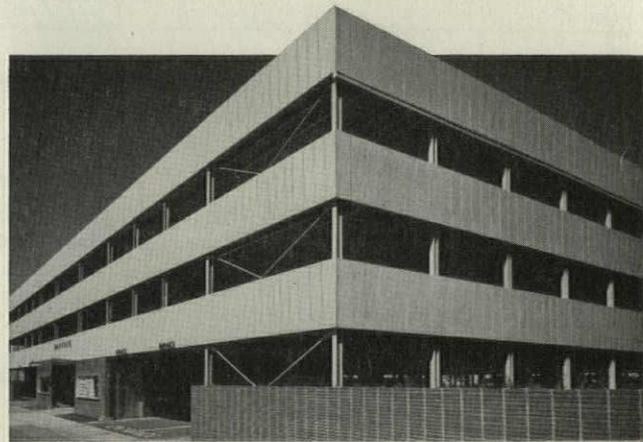
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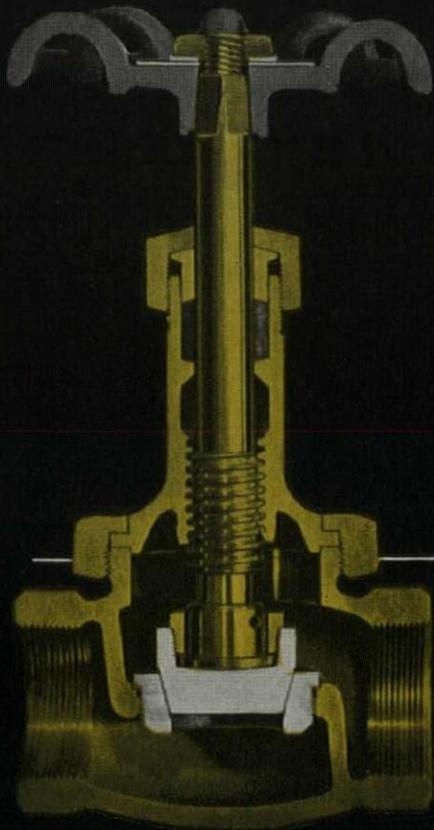
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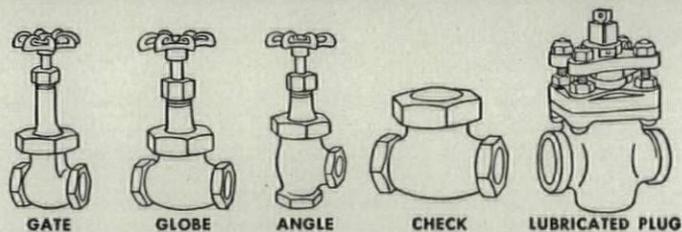
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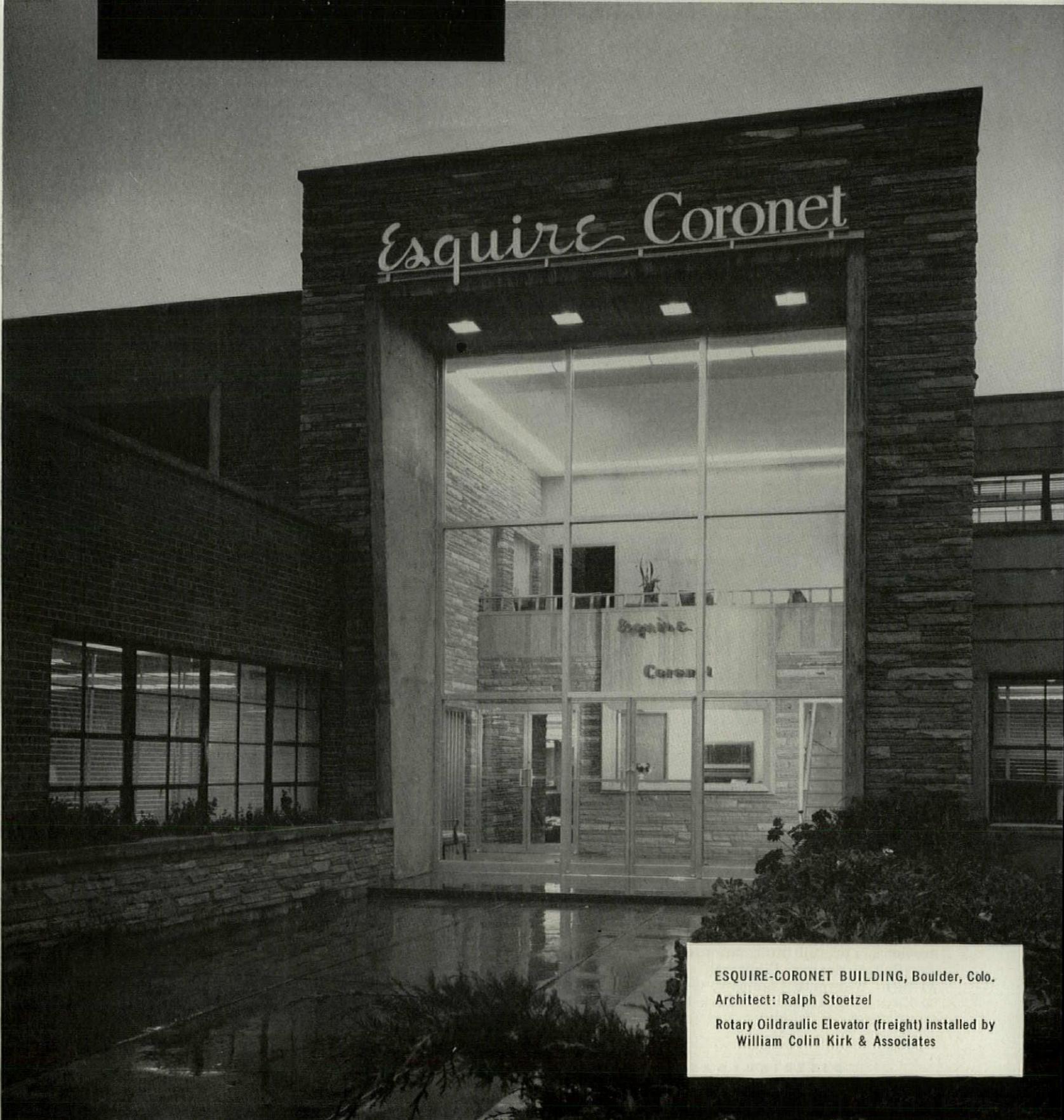
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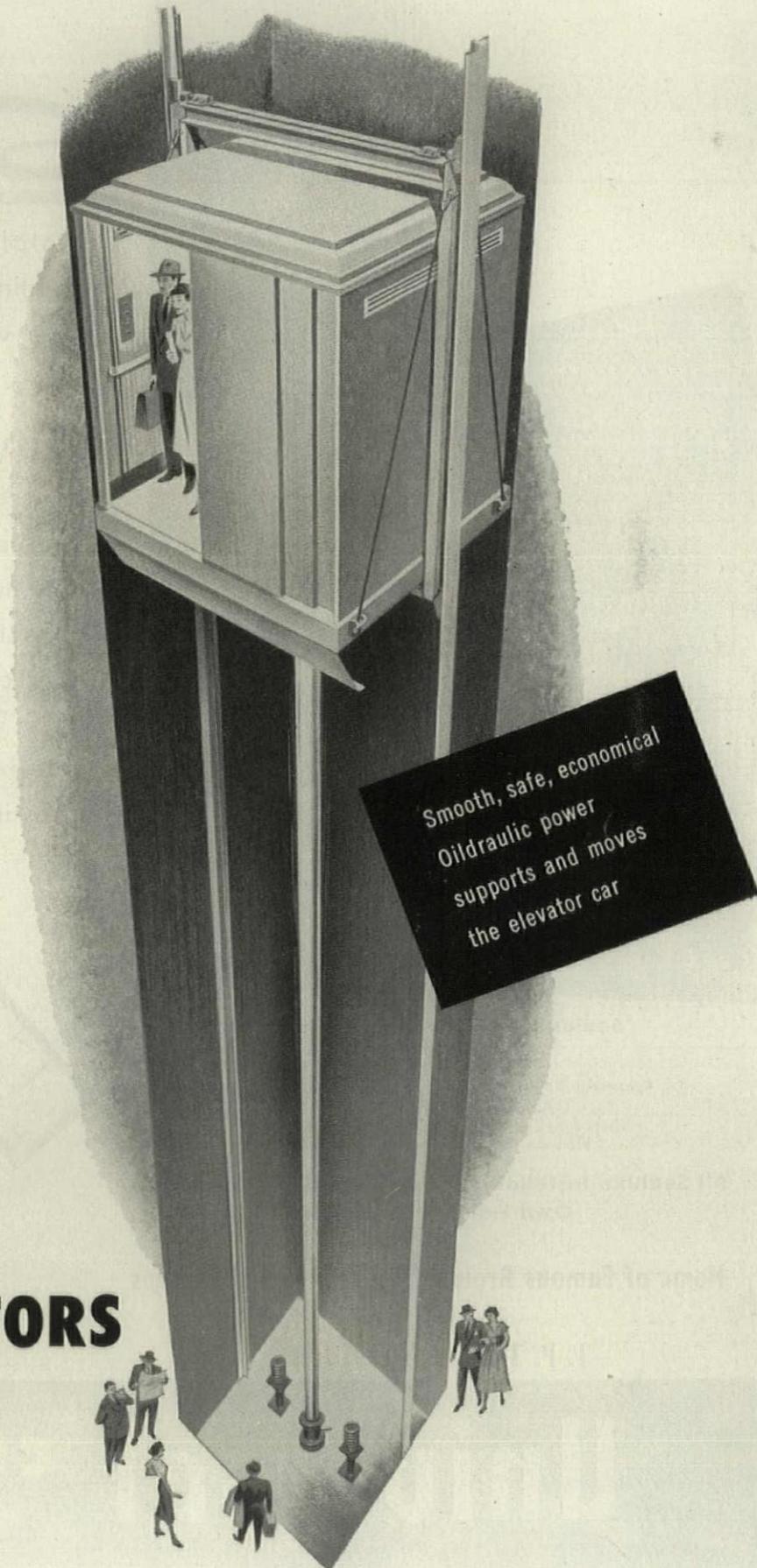


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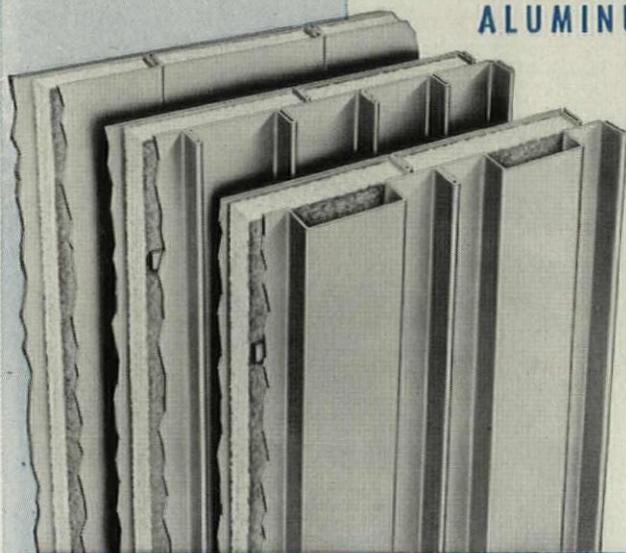
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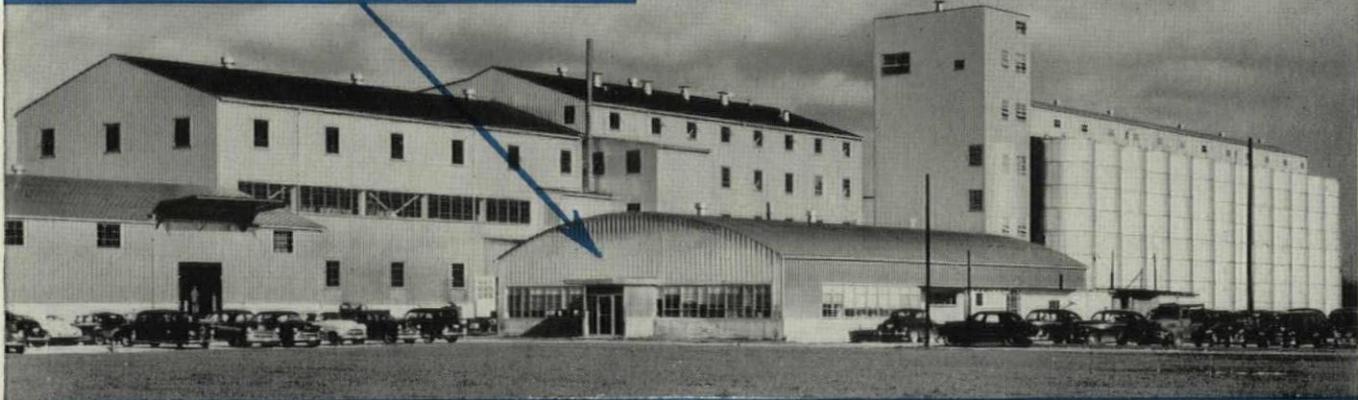
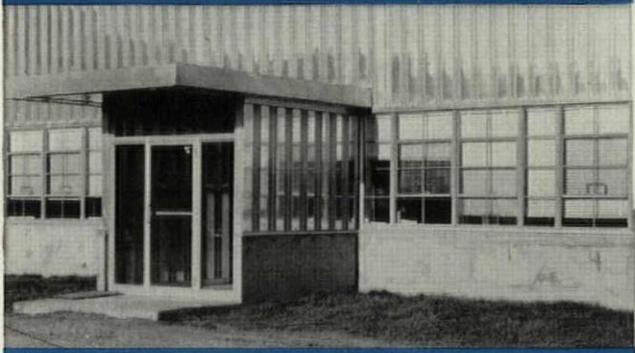
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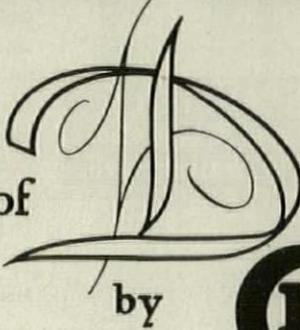
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FACE BRICK**  
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NEW YORK CITY

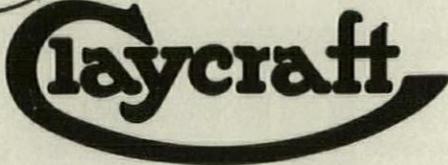
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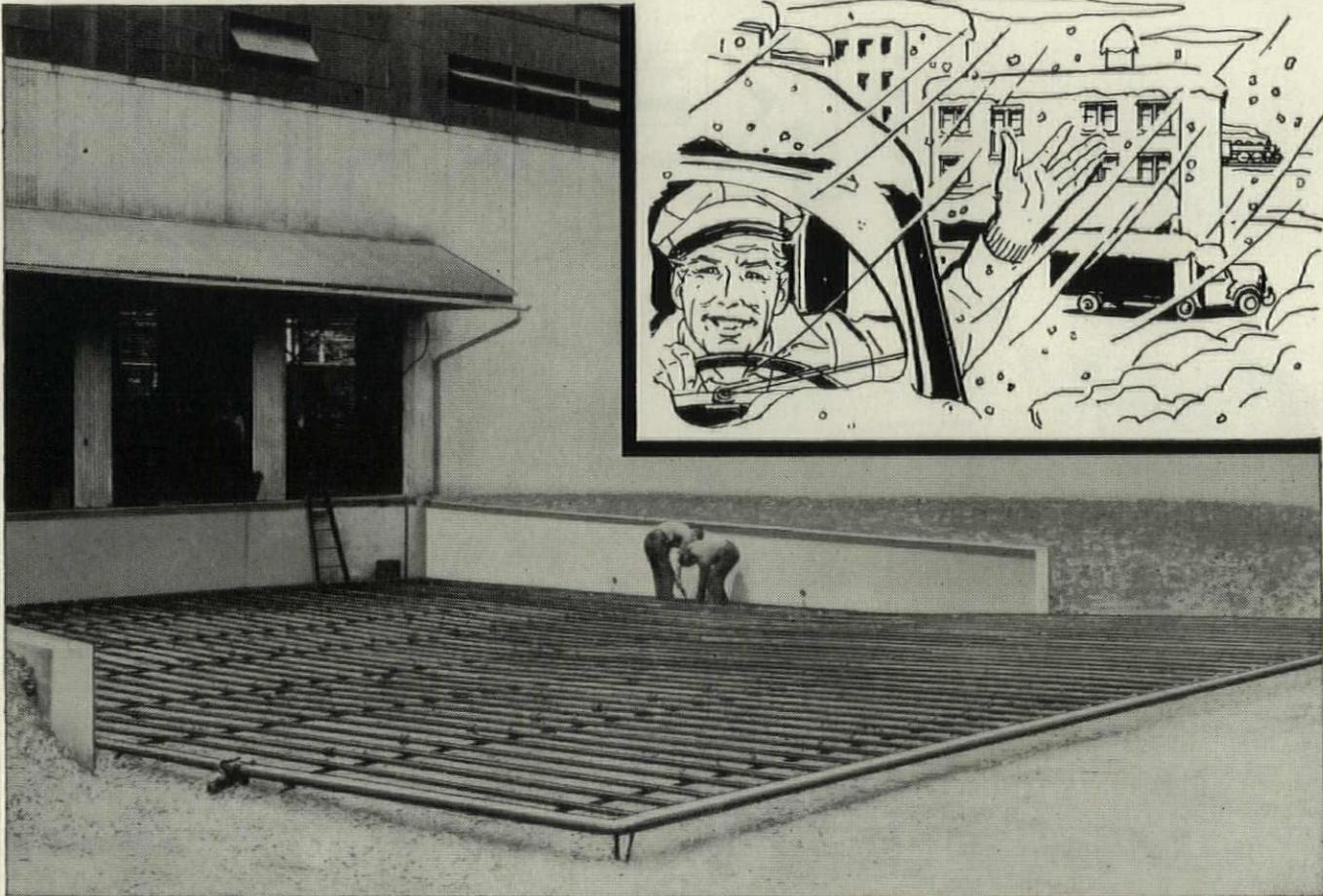


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## No stuck trucks at loading docks with steel pipe snow melting

All the precious time gained, high-balling the highway with urgently needed cargo, or making fast work of local deliveries, can be lost forever by a jam at an inclined or declined loading or receiving dock, caused by just a skim of ice or a mere half-inch of snow to say nothing of a heavy storm!

Yet for a comparatively minor investment, dock approaches and aprons can be kept snow and ice free all winter long. So, far-sighted managements are licking this weather

problem at the docks with steel pipe snow melting systems . . . and the big wheelers roll in and out "in a breeze."

Snow melting and steel pipe go hand-in-hand. Economy in purchase and durability in service make it a natural for this application. Add the important factors of formability and weldability for panel fabrication and you have the reasons why steel pipe is first choice for snow melting systems—and why it's the most widely used pipe in the world!

**Steel Pipe  
is First Choice**

### **COMMITTEE ON STEEL PIPE RESEARCH**

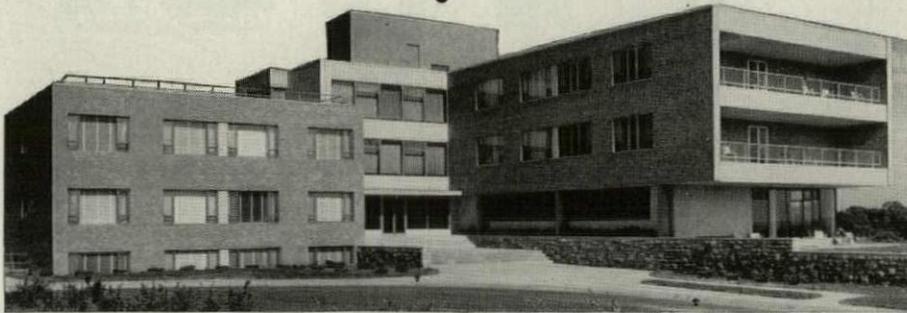
AMERICAN IRON AND STEEL INSTITUTE

350 Fifth Avenue, New York 1, N.Y.

Planned for Expansion...  
so the Logical Choice was

# KEWANEE

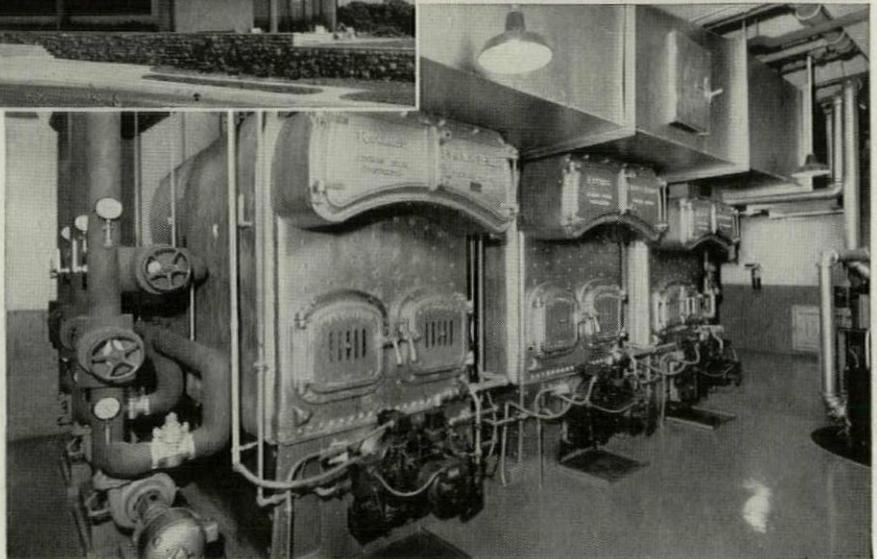
HEAVY-DUTY STEEL BOILERS



HOME for JEWISH AGED  
Kansas City, Mo.

KIVETT & MYERS, Architects  
W. L. CASSEL, Engineer

Three Kewanee Heavy-Duty  
Oil-Fired Boilers installed by  
A. D. JACOBSON PLUMBING  
and HEATING CO.



In planning institutional buildings today...  
careful consideration must often be given to later  
expansion of *both* building and equipment facilities.

Kewanee Boilers are capable of producing *more steam*  
than is guaranteed by their rated capacities, hence are  
ideally adapted when later expansion is needed. This fact  
plus a well known dependability and economy of  
fuel makes Kewanee the logical selection for important  
buildings of every type

KEWANEE-ROSS CORPORATION

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

KEWANEE, ILLINOIS

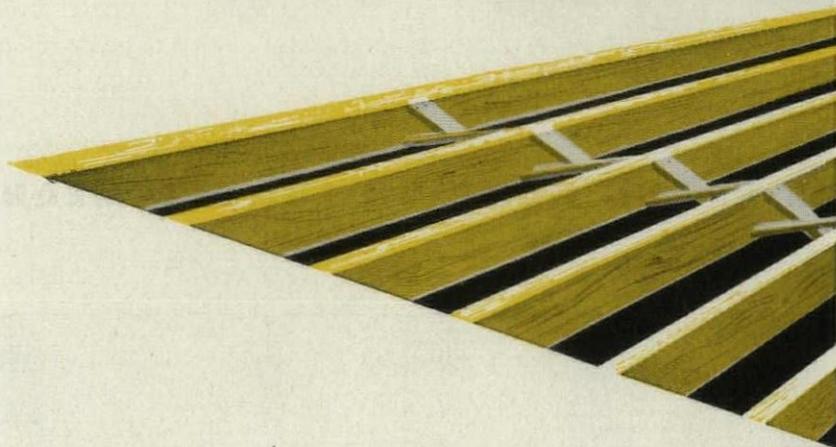
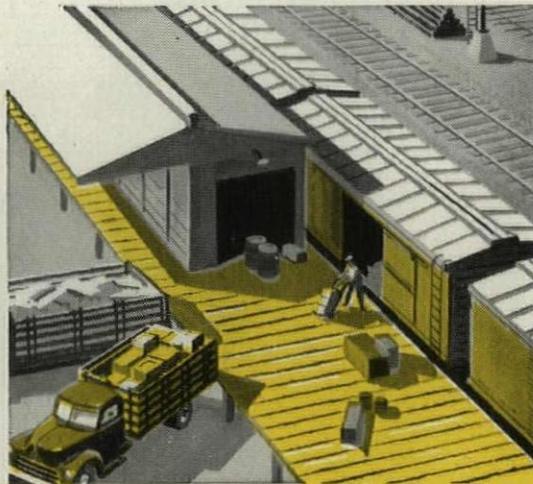


*Serving home and industry*

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

# WOOD

most  
workable of  
structural materials...



...lasts  
years  
longer  
when \*

# penta

PROTECTED

You use wood for building construction because it is the most workable of materials, offers the greatest flexibility of design and is always available. And when you specify PENTA protection for the wood you use, you also add the valuable qualities of *durability* and *long structural life*.

The treatment of wood with PENTA assures service life many times increased through the prevention of rot and termite damage. This PENTA protection is *permanent*, too, since PENTA will not leach or evaporate. Workability is unimpaired, and building mechanics prefer to work with PENTA-treated wood because it is *clean*.

**"Wood treating specifications:** Structural Lumber, all species, and other wood construction materials to be used in contact with the ground and exposures of similar severity, and not to be painted, shall be treated by a method which will give a minimum net retention of 8 lbs./cu. ft. of '5% penta petroleum oil solution.' For bridge material a minimum net retention of 12 lb./cu. ft. shall be used. Where an especially clean treated wood is desired, the oil shall meet A.W.P.A. specification page 50 Section 2."

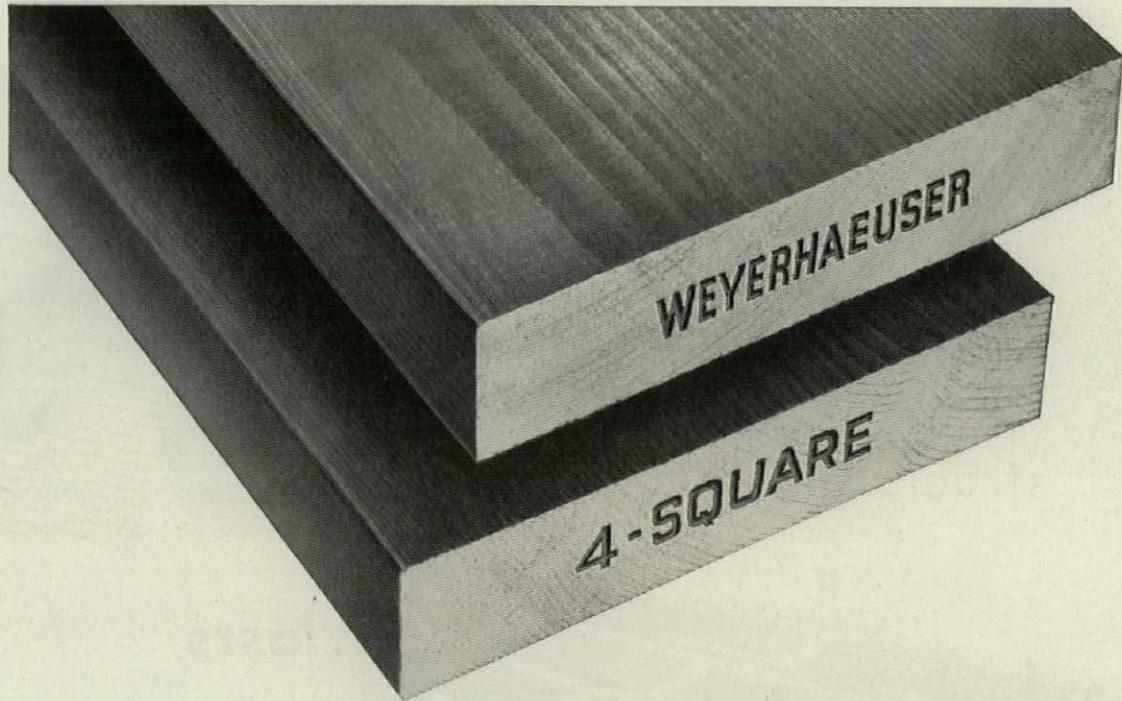
*(This is an excerpt from the wood treating specifications of a plant operating in the Gulf Coast Area.)*

THE DOW CHEMICAL COMPANY  
MIDLAND, MICHIGAN.

For more data write Dept. PE 41 for one of the following:

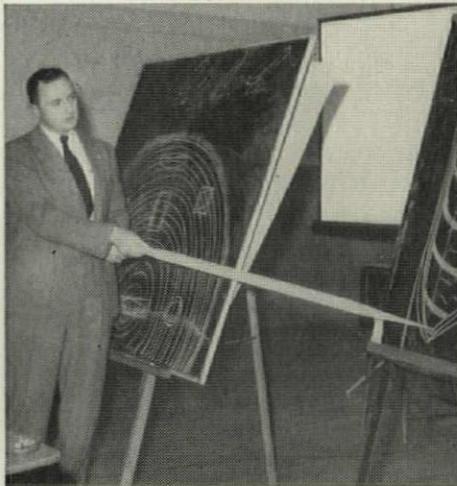
- Plant Wood Treating Specifications
- Valuable Booklet, "Pointers on Penta"





**THIS BRAND NAME ON LUMBER MEANS . . .**





SCHOOLDAYS are never over for a good lumberman. Here instructor points out important facts concerning lumber and its handling.



THERE'S A RIGHT and a wrong way to plant trees. This man knows the right way because of training in the proper handling of seedlings.



"PIANO PLAYER" this man is called. He operates a team of high speed saws, individually controlled from the "keyboard."

# Good Lumber... *produced by* Trained Personnel

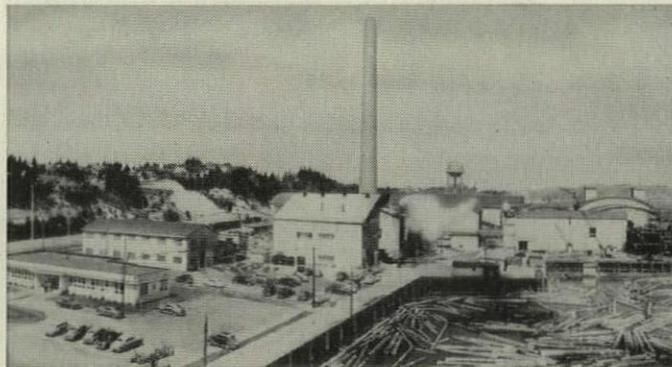
How many feet of clear lumber can be obtained from a 40 foot Douglas Fir log?

The answer to that question depends in part on the skill, the training, the experience of many different men doing many different jobs. Each log must be appraised as an individual problem by men with the know-how needed to get the most out of it, with the least waste and in the least amount of time.

In a Weyerhaeuser mill, for example, a single man, the head sawyer, makes thousands of decisions in a single day . . . determining where and how to cut to secure the greatest yield of good lumber from every log. This is just one example of why Weyerhaeuser places such emphasis on getting the best men in the industry for each of the many dozens of highly technical operations necessary to the job of producing high quality Weyerhaeuser 4-Square Lumber.

In addition to the selection of top personnel, Weyerhaeuser conducts a broad program of training designed to sharpen the skills and aptitudes of its men to the utmost.

Add together all the men who contribute to the quality of the finished product . . . the fellers, scalers, hookers, loaders, buckers, crane and bulldozer operators, linemen and section hands . . . everyone from brush monkey to mill mechanic . . . and you will get some idea of the army of technicians needed to make that famous brand, "Weyerhaeuser 4-Square" mean greater lumber value to you.



The Coos Bay, Oregon, Mill

At mills located on the West Coast and Inland Empire, Weyerhaeuser 4-Square Lumber is produced in a range of products from Douglas Fir, Idaho White Pine, Ponderosa Pine, West Coast Hemlock, Western Red Cedar and related species.

## Weyerhaeuser 4-Square Lumber and Services

WEYERHAEUSER SALES COMPANY • ST. PAUL 1, MINNESOTA



## GOOD REMEDY for business ailments



Many of the big pharmaceutical houses use Worthington air conditioning and refrigeration machinery to control chemical reactions, inhibit bacteria, prevent deterioration.

And many a corner drug store keeps up "hot weather" business by using Worthington air conditioning

to bring in customers.

No other manufacturer makes so complete a line. A Worthington system is all Worthington-made — not just Worthington-assembled — assuring you of perfectly balanced operation and unit responsibility.

Worthington Corporation, formerly Worthington Pump & Machinery Corporation, Air Conditioning and Refrigeration Div., Harrison, N. J.

America's Leaders... in Many Businesses... Select

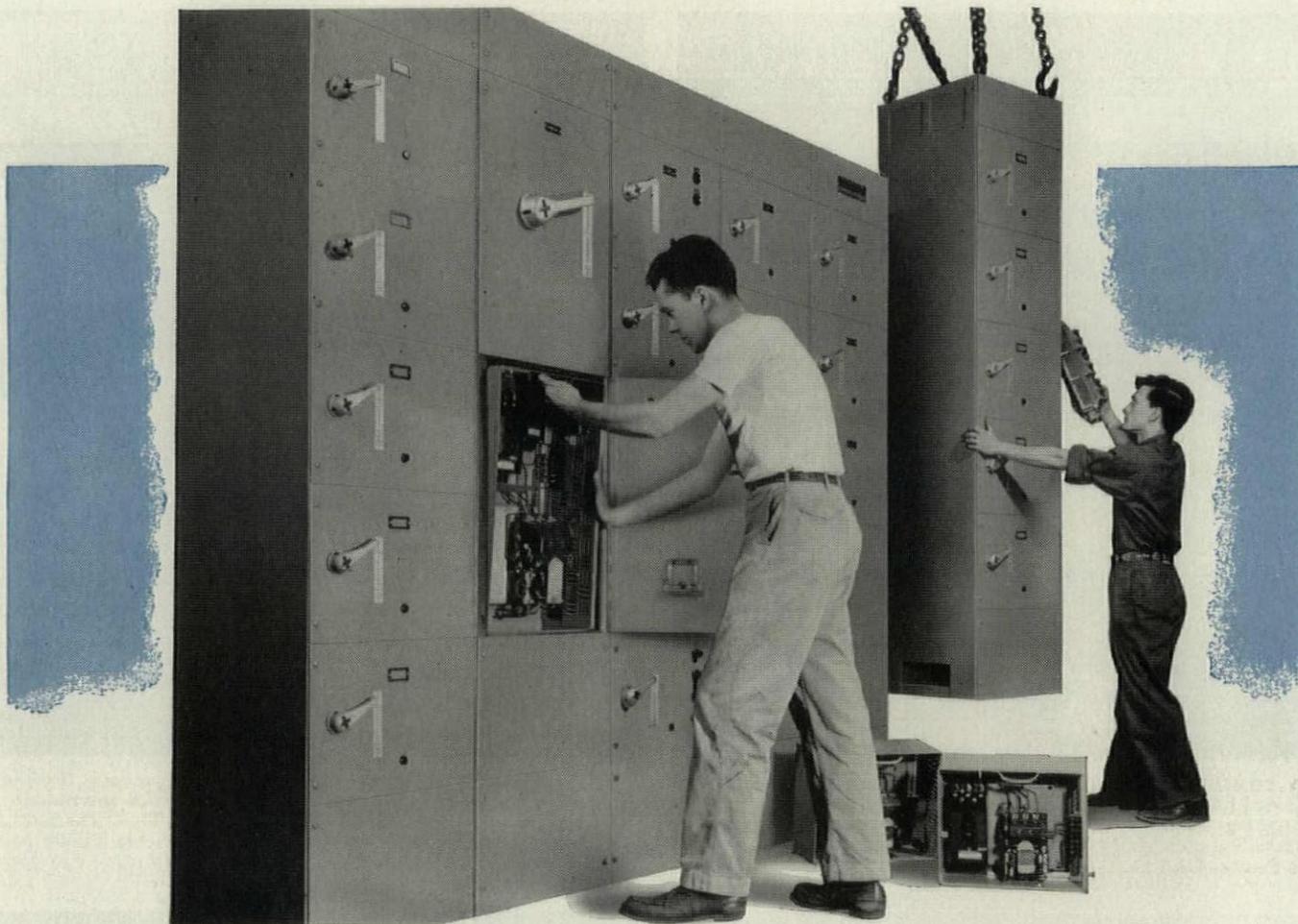
# WORTHINGTON



A.2.8

## AIR CONDITIONING AND REFRIGERATION

The Most Complete Line... Always the Correct Recommendation



## ***FLEXIBILITY*** of electrical components...of structural units

***Another reason why most control center buyers specify WESTINGHOUSE***

No matter what type and size of motor control you need, you can house it in a Westinghouse Control Center. That's not so unusual in itself. But, the important thing is the ease with which these control units are initially installed and then interchanged as circuit requirements change.

The secret is in the standardization of cubicle dimensions. The height of these units are 14" or multiples of 14". Thus, all units are completely interchangeable. One 28" unit can replace two 14" units—three 14" units can replace one 42" unit—etc.

Standardization of vertical structures also aids flexibility. You can arrange, rearrange, add or subtract

vertical structures to meet any requirement. Each structure dovetails perfectly with its neighbors.

Need help? Westinghouse offers you the services of an application engineer to work with you on your control center planning. Call your local Westinghouse office today. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-27023

YOU CAN BE SURE...IF IT'S  
**Westinghouse**

**CONTROL CENTERS**



# Are YOU risking fires like these?



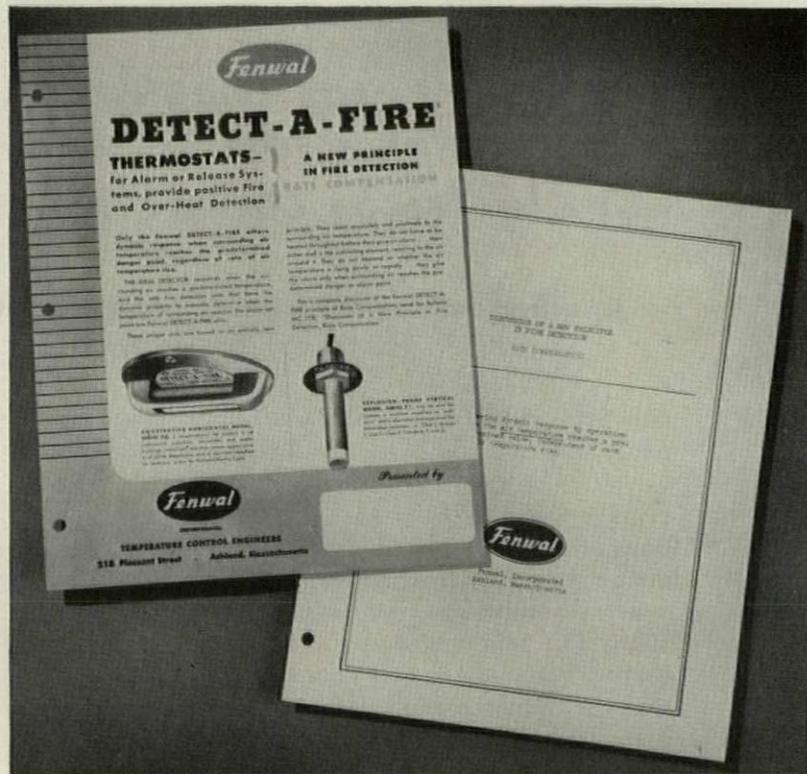
**A PROPERTY-CONSUMING FIRE** resulted above when *full* fire protection was not provided for this rubber manufacturing plant. If you are responsible for protecting life and property, you can make sure of *full* fire protection by installing a carefully engineered alarm or release system that incorporates Fenwal DETECT-A-FIRE® thermostats.



**A \$3,000,000 FIRE** occurred at this boarding school. It could have been quickly detected by Fenwal DETECT-A-FIRE thermostats activating an alarm or release fire protection system. These thermostats respond the instant temperature of surrounding air reaches danger point. No hazardous delays! No annoying false alarms! No other fire detection units are so positive.



**A MONEY-SAVING ECONOMY** is still another benefit to users of DETECT-A-FIRE thermostats. Besides cutting loss of life and property, these thermostats assure long-term economy in themselves. They offer built-in extra value by combining long life, corrosion resistance and repeatability. Fenwal DETECT-A-FIRE thermostats are listed by  ... approved by 



**THESE FREE BULLETINS** give you complete details on Fenwal DETECT-A-FIRE thermostats and their new Rate-Compensation Actuation principle of fire detection. They are the only units operating on this principle. Fenwal engineers will be glad to work with you and your system installer in bringing you *full* fire protection. Write Fenwal, Incorporated, 255 Pleasant Street, Ashland, Mass.

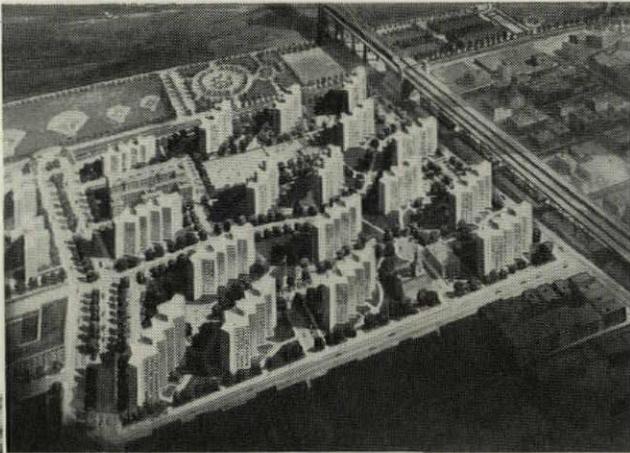


**DETECT-A-FIRE®**  
Thermostats

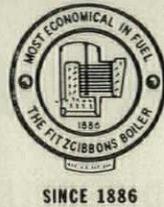
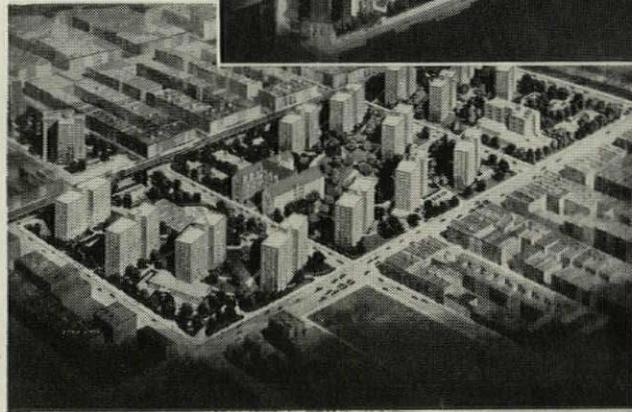
DYNAMIC, RATE-COMPENSATION ACTUATED FIRE DETECTORS

# FITZGIBBONS *heats more housing projects*

**BARUCH HOUSES**  
NEW YORK, N. Y.  
NEW YORK CITY HOUSING AUTHORITY  
EMERY ROTH & SONS  
RICHARD ROTH  
ARCHITECT  
V. L. FALOTICO & ASSOCIATES  
CONSULTING ENGINEERS  
HEATING MAINTENANCE CORP.  
HEATING CONTRACTOR



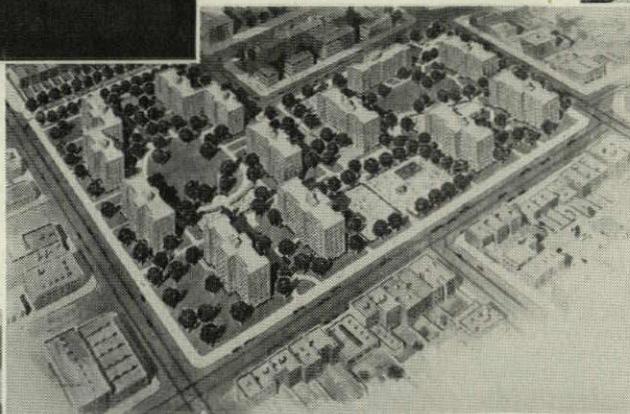
Here are just a few recent larger New York City Housing Authority projects to be heated with Fitzgibbons Steel Boilers. Thousands of similar installations throughout the nation have proven that outstanding performance and fuel economy go hand-in-hand. Good boiler design means trouble-free heating service. Be assured of these vital factors in your next heating job by specifying the Fitzgibbons Boiler.



**Fitzgibbons Boiler Company, Inc.**  
101 PARK AVENUE, NEW YORK 17, N. Y.  
Manufactured at: OSWEGO, N. Y.      Sales Branches in Principal Cities

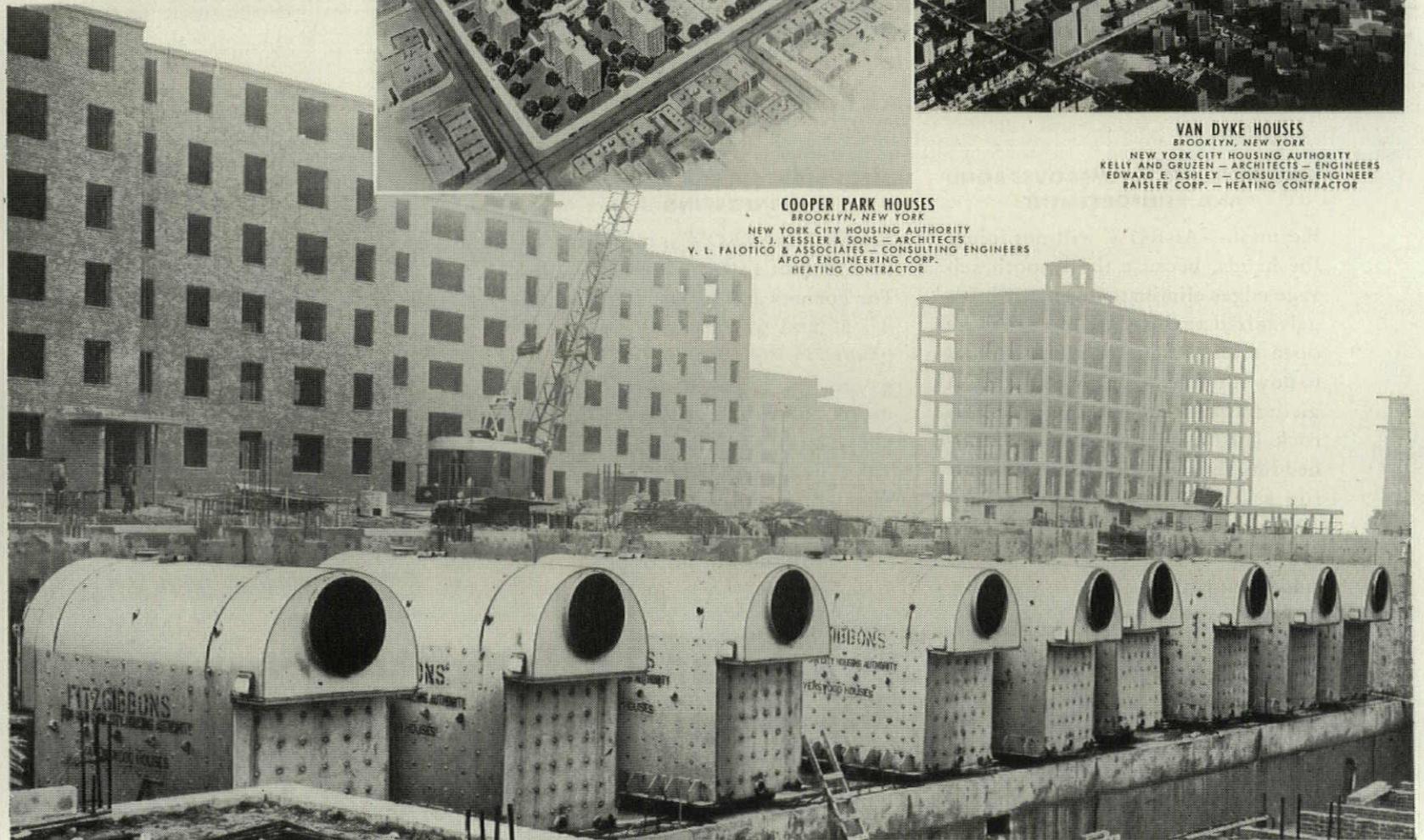


**GEORGE WASHINGTON HOUSES**  
NEW YORK, N. Y.  
NEW YORK CITY HOUSING AUTHORITY  
ALFRED HOPKINS & ASSOCIATES  
ARCHITECTS  
GUY B. PANERO — CONSULTING ENGINEER  
J. L. MURPHY, INC. — HEATING CONTRACTOR

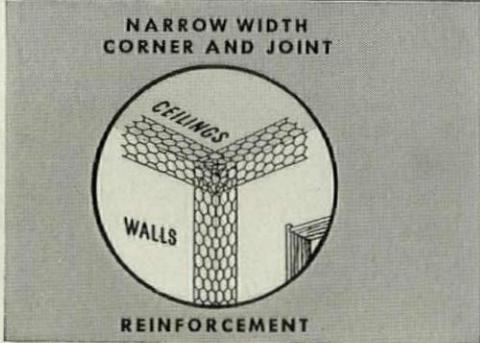
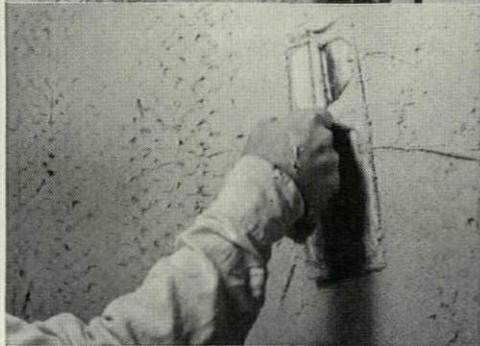
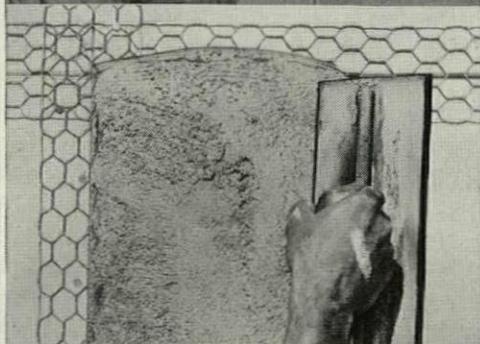
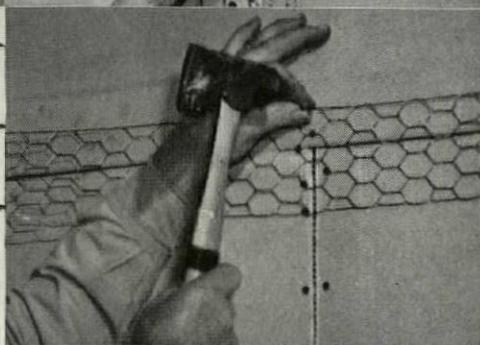
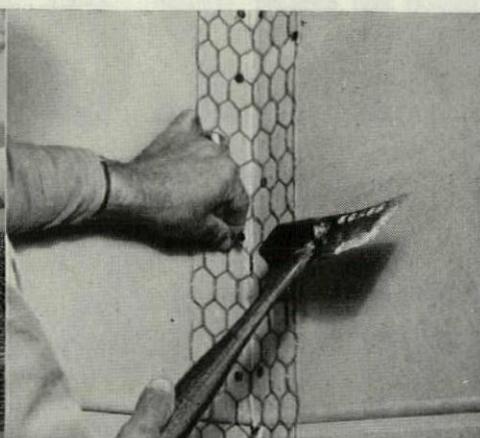


**VAN DYKE HOUSES**  
BROOKLYN, NEW YORK  
NEW YORK CITY HOUSING AUTHORITY  
KELLY AND GRUZEN — ARCHITECTS — ENGINEERS  
EDWARD E. ASHLEY — CONSULTING ENGINEER  
RAISLER CORP. — HEATING CONTRACTOR

**COOPER PARK HOUSES**  
BROOKLYN, NEW YORK  
NEW YORK CITY HOUSING AUTHORITY  
S. J. KESSLER & SONS — ARCHITECTS  
V. L. FALOTICO & ASSOCIATES — CONSULTING ENGINEERS  
AFGO ENGINEERING CORP.  
HEATING CONTRACTOR



▶ **FOR WALL AND  
CEILING CORNERS AND JOINTS  
WHEREVER PLASTER IS APPLIED...**



# Keymesh-NARROW

**NEW...ECONOMICAL SOLUTION TO AN OLD PROBLEM!**

*Pre-formed for Corners...lies flat, too...* while Keymesh-NARROW is purposely supplied pre-formed for corners, it still lies flat in the roll and when applied on flat surfaces. It forms easily for corners by merely flexing the cut piece... holds its shape or can be re-shaped if desired. Its narrow width and low cost permit a fast, economical reinforcing job on any location where interior plaster is used... and helps prevent future crack troubles!

**SAFE HANDLING... IMPROVES BOND AND REINFORCEMENT**

Keymesh-NARROW will not injure the hands, because the smooth selvage edges eliminate this hazard. It's galvanized against rust, too. And, the open mesh permits the brown coat to flow through and around the mesh giving a generous bond of plaster to rock lath, insulation lath, etc., imbedding the steel wires... thus making a strong, reinforced section where needed... with an even base for the second coat... and a firm, smooth finish!

**SIZED RIGHT... FOR EVERY PLASTER REINFORCING JOB**

Keymesh-NARROW is manufactured in 150 foot rolls in several widths. For corners and joints it is made in 4", 5" and 6" widths, 1" mesh, 18 gauge... 4½" and 6" widths, 17 gauge. For joints, also in 6" by 1" mesh, 20 gauge. For reinforcing above large windows and openings, 12" with 1" mesh, 20 gauge is recommended. Keymesh is also available in 3 and 4 foot widths for easy over-all lathing reinforcement practice.

**KEYSTONE STEEL AND WIRE COMPANY**

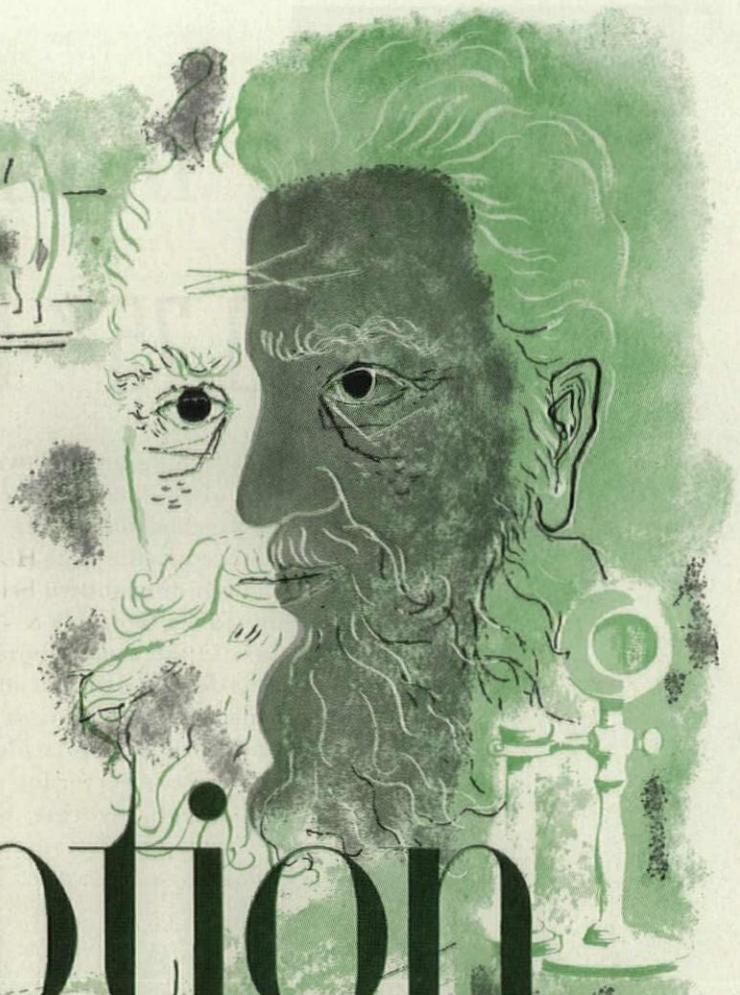
Building Materials Division Peoria 7, Illinois

KEYMESH • KEYMESH-NARROW • TIE WIRE • WELDED FABRIC • NAILS  
KEYSTONE NON-CLIMBABLE FENCE • KEYSTONE ORNAMENTAL FENCE

WRITE FOR PRICES AND OTHER INFORMATION ON

**Keymesh**  
PRODUCTS

If Alexander Graham Bell hadn't been a teacher of "visible speech" it is probable he never would have invented the telephone ★ By showing deaf persons the positions held by the mouth, lips, throat and tongue to make sounds, Bell taught them to speak. His uncanny perception—that sound had shape—led to the indispensable instrument at your elbow that transforms miles into minutes.

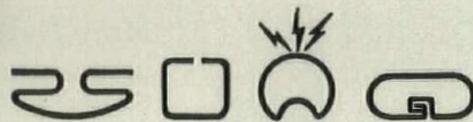


# perception

Many of the men responsible for making a new or improved product better, faster and cheaper are finding the answers to their problems with Van Huffel cold formed metal shapes and tubing ★ So, don't shelve that seemingly impossible idea because of the known limitations of methods and materials. It's just possible Van Huffel's half century of experience and perception of shapes for things to come can transform that mental image into a metal miracle.

# Van Huffel

TUBE CORPORATION • WARREN, OHIO



WELDED • LOCK SEAM • OPEN SEAM • BUTTED TUBING • METAL SHAPES • MOULDINGS

Modern Thinking  
about  
Modern Materials

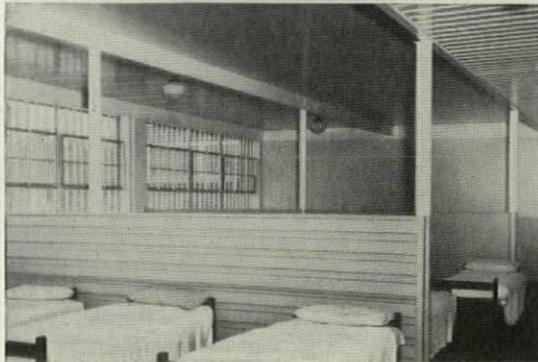
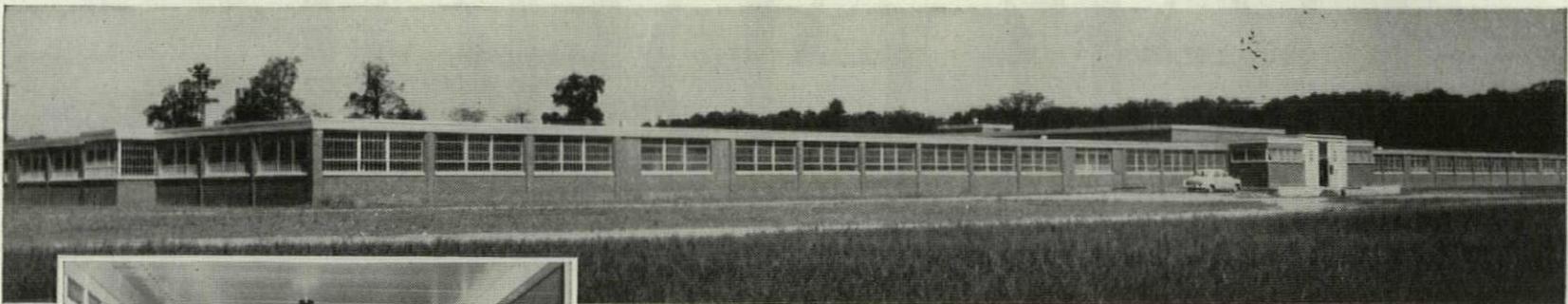
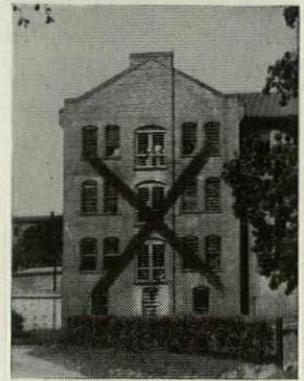
# BUILDS HOSPITALS AT

## 65 TO 75% OF REGIONAL COST

The one-floor quadrangle, around two football-field sized patios, is what Gregson & Ellis, of Atlanta, designed to replace the three-story edifice on the right for psychiatric patients. It is the thoroughly modern, well equipped, new Milledgeville State Hospital costing only \$4.95 per sq. ft.

The 1,000-bed building shown below is typical of many institutional structures designed by Gregson & Ellis at a cost  $\frac{2}{3}$  to  $\frac{3}{4}$  of regional costs, with access to the same labor and building conditions.

Gregson & Ellis designed, to full advantage, the economies inherent in all Robertson materials. They made the most of fast, lightweight dry construction, and knew how to achieve the functional beauty of undisguised materials. The contractor for the job was The A. R. Briggs Construction Co., of Macon, Georgia, who was low bidder at \$494,000.



**Q-DECK AND Q-FLOOR** ceilings are the smooth side of Robertson Roof Deck, white enameled. Insulation and built-up waterproofing have kept the building pleasantly cool in the hottest weather. In winter, the cells of the Roof Deck are used for conveying forced warm air, which emerges near the windows, from holes cut into the steel cells . . . a clever combination of radiant and convection heating.

Privacy is provided for wards by partitions of soundproofed Robertson Q-Floor units. These are located to permit circulation of air, above and below, and to facilitate floor cleaning.

### More Detailed Information

is available on this hospital, or other Gregson & Ellis buildings and on the most advantageous use of Robertson materials. Write for complete literature.



Gregson  
&  
Ellis  
Architects

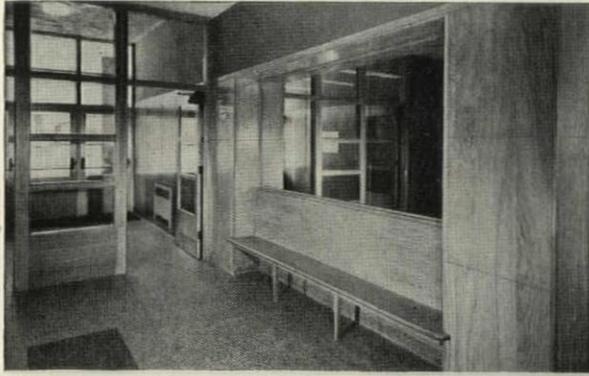
## H. H. ROBERTSON COMPANY

2403 Farmers Bank Building Pittsburgh 22, Pennsylvania



Offices in ALL Principal Cities  
in the U. S. A. and Canada

World-Wide Building Service



The entrance of the Hamilton School — with its beautiful panels of Birch Weldwood Plywood.

Built-in book case cabinets and magazine rack arrangements along one entire wall in each class room . . . and open book shelves along one or two walls . . . are made of unselected Birch Weldwood Plywood in the beautiful new Hamilton School, Mt. Vernon, N. Y. Architects: Warren S. Holmes and Emilio DiRienzo. Inst.: Sanford Woodworking.



*Add Beauty... Utility... Economy*

**For Today...and the Years Ahead  
with WELDWOOD® PLYWOOD**

Look what beautiful and functional Weldwood Plywood does for the Hamilton School, Mt. Vernon, N. Y.

Weldwood Plywood gives an entire building . . . or a single room . . . character that no other kind of material can duplicate. Gives it a beauty that never goes out of style . . . a quiet dignity . . . lifetime wearing qualities.

And you can use beautiful Weldwood hardwoods at surprisingly low cost for any paneling job—whether it be a school, church, office, or private dwelling.

Once installed, Weldwood walls or built-in units require virtually no maintenance . . . no redecorating.

Weldwood Plywood saves time and money in new construction because it is quickly applied directly to the studding.

In redecorating, the large panels go up fast and easily, right over existing walls . . . even over cracked, unsightly plaster.

And remember, Weldwood Plywood is guaranteed for the life of the building in which it is installed.

So on your next job be sure to consider the advantages and economies of using beautiful Weldwood Plywood.



**WELDWOOD Plywood**

*Manufactured and distributed by*

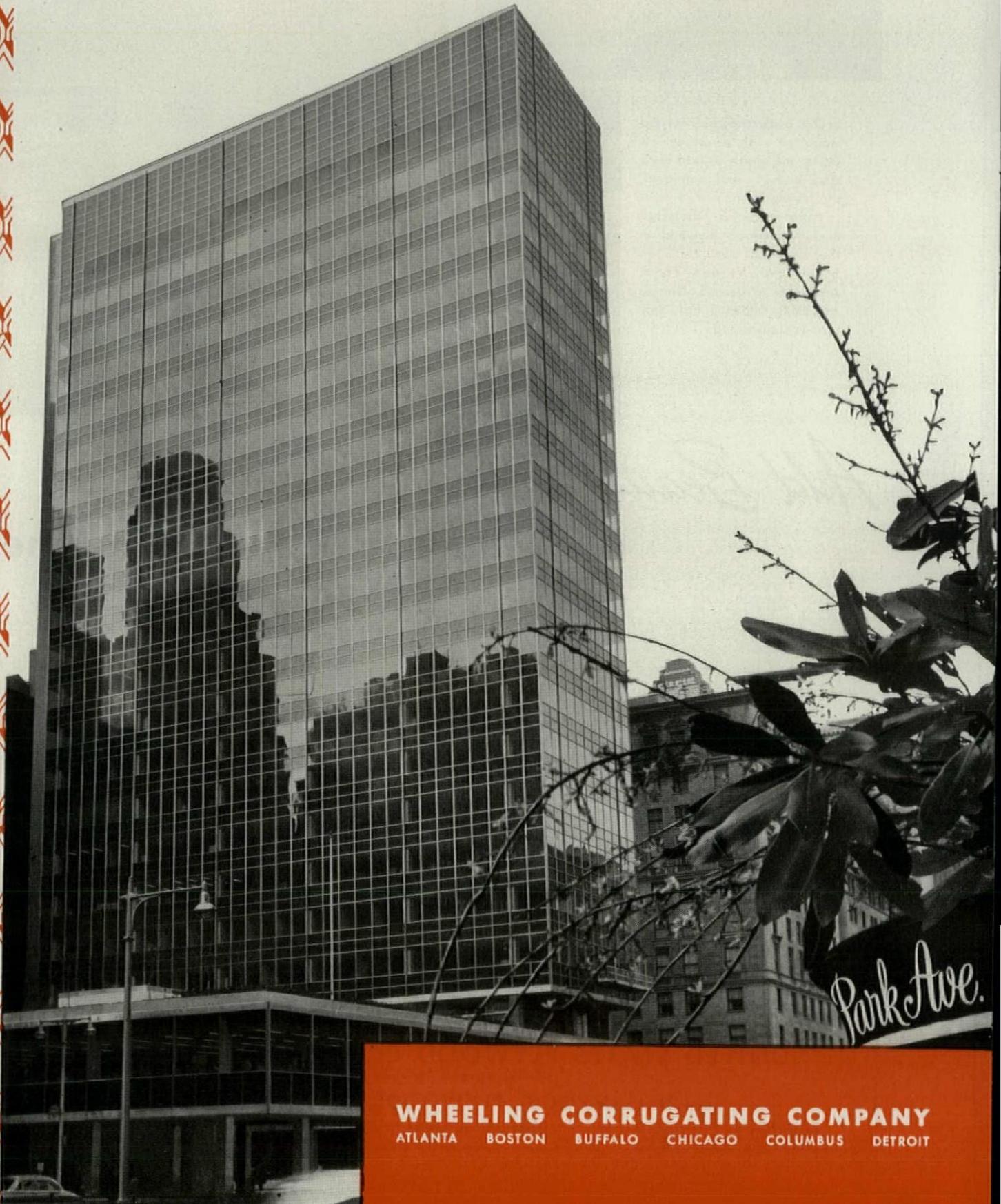
**UNITED STATES PLYWOOD CORPORATION** New York 36, N. Y.

*World's Largest Plywood Organization*

*and U. S.-MENGEL PLYWOODS, INC., Louisville 1, Ky.*

**Branches in Principal Cities • Distributing Units in Chief Trading Areas • Dealers Everywhere**

*For LEVER HOUSE, it's*



**WHEELING CORRUGATING COMPANY**  
ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT

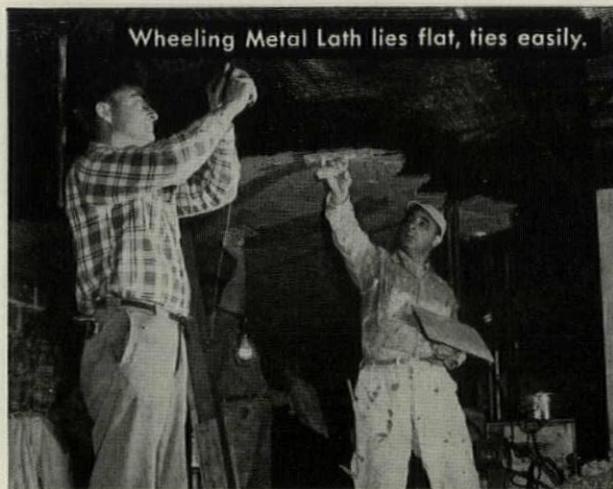
# Wheeling Metal Lath!

**New York's newest,** most contemporary "house"—designed for Lever Brothers Company by Skidmore, Owings & Merrill. Fully air-conditioned, it is designed around the administrative functions it serves, discards conventional shapes and proportions, foreshadows the functional design of buildings to come.

**On all plastered surfaces,** Wheeling Metal Lath and Lath Accessories assure a lasting base. Wherever lathers use Wheeling Metal Lath, they find it always a *better* start for the *best* finish!

The Wheeling line of building materials includes: Steelcrete Reinforcing Mesh, Expanded Metal, Metal Lath and Metal Lath Accessories, Tri-Rib Steel Roof Deck, ExM Angle Frame Partitions, and Steelcrete Vault Reinforcing.

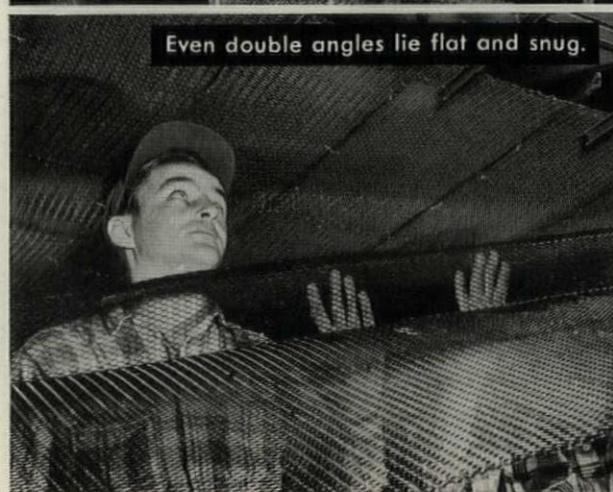
Metal Lathing Contractor, Jeremiah Burns, Inc. Metal Lath furnished by Universal Builders Supply Co., Inc. General Contractors, George A. Fuller Co.



Wheeling Metal Lath lies flat, ties easily.



Angles stay true, speed up corner work.



Even double angles lie flat and snug.

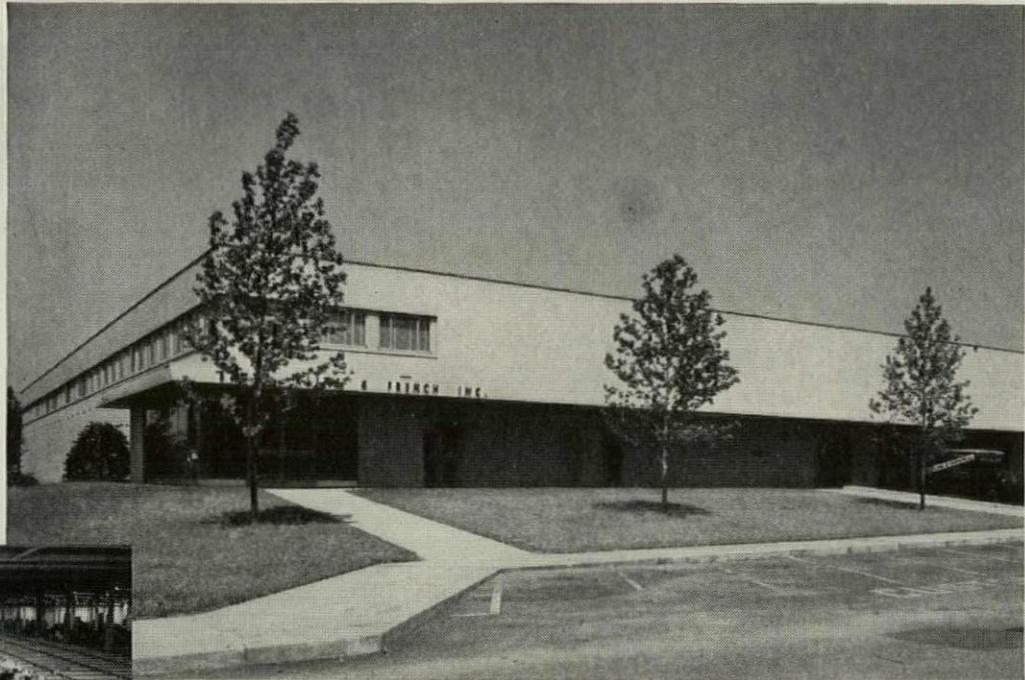


**BUILDING MATERIAL DIVISION • WHEELING, WEST VIRGINIA**  
KANSAS CITY   LOUISVILLE   MINNEAPOLIS   NEW ORLEANS   NEW YORK   PHILADELPHIA   RICHMOND   ST. LOUIS

# YORK *Unitary* AIR CONDITIONING gives you greater freedom in design and space

*In the new block-long offices of Smith, Kline & French, Inc. (leading wholesale druggists), York Unitary Air Conditioning provides offices with individual control of cooling and heating.*

*Another York-Sized Job—the warehouse of Smith, Kline & French, Inc.—a single, block-long room—is believed to be the world's largest fully air-conditioned commercial room.*

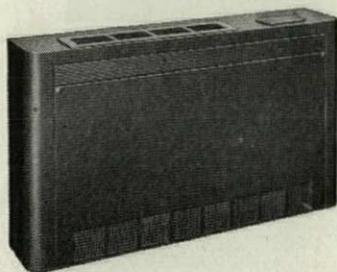


Whether you're renovating an already existing structure or building a new one, York Unitary Air Conditioning saves you space and helps simplify your design problems.

For example, you can locate outside air intakes anywhere from windowsill to floor level. Only three pipes—water supply and return, and drain—are necessary. In the engine room, only space for a central water supply system is required. And there's no additional air handling equipment with the York Unitary System.

Your client will enjoy savings, too. Individual room controls allow management to condition only those spaces actually occupied. And cleaning and redecorating costs go down because all air—recirculated as well as outside—is filtered.

Your nearby York Representative (listed in your Classified Directory) can add fact after fact to those above—facts that will surely demonstrate the superiority of York's Unitary System. Consult him today or write York Corporation, York, Pennsylvania.



*York Unitary Air Conditioners may be installed to provide heating initially and cooling added later. Right or left-hand units are available to facilitate piping.*



THE BIG ADVANCES COME FROM

# YORK

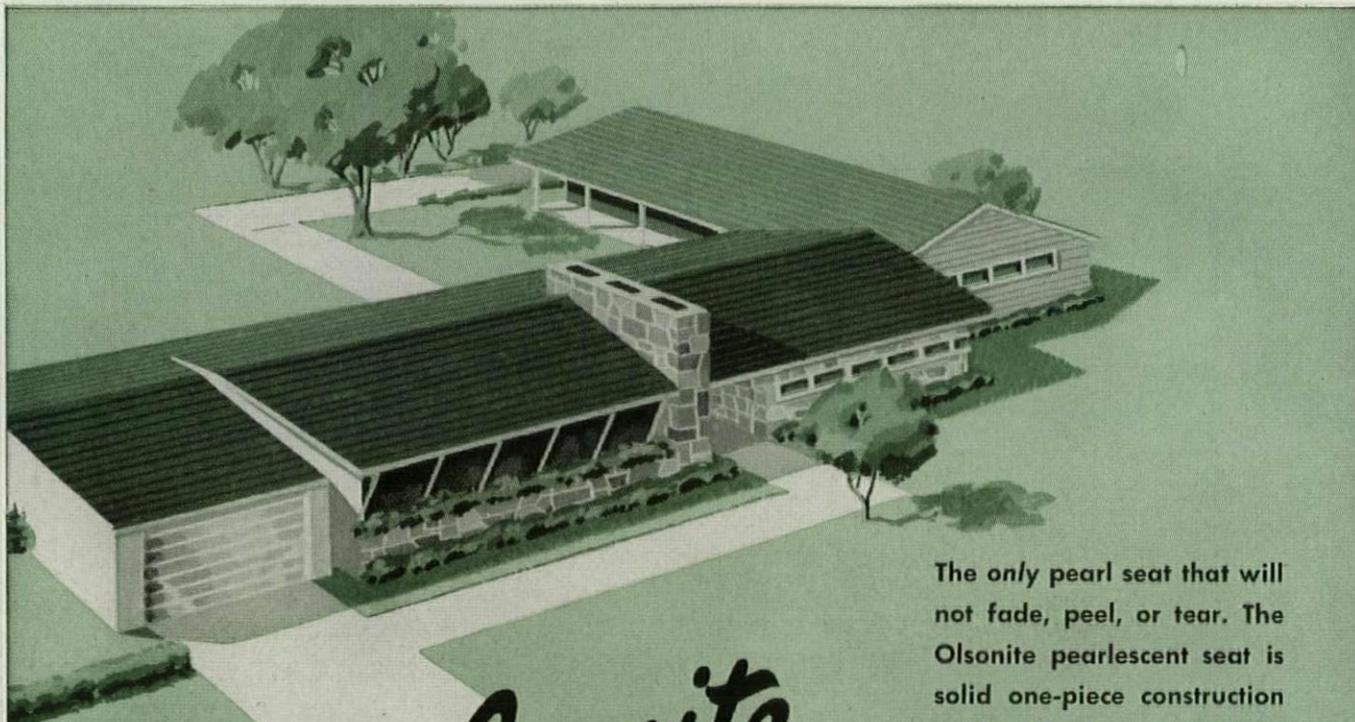
HEADQUARTERS FOR MECHANICAL COOLING...SINCE 1885



Linoleum, the oldest, most thoroughly tested and proved of all resilient floors, is still the best economic value in its price class. Long wearing, quiet and comfortable underfoot, greaseproof, easily maintained, Armstrong's Linoleum also offers the widest choice of beautiful designs and the most complete color range of any flooring.

American Airlines Ticket Office  
Los Angeles, California  
Arthur & Ross Hutchason, Architects

**ARMSTRONG'S LINOLEUM**  
ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA



**SOLID** *Olsonite*

The only pearl seat that will not fade, peel, or tear. The Olsonite pearlescent seat is solid one-piece construction without sheet covering of any kind. Available in 32 colors and white and black.

**PEARLESCENT SEATS**



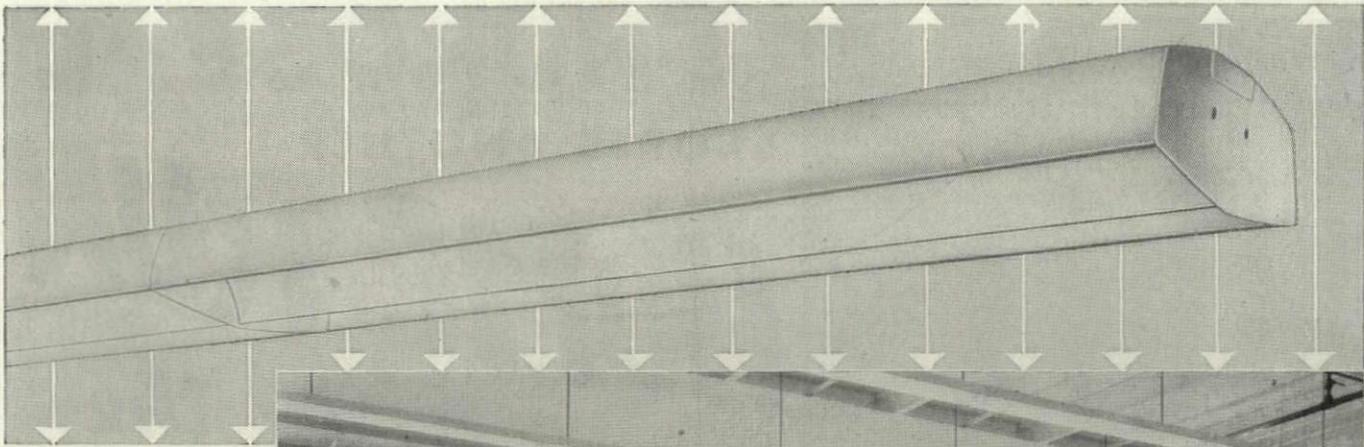
**NOT HOLLOW • NOT CONCAVE • NOT CORED—BUT SOLID OLSONITE**

**SWEDISH CRUCIBLE STEEL CO.**

PLASTICS DIVISION

8561 BUTLER AVENUE • DETROIT 11, MICHIGAN

P-3



NOTE: ↑  
 half the light goes up to be reflected from the ceiling and upper walls.

NOTE: →  
 the ceiling and upper walls are painted white to have a high reflectance value.



## SETTING THE PACE IN THE INDUSTRIAL LIGHTING REVOLUTION

### THE WAKEFIELD INDUSTRIAL

# PACEMAKER

*A revolution is taking place in factory lighting—and sparking the revolution is the Wakefield Industrial Fluorescent Pacemaker.*

Study the photo above to see the revolution in action. In the foreground is a new addition to an old plant, lighted by Wakefield Industrial Pacemakers. In the background is a glimpse of the old plant, a gloomy cavern by contrast, lighted in the old way by old style industrial fixtures.

In the new plant area, continuous rows of Wakefield Industrial Pacemakers send half the light up to be reflected from ceiling and upper walls. That's step one in the revolution—a luminaire that has a sub-

stantial upward lighting component. Step two is to paint the ceiling and walls white to give them a high reflectance value. Result: a bright, comfortable, overall visual environment, markedly free from glare, shadows and sharp brightness contrasts, in which people work better, faster and more accurately and are less tired at the end of the shift.

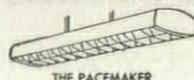
*The Wakefield Industrial Pacemaker is an economically priced, ruggedly built, heavy gauge steel luminaire that will last a long time, is quickly installed and inexpensively maintained. For more detailed information, you will want our four-page folder. Write to The F. W. Wakefield Brass Company, Vermilion, Ohio.*

## Wakefield Over-ALL Lighting

AT GRAYBAR, GESCO AND LEADING INDEPENDENT WHOLESALERS



THE GRENADE



THE PACEMAKER



THE COMMODORE



THE STAR



THE WAKEFIELD CEILING



# THOROSEAL

SCORES ANOTHER

# HOME RUN

at the  
Braves Field



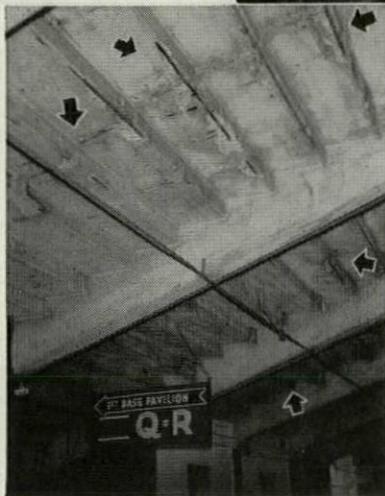
General contractor and technical supervisor of Standard Dry Wall Products, Inc., plan correction of an extreme condition existing in bleacher seats at Braves Field, Boston, Massachusetts.



Above photograph shows THOROSEAL FOUNDATION COATING being grouted into upper, or wearing, surface of bleacher seats.



Right photograph shows soffits of concrete seats where concrete has blistered away from reinforcing rods. Rods were sand-blasted and sealed with THORITE Patching Mortar and entire undersurface sealed with THOROSEAL.



General contractor, Henry Gironi, Allston, Massachusetts, an expert, with long experience in masonry maintenance, rehabilitation and surface protection, performs correction task on Braves Field, with satisfaction to all concerned. Waterproofing Products, Inc., Allston, Massachusetts, furnished the materials.

THORITE Patching Mortar was used for sealing rods and patching cracks and blisters in concrete. THOROSEAL FOUNDATION COATING was used for grouting wearing surfaces.

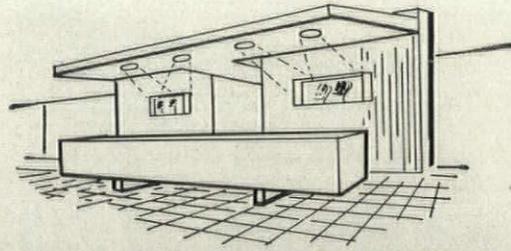
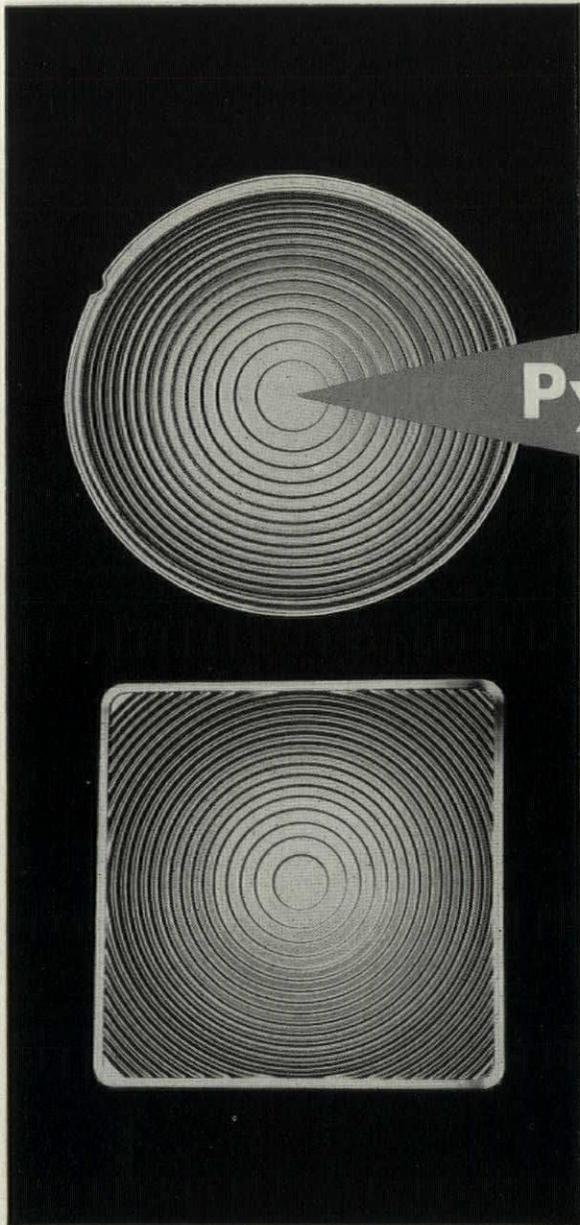
Standard Dry **40th** Wall Products

NEW EAGLE, PENNSYLVANIA

"HOW TO DO IT."

Get our new 20-PAGE BROCHURE, with designer's guide. Pictorially described, in detail





## Pyrex® brand Lenslites

### give you **unusual design flexibility**

For a variety of distinctive lighting effects at low cost—plan on using PYREX brand LENS LITES. They offer a highly flexible medium for control of incandescent light sources. Wide variations in light distribution can be obtained simply by changing the position of the lamp and reflector relative to the LENS LITE, or by using various distribution patterns in the glass itself.

Heat-resistant PYREX brand LENS LITES can be used with lamps up to 1000 watts without danger of heat breakage. Carefully engineered prisms assure precise light control and minimize brightness. Stippled rear surface produces smooth, even illumination.

Available both round and square in a number of sizes and in concentrating, wide, and extra-wide angle distribution patterns, PYREX brand LENS LITES may be obtained from leading fixture manufacturers. For complete design data and specifications send for Bulletin LS-9. Simply mail the coupon.

**TEMPERED PYREX LENS LITES** for institutional applications . . . Tempered by a special heat treating process, PYREX LENS LITES are *immediately available* in sizes 8" and 12" for use in hospital psychiatric wards, prisons and similar institutions where law requires. Should glass be broken, it shatters into tiny particles. Larger sizes can be tempered to order.

**APPLICATION SUGGESTIONS**—Used in recessed ceiling fixtures with the lamp at focal length, with concentrating pattern, LENS LITES provide high intensity concentrated beams for accent lighting in stores, restaurants, etc.

When the lamp is moved closer to the lens, or with wide or extra-wide angle patterns, the beam spreads proportionately. This creates soft lighting effects for restaurants, banks and cocktail lounges.

By offsetting the lamp, light beam offsets to 20° are possible. This is particularly desirable for display lighting and for special effects.



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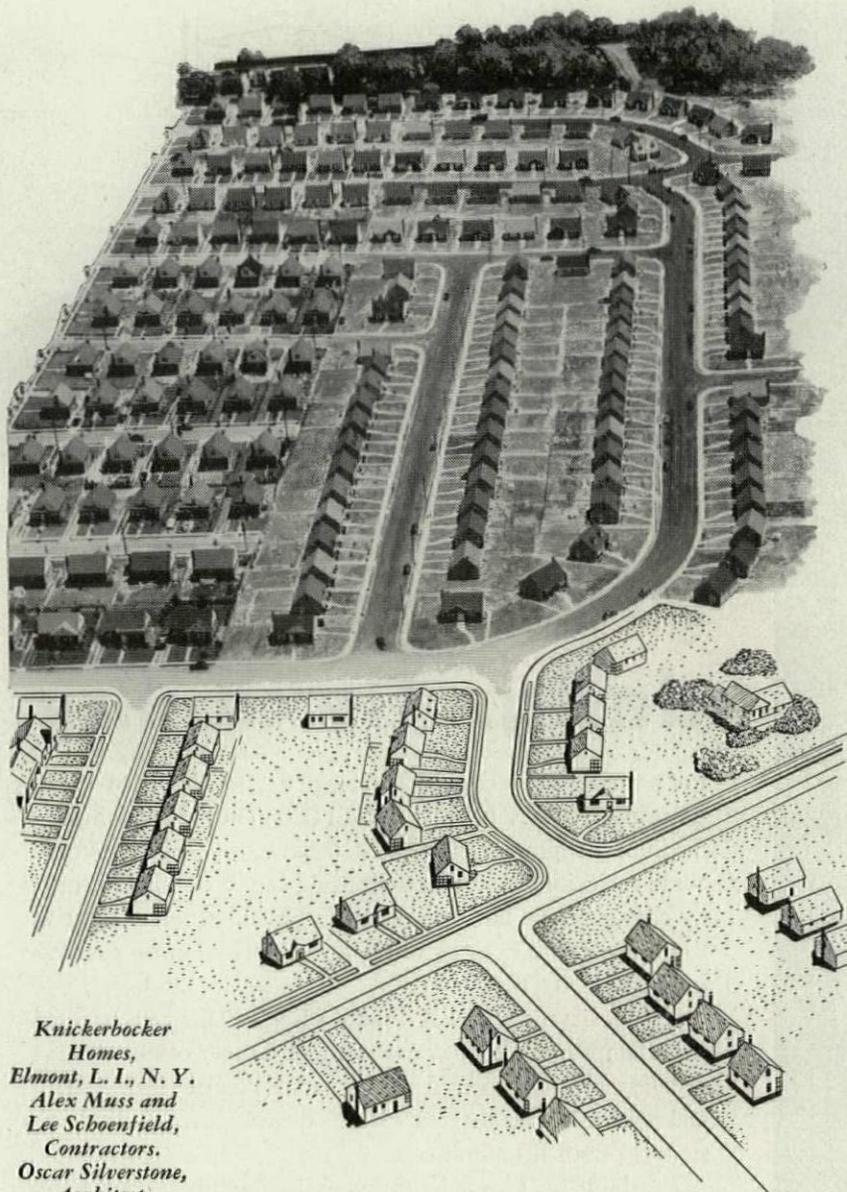
Please send me Bulletin LS-9, describing PYREX® brand Lenslites.

Name \_\_\_\_\_ Title \_\_\_\_\_

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City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

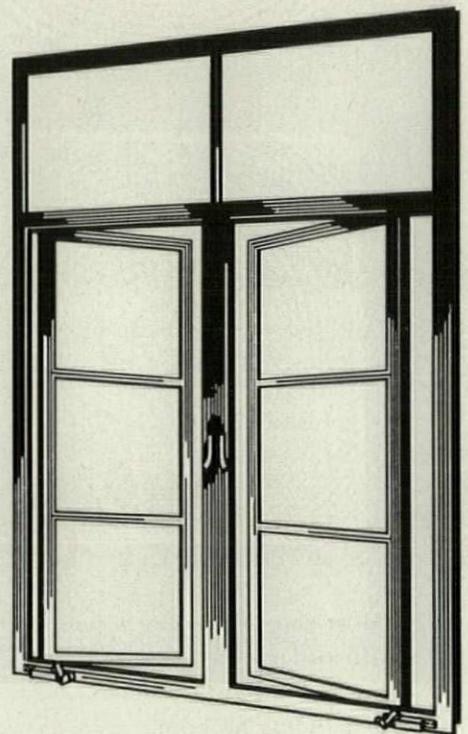


*Knickerbocker  
Homes,  
Elmont, L. I., N. Y.  
Alex Muss and  
Lee Schoenfeld,  
Contractors.  
Oscar Silverstone,  
Architect.*

Architect Oscar Silverstone  
says:



"Truscon Series 5 Casements  
gave us the lowest possible  
window unit cost in the  
Knickerbocker Homes project."



Where lowest-cost-per-foot initial building costs are imperative . . . and where lowest maintenance cost-per-year in tenancy is essential . . . builders' figures have proved the unequalled efficiency of Truscon Residential Steel Casements.

Look for the exclusive features which Truscon furnishes (1) Extra weight — 10 to 15% heavier; (2) Stainless steel operator guide—eliminates corrosion; (3) Superior workmanship—all welded corners of vents and frame are ground smooth, thus insuring tight weathering contacts.

See SWEET'S for complete details on Truscon Residential Steel Casements, and write for free literature on the entire line of Truscon Steel Building Products.

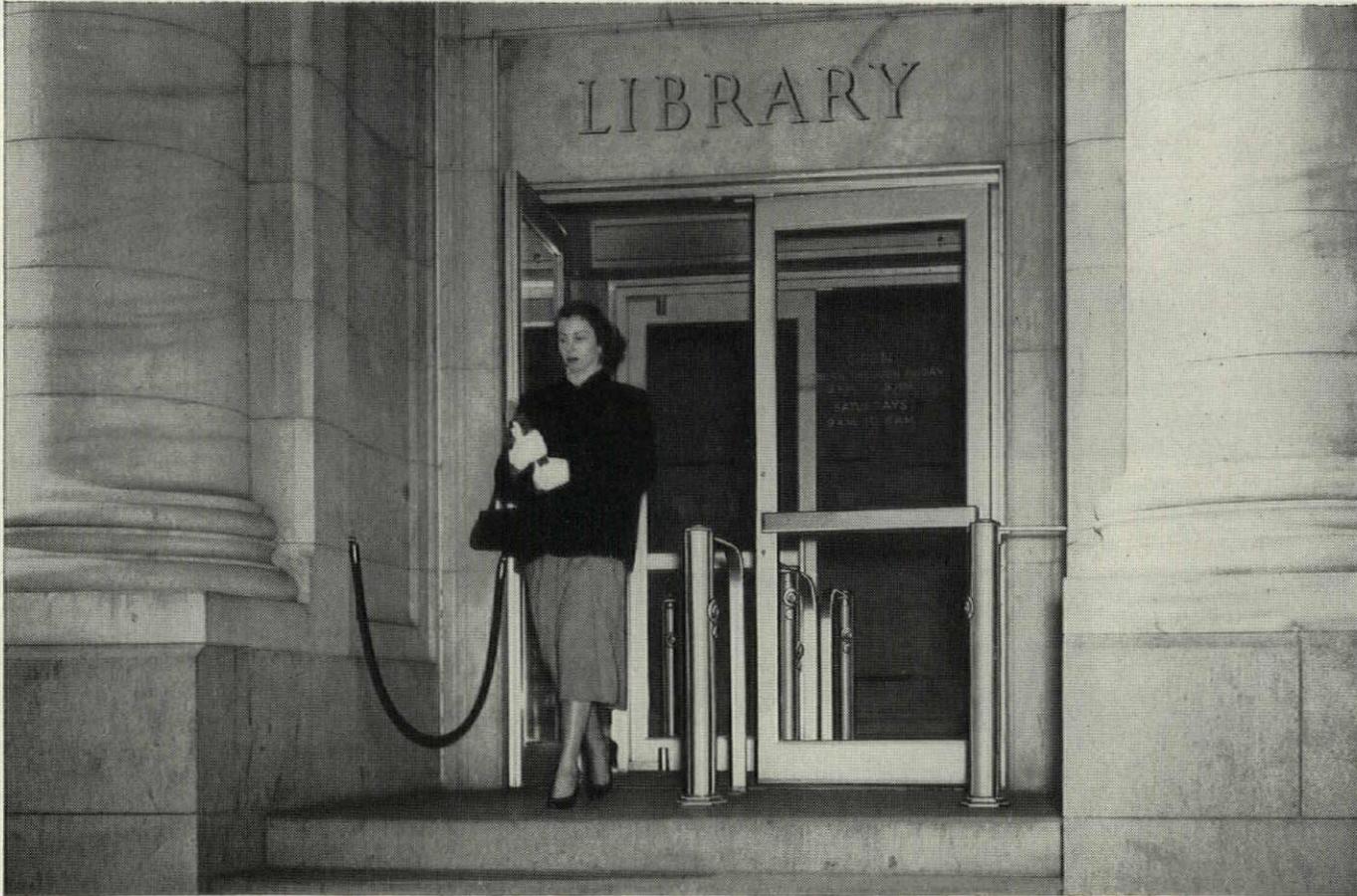


**TRUSCON® STEEL COMPANY**

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TRUSCON a name you can build on



## One for the books!

"Most people think of a public library as an old-fashioned institution," states John C. Settlemayer, Director, Atlanta Public Library, Georgia. "In our building program we have tried to create the direct *opposite* of this popular concept of the library by installing the most modern equipment.

"One of the most important additions to our main library building was the installation of Stanley Magic Door Controls on the front door. Experience has confirmed our belief that this 'Magic Door' has justified itself many times over in public relations value alone, not to mention the added convenience to our patrons."

Mr. Settlemayer reports that the library's experience with Stanley Magic Doors has influenced a number of other establishments to consider installing this modern convenience.

To make the buildings you plan more efficient, specify Stanley Magic Door Controls. Many super-markets, restaurants, hospitals, banks and industrial plants have proven the advantages of this modern equipment which eliminates the need for opening and closing doors by hand.

Easily adapted to almost any requirement of space and location, "Magic Door" Controls can be installed on existing doors. Mail coupon for details.

# STANLEY

Reg. U.S. Pat. Off.

## DOOR CONTROLS

*"The Magic Door"*

COMPLETELY AUTOMATIC DOOR CONTROLS  
FOR SWINGING, SLIDING OR FOLDING DOORS

THE STANLEY WORKS, Magic Door Division  
3037 Lake Street, New Britain, Connecticut

- Send me full information on Stanley Magic Doors.  
 Please have your representative call

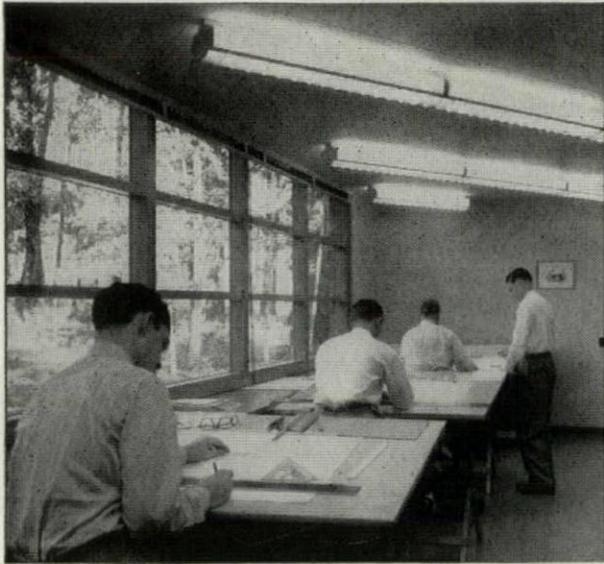
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Firm Name.....

Street.....

City..... Zone..... State.....

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Architect R. Edwin Wilson air conditioned his building on the outskirts of Charlotte, N. C. He used *Thermopane* throughout to reduce cost of heating and air conditioning.

## WHERE ARCHITECTS ARE USING

Wherever good lighting, noise control and thermal insulation are needed, architects are using *Thermopane*\* insulating glass. *Thermopane* made with two  $\frac{1}{4}$ " panes and a  $\frac{1}{2}$ " air space eliminates 44% more noise transfer than a single  $\frac{1}{4}$ " pane, but transmits as high as 81% of daylight. Thus, its light transmission is second only to that of a single pane of clear, flat glass which passes as high as 90% of daylight.

*Thermopane* also provides insulation against heat loss or air conditioning loss. When the hermetically sealed air space between the two panes of glass is  $\frac{1}{4}$ ", the heat transmission coefficient is only .65 for winter conditions; with  $\frac{1}{2}$ " air space, the coefficient drops to .58. The heat transmission coefficient for  $\frac{1}{8}$ " thick single glazing is 1.15. Therefore, *Thermopane* will save from 43% to 50%



Perkins & Will, achieved maximum daylighting and a sense of great spaciousness with a *Thermopane* Daylight Wall in the library of the Barrington, Ill., Consolidated High School.

Architect Clyde W. Smith used an acoustical ceiling in the Minneapolis & St. Louis Railway Building, Minneapolis, Minn. *Thermopane* completes the noise control.



# TRANSPARENT INSULATION

of the heat that would be lost through single-pane windows.

This insulating glass also has the reverse effect of reducing the amount of summer heat which enters a room through the windows, a factor much appreciated in the southern areas of the United States and in air-conditioned buildings everywhere.

## YOU CAN BUILD SPACIOUSNESS INTO SMALL SPACE

*Thermopane* compares closely with a solid 10" concrete wall in its insulating value but has the advantages of transparency and of requiring no decorative maintenance. Used as a Daylight Wall, it also provides the pleasant effect of great spaciousness, even for a small room.

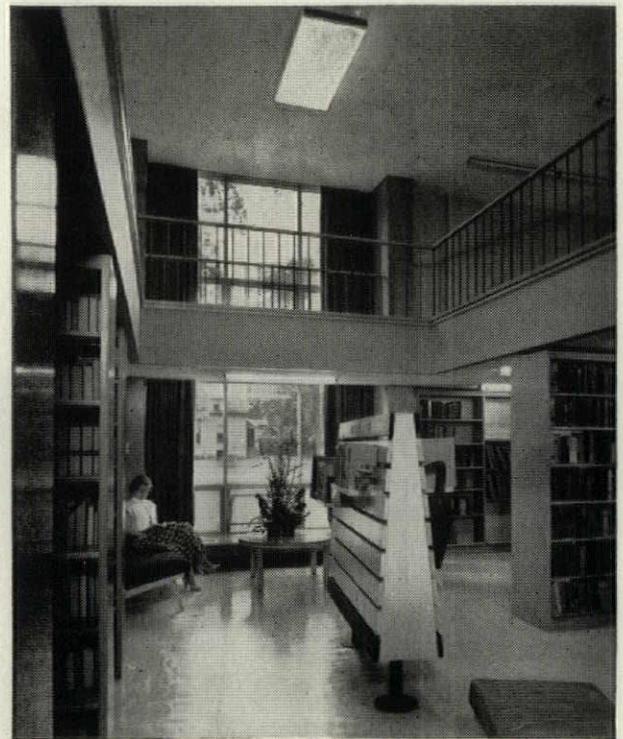
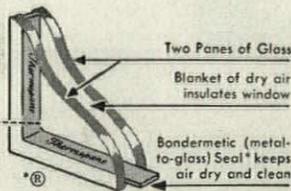
A Daylight Wall employs clear, flat glass (single or *Thermopane*) from sill to ceiling and from wall to wall for maximum daylight. The lines of ceiling meet no vision barrier in this transparent material, merging the indoors and outdoors. In this way, a Daylight Wall makes a room seem larger, makes it lighter and gayer. *Thermopane* can be used in opening units to provide natural ventilation.

Have you compared the cost of a Daylight Wall, taking into account its lightweight construction and fast installation, with a wall of other materials? The figures vary locally, but the conclusion remains constant. Write for latest literature to Libbey-Owens-Ford Glass Company, 4272 Nicholas Building, Toledo 3, Ohio.

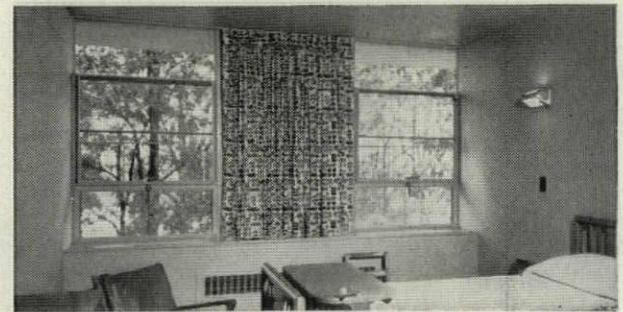


# Thermopane

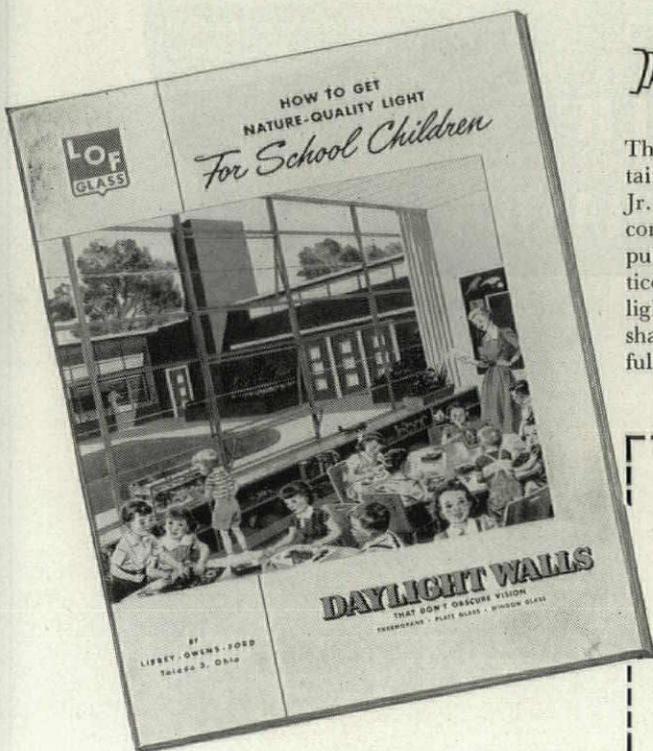
LOOK FOR THE NAME ON THE SEAL BETWEEN THE PANES



Holabird & Root & Burgee designed this public library at Wilmette, Ill., with one end "open" to daylight and view by using *Thermopane* all the way to the ceiling. *Thermopane* reduces noise from the outside.



Architect Shirley Simons used *Thermopane* in Daylight Walls of the Smith County Hospital, Tyler, Texas, for noise and temperature control. The wall-to-wall and sill-to-ceiling use of clear glass makes the room feel less confining.



## FREE TO ARCHITECTS NEW BOOK ON DAYLIGHTING SCHOOLS

This 24-page, fully illustrated book, contains the latest research of Prof. R. L. Biesele Jr. of Southern Methodist University. It contains much information never before published; data from Recommended Practice compactly presented for quick reference; light transmittance chart, sunlight map, shading devices and similar information useful to school architects, for the first time

gathered into one convenient book; large photographs of unusual and advanced architectural uses of glass in schools designed by outstanding architects in all regions of the country.

Every page is informative and of assured interest to architects.

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Libbey-Owens-Ford Glass Co., 4272 Nicholas Bldg., Toledo 3, Ohio

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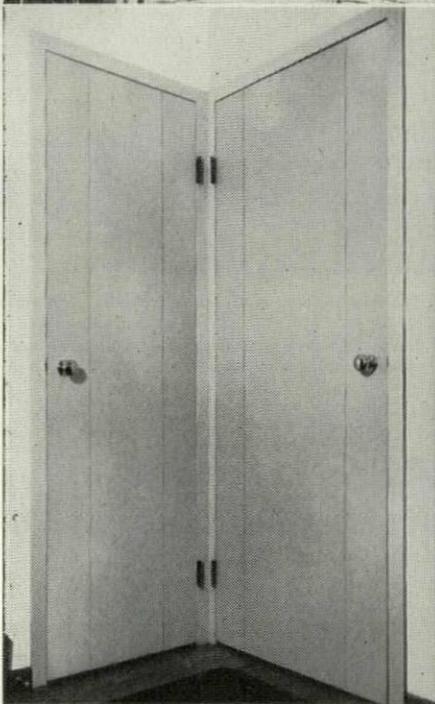
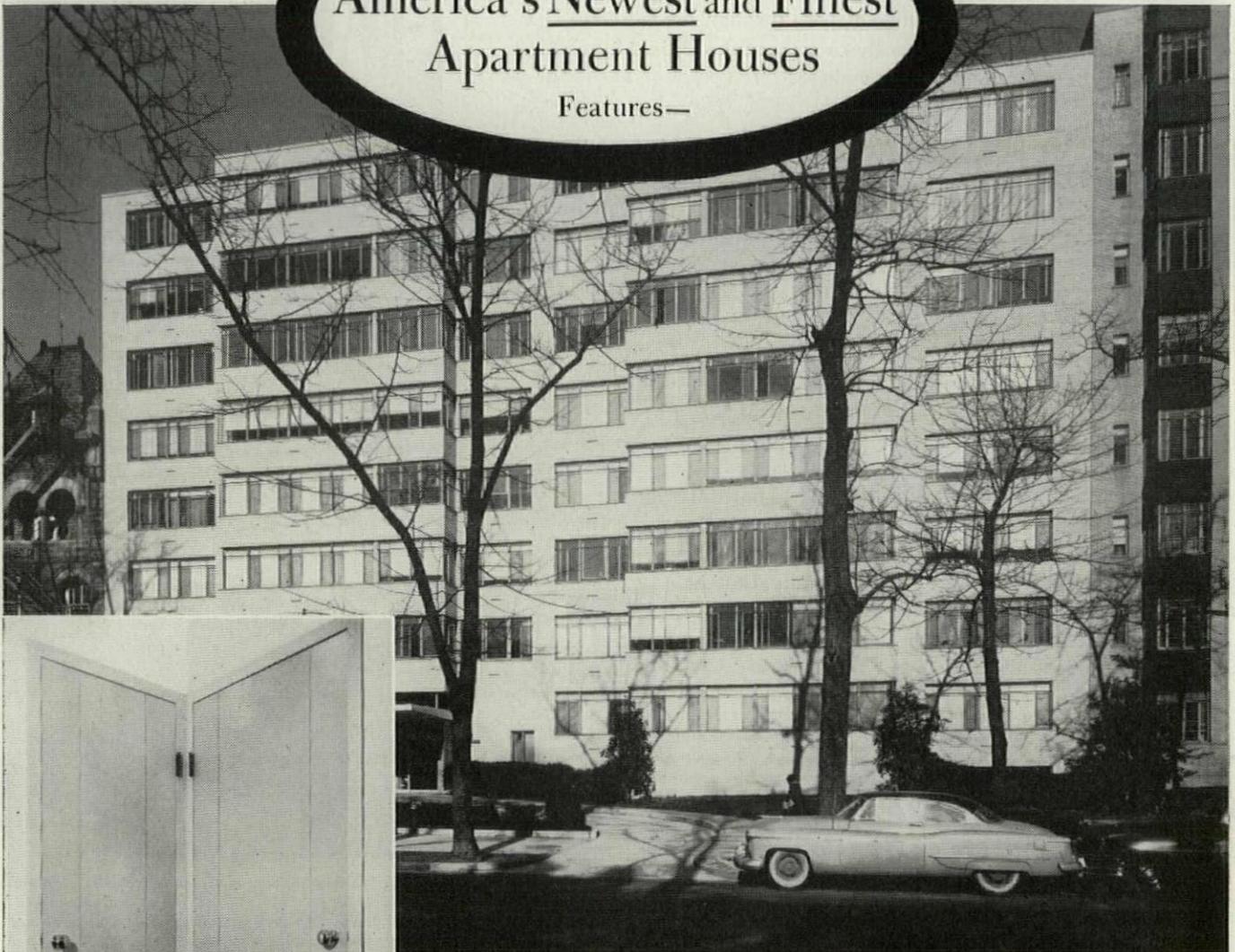
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**America's Newest and Finest**  
**Apartment Houses**

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Typical matching design  
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Architects—Berla and Abel  
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Any "Blue Ribbon" list of new structures across the nation will show a high percentage of fine buildings like the Boston House which feature USF "Wooster" Hollow Steel Doors and Frames. Architects favor the matching design available from corridor entrance to swinging or

sliding closet doors. Builders like the labor and time-saving installation. Owners value the permanence and low maintenance.

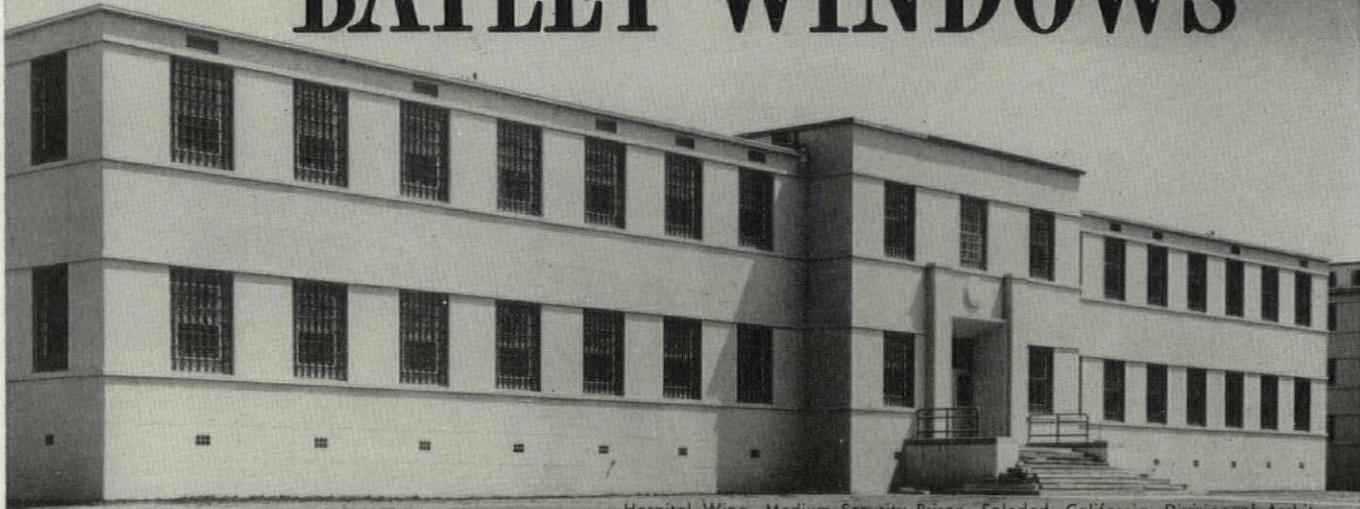
Why not make use of these advantages? Specify USF "Wooster" Doors and Frames throughout.

**United Steel Fabricators, INC.**

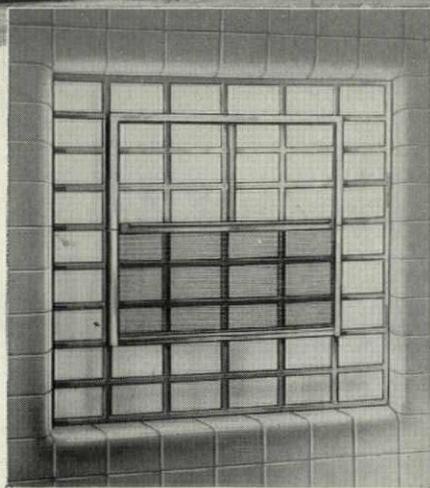
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Manufacturers of: Hollow Metal Doors and Frames • Pre-fabricated Metal Buildings • Corrugated Metal Window Wells • Highway Guard Rail • Structural Plate Bridge Flooring • Corrugated Metal Pipe

Where the *other* services also count—it's always  
**BAYLEY WINDOWS**



Hospital Wing, Medium Security Prison, Soledad, California; Division of Architecture, State of Calif., Archts.; M & K Corporation, San Francisco, Calif., Builders.



Highlights of this New  
**Exclusive BAYLEY Product**

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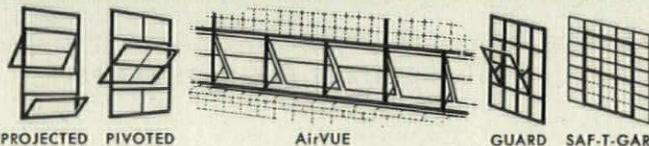
**New Bayley SAF-T-GARD Window**  
*Scientifically Developed for Mental Hospitals*

To be known for a fine quality product is only the *first* essential. Much more is required from a truly satisfactory relationship. Full understanding of this fact is the foundation of Bayley's policy—and why Bayley has been so widely preferred for so many years by discriminating Building Designers.

Bayley's endeavor to better serve through all the building stages—from recognition of need to building occupancy—is further exemplified in the new Bayley Saf-T-Gard Window. This window is the result of Bayley's close collaboration with Doctors and officials of mental institutions. Not only does it efficiently meet the demands of modern mental hospitals but it also incorporates construction features made possible by Bayley's years of specialized window experience.

*Regardless of window requirements, you too will find extra values in discussing your needs with Bayley. Write or phone.*

*See Bayley in Sweet's. Complete catalogs on Aluminum Windows, 17a/BA; Steel Windows, 17b/BAL; SAF-T-GARD Hospital Detention Window, 17b/BAY.*



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## An analysis of lighting systems for today's classrooms . . .



### CLASSROOM REQUIREMENTS

- ceilings . . . white to reflect maximum light
- walls . . . canary yellow and aquamarine to promote comfort, avoid monotony
- desks . . . light (non-gloss) to avoid glare
- layout . . . 3 continuous rows for best appearance, minimum wiring
- system . . . semi-indirect for maximum comfort
- illumination level . . . 75 footcandles

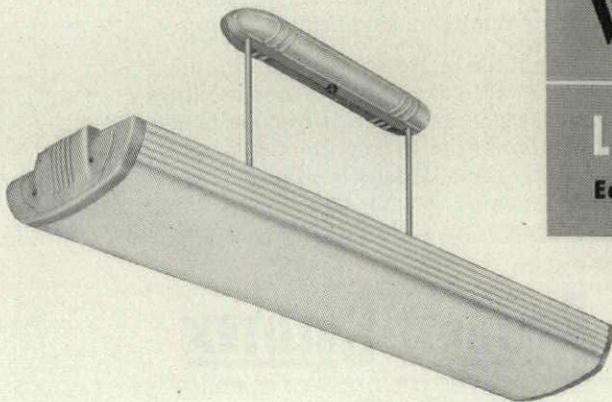
## *Semi-indirect lighting*

# Lighting at its best

A classroom should be pleasant and comfortable, and the lighting system should be an inconspicuous part of the background. That's why semi-indirect fluorescent lighting, which directs most of the light to the ceiling, is the best in classroom lighting. The entire ceiling becomes a part of the lighting system; all lamps are completely shielded.

Westinghouse Type CD Plastic Luminaires, used in this model classroom, are designed to blend with the light ceilings and easily become an integral part of the room.

This is the best, but not the only method of lighting classrooms. Westinghouse has a complete line of fluorescent and incandescent luminaires which meet classroom requirements. For an analysis of these methods get B-4556, The ABC Plan for School Lighting, Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.



YOU CAN BE **SURE**... IF IT'S  
**Westinghouse**

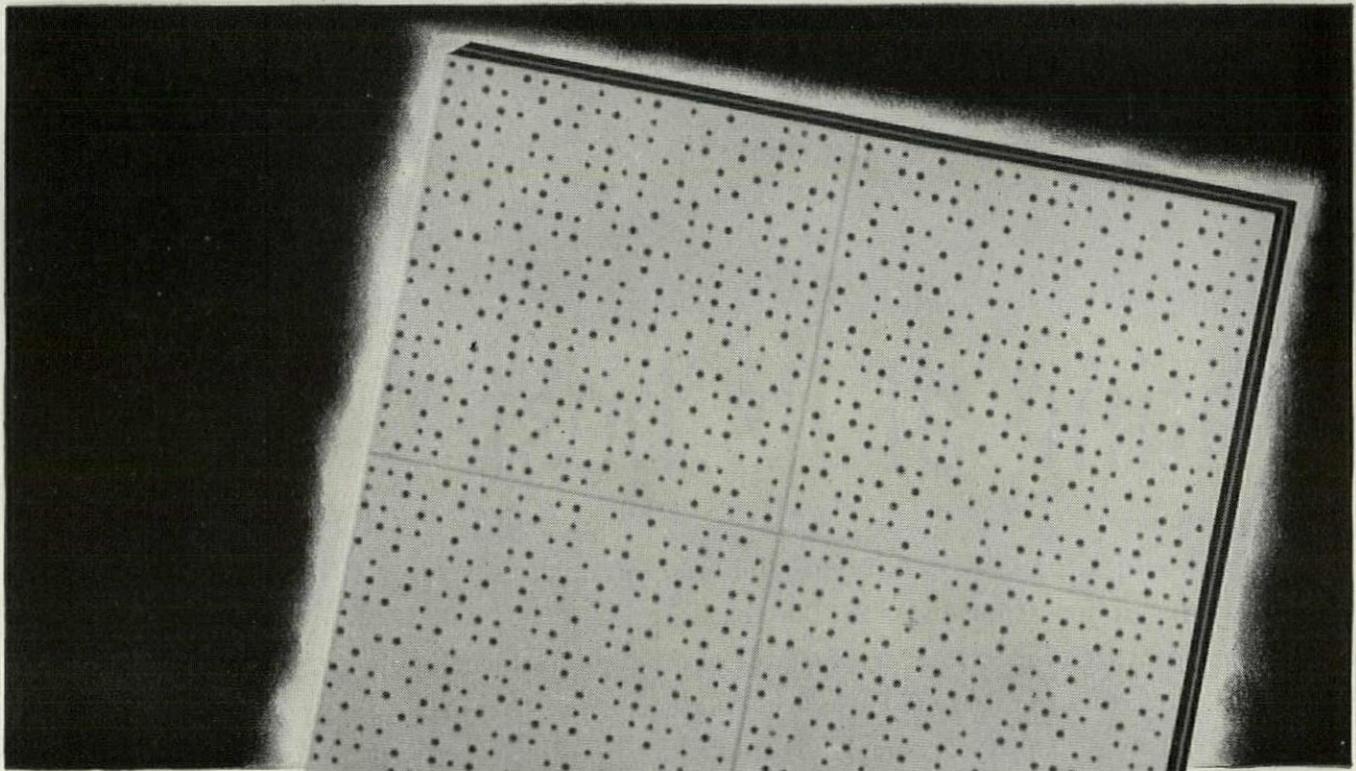
**LIGHTING DIVISION**

Edgewater Park, Cleveland, Ohio



J-04312

Something **UTTERLY NEW** in acoustical materials...



**Acousti-Celotex**

# RANDOM PATTERN

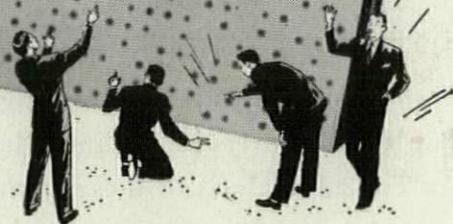
**Perforated Tile**



Utterly new and "different" in appearance, Acousti-Celotex RANDOM PATTERN Perforated Tile enables you to create dramatically beautiful decorative effects impossible with any other Sound Conditioning material.

It owes its unusual charm to its sharply profiled perforations of varying sizes, arranged in random fashion. And to its rich, linen-like surface that gives better light diffusion.

But beauty is only part of the story. Acousti-Celotex RANDOM PATTERN Perforated Tile also has high sound absorbing value. And like all Acousti-Celotex Cane Fibre Sound Conditioning Products, it has a *new washable finish* of remarkable durability.



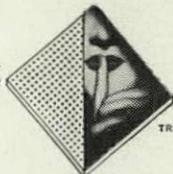
Note the interesting, varied charm of new Acousti-Celotex RANDOM PATTERN Perforated Tile. It lends a new note of beauty to any restaurant, theatre, office, hospital, school, church.

Applied in two coats under the pressure of a hot knurling iron, this tough and flexible new finish actually becomes an integral part of the tile. Keeps its smart, soft-white beauty through many, many washings.

Ask your Distributor of Acousti-Celotex Products to show you a sample of the new Acousti-Celotex RANDOM PATTERN Perforated Tile. If you don't know where to reach him, write to The Celotex Corporation, Dept. A-72, 120 S. LaSalle St., Chicago 3, Ill. In Canada, Dominion Sound Equipments, Ltd., Montreal, Quebec.

*Sound Conditioning is a Sound Investment...*

FOR OFFICES • FACTORIES • STORES • SCHOOLS  
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**ACOUSTI-CELOTEX**

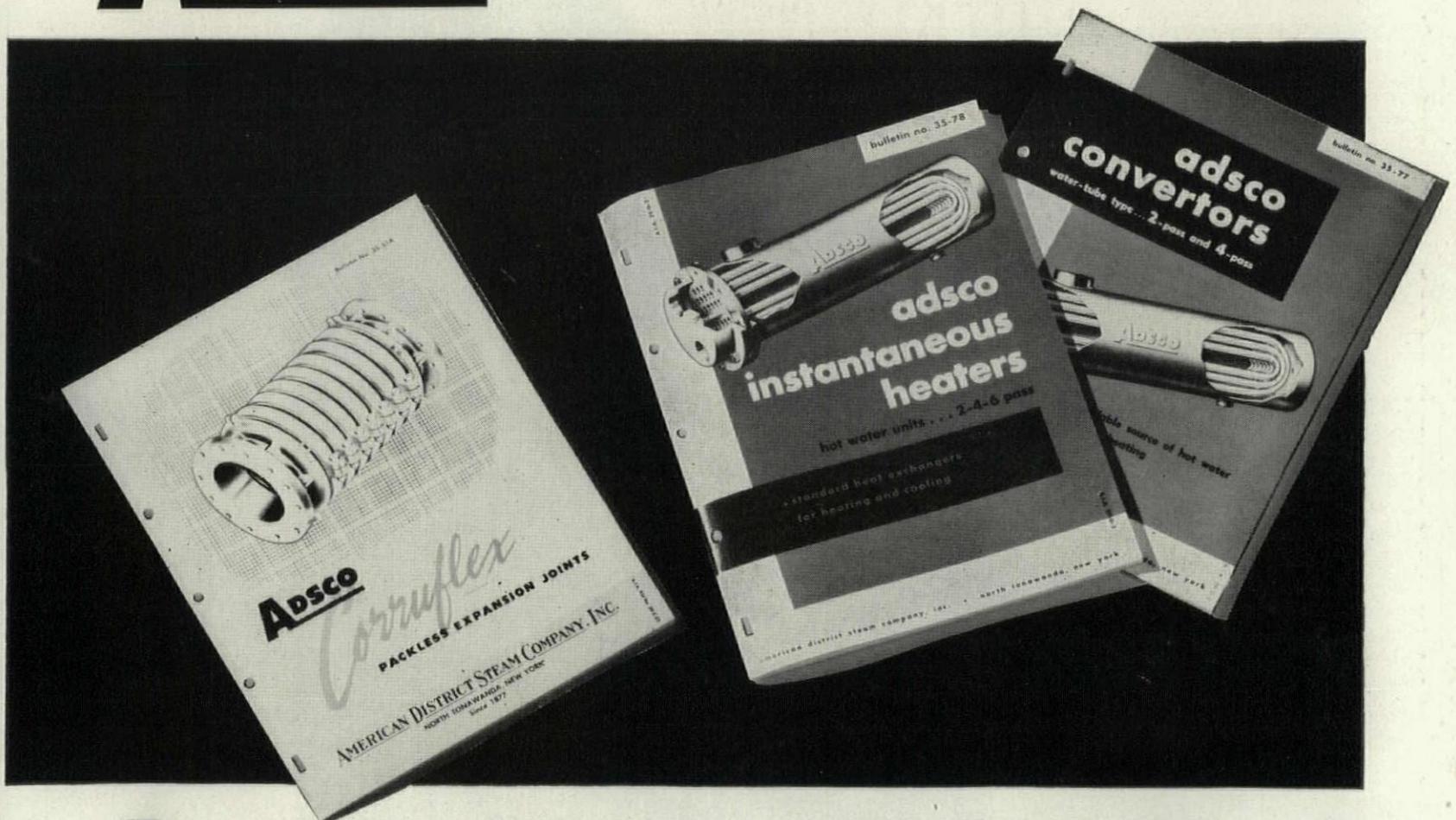
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PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

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# AdSCO TECHNICAL BULLETINS



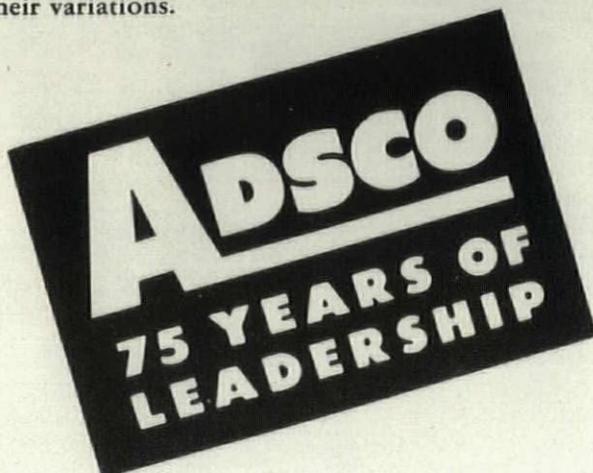
## 3 NEW BOOKS JUST PUBLISHED SEND FOR YOUR COPIES TODAY!

AdSCO's three new bulletins—one on Corruflex Packless Expansion Joints, one on Instantaneous Heaters, and one on Convertors—are the most authoritative in the industry. These new bulletins will provide ready information you will always need. *Here they are:*

**1. CORRUFLEX** . . . 28 pages with complete information on selection, specifications, and installation; 9 pages of tables on weights and dimensions. Drawings of 3 typical piping arrangements; 29 drawings of basic joints and their variations.

**2. INSTANTANEOUS HEATERS** . . . 56 pages, with 49 pages of tables. Capacities and pressure drops for 198 heaters at 9 steam pressures and 12 temperature ranges. Special information and tables on coolers and on booster, swimming pool and other types of heaters.

**3. CONVERTORS** . . . 32 pages, with 24 pages of tables. Capacities and pressure drops for 148 convertors at 7 steam pressures and 15 temperature ranges. Detailed instructions on how to select a convertor. Special charts and information on problems related to convertors.



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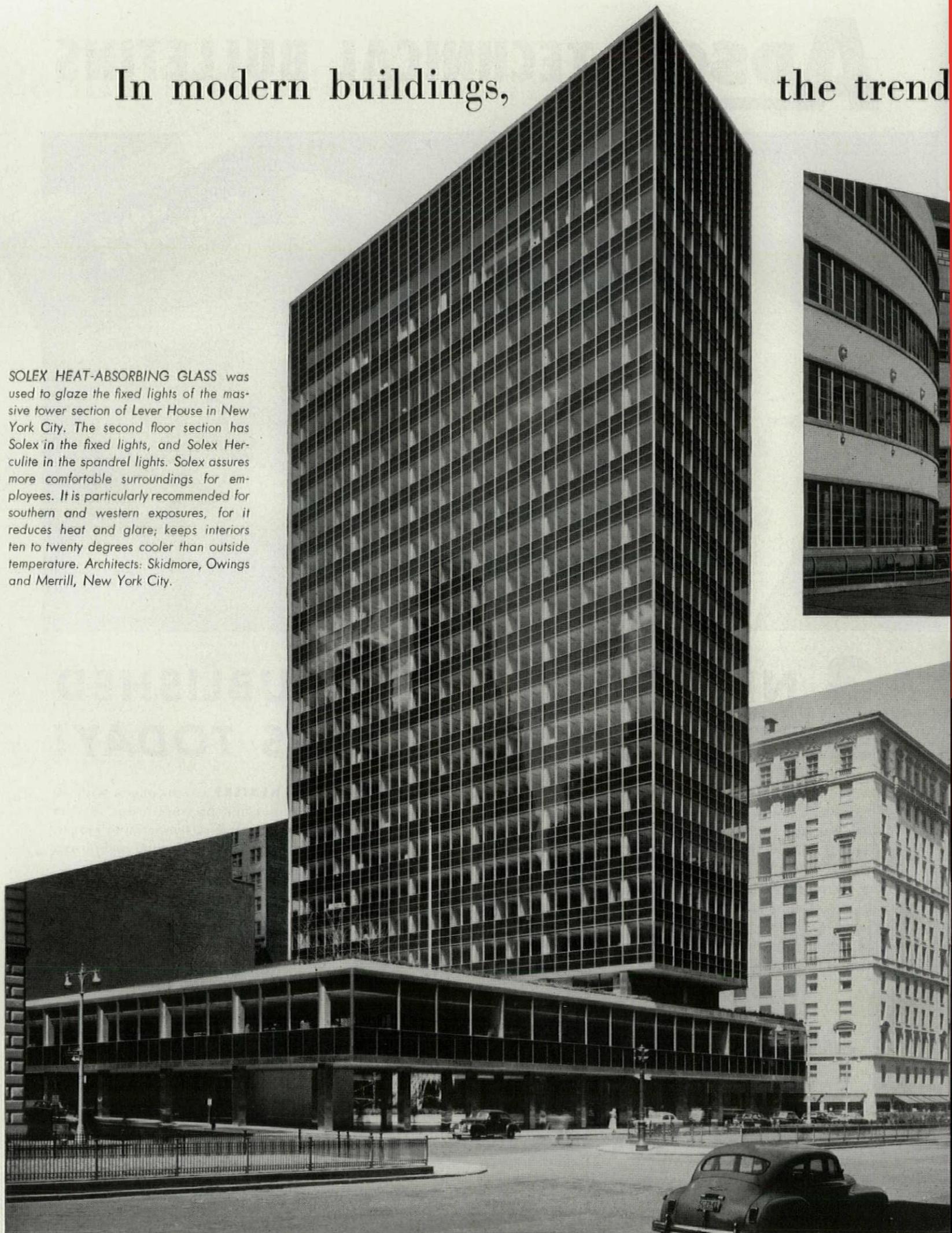
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In modern buildings,

the trend

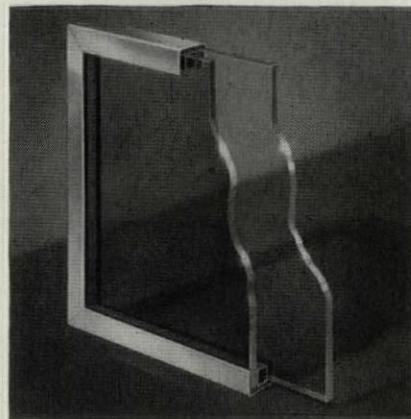
*SOLEX HEAT-ABSORBING GLASS* was used to glaze the fixed lights of the massive tower section of Lever House in New York City. The second floor section has *Solex* in the fixed lights, and *Solex Herculite* in the spandrel lights. *Solex* assures more comfortable surroundings for employees. It is particularly recommended for southern and western exposures, for it reduces heat and glare; keeps interiors ten to twenty degrees cooler than outside temperature. Architects: Skidmore, Owings and Merrill, New York City.



is toward **SOLEX Heat-Absorbing Glass**  
*... "the best glass under the sun!"*



6550 SOLEX-TWINDOW units were among the substantial number of Pittsburgh Glass products selected for the mammoth Greater Pittsburgh Airport at Pittsburgh, Pa. Solex increases the visibility of distant objects. And when used in Twindow units—with the outer pane of Solex and the inner light of Plate Glass—it forms an insulating window of extreme efficiency. It offers great protection to delicate electronic instruments against excessive temperature variations. Architect: Joseph Hoover, Pittsburgh, Pa.



SOLEX-TWINDOW gives all the advantages of Twindow, "the window with built-in insulation," plus a means for reducing the strong heat and brightness of intense sunlight. The sectional view here shows the make-up of this unit. The outer pane is Solex Plate Glass, the inner clear Plate Glass. Between these two panes is a sealed-in air space. The entire unit is enclosed in a stainless steel frame. This protects the seal and glass edges, making handling safer and easier, and cutting installation time.

AT 525 WILLIAM PENN PLACE, in the heart of downtown Pittsburgh, is this new 41-story skyscraper, completely glazed with Solex—"the best glass under the sun!" Solex transmits 70% to 75% of the sun's total light, but admits less than 45% of the total solar heat. Its soft greenish color, almost unnoticeable from inside the room, is easy on the eyes. Solex reduces fading and bleaching of upholstery, draperies, rugs and other fabrics that are normally affected by sunlight. Architects: W. K. Harrison, M. Abramovitz, New York City, and W. Cocken, Pittsburgh, Pa.

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LOCATION: Chicago, Illinois  
SHAW, METZ and DOLIO: Architects  
J. S. JAMES: Corporation President

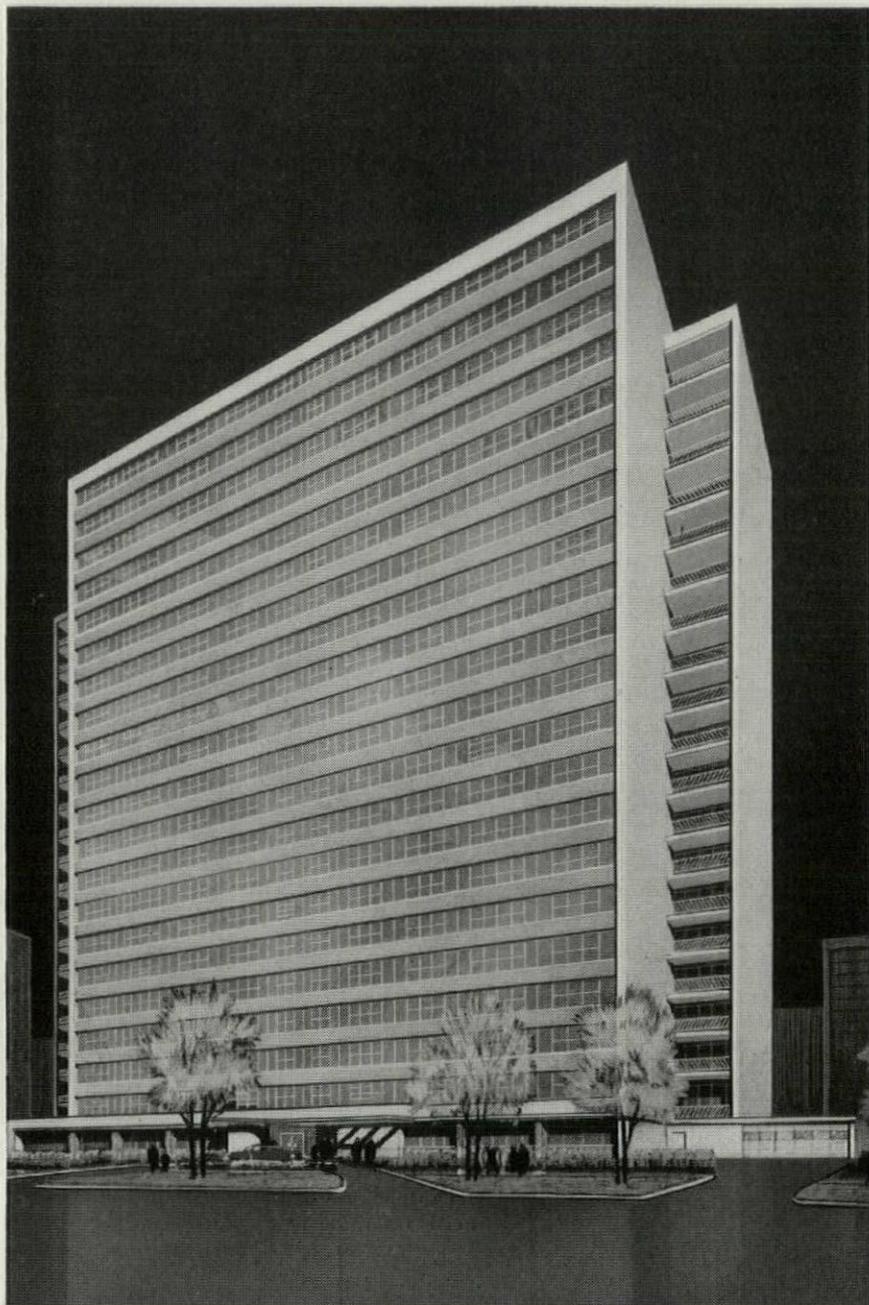
SHERIDAN TOWERS, new 21-story, 258-apartment building overlooking Chicago's magnificent lake front, represents the finest aspects of modern architectural design planned to place a definite accent on simplified housekeeping. At the owners' specific request, every detail of planning and construction has been carefully developed to provide more and better features for comfort, convenience and pleasant living.

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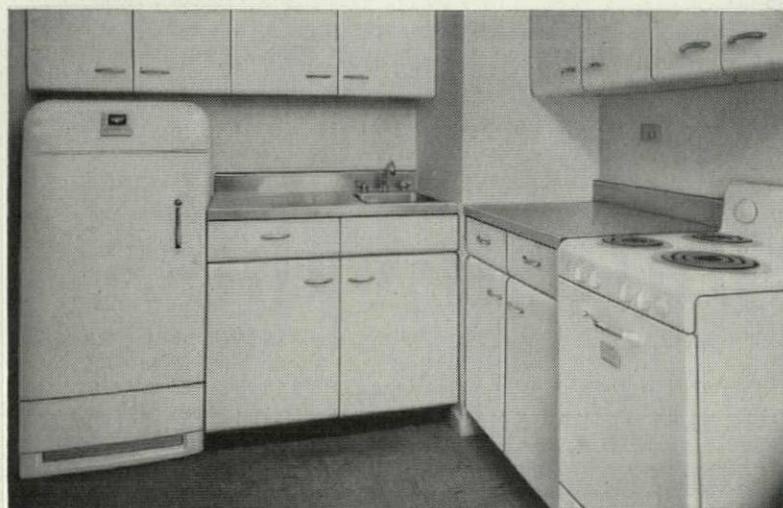
Concerning the Frigidaire Appliances, Mr. James, corporation president, has this to say: "Drawing on my many years' experience in the building field, I've found that electric convenience is what people want most in their kitchens. And we've found that Frigidaire appliances not only provide that convenience, but are simple and economical to operate, and add the streamlined beauty these modern apartments deserve."

Ask about the complete line of household appliances Frigidaire manufactures for residences and apartments. For full information, call your Frigidaire Dealer — or the Frigidaire Distributor or Factory Branch that serves your area. See Frigidaire catalogs in Sweet's Files or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Leaside (Toronto 17), Ont.

*Frigidaire Refrigerators and Electric Ranges in all 258 of Sheridan Towers' electric kitchens are a decided factor in facilitating rentals.*



*Sheridan Towers offers prospective tenants a choice of four types of apartment in either 2½ or 3½ rooms.*



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*Frigidaire reserves the right to change specifications, or discontinue models, without notice.*

# Will building again become CMP whipping boy after steel strike?

As the longest and costliest strike in the nation's steel history dragged on toward the end of its second month, the shadow of creeping paralysis spread further and further over construction's future. By the third week in July, defense mobilizers figured that even if the walkout were settled the next day, the nation had lost 75% of a normal quarter's production of steel. That more than canceled out all the gains from steel-mill expansion in 1952.

Under the circumstances, there was not a word of protest from the construction industry when NPA postponed indefinitely its promised increases in steel allowances and the scheduled July 1 end to the ban on recreational building. But that was only a starter.

The continuing strike killed once-bright chances of decontrolling steel early next year. Now, said DP Administrator Henry Fowler, the earliest date for lifting controls would be July 1, 1953. And for the months immediately following the end of the strike, it began to look as if much construction (especially commercial building) might face a priorities drought as bad or worse than last winter's. One DPA executive frankly expected that "commercial building will be made the whipping boy when the steel strike ends."

**Winner take all?** The reasoning behind such gloomy forecasts went like this: mobilizers will have to give first priority on steel to the military, and AEC programs. This alone, officials were convinced, would mean slowing down all other deliveries through the first quarter of 1953. Second, aid would go to defense housing and other defense-supporting programs. Third would come construction deemed essential to the civil economy. In last place would fall building considered postponable—like recreational and commercial construction. It looked as though DPA would rule there was no steel left over for either.

Even if commercial and recreational building is stopped completely, the saving might not cover military needs, said some DP Aides. That could mean that school and hospital projects would be cut back. So far, politically potent educators have been fairly successful in making school building untouchable. The US Office of Education made it clear it will do its utmost to resist any cuts now. The US Public Health Service, taking a more reasonable attitude, began sifting projects scheduled to get fourth-quarter steel allotments, reclassifying them according to urgency.

**Cancel CMP tickets?** No one at DPA was promising that mobilizers would not have to take the most drastic step of all: canceling some third-quarter steel allotments already issued but unfilled because of the strike. Fourth-quarter allotments would

not be issued until the strike ends and DPA can assess the havoc. But the lead time necessary to translate orders into shapes was rapidly running out. Any way you looked at it, the controllers appeared to be heading for a wildly snafu fourth quarter.

Already, officials were worried over signs of a resurging steel black market, as the strike emptied the nation's steel bins. Gone with the strike were chances for fulfillment of the government's forecast for a \$32 billion new construction year. And it began to look as if predictions that the nation would build 1.1 million homes and apartments would have to be shaved, too. So far, the strike had produced no large construction force layoffs. But contractors expected some next month. Steel fabricators feared it would take them six months from strike's end to regain normal production.

## HOW EXTENDED CONTROLS ACT AFFECTS CONSTRUCTION

Two days before the Defense Production Act expired, Congress ground out a 35-amendment extension so involved that some controls affecting building were continued three months, some ten and some a full year. The law, signed reluctantly by President Truman, remained the basic legislation affecting construction during rearmament. Its chief features:

**Materials controls.** Authority for allocations and priorities is extended unchanged to June 30, 1953. Limited US participation in the International Materials Conference is permitted.

**Wages.** Controls extended to April 30. Increases up to \$1 an hour no longer need be cleared with the Wage Stabilization Board. Architects and professional engineers are exempted from salary control. (WSB warned, however, that the act applies only to engineers working "in a professional capacity." And an "engineer" must have a college degree or a license to practice.)

**Wage Stabilization Board.** The board is barred from jurisdiction in any labor dis-

## WASHINGTON DIARY

- 6/18 NPA increases self-certification of aluminum and copper for both construction and industry and consumer products.
- 6/19 NPA allots controlled materials for 431 commercial, religious, entertainment and municipal projects costing more than \$168 million (subject to recall due to steel strike).
- 6/26 DPA publishes 200-page Building Research Advisory Board report, recommends more than 200 conservation measures in building construction (see p. 114).
- 6/30 NPA suspends copper and aluminum inventory restrictions for duration of steel strike.
- 7/3 NPA announces fourth-quarter 1952 copper and aluminum allotments, reflecting increased supply of both metals. Steel allocations withheld pending strike outcome.
- 7/8 DPA, in seventh "List of Basic Materials and Alternates" predicts "ample" aluminum by second quarter, 1953, increased copper.
- 7/9 NPA relaxes rules, allows construction starts without allotment where sufficient carbon steel is on hand to finish building project (except on amusement buildings).
- 7/21 DPA fast tax write-off approvals rise to 12,270 new or expanded facilities costing \$20.9 billion.

## Luxury tower apartments go begging on West Coast

Metropolitan Life Insurance Co., which has found the West Coast balking at occupying its tower apartments (AF, Jan. '52), took another tally of its Parkmerced development in San Francisco last month. Of its 11 13-story, 153-unit tower apartments, one was open, 10 still (as of six months ago) listed as about to be opened. Total tenants signed in: 60.

pute. Thus it cannot repeat its steel-strike intervention.

**Prices.** Remain controllable until April 30.

**Rent.** Controls end Sept. 30 in all non-defense communities unless they take affirmative action meanwhile to continue them. Affected: 7,150,000 of the nation's 19 million, nonfarm rental-housing units. Rent ceilings in 116 critical defense areas (with 1,150,000 rental units) remain until April 30.

**Credit controls.** When housing starts drop below an annual rate of 1.2 million for three consecutive months, the Federal Reserve Board must reduce down payments to a maximum of 5%. If the seasonally adjusted rate jumps back over 1.2 million for each of any subsequent three consecutive months, stiffer down payments may be reimposed. (The administration decided to start counting starts with June, which means that down payments will probably be eased in mid-September or Oct. 1.) Left intact is the Federal Reserve's authority to require a 50% down payment on commercial construction.

# Congress puts stiff unit cost lid on military building, votes billions for construction

Though it talked economy, the 82nd Congress ended by voting construction a \$6 billion meal ticket. As in fiscal 1952, nearly 90% went to the armed forces and the AEC. The military public-works bill authorized projects totaling \$2.3 billion of which the Air Force got \$1.8 billion, mostly for bases here and abroad. Actual appropriation: \$2.1 billion. Included was a \$100 million fund to underwrite privately built family housing for American troops stationed overseas (H&H, July '52). Thus the Air Force could begin setting up a little FHA Wherry Act program for European and North African builders.

**New watchdog.** At the last minute, the lawmakers added what they hoped will be safeguards against such muddles as the North African air base scandals aired this spring. First, they created a new civilian director of installations in the office of the Secretary of Defense. Object: high-level checking of all planning and policies on military building. Defense officials began looking for a top construction man for the post, but word from the Pentagon was that the office will not be set up until Congress reconvenes in January and appropriates money for it.

Stern by far were the new unit cost ceilings Congress clamped on barracks, bachelor officers' quarters, and warehouses:

BUILDING TYPE	OLD CEILING	NEW CEILING
Temporary barracks . . . . .	\$1,900 per man	\$1,400 per man
Permanent barracks . . . . .	\$2,000 per man	\$1,700 per man
BOQs . . . . .	\$6,000 per man	\$5,000 per man
Warehouses . . . . .	\$7.50 per sq. ft.	\$6 per sq. ft.

Moreover, the lawmakers forbade any construction of troop housing at all except at bases where there is an "obvious deficiency" of it.

**Good-by dormitories.** One effect of the new price ceilings, said Corps of Engineers officials, will be to put the skids under

the air force's brave new housing deal—airmen's dormitories (H&H, Jan. '52). And Chairman Carl Vinson (D., Ga.) of the House armed services committee admitted: "It may be possible that this new formula is too rigid. It may not be possible to build warehouses all over the country at \$6 per sq. ft. But we'll try."

Pentagon planners agreed they had been handed a tough set of rules. But to many a Congressman, the apparent extravagance of military construction during the last year openly invited a straitjacket. Most damning of the facts on record was Rep. Porter Hardy's investigating subcommittee report after analyzing 105 major air-force installations: "Over \$80 million of programmed expenditures for air-force troop housing is unnecessary. . . . Simply stated this would amount to excess building of more than 200 three-story dormitories costing \$400,000 each." The Hardy committee explained that the air-force miscalculated the number of its men who would live on posts: "although 30% of the airmen live off-base with dependents, the air-force policy was to build dormitories to accommodate at least 80% of its enlisted strength." At today's prices, the committee felt, the US could not afford such surplus building.

**Blank check banned.** For the Atomic Energy Commission, Congress appropriated \$3 billion, including funds for construction of the vast new atomic and hydrogen bomb plant in the Ohio Valley.

A total of \$195 million was appropriated for school building in federal-impact areas—\$20 million less than the Federal Security Agency asked. As in years past, FSA's budget for hospital construction was sliced drastically, leaving the agency \$75 million to match state funds. For civil defense, the lawmakers appropriated a token

\$43 million, only a little more than half of last year's amount. The General Services Administration got \$14 million, chiefly for maintenance and repair.

Most significant spot where Congress cut down on construction was public housing. By freezing annual starts at 35,000 a year permanently (AF, June '52), legislators made a cripple of the 1949 Housing Act's controversial vision of 810,000 public-housing units in six years.

## Wunderlich bill, 4 others sidetracked by Congress

As the 82d Congress adjourned, five major bills affecting the building industry died without enactment. The casualties:

▶ The bill designed to offset the Supreme Court decision in the Wunderlich case by providing for judicial review of disputes arising under government contracts. The measure, strongly backed by general contractors, passed the Senate but was trapped by the adjournment rush in the House. Unless there is a special session of Congress this summer, it will have to start from scratch when the 83d Congress convenes in January.

▶ The antibid-shopping bill, backed by electrical and mechanical subcontractors' groups, but violently opposed by general contractors. The measure would have required general contractors on federal projects to list the names and bid prices of their subs. It died on the Senate calendar without reaching the floor.

▶ A Taft-Hartley Act amendment, which would have exempted the construction industry from Taft-Hartley's requirement for an NLRB certification election before collective bargaining. Contractors generally supported the bill because both labor and management men agree certification elections are not feasible in construction. But the Associated General Contractors objected to a provision that would legalize closed-shop contracts in construction despite other federal statutes banning them. The amendment passed the Senate, died in the House education and labor committee.

▶ The lease-purchase bill permitting the Public Buildings Service to make 8- to 25-year lease-and-purchase contracts for buildings in lieu of more costly direct construction. It passed the House, and Senate-works committee, but never reached the Senate floor.

▶ The Davis bill to permit professionals, such as architects and doctors, whose income may fluctuate widely from year to year, to invest up to \$10,000 or 15% of their earnings in government bonds in bonanza years, subject to income tax only when cashed. It never got out of the House Ways and Means Committee.

Hedrich-Blessing



## Chicago filtration plant wins AIA award

Chicago's AIA chapter last month picked the city's south district filtration plants (above), designed by City Architect Paul Gerhardt Jr., as winner of one of four awards of honor for good design. Other winners: Perkins & Will for their Blythe Park school at Riverside (May '50 issue); Shaw, Metz & Dolio, for their Florsheim Shoe Co. offices in Chicago (Dec. '49 issue); and Skidmore, Owings & Merrill, for their administration building for the Illinois Children's Home & Aid Society.

LIFE—George Skadding



**COMMISSION MEMBERS** were (l to r) Eric Hodgins, member of the board of editors of *FORTUNE*; President Arthur Bunker of Climax Molybdenum Co.; Chairman William S. Paley, board chairman of Columbia Broadcasting System; Engineer George R. Brown, chairman of Texas Eastern Transmission Corp.; Edward S. Mason, dean of Harvard's Graduate School of Public Administration. They were aided by a staff of 120 who worked 1½ years, spent \$950,000 assembling data.

## Presidential report hits waste in building; forecasts 35% rise in construction by 1975

The year's most comprehensive mouthful about the US building industry and its future was said last month by the President's Materials Policy Commission. In its monumental, 813-page report on the nation's resources outlook for the next quarter century, the commission predicted:

► By the 1970's, the annual physical volume of construction may well soar 39% above its 1950 level to reach a whopping \$34½ billion (see graph). Reason: US population probably will rise 25% and the national output of goods and services, advancing its historic rate of 3% a year, should double.

► The job ahead from now until 1975 calls for "large increases over the rate of construction from 1926-50" for every category of the industry. For instance, homebuilders may be called on to produce 35 million homes, which means an average rate of 1,400,000 a year! The outlook for other segments of construction:

	Com- mercial (million sq. ft. of floor space)	In- dustrial (million sq. ft. of floor space)	Hospital (million beds)	School (million desks)
1926-50 new construction..	2,290	4,125	0.9	16.0
1950 new construction.....	130	129	.05	1.0
1951-75 new construction...	4,200	7,400	1.4	20.0
1970's annual construction..	220	375	0.67	0.88

► This zooming national appetite for building will mean that construction—already "the largest user of materials in the US economy"—will gobble up one third more materials in 1975 than in 1950. Therefore, unless the industry mends its wasteful ways, turns from relatively "scarce" materials such as copper, lead, zinc and lumber to more plentiful substitutes such as aluminum, plastics, glass, asphalt, gypsum and concrete, it will add importantly and needlessly to US raw-materials problems.

**Federal building code?** To batter down roadblocks to less expensive, less wasteful use of raw materials in heavy building, the commission offered two highly controversial, specific recommendations:

► The Department of Justice and Federal Trade Commission should step up efforts to enforce antitrust laws against building and building-materials industries. (A quarter of the nation's antitrust suits so far, the Presidential commission noted, have involved the building industry.)

► A single comprehensive set of construction standards should be adopted by the federal government. This federal code should be based on performance standards, not rigid specifications. It should be mandatory for all federal construction, including public housing, VA and FHA housing. By thus setting a standard to which the wise and honest men in building could repair, the federal government could save local governments "much wasted effort" in the expensive process of writing their own codes.

**How to save.** Bulk of the Materials Policy Commission's 5½ pages on construction dwelt on its fabulous waste of materials, echoed much of the results of *THE MAGAZINE OF BUILDING*'s round tables on waste in construction (Sept. '50 and March '51 issues). "Nowhere," mourned the commission, "are technological opportunities and barriers to their attainment better illustrated than in the building industry. . . ."

Many innovations have been thoroughly tested. They work; yet they have been put to relatively little use."

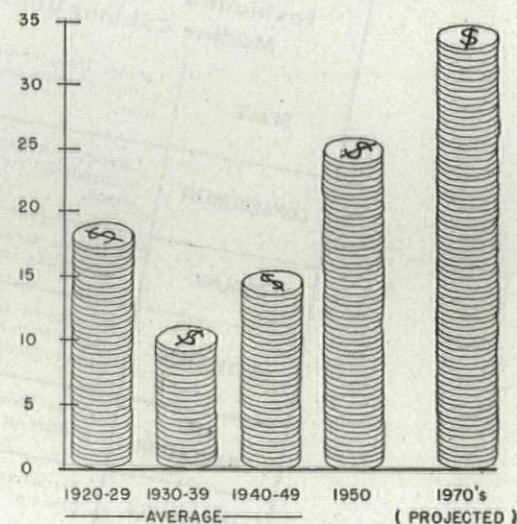
Specifically, the commission declared that "economically feasible" changes already in sight could by 1975 cut construction's demand for copper and lumber in half, cut its use of lead by a fourth, use of zinc by a fifth. Said the report: "Iron and steel (for example) may replace lumber for some uses (house frames) and may in turn be replaced by plastics in other instances (bathtubs, sinks). Or an unnecessary use of a scarce material may be eliminated altogether through changes in design: for example, wider eaves remove the need for gutters and downspouts, often made of scarce copper. . . . Where brick and lumber walls are now common we can expect greater expanses of glass, aluminum and gypsum products by 1975. Sheet aluminum will replace some of the galvanized steel now used in industrial and farm buildings.

"Plumbing, heating and air conditioning in 1975 would take vast quantities of scarce metals if 1950 patterns of use are continued. But . . . plastic pipes . . . are already becoming competitive with copper, lead, brass, iron and steel pipe. More efficient designs and less stringent codes would reduce cast-iron pipe requirements by another 20%, and allow replacing cast-iron in bathtubs, sinks and toilets with plastic. . . ."

"In electrical systems aluminum can substantially replace copper wire by 1975 if habit and unnecessary local-code restrictions are overcome. Codes and custom often require needlessly heavy galvanized steel conduits for wiring. Hundreds of thousands of tons of steel and zinc could be saved

### ESTIMATE OF BUILDING'S FUTURE

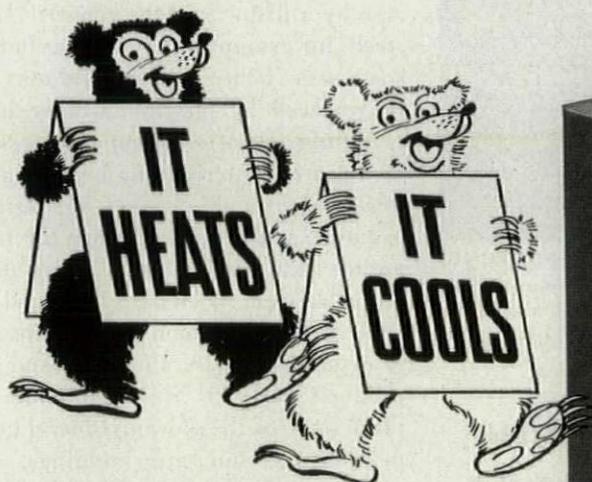
IN BILLIONS OF DOLLARS



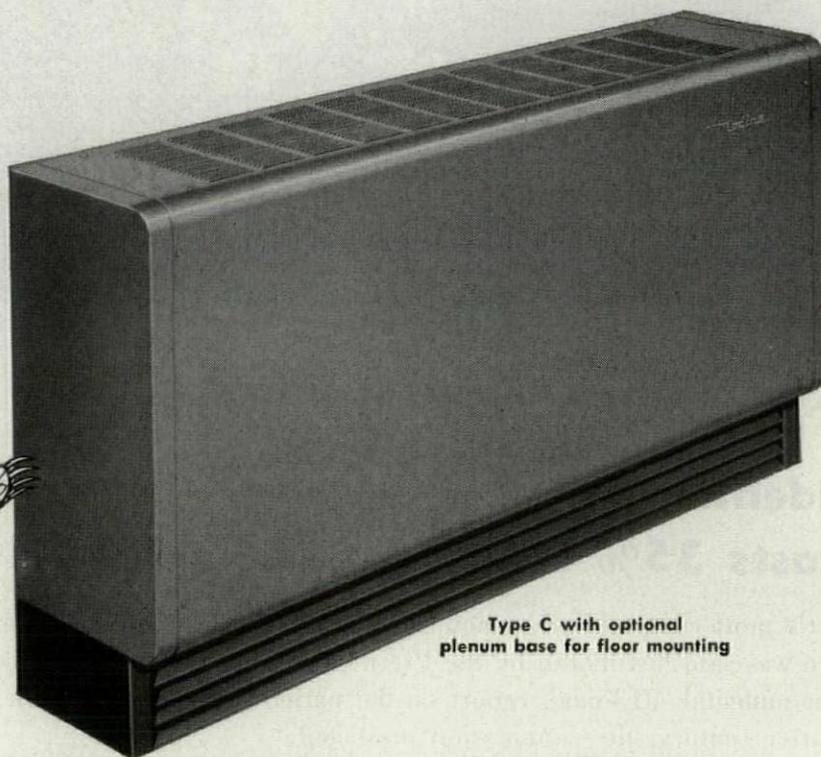
Source: President's Materials Policy Commission

On its assumption that the overall US economy will continue to grow, presidential commission projected \$34.5 billion construction volume for 1970's (excluding engineering structures as roads, dams, docks).

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IDEAL FOR STORES, SHOWROOMS, SCHOOLS, BANKS, HOTELS, HOSPITALS, THEATERS, CHURCHES, OFFICES, VESTIBULES AND OTHER COMMERCIAL AND PUBLIC BUILDING AREAS



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SPACE	Cabinet Units occupy only a portion of space taken by radiators.
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Not as elaborate or expensive as unit ventilators or air conditioners, Modine Cabinet Units are economical to use. What's more, the scrap value of the radiators they replace defrays part of their cost. (For example, a 280 lb. Modine Cabinet Unit replaces 3200 lbs. of cast iron radiation.) Available in five sizes from 120 to 640 Edr.

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through use of lighter conduits or plastics and with no sacrifice of safety standards. . . Titanium oxide can, even more than in the past, replace lead and zinc in paint."

**Industry selfish?** Technology has so far outstripped acceptance of new waste-cutting building techniques that the commission declared the "great challenge to public and private policy" lies in demolishing the "man-made obstacles to changing use of materials." The commission blamed the building industry itself for perpetuating many of the roadblocks for selfish ends. The commission commented on these:

*Nature of the Building Industry*—The "small, inefficient builder," craft-union labor and the "burden of financial control and supervision" borne by construction are the three biggest obstacles to cheap, efficient building. The "large proportion of small, inefficient builders"—especially in home-building—are helpless victims of "violent fluctuations of demand, restrictions imposed by lenders, and a notoriously costly distribution system" in which "distributors often attempt to protect their market by combinations to boycott producers who attempt to circumvent the distributors and deal directly with the builder." Thus they cannot afford to introduce new ideas and methods. Fortunately, the number of larger building firms is growing. But the industry needs more mergers.

Craft-union organization of building labor has caused jurisdictional strikes, featherbedding and "keep out" policies for prospective craftsmen. On lenders: "No other important group in our economy bears the burden of financial control and supervision that is imposed on the building industry. Housing must meet the mortgagee's standards, usually requiring conservatism in design and materials."

*Restraints of Trade*—Despite the fact that a quarter of the government's antitrust suits have been aimed at the building in-

dustry, "restraints of trade . . . continue. Combinations of distributors bar the use of competitive materials. Agreements among subcontractors in bidding reduce competition. Patent and license agreements are used to control prices and prevent competition. All these practices are vastly expensive to the public. Moreover, they often take place with the concurrence of labor and are abetted by local codes and licensing provisions which [stifle] competition."

*Building Codes*—Under the guise of protecting health, welfare and safety, local building codes "have often become devices for protecting select groups in and out of the building industry at the expense of the general public." The wide variety of standards in the nation's 2,200 local codes wrecks chances for manufacturing economies and inhibits research because the very diversity of standards creates a legal barrier to the market. The solution: uniform codes based on performance standards instead of rigid specifications of materials. But the "discretion necessary for enlightened administration of performance-type codes also permits serious abuse."

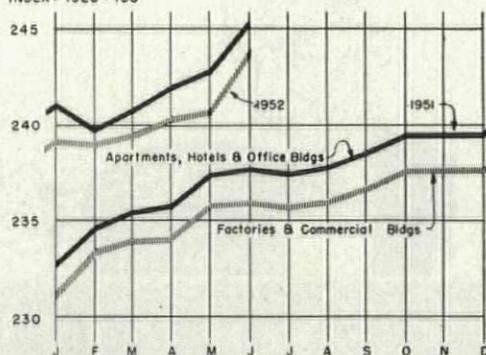
*Inadequacy of Research*—"The disorganization, low capitalization, localism and conservatism which plague the building industry have discouraged research" by private groups. In agriculture, organized much like construction, federal and state governments have taken over research. For building, little government-financed research is underway and HHFA, in charge of housing research, has suffered serious budget cuts.

**Federal opportunity.** As the largest single customer of the building industry, the federal government could lead the way to cut costs and waste of materials, said the commission. "Federal building [is] not legally bound by local regulations. Yet in practice most government agencies conform with local construction codes even though this may lead to waste." It was for this reason that the commission recommended that "an agency" of the government "formulate and keep up to date national standards of building construction with participation of . . . an advisory board of interested federal agencies and nongovernment technical groups."

**Action: doubtful.** In an election year, adoption of the commission's recommendations was unthinkable. It was by no means an even-money bet that action would come next year. But the long-range implications of the report carried a clear warning to the building industry: either weed your own garden of costly and wasteful featherbedding, trade restraints, archaic codes and uncoordinated research or eventually the government will do it for you by force.

## BUILDING COSTS RISE

INDEX: 1926 = 100

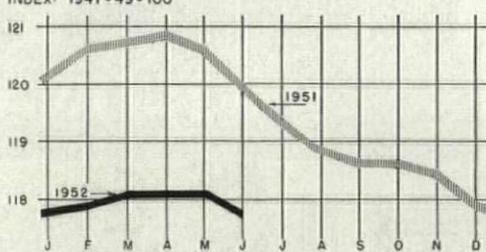


Source: E.H.Boeckh and Associates

**BIG WAGE INCREASES** won by building labor in spring bargaining were beginning to make overall building-cost indexes shoot up again last month. Boeckh's factory and commercial building index, for instance, rose from 241.5 in May to 243.7 in June.

## MATERIALS PRICES DROP

INDEX: 1947-'49 = 100



Source: Bureau of Labor Statistics

**WHOLESALE PRICE INDEX** of all building materials compiled by BLS sank 0.3 points in June as lumber prices dipped. Green Douglas fir dimensions No. 2 was off \$4 on transit cars.

## US jury indicts Chicago lathers and plasterers

Three years ago, the US attorney's office in Chicago began poking into the practices of the Windy City's lath and plaster unions and contractors. Lack of manpower halted the inquiry. Nine months ago, antitrust lawyers began again. This time their efforts bore fruit, despite efforts of Chicago politicians to waylay the investigation.

Last month, a federal grand jury indicted the Employing Lathers Association, local 5 of the AFL lathers' union, the Employing Plasterers Association, local 74 of the AFL plasterers' union, and three of their officers. The charge: conspiracy to violate the Sherman antitrust law. The jurors asserted:

Both unions will furnish no men to a contractor who has not won their prior approval to operate. No contractor is approved unless he has been a union journeyman for at least five years. Plaster contractors are required to boycott generals on any job where they have a dispute with another member of the association. The lath contractors "made 75% of their dues" available to promote "restriction and reduction of competition." Each plaster contractor was allocated a lath contractor, preventing changes or competitive bids.

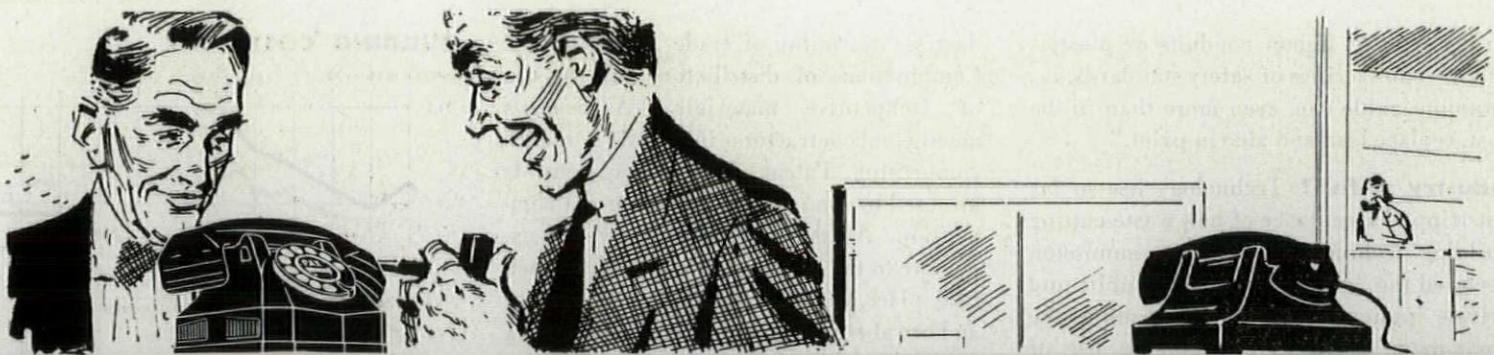
Lathers and plasterers began raising a defense fund to hire top-notch lawyers. No trial was likely before autumn.

## NEW CONSTRUCTION ACTIVITY (expenditures in millions of dollars)

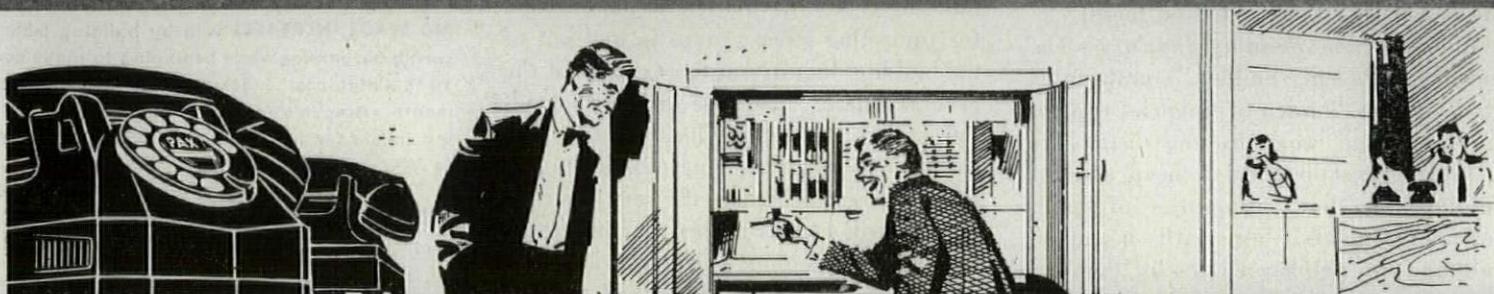
Type	June			First 6 months		
	'51	'52	% Change	'51	'52	% Change
<b>PRIVATE</b>						
Residential (nonfarm)	957	965	+0.8	5,361	4,927	-8.1
Industrial	180	180	0	903	1,181	+30.8
Commercial	131	93	+29.0	758	481	-36.5
*Total	1,933	1,906	-1.4	10,390	10,001	+3.7
<b>PUBLIC</b>						
Industrial	83	164	+97.6	361	732	+102.8
Military	77	163	+111.7	297	788	+165.3
Residential	47	55	+17.0	229	353	+54.1
*Total	877	1,075	+22.6	3,939	4,936	+25.3
<b>GRAND TOTAL</b>	<b>2,810</b>	<b>2,981</b>	<b>+6.1</b>	<b>14,329</b>	<b>14,937</b>	<b>+4.2</b>

\* Minor components not shown, so total exceeds sum of parts. Data from Department of Commerce.

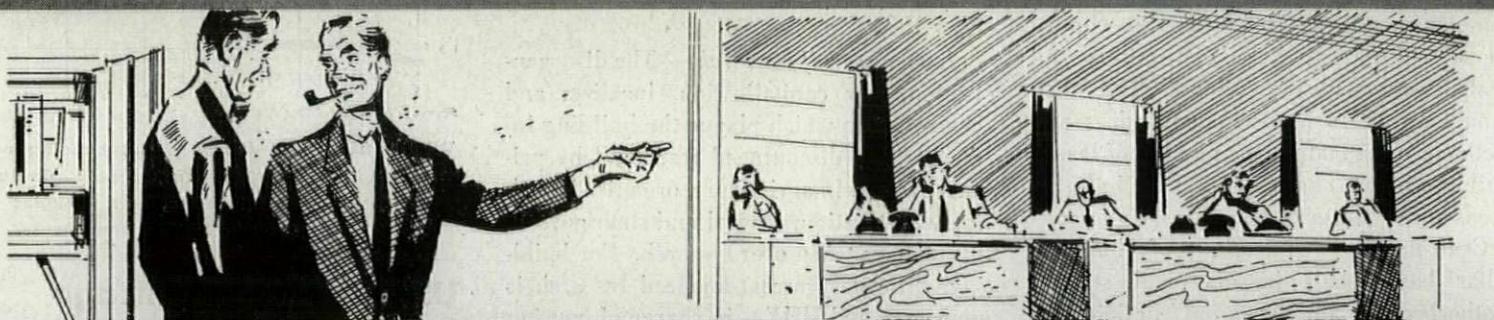
**RECORD OUTLAY** for new construction was registered during the first half of 1952. The \$15 billion spent was 4% above the 1951 mark for the same six months.



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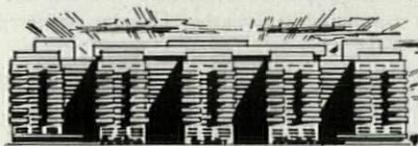
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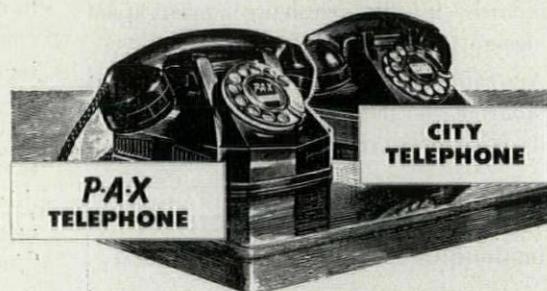
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# Slum rehabilitation, redevelopment make gains

Four years ago, New York's department of housing and buildings ruled that a tenement apartment at 1101 Bedford Avenue, Brooklyn, was unsafe for occupancy because it lacked fire escapes and fire-retarding equipment. For four years, lax law enforcement let the violations stand. Last June 18, a pyromaniac set a fire in the aged, four-story structure. Four children and three women burned to death.

New York has shrugged off tenement conflagrations before. But this one fired more public indignation than the city had seen in years. A Brooklyn grand jury began an official inquiry. The New York *World-Telegram*, in a front-paged series, cried that "at least 500,000" New Yorkers live in flimsy firetraps "mostly without hope that the hazards will be corrected" because of the city's "weak-kneed enforcement of the law." The average fine for "chiseling landlords" caught violating building laws was \$14 last year, the paper noted.

**More inspectors.** Like any public official caught amidst an embarrassment for which there is no quick and easy solution, Mayor Vincent Impellitteri appointed a survey committee (headed by city construction coordinator Robert Moses). When the report was in, the mayor took a few more steps. He ordered 110 inspectors added to the building department's staff of 250. (The department had unsuccessfully sought from 300 to 600 more in recent years.) The mayor wrote state and federal officials begging for faster action on slum clearance and public-housing projects and sterner building-inspection laws. He petitioned HHFA administrator Raymond Foley for more public housing in Puerto Rico so fewer Puerto Ricans would migrate to New York slums. Fire Commissioner Jacob Grumet closed up Brooklyn's 41-tenant Hotel Montague because it lacked fire sprinklers.

Despite the furore, New York had not yet *really* made up its mind to solve its slum problem. The New York real-estate board, for instance, was sitting on its hands. But the tempest pointed up what was becoming a national groundswell of interest in slum rehabilitation and redevelopment.

**Builder, realtor support.** Both NAHB and NAREB have become ardent champions of rehabilitation and redevelopment—the two R's that private enterprisers see as the alternative to public housing. The realtors established a national committee on rehabilitation last January, headed by Harold S. Goodrich of Springfield, Ohio. In its first report, issued to spur local real-estate boards to sponsor slum-prevention drives, the committee laid down the key

doctrine of private enterprise: "Experience in cities like Baltimore, Charlotte, Pasadena, Corpus Christi, St. Petersburg and Norristown proves that an adequate ordinance *plus* businesslike enforcement is needed to get action on a wide scale."

NAREB President Joseph W. Lund has plans to carry the attack on city decay much further. Last month he told the New York

State realtors convention that NAREB is working on a master blueprint for saving cities by:

- ▶ Helping mass transit systems provide service good enough so commuters will use them instead of clogging streets with their own cars.
- ▶ Prevention of blight in buildings before it occurs.
- ▶ A complete restudy of tax loads to achieve better distribution of the burden of city costs.

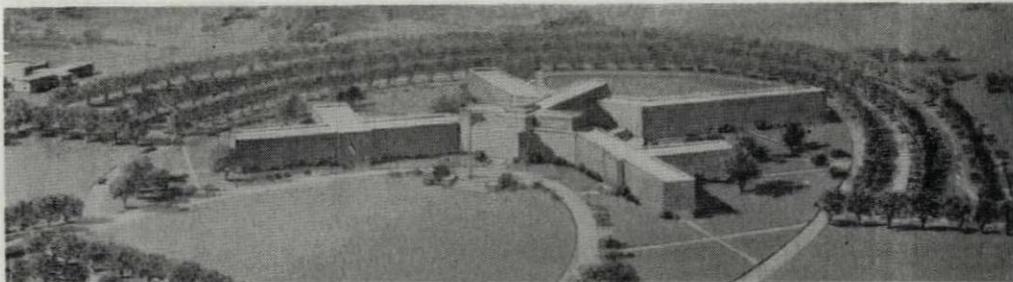
Ezra Stoller



**CAPITOL REDEVELOPMENT** in Nashville under Title I of the 1949 Housing Act has started with construction on triwinged state office building designed by Hart and McBryde of Nashville (in center of model group). Work also has begun on state library and archives (extreme right adjacent to Capitol) designed by H. Clinton Parrent Jr., Nashville. Angled-front structure is existing state office building. Other models suggest possibilities for ultimate redevelopment, such as a tall privately built office building, department store (large rectangle), and retail group. Tennessee is spending \$11

million on immediate capitol area improvements, which form part of 93 acres, mostly slums, which would be involved in the redevelopment project. Clarke, Rapuano and Holleran, New York consulting engineers and landscape architects, were consultants, with City Investing Company of New York, and J. W. Denis, Nashville realtor. Despite prospective abundance of open space, wings of new state office building will face in on each other, and structure will look out onto other proposed buildings unless better orientation is achieved in final development.

James Nevins

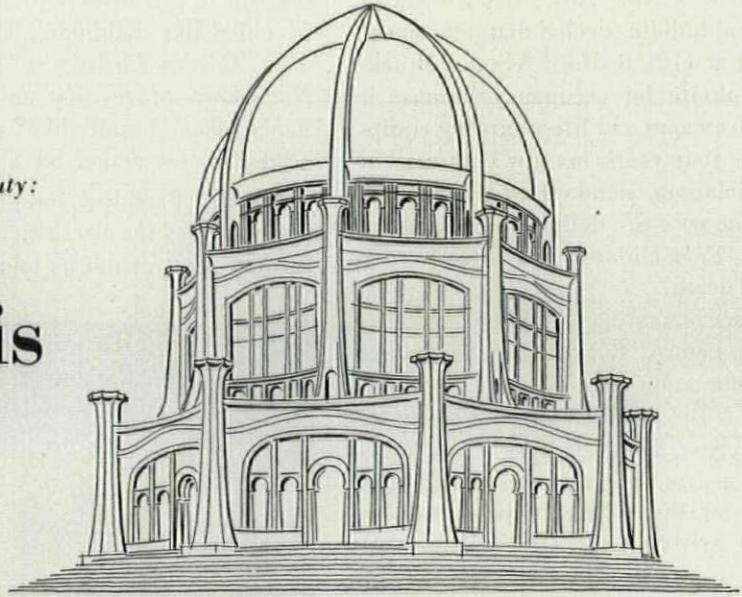


**FLIGHT TO THE SUBURBS:** New York got a pointed illustration last month of what happens when a city neglects its problems. Union Carbide & Carbon Corp. announced it intends to move its 2,500-employee headquarters out of the nerve-jangling crush of midtown Manhattan's canyons to a countrylike 286-acre Westchester County estate. There, Union Carbide would build a \$10 million garden-type office designed by Eggers & Higgins (preliminary sketch, above). One of the towns involved, Greenburgh, quickly agreed to the prerequisite rezoning. The other, Mt. Pleasant, gave tentative approval this month.

Union Carbide, the biggest firm to plan to flee to New York's suburbs so far, loftily declined to discuss its reasons. But over-crowded Manhattan working conditions, lack of expansion room and high-priced clerical help have impelled General Foods to buy a Westchester county tract and the L. E. Waterman Co. to move to Seymour, Conn. And when New York City doubled its gross-receipts tax on financial firms July 1, Hugh W. Long & Co. and Investors Management Co., Inc. moved across the Hudson River to Elizabeth, N. J. They found they would thus escape \$188,000 in taxes.

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## Temple in Illinois



BAHÁ'Í HOUSE OF WORSHIP, Wilmette, Illinois. Louis J. Bourgeois, original architect for exterior, Shaw, Metz and Dolio, architect for interior, George A. Fuller Company, general contractor.

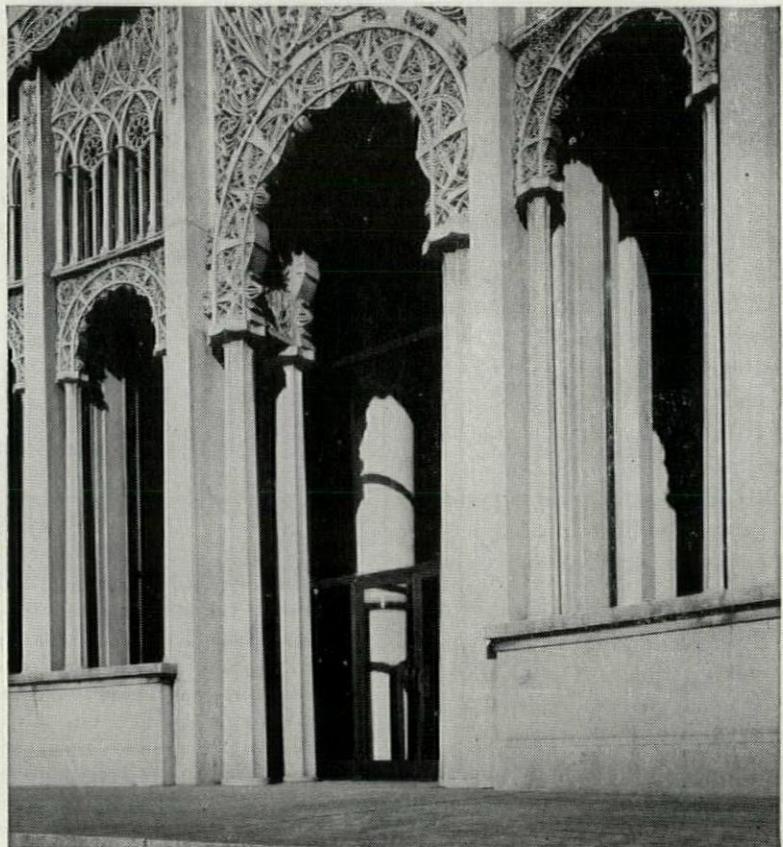
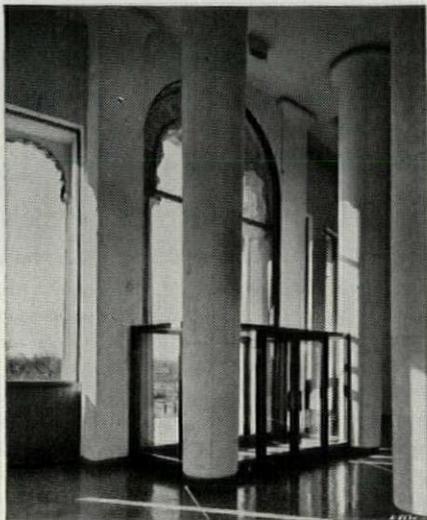
**T**HIS IMPRESSIVE TEMPLE was started in 1920 by members of the Bahá'í faith to express Bahá'í teachings in progressive revelation and spiritual unity of East and West.

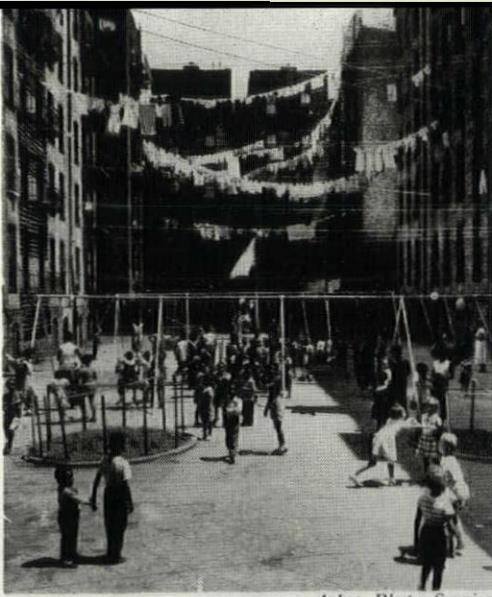
In the doors and windows of each of the nine sides of this Temple, the beauty of ANACONDA Architectural Bronze will outlast generations of worshippers. For no other metal surpasses bronze for monumental endurance, warmth or grace of effect. It is the oldest metal known to man — traditional in centuries of noteworthy architecture. Bronze creates the impression of stability and dignity so desirable in public, private and commercial buildings.

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Bronze doors and window frames in the Bahá'í Temple were fabricated by Waukegan Architectural, Inc. from extrusions and sheets. For information about ANACONDA Architectural Bronze, write The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Limited New Toronto, Ontario.

One of the nine entrances (right, exterior; below, interior). Original wood and steel frames were replaced with ANACONDA Bronze. First floor took ten tons.





Acher Photo Service

**LITTER HEAP TO PLAYGROUND** transformation of this Harlem tenement courtyard in New York cost the owner of surrounding buildings, Dr. Warren Smadbeck, only \$1,000. The money bought pavement swings, seesaws, sprinkler, benches and tables. But improvement has stopped residents from "air mailing" garbage into their backyard, so Smadbeck thinks it was well worth it. Only tenants of perimeter buildings have keys for gateway to the playground.

More and more cities were talking about private work against blight, and more and more action was beginning to follow the talk. Items:

► Boston, Memphis, Miami, Los Angeles, Pittsburgh, Philadelphia, Washington, Winston-Salem, Rapid City, S.D., and Stamford, Conn. have seen realtor-supported movements for adoption of the famed "Baltimore plan" for slum cleanup this year.

► In April, the Chicago city council adopted an ordinance authorizing the municipal building department to ratproof any building at the owner's expense if he fails to do so. Last month, a report prepared for the city council recommended a "tough" housing court to enforce health and building ordinances, urged doubling of the building department's inspection staff, and demanded a powerful central agency to coordinate the anti-slum work of neighborhood groups and the multitude of city agencies with a finger in blight prevention. The report warned: 56 sq. mi. of Chicago's "middle-aged" (35 to 50 years old) residential areas are "rotting away." It urged creation of "conservation districts" to arrest further decay, and block organizations inside each district to stimulate law enforcement.

► In Arlington, Va., businessmen took a leaf from Baltimore's book, formed a Fight Blight committee, handed the county board of supervisors a detailed report that spelled out how that Washington suburban area can stop slum growth by enforcing existing building and zoning laws and taking advantage of Title I redevelopment bounties. Like its Baltimore namesake, the Fight Blight group offered to build private housing for very low-income residents if county officials cooperate to attack slums.

**Public-housing answer?** Hoping to show that private enterprise can provide all necessary housing, 20 Cleveland, Ohio, homebuilders last year formed Private Enterprise Redevelopment Corp. to erect slum replacement apartments in an area undergoing Title I redevelopment. Difficulties de-

layed progress. Original plans called for 77 units, but the city planning department ruled this was too many for the 2½-acre site. Builders trimmed plans to 66 units. As plans grew firmer, rents appeared likely to rise about \$10 a unit over original estimates to reach some \$65 for a one-bedroom apartment, \$75 for two bedrooms and \$85 for three, not counting utilities. And this month, FHA was balking at granting the legal maximum (about 80%) mortgage insurance on the \$600,000 project until it was certain the whole area would be redeveloped. Instead, FHA was talking of a 75% mortgage. But the builders still insisted they would go ahead.

**Detroit difficulties.** The hurdles well illustrated, as HHFA's Nathaniel S. Keith told a conference on urban problems at Portland, Ore., last month, that urban redevelopment is "a painstaking, time-consuming process." The Builders Association of metropolitan Detroit would agree. There, some dozen homebuilders had planned to bid for 32 acres of a 130-acre Gratiot redevelopment project, within a mile of Detroit's city hall. On the plot, the builders planned to erect moderate rent garden apartments in another private-enterprise answer to public housing. Two weeks before the scheduled July 30 land auction, they struck a snag. Generally, said builders, Detroit developers have been permitted to build garden apartments with 37 units per acre. But now, the Detroit housing commission, in charge of redevelopment plans, decided to permit only 24 to 26 units per acre. Unless the trouble was ironed out,

some of the 12 builders threatened to withdraw from the project entirely.

**AIA endorsement.** As the American Institute of Architects saw it last month at its New York convention, Title I redevelopment like Detroit's "provides the only prospect for stabilizing and rejuvenating the centers of our older cities."

The combination of rehabilitation and development bore rephrase that the big job was about to be well begun.

## State bans modern design for California building

For a year California has been planning a \$10 million Department of Employment building to grace a new capitol mall in Sacramento. State architect Anson Boyd this month explained why not even a blueprint had come out of the oven: modernists Harry A. Thomsen and Alec L. Wilson of San Francisco had designed a six-story, two-block-long structure with glass walls à la United Nations.

Said Boyd: "The architects were distinctly told the building was to conform to the classical features of the Capitol and other state buildings. I certainly am not going to okay such a building and then, in a year or two, have the legislature call me on the carpet and want to know where I got the authority to do the job." For adhering to contemporary design, Thomsen and Wilson will forfeit a \$250,000 fee. And the Department of Employment building will be blueprinted by Boyd's chief designer, Alfred E. Eichler, in reinforced concrete.

## How big is big enough for a city? Growth-loving Dallas spurns proposal to find out

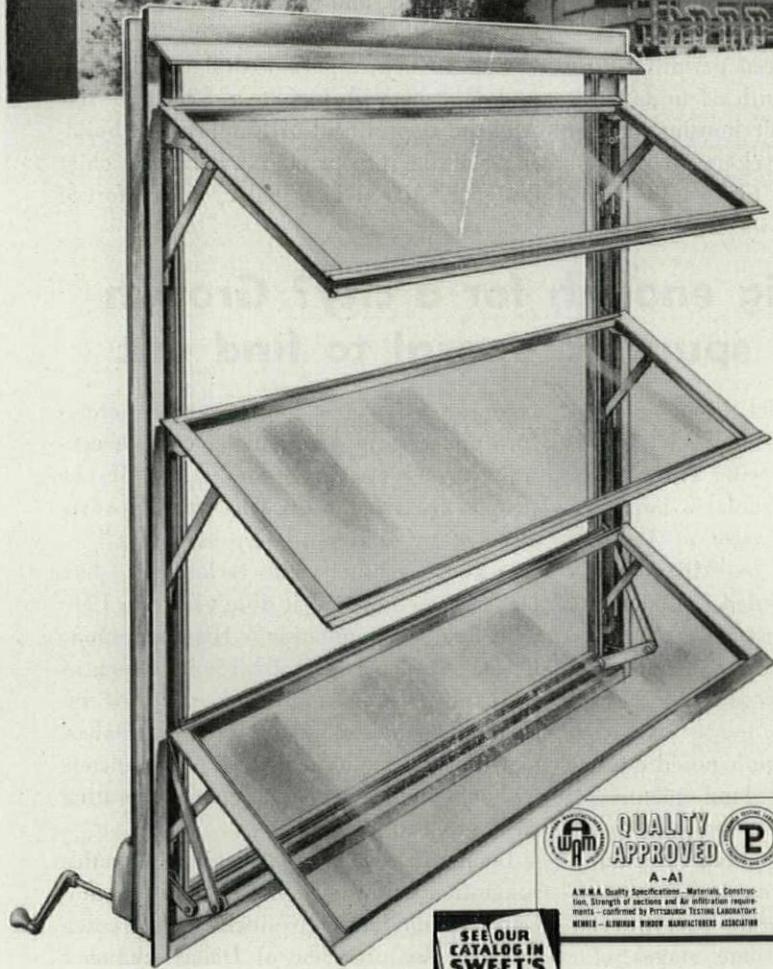
How big should a city let itself grow? Last February, homebuilder Will W. Caruth Jr. startled expansion-loving Texans by proposing a full-fledged, scholarly inquiry into what the "optimum" size of Dallas (pop. 434,000) ought to be. Millionaire Caruth, whose forebears settled in Dallas a century ago, offered to finance the study through the Caruth Foundation, a philanthropic institution founded in his father's memory.

Explaining his offer, Caruth posed questions that architects and land planners across the nation could well ponder, too. Said he: "We have seen our tax rates advance for many years . . . as we have seen our city grow in size and in the facilities it offered its citizens. At some stages of growth we have had to abandon certain of our capital assets—which had been adequate for a smaller city—and substitute new facilities. In addition, we must under-

take expensive new improvements heretofore unnecessary to a smaller city—a central expressway, for instance. . . . Maybe people are tired of paying for improvements . . . and more improvements."

Asked Caruth: what advantages does Dallas have now that it didn't have in 1940 with 300,000 population? His suggestion: let Dallas encourage satellite cities such as Garland, Denton and Ennis to grow instead, thus increasing markets for Dallas' distributors, manufacturers and financiers without increasing municipal operating costs proportionately.

Boom-minded Texans received Caruth's suggestion with icy silence. Last month, Caruth Foundation president Ben Wooten (who is also president of Dallas' chamber of commerce and First National Bank) admitted the project was dead. Such a survey, he explained, "might put a crimp in the future growth of Dallas."



*Architect Albert Anis specified*

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## PEOPLE: Gropius resigns at Harvard; Empire State

building gets new president; new team to design UNESCO office

The Empire State Building, which last December acquired new owners (AF, Jan. '52, p. 45), last month had a new president: **William J. Keary**. The new head of the world's tallest building is Erin-born. He has been vice-president and director of the Union Securities Corp. since its formation in 1938, and for the past four years has headed Chicago's Madison-State-Dearborn Building Corp. Keary's predecessors in his new job: late Gov. Alfred E. Smith and late Gen. Hugh Drum.



Architects had no sooner put their convention bags down in Manhattan than they learned **Walter A. Gropius** was resigning his job as chairman of Harvard's school of architecture. In Gropius' 14-year reign, Harvard has become one of the nation's finest architectural schools. And the former impresario of Europe's famed Bauhaus was not due to retire until next year. Explained Gropius: Last year Harvard cut his staff from 13 to 10 by making no replacements; last month, the university lopped off another three aides, ordered a fourth transferred from assisting Gropius with his "master course," and discontinued Design I, Gropius' pet first-year course on materials, color, descriptive geometry. At 69, Gropius felt the resulting personal work load would be too much.

Behind the staff cuts lay a June 13 order from President Conant requiring a drastic reduction in the school's budget. Inflation had cut its income in half and Harvard policy is that each school must be self-sustaining. Since **Joseph Hudnut**, dean of Harvard's faculty of design (who was to have resigned this year), will remain another year as dean, it was a safe bet there would be a shift in emphasis at Harvard architectural school. Gropius believes in anticipating the architectural needs of an industrial civilization by making the architect the leader of a team embracing engineers, manufacturers, contractors. Hudnut, critic and historian and once a strong champion of modern architecture, recently grown increasingly squeamish about industrialism as such, pictures modern architects as mere technocrats, idealizes the individual architect as an individual artist, speaks with fond rotundity of his favorite Georgian age & architecture. Gropius, retiring with full pension, will devote full time to his private practice,

The Architects Collaborative. Among his chief Harvard associates, **Richard Filipowski**, instructor in design, goes to MIT as an assistant professor, and **Norman C. Fletcher**, assistant in architecture, will return to The Architects Collaborative.

**NAMED:** **Roland P. Place** as board chairman and **W. C. McCord** as president of US Radiator Corp.; **Corydon Wagner**, National Lumber Manufacturers Assn. board chairman and vice-president and treasurer of the St. Paul & Tacoma Lumber Co., to represent natural resources on the US Chamber of Commerce board of directors; architect **Marcel Breuer** of New York, **Pier Luigi Nervi** of Italy and **Bernard H. Zehrfuss** of France, as designers of UNESCO's Paris headquarters.

**DIED:** **Frank T. Cornell**, 80, designer of

## CLOSEUP: mortgage banker uses engineer's approach

George W. Warnecke, a balding, 62-year-old New Yorker whose mortgage banking operations encompass nine cities, graduated from Columbia University as an electrical and mechanical engineer. From 1913-21, he was a homebuilder in Los Angeles. Out of this fusion of experience has grown what is generally regarded as one of the nation's most unique (and one of its largest) mortgage firms. Last year, by his own account, Warnecke placed \$110 million worth of mortgages on residential property, serviced \$300 million worth, and brokered some \$27 million in industrial loans—mostly bond issues to finance construction.

Two policies distinguish George W. Warnecke & Co.:

- ▶ It shies away from FHA and VA mortgages almost entirely, specializes in blue-chip, high-rise apartments and conventionally financed tracts of homes.
- ▶ It goes to unusual lengths amassing technical detail to make sure that any deal the firm recommends to an investor will result in a completed building—not a builder gone broke halfway through.

To provide a sure base for such "underwriting" of loans he handles, engineer Warnecke goes into projects so thoroughly that, he says, last year he accepted only three out of every ten residential deals offered to him. Investors like the close analysis, which goes not only into design, location and amenities but probes as deep as quantities of materials involved, pricing them and checking costs of each proposed project. Backing up his own engi-

neering know-how, Warnecke has a full-time architect on his New York headquarters staff. Said Vice President H. M. Spencer of Travelers' Insurance Co., for whom Warnecke is servicing some \$40 million worth of loans: "What we like is his knowledge of building." Because Warnecke represents both the mortgage lender and the construction lender, performing appraisals and inspections for both, building promoters pay fewer fees.

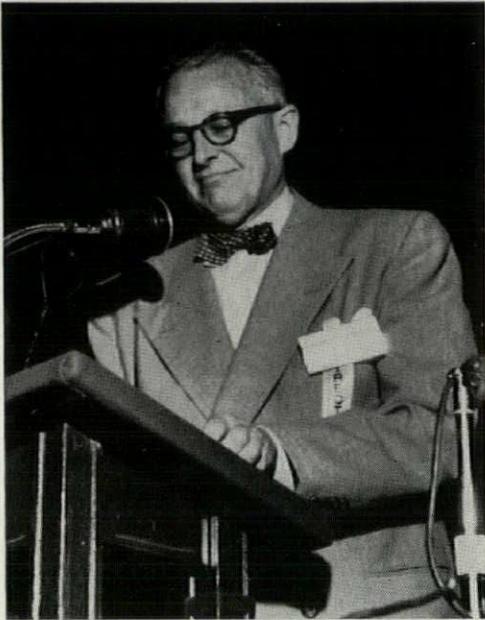
If such close financial control produces a sound product (Warnecke is proud that not a loan he has recommended since 1934 has gone into default), it also points up the perennial problem the building industry faces in selling modern design. Warnecke will have none of such architecture as Mies van der Rohe's striking, glass-walled Promontory Apartments in Chicago. "The public," he insists, "isn't ready for it."



GEORGE W. WARNECKE

Len Rosenberg

# AIA CONVENTION



**President Glenn Stanton** told convention Institute membership and activity in architectural offices are at all time high.



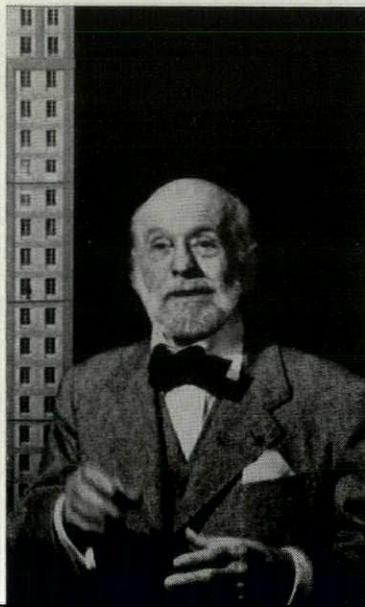
**Board of Directors** warned convention delegates of "inroads" made by package-service companies and by government bureaus.

**Opening lunch session** heard welcome from city official representing Mayor Impellitteri.

Photos: Roy Stevens

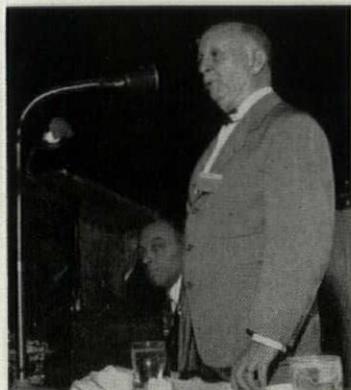


**Frank Lloyd Wright**, flanked here by New York's Arthur Holden, convention chairman, and AIA staffer Fritz Gutheim, spoke to students.



**Gold Medal** was awarded to French architect Auguste Perret (AF, June '52) for buildings he has designed in reinforced concrete.

## meets in New York to resist competition from package firms and government



**Pyke Johnson**, president of the Automotive Safety Foundation, urged delegates to study action of Washington, D.C., which set aside 21 provisions of a restrictive building code in order to make possible the construction of experimental-type parking facilities.



**Ernest T. Weir**, chairman of National Steel Corp., told lunch session "government intervention" was to blame for steel strike.

A paraphrase of most of the leading speeches and reports made at the 84th annual convention of the American Institute of Architects in New York City last month would go something like this: "The role of the architect in modern society is substantially the same as it has always been, but is enriched now by technological innovations which have given the architect unparalleled resources to work with. But the very technological climate that has produced these resources, and the industrial tempo and governmental bureaucracy that have grown up side-by-side with it, have molded a form of competition that the architect has not before had to face. This competition comes chiefly from 'package service' firms that appeal to big business' affinity for 'efficiency' by tying together engineering and design; and it comes from government bureaus that attempt to provide design services for private institutions. Now the architect must determine the nature of his answer to that competition. Shall he fight it—and if so, how?—or shall he join it?"

In the end, the convention formed no enduring answer; nor could one really have been expected, for the many forces that have formed the face of the architect's new competition have been a long time a-building, and his answer could not be the prod-

uct of any one convention. Perhaps Walter Gropius, with his plan to transform the architect into the "Master Builder" he used to be (*see AF*, June '52), might have sparked a debate on the convention floor which would have nailed the problem down at the grass-roots level and revealed the response of the individual architect. But Gropius' proposal never got to the floor for discussion. Perhaps the convention managers thought it was not yet time to consider it; at any rate, they shelved it. And what action the convention took was more tentative than lasting:

▶ The Board of Directors warned the delegates of the "inroads that package-service companies are making on the fields of the private practitioners," and solemnly advised the convention to "study and know" the pattern of package service: "We must search to find a weakness in the package-service system and emphasize that weakness to the potential clientele."

▶ The Board advised the architect also to assume the initiative in stimulating construction work, and urged him to "acquaint himself with the problems and procedures for initiation, especially with those in which finance is concerned." (But lest this be taken as an indication that the architect should modify his traditional role, the Board warned that "the standards of professional practice must be scrupulously observed.")

▶ The convention condemned the Public Buildings Service for offering design services to hospitals in Washington, D.C., and asked PBS to collaborate with AIA in setting up policies to prevent a recurrence of this practice.

▶ Perhaps most significant of all, the convention set up a \$35,000 a year (for three years) public-relations program to combat these twin dangers of encroachment and to let the people know "there are certain things we can do better than anyone else."

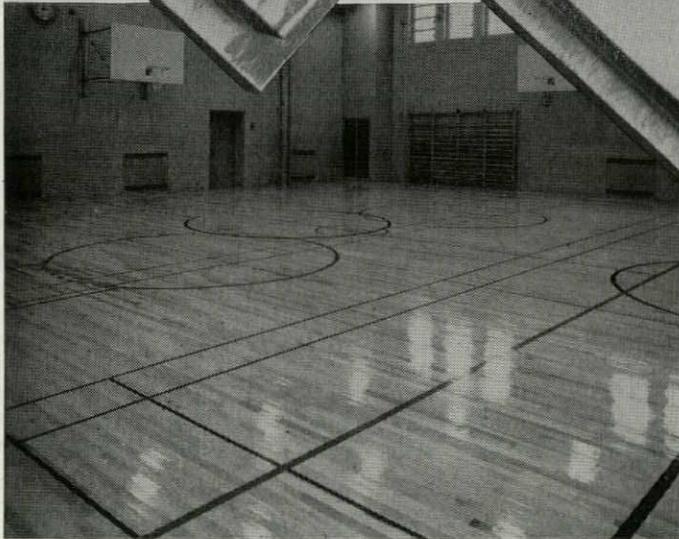
Not only in these end actions, however, did the convention show its concern with the big problem of its competition and the forces that have produced it. The bulk of the convention agenda was devoted to such components as the "automobile revolution" (it heard Automobiler Pyke Johnson sound the vital need for off-street parking and loading facilities—*see picture, left*) and dispersal of cities (it called upon the



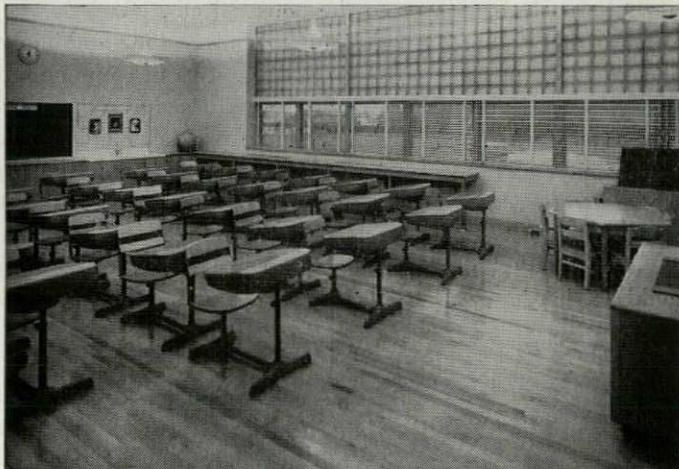
"Cutting Construction Costs" was subject of panel moderated by former AIA president Ralph Walker (at podium). Henry L. Wright, Los Angeles (left), said California architects cut school-building costs by providing rooms with least amount of fixed equipment and cabinets, and by specifying low-maintenance cost materials rather than low-first-cost materials. W. H. Scheick,

executive director of Building Research Advisory Board (center) told delegates of new BRAB report (*see p. 114*). Robert W. Cutler, New York, said hospital-construction costs can be cut by conserving on community basis, if future needs are adequately analyzed. Example: provide central laundry for use of several hospitals in same area instead of putting a laundry in each.

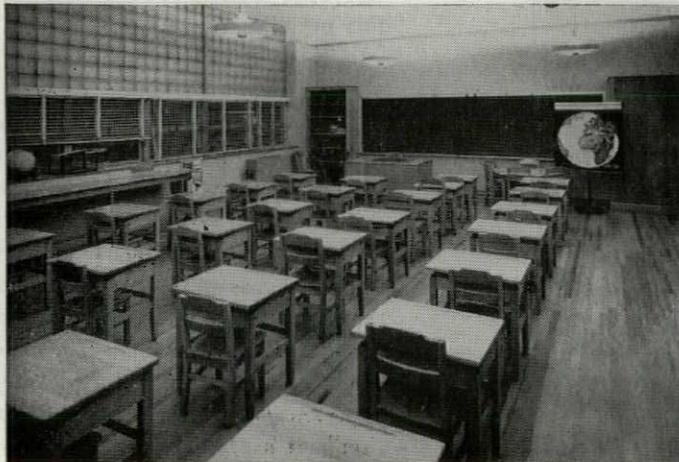
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federal government to lead the way in a program to provide more open space in heavy population centers). It listened respectfully to such commercial successes as William Zeckendorf and Kenneth Welch tell how to combine design with salesmanship (see picture, below). And in well-attended technical sessions the architects showed their sharp interest in such "structural resources" as the "lift-slab" system (presented by O'Neil Ford of San Antonio), and precast concrete (whose possibilities were outlined by builder Roger H. Corbetta).

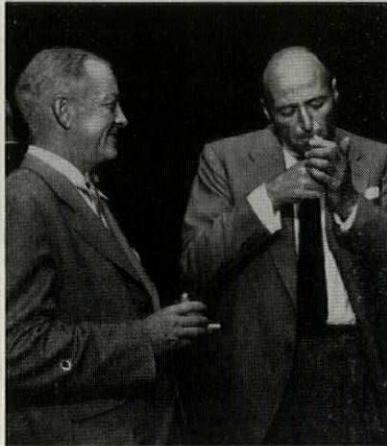
But lest the architect become so absorbed with his new competition and the new tools that he has to work with that he forgets his real function, orator Hugh Ferriss was on hand to warn him of the danger that comes when the architect becomes a "technologist without vision wandering forlorn in a wilderness of facts," and to remind him of his traditional role as the uniter of the scientific and artistic calculations that make the finished product. "Technical gains will never be discarded," said he, "but now artistic gains as well can be exploited. There has been a recent change of climate. . . . A winter of cold calculation is past and spring is returning to architectural design. Most architecture now is engaged in an effort to reunite man's impulse to make things work and to make them beautiful."

The convention also:

- ▶ Paid its respects to the centennial of civil engineering, celebrated this year. A ceremony at Lever House featured an exhibition titled "Reunion of Architecture and Engineering."
- ▶ Reaffirmed its three-year-old endorsement of public housing. (A short-lived proposal from the Utah delegation to reverse the stand died from lack of support.)
- ▶ Created a College of Fellows, to be composed of Fellows of the Institute. Its purpose will be primarily to act in an advisory capacity to the Board of Directors.
- ▶ Re-elected for another term its same slate of officers: President Glenn Stanton, Portland, Ore.; Vice Presidents Kenneth E. Wischmeyer, St. Louis, and Norman J. Schlossman, Chicago; Secretary Clair W. Ditchy, Detroit; and Treasurer Maurice J. Sullivan, Houston.



**Corridor Conferences:** *Walter Gropius, Harvard; William W. Wurster, University of California; Eero Saarinen, Bloomfield Hills, Mich.; and G. Holmes Perkins, University of Pennsylvania.*



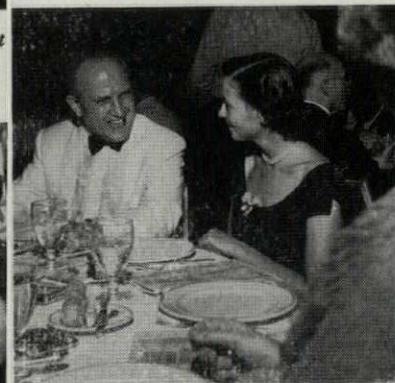
*US Plywood's Vernon Sears and Robert Jacobs, New York City.*



*Serge Chermayeff, Pennsylvania State College, with Alfred Shaw, Chicago, and Betty Mock Kassler, Princeton, N.J.*



*Architect and Planner José Sert, with Mrs. Sert and Mrs. Robert Law Weed.*



**At Formal Dinner:** *AIA Secretary Clair Ditchy shares a light moment with Mrs. Marshall Fredericks.*

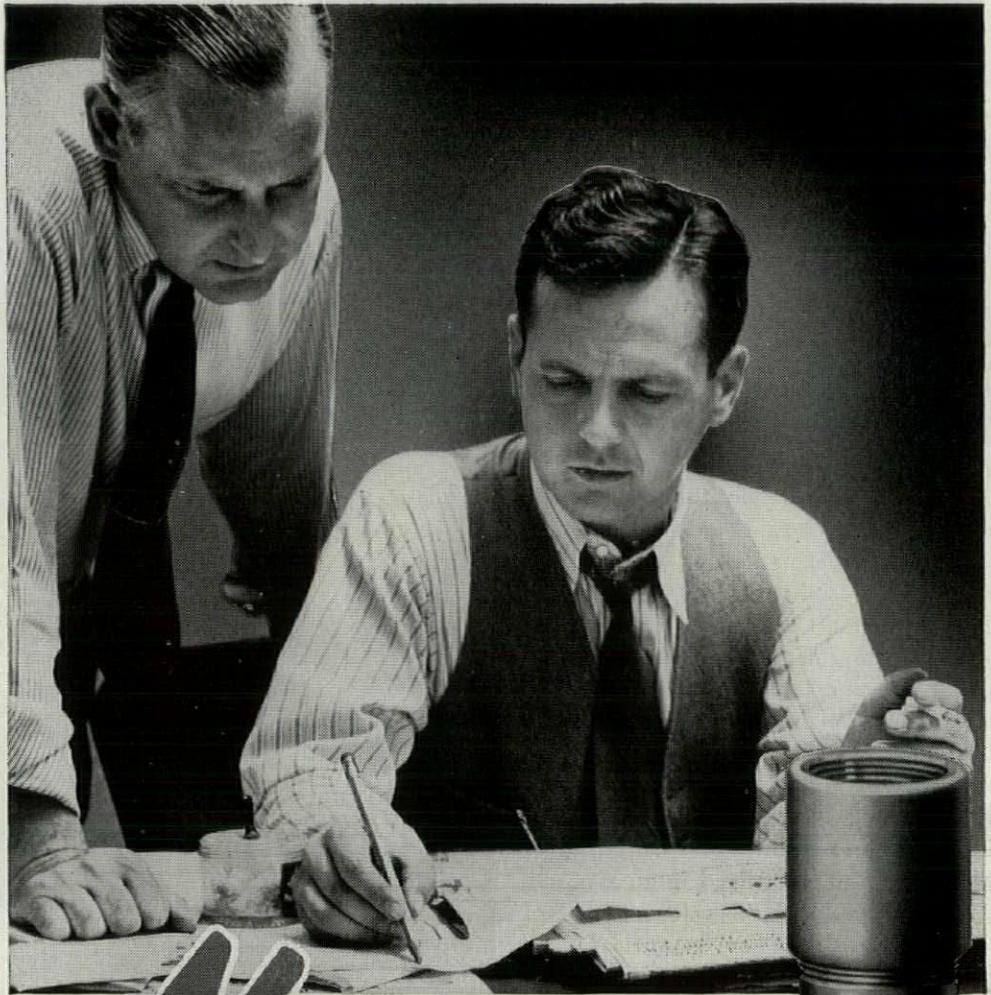
Photos: Roy Stevens



"Crossroads in Architecture" symposium was held in Museum of Modern Art. Kenneth C. Welch, shopping-center consultant (at podium), said the important task for architects is to "try to educate potential clients." William Zeckendorf, realtor (second from left), seconded this. He told architects one of their "greatest needs" was a "practical un-

derstanding of the economics of real estate," and that often they must persuade an owner that architectural services "will result in a profit, and get the owner something more than he paid for." Left: moderator Douglas Haskell, THE MAGAZINE OF BUILDING; seated, right: builder Alfred Levitt, who discussed architects and homebuilding.

When you  
figure  
the pipe  
you can  
be sure—



*if it's* **National**

● A lot of people have faced a lot of piping problems over the last 60 years. During that time, so many of them have solved their requirements with one pipe—NATIONAL Steel Pipe—that they have made NATIONAL the largest selling pipe in the world.

Other things have helped too . . . the fact that one integrated organization has complete control of U-S-S NATIONAL Steel Pipe production, from the raw material to the finished product . . . the fact that advanced steel-making facilities and special pipe manufacturing processes are here combined with the experience of thousands of skilled craftsmen to produce steel pipe of uniformly high quality and utmost dependability.

As a result, when you decide on NATIONAL Steel Pipe you can be sure you'll always get pipe whose metallic structure, strength, sound joints, superior cutting, bending and threading properties assure easy installation and long, trouble-free performance.

These are the reasons why "old timers" swear by NATIONAL Steel Pipe and why NATIONAL is being consistently specified by the new generation of architects, engineers and contractors. In turn they have found that for low cost, easy installation and *proved* reliability in service, no other pipe quite fills the bill like NATIONAL.

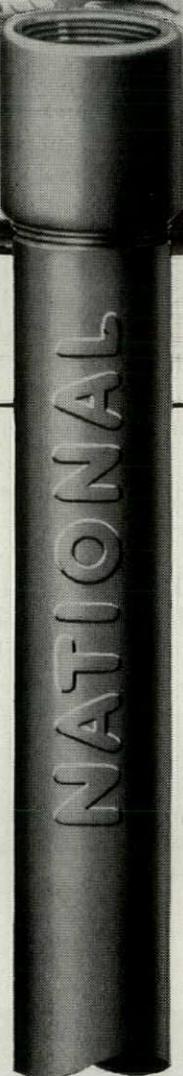
So when you need an all-purpose steel pipe . . . make it NATIONAL.

NATIONAL TUBE DIVISION, UNITED STATES STEEL COMPANY, PITTSBURGH, PA.  
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**U-S-S NATIONAL Steel PIPE**

UNITED STATES STEEL





## This Handsome Floor is no sissy, mister!

...Flexachrome floors are tough, rugged, long wearing, grease and oil resistant!

Sure, Flexachrome's good looking! Yes... beautiful!

But don't hold *that* against it.

Flexachrome\* Vinyl Plastic-Asbestos Floor Tile is *all-man*, Mister... all-man *all the way through*.

Let's list Flexachrome's advantages... it is moderately priced. It is quickly installed... no long space tie-ups. It can take all that "the traffic will bear." Standing feet... Walking feet... Light trucks... Heavy trucks.

Maintenance is simple. Daily sweeping... periodic washing. Repairs are quick and inexpensive... thanks to tile-at-a-time installation.

Flexachrome is unharmed by vegetable and mineral oils... and greases. It's ideal in machine areas, food packing departments, kitchens, cafeterias, laboratories.

So, *in addition* to a rich choice of colors with high light reflectance that improve working environment and boost employee morale... Flexachrome gives you: *first low cost... low operating cost... long service life.*

Phone your local Tile-Tex\* Contractor, listed in your classified telephone book. Ask him to show you samples of TUFF-TEX\*, too... another colorful, economical, greaseproof flooring material.

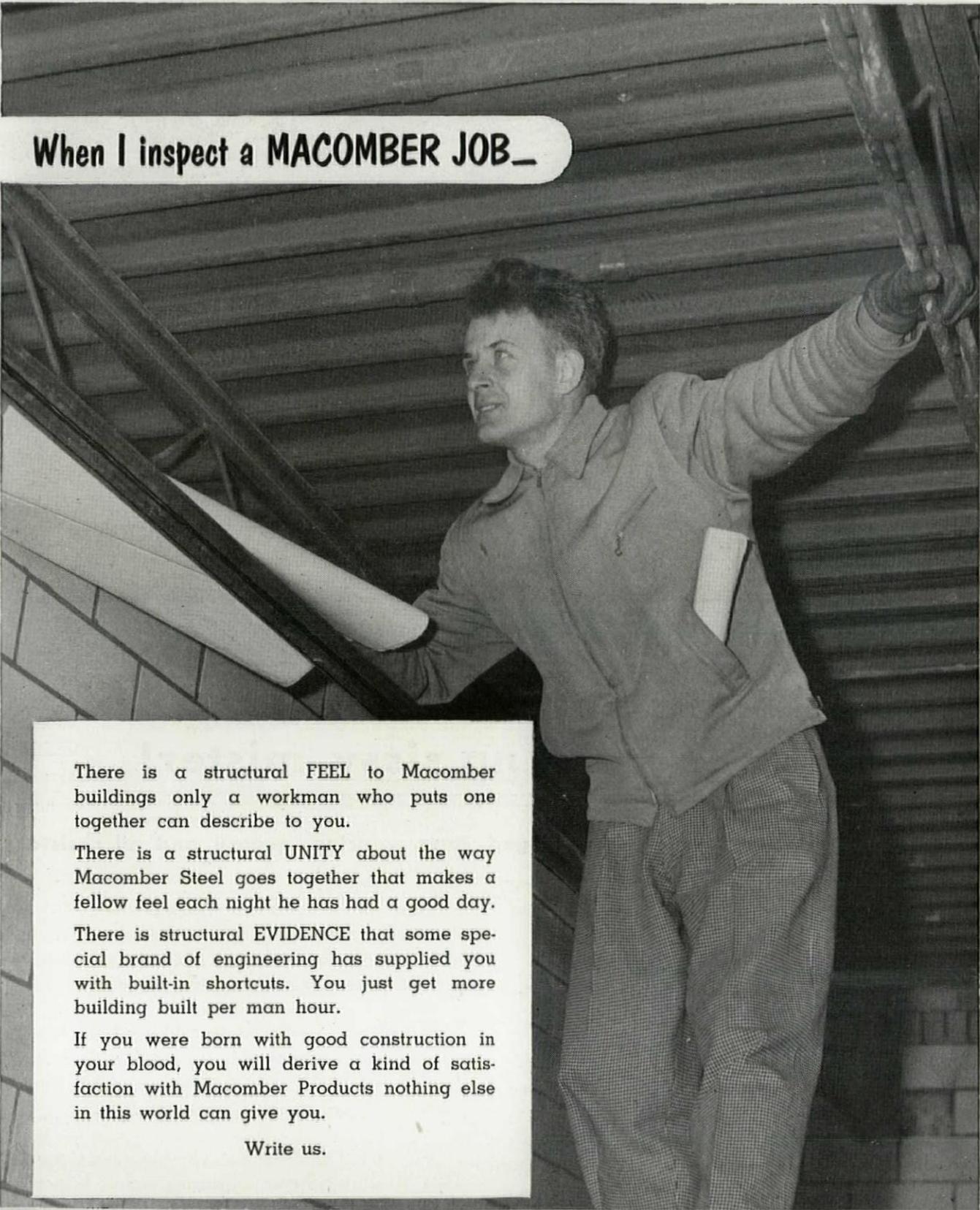
THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley Street, Chicago Heights, Illinois.

TILE-TEX—THE PIONEER DIVISION, The Flintkote Company, P. O. Box 2218, Terminal Annex, Los Angeles 54, California.

The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto, Canada.

**Tile-Tex**  
PLASTIC-ASBESTOS  
**FLOORS AND WALLS**

\*Registered Trademark, The Flintkote Company



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There is a structural **FEEL** to Macomber buildings only a workman who puts one together can describe to you.

There is a structural **UNITY** about the way Macomber Steel goes together that makes a fellow feel each night he has had a good day.

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If you were born with good construction in your blood, you will derive a kind of satisfaction with Macomber Products nothing else in this world can give you.

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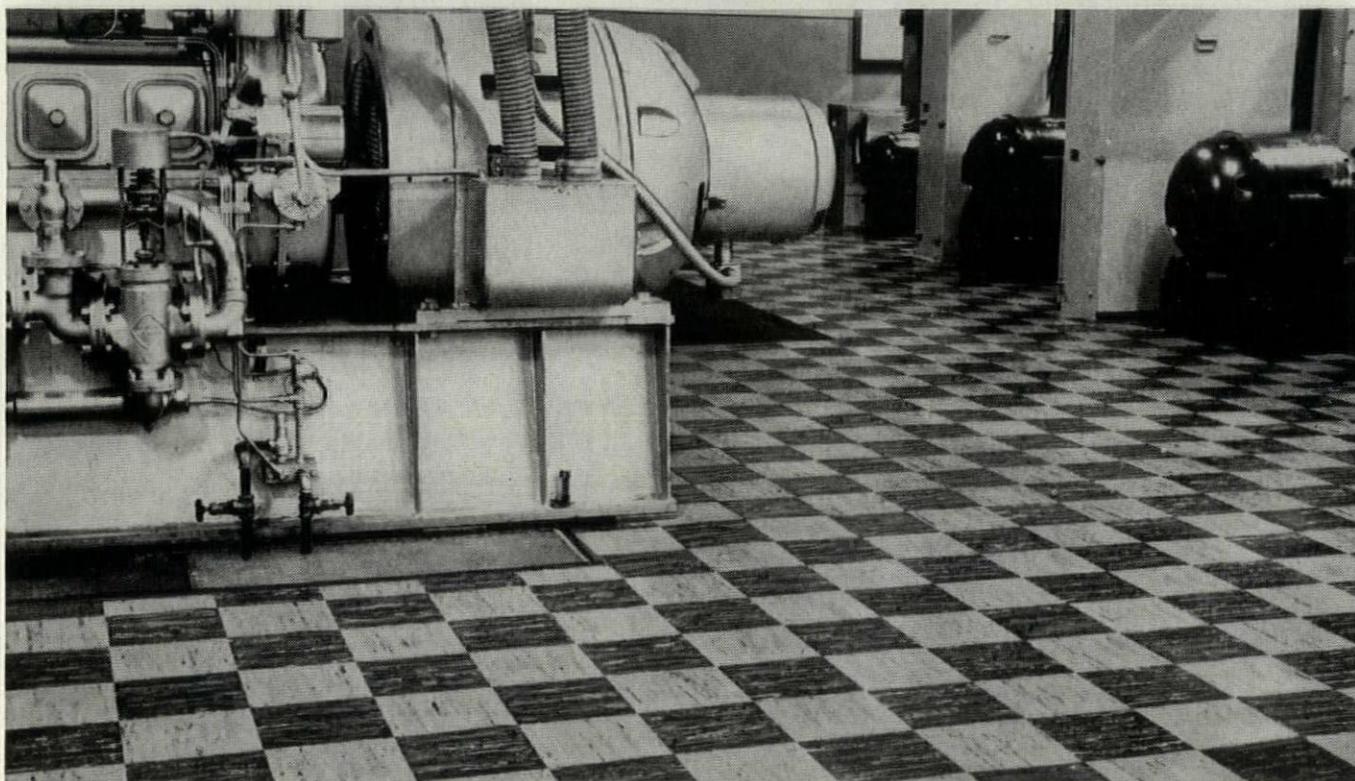
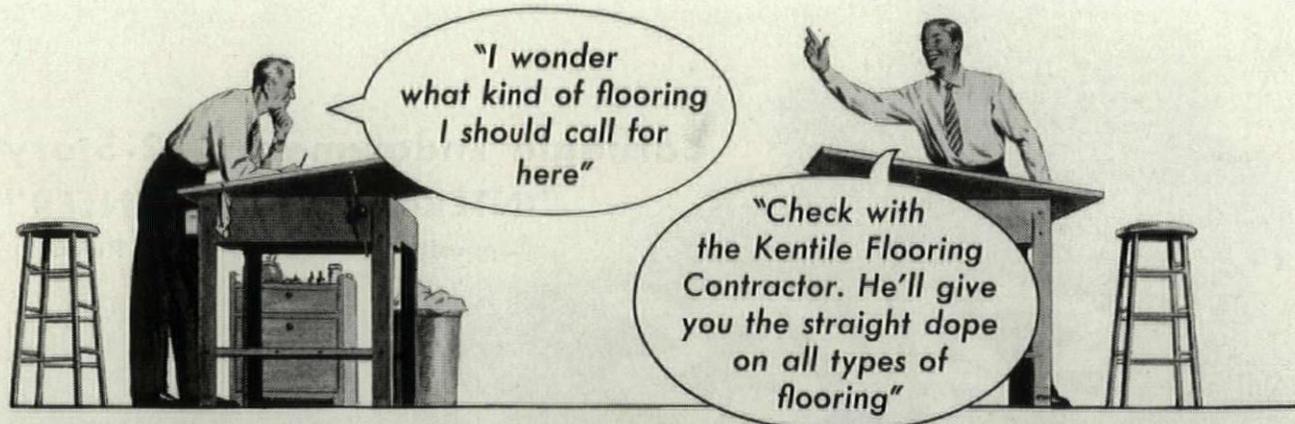


**STANDARDIZED STEEL BUILDING PRODUCTS**

**MACOMBER • INCORPORATED**

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**V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK**



*Special Kentile (greaseproof) is ideal for power rooms, machine shops, restaurants . . . wherever greases, oils, alcohol, alkalis, most acid solutions, or extra heavy traffic present a maintenance problem.*

## The practical and time-saving solution to any flooring problem is a call to the local Kentile Flooring Contractor

THE OBVIOUS advantages of a certain kind of flooring in a certain installation are often outweighed by disadvantages that can be foreseen only by the expert. To keep posted on the great number of products and materials available today would be so time-consuming

that busy specifiers everywhere are learning to count on specialists for accurate and up-to-date information. Such a man is the Kentile Flooring Contractor. Call on him as often as you wish...you'll find his extensive background makes him a valuable addition to your "staff."

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## Carnegie Endowment's 12-Story "INTERNATIONAL CENTER"

Opposite the United Nations Plaza

# SAVES STEEL

## WITH REINFORCED CONCRETE

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In this impressive Manhattan structure, planned for the use of nonprofit organizations active in promoting international understanding, reinforced concrete was chosen for framing and floors . . . in order to *save steel* for national defense.

By designing their structures for reinforced concrete, builders all over the country are conserving the nation's vital steel supply and stretching their own steel allotments. Furthermore, they are *reducing the cost* of the buildings they erect.

Because reinforced concrete framing is faster to erect, it also provides extra months of rental income. In addition, it is inherently firesafe and durable—highly resistant to wind, shock, and quakes. On your next structure, *design for reinforced concrete!*

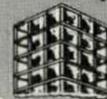
### HOW REINFORCED CONCRETE SAVES STEEL



COLUMNS  
Use Less Steel



BEAMS  
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Complete  
BUILDINGS  
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**CONCRETE REINFORCING STEEL INSTITUTE • 38 South Dearborn Street, Chicago 3, Illinois**

# 30 DAY FIRE GUTS WAREHOUSE

## FAILS TO DESTROY STOCK OF FIRE-CHEX ASBESTOS-PLASTIC SHINGLES STORED INSIDE

**"We Saw it With Our Own Eyes! Carey Fire-Chex Shingles are Fireproof!", Say Officials of Mohawk Building Materials Corporation**

**RENSELAER, N. Y.,** December 6, 1951 —The fire that broke out on November 6 and destroyed two sections of the Rensselaer warehouse, owned by the Mohawk Building Materials Corporation, was finally extinguished last night, 30 days after the alarm was turned in.

Although the fire in most sections of the building was brought under control within ten days, it smoldered in the insulation board and roofing section for a full month. In this section, eighteen inch brick walls collapsed during the early stages of the fire, burying the roofing and insulation to a depth of over ten feet. Firefighters scored complete victory last night, when they spread this mass with a bulldozer and extinguished the flames.



As the rubble was cleared away, several piles of Carey Fire-Chex shingles were observed to be still standing. The wood pallets on which the shingles were piled had burned away, and the paper cartons were gone, but the shingles were still in good condition. Officials of the Mohawk Building Materials Corporation stated that the Carey Fire-Chex shingles were just slightly stuck together on the 12" edges, but not enough to prevent sliding them out from beneath the wire ties. "We saw it with our own eyes. Carey Fire-Chex shingles are fireproof," said C. Lawrence Fenner, vice president of the firm.



Fire-Chex asbestos-plastic shingles are an exclusive product of the Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio, widely known manufacturer of asbestos and asphalt building materials. Coated with a patented asbestos-plastic, Fire-Chex have been tested by Underwriters' Laboratories, Inc. and found to resist fire so effectively that they are rated "CLASS A" without underlayment by Underwriters' — the highest possible rating for fire protection. Fire-Chex are the only roofing material of any kind to carry this highest fire-protective classification.



**Steel I Beams Twist Like Pretzels . . . But Fire-Chex Virtually Unscathed During "Baptism by Fire"**

FIRE-CHEX are 'tops' for beauty, too! They're the only shingles designed for application in gorgeous Shadow Blend Roof Designs, copyrighted as 'works of art.' Ask your Carey dealer to give you the profit-pyramiding facts about FIRE-CHEX — pronto! Or, mail coupon for sample of Fire-Chex and informative literature!

**Carey**  
THE PHILIP CAREY MFG. COMPANY

Lockland, Cincinnati 15, Ohio

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Lockland, Cincinnati 15, Ohio Dept. AF-7  
In Canada: The Philip Carey Co., Ltd.  
Montreal 3, P. Q.

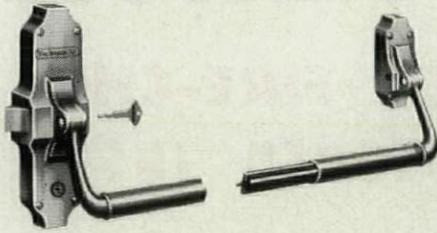
Gentlemen:

Please send me a sample of Carey Fire-Chex asbestos-plastic shingles and informative literature. I will not be obligated in any way.

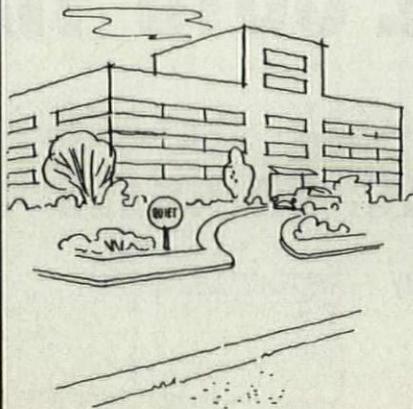
NAME \_\_\_\_\_  
FIRM \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

# A<sup>2</sup>

## Rim Type Exit Device

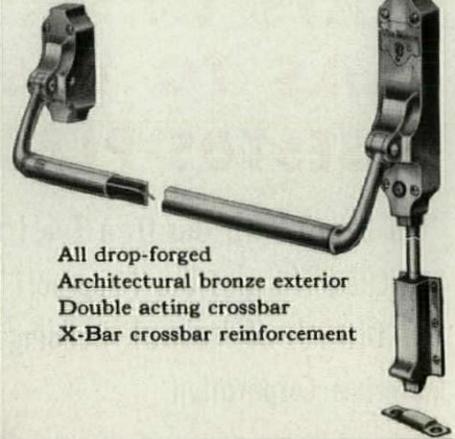


All drop-forged  
Architectural bronze exterior  
Double acting crossbar  
X-Bar crossbar reinforcement

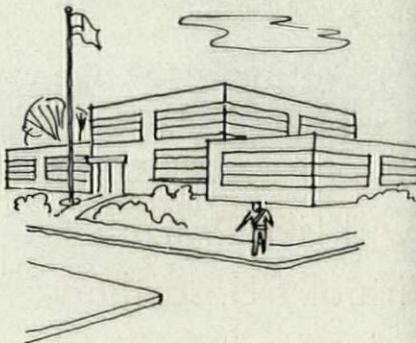


# B<sup>2</sup>

## Vertical Rod Exit Device



All drop-forged  
Architectural bronze exterior  
Double acting crossbar  
X-Bar crossbar reinforcement



# Von Duprin

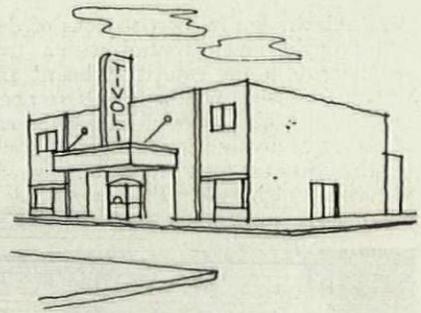
FIRE AND PANIC  
EXIT DEVICES

and auxiliary items for

"The SAFE Way Out!"

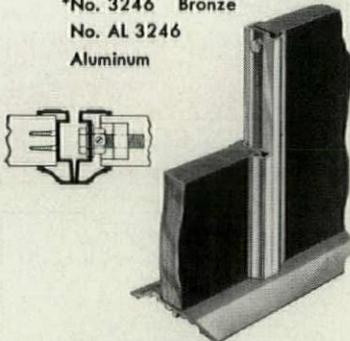


VONNEGUT HARDWARE CO.  
VON DUPRIN DIVISION  
INDIANAPOLIS 9, INDIANA



## Compensating Metal Astragal

\*No. 3246 Bronze  
No. AL 3246  
Aluminum



Easily adjusted  
Eliminates gap between doors  
Provides correct bevel  
Permits independent door  
operation

\*Subject to N.P.A.  
restrictions

## Frame Pattern REMOVABLE MULLION

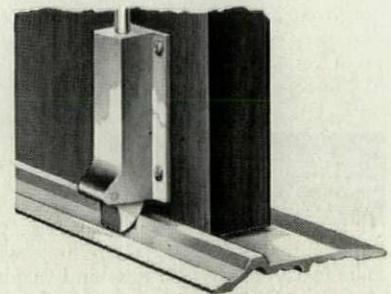
No. 1254



Acts as stop for  
meeting stiles  
Covers gap  
between doors  
Holds strikes for  
rim devices

## LATCH TRACK Threshold

\*No. 12390 Bronze  
No. AL 12390 Aluminum



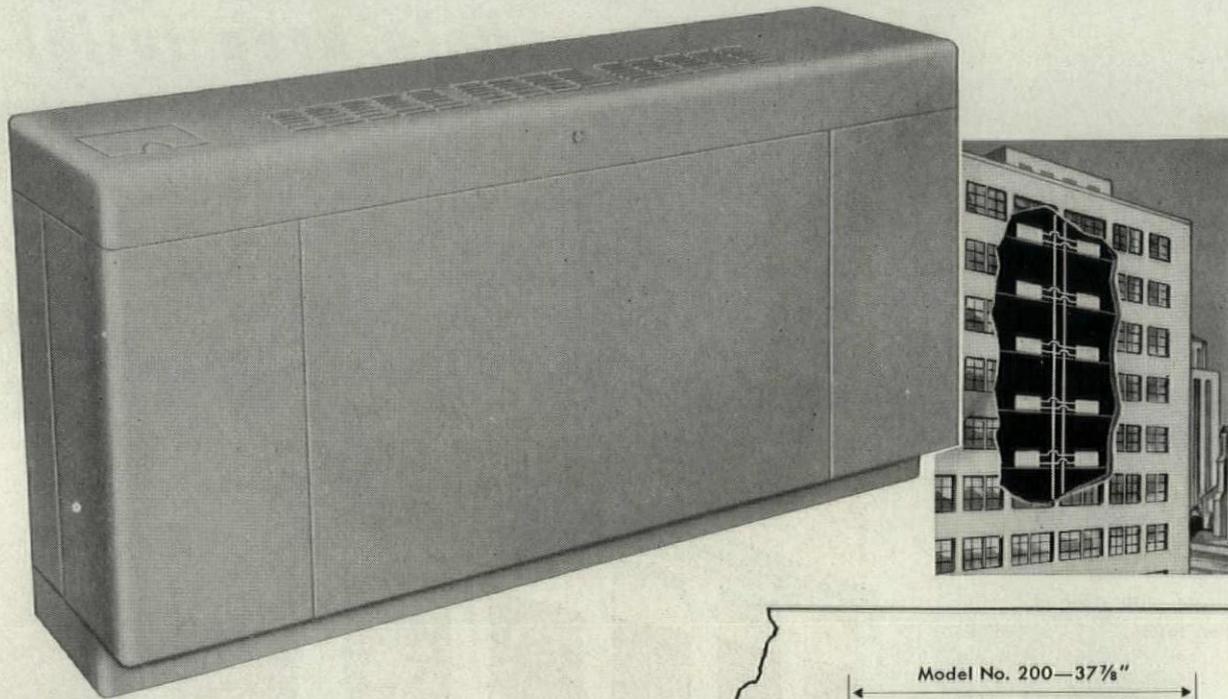
Sturdy extruded sections  
Latching at any point  
Full opening door stop

\*Subject to N.P.A.  
restrictions

# THE REMOTAIRE by AMERICAN-Standard

... a new remote type room conditioner for multi-room installations ...

## HEATS IN WINTER...COOLS IN SUMMER



● Here's year 'round comfort-conditioning for such multi-room installations as hotels, motels, office buildings, hospitals, apartments and residences.

The Remotaire uses chilled or heated water supplied through a simple piping system from a remotely located central water chiller and heating plant. Designed for location under windows, the Remotaire can be free standing or recessed into the wall 4 inches.

Individual control of each unit allows the occupant to choose the room temperature that suits him best without affecting adjoining spaces.

The Remotaire is provided with an arrangement for introducing ventilation air through a wall aperture. However, ventilation air may be supplied by several other methods if desired.

Whether for modernization of an existing building, or in the planning of a new building, put this quality remote type room conditioner to work in the buildings *you* plan. For further information, send for descriptive literature—Form 298.



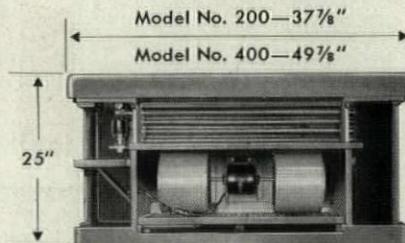
American Radiator & Standard Sanitary Corporation,  
Dept. AF-72, Pittsburgh, Pa.

**AMERICAN-Standard**  
HEATING-COOLING



*Serving home and industry*

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**THE REMOTAIRE IS SMARTLY STYLED, STURDILY CONSTRUCTED.** All surfaces of the heavy-gauge furniture steel cabinet are bonderized and finished with a baked-on gray semi-gloss enamel.

**IT'S EASY TO INSTALL . . .** in both old and new buildings. Ventilation air can be introduced through a wall aperture or by several other methods if desired. Piping and electrical connections are easily made in spacious end compartments.

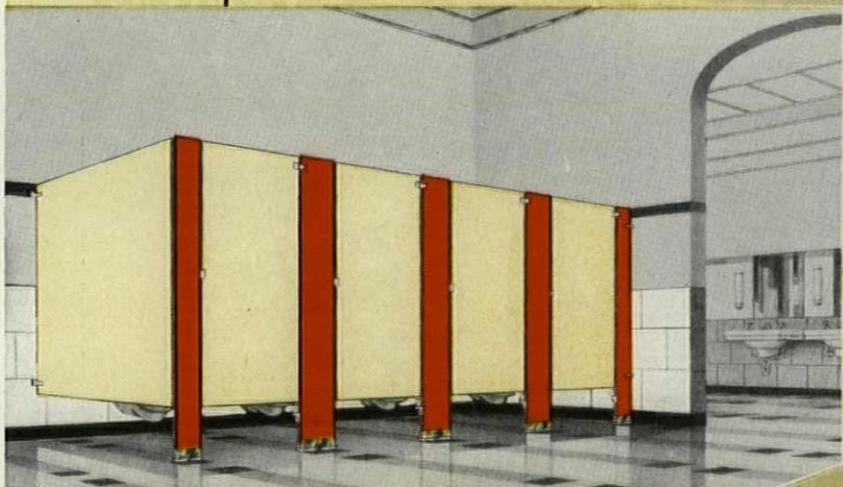
**IT'S SIMPLE TO OPERATE . . .** Individual control of each unit allows the occupant to choose the room temperature that suits him best without affecting adjoining spaces. Room ventilation can be adjusted with the fresh air damper located in each unit.

**EASY TO CLEAN AROUND.** The cabinet is designed with toe-step offset . . . allows maximum cleanliness of floor (and eliminates unsightly return air grille).

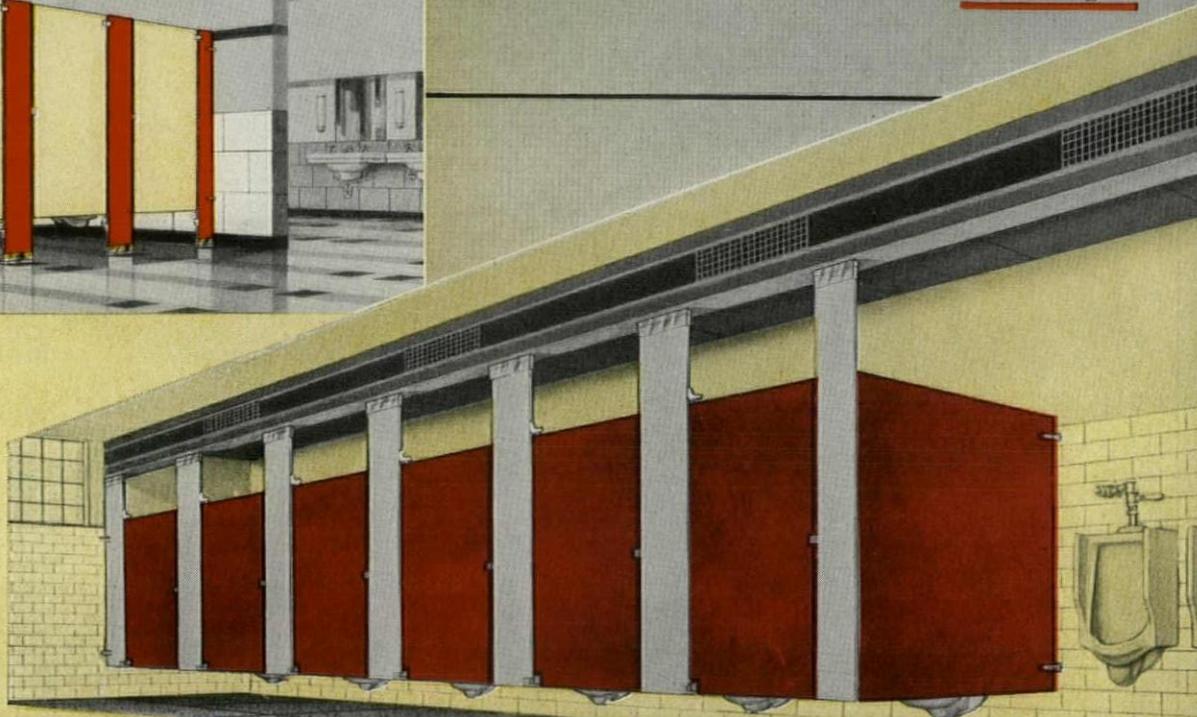
**FLEXIBLE INSTALLATION.** Coil is designed for either right or left hand connections and can be easily reversed in the field if necessary. Spacious end compartments with removable end panels provide ease of installation and allow more than a 90° horizontal wrench swing.

# Sanymetal\*

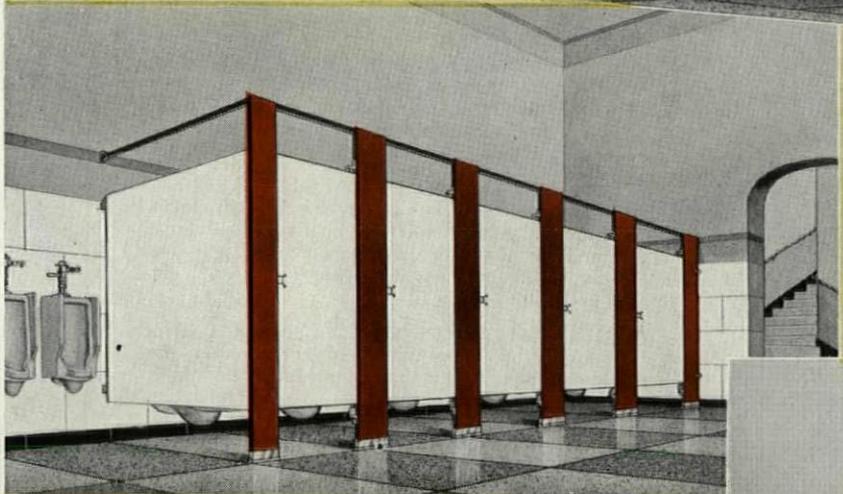
*... Toilet Compartments help keep toilet room environments new always*



Sanymetal **NORMANDIE** Type Toilet Compartments endow a toilet room environment with dignity and good taste

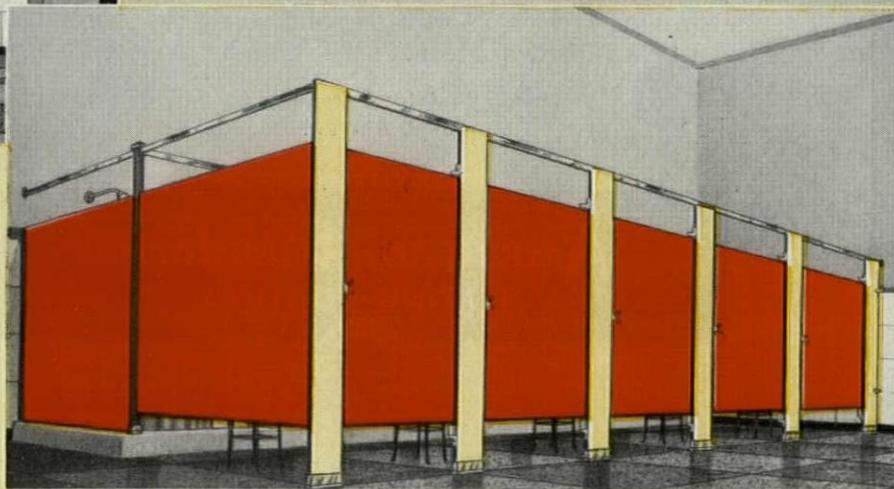


Sanymetal **CENTURY** Type Ceiling Hung Toilet Compartments offer the utmost in sanitation and provide modern, distinctive toilet room environments for schools, institutions, terminals and other public buildings.



Sanymetal **ACADEMY** Type Toilet Compartments are suitable for conservative but modern toilet room environments in all types of buildings.

Sanymetal **ACADEMY** Type Shower Stalls and Dressing Room Compartments provide the utmost in sanitation for gymnasiums, stadium dressing rooms, Y.M.C.A.'s, clubs, trailer camps, tourist motels, etc.



# *Sanymetal* **USES TWO FULL-PURPOSE METAL BASE MATERIALS FOR TOILET COMPARTMENTS AND SHOWER STALLS**

## This is Sanymetal "TENAC"

(Baked-On Paint Enamel over Galvanized Bonderized\* Steel)

A metal base material that is notable for the positive adhesion of the baked-on paint enamel to the metal and its resistance to corrosion. Its lustrous, protective finish assures long-lasting newness. Available in 21 attractive colors.

FINISH COLOR COATS

PRIMER COAT

BONDERIZED COATING

GALVANIZED COATING

STEEL BASE

## This is Sanymetal "PORCENA"

(Vitreous porcelain on steel)

Vitreous porcelain on steel is an ageless and fadeless material that stays new always. It is in every respect unlike painted enamel or lacquer finished steel because it is fused to steel at a temperature of 1350-1550° F. This impregnates the steel with vitreous porcelain enamel to the extent that it cannot be hammered out. This metal base material is impervious to moisture, odors, cleaning and uric acids, oils and grease. It is rust proof. Available in 21 glistening colors. It has no equal for strength and durability.

STEEL BASE

ETCHED SURFACE

BASE COAT OF PORCELAIN

COLORED COATS OF PORCELAIN

The toilet room environment that stays new is the toilet room in which the most suitable type of toilet compartment available has been installed. Toilet compartments usually dominate a toilet room, influence the toilet room environment and emphasize the utility of fixtures and appointments. The bare functional type of toilet room is inadequate according to today's standards.

Sanymetal offers several different types of toilet compartments for creating the most suitable toilet room environment for each type of building. Sanymetal also offers and recommends Two Full Purpose Metal Base Materials which combine colorful attractiveness with long years of service life and effect important, day after day, savings in cleaning and maintenance cost. These Two Full Purpose Metal Base Materials—Sanymetal "Tenac" (galvanized, Bonderized\* steel), a highly corrosion-resistant material; and Sanymetal

"Porcena" (vitreous porcelain on steel), the ageless and fadeless, rust proof material—represent years of engineering research and skillful adaptation by Sanymetal engineers of corrosion-resistant steels to the fabrication of new and different types of toilet compartments. Ask the Sanymetal representative in your vicinity for helpful suggestions for planning suitable toilet room environments.

### THE SANYMETAL PRODUCTS CO., INC.

1687 Urbana Road • Cleveland 12, Ohio

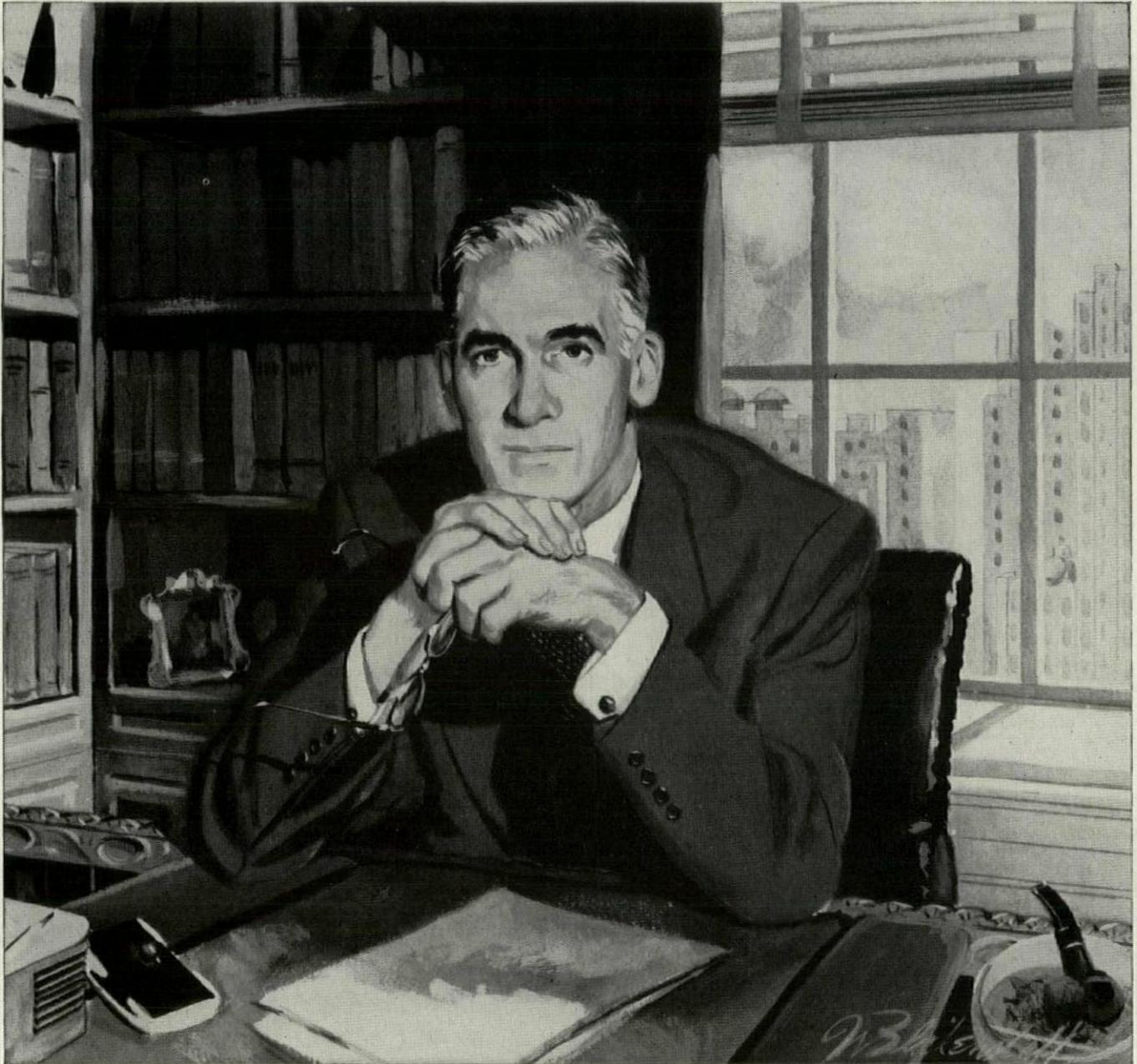
Installations of Sanymetal Toilet Compartments have been made in over 150,000 different buildings including practically every type of building. Ask the Sanymetal representative in your vicinity for information about planning suitable toilet room environments that will always stay new. Refer to Sanymetal Catalog <sup>22b</sup> in Sweet's Architectural File for 1952.



# *Sanymetal* \* TOILET COMPARTMENTS • SHOWER STALLS • DRESSING ROOMS

\*Trade Mark Reg. U. S. Pat. Off.

\*Treated with "Bonderite", a product of Parker Rust Proof Co.



## plenty of reason to set you dreaming

This is a time for planning, by business men of vision. The day must come when allocations and priorities will be words of the past . . . when materials will be much easier to get and orders perhaps much harder. Against that day, let some of your dreaming center on stainless steel,

the most uniquely useful metal in the book—hard, strong, beautiful, everlasting.

• Our Development Engineers and Research Staff are at your service. Let us work with you. *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.*

You can make it **BETTER** with  
**Allegheny Metal**



W&D 4063

# Airfoil

## AG-35 VOLUME CONTROLLER

**NEW... REDUCES  
ADJUSTMENT TIME  
and LABOR**

**90%**

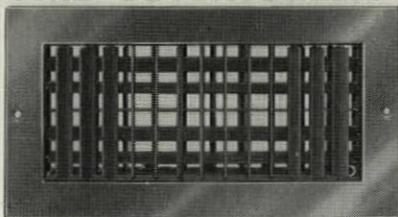
### BALANCE SYSTEM WITH- OUT REMOVING GRILLE

This means that plaster or paint is never damaged or smudged during balancing. Key-operator regulates air volume to hairline adjustment.



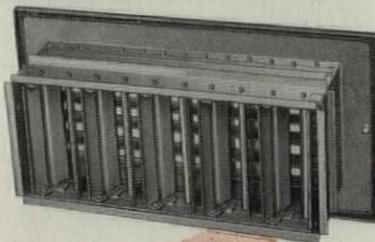
### ONE-UNIT GRILLE and VOLUME CONTROLLER

COMBINE AG-35 with any AIRFOIL grille for complete one-unit handling.



#### PERFECT 4-WAY AIR CONTROL

Light weight—easy to handle—easy to install.



**VOLUME CONTROL LOUVERS MOVE SIMULTANEOUSLY IN OPPOSITE DIRECTIONS—CLOSE TO ANY DEGREE DESIRED FROM FULL OPEN TO FULL CLOSED**

Installers balance an air-conditioning system in *one-tenth the ordinary time* with amazing, new AIRFOIL AG-35.

There are no grilles to remove. *Workman's hands never touch grille or wall to leave dirty, expensive smudges.* Blades adjust faster—easier. Close more tightly.

Louvers do not close flat as in common styles using damper but *close at 45°*. This maintains a metering control down to the final moment of closure with a minimum disturbance of the air pattern.

Remember—there is *one unit to install—one unit to handle—one unit to purchase* when the air guide volume adjuster is combined with an AIRFOIL grille.

AIRFOIL Grilles are the most efficient ever designed. They are priced to enable you to use a superior product at lower cost. Get complete information at once.

**FREE**



#### CHECK TYPE OF GRILLE ON WHICH INFORMATION IS DESIRED

- Air-conditioning outlets
- Return air grilles and registers
- Volume controllers
- Perforated metal and ornamental grilles
- Door ventilators
- Special made-to-order grilles

#### TITUS MANUFACTURING CORP., WATERLOO, IOWA

- RUSH information on AG-35
- Send complete catalog.
- Send literature on above checked items.

NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_



## Help your clients sell more merchandise with **WRIGHT RUBBER TILE!**

In these competitive times, the success of a store depends more on its attractiveness than on any other one factor, and nothing will add more to that attractiveness than Wright Rubber Tile!

Leading architects and designers in all sections of the

country have found that floors of Wright Rubber Tile mean more profits for their clients and more prestige for themselves. Get more information on this outstanding floor covering before you write another specification.

WRIGHT MANUFACTURING COMPANY  
5205 Post Oak Road Houston 5, Texas



### WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

- \* WRIGHTEX—Soft Rubber Tile
- \* WRIGHTFLOR—Hard Surface Rubber Tile
- \* WRIGHT-ON-TOP Compression Cove Base

3452

## LETTERS—Gropius challenge

*Fearful of the profession's future, Dr. Walter Gropius, ex-Chairman of Harvard's Department of Architecture, has urged architects to regain their position as "master builders" through closer contact with actual construction and closer teamwork with engineers, builders, industrialists and scientists—AIA's rule No. 7 notwithstanding (AF, May '52, p. 111).*

*Reader reaction to this challenge has been great and thoughtful. Last month FORUM devoted six full pages to the comments of architects, engineers, builders and educators on the Gropius proposals (AF, June '52, p. 112). This month FORUM devotes its entire Letters department to excerpts from additional reader comments. As in the earlier installment of this symposium, most of the following letters express agreement with Dr. Gropius' conclusions, if not his reasoning. Only a few favor the status quo.*

### Rule No. 7's original dissenter

Sirs:

At the 1949 AIA convention in Houston, as President and delegate from the Florida South Chapter, I spoke on the floor at some length opposing the addition of paragraph 7 to the mandatory rules. . . . I was the only one who voted against the addition. . . .

I was and am opposed to the arbitrary separation of planning and building. . . . Since opening my workshop I have always had one job going that I personally built. . . . We have overlong ignored our ancient professional birthright as "master of crafts." It is high time we devoted less time to the minor aspects of architecture and more time to basic principles which have made possible the great buildings of the past and which still have validity for the future. . . .

ALFRED B. PARKER, *Architect*  
Miami, Fla.

### Lighting fixtures, for example

Sirs:

Dr. Gropius has hit the nail squarely on the head. I not only agree with him, but am practicing much of what he is preaching.

For example, when I first started practicing architecture, there were no recessed-type light fixtures on the market. I tried to interest some lighting manufacturers in producing such a fixture, with no avail. I finally had them made by a local shop. I sold these fixtures myself and specified their uses in buildings. Ten years later, lighting manufacturers put them on the market. . . .

ALDEN B. DOW, *Architect*  
Midland, Mich.

### A is for analyst, too

Sirs:

Although I am most happy to note that both Gropius and Belluschi agree with so many specific points I have made in the past, both, apparently, want to perpetuate the myth of the architect's superiority. . . .

(Continued on page 76)

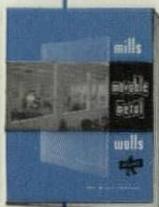
# "Our Mills walls save time and money"

General Office, United Gas, Shreveport, Louisiana



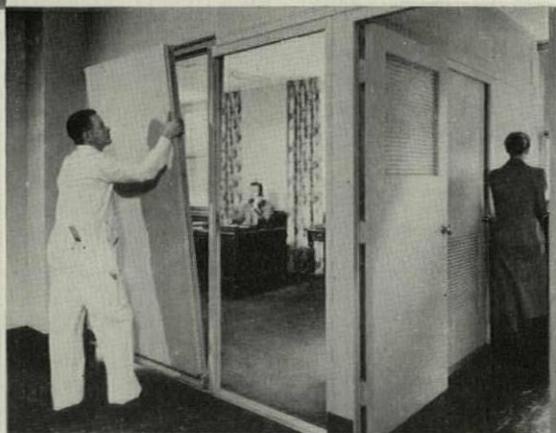
"We saved money every time we made a change in layout of our office space during the last 12 years", says D. B. Cook, building Maintenance Supervisor for United Gas, Shreveport, Louisiana, "because our Mills Movable Walls cost so little to rearrange to meet our changing requirements, as compared to the cost of conventional masonry type walls.

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United Gas saved a great deal of *time* as well as *money* in using more than a mile of Mills Walls in its main office building. Mills Walls permit earlier occupancy of new offices because they are delivered completely pre-fabricated, can be installed in one-third to one-tenth the time required for tile and plaster walls.



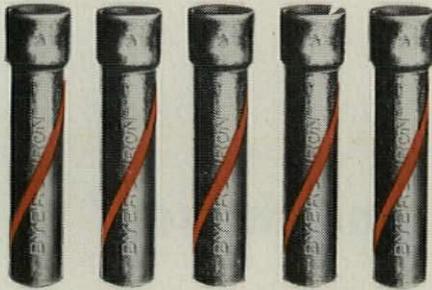
No lost time, no materials wasted, no dust or debris when Mills Walls are moved.

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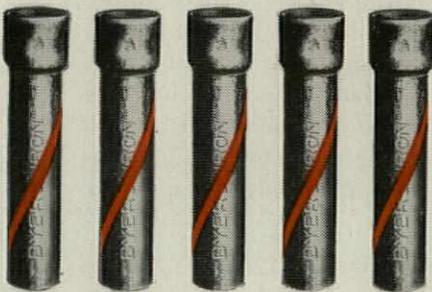


THE MILLS COMPANY, 979 WAYSIDE ROAD, CLEVELAND 10, OHIO

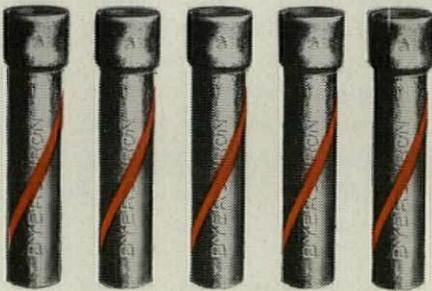
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## LETTERS—Gropius challenge

What endows the architect, apparently automatically, with such advantages over his fellow men? The fact of choosing the now fashionable profession? The traditional training, the validity of which is being questioned everywhere by honest educators? The ability to sketch charmingly? The claim to creative leadership can hardly be established, ipso facto, on such a slippery base. Architectonic genius is as likely to reside in an engineer or manager or scientist.

The only logical priority for the architect in the complex team required for industrial production may be established alphabetically—but I suspect this won't last long and will be superseded by the analyst who will have to join the team sooner or later. . . .

SERGE CHERMAYEFF, *Architect*  
Institute of Design  
Chicago, Ill.

### Inventor vs. the mob

Sirs:

The architect was never "master of the building industry." Who owns the productive means is the master. The *maitre de l'oeuvre*, Medieval or Renaissance, had the power position of a workman. The talented amateurs of a later time had power positions not because they were architects but because they were gentlemen.

The industrial designer's . . . sole contribution is to make the product stylish. Let's stop this rot about the value of industrial designers. My God, who puts the chromium on cars!

Gropius with his old-fashioned functionalist philosophy cannot define the difference between architecture and building. Architecture is more than built space large enough to move about it. A "system for building schools" may be a useful tool to the architect but it is not architecture, for architecture is an art, not an applied science.

Teamwork: A team without an hypothesis is a mob. A mob cannot get an idea. The inventor is solitary. The team can study, test, improve. The architect is an artist (which is to say an inventor) in a specialized field. His real function is to establish a new plan which when built will be beautiful to look at, to move within. It must also satisfy animal needs for shelter and the like. But the final judgment of artistic worth is not in the latter, though our present materialism will starve the man that says so. The architect has this problem: during his lifetime his work will be judged on its utility value (applied art), afterward it will be judged as sculpture (fine art).

What happens to an idea when a team takes it? At the risk of offending friends: Lever House is pretty good Mies van der Rohe, while the UN is pretty bad Le Corbusier. In our society the most difficult job for the architect, once the idea has jelled, is how to keep the team from spoiling it. And who is the team? The client, the budget, the building codes, the

(Continued on page 78)



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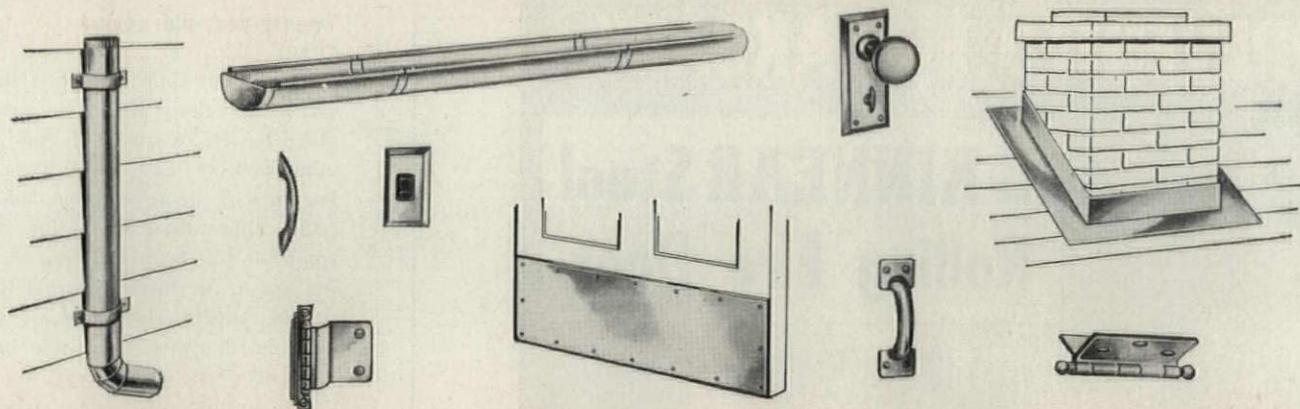
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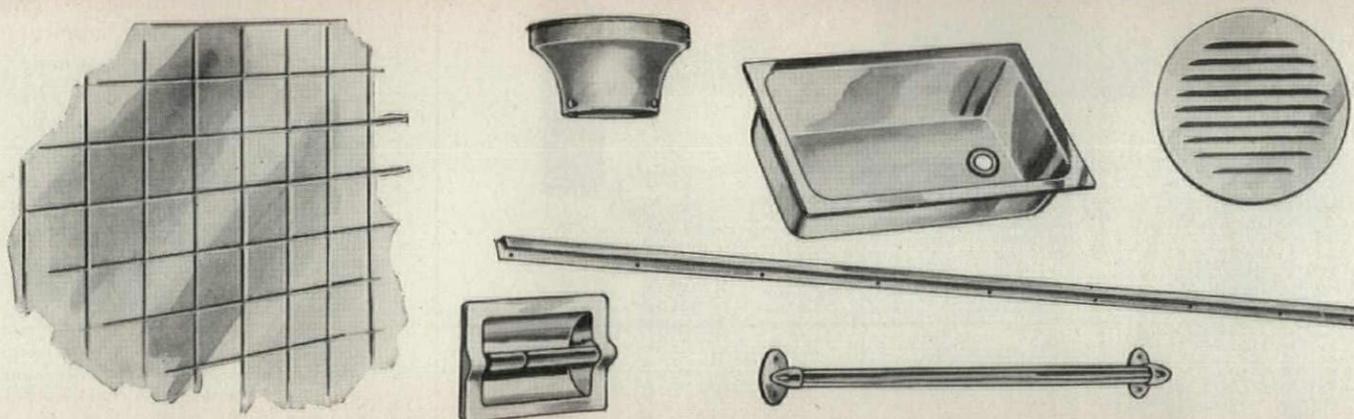
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\*(As reported in the Jan. 1947 Quarterly of the National Fire Protection Association.)

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**LETTERS—Gropius challenge**

structural engineer, the mechanical engineer, the draftsmen, the contractors, the workmen.

PERCIVAL GOODMAN, *Architect*  
New York, N. Y.

**Twenty-year-old advice**

Sirs:

It is about time architects in the commercial field realized that from now on it will be much harder to stay with the parade, for the other members of the building team are pushing on and, in my opinion, have reached the point where they are going it alone. This condition has been creeping on the profession for years; architects should give it serious thought and realize how weak they are in keeping up with this new era or system, whichever you care to call it.

The architect today must be more than a designer, he must have a knowledge of architecture, construction, business values, real estate laws, etc., for he naturally becomes a part of a group cooperating and working as a unit. This building group, which appears in every construction setup, consists of architects, engineers, builders, owners, finance men, real estate men, suppliers, etc. It will be guided by the strongest mind in the group, whether architect, owner, builder or manufacturer. The architect should, if possible, build himself into a position where his will be the directing mind; if not the leader, he should at least be a respected member of the team.

L. ANDREW REINHARD

*Reinhard & Hofmeister, Architects*  
New York City

(For his comment on the Gropius Challenge, Mr. Reinhard dug into his files, came up with the above statement dated Nov. 17, 1933!—Ed.)

**A rose, by any other name, . . .**

Sirs:

It is difficult to envision the disappearance of the general contractor from the building scene. It is equally difficult to visualize the architect as the "best man on the team."

The system which has made America great is a good one, and to be a first-rate architect is good enough. In fact, the accomplishment of this goal is exhaustive if you contemplate it.

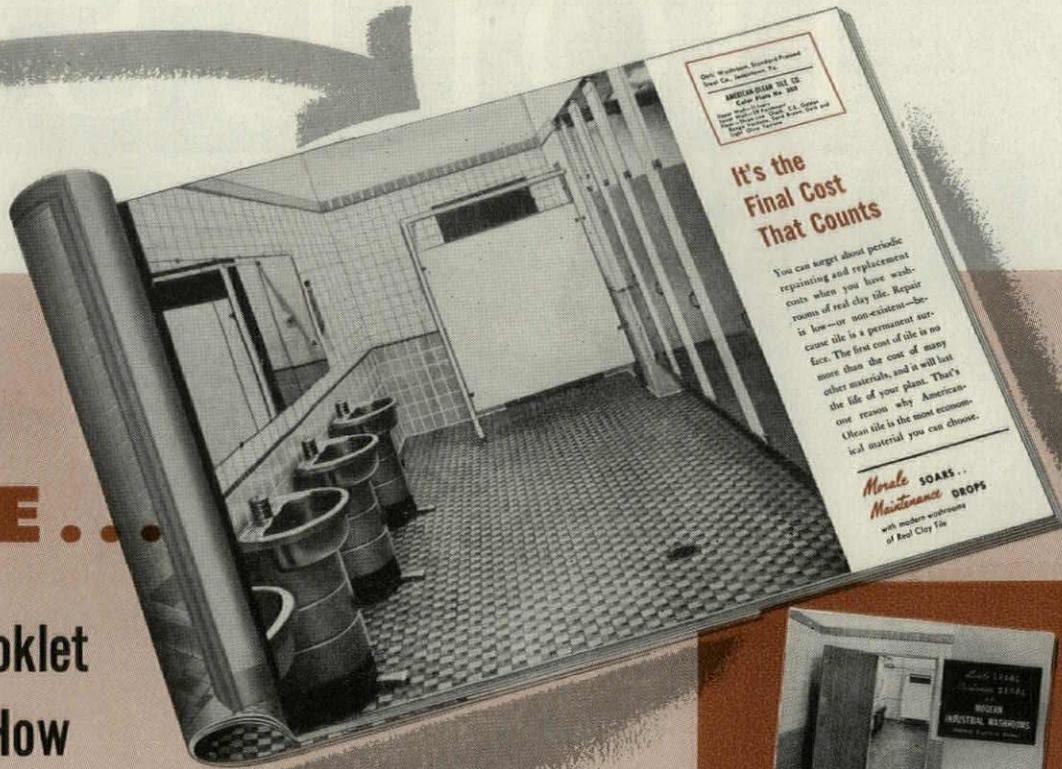
When all men have the same opportunity for education is it not strange that one is not particularly beholden to another. Prestige should be born out of accomplishment rather than position. If it happens we select as elite the industrialist, the businessman, or scientist, what does it matter, particularly if they are our clients?

Why should the architect be concerned with titles? He is planner, industrial designer and engineer, if you please. Would he be better if you also named him builder, loan expert, mortgage broker, financier of construction, or hirer of trades and crafts? I doubt it. . . .

I differ with the idea that the architect has slipped from his position of esteem. . . . While it is possibly true 80% of our buildings are not architect designed, it is true that practically all principal structures are designed by

(Continued on page 82)

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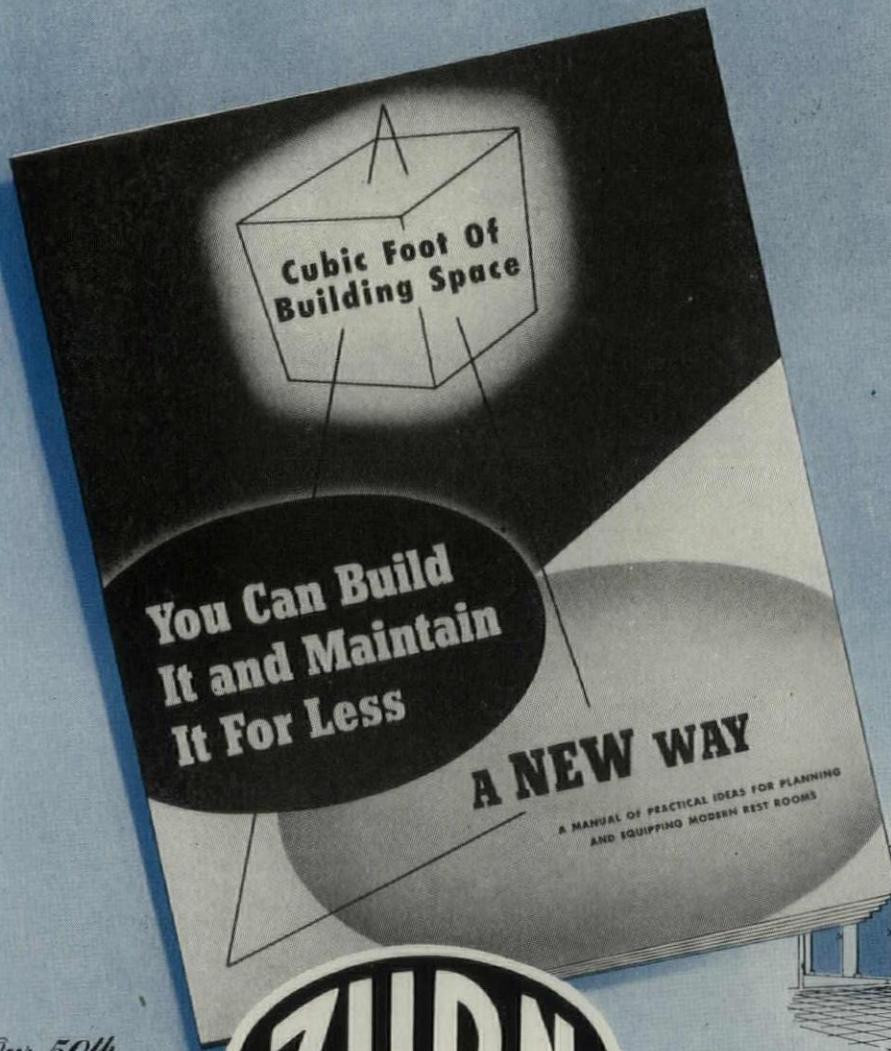
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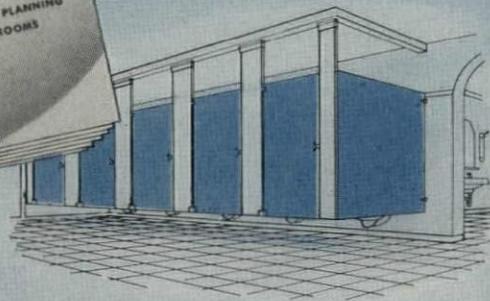
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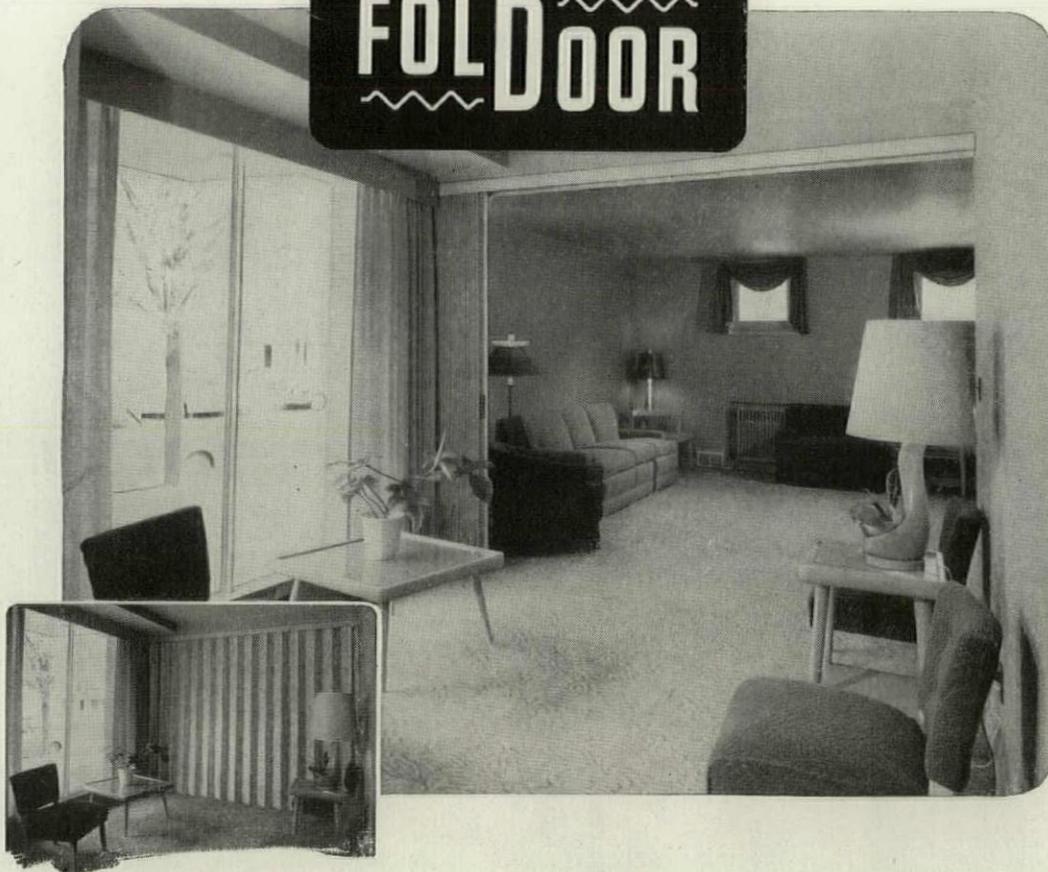
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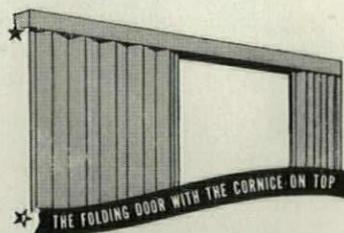
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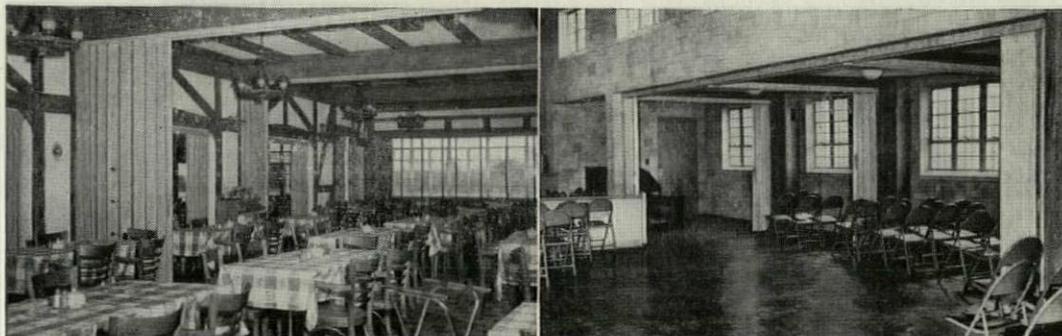
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## LETTERS—Gropius challenge

architects. Generally, these architects are respected in their communities and outside . . .

Understanding of the job to be done and co-operation between the different segments of the building fraternity will stand everyone in better stead than jockeying for position. After all, there is a respected place for the individuals who can qualify.

Who can qualify to be the architect better than the architect? Definitely it is in the best interest of the construction industry and governmental bureaus to keep it this way.

PAUL THIRY, *Architect*  
 Seattle, Wash.

### Missing links

Sirs:

Dr. Gropius has omitted the link that will bind the architect again to our culture—the financier, the investor. Only with him also included will all the present ailments have a chance to cure. With him an architect and a builder could function as a team, each contributing what the other cannot, success dependent upon the efforts of all three. These three as a team would wed in practice what Dr. Gropius so often preaches to be wed in architecture—a balance of beauty, utility and economy.

CHARLES S. SINK, *Architect*  
 Denver, Colo.

### No sympathy from the engineer

Sirs:

Dr. Gropius' wise observations on the current practice of the building industry, while made from the viewpoint of the architect, are also of special interest to the engineer and builder. . . .

He laments the decline of the architect's prestige and his dominant role in the building industry. Even if this were true, it could arouse no sympathy from the engineer who himself is often relegated to a secondary role by the architect in the design of a building. In most cases the architect still maintains the most favorable position, acting as the agent of the client. He has not only complete control of the basic design and development, but sometimes he also dictates the type and method of construction. . . .

Good engineering elaboration is an essential requirement for the most advantageous development of architectural concept. The needed elaboration cannot be obtained by structural draftsmen or from ever-ready handbooks. Only expert aid and competent engineering service could devise an efficient framework to architectural layout; and the aid must be secured as that of fellow associates and the services obtained by proffer. . . .

What the building industry needs for its improvement is new concepts and ingenious execution. We need new ideas and daring imagination in our architectural and engineering expressions. A good share of the new thinking can and should come from the young engineer and architect. Lack of opportunity

*(Continued on page 86)*

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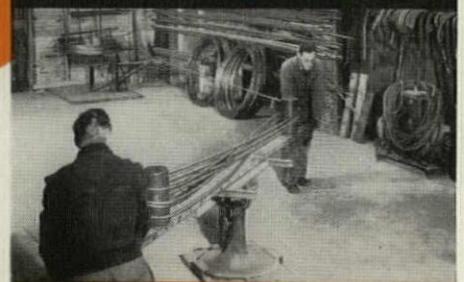
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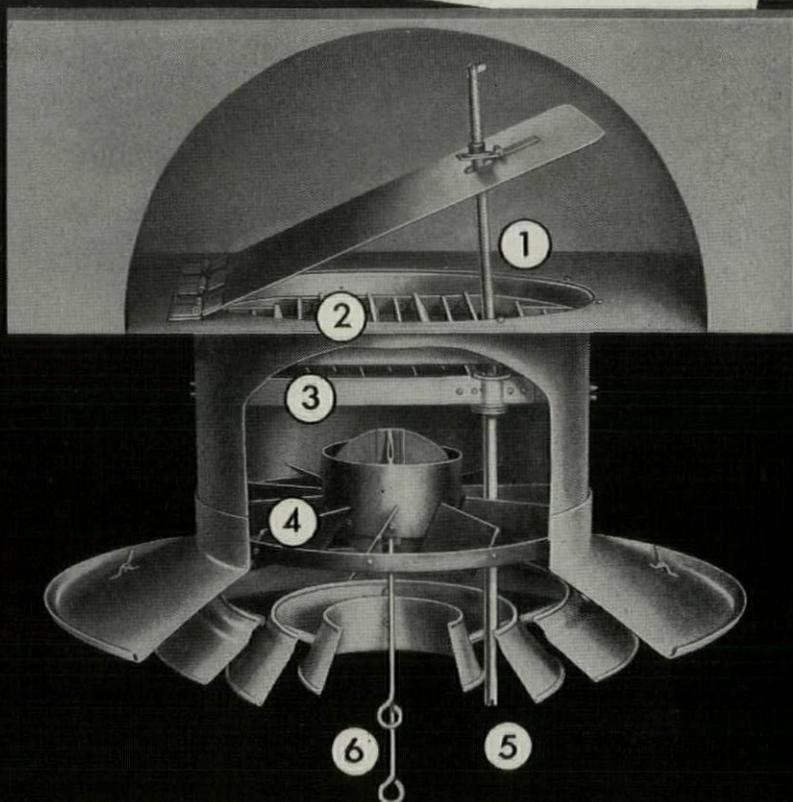
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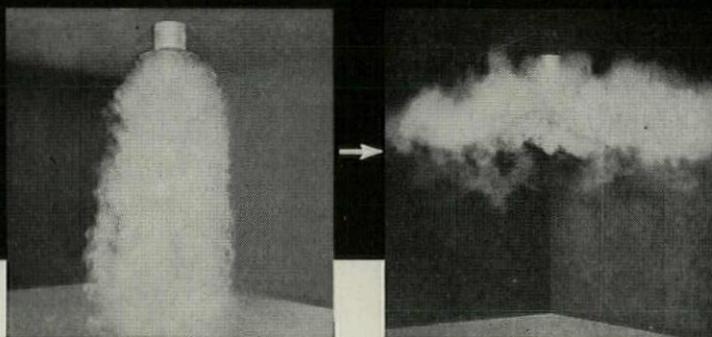
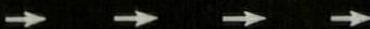
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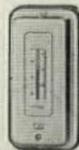
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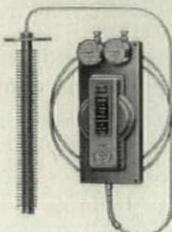
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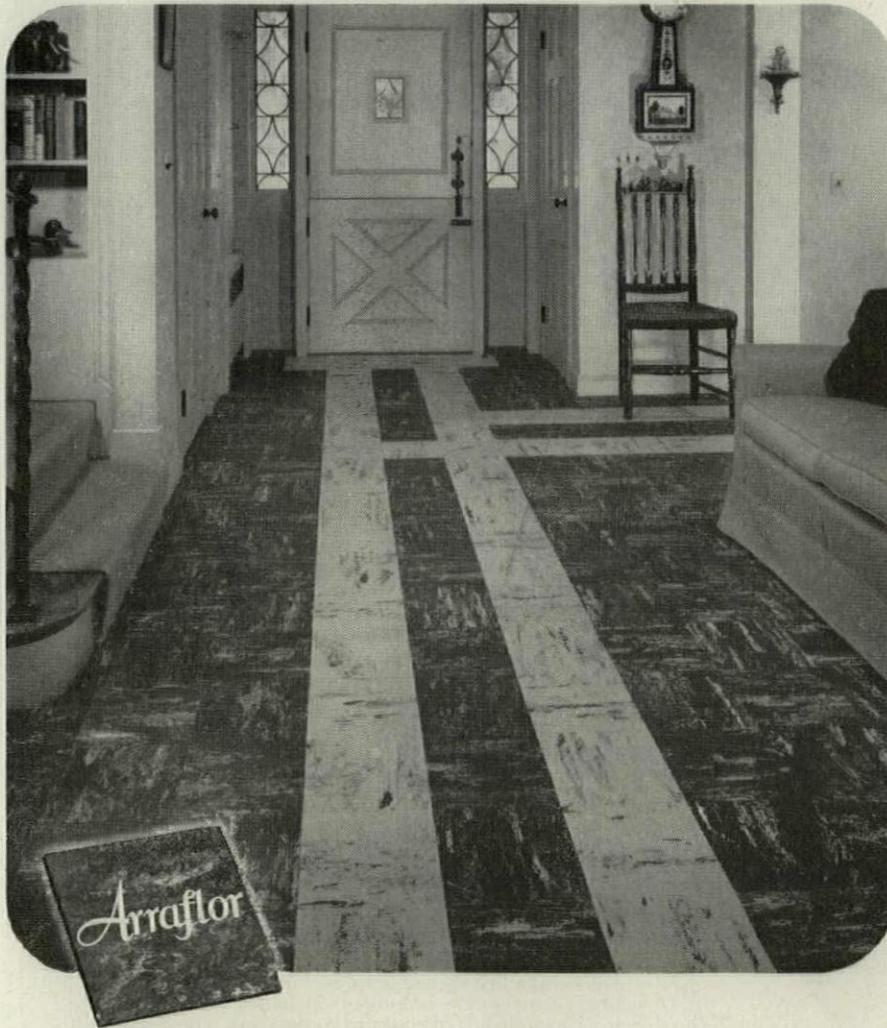
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## LETTERS—Gropius challenge

and initiative for the young professional, as so rightly deplored by Dr. Gropius, is unfortunately a sad reality in both professions today. Anything that can be done towards the betterment of their lot will constitute a real service to the building industry. They should be freed from petty administrative tyranny—so prevalent in our present-day large organizational setup. We should provide them inspiring leadership and competent guidance. We should treat them as young associates—not as apprentices. We must encourage their free and independent thinking and not penalize them for their tendencies of deviation from the conventional. Above all, we must create opportunities for the exercise of ingenuity and initiative, and devise effective means for appraisal and recognition of merit. Only then we may hope to obtain the maximum benefit, and the much-needed aid, from the services of the young professional. . . .

The great majority of builders have made little effort to keep pace with the advances of modern technology. . . . The prevalent tendencies of extreme conservatism in the building field have discouraged the creation of structures in harmony with the spirit of the times. . . . Should the exponents of archaic thought still persist in their ancient ways, then it may be necessary for the architect, as well as the engineer, to follow the message of Dr. Gropius by going into the building field to take a hand in the execution of their design concepts.

These opinions are my own and do not necessarily reflect the views of the Bureau of Yards and Docks or the Navy Dept.

ARSHAM AMIRIKIAN, *Engineer*  
Department of the Navy  
Bureau of Yards & Docks  
Washington, D. C.

### A temporary team for each job

Sirs:

I agree that rule No. 7 in AIA's code of ethics is of doubtful value. In fact, I regard as suspect any rule, professional or legal, which limits the services an architect may perform for a client. Ethics are difficult to legislate and no rules will make an honorable man of a scoundrel. The only other major statement by Dr. Gropius with which I can fully agree is that we do not enjoy the public confidence that we feel should rightfully be accorded the profession.

I vigorously disagree with his conclusion that it will strengthen our position with the public to take on the coloration of a builder. . . .

No architect can hope to master all the specialized knowledge and techniques required for a large building operation. As a member of a team, however, he can co-ordinate and direct the work of others to produce buildings satisfying to human needs. Such a team need not be assembled in permanent

(Continued on page 90)

# GIANT MORGANZA FLOOD CONTROL JOB

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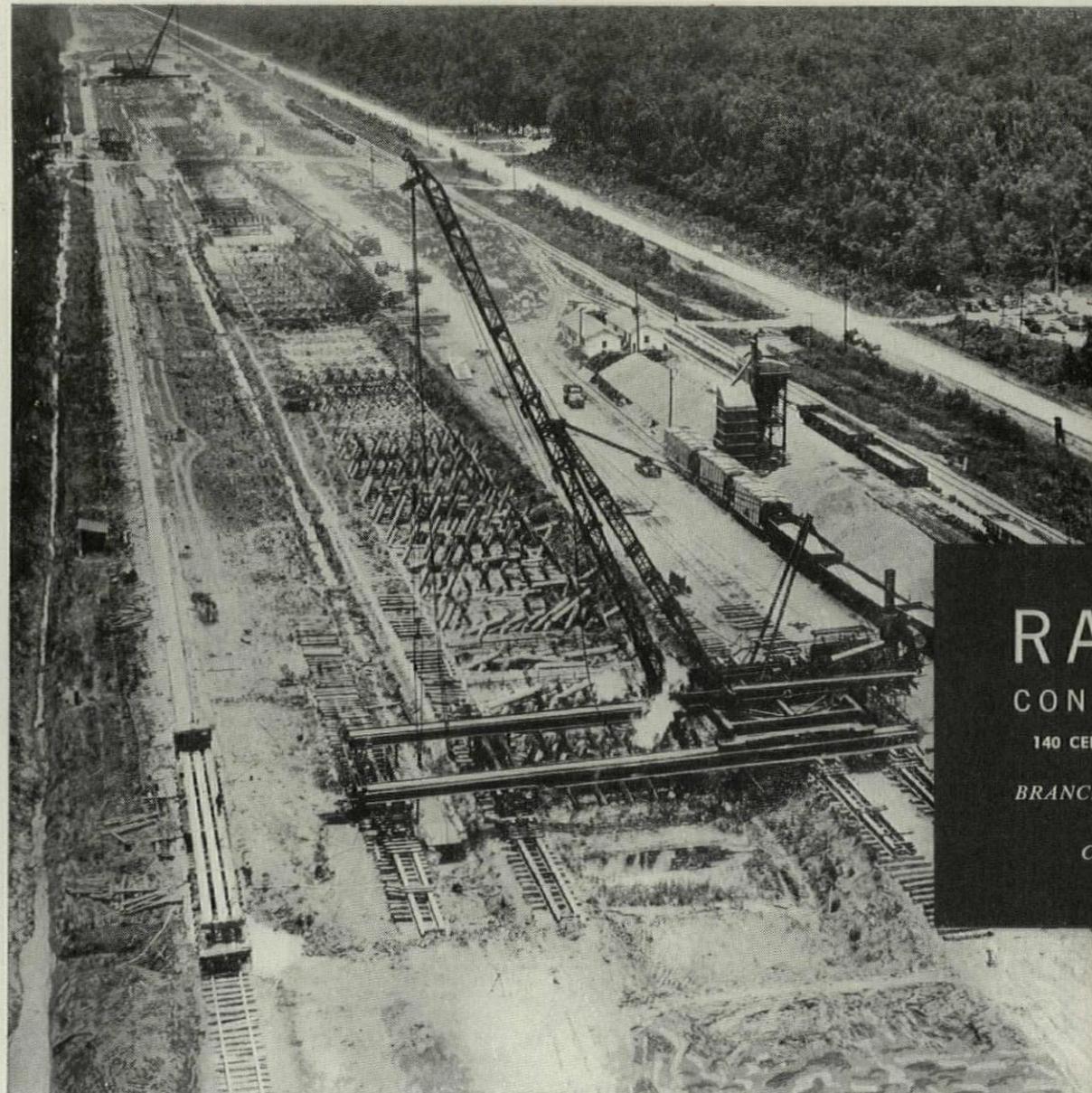
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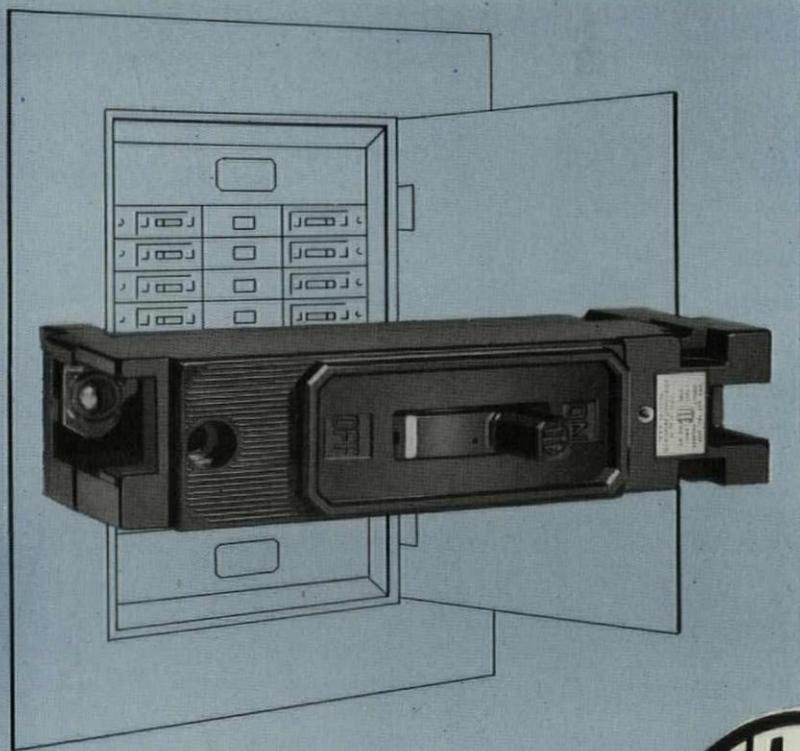
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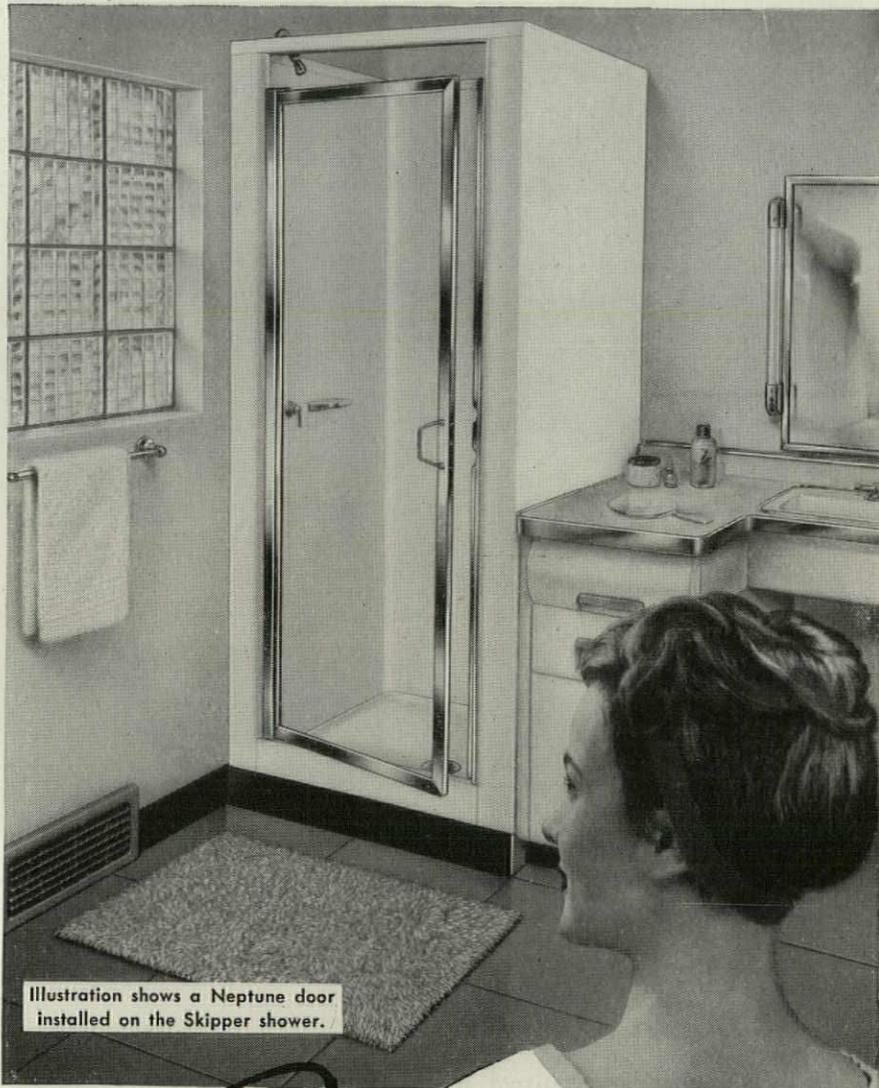


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## LETTERS—Gropius challenge

form but the various skills required can be brought together as required to solve each of a variety of building problems as they arise. . . .

We must constantly strive to raise our standards of performance. We may then stand erect and speak with pride of architecture as a profession.

PHILIP WILL, JR.

*Perkins & Will, Architects & Engineers  
Chicago, Ill.*

### One industry-wide design fraternity

Sirs:

Today's contracting business is highly specialized and should not be added to that of the architect.

The need for "teamwork," however, is without question. . . .

I suggest that this principle be extended on a formally organized, profession-wide basis to the extent that all fields represented in the design of a building project be welded into a homogeneous unit. Thus, you would bring together design engineers (structural, electrical, mechanical, sanitary) with specification writers and architects in an organization with a single aim and purpose—better buildings.

Architects might take the leadership in implementing such an affiliation within the framework of AIA, thereby creating a movement which would re-emphasize the true value of the architect on the building team.

Obviously, this could only be a first step in correcting the conditions outlined by Dr. Gropius; it should, however, set the stage for the teamwork so badly needed.

MARSHALL SHAFFER, *San. Engr. Dir. (R)  
Chief, Technical Services Branch  
Division of Hospital Facilities  
Public Health Service  
Washington, D. C.*

### Architects' fees and their services

Sirs:

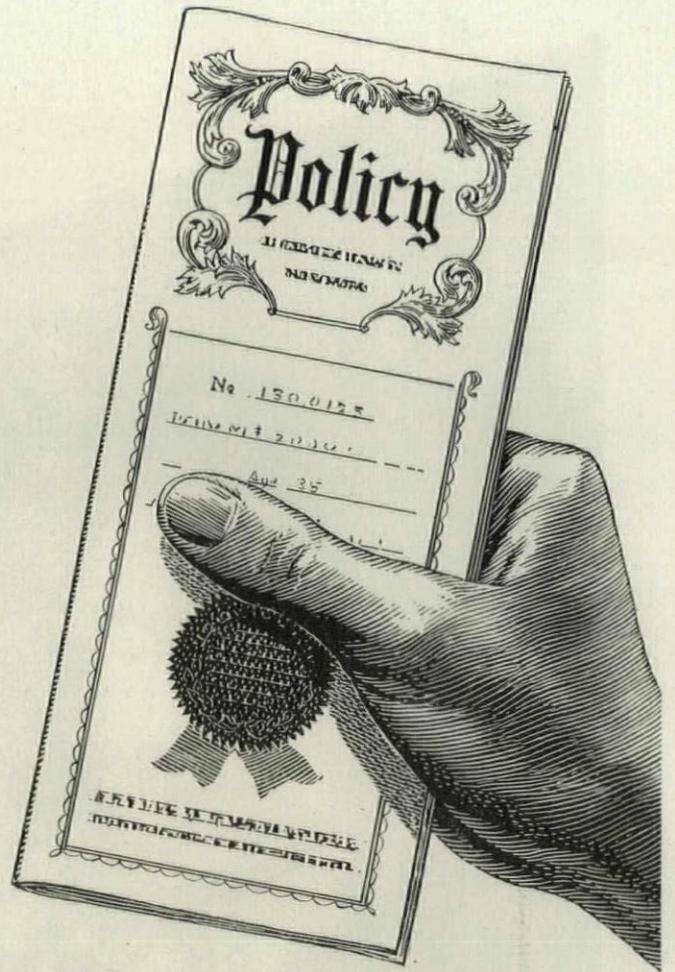
Most of Dr. Gropius' conclusions about the status of the profession are sound. As to his rationalizations and recommendations, there may be some real question.

He condemns AIA rule No. 7 and rightly. I believe, however, that he misunderstands the intention in saying that it is "to block unfair competition." The real purpose is to help insure that the nature of the architect's interest in building construction shall not be such as to interfere with his unbiased service to the client in the performance of his artistic, technical and professional duties. . . .

A professional man and an artist, whether he be doctor, lawyer, architect, engineer, clergyman or teacher should have a wholly different objective in his work and his livelihood than a businessman whose profits may well be what the consumer will pay. The professional, on the other hand, has been trained specially and in many cases partly at the

(Continued on page 94)

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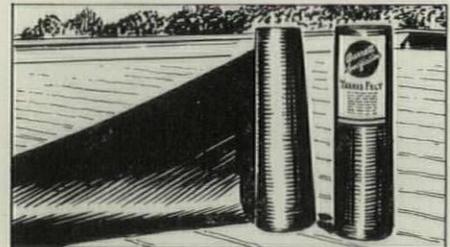
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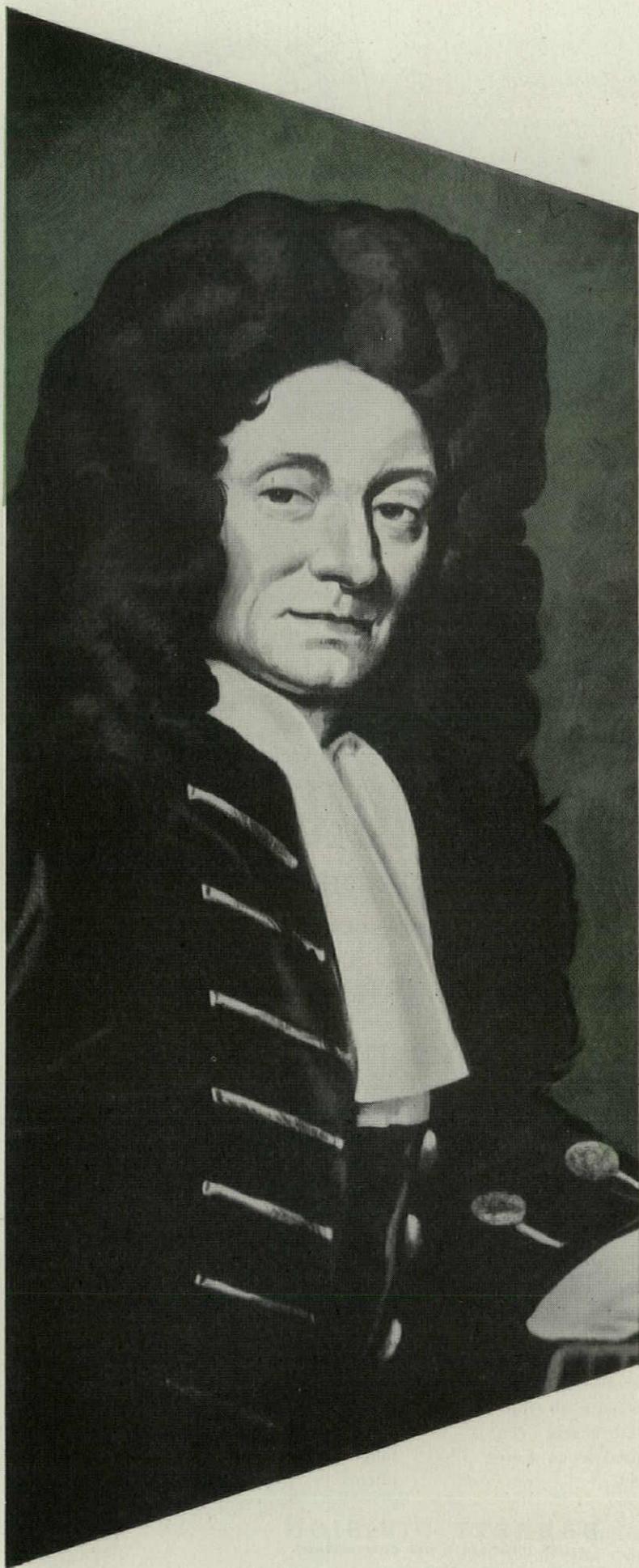
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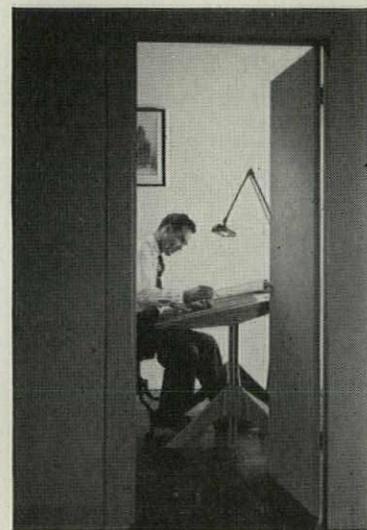
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250 years ago Sir Christopher Wren wrote:

*"We architects are scrupulous  
in small things . . .*

AND ARCHITECTS TODAY  
HEARTILY AGREE WITH  
THE GREAT ENGLISHMAN..

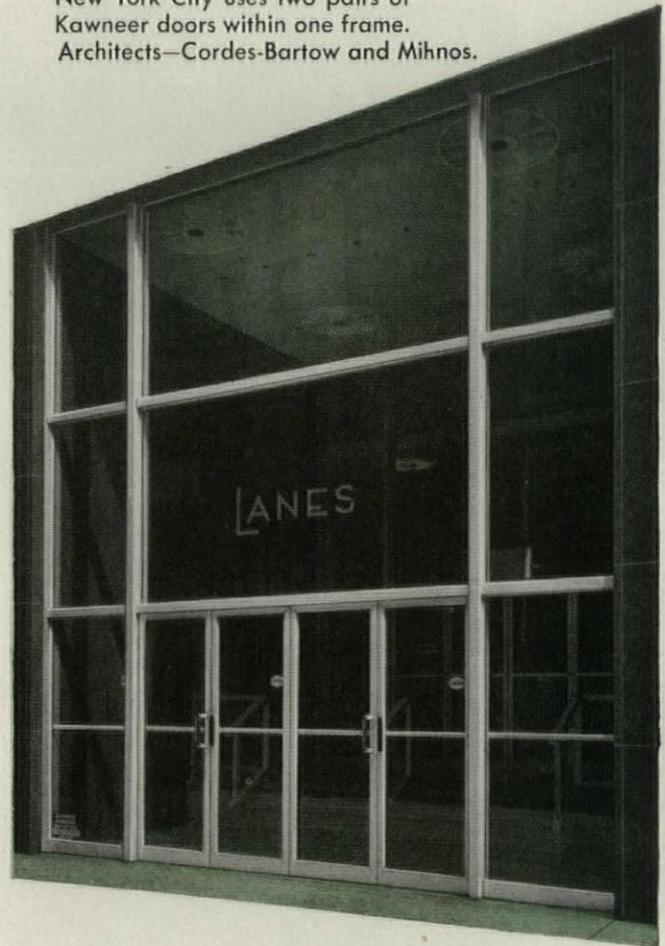


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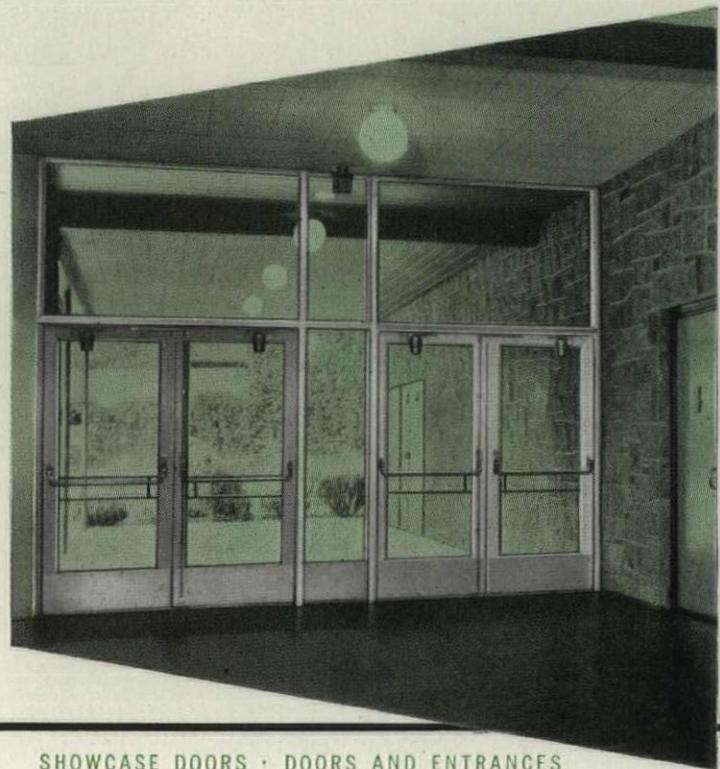
Esquire Coronet publications building in Boulder, Colorado. A striking treatment of an entrance unit featuring Kawneer doors and mullion construction. Architect—Ralph Stoetzel.

Lanes Department Store in New York City uses two pairs of Kawneer doors within one frame. Architects—Cordes-Bartow and Mihnos.



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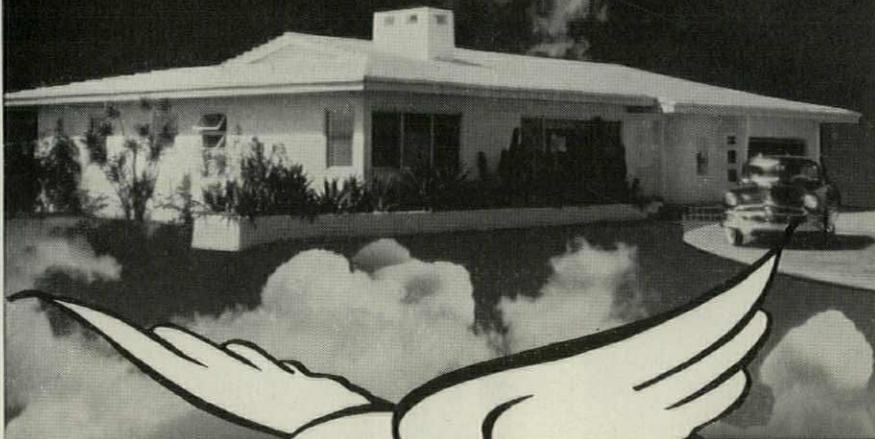
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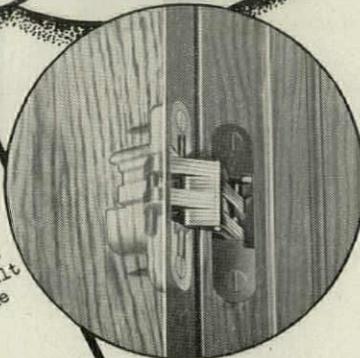
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## LETTERS—Gropius challenge

expense of the people with the idea that his function is to serve. . . .

Architect's fees should relate to the value of the services rendered, as established by his own needs and not as established by the market value of the product. . . .

The means should and can be developed whereby it is possible for an architect, as a member of a team, or otherwise, to engage in building operations more directly than now is the case, but I do not think that Dr. Gropius points any desirable way to this end.

ROBERT S. HUTCHINS  
*Moore & Hutchins, Architects*  
New York, N. Y.

### Engineer vs. architect

Sirs:

In this age of creative activity, in a changing civilization, the role of the engineer and scientist can be observed in everything about us, while that of the architect is less apparent.

While architects are arguing whether to imitate the "Colonial" or "Contemporary" styles, engineers are exploring the possibilities of new materials and methods and are basing their designs on orderly scientific conceptions.

If architects will forget about "styles" and remember that what we see today is a result of circumstances which will never occur again, they will better understand the needs of the present day and be able to seize the opportunity. And if they will further change their intellectual perspective and realize that they are not the center of the universe but merely a small planet in the solar system, it is possible that they can resume their place in the new society—engineers and scientists have advanced knowledge so far beyond that of the average architect that he can no longer be held as indisputable authority.

Some architects in their dilemma have turned to the protection offered by state registration laws. Their pitiful attempts at preventing engineers from designing buildings for human habitation have left a very bad taste in its wake and has had a detrimental effect upon ethical standards. Their insistence that the crusade is strictly in the interest of protection of health and morals is so shallow that the public has no difficulty in judging its merits.

Those distinguished architects, with engineering minds, who stimulate our intellect with their skillful building technique or brilliant use of materials, can render a great service to the profession by imparting their views to the younger generation, so that they may enter practice with an open mind and thus give their creations something of that quality.

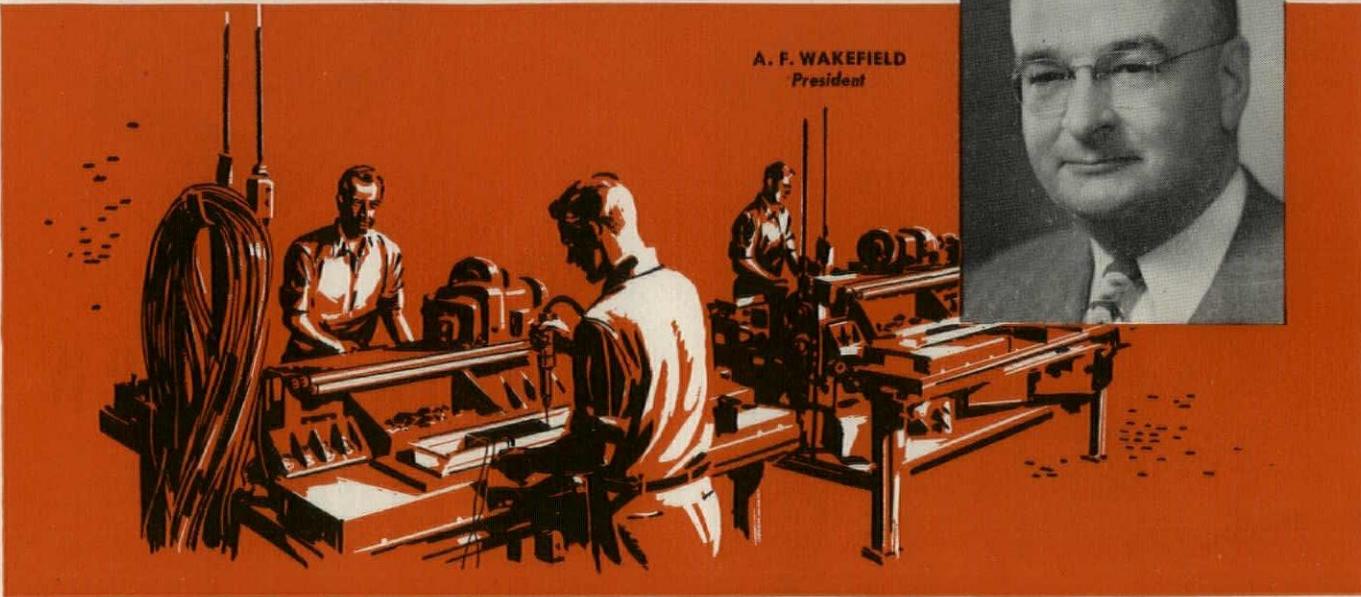
GOSTA R. TRUEDSSON, *Engineer*  
Holden, Mass.

### The components of good architecture

Sirs:

I agree with Dr. Gropius' opposition to the  
(Continued on page 100)

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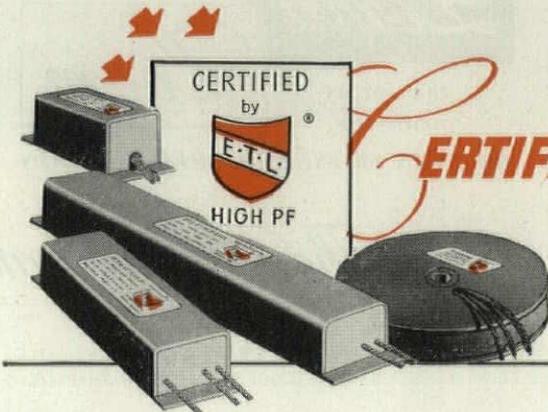
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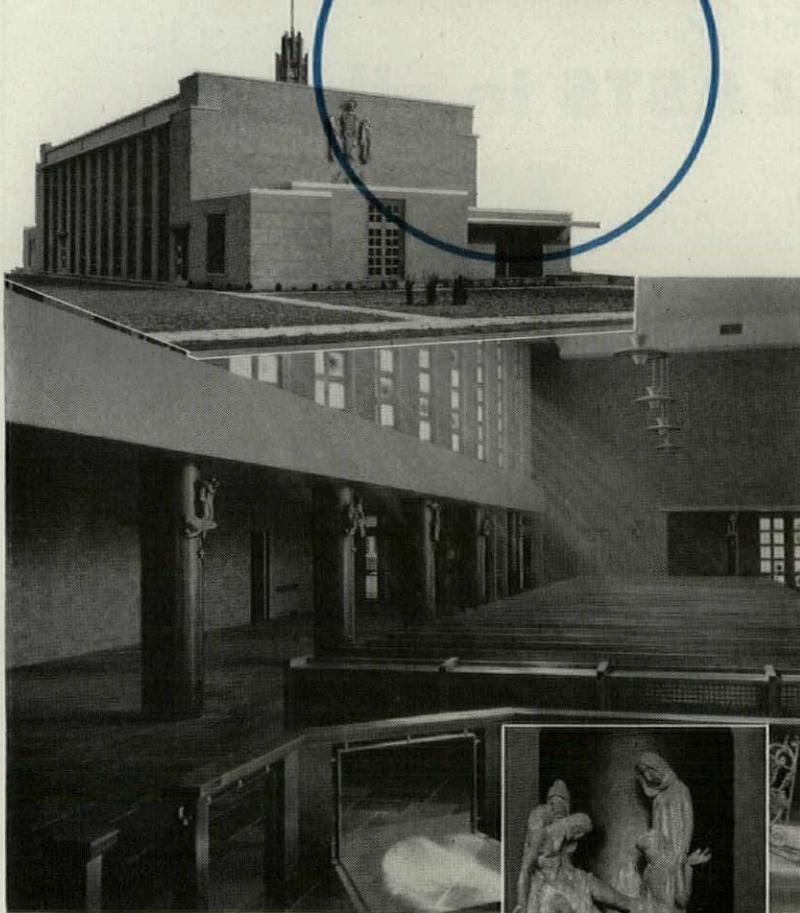


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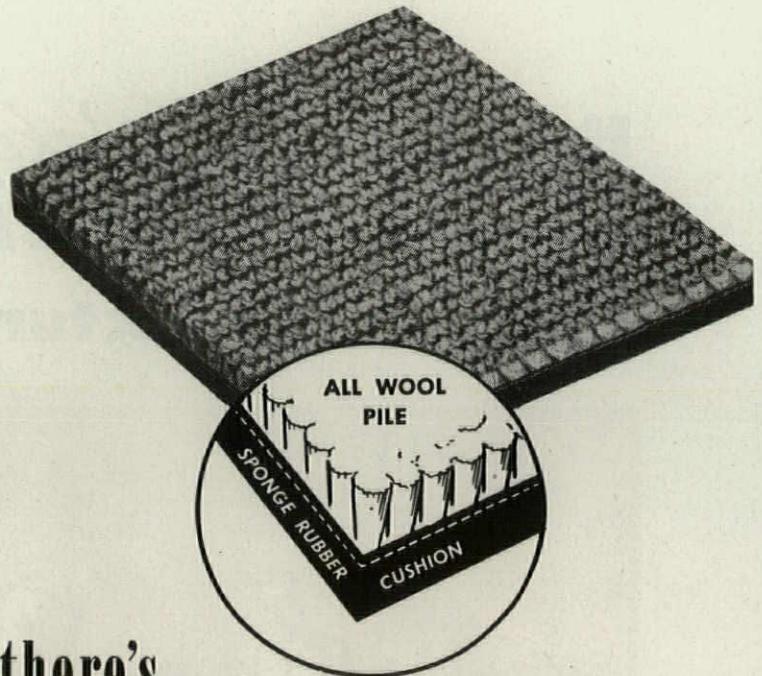


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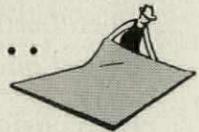
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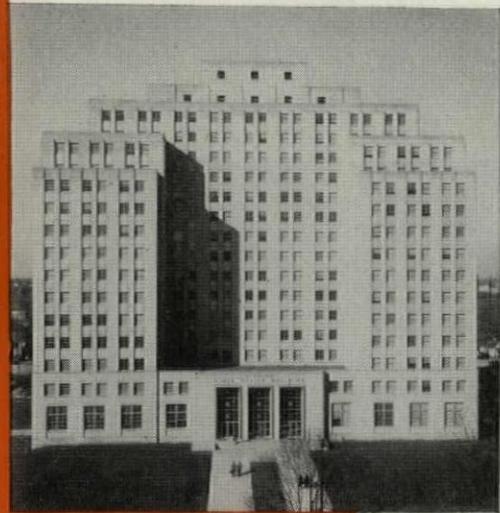
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## How Honeywell Customized Temperature Control Helps Boost Business in St. Louis Shopping Center

*Year-round comfort—winter and summer—keeps customers coming back*

The Hampton Village Shopping Center, located in St. Louis, Missouri, is one of the most progressive community retail operations in the country.

Plenty of parking space, the convenience of night shopping, smart, efficient store interiors—these are some of the reasons why.

And another reason for Hampton Village's success has to do with the superior kind of *comfort* the center's customers and employees enjoy.

For at Hampton Village, air conditioning and heating plants give *maximum* comfort—because they're controlled by Honeywell Customized Temperature Control to meet differences in exposure, occupancy and use.

As store managers at the center have learned, it's important to furnish customers with ideal "climate." Because *comfortable* customers keep coming back—and come back more often.



**Temperature control** problems resulting from varying exposures are clearly illustrated by the photograph above of Hampton Village's Medical Center Shopping area, designed by St. Louis architect Preston J. Bradshaw. The S. S. Kresge store, facing west, absorbs a great deal of sun on hot summer afternoons. The J. C. Penney store, with a large glass area to the north, is vulnerable to cold wintry winds. But with Honeywell Customized Temperature Control on guard—neither store is ever uncomfortable. And when stores like Penney's (interior, right) are crowded, Honeywell controls easily compensate for increased customer traffic.





**Separate thermostat** systems are located in each ground floor shop in the Medical Center building. Thus, the management of shops like Garland's, above, can maintain the exact temperatures that will please customers and employees—and meet varying

occupancy and use factors. And Honeywell Customized Temperature Control—with a separate thermostat controlling each of several fan units—enables doctors located on the second floor to provide the temperatures their patients find most comfortable.



**Exposure and occupancy** problems are of first importance in the world-famous Bettendorf Market, above. Floor space is vast, to take care of peak customer load. The building, located in the center of the big parking area, is exposed on all sides to sun and

wind. Yet, with Honeywell Customized Temperature Control on the job—with thermostats located strategically throughout the store—Bettendorf customers and employees enjoy an ideal "climate" at all times—no matter how changeable the weather outside.

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*"It's proved the importance of comfort," says Robert W. Shepard, vice-president of Webb and Knapp, Inc., owners of Hampton Village Shopping Center.*



*"With the kind of comfort Honeywell Customized Temperature Control helps make possible at Hampton Village, the 'regular' customer list grows constantly. And our maintenance department has had very little trouble."*

.....

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Gentlemen:

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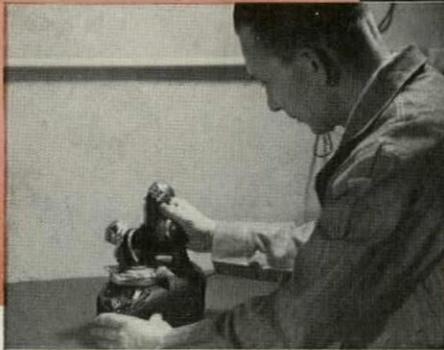
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## LETTERS—Gropius challenge

AIA's restriction against a "young architect" and a "young builder" joining hands and building up a complete service. Certainly the need is rather for more restrictions against builders practicing architecture.

However, with Dr. Gropius' pessimistic view of the architect's role in relation to other social forces I must take exception.

There need be no submerging of the architect to the engineer unless the architect confines himself to the "machine for living" philosophy.

There need be no separation of design and execution of the building if the architect consults with builders and product representatives during the design stage in addition to the building stage.

There need be no lack of influence on the part of the architect relative to introducing new products if he sees the various representatives of products people who continually seek his advice on the improvement on existing products as well as the introduction of new products.

By retaining his independent role the architect can continue to be the leader of those who believe that architecture should have, among its components, good generous proportions, use of varied materials, painting, sculpture and landscape architecture for greater human enjoyment. It is this role that has gained the architect respect in other countries and through the ages—respect but not larger fees.

GEORGE NEMENY, *Architect*  
New York, N. Y.

### Collaboration for service, not power Sirs:

Today's architect should not be warned that he will lose the leadership which is rightfully his, but he must be warned to stop producing so much which, if he were honest with himself, is mediocre. It is true that big jobs of modern complexity must be undertaken by teams made up of the architect, the engineer, inventors or scientists, builders, financiers and real-estate men and the logical head planner to integrate the work of the others should be and *is* the architect, whenever he has the ability to assume the leadership. . . .

By all means, let us "collaborate with the scientists and the industrialist" but not that we may "share their power" but serve our society. It is far more important to concentrate on *earning* our recognition.

Individual architects (not the prima donnas but the men of stature) are being recognized as leaders in their communities and their services are limited only by their strength and the fact that there are only 24 hours in a day. But these men are not concerned with their individual importance or whether they are "held in high social esteem" and because of this they are, paradoxically, respected and even honored. . . .

SAMUEL E. HOMSEY, *Architect*  
Wilmington, Del.

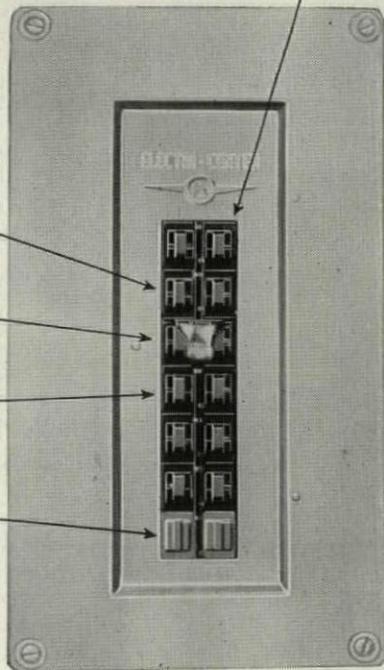
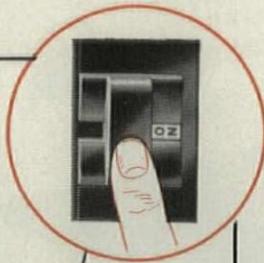
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- 2 TIE HANDLE**—Two 50-amp Pushmatics tied together act as a Main Disconnect for all branch lighting circuits in lower section. (Each circuit is protected against overload and shorts by its individual Pushmatic breakers, however.)
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- 4 UNUSED CIRCUITS**—Can be plugged with filler plates until needed.

**XD ELECTRI-CENTERS**—Space for either 12 or 18 circuits. Basic device consists of interior, box, front (flush or surface), 4 Pushmatics and 4 filler plates. 100-amp mains. Additional Pushmatics available in 15, 20, 30, 40 or 50 amps. Only 2 basic devices to stock and sell. Get all the details. Write for bulletin.

**New Bulldog XD Electri-Centers make it easy to plan flexible, centralized circuit protection for both lights and service appliances.**

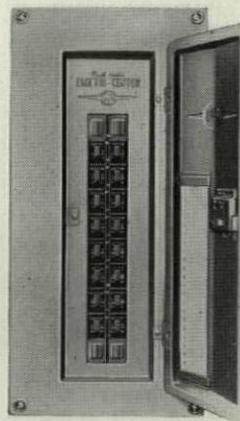
**Here's the new Bulldog XD Pushmatic Electri-Center®**, a specially designed panel that provides one central control for *all circuits in the home, present and future!* . . . eliminates the need for individual fuse box and costly main switch by providing for both in a single panel.

Internal split-bus-bar design separates panel into *two* groups of circuits. Pushmatics in the upper section provide protection and disconnect for 1- or 2-pole service appliance circuits. One Main Disconnect gives master control over all individually protected lighting circuits in the lower section (see 4 points, left).

Of course, famous Bulldog Pushmatic circuit breakers make the XD Electri-Center tops in safety, convenience and flexibility, too. To add a circuit, add a Pushmatic. *Safe, trip-free, positive automatic protection always.*

Check the features at left. Specify these great Electri-Centers for domestic installations. For complete details write for free bulletin.

### Also PB ELECTRI-CENTERS for homes, businesses



Same as XD Electri-Centers, except that bus bars are not split. Each circuit is controlled individually. Attractive, compact, simple. The last word in efficiency and flexibility. Available in 14 or 20 circuits, single-phase, 3-wire solid neutral or 3-phase, 4-wire solid neutral. Doors available if desired. Flush or surface fronts.



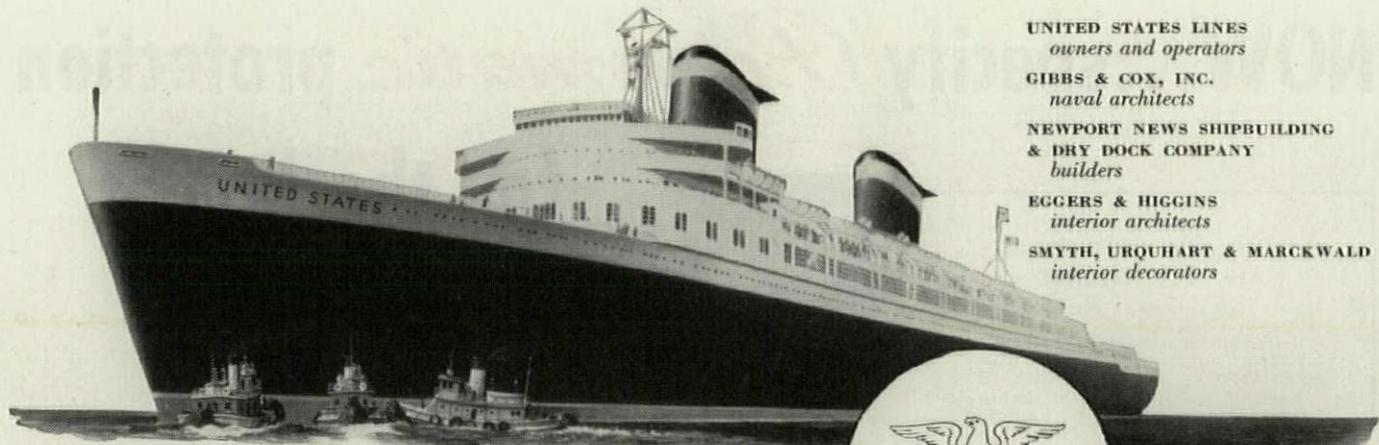
# BULLDOG

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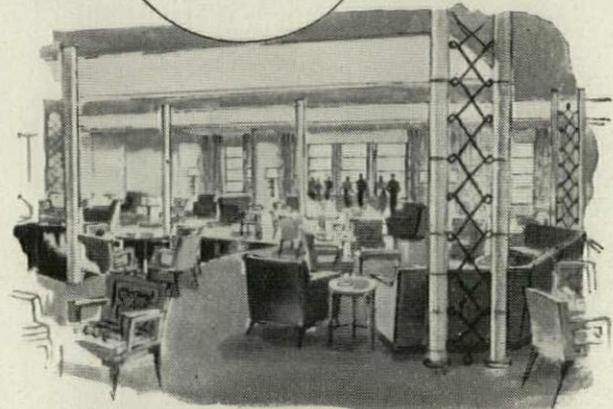
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SMYTH, URQUHART & MARCKWALD  
interior decorators



UNITED STATES LINES  
NEW YORK CITY

# LIKE NO OTHER THE WORLD HAS EVER SEEN



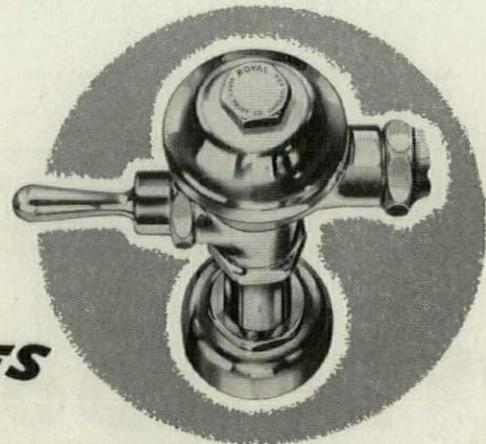
CABIN CLASS LOUNGE • Typical of the luxuriously comfortable surroundings which distinguish the S. S. United States is this inviting lounge for thoroughly enjoyable leisure and sociability.

★ July 3rd, 1952 will shine brightly in maritime history as the first sailing date of the S. S. UNITED STATES—our nation's *newest, biggest, fastest and most unique luxury liner*. In no other single structure, on sea or on land, has so much aluminum been used. Numerous decks, walls, and doors, the ship's rails, and even the big stacks are made of it. Of no other liner can it be said, "the only wood in the ship is in the grand pianos and the butcher's block." The elimination of wood, the use of flameproof fabrics and fire-retarding paints assures a previously unknown degree of safety.

Since a ship is entirely on its own once it puts to sea, it is important that its equipment, such as flush valves, be selected for infallible performance. Hence, there can be no compromise with quality in meeting the exacting demands of off-shore use. That's why SLOAN Flush VALVES were chosen for this \$70,000,000 ship.

The selection of Sloan Valves for the new S. S. UNITED STATES stems from their time-tested performance on *all liners of our country's merchant marine built within the last three decades*, including the S. S. America and others of the United States Lines fleet.

For fine buildings as for fine ships, SLOAN Flush VALVES are your assurance of quality and performance.

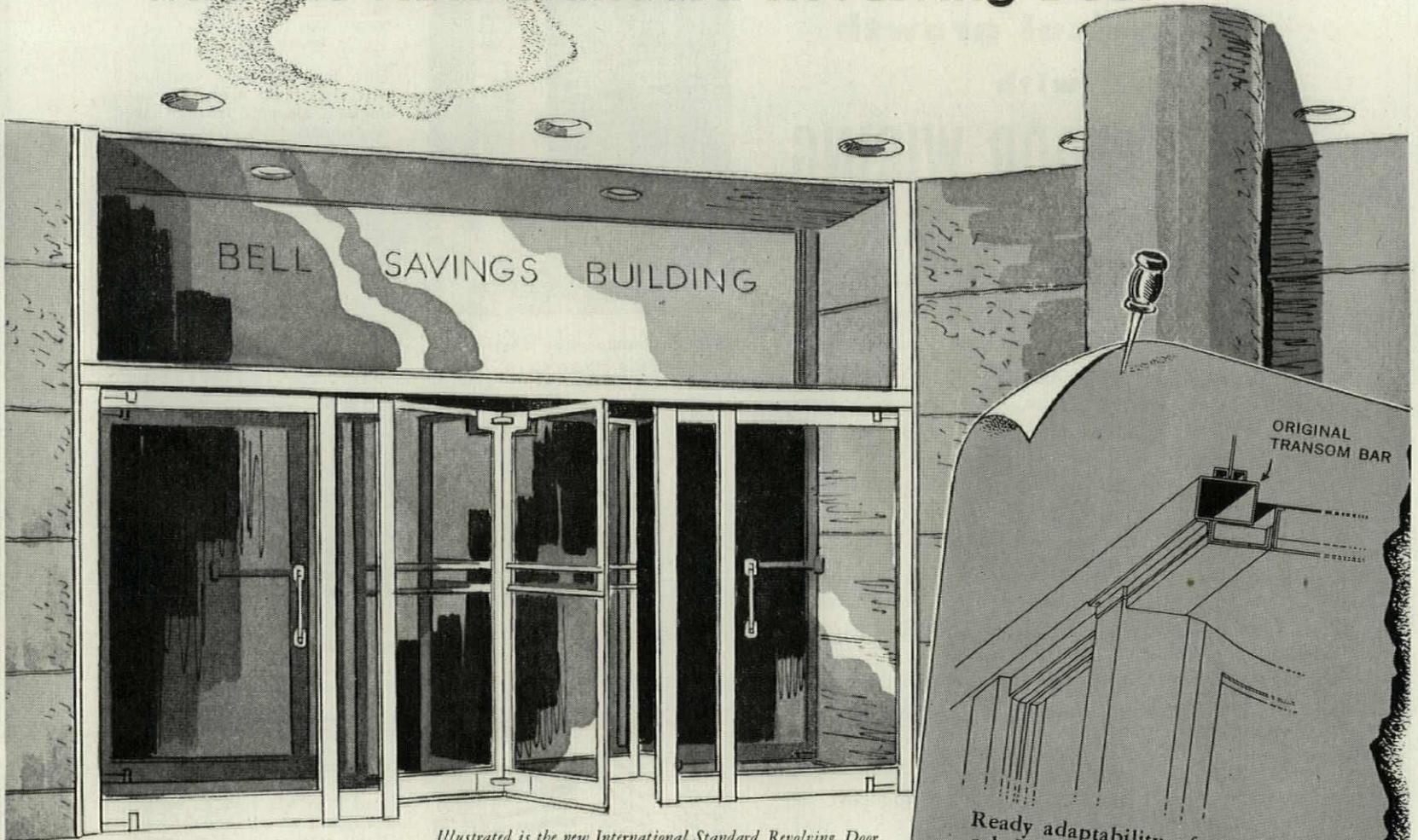


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are sold than all other makes combined

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# We "RANG THE BELL" for Bell Savings

with the NEW Standard Revolving Door



*Illustrated is the new International Standard Revolving Door entrance for Bell Savings & Loan Assn., Chicago, Ill.*

● "Bell Savings" in Chicago, in completing the modernizations of the building entrance replaced two pairs of center swing doors with an International Van Kannel revolving door.

The installation resulted in the elimination of unbearable drafts and effected substantial savings in heating and cooling costs.

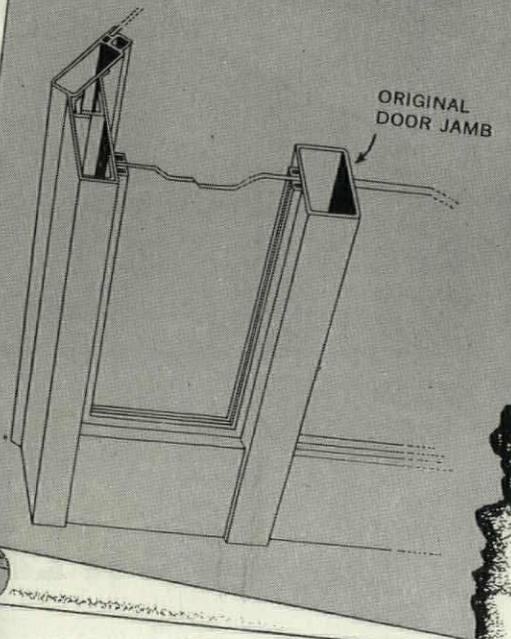
The substitution was made quickly and simply with a single standard model revolving door replacing the four center swing doors; two

at the interior and two at the exterior. The finished job looks as though the revolving door were a part of the original entrance.

This case example emphasizes (1) why more than half of all revolving door installations replace swing doors, (2) how this economical standard model revolving door is readily adaptable to nearly every condition.

For reference details write for Catalog 52C . . . it's new . . . it's news!

Ready adaptability of economical International Standard Revolving Doors is apparent from these enlarged details of the Bell Savings Building installation.



REVOLVING  
**INTERNATIONAL VAN KANNEL**  
DOORS  
1909 EDGAR STREET EVANSVILLE 7, IND.

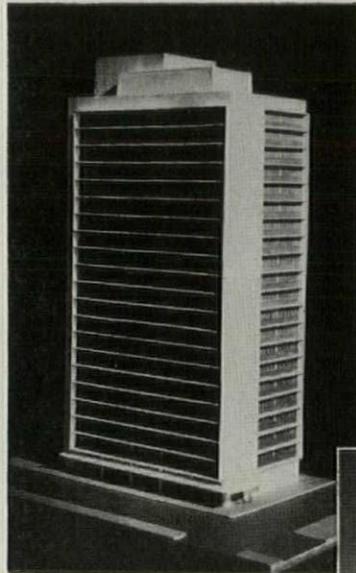
IN CANADA: International-Van Kannel revolving doors are available through Eastern Steel Products, Ltd., in Toronto and Montreal.

# How Houston gears for electrical growth with G-E Q-FLOOR WIRING

As the skyline of Houston, Texas, grows, the requirements for expanded electric service *within individual buildings* grow. These four buildings, with G-E Q-Floor wiring, are prepared for the future—whenever the rearrangement of office or store equipment demands additional electrical service.

The steel cells of Q-Floors provide the ultimate capacity for the wires of power, signal, and telephone circuits. Outlets can be installed at any time to provide electrical facilities where needed over the entire floor area. And the provision for electrical expansion will outlast the building itself.

To provide for tomorrow's changing needs of electrical growth, specify G-E Q-Floor wiring. Write for the complete story—a copy of the *G-E Q-Floor Wiring Data Manual*, Section C4-74, Construction Materials Division, Bridgeport 2, Connecticut.



← Melrose Building

Architect: Lloyd & Morgan  
Gen. Contr.: Tellepsen Constr. Co.  
Consulting Engr.: Herman Blum  
Elec. Contr.: Hirsh Elec. Co.  
Owner: Melvin A. Silverman and  
Bennett Rose

This new Q-Floor building will always be ready for unforeseen changes in floor arrangements . . . changes that demand new electric outlets.

Bank of Commerce Building →

Architect: Alfred C. Finn, F.A.I.A.  
Gen. Contr.: Manhattan Constr. Co. of  
Texas  
Elec. Engr.: Reg. F. Taylor  
Elec. Contr.: The Howard P. Foley Co.  
Owner: The National Bank of Com-  
merce of Houston

With G-E Q-Floor wiring, electric outlets can be added or relocated quickly — without disturbing this building's tenants.



San Jacinto Building

Architect: Kenneth Franzheim, F.A.I.A.  
Gen. Contr.: W. S. Bellows Const.  
Corp.  
Struct. Engr.: Ward Butterwick  
Elec. Engr.: Reg. F. Taylor  
Elec. Contr.: J. S. Copeland Elec. Co.  
Owner: Brown-Bellows-Smith, Inc.

Dead load was reduced in the rebuilding of the San Jacinto Hotel into a modern office building. After stripping the building to its original steel frame, the heavy, arched concrete floors were replaced with Q-Floors (steel floor and race-way combined).

Sakowitz Building

Architect: Alfred C. Finn, F.A.I.A.  
Interior Architect: Brochsteins Inc.  
Gen. Contr.: Tellepsen Constr. Co.  
Elec. Engr.: Reg. F. Taylor  
Elec. Contr.: J. S. Copeland Electric Co.  
Owner: Sakowitz Bros.

G-E Q-Floor wiring gives this department store complete electrical coverage for display window, show case, and office lighting.

*You can put your confidence in—*

**GENERAL  ELECTRIC**



Photos: Ezra Stoller—Pictor

## ROOFTOP SHOWBOAT

**produces drama and income for realtor Zeckendorf**

Atop the twin office buildings at 383-385 Madison Ave., New York, realty-tycoon William Zeckendorf has grabbed capital opportunity to enthrone his firm of Webb & Knapp—and himself. After spending a cool half million on his two-level rooftop palace, his showboat riding the crest of Manhattan, Zeckendorf rubbed his hands and said, "We couldn't have afforded to spend less."

What he got, first-off, was premium usable space; then, for his associates, New York's most advanced and gadgeted offices; and finally, for himself, a penthouse "throne room" expressing high adventure in finance.

But Zeckendorf has a modest associate who shares the glory: I. M. Pei. Director of Webb & Knapp's remarkable architectural division, keen Pei had already earned fame just formulating Zeckendorf's shining but still unbuilt projects such as the spiral apartment house (Jan. '50 issue). Now, for his "coming out" party with actual construction, he posed a chess-master's new architectural gambit: how to move small circular spaces into big rectangular ones. If that sounds like a Chinese puzzle, turn the page.

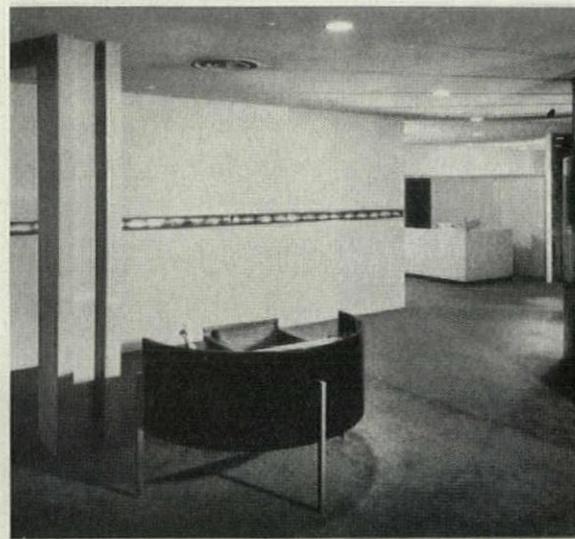
## THE RECEPTION SPACE: small circles in large rectangles

The airy spaciousness and the sense of colorful well-being of the big reception room is obtained by a careful juxtaposition of carefully formed elements. Chief among them is a large cylinder defined by a glass-topped teakwood wall, some 25' in diameter, free-standing not far from the middle of the room (*top photo, opp. p.*). It's Zeckendorf's arena, his private office, focus and climax of the place.

How this room came to be round, how it came to stand free within the larger area, is Pei's part of the story.

It all began with the decision to flank the glass-walled reception room with a penthouse terrace (*plan, opp. p.*). Automatically the terrace corner became the focal point visually; and of course the boss's office must be at, or close to, this focus! But the usual corner office would have spoiled the focal corner for everybody else: it would have divided the gorgeous outdoor view from the big reception room into two conventional and humdrum fragments (not to mention spoiling the circulation). So Pei pulled the "corner office" back into the big reception space—and made it circular. Being rounded it now offered less obstruction both physically and psychologically to the visitor's enjoyment of the terrace view. You felt you could "slip around it."

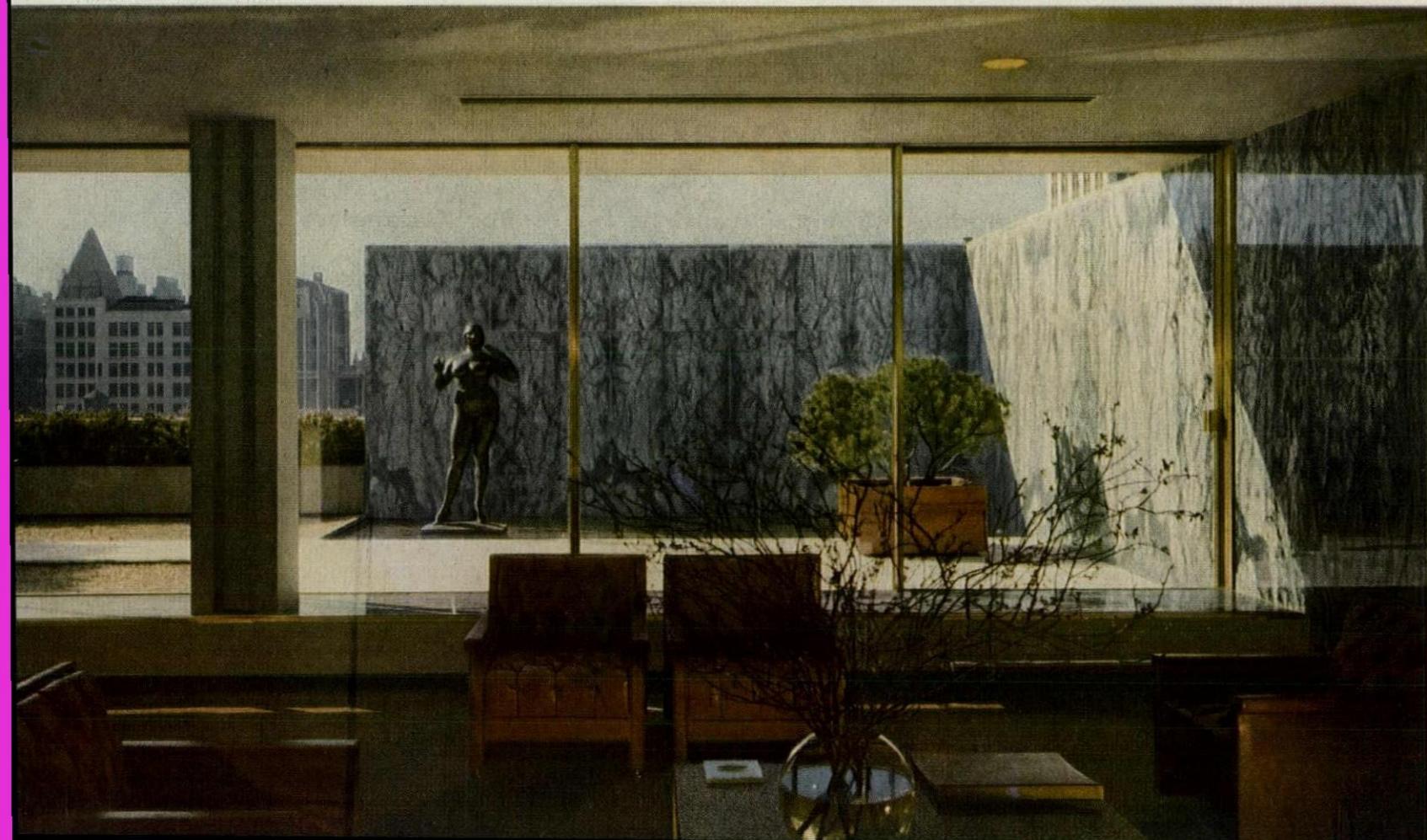
Once Pei had accepted a concept so strong and dramatic as a round room standing free, he had advanced beyond anything of the kind yet tried by the "old masters" of modern architecture, but he also had two new space problems on his hands: 1) You couldn't add protrusions, either inward or outward, without spoiling the perfection of the round shape. Accordingly Pei put all auxiliary spaces—bath, toilet, kitchen—along with the head's private dining room—into another round shape, a crow's nest above the roof, reached by a round elevator in a *second* free-standing cylinder. And 2) he kept any partition from butting into the round room from the outside, thus avoided any adjacent spaces with a "bite taken out."



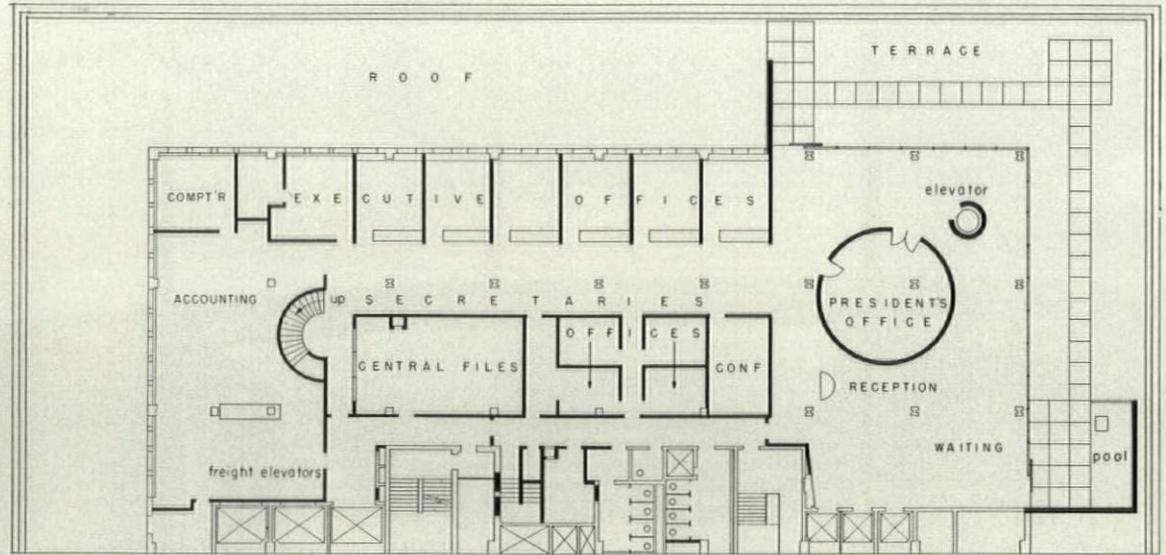
*Receptionist's desk, like all furniture, was designed by Pei and his associates. It presages the theme of rounded shapes in a big square space.*

*Terrace, seen through full glass curtain wall, has Lachaise bronze statue in pool, with marble backdrop. Gravel terrace floor is "self-cleaned" of city soot by rain "for low-cost maintenance."*

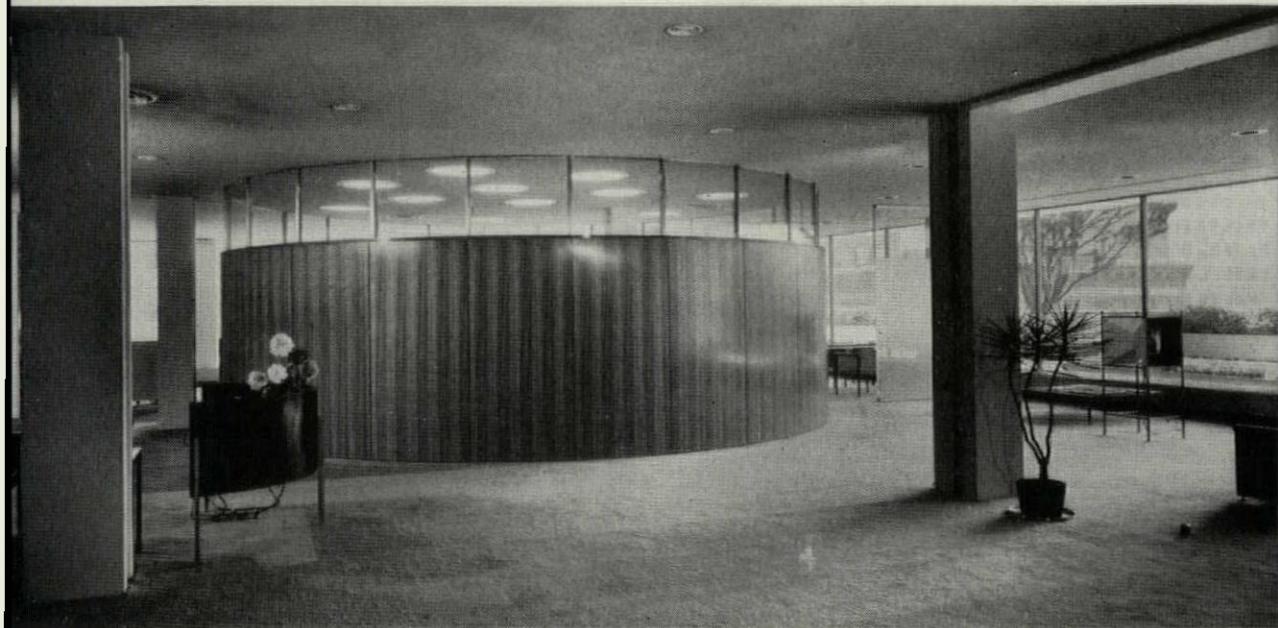
Photos: Ezra Stoller—Pictor



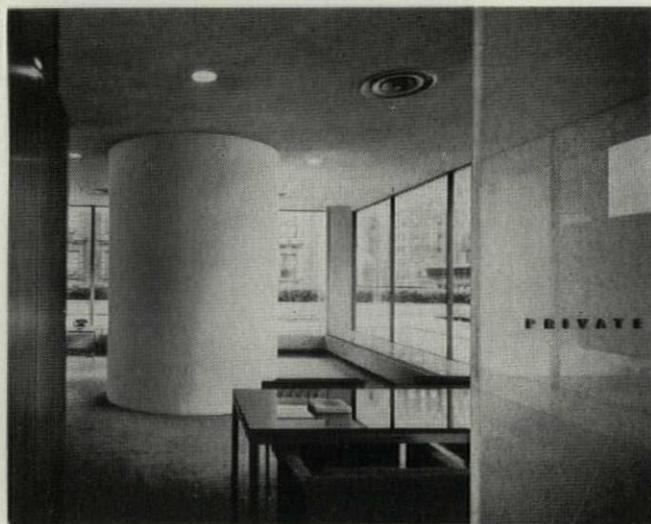
WEBB & KNAPP OFFICES, New York  
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 D. Page U. J. Franzen  
 J. Lo Pinto H. N. Cobb  
 WILLIAM LESCAZE, Associate Architect  
 RHEINSTEIN CONSTRUCTION CO.  
 General Contractor



*Plan shows clear organization: reception room and chief's office (r.); executives' offices and secretaries' concourse (top); auxiliary space in middle. Upper level has chief's crow's nest (cover), drafting room (reached by rear stair).*



*Zeckendorf's private office is 25' cylinder, teakwood covered, with glass transom. It stands free in middle of reception space (see text). Beyond it is corner of reception room (photo, r.) used as conference space. Within this space stands round elevator shaft (bottom photo) leading to crow's nest above roof (see cover).*



*Conference space is informally marked by glass partition with "private" sign; no partition strikes round room.*





### ROUND OFFICE: Light and sound in a "silo" room

What makes acoustics difficult in a round room is that reverberated sound focuses in the middle and that explains the strange shape of the panels around the room. Wags have described them as "standing coffins for Zeckendorf's competitors" but actually they are a scientific design to absorb correct amounts of sound and to deflect reverberations. MIT's acoustical experts Bolt, Newman and Beranek were the consultants. (The details are told and illustrated overleaf, on p. 110.)

And Pei had to learn also how to light a round enclosure from above. Some light is borrowed through the glass transom topping the surrounding wall. (Incidentally, this glass also greatly enlarges the interior effect of space, saves the round room from being intolerably confining, like a big tank or can.) But more light was needed—daylight and electric. So the architects borrowed a leaf from Aalto's MIT dormitory (June '49 issue); set plastic "blister" skylights on the roof; surrounded them with outdoor spotlights; and diffused the light through 2' cylinders reaching down 3' through the roof slab to the ceiling. Then Zeckendorf complicated the problem by asking for mood control—varying intensity of light and varying color—controlled from his big desk by dimmers, like his "juke-box" lobby downstairs (AF, Jan. '51). How the architects handled 1) heat, 2) snow, 3) condensation, 4) leakage problems is shown on *opposite page*.

*Owner Zeckendorf sits at a big bronze-legged plate-glass topped desk in his private office with doors opening toward terrace corner. Exterior facing of room is teak-wood, interior oak. The odd faceted shape of interior panels is due to acoustical considerations described on page 110.*



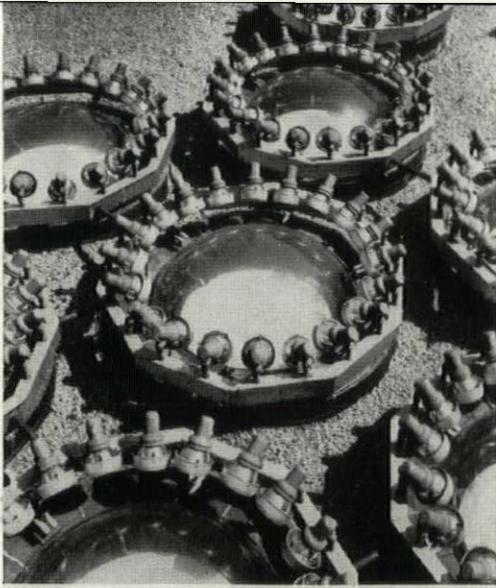
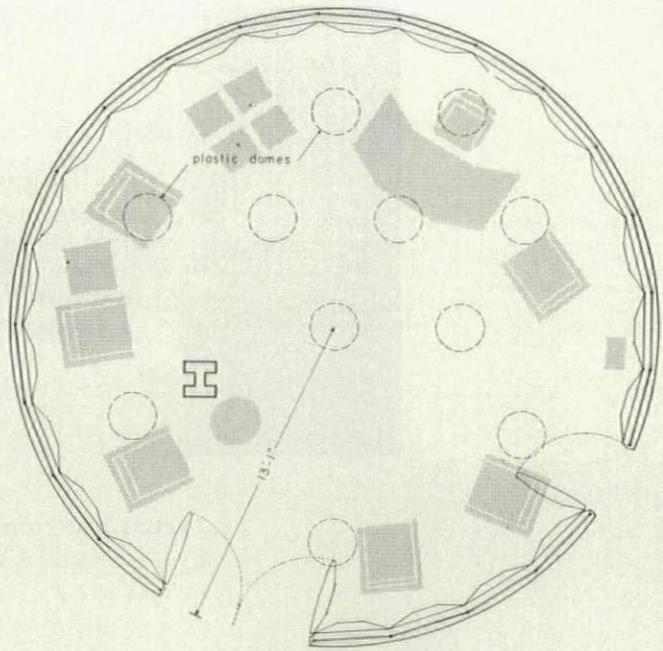
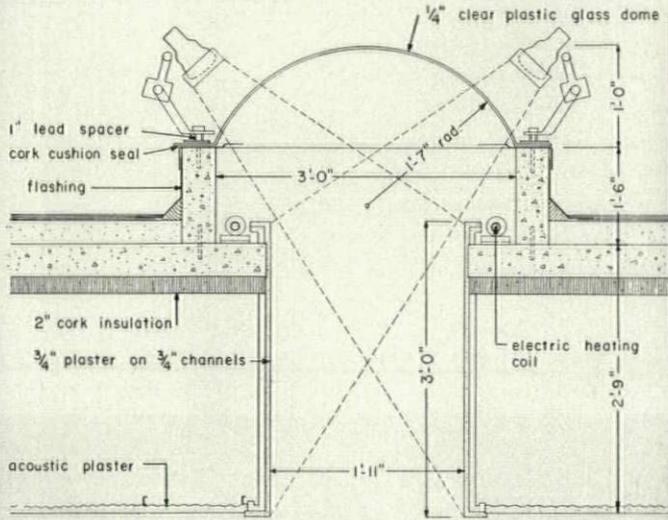


Photo and section shows plastic "blister" skylights set on roof. Colored 150-watt spots (out of sight from within room below) are blended and intensified on dimmers controlled from owner's desk. Intense heat



A hexagonal pattern of lights serves office as a whole and a smaller hexagon fitted into it gives extra light on owner's desk. Pattern skips beams.

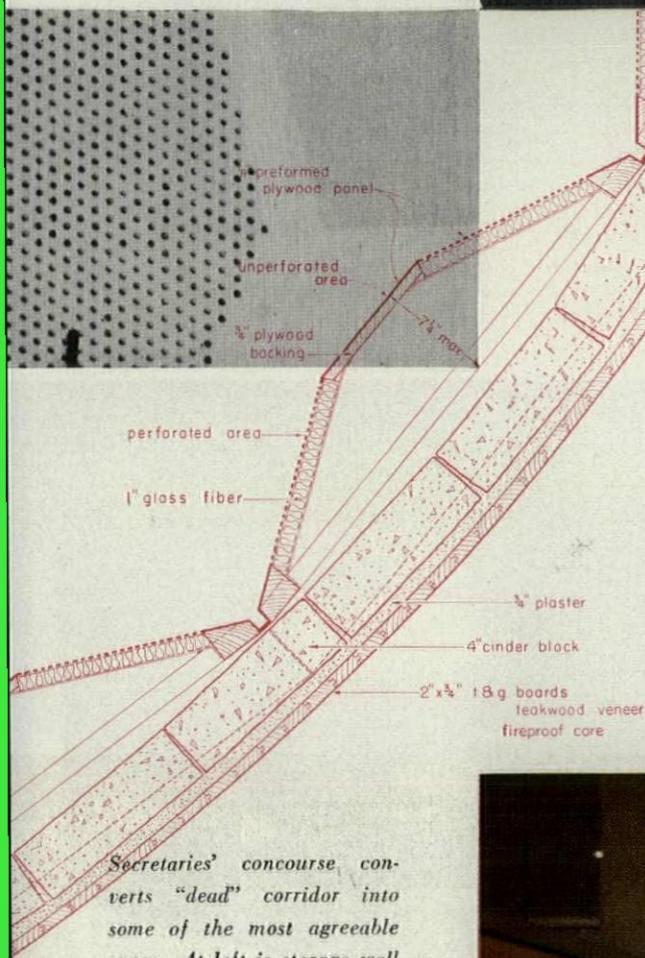
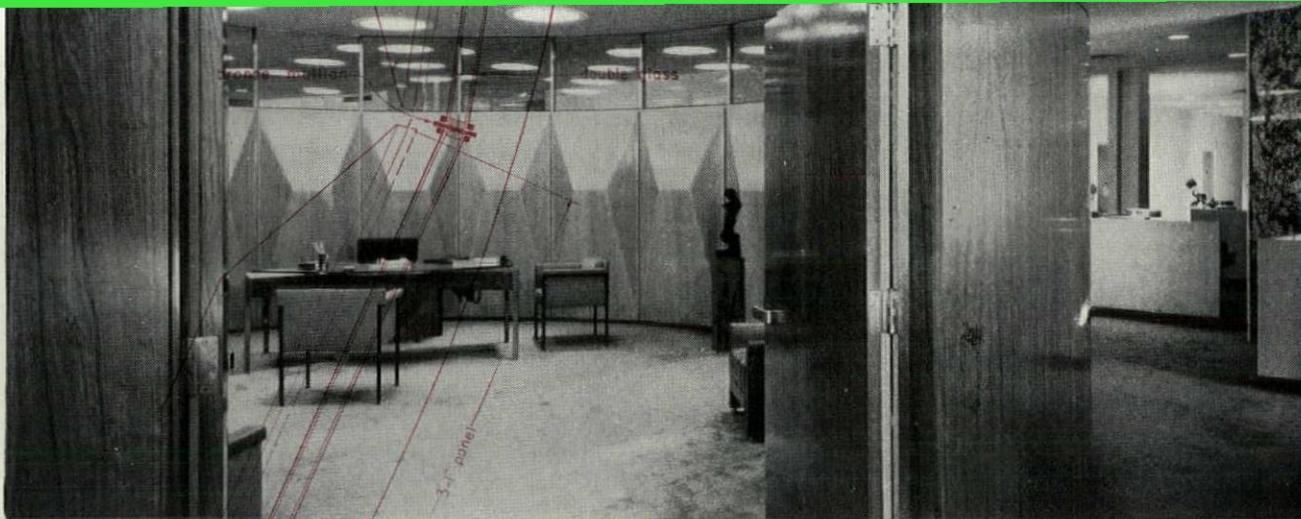
Photos: Ezra Stoller—Pictor



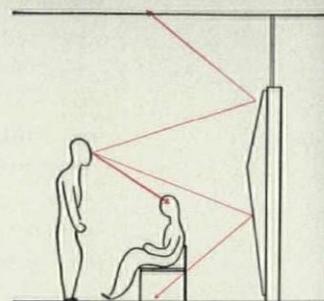
melted the plastic domes until special pyrex heat filters were slipped on the lights. Cylinder leading through roof slab is needed to diffuse light and blend various colors (dashed lines in section show incidence of light). Electric coils (between cylinder and dome mounting) melt any snow or ice accumulating on domes during daylight hours when lights are unused, also dispel condensation. Weep holes to allow condensation to escape were finally filled with cotton wicking to prevent any driving rain from beating in. Installation has been a practical success.



Photo (r) shows wall of faceted panels, outer wall surface of teakwood. Photo below shows perforations in side splays of panels. Horizontal section shows construction of round wall, and vertical section, how sound deflects from panels.



**ACOUSTICAL CONTROL** in the round office was solved in collaboration with MIT acoustical experts Bolt, Newman and Beranek. The inward facing of room is a series of faceted panels, oak faced. In size the panels were closely calculated to minimize reverberation of the wave lengths of common speech. Horizontal leading edge of panel (section, r.) is at approximate speaking height, so the speech wave is broken up and deflected up, down and sidewise, not back at speaker. Also, the unequal frontal planes of panel deflect a major share downward toward soft sound-absorbent carpet, a minor share upward toward less absorbent acoustical plaster ceiling. The canted left and right cheeks of the shaped panel represent 25% of the wall surface, the correct proportion to be devoted to sound absorption—and are accordingly perforated (photo 1.). To minimize sound transmission out of the room, glass in transoms is doubled  $\frac{1}{4}$ " plate against rubber gaskets. Partition (see plan) is of porous 4" cinder block with a  $\frac{3}{4}$ " plaster seal on the exterior and then teakwood panels attached to furring strips. Hinged doors close against sound-killing gaskets, have a patented drop-seal in the bottom.



Photos: Ezra Stoller—Pictor

Secretaries' concourse converts "dead" corridor into some of the most agreeable space. At left is storage wall between secretary's cubicle and executive office. Ceiling lights illuminate typewriters. Desk lights of special design were "cheaper than stock fixtures."



## EXECUTIVE SPACE sets new standards

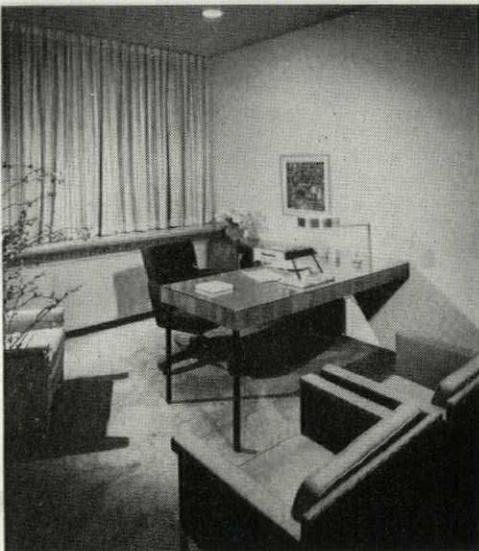
Though the chief's own office, as a throne room or "bull ring," has attracted major attention, there is a two-level working wing of the Webb & Knapp offices which is equally important.

Top executives of modern business have two needs: 1) costs being what they are, executives need salvaged dignity and a sense of space in quarters becoming even tighter. 2) In place of monumental desks they need quick communication—direct mechanical communication. The old device of voluminous mail belong chiefly to subordinates.

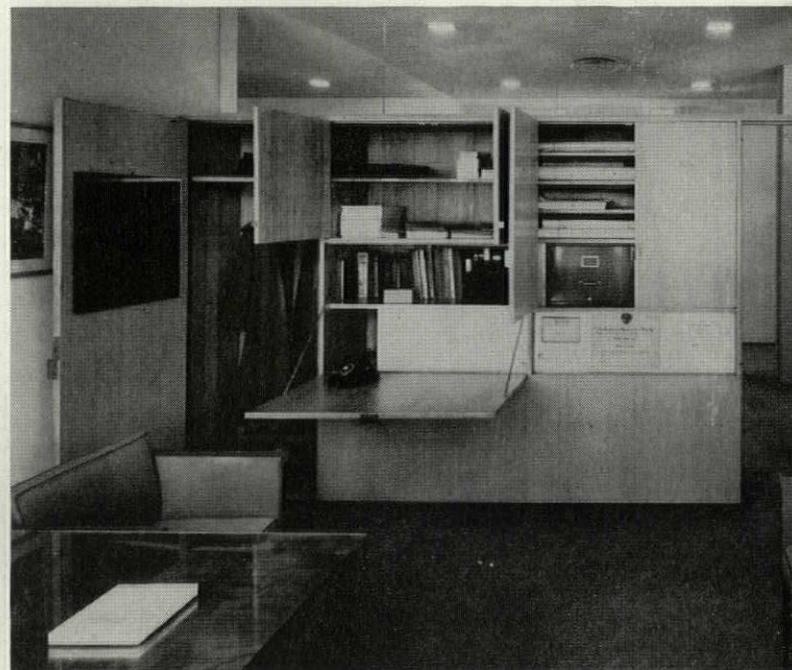
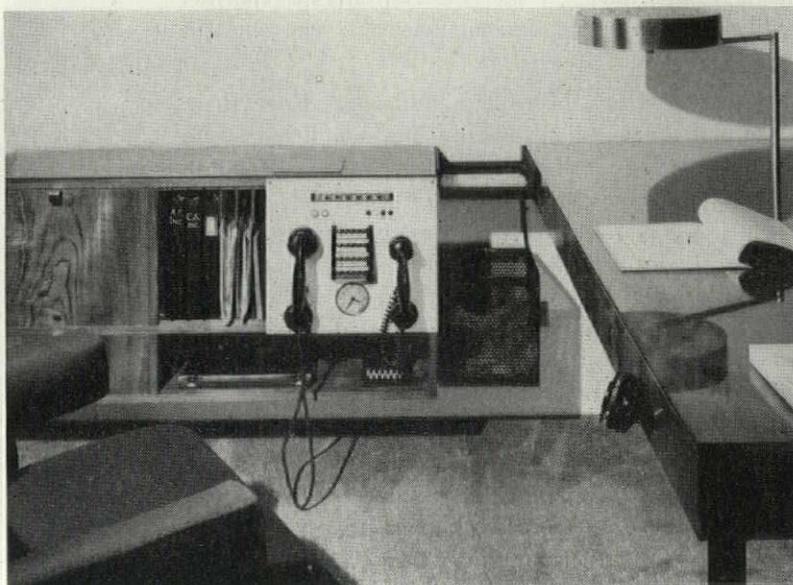
Pei is justly proud of his spacious-seeming dispensations. For smaller offices (13' x 16') yet with a sense of space, he first threw secretaries and most files out of the executive's office. But secretaries were well treated too; their desk-high cubicles, each guarding an executive's door, add up in series to a new invention—the secretaries' *concourse* replacing dead corridor (*color photo*). Between secretary and boss the usual dead partition was replaced by a live storage wall for bulk filing, its drawers and cupboards opening according to need either way. And sound deadening is more effective through the storage wall.

Since the executive now had wall storage for his "junk," Pei then cleared out the desk-files that make a fortress of the executive desk, left a slab with one drawer for "pens and pipes," put a "control panel" against the wall to the left (*bottom photo*) for phones, clock, speakers, waste basket and private files. Communication has gone mechanical!

This was not the first essay ever made in executive space conservation or arm's-length control—but rarely had the job been done with such a combination of design skill with practical sense. Just one modification has been made by some of the Webb & Knapp men: some have restored one stack of files at the right end of their desks.

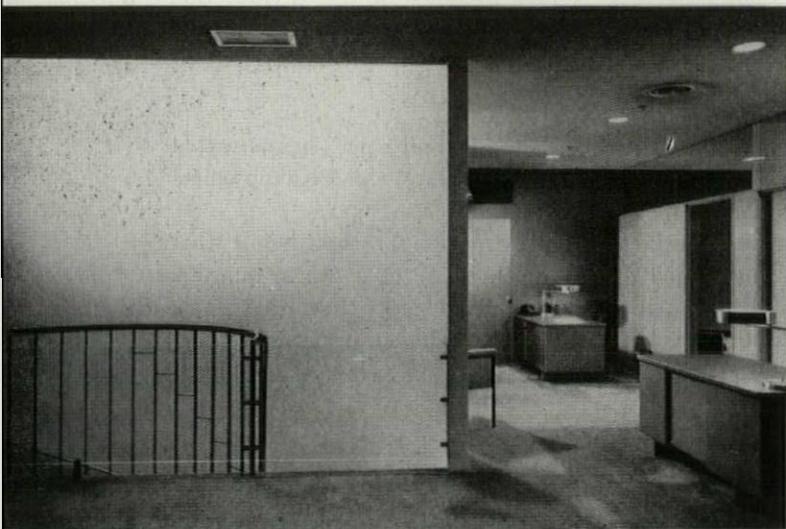


**SLAB DESK** makes office seem more spacious than conventional fortress desks. Ceiling spotlight is supplemented by desk light.

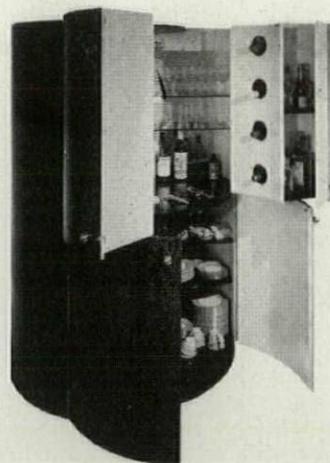


**STORAGE WALL** has room for executive's bulky materials including display devices. Pull-down doodle desk has phone, saves steps.

**CONTROL PANEL** at left of executive's desk holds clock, phones, speaker system, directories, private files, waste basket.

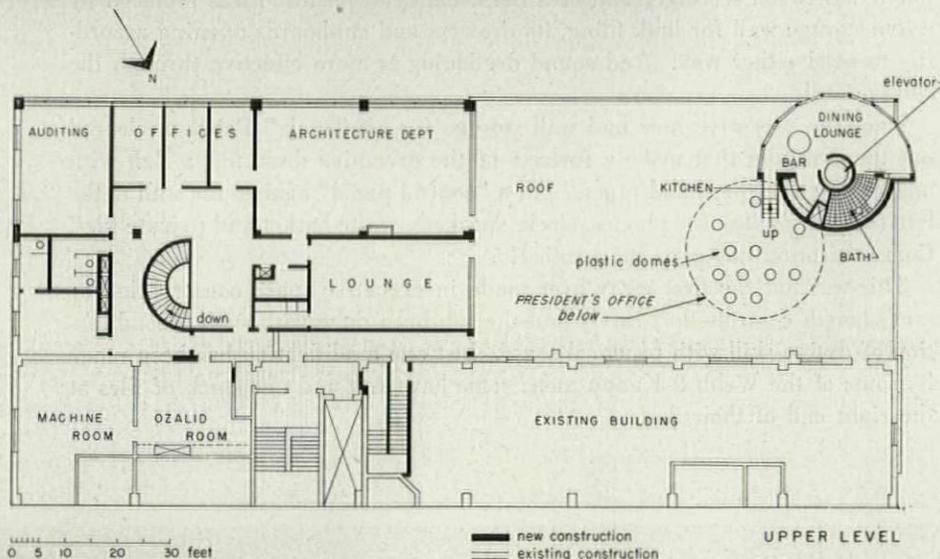


Round stair leads to upstairs offices, drafting rooms

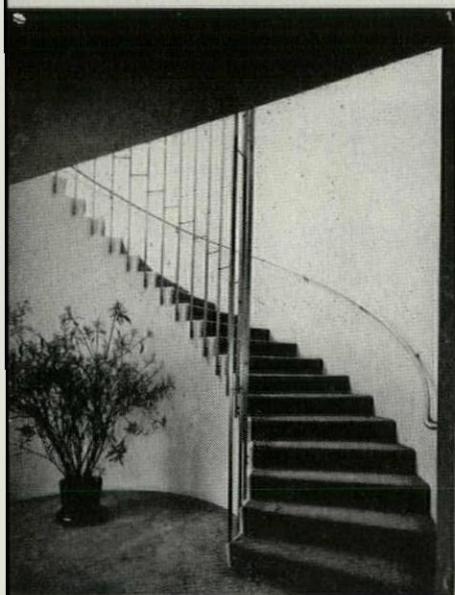


Even this bar is another free-standing cylinder.

Photos: Ezra Stoller—Pictor



Private dining lounge, draped and white carpeted, is in crow's nest or conning tower above roof (photo, top r., opp. p.). It is reached by round elevator (photo, lower r., opp. p.) standing next to owner's office in the conference space that occupies the most impressive corner of the big reception room downstairs.



Just for heck, Pei made the rear stair a semicircle, too. The very light brass screen-rail holds firm (against many predictions) because of its curved shape.

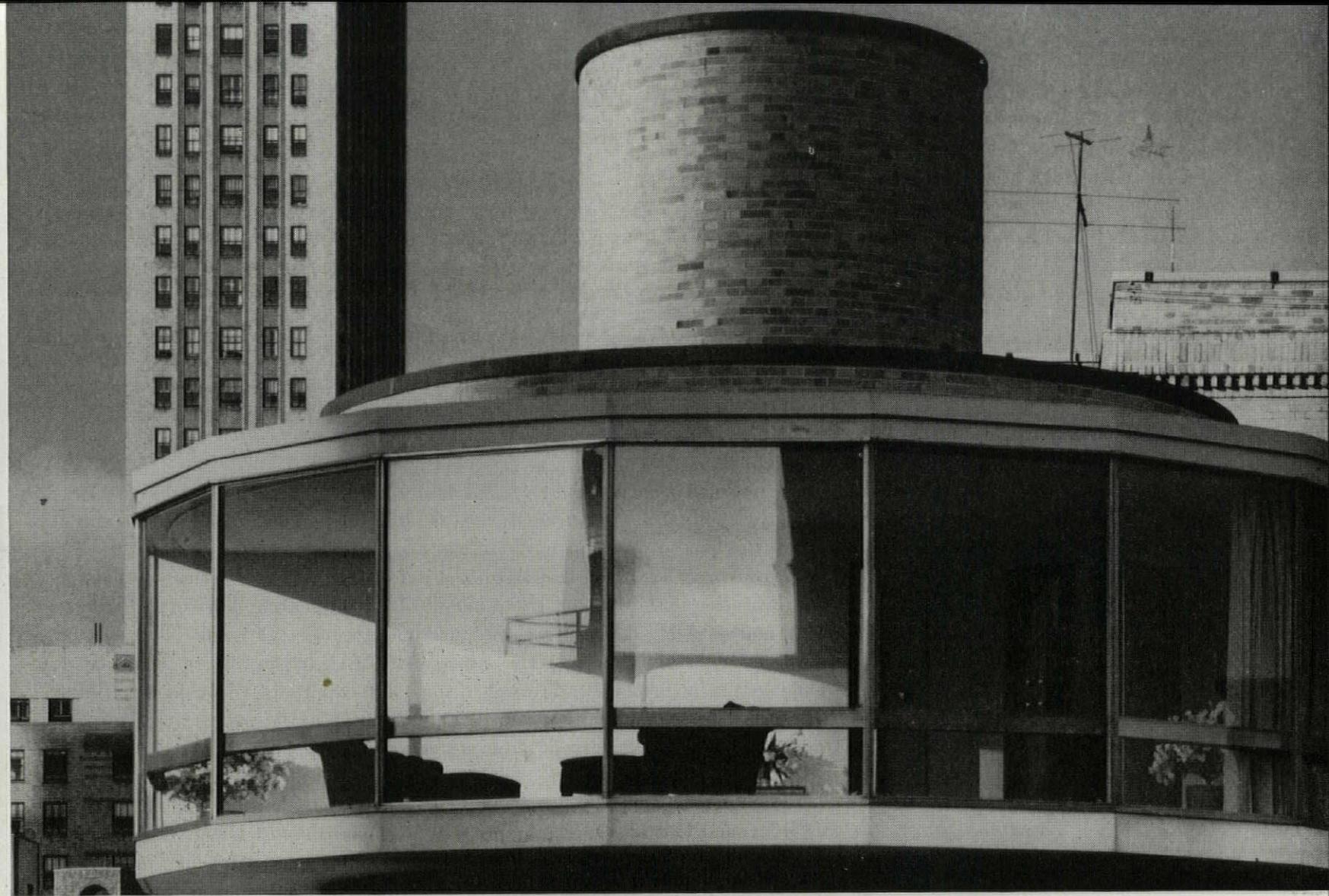
### A ROUND CROW'S NEST—and a threefold achievement

Zeckendorf's private dining room and entertainment space, in a crow's nest above the roof and overlooking Manhattan, is the final flourish in this palace for a modern business Caesar. Here, equipped with kitchen, bar, and an elaborate bath, is a retreat from which to return to work, or again a lush eyrie in which to commune with very special guests.

Yet this lavishness has less importance for the long run than has the fact that such a Caesar has, like Morgan of old, commissioned the very finest in architecture and the allied arts.

What Pei and associates achieved has three-fold significance. First, there was the opportunity here to play a new "shuffle-board game"—to demonstrate the peculiarly modern art of floating small curved spaces, independent and self-enclosed, into the big rectangular space of the modern "loft." But, beyond that, the best values of the job may lie in the part least possible to convey in words and pictures: the sensitivity and art with which every last line, every last color—of room and furniture and painting and sculpture and planting—were harmonized to contribute an agreeable euphoria. And, finally, unlike some of the earlier "modern masters," Pei, the Chinese realist, has treated the sciences seriously too—of sound, of light, of temperature—without ever relaxing his hold on overall design. Here the functionalist and the artist are in a rarely happy marriage.

Throughout the job an older pioneer of modern architecture gave a younger colleague unselfish advice and help: William Lescaze, as collaborating architect, checked working drawings, took responsibility, aided supervision.



# CONSERVATION IN BUILDING

**In BRAB's report to DPA  
300 industry experts tell  
how to save money,  
manpower and materials  
in public and private building**

*"As allocator of scarce materials, as coordinator of the economy and, most important, as the industry's biggest customer, the federal government has a threefold responsibility and a threefold opportunity to help the building industry cut waste. . . . The federal government can make a very great contribution to the attack on waste in building by setting its own house in order and insisting that the same economy standards be rigidly enforced in all its own construction work. In World War II government set a shocking example of waste in building."*

Thus, this magazine in February and March 1951 capsuled the opinion of its industry round-table meetings called to explore the possibilities of conservation in construction.

As a direct result of that three-pronged challenge, the Defense Production Administration last summer asked the Building Research Advisory Board to study and suggest specific ways the government could cut waste in its annual \$1,185,000,000 building program. Since then BRAB has examined the practices of 5 government agencies and consulted some 300 experts in all fields of building technology. Last month, it packaged its findings in a 107-page report—one of the most significant pieces of building research ever added to the industry's meager library on this subject.

Many key men at this magazine's earlier round-table meetings also played key roles in BRAB's research: James W. Folin, chairman of DPA's Construction Conservation Coordinating Committee, who held up the government's interest in the work; William H. Scheick, BRAB's executive director who coordinated the whole job; and Architect Frank Walker, Housing Consultant Carl F. Boester of Purdue and Professor Walter Voss of MIT who headed three of BRAB's seven advisory panels.

## WHAT IS CONSERVATION?

BRAB's No. 1 recommendation sets the pitch for hundreds of other suggestions, major and minor, sprinkled through its report: "conservation . . . under any circumstances means maximum efficiency in the use of money, manpower and materials."

In times of emergency this definition must, of course, be modified to put emphasis on the conservation of critical materials, but in normal times BRAB sees long-term conservation best achieved "through design for annual cost"—the cost of producing the structure and maintaining and operating it during its expected life.

"Substitution of temporary or expedient materials [such as 'Victory' materials used during World War II]," warns BRAB, "may result in long-term waste in operation and maintenance, or in replacement costs. When this occurs in permanent buildings, conservation has not been achieved. Basic objectives for any emergency conservation program should be to achieve necessary safety, satisfactory performance and appearance, with a minimum of critical materials allocated for essential uses." [BRAB's report lists innumerable substitutes for critical materials. However, since the crisis of shortages is past, this review concentrates on BRAB's more significant recommendations concerning long-range conservation.—Ed.]

"When critical materials are controlled during a national emergency, they must be allocated with regard to the essentiality of buildings or facilities to the national emergency program. Essen-

tial construction should not be denied critical materials necessary to achieve lowest annual cost unless there are more urgent needs for such materials."

## . . . AND WHEN DO WE START?

Here BRAB comes quickly to the point: Now. "The Federal construction agencies should effect conservation in building construction *at all times* and . . . the government should avail itself *at once* of the opportunities that exist for it to provide exemplary leadership in the practice of such conservation."

## WHAT ARE THE BROAD PRINCIPLES?

Although BRAB's report is a loose-jointed document written with a heavy hand, many significant facts and pointed recommendations are revealed when the reader—on his second or third try—grasps the meaning of the researchers' typically ponderous verbiage. Clearest of all are the five basic means of conservation which pop up continuously through BRAB's own conclusions and those of the experts whom BRAB consulted: research, standards, proficiency, ingenuity and collaboration. They are the keys to efficient building by both government and private enterprise.

**Research.** Since building, the largest of all industries, conducts less research than the pickle packers, it is small wonder that BRAB harps on the immediate and continuing need for research into the technical aspects of building design, construction, opera-

tion and maintenance. And because the federal government is the industry's biggest client, it is logical that BRAB should urge the government to "support and maintain coordinated research . . . and procedures for the trial and adoption of research results."

**Standards**, like specifications and codes, constitute a different problem. With thousands of local building codes serving one purpose, with a dozen different proposals for a model code, with hundreds of different specifications for solving the same particular problem, and with a host of overlapping and obsolete standards, the industry suffers from an overdose of unrelated wasteful criteria. The crying need is for standardization of standards and unification and simplifications of other existing criteria, plus the development of a few new ones, such as those covering occupancy live loads (ASA), increases in allowable tensile stresses in reinforcing bars (ACI), ultimate load designs (ASCE-ACI) and the grounding of electrical circuit neutrals (AIEE) which have been bogged down in association committees for months and, in some cases, years. BRAB calls on the government's construction agencies to assist the organizations responsible for these standards, specifications and codes.

"When one government agency adopts a standard [or practice, or specification] that meets the requisites for long-term or emergency conservation for a given principle of construction, then," says BRAB, "all variations in excess of that standard are potentially wasteful. Where all government agencies use variations of a standard in excess of the national standard for the same situation in civilian construction, then all government practice is potentially wasteful. . . . Conservation is possible wherever variations exist in standards, and these variations are reduced to the best single standard.

"Because government construction is not subject to local building codes or regulations, there is always the opportunity for government to adopt a new technical standard *in advance* of its general acceptance for civilian construction."

BRAB also suggests that the government scrap its standard plans for various building types (which freeze design) and substitute standardized program requirements which will allow latitude for inventiveness in design and construction.

**Proficiency and ingenuity**, counsels BRAB, are "the greatest potentials for conservation." Tying this down to design in particu-

lar the report states that "the most significant and effective conservation in building construction is achieved through ingenuity in design." Therefore, it is urged that the government improve its methods of selecting, compensating and supervising the design and construction organizations it hires and increase its appropriations accordingly. To the same end the government must insure the proficiency of its own technical personnel all down the line (from Washington bureaucrat to field man) by sound methods of recruiting and training, by adequate pay and advancement and by providing a means for the exchange of technical ideas. Thus, BRAB implies that the government's building technicians at present may be underpaid and unqualified, that some of its contractors are, too, and that wasteful building results.

**Collaboration.** With 13 federal agencies engaged in building and with all of them playing their cards close to their chests, it is not surprising that BRAB takes up the oft-voiced cry for interagency collaboration. BRAB would like to see an interagency mechanism for collaboration at both the administrative and technical levels to establish and maintain the conservation program. And it would like to see this collaboration extended to professional societies, technical bodies, research institutions, and other elements of the building industry concerned with the advancement of building technology, including the National Research Council of which BRAB is an adjunct.

#### . . . AND WHAT ARE THE SPECIFIC MEANS?

In its recommendations covering the broad principles outlined above, BRAB leaned heavily on the facts and opinions expressed by 300 of building experts in and out of government. According to their qualifications, they were assigned to seven Advisory Panels to study the conservation possibilities in these specific fields:

1. Construction practices
2. Space & planning (incl. hospitals)
3. Building envelope and interior
4. Structural engineering
5. Plumbing
6. Heating and ventilating
7. Electrical systems

The specific recommendations of these seven Advisory Panels are outlined on the following pages.

### "OPPORTUNITIES FOR GOVERNMENT"

"The outstanding conclusion from the results of the study of government practices is that opportunities exist for the government to provide exemplary leadership in building conservation.

"The complexities and cumbersomeness of the entire building economy need have no counterpart in the organization and performance of the government construction agencies. They have many things in common which should prompt a program of cooperation and collaboration for the practice of conservation at all times:

"They all operate and build with taxpayers' money.

"Their technical operations are within the bounds of reasonable control and supervision.

"They have many bases for regular collection and analysis of comparable data on the design, construction, and operation of buildings of similar types.

"They have technical personnel who participate in the activities of standard-making bodies.

"The government has research facilities, as in the National Bureau of Standards, not fully utilized by the construction agencies.

"Advisory services are available through the National Research Council.

"The opportunities for the government are:

• "To establish a model program of collaboration in its construction agencies for unified practices in building construction and the advancement of building technology.

• "To create incentive for and foster ingenuity in building design and engineering.

• "To utilize its building properties for the production of basic data on performance and for the definition of research problems.

• "To provide means and leadership for building research and the utilization of research results in government building."

## 1. BUILDING CONSTRUCTION PRACTICES

Chairmaned by Contractor William Muirhead of Durham, N. C., BRAB's advisory group of contractors, most of whom have had extensive experience in government construction, limited their recommendations mainly to the government's administrative practices. In general, the contractors held that "teamwork between designer, owner and builder is essential for conservation."

Specifically the contractors ask:

- Conferences with government agencies well in advance of bidding so that they may suggest conservation measures during the formative stage of design.
- Complete plans and specifications with special emphasis on coordination of all mechanical layouts with structural and architectural design.
- Elimination from government specifications of obsolete clauses which hinder conservation, plus simplification and standardization of federal specifications by all agencies.
- Elimination from government contracts of clauses which discourage competitive bidding.
- Standardization and simplification of procedures for changes during construction, which are often complicated and arbitrary and cause expensive delays. Contract officers and field representatives should have their authority and procedure clearly outlined and procedures should be revised to simplify making decisions on the job.
- Standardization of supervision and inspection by government men which now is subject to many variations in the performance of individual inspectors, and in the case of military construction, to the whims of commanding officers. Inspection and supervision should be based on the "principle that supervisory and inspection personnel can best assist the conservation program by performing their duties as part of the construction team employed to help build the structure."
- More careful weighing of the real need for hasty completion against the resulting waste of materials and time.
- Encouragement of architects and engineers to produce comparative design analyses of new and existing methods of construction.

## 2. SPACE & PLANNING

Since little research exists on space and planning, Chairman Ralph Walker and his panel of design experts feel that there is a basic need for the establishment of criteria for measuring space efficiency—uniform methods for evaluating plans for government and civilian buildings alike. Suggested formula: efficiency ratio equals the usable floor area (net floor area in the case of hospitals) divided by the gross area.\* The panel recommends that hence-

\* *Gross Area* of building is the sum of the areas at each story level included within the principal outside face of exterior walls. *Include* all stories or areas which have floor surfaces with standing head room (6'6" min) regardless of their use. *Exclude* all unroofed areas and unenclosed roofed-over spaces.

"*Total Floor Area* is the gross area excluding exterior walls.

"*Usable Floor Area* is the area required for the fixed program requirements, or the rentable or direct revenue-producing areas of the building."

forth all plans for federal buildings be accompanied by such an efficiency analysis.

The panel wanted to suggest efficiency criteria for the buildings most frequently erected by government; it was unable to do so in the case of garages, warehouses and dormitories. (For example, due to wide variations in the types and purposes of garages, it was found that the ratio of floor area to clearance area in existing government garages necessarily ranged from 1.7 to 4.4.) For government offices, however, the panel suggested these specific plan-efficiency ratios as guides:

Walk-ups not exceeding 3 stories.....	85-90%
Three to 12 stories.....	80-85%
Thirteen stories & higher.....	75-80%

To see how three of his newest New York City office buildings measured up against these yardsticks, architect Robert A. Jacobs, a panel member, applied the formula to them and came up with these efficiency ratios:

445 Park Avenue (22 stories).....	76.7%
100 Park Avenue (36 stories).....	74.6%
1407 Broadway (42 stories).....	77.7%

Here is how he arrived at the figure for the 1407 Broadway, his most efficient design:

Gross area .....	970,591	
Walls .....	30,292	
Utilities, incl. stair corridors.....	110,668	
Toilets .....	18,958	
Fan rooms .....	24,353	
Elevator corridors .....	32,000	
<hr/>		
Total exclusions .....	216,271	
<hr/>		
Usable floor area .....	754,320	
Efficiency ratio = .....	754,320	77.7%
<hr/>		
	970,591	

### Other office-building suggestions:

- A 9' ceiling height (8' minimum in limited portions).
- Partition spacing based on a module of 4' 4" which may be increased or decreased in multiples of 4".
- A 25' office depth from window to corridor in nonventilated buildings.

On the subject space and planning in general the panel stumped for 1) modular coordination in all government building design, 2) discontinuance of the general use of standard plans which freeze design, 3) substitution of standardized program requirements for standardized building types to allow latitude for design ingenuity, 4) adoption of uniform fire-safety regulations, 5) periodic creation of opportunity for highly competent architects and engineers to design for the widest possible latitude for ingenuity, *unrestricted by ordinary design standards*, 6) establishment of an independent board of review of the highest competence to evaluate new design and engineering ideas, 7) inclusion of pilot research jobs in the government building program to field test new ideas, and 8) consideration of the "life" of a building in its design and specification. "Any building with a designed life of 25 years should be considered a permanent building. . . . Those parts of a building which cannot be made to last the life of

the building should be installed so that they may be conveniently replaced."

The panel also emphasized the economy of spending money on good design—an "investment in competent design is a major factor for conservation."

**Hospital planning:** Although BRAB found that most government buildings of similar type varied too widely in purpose to permit many generalized recommendations, it found an exception in hospitals and put a separate advisory panel to work on this subject as a case study of conservation in space and planning.

This group agreed upon a slightly different plan-efficiency ratio (net floor area to gross area) and set 60% as the minimum for acute general hospitals of 200 beds or more. "Plan efficiencies of 67% can be achieved, especially where large, open nursing wards are used, for circulation is included in the net area of the wards."

Because several government agencies use different room size standards the panel after consultation with representatives of these agencies recommended a new unified set of minimum room sizes for use by all and called it a "tentative conservation measure" subject to further study.

**TYPICAL ROOM SIZE—net floor area in sq. ft.**

Description	Existing Standard or Practice USPHS	Recommended Practice Minimum
Isolation or quiet room for single occupancy .....	190	130
Single-bed room—max. capacity 1.....	115-190	130
Single-bed room—emergency capacity 2 beds .....	190	144
Two-bed room .....	190	190
Four-bed room .....	380	320 (2)
Larger than 4-bed room (area per bed) .	86	{ 72 } 90
Utility room, nursing unit.....	190	180-200
Nurses station .....	183	136
Day room or visitors space..... (50 beds)		180
Major & minor operating room—non-teaching .....	284-327	288
Fracture room .....	190-265	288
Delivery room .....	290-305	288
Labor room .....	167-255	120
Autopsy room .....	280	280
Radiography and fluoroscopy room.....	207	225
Oral-surgery room.....	75	75

It is noteworthy that the panel recommends the same size room for major and minor operating, fracture and delivery rooms for greater flexibility in emergencies.

Other panel recommendations: 9' ceiling heights, double loaded 8' wide corridors, segregation of convalescent and other patients in separate but connected buildings. ("It costs considerably less to erect a separate structure for convalescent patients. The removal of convalescent patients adds to the tone, atmosphere and service of the hospital and permits a concentration of intensive nursing and medical care where it is most needed.")

Finally the panel suggests a reduction in provisions for expansion from the usual 100% to 30-35%. "The original size of administrative, professional, technical, and domestic facilities of a project should be designed not more than 30 to 35% larger than necessary to handle the original, normal bed capacity. These facili-

ties should be so arranged and located as to permit their future expansion if found necessary. The most efficient and economical program for expansion may be obtained with an original plan providing for unit expansion of the various facilities."

### 3. BUILDING ENVELOPE AND INTERIOR

In addition to restating many well-known means for conserving critical finishing metals during an emergency (such as eliminating gutters, reducing parapets and substituting wood for metal doors), BRAB's advisers on this subject, chaired by MIT's Walter Voss, offers three recommendations for every-day application in the design of walls and roofs: 1) Total heat loss should not normally exceed 6 Btu/hr/cu. ft. of heated or air-conditioned space in buildings heated to 65° or higher or cooled for any purpose and 8 Btu/hr/cu. ft. in buildings heated to less than 65°; 2) Dead loads and, in turn, framing requirements should be minimized by the use of light-weight units, cavity walls, thin-shelled panels and light-weight fireproofing, aggregates and partitions, and by the reduction or elimination of floor and roof fills; 3) Uniform fire-safety regulations (such as the Federal Fire Council's "Recommended Design Practices for Fire Safety in Federal Buildings," dated March 1, 1950) should be adopted by all government agencies.

### 4. STRUCTURAL ENGINEERING

Recognizing "ingenuity in design as the most effective and productive of all conservation measures," the panel of experts on structural engineering chaired by PBA's W. E. Reynolds urges the government 1) to select engineers on the basis of their competence rather than competitive bidding; 2) to give architects and engineers latitude and adequate compensation to insure design ingenuity; 3) to allow sufficient time for adequate engineering.

In addition the engineers made these specific recommendations:

- Until standards of occupancy live loads (such as those now in preparation by ASA Committee A58) are nationally accepted, government agencies should use the following:

- 40 psi—Hospital wards, and bedrooms, apartments, barracks, classrooms, corridors in dwellings
- 50 psi—Offices
- 60 psi—Theaters with fixed seats, churches
- 80 psi—Hospital corridors
- 100 psi—Theaters without fixed seats, public building corridors, dance halls, stairs.

- Since live loads fluctuate and are less well defined than dead loads, it is suggested the ASA, ASCE and other technical bodies investigate the reduction of live loads in terms of the dead load-live load ratio for various materials along the following lines:

- No reduction when ratio equals 1
- 33% reduction when ratio equals 2
- 50% reduction when ratio equals 4 or more.

- Since existing snow load values are unsatisfactory, ASA and the US Weather Bureau should continue their joint work toward improving such design data.

- Minimum roof loads should not be less than 15 psf.

- The engineers felt that their live load reduction suggestions offered a better means to reduce the weight of structural steel, and

consequently decided against any increases in the working stresses of carbon steel.

- Where adequate supervising is available, use of high-strength concrete (3,000 psi and up) should be investigated as a means for saving reinforcing steel. Since substantial economies will result from the ultimate strength theory of design, the Joint ASCE-ACI committee on ultimate load design should expedite completion of a code of practice which should then be used as an alternate to the conventional straight-line method of design using working stresses.

- ACI committee 318 should expedite its study and recommendations concerning the increases in allowable tensile stresses of steel reinforcement bars.

- The design of all steel-framed buildings should include an appraisal of the economy in steel and money that may be obtained with welding, continuity, cantilever design and composite use of steel beams and concrete slabs.

- In reinforced concrete buildings of continuous design, continuous frame analysis should be used in preference to arbitrary coefficients, and sections should be proportioned to resist the moments and shears thus obtained. Building codes should permit thinner walls and those containing less reinforcement provided they meet appropriate standards. Arbitrary limitations on slab thickness and percentage of steel should be disregarded in favor of proportioning by accepted methods of analysis. Present limits on the amount of temperature reinforcement should be relaxed.

- Modification of building codes to permit precast construction would promote further economies in concrete construction.

## 5. PLUMBING

Without proposing to make the National Plumbing Code mandatory, the panel of plumbing experts suggests that in the interests of long-range conservation, local code committees adopt it as their legal standard and that the government use it as its manual of plumbing design. Other recommendations:

- Service weight CI soil pipe (instead of extra heavy) for installations up to four stories, at a saving of 25% by weight.
- Nonmetallic pipe for home-sewer connections where possible.
- Types L & K copper tube for galvanized pipe—particularly where the latter is affected by aggressive water.
- Black instead of galvanized fittings for drainage and venting systems wherever screw pipe is used.
- Black steel pipe for galvanized pipe in above-ground drainage systems (liquid wastes containing soap, oils, etc., will coat the pipe and prevent erosion).
- Limit use of copper for shower pans and flashing.
- Substitute pressure drainage for gravity and thus reduce pipe sizes.
- Iron plugs instead of brass for cleanouts.
- Small size flushometer valves (at a saving of 4-5 lbs. of brass per valve).
- Hard lead or cast-iron floor flanges for brass.

- 100 psi valves for 125-150 psi valves in water-supply systems.
- Not heavier than type L & K copper tube for water-service mains.
- Finally, it is recommended that the National Bureau of Standards and other laboratories research the suitability of plastic tubing for water-supply and drainage systems.

## 6. HEATING & VENTILATING

Due to limitations of time, BRAB's study dwells primarily with heating, touched only lightly on ventilating and air conditioning. The study of heating was limited to high-pressure and conventional two-pipe low-pressure steam distribution systems.

Most interesting recommendation on this subject: limit performance guarantees of completed structures and equipment to one year. Excessive performance guarantees raise bids out of proportion to the value received by the owner. Defective materials and inferior workmanship will usually show up within a year.

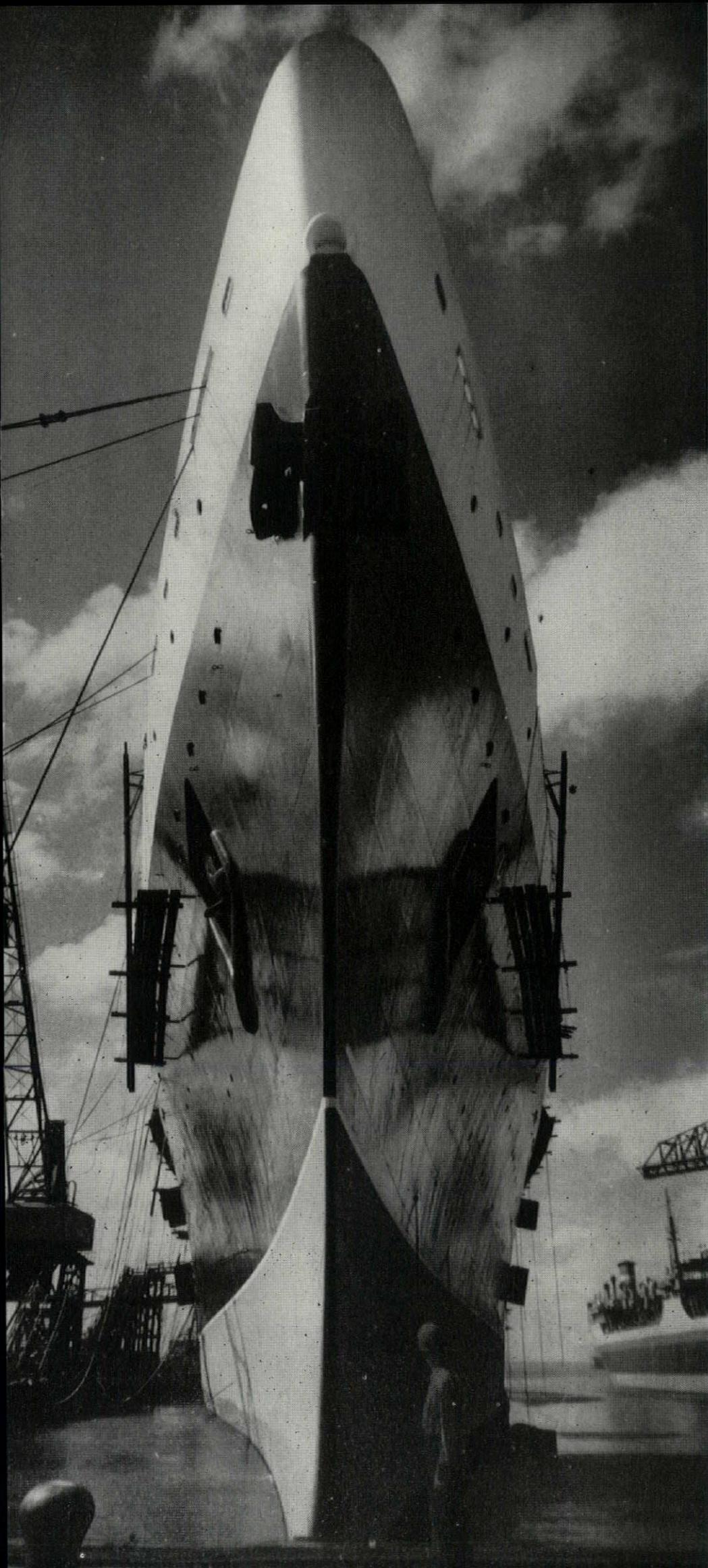
## 7. ELECTRICAL SYSTEMS

Among a great many logical and fairly obvious observations on this subject are a few worthy of special note:

- "Mandatory regulations affecting engineering practice only serve to confuse the designer and jeopardize the installation. . . . A list of nonmandatory recommendations which would serve as a guide for electrical design would achieve the desired results."
- The National Electrical Code is basically a standard of minimum electrical requirements: it does not necessarily provide for adequate design.
- Consider use of aluminum for large-size conductors.
- Use higher-voltage circuits.
- AIEE should expedite their investigation of the use of circuit neutrals for grounding.
- AIEE should develop a comprehensive design manual containing proper design procedures, formulas, design factors and diversity factors for the most typical electrical installations.

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**Note:** Both BRAB and DPA favor wide dissemination of the report but they emphasize the possibilities of misinterpreting such necessarily brief excerpts and summaries as comprise this review.—Ed.



# S. S. UNITED STATES

**challenges architects and  
builders on land to equal  
her beauty, her fire safety,  
her use of aluminum  
construction**

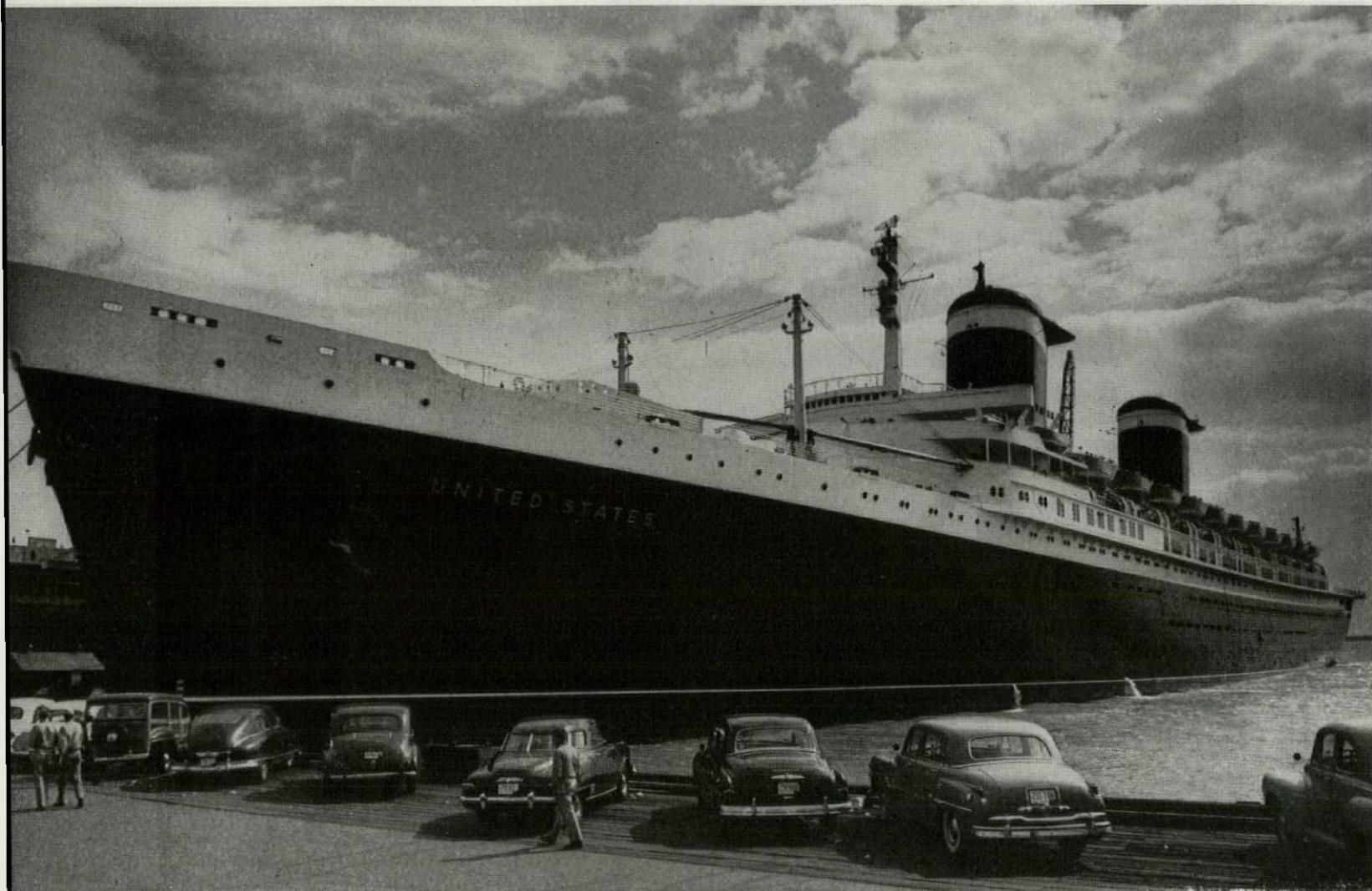
There is a story of the superliner *United States* that all the newspapers have only half told—the story of the *United States* as architecture, her story as a building.

Considered simply as a huge, inhabited structure afloat, she is a formidable achievement and a beautiful thing. Her 990' length is within 55' of the Chrysler Building laid on end. She is in fact a complete town, housing a peacetime population of 3,000—2,000 passengers and 1,000 crew. In wartime she can become a nice little floating city capable of carrying 14,000 troops, nearly a full division, across the Atlantic in just under 3½ days.

She is outwardly the most beautiful little city of around 15,000 that America has yet produced, and the most up-to-date; she is the world's only city air conditioned from end to end.

**As a building—**

—that houses a complete city, the *United States* challenges our land-built best no less than she challenged the blue ribbons once held by the *Queens*. Her fireproofing, for example, is probably unparalleled and her structural use of aluminum exceeds that of any other man-made cre-



Photos: (above) Associated Press; (opp.) LIFE—Arnold Newman

ation. As a \$73 million building laboratory for the nation, she specifically asks the land builders:

*Must all big buildings be built like stoves? Or can the fire menace be met by eliminating inflammable materials? (p. 124.)*

*And can structural aluminum replace steel for certain uses? If so, what problems are there to be overcome? (p. 122.)*

#### As architecture—

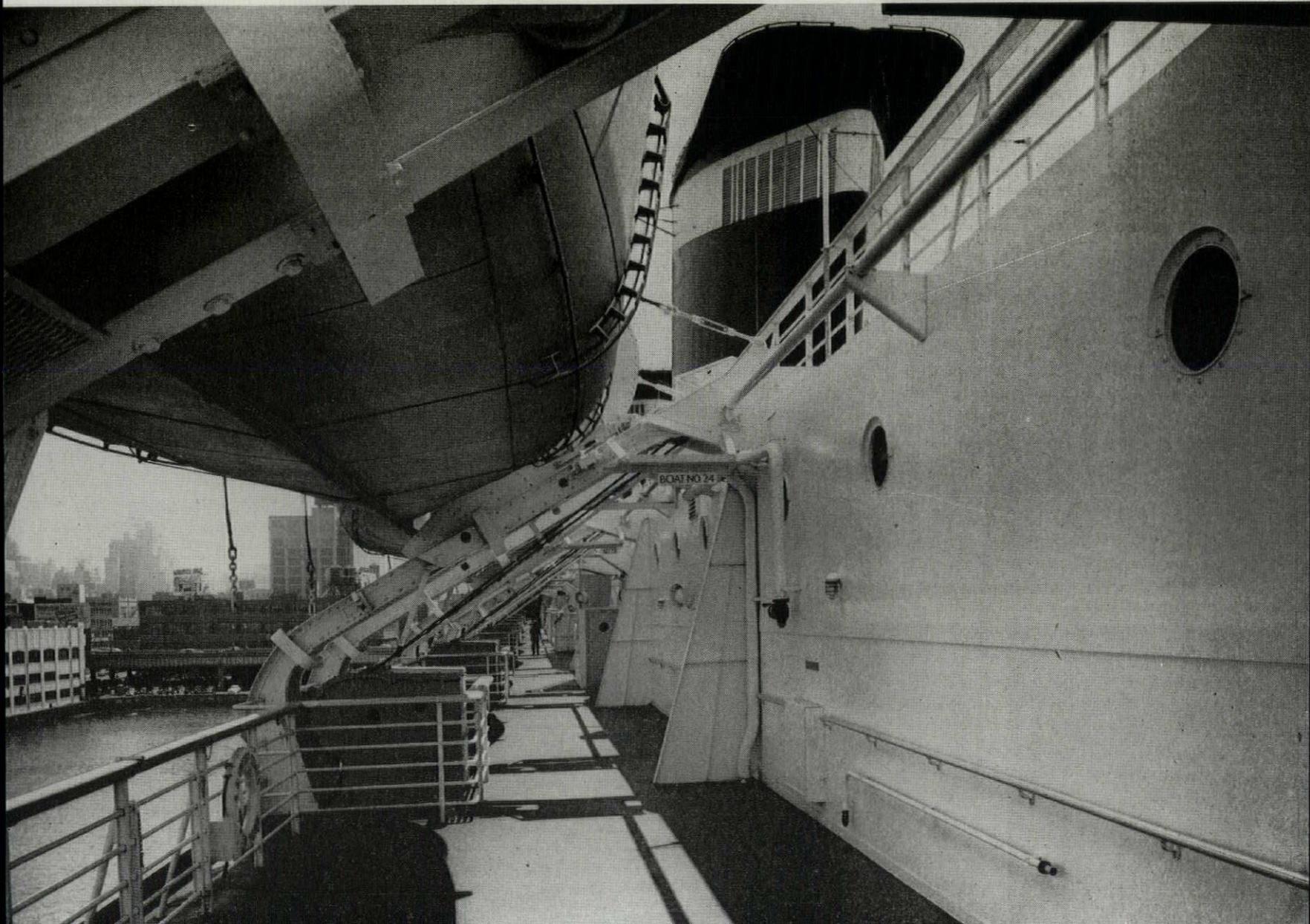
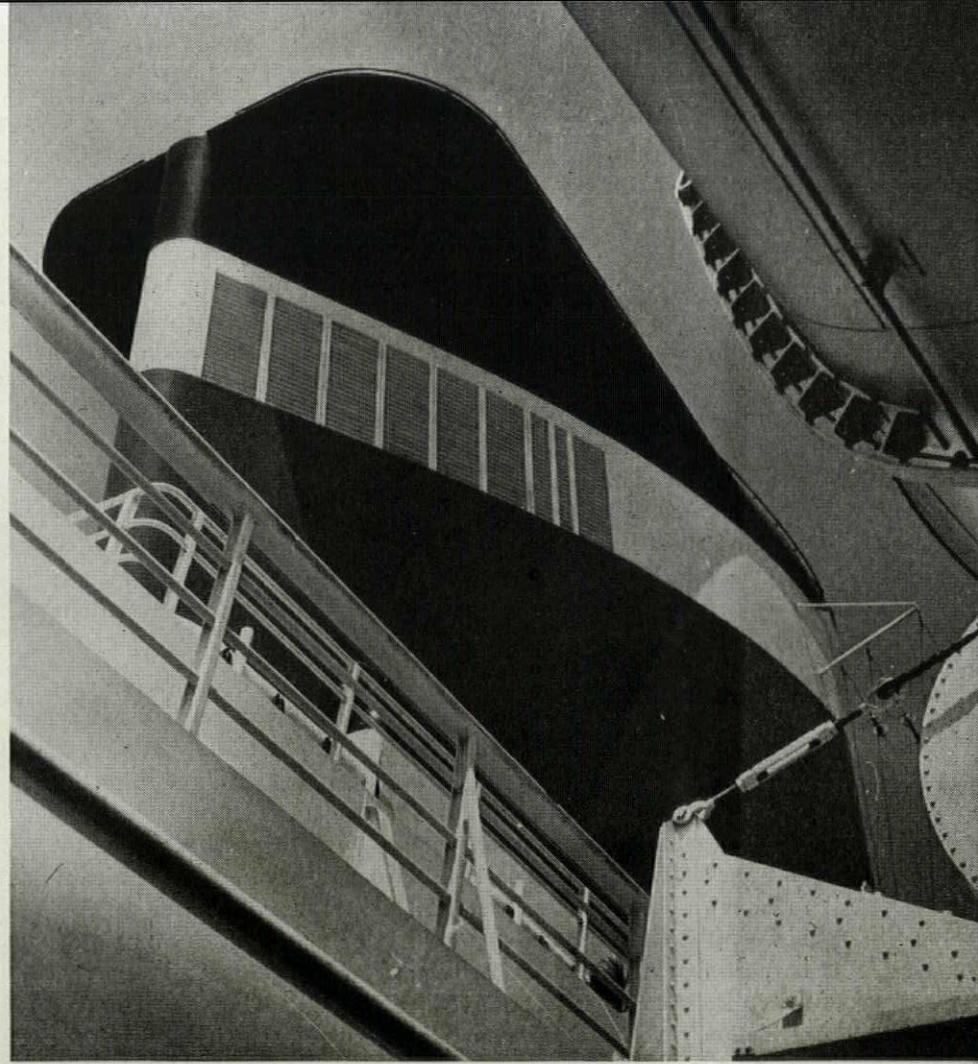
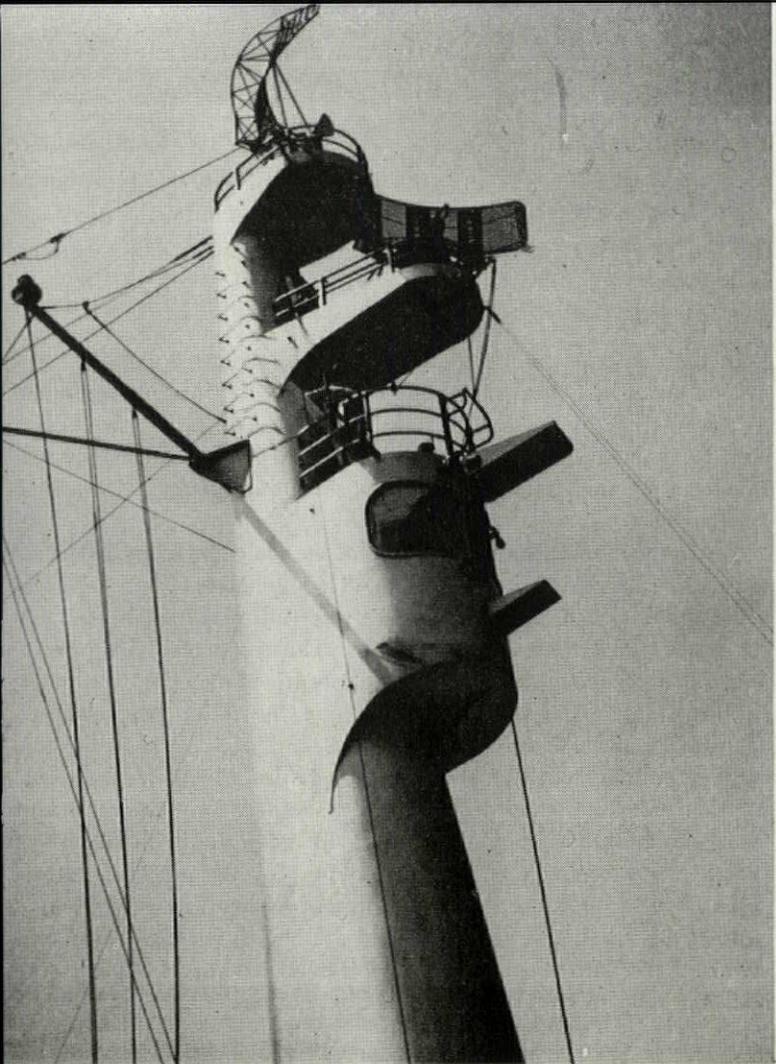
—the story of the *United States* is twofold. There's the architecture of the ship as a whole by famed naval architect William Francis Gibbs of Gibbs & Cox. And there's the interior architecture for a floating hotel by architects Eggers & Higgins and decorators Smyth, Urquhart & Marckwald.

As a streamlined shape, the *United States* has nothing to do with the simple whalelike shapes doodled by industrial designers to represent "liners of the future." She is still very recognizably a liner, with narrow (101'-6") beam (to clear the Panama Canal), a strongly raked clipper bow, and exceptionally low-lying weather deck—all combining to give her the characteristic postwar appearance of a swift oversized yacht. Naval architect Gibbs' first lesson to his land-lubber colleagues is one of fluidity and grace, at the very moment when land architecture is seeking to unstiffen itself and go more and more into curved self-bracing structures and dynamic curved forms.

*Sweet lines of liner depend on low weatherdeck, streamlined stacks, absence of "gimcrack" on the superstructure. Opp. p: top l., aluminum radar tower as functional sculpture; top r., streamlined aluminum stack with sweeping fin to deflect exhaust; bottom, a view all aluminum: stack, lifeboat, davit, wall, deck and rail are all of the same metal. Below, modern ships of three nations: front to back, the Queen Mary, Liberté, United States.*

Photos: (below) Daily News; (opp.) J. Alex Langley





GIBBS & COX, Naval architects  
 EGGERS & HIGGINS, Interior architects  
 SMYTH, URQUHART & MARCKWALD, Interior decorators  
 NEWPORT NEWS SHIPBUILDING & DRYDOCK CO., Contractor

Gibbs' most noticeable curves are his stack-tops. These stacks, of which the larger one in front is 60' long and 55' high, are the world's largest yet; for the tendency of stacks has been not to disappear but to grow ever larger and squatter, housing miscellaneous equipment. They are, so to speak, the ship's crest. Yet in silhouette the stacks of the *Queens* are still basically sawed-off stove pipes whereas those of the *United States* are helmeted with beautiful wide-finned caps which nautical language calls "sampan." The object is to cut wind resistance and above all to deflect the exhaust of today's lower stacks away from the deck; the shape, wind tunnel tested, is strictly functional—and strikingly handsome.

Apart from raking his lines and curving his contours for racy fluidity, Gibbs has shown how to combine many small disparate features into a few big sweeping ones. When Le Corbusier, back in 1933, asked the "blind men" of architecture to look at ships, his photos still showed decks cluttered with flocks of ventilators, with masts, derricks, capstans and winches. On the *United States* the masts have disappeared except for one beautifully shaped, aluminum-radar tower. She has front and aft sets of kingposts with attached booms (the *Queens* have cut down to one set) but the ventilators have disappeared: enough air for three air-conditioned Radio City Music Halls comes in unobserved. Elimination, simplification, consolidation, redesign of such operating features, has yielded free deck areas whose spaciousness, compared to other modern ships, is positively thunderous.

Inside the ship, not much is being divulged; but Gibbs found he could put his postwar high-pressure, high-temperature steam turbines—so compact are they—into space which before the war would have held only the boilers, proving that a mechanism, with maturity, takes less space not more. Other details: the ship distills enough water for passengers and air conditioning as well as the sensitive turbines, so the passenger finds not one tap that does not run pure drinking water; and while they were at it the engineers air conditioned the boat as a whole, so she could be completely battened down in wartime even in the tropics.

### Ship as hotel

In their interior public spaces, architects Eggers & Higgins kept a good share of Gibbs' shipshape clarity but the interior treatment as a whole by the decorators failed to come as clear. It is evident now, after the event, that those strict standards of performance that ruled the job were fatal to the swank sea-going luxury by inherited standards.

The chance for *plushness* at the top of the scale was killed in the act of raising *convenience* at the bottom. Thus the close spacing of bulkheads that meant unprecedented safety for all meant smaller dimensions, also, in first-class public rooms. Unprecedented fire precautions for everyone meant painted walls not fancy paneling, aluminum furniture not exotic veneers. Conversely the uniquely convenient acoustical hung ceilings hid ugly ducts and pipes, and if the top-ranking cabins lacked rich veneers all cabins hid their plumbing. All this enforced democracy virtually shouted for a new kind of taste, one freshly aristocratic, that could make the brilliant best of free air and common paint, not looking for decorative fuss and patent feathers. The decorators' limit of vision was perhaps best expressed in their use of contributed art, which created a wan version of Paris 1925, had little to teach good architects ashore, gave back no echo to naval architect Gibbs' outdoor spatial thunder.

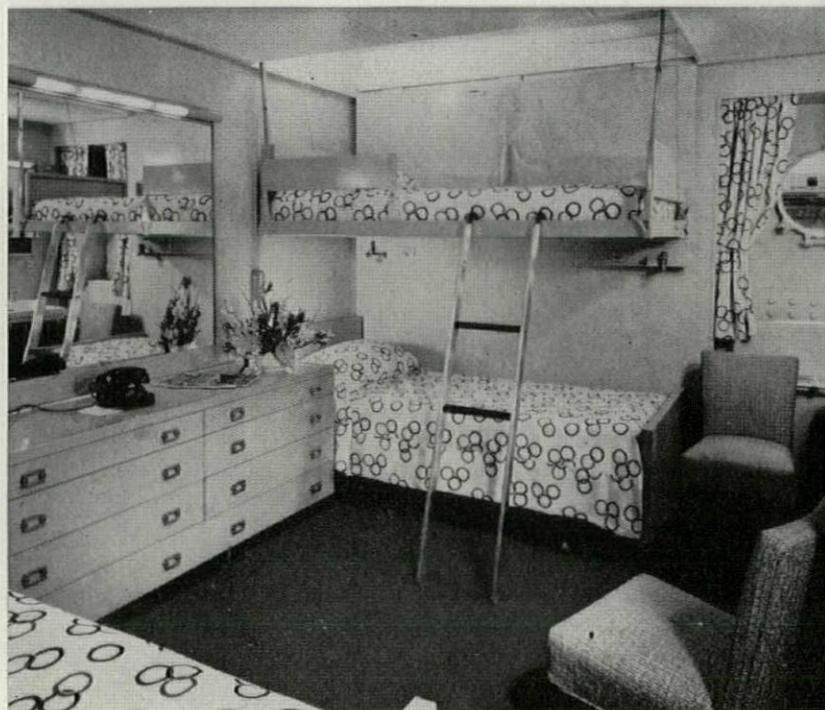
### Aluminum construction

More than 2,000 tons of aluminum was used on the *United States*, most of it in the superstructure. Among its advantages were to lower the metacenter (so the ship will be steadier), to improve maneuverability, to increase cargo capacity per ton, and speed per horsepower.

The direct-weight saving compared with an identical use of steel was something over 2,000 tons, but aluminum enthusiasts estimate the true effective saving as high as 10,000 tons, taking into consideration the bigger engines that would have been needed to drive a heavier vessel at the same speed, the stronger framing in the lower hull that would have been required for a heavier superstructure, etc.

Roughly 1,400 tons of the liner's aluminum went for aluminum

Photos: LIVE—Arnold Newman

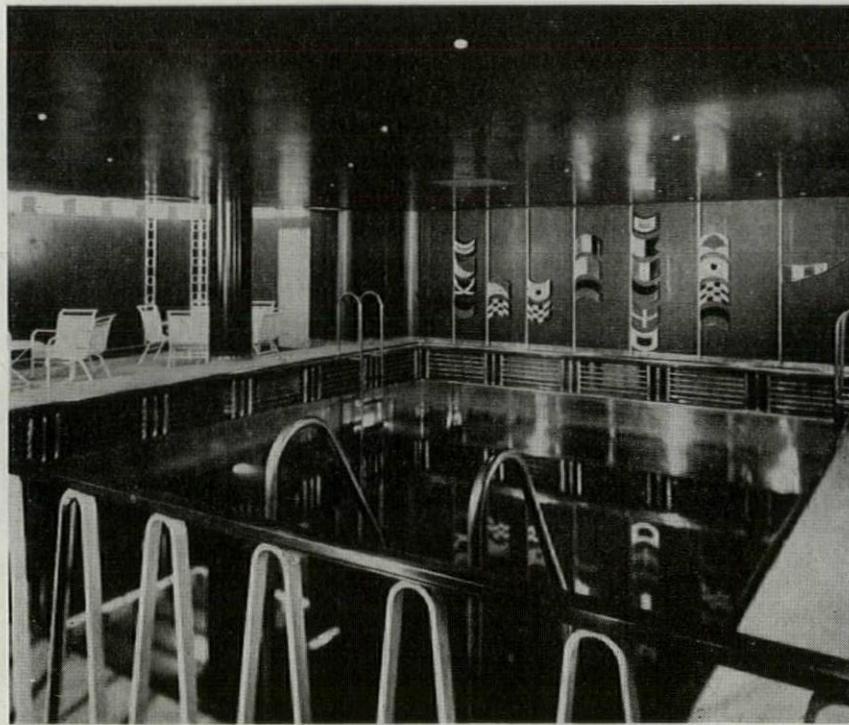




Photos: J. Alex Langley

*First-class ballroom, above, has cove lighting and a circular etched glass screen by Charles Gilbert, reminiscent of decor of 1929 Chanin Building. Bottom row of photos, l. to r.: cabins of tourist class, cabin class, and two versions of first class. All walls are painted with fire-retardant paint, all furniture is aluminum, all fabrics fire resistant.*





deck plates, bulkheads, longitudinal beams, and the two huge smoke-stack housings (which took 85 tons each). Of these 1,400 tons about three-fourths was for deck plates, one-fifth was for structural members and 5% for 1½ million rivets. The other 600 tons were divided into a host of miscellaneous uses, including doors, furniture, portholes, notice panels, insulating foil and bulkhead veneers.

The raw cost of aluminum to form beams and girders is roughly four times that of a correspondingly strong steel structure. In addition, with present knowledge and techniques, handling and working of heavy aluminum requires considerably more time than steel. As a result, shipyard engineers agree with structural engineers ashore that aluminum is too costly to use structurally unless some consideration other than cost, such as speed or weight, is important. At sea it can be used profitably only on the upper decks. On land its most obvious uses would be power distribution towers or additions atop existing buildings.

The problems encountered working the heavy structural aluminum demanded considerable ingenuity. Since aluminum cannot be heated and shaped like steel (it must be shaped cold or heat treated after shaping), one gang that commonly shapes 25 steel plates a day found itself able to shape only one heavy aluminum plate per day.

No marine alloy suitable for welding heavy structural parts for ships was available when the *United States'* superstructure was built (such an alloy has since been developed), and consequently all the superliner's aluminum joints had to be riveted. This could be done only with frozen aluminum rivets, which means that the rivets were heat-treated until they attained a satisfactory metallurgical plasticity, then quickly frozen to retain that plasticity and delay age hardening (which occurs at normal daily temperatures). Handed to riveting gangs in the frozen state, they were inserted and driven quickly to join the parts. When in place, age hardening commenced as the rivets reached normal temperature. This added strength to the connection.

Deck plating itself is aluminum covered with a synthetic-rubber compound that is proved to have perfect bonding. One rule that was proved in laying the deck was that the aluminum, because it has a coefficient of thermal expansion more than 2½ times that of steel, should be laid during the sunny part of the day so as to be fully expanded.

Fabrication of many light-gauge aluminum parts such as the shower stalls was done by welding, usually by the inert gas method.

A preset voltage and a controllable rate of feed for the welding wire permitted even heating of the welded surfaces—which produced an even weld and a minimum of buckling. The smallest possible wire was used to increase current penetration at the point of weld. With the power and rate of wire feed fixed, the operator could move the wire along at about a foot per minute in a single operation to complete the joining.

Exposed aluminum handrails on open decks were anodized to prevent corrosion. Joints here had to be welded and ground flush, first, then returned to the shop for the anodizing process. This tedious operation paid off handsomely, however, and the rails present a smooth, weatherproof surface. Interior aluminum trim was also anodized. Other aluminum surfaces exposed to salt spray were painted.

#### Fireproofing measures

US Lines publicity men cherish the boast that "the only wood on the ship is in the butcher's chopping blocks and the grand pianos." In this case, such a publicity phrase does characterize the extremes to which designers went to fireproof the liner. The expense they went to, however, would preclude general adoption of all such techniques today.

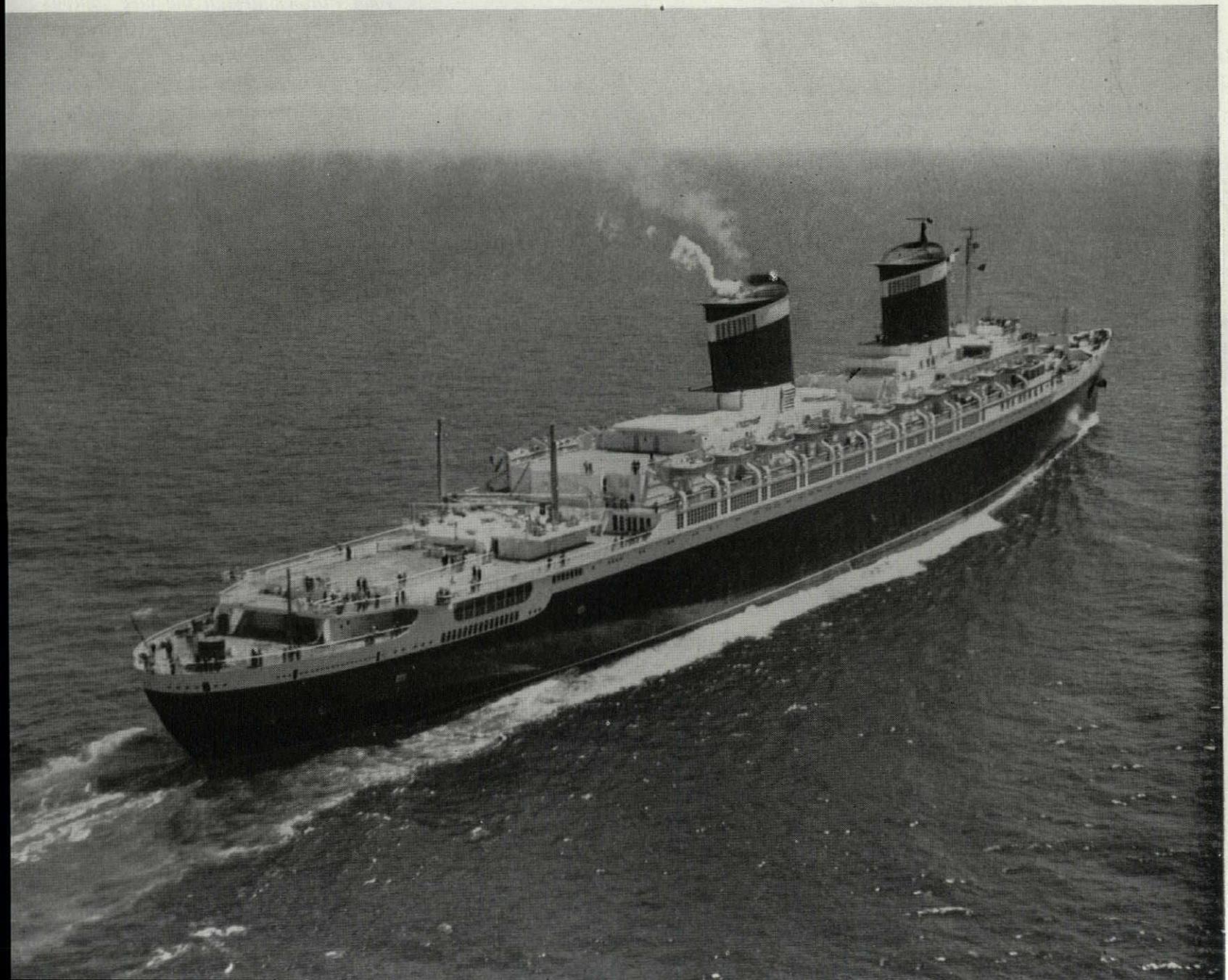
Upholstery of all furniture is glass fiber. Furniture frames are metal. Fabrics for drapes and furniture are of flameproof synthetic. In addition, all materials received a special fireproofing treatment that, unlike most other commercial processes, does not have to be repeated after each cleaning but will last the life of the fabric. The process costs between \$1 and \$1.50 per yard. Probably an all-time limit in precaution against fire was reached in the selection of fire-retardant dyes for drapery paint.

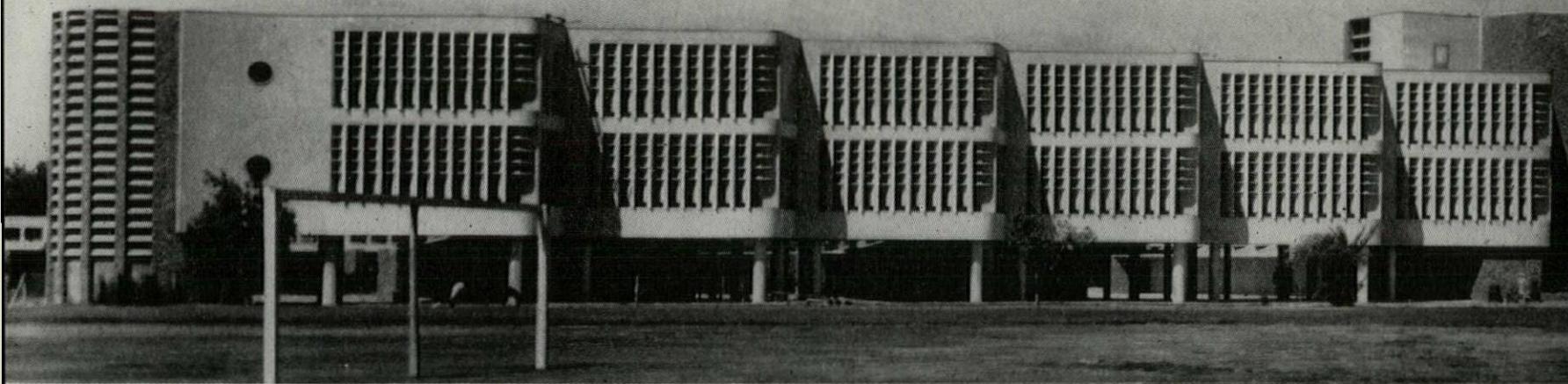
All paint used on interior surfaces is fire retardant and each of the more than 100 colors and shades used was tested to be sure the various pigments did not destroy the paint's fire-retardant quality. At the time of building, no commercial fire-retardant paint was available which could meet the tough Navy specifications. Finally, the retardant was developed at high cost by Devoe & Reynolds and made available, under Navy rules, to all manufacturers.



*Mural sculpture in first-class dining saloon (extreme l.) is by Gwen Lux, is executed in fireproof lightweight foam glass. Swimming pool (directly l.) is decorated with porcelain enamel copies of code flags designed by Lewis E. York.*

*Photos: (above) J. Alex Langley; (below) US Lines*





LOCATION: Cairo, Egypt

JOHN W. POLTOCK, Architect

# SUN CONTROL

A college's major design problem becomes its major design feature

*Egypt's broiling sun made Architect John Poltock design the new campus of Cairo's Victoria College for shade and ventilation. He got them—as well as a striking design of light and shadow—by three means:*

1. Precise orientation takes advantage of prevailing northwest winds, avoids motionless air pockets between walls, and minimizes sun-control problems.

2. Open-air ground floors beneath most buildings help pass on breezes that otherwise would be blocked and provide shaded exterior walkways for students. (Eventually nearly all buildings will be so connected.)

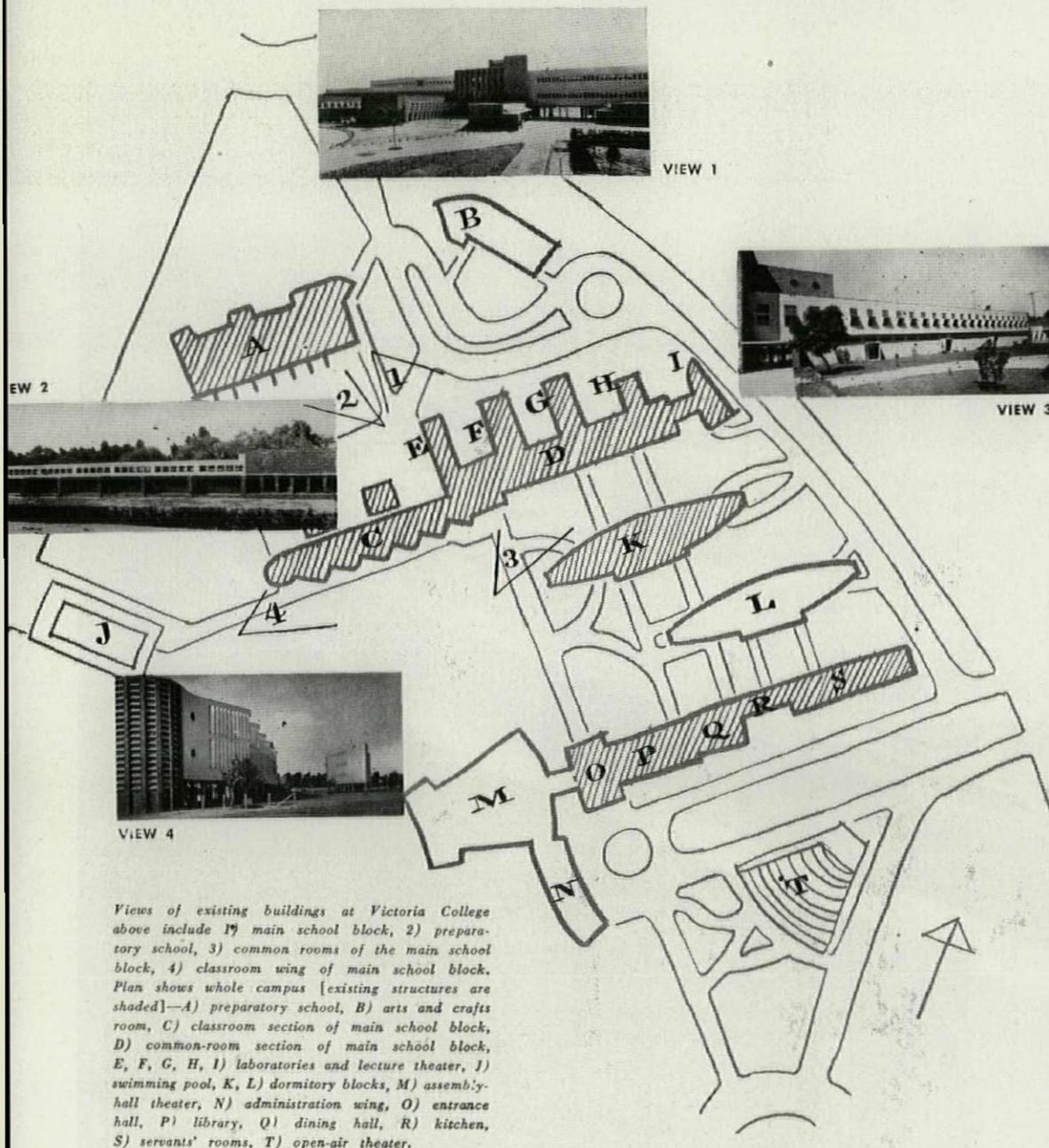
3. A wide range of louvers and canopies reduces sky glare, screens direct sunlight and channels air movement.

In addition, the thick masonry walls with light exterior finishes (characteristic of that area) help insulate rooms both summer and winter.

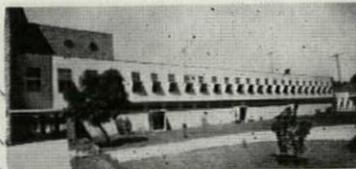
A minimum of small, deeply recessed windows was used in the curved extremities of the dormitory walls on the hot southeast. On the northwest (not shown) twice as many were used to take advantage of the prevailing winds.

Instructors' rooms in the center have deep, open balconies whose projecting walls, floors and ceilings keep out the sun. Only in early morning does direct sunlight reach these rooms.

The main classroom block has two floors of wedge-shaped classrooms set at an angle to the main axis of the building. One exterior wall of each room gets eastern sun.



VIEW 1



VIEW 3

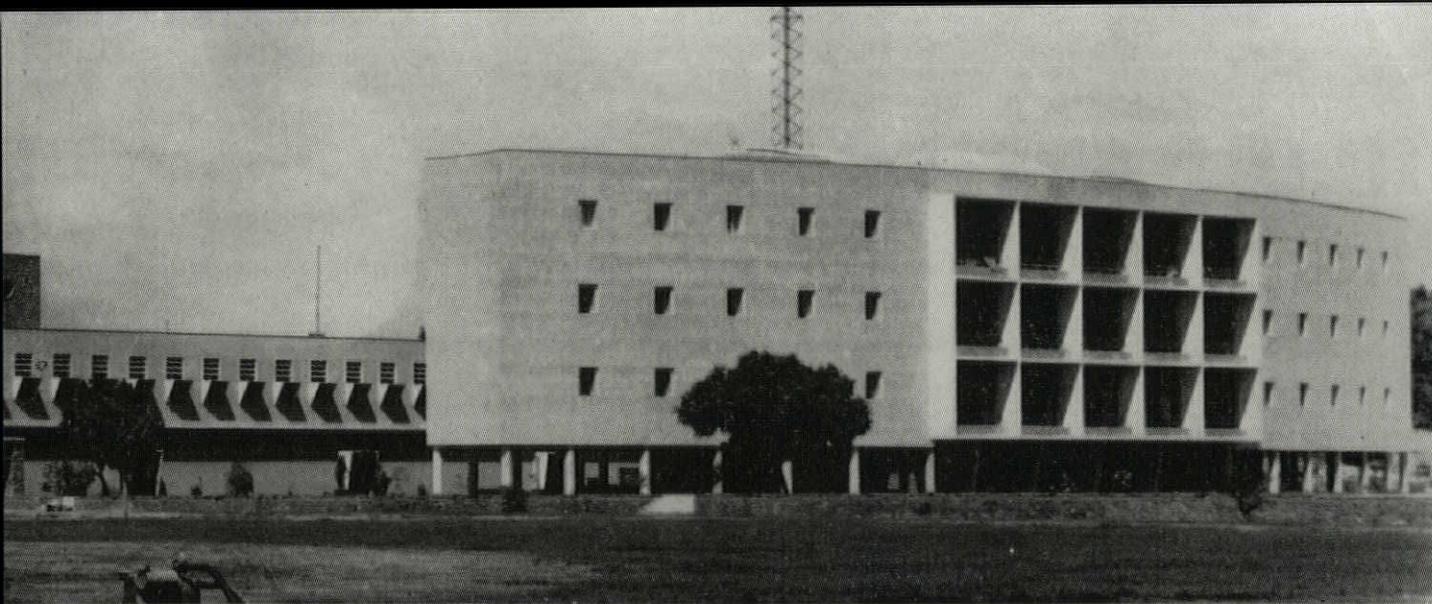


VIEW 2



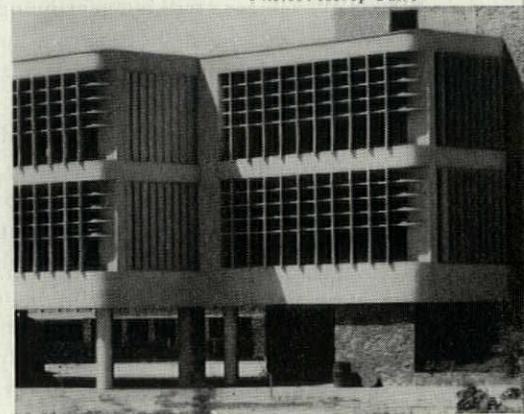
VIEW 4

Views of existing buildings at Victoria College above include 1) main school block, 2) preparatory school, 3) common rooms of the main school block, 4) classroom wing of main school block. Plan shows whole campus [existing structures are shaded]—A) preparatory school, B) arts and crafts room, C) classroom section of main school block, D) common-room section of main school block, E, F, G, H, I) laboratories and lecture theater, J) swimming pool, K, L) dormitory blocks, M) assembly-hall theater, N) administration wing, O) entrance hall, P) library, Q) dining hall, R) kitchen, S) servants' rooms, T) open-air theater.



*In Cairo, Egypt, buildings of Victoria College solve sun problem using eggcrate, vertical and horizontal louvers, canopies*

*Photos: Kerop-Cairo*



*Harsh afternoon sun on main classrooms is diffused, partly blocked by fixed system of louvers in south wall.*

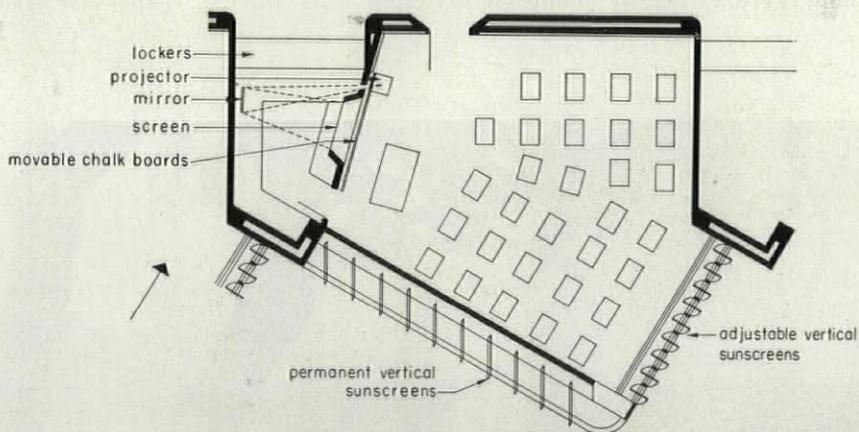
Here, adjustable vertical louvers of hollow, insulation-filled metal are ganged together and manually operated to admit solar heat on winter mornings. During hot months (which in that latitude constitute nine months of the year) the louvers are closed and the insulated fins help keep out heat.

Each classroom also has a south exterior wall. Here, deep, fixed vertical louvers eliminate sky glare for students when they look toward the blackboard. Louvers also direct incoming light toward the teacher's desk. To get a view, students need only turn their heads to the left. In addition to the vertical fins a series of five fixed horizontal louvers reduces mid-day sky glare from above so that no open sky is visible below the normal right line of seated students. Both sets of louvers reduce solar heat and direct air movement into the rooms.

On the other end of the building the small windows have fixed horizontal louvers on upper sections to reduce sky glare and direct air into the offices and special-purpose rooms while each lower section has a fixed canopy with side checks.

Wedge-shaped classrooms offer several teaching advantages beyond their obvious lighting and ventilating virtues. The unorthodox shape helps focus students' attention on the instruction and on the end of the room where all instruction devices are concentrated. These include blackboard visual-aid projection, screen and demonstration boards. It also helps the instructor control the students since they are all within his angle of vision. The long corridor wall is available as a continuous display wall. And both blackboard and display wall get plenty of light from the two window walls where the louvers and sky screens control its direction and amount.

*Wedge-shaped classroom focuses attention on blackboard where light is focused by the louvers.*



*Plenty of light without glare is result of louver system which also directs air movement into the room.*



# TO BUILD HAPPIER BOYS

Sensible site planning, handsome design and enlightened social thinking  
aid rehabilitation program at residence school

Here is a school in which the parts are good and the sum of the parts even better. Given a 157-acre site among the hills and vineyards north of San Francisco Bay and a program calling for an institution to serve as both home and school, the architects have created a campus that is notable for:

- ▶ its domesticity, achieved without masquerade;
- ▶ its orderliness, achieved without the formality of a main axis or monumental focus;
- ▶ its unity, achieved without sacrificing variety of outlook, fenestration or function of the separate buildings;
- ▶ its economy, achieved by standardization of construction and materials without monotony.

Of its eleven buildings (chapel, administration, dining hall, academic building, gymnasium, three cottages, convent, priests' cottage and maintenance shops), most interesting are: 1) the chapel because it successfully integrates architecture and sculpture, dignity and informality; 2) the dining hall because it solves the problem of housing many separate small dining rooms; 3) the 21-boy cottages because they avoid the curse of dormitory atmosphere, are consistently homelike.

Neither a reform school nor an orphanage, the center is an enlightened descendant of both. It takes neglected or underprivileged boys 6 to 14 years old who have not yet had trouble with the law but show signs of heading toward delinquency. It now serves 63 boys but the service buildings are designed for the 126 it will house when three additional cottages are built. Funds were raised by public subscription after the

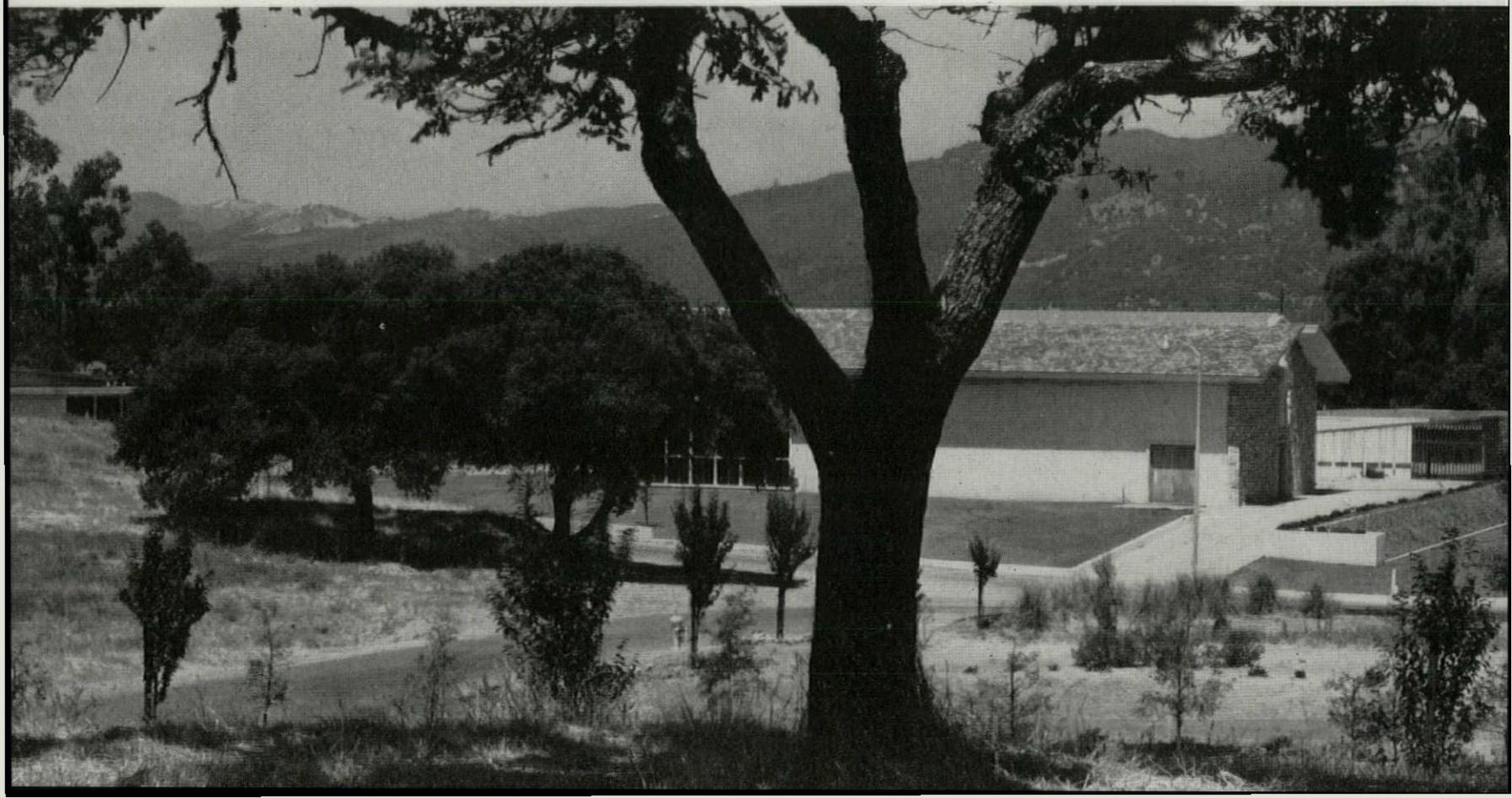
Archdiocese of San Francisco had successfully tried a smaller pilot school on a San Francisco estate.

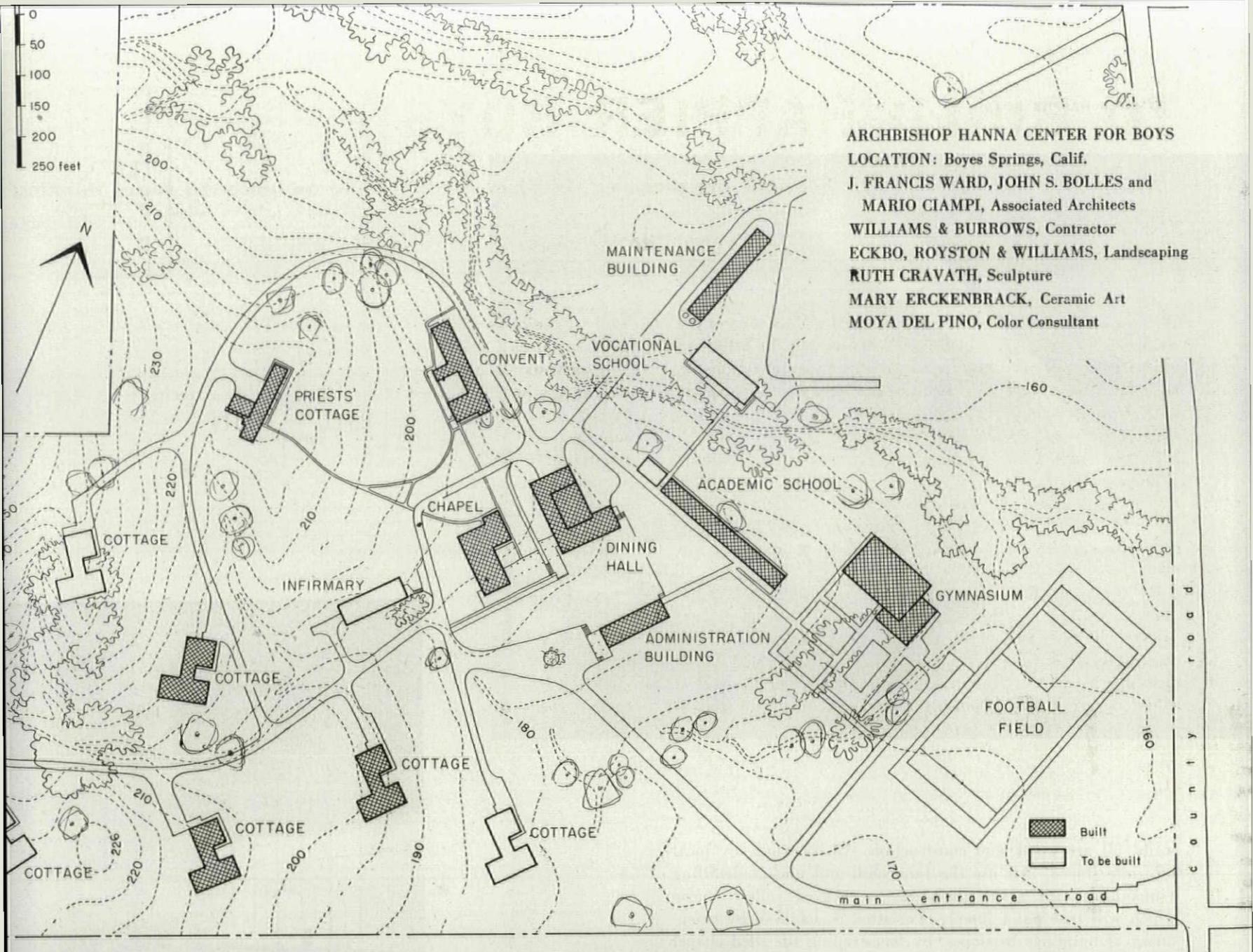
**The campus:** Everything about the campus is subtly aimed at the center's job of "preventive rehabilitation." The architects turned down five sites as too barren and depressing or too suburban, chose this one because its natural beauty is easily maintained and its gently rolling slopes lend themselves to noninstitutional arrangement. Expressing the center's goal of a well-rounded life, the campus does not focus on any one activity at the expense of others but distributes its emphasis almost equally among church, school, sports, social life and home life. This plays down the size of the institution as a whole.

"The chapel was deliberately placed so that the boys going from their cottages to the dining hall, the school or the playfields would almost have to brush against it," reports architect Bolles. "It was also designed to be as informal as possible so that the children would feel free to enter regardless of their attire or mood. It has worked out surprisingly well in this respect."

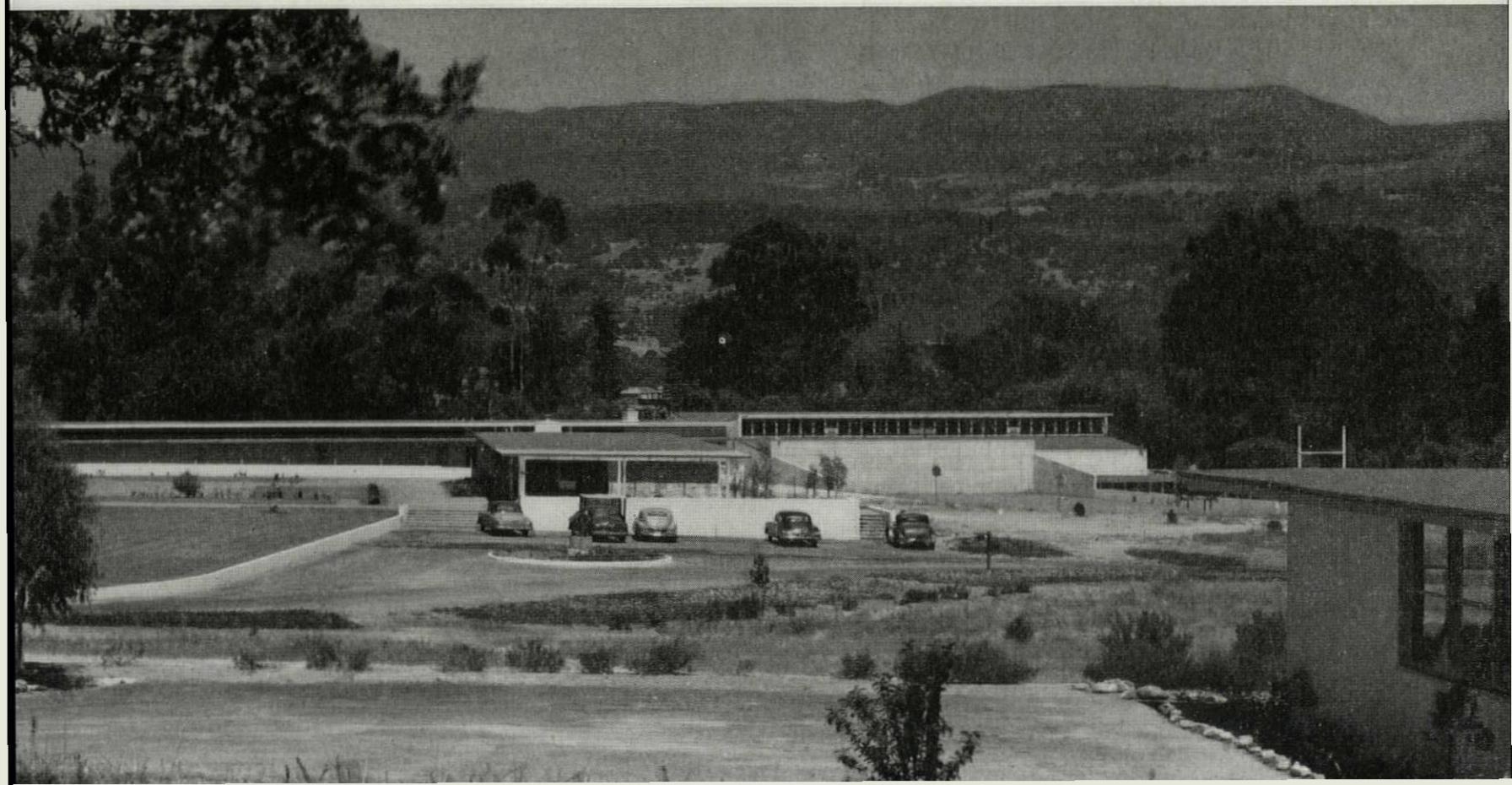
School and sports facilities are grouped, but with the school oriented northeast, away from the distractions of games or activities centering around the administration-chapel-dining group. The plan also considers the public on whose support the school depends; passing motorists have the pleasant view of boys on the playing fields.

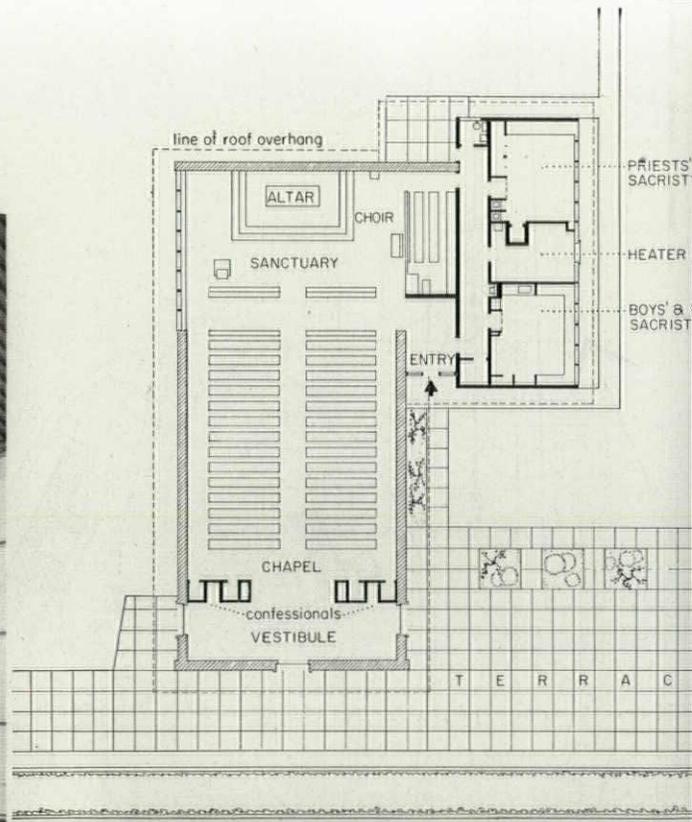
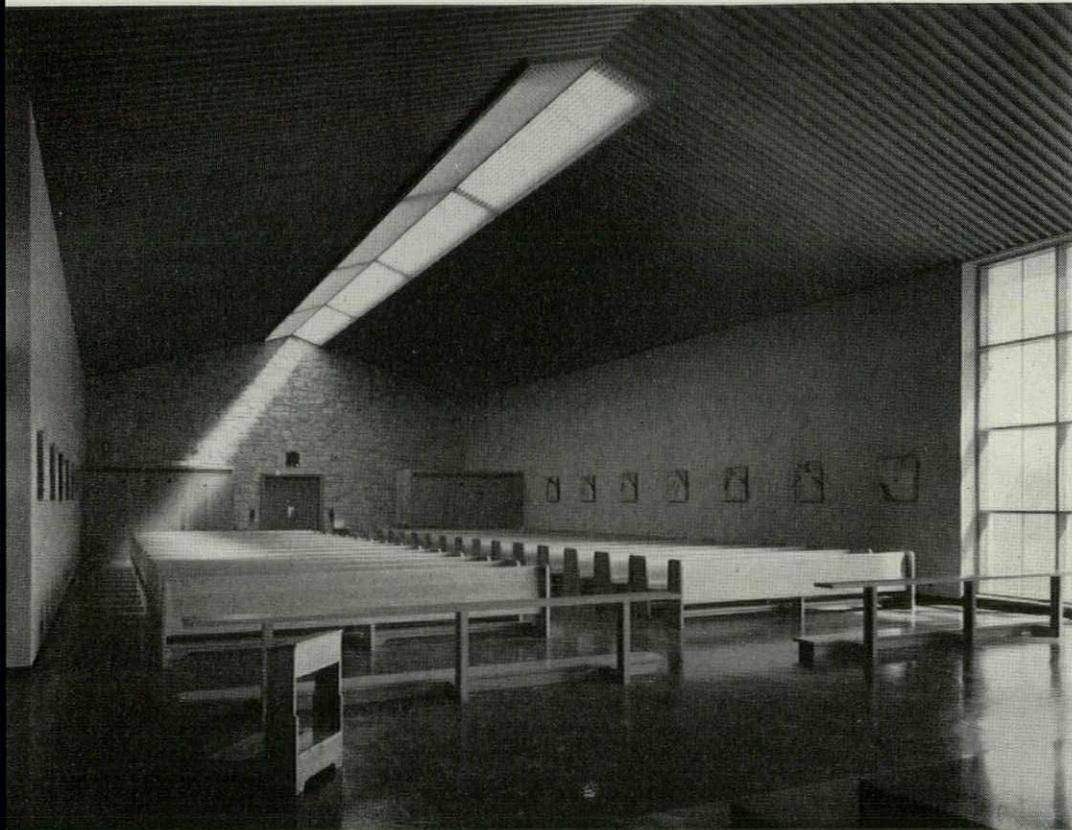
All buildings are constructed on a 4' module. Except the chapel and gymnasium, which have steel framing and concrete





northeast into the central campus with school in center background, chapel at left (facing page)



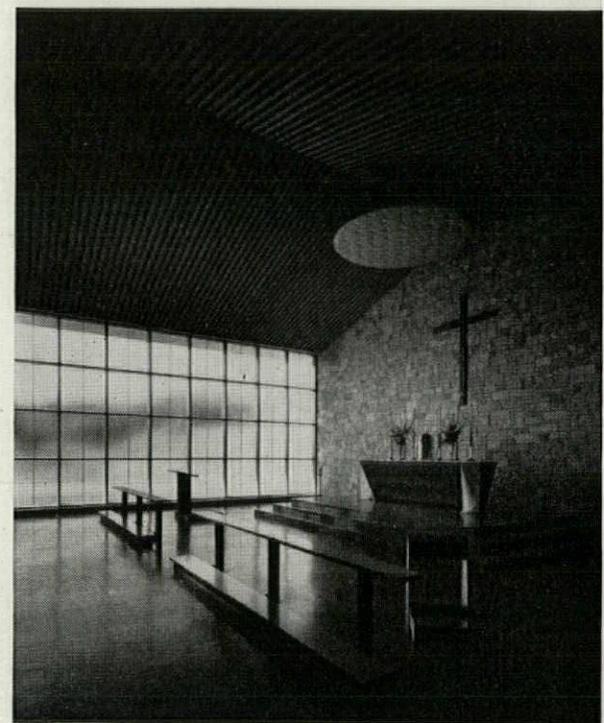


walls, all are wood stud construction. All exteriors are local off-white stucco. All use the same mill and plaster detailing (smooth-troweled gray, green-gray or grayed yellow stucco which will take paint later). Variation is achieved by orientation of buildings to slopes, by fenestration, the tiled chapel roof, occasional use of local stone and redwood and color of trim (yellow on chapel and administration building, blue on dining hall and school group, green or red on cottages). Principal economies resulted from standardization and use of slab on grade construction.

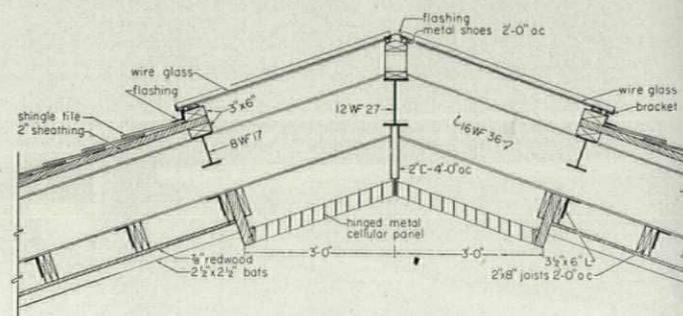
Now for the individual buildings:

**Chapel:** "The most interesting part of the job," says architect Bolles, "was in selling the chapel to the Archdiocese. Bolles has a past as an archaeologist, once worked in medieval church ruins at Cluny, and conceived of the chapel as a return to the spirit of the Romanesque church. By pointing out analogies between the two, he convinced church officials that the chapel suitably fitted liturgical requirements. Just as the Romanesque, it is designed as background for ceremony and art: the facade, with its split roof, for the figure of Our Lady of Fatima and Three Children, the dark gray interior for the 14 Stations of the Cross carved in Tennessee marble. Lighting (Bolles likens the skylight to the Romanesque clerestory) directs the congregation's attention to altar and ritual. The smaller convent chapel is done in the same spirit, with stations glazed on patio tiles.

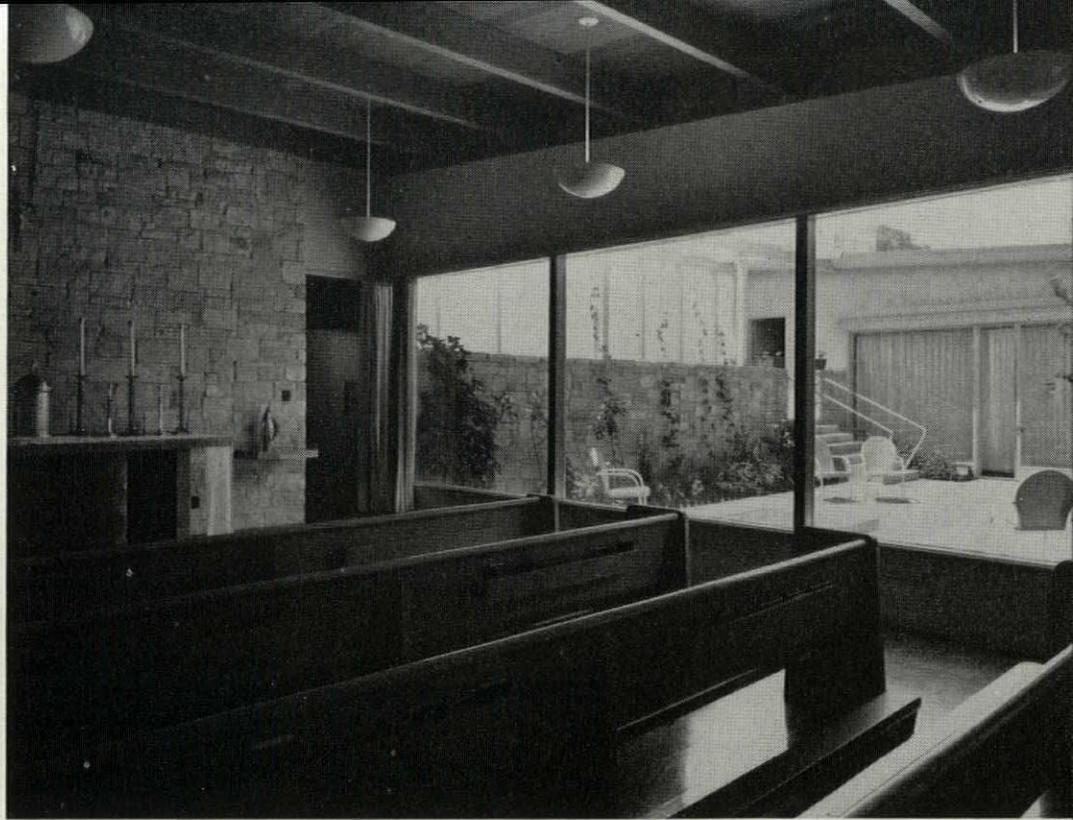
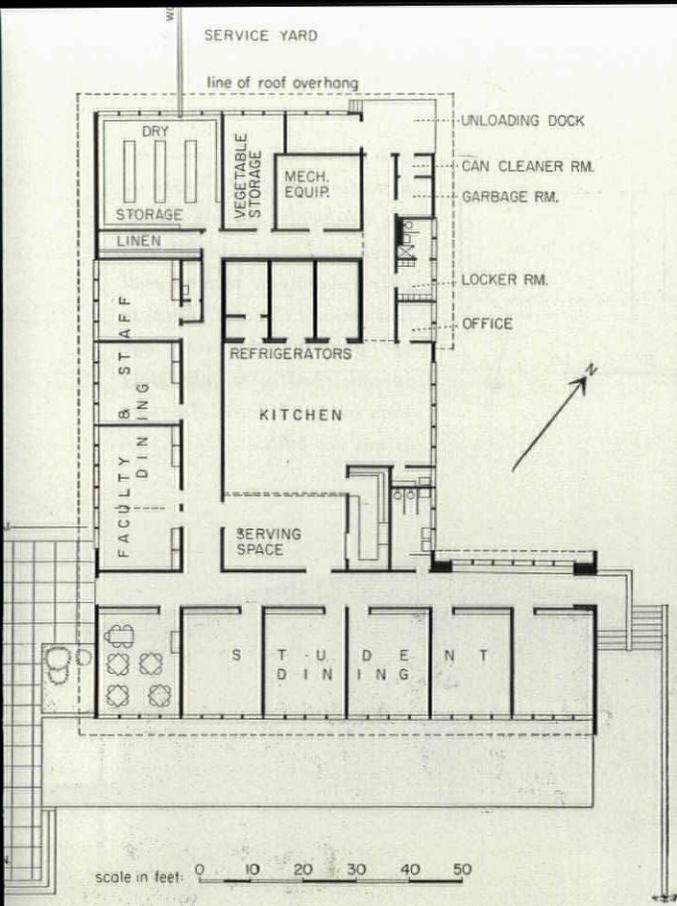
**Dining Hall:** Both architects and school officials wanted a dining room and kitchen in each cottage so boys could help prepare meals, clean up, feel they were helping run this part of their homes. Expense ruled out both this plan and a scheme of a central kitchen with delivery service to individual cottages. The architects compromised by attaching to the central kitchen a series of small rooms in which each cottage group eats with its



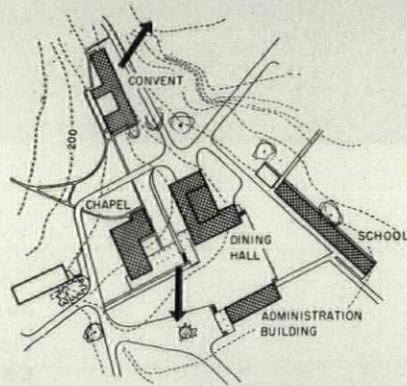
Natural lighting dramatizes the chapel ritual. Ceiling is finished with 2 1/2 x 2 1/2" redwood batts; canopy is copper and silk.



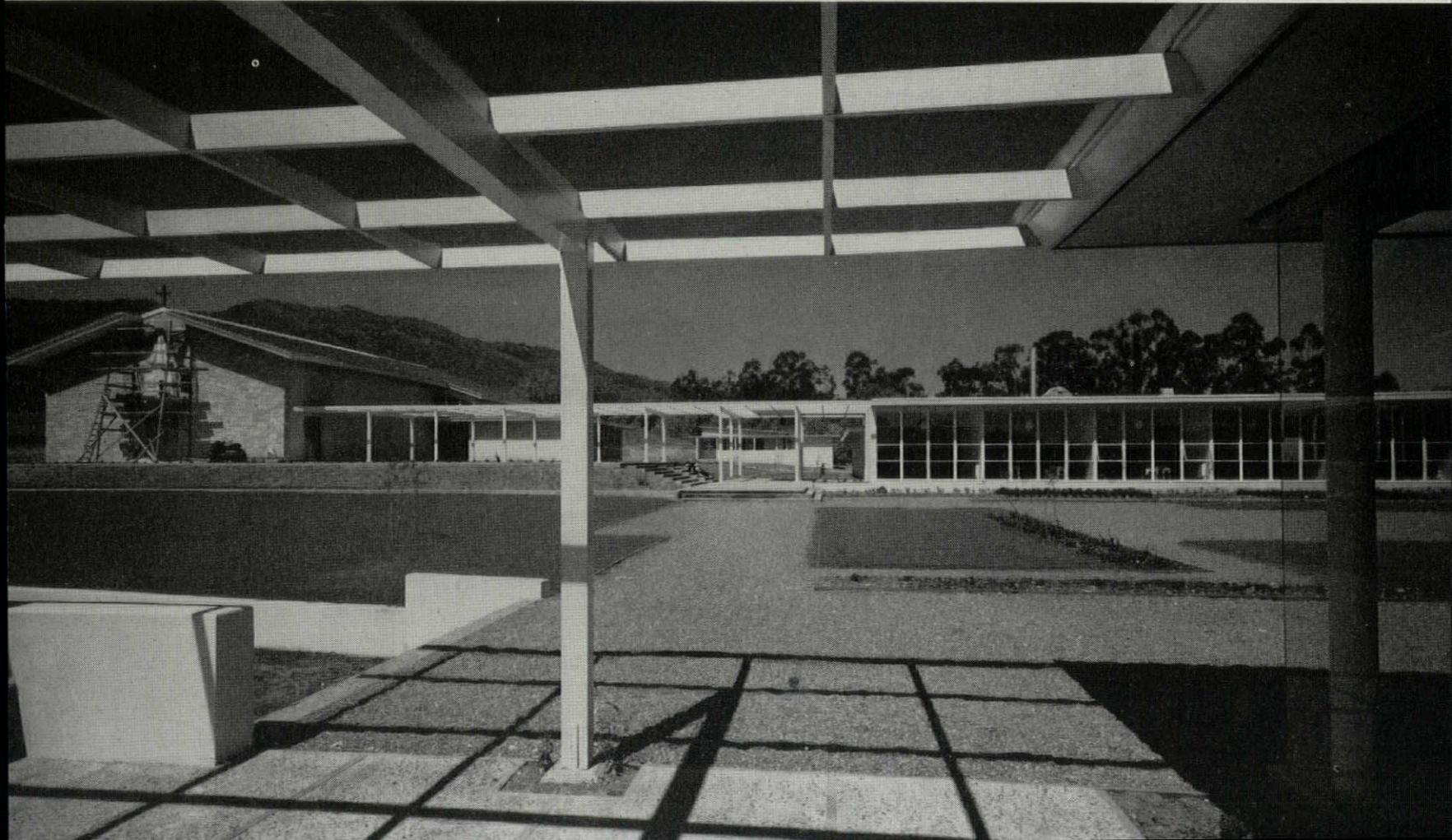
Chapel roof and skylight detail. The hung ceiling creates a 42" chamber between the wire glass and diffusing panel.

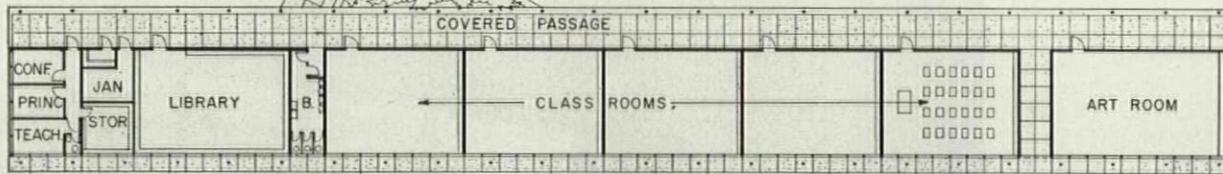


*View of chapel and dining hall from the administration building entrance. Each cottage group has its own dining room along the southeast face of the hall. The six boys' and four staff rooms are all conveniently served from forward area of the kitchen. The gravel terraces have 2" x 4" redwood dividers and redwood trellises.*

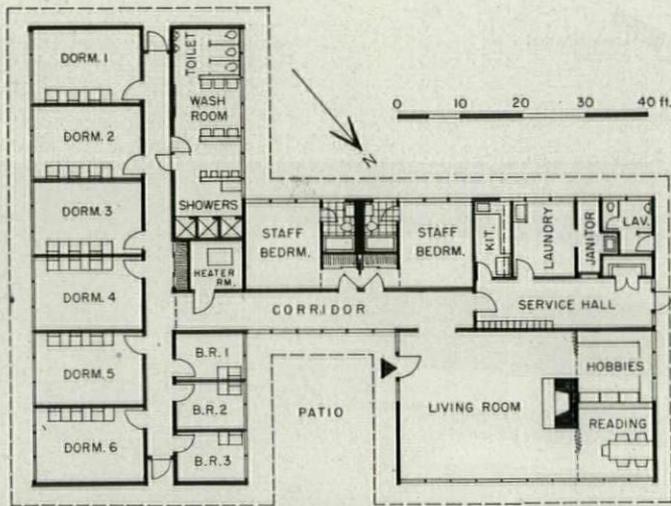
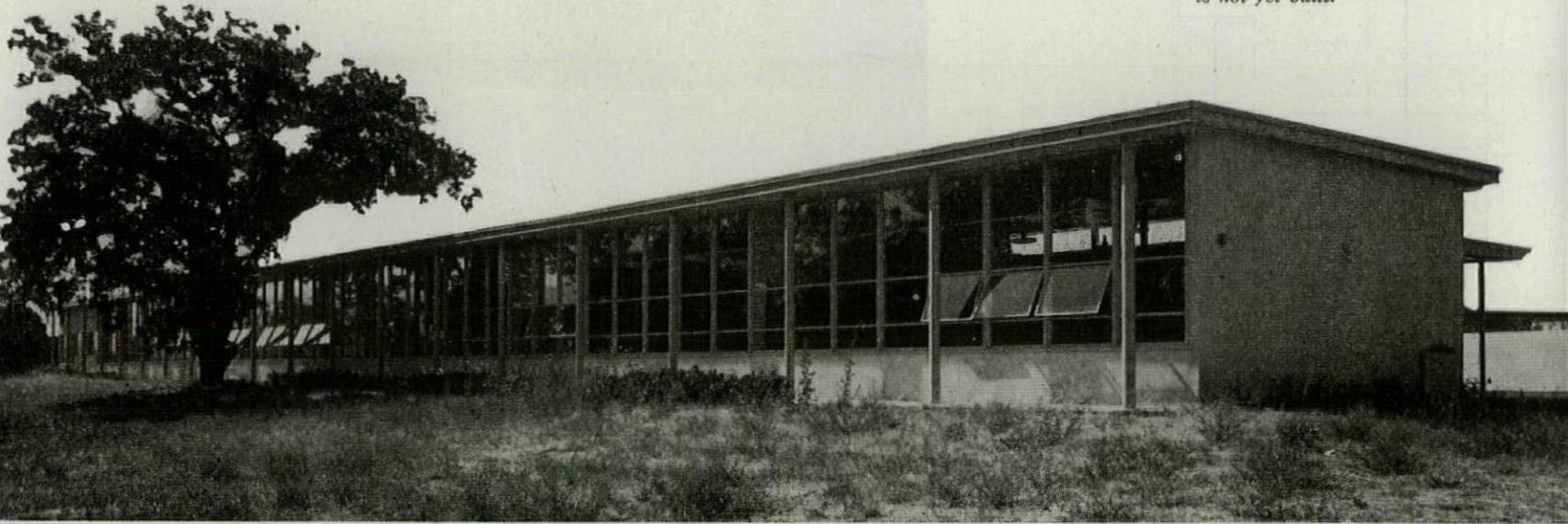


*The small convent chapel repeats the simplicity of the main chapel, is also dramatized by window treatment. The patio is enclosed on its other sides by the community room, the cell corridor and an elevated terrace surmounted by obscure glass.*





School is oriented northeast with clear glass clerestory on the southwest. Construction is wood stud and stucco with lally columns at window wall and covered corridor. Because of students' nine-year age spread, classrooms take more than one grade each. Art room is not yet built.



own house parents—a device that again plays down the size of the institution, plays up intimacy and domesticity.

**Cottages:** On advice of the school psychologist, most rooms are three-bed, three in each cottage are singles. House-parent quarters are flexible, to accommodate either two house mothers, each with her own room, or a couple, with bedroom and sitting room.

It was felt that the right to snacks is one of the rights of home that loom large to a boy, so a small kitchenette was included. Focal point of each cottage is its 40' x 24' living room. The portion of the room behind the fireplace is divided with bookshelves and materials cabinets into a 10' x 12' hobby room with workbench, and a reading room of the same size. Said Archbishop John J. Mitty at dedication of the center: "When a boy sits in front of the fireplace and looks out those big windows at the Sonoma Valley, he can't but have a sense that he is loved and that he is indeed a child of God."

<b>Cost data (1949 prices)</b>	
Total (excl. of archt's. fee)	\$1,236,017
	Per sq. ft.—
Chapel .....	\$15.50
Dining hall .....	14.00
Administration .....	12.00

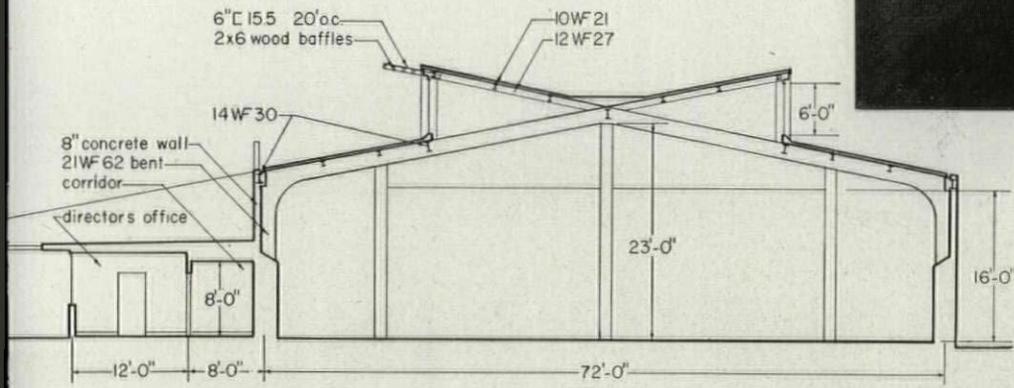
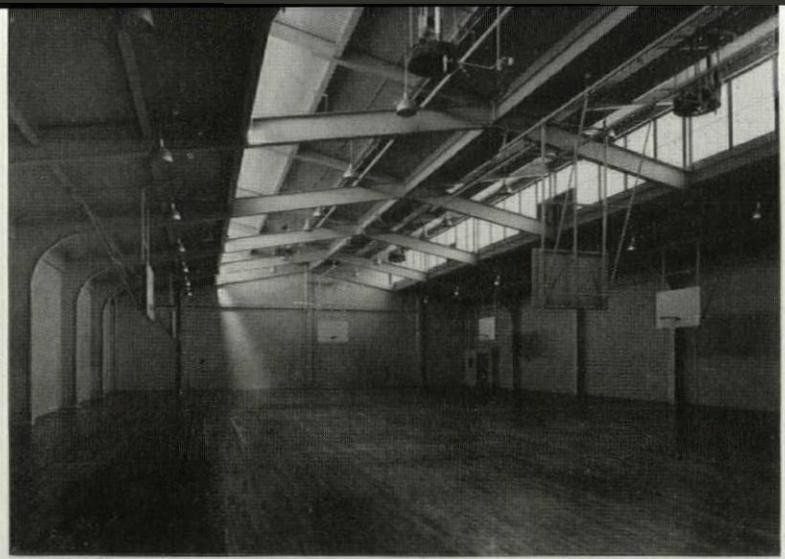
Convent .....	12.00
Priests' cottage .....	11.00
Boys' cottages .....	10.00
Gymnasium .....	8.00
School .....	8.50
Cost per classroom....	\$5,950
Classroom per pupil ..	233

Cottages are simple and economical but without any hint of the barracks. Big living room is scaled down by the native stone fireplace and by the ceiling beams (2" x 12" over the long span, 4" x 12" over the shorter). Hobby and reading corners behind the fireplace can be curtained off. Cottages are all alike.



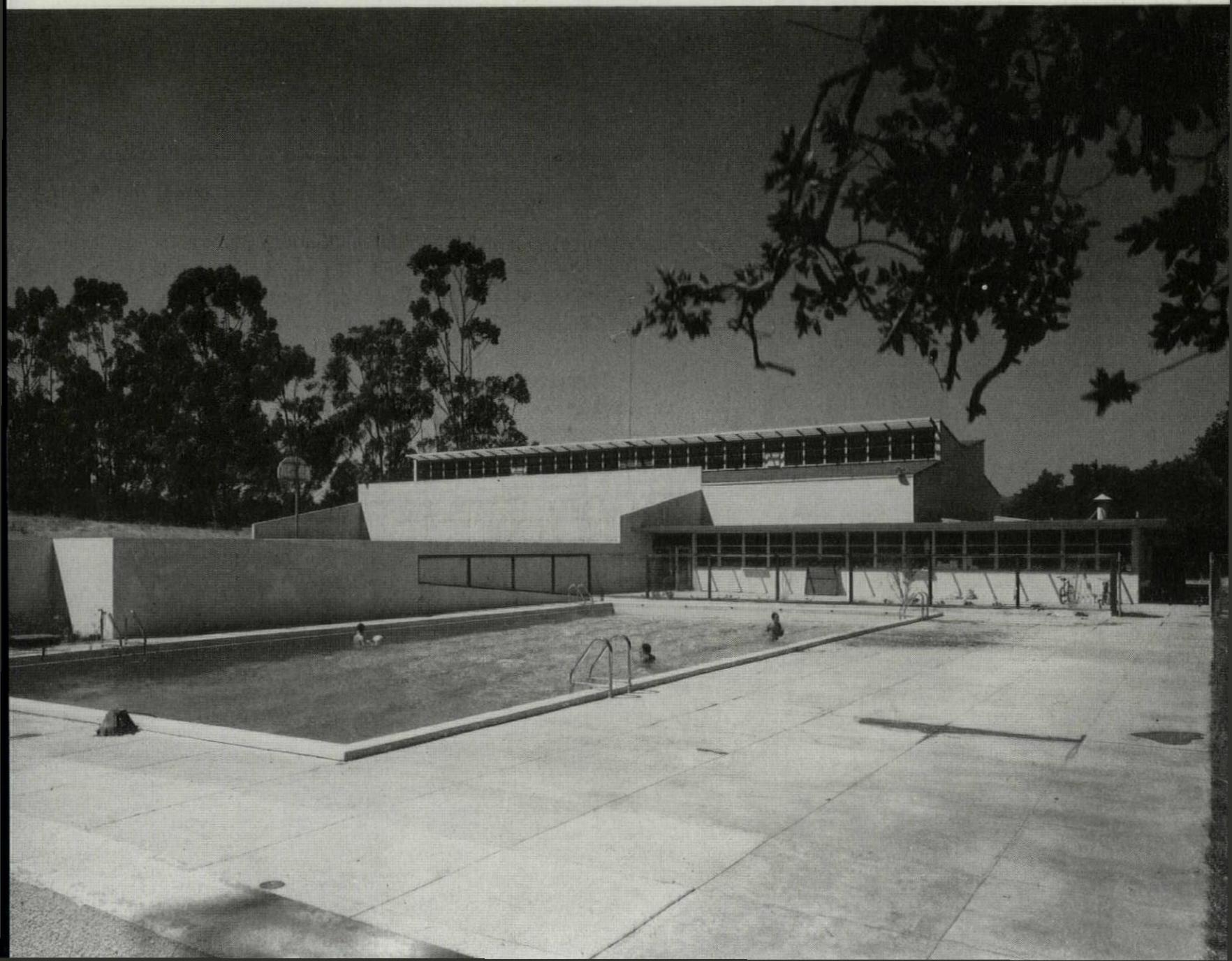
**TO BUILD HAPPIER BOYS**

Section through gymnasium shows steel rigid framing, with 12" beams rivetted to frame to form monitor roof. Outrigger carrying 2" x 6" baffles over south clerestory is a 6" channel beam.



SECTION THROUGH GYMNASIUM

Gymnasium's southern face makes a backstop for three handball courts. Low roofed area behind the swimming pool screens the locker and shower room entrance and contains barber shop, canteen and athletic director's office.





# FACETED METAL WALL

for Alcoa in Pittsburgh sets new style in tall buildings

Here, with its skin finished, although it is otherwise incomplete, stands a building whose exterior design architects the world over will wish to ponder.

Against the trend of virtually all tall modern buildings, which strive for a slick skin or else get pattern through attachments such as sunshades, this is a building with a faceted outer surface, a surface whose subtle flick of brightness and shadow changes like a thousand diamonds with every step the observer takes and with every hour's change of the sun.

But this effect of Pittsburgh's Alcoa Building is far from accidental. This is how it has come about:

1. The building is the first tall office building ever erected with an all-aluminum skin—and architects Harrison & Abramovitz have treated the skin as exactly what it is, a completely separate membrane which need not conform to the surface of the masonry fireproofing behind.
2. They have recognized that the nature of metal is far different from the nature of stone, easily stamped into patterns to which masonry is ill adapted. Although the effect is as "rusticated" as the Renaissance Pitti Palace, the diamond pattern is recessed not projected.
3. The diamond-grid pattern adds a new dimension in time—the visual effect changes bewilderingly not only as the observer walks past but as the sun's position changes.
4. For the lighting in their new pattern, the architects have reversed the major trend of contemporary architecture toward more glass—a trend which culminated in the same architects' all-glass Secretariat for the UN. This building, in fact, carries less glass than any other tall office building ever built in the United States; the windows are reduced to isolated round-corner portholes only 4'-3" high x 4' wide.

It will still be several months before the Alcoa Building is finished and ready for an adequate presentation, so this is just an interim report to update the detailed preview published in our Nov. issue '49, the detailed report on the metal-skin construction in April 1951, the detailed report on the reversible windows in the Nov. issue '49. Next month's FORUM will contain a technical report on the radiant cooling

system incorporated in the all-aluminum ceiling, on the all-aluminum wiring and bus-bar system, and on the aluminum water pipes.

For this tower is more than a handsome piece of architecture. It is also a testing laboratory, erected almost regardless of cost, to try out every possible use for aluminum in building. And it is, perhaps, the greatest challenge ever thrown down to the copper industry, which normally sells 30% of its total production to the building industry largely for uses for which aluminum is here substituted.

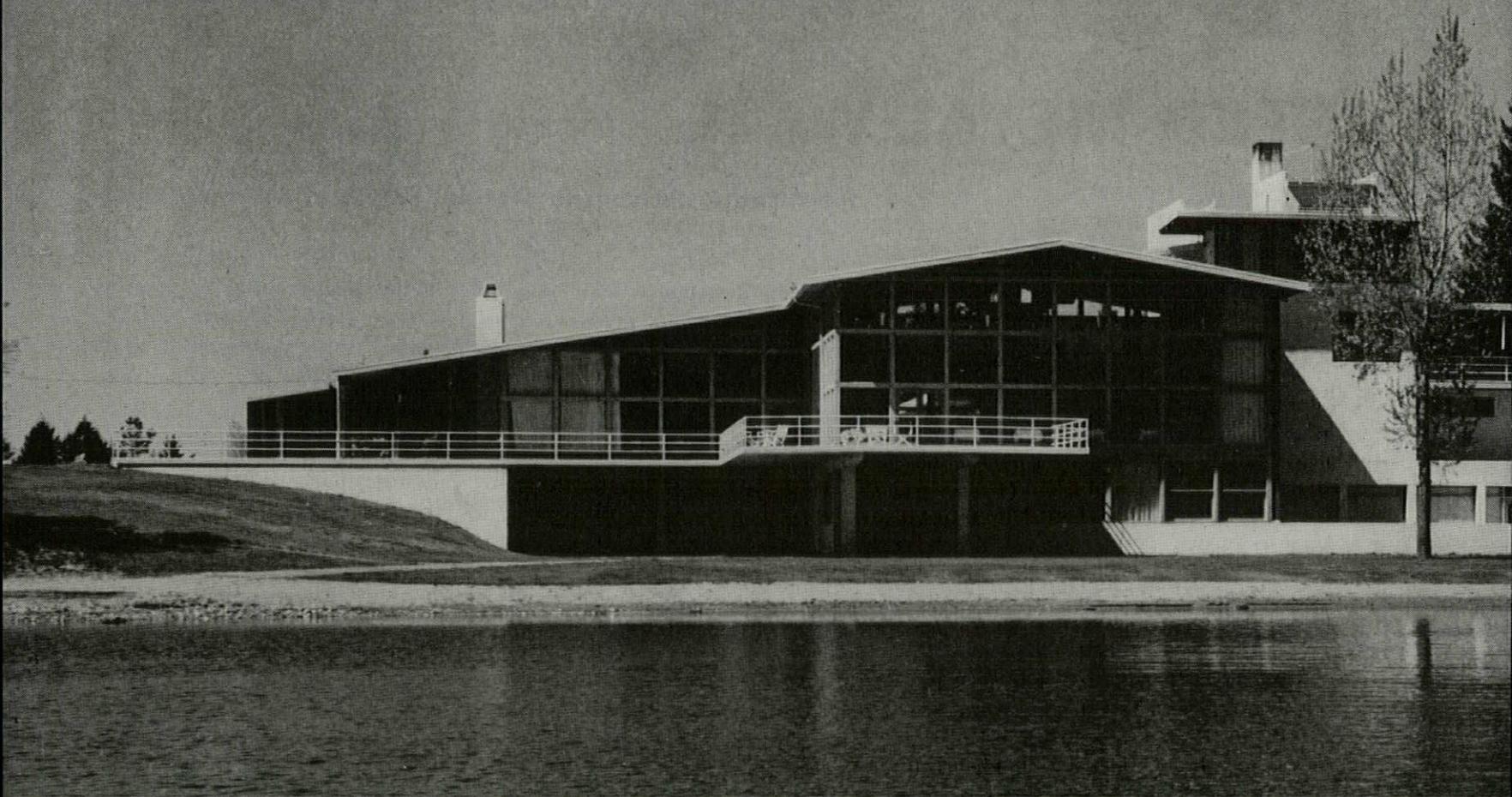
Before World War II the aluminum industry sold only 18 million pounds to building—6% of its 300 million pound total. Before Korea it was selling 280 million pounds—20% of 1.4 billion pounds. After Korea it plans to sell 700 million pounds—35% of 2 billion pounds. Most of aluminum's gains so far have been new uses or at the expense of wood. But when aluminum bids for piping and wiring it is challenging the supremacy of copper—which now costs 54% more per pound (combining domestic and imported purchases) and 470% more per cube.

When the Alcoa Building is finished late this year, FORUM will complete its 8-part presentation with a final report in pictures.

*J. Alex Langley*

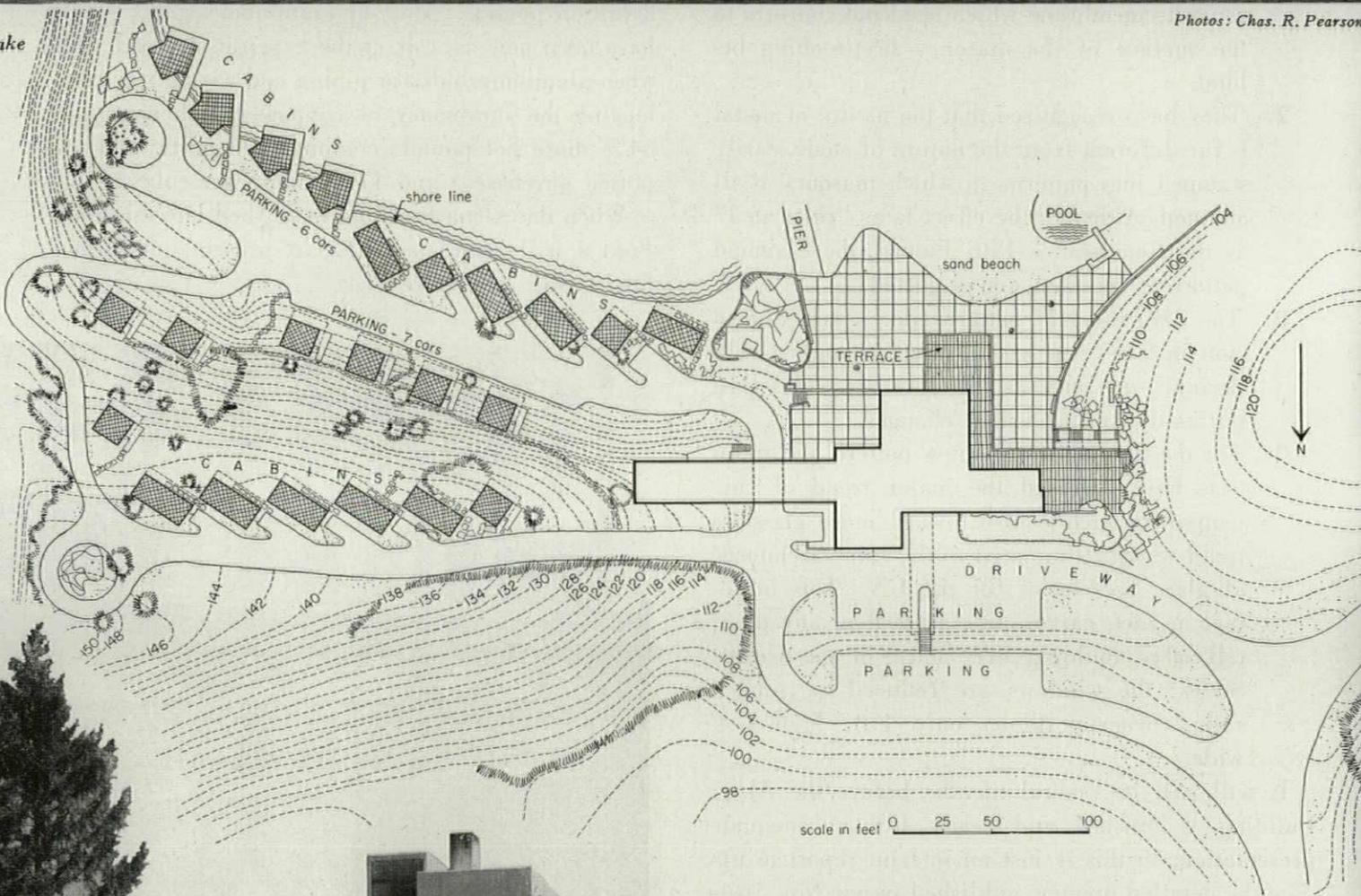


←  
*Jack Holmes*

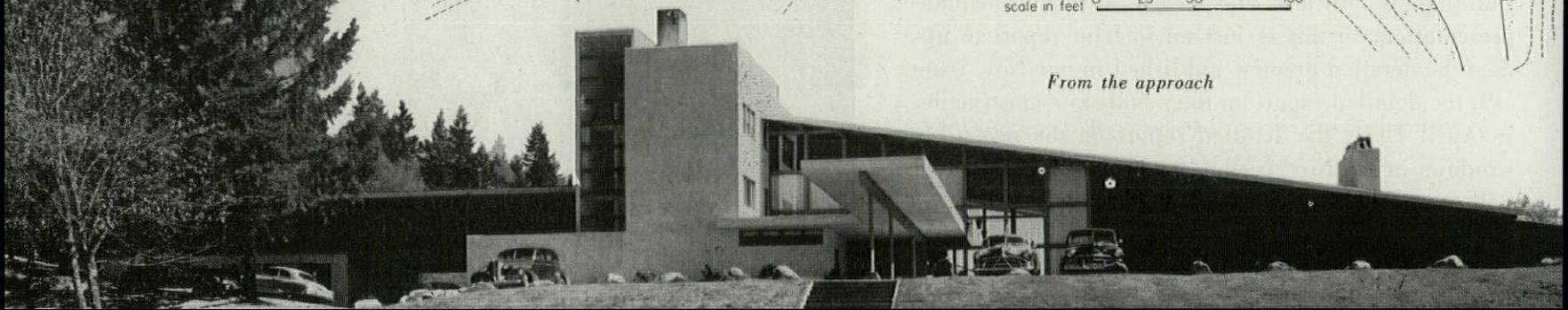


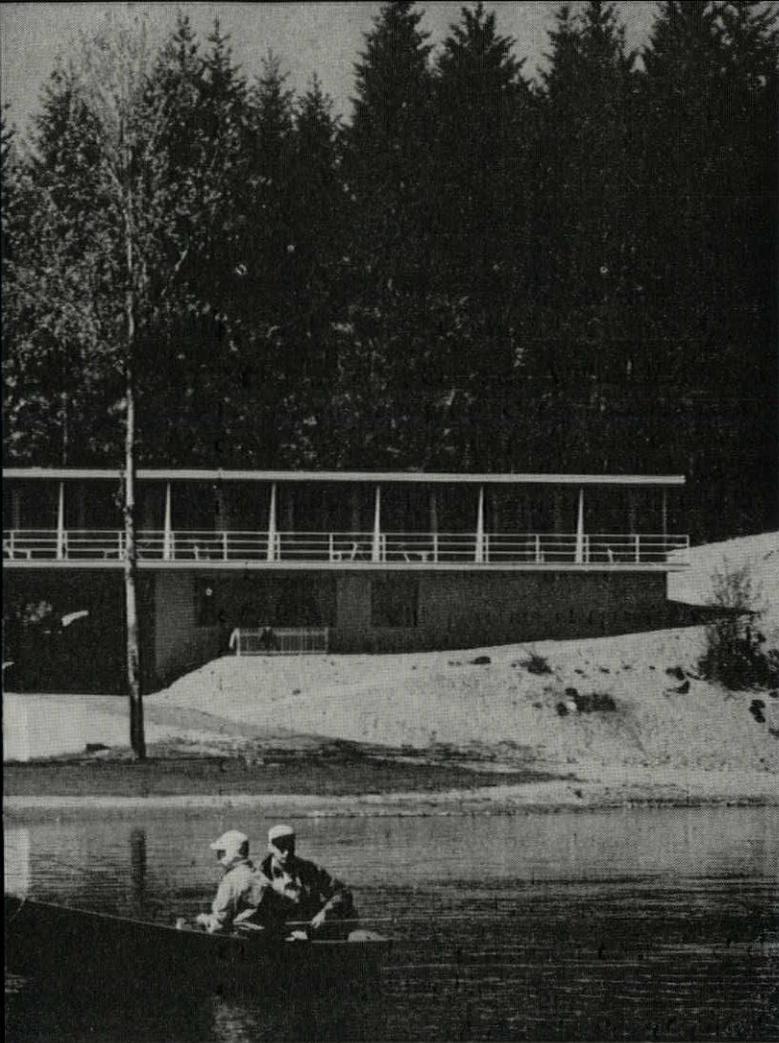
Photos: Chas. R. Pearson

From the Lake



From the approach





**Selected by AIA**

**at its New York City Convention last month**

**as one of the top national award winners in design,**

**this small**

## PRIZE HOTEL

**is an example of the open plan grown up**

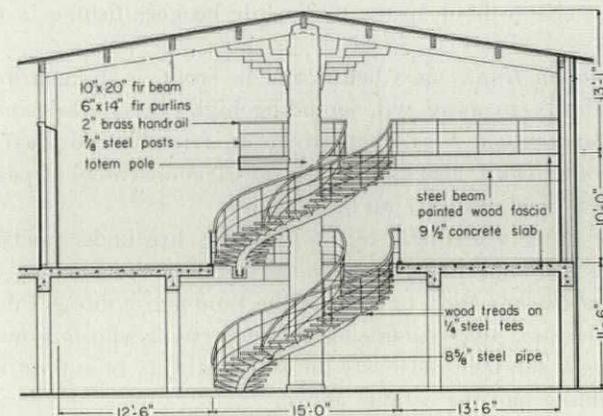
The designers took the house architect's practice of connecting spaces without partitioning them, and magnified this freedom in their composition of the general-use areas—the dining rooms, lounges, lobbies, cocktail lounge, mezzanine, and dining porches. These areas fit together continuously, without seams, yet each preserves its identity. The result: a small hotel that has the informality of home, and also packs a lot of separate functions into comparatively small footage.

You enter the lobby and if you turn right, you're in the lounge. Then look out toward the lake, and you're in the main dining room. The *pièce de résistance* is a 35'-high decorative totem-pole column and if you look to see what the figures are toward the bottom, you're downstairs. Or, if you walk up the spiral stair to the mezzanine, you're also a few feet from the private bedrooms, where the architects do finally resort to doors to define the zoning.

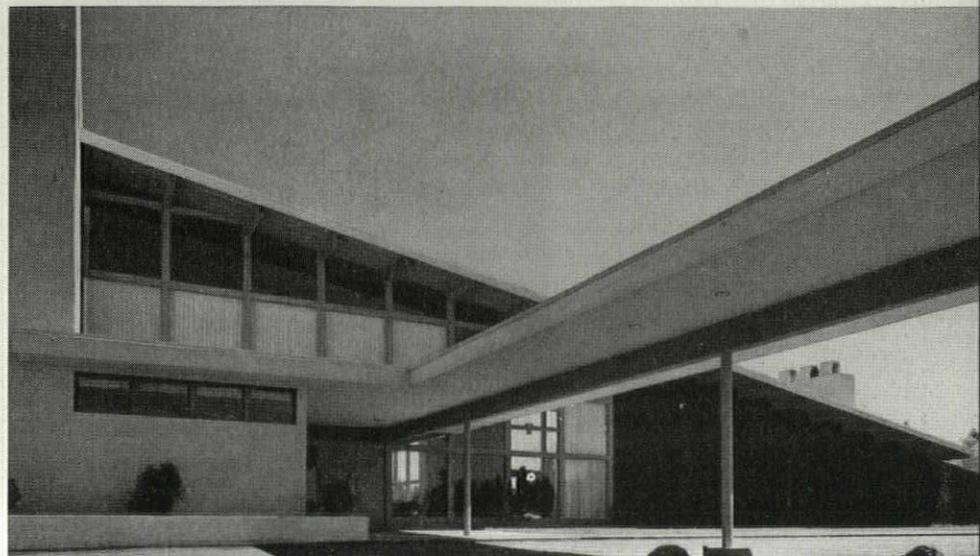
The hillside site beside a charming lake helped the designers of this building by allowing them to go downstairs and yet retain a view. But they returned the compliment generously by fitting a spacious, relaxed design into this vista. Thorough use of native materials adds another link.

This lodge is no stranger to awards. Before taking one of the three top national honors at the national convention last month, it won the Northwest Chapter AIA's competition in 1951. The citation of last month's national jury, however, was not only highly respectful; it was also one of the most wistful design citations ever registered. The AIA, meeting in the middle of New York City's soggy, sizzling June heat wave—weather that shocked even visiting Texas architects—cited:

"A most successful plan and elevation located in a truly magnificent setting on Lake Wilderness. Together with the 40 cabins located along the forward slope of the wooded hill in proximity to the lodge, and with a private airport nearby, this should be an ideal haven for a tired architect."



Section above shows how total area is split into neatly sized service areas. Canopy to entrance right is supported by exposed steel box beam on single row of pipe columns.





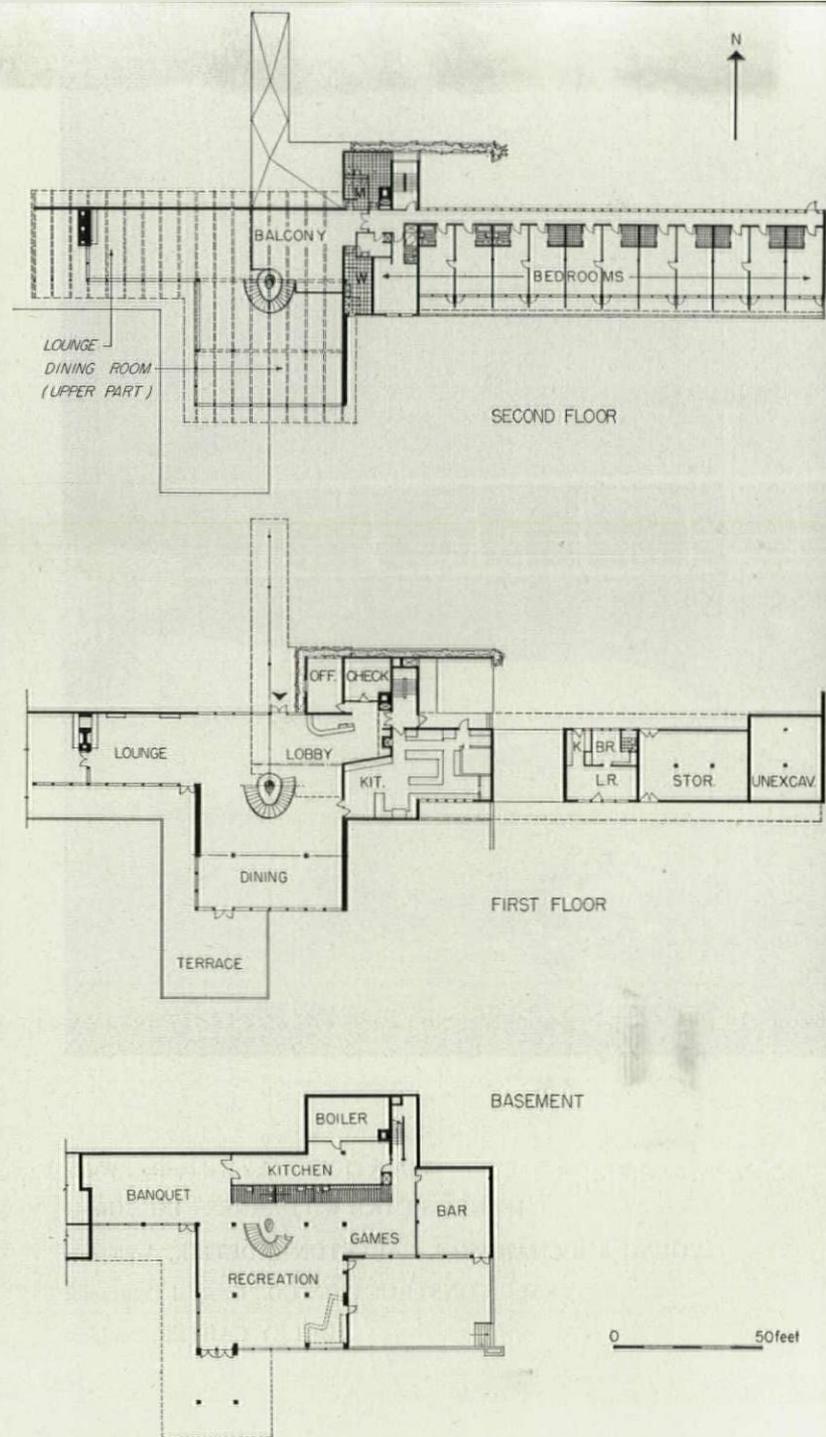
Stairway around structural totem pole is self-supporting on a formed spine of 8" steel pipe. Open carpeted treads of 1½" plywood are bolted to steel angle supports welded to the pipe.

There is nothing archaic about Gaffney's totem pole (*above*) but the tree it was carved on. This is a native cedar 5' in diameter that has a hole bored through its heart, into which heat was blown to prevent any possibility of dry rot, and to reduce checking. It also is impregnated with wood preservative. Sculptor Dudley Carter (an engineer turned artist) finished it by carving it carefully within structural limits with a double-bit faller's ax, then painting abstractions in the style of Indian totem art in red, yellow, blue, black and white.

The pole has several physical functions: it is a roof column; it receives a pair of welded steel box beams that support a mezzanine, and it serves as visual center for the stairwell. But most important, it is remarked and remembered by patrons who describe it (and Gaffney's Lake Wilderness) to their friends back home.

Sculptor Carter's description of the role, which was designed according to the principles of primitive Northwest Indian totem carvings, reading from top to bottom:

"*Top Figure*: symbolizes the host and founder, who bears the burden and responsibility of it all. He seems to be gazing out across Lake Wilderness toward Mt. Rainier, and wishes for



someone else to hold up the roof while he goes fishing in the lake.

"*Mountain Hawk*: next below and in front, is the guardian spirit who keeps away evil, including high-pressure salesman.

"*Mountain Goat Kids*: they are twins, friendly and playful.

"*Morning Dove*: also known as Wild Pigeon, symbol of peace and has a good influence on the weather.

"*Fire Bird*: a mythical bird who keeps fire under control. Subdues the flame rising between the horns of the Ram.

"*Great Horned Owl*: in front of the Ram and holding a dogwood blossom, gives confidence to this arrival who is symbol of strength and takes seriously the responsibility of supporting the building and the column above.

"*Chipmunk*: perched on the horn of the Mountain Ram is wondering (as you are) why he was not given a tail.

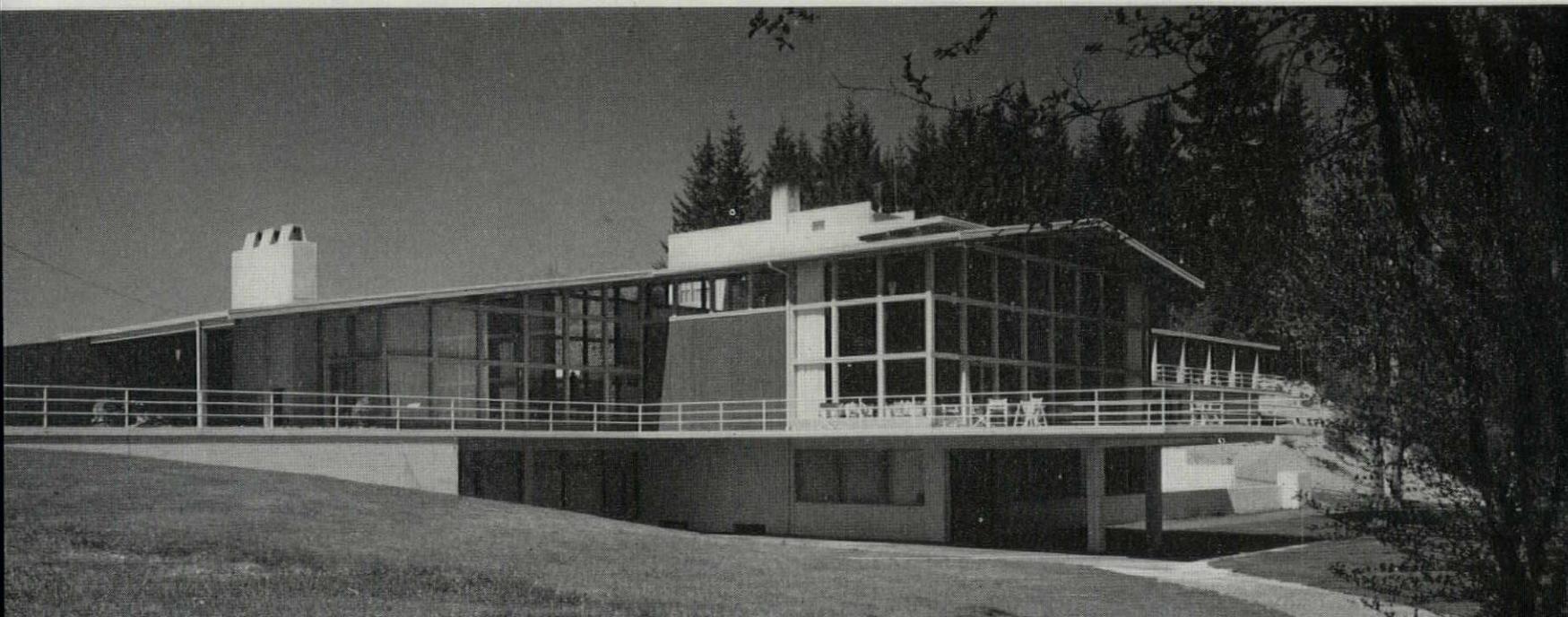
"*Frog*: lower down the column Frog is supporting the steel beam. After devouring a horsefly, feels equal to the Mountain Lion below, who is posed for an attack."

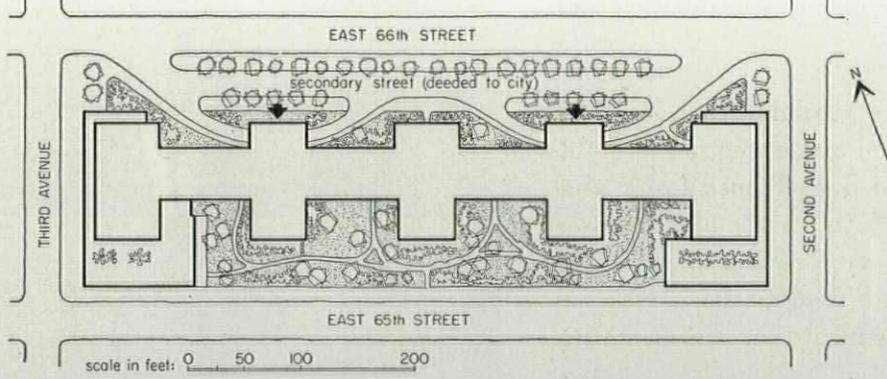
Cost of the Lodge was \$8.40 per sq. ft., including 21,588 sq. ft. of floor space, 1,710 sq. ft. of cantilever concrete slab, and 822 sq. ft. of bedroom balcony.



*Main dining room, viewed from under mezzanine, faces lake view to south*

*In good weather tables are set on big porch shown below*





Quality in quantity:

# MANHATTAN

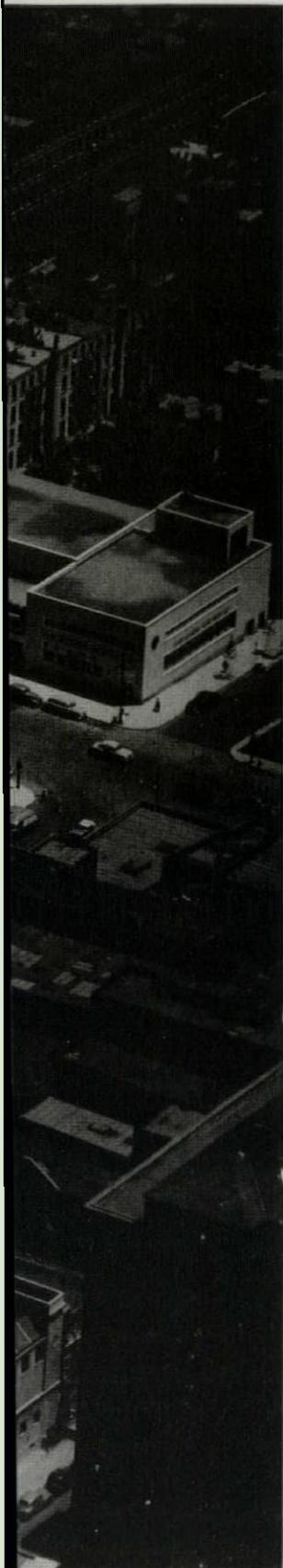
a full block of sw

*J. Alex Langley*



# HOUSE

new New York apartments



In 1946 one of the only available complete block parcels of Manhattan real estate went up on public auction, when the Third Ave. Transit Corp. abandoned its spacious carbarns in the block between 65th and 66th Sts. on the wrong side of New York City's most prominent railroad tracks. These (*see lower left corner air view*) are the elevated RR, a relic of the nineties which still casts its latticed shadow on the archaic cobblestones all the way down rundown Third Ave.

In 1946 the New York Life Insurance Co., warm with its suburban-housing plans for Fresh Meadows, was also looking around for an urban field to conquer in New York, and made a modest bid of \$1.6 million. Somewhat to their surprise the block was knocked down to them, and they found themselves the owners of as stimulating an architectural challenge as has been faced on the precious rock of Manhattan in a generation.

Five years later the answer to this challenge is complete—the biggest, whitest, and most interesting postwar mountain of cliff dwellings for New York City's well-heeled natives.

There were two strikes on Manhattan House: 1) This is a decidedly marginal neighborhood for swank apartments; although it is the upper east side, it is near neither of the stylish arms—Park Ave. to the west, the river to the east—but instead is on the unglamorous spine. 2) New Yorkers who pay this kind of rent (averaging \$65 per room; the top in New York City is about \$80) traditionally resist living in mass housing (there are 581 apartments in this block-long building and 2,524 rooms). But New York Life also started this project with three strong advantages:

**An investment program restricted to a 6% return**, considerably lower than the usual apartment-house operator's. This relieved them in some measure of the usual desperate necessity to cram their site. The insurance company's other advan-

*Building rests on handsome concrete piers*

*Torkel Korling*



NEW YORK LIFE  
INSURANCE CO., Owner

*Project built under direction of Otto L. Nelson,  
vice-president, and G. Harmon Gurney, staff architect*

MAYER & WHITTLESEY  
SKIDMORE, OWINGS & MERRILL  
Associated Architects

*Participating partners: for Mayer & Whittlesey—  
Albert Mayer, Julian Whittlesey, M. Milton Glass  
For Skidmore, Owings & Merrill—Louis Skidmore,  
Gordon Bunshaft, J. Walter Severinghaus*

CHARLES MAYER, Structural Engineer

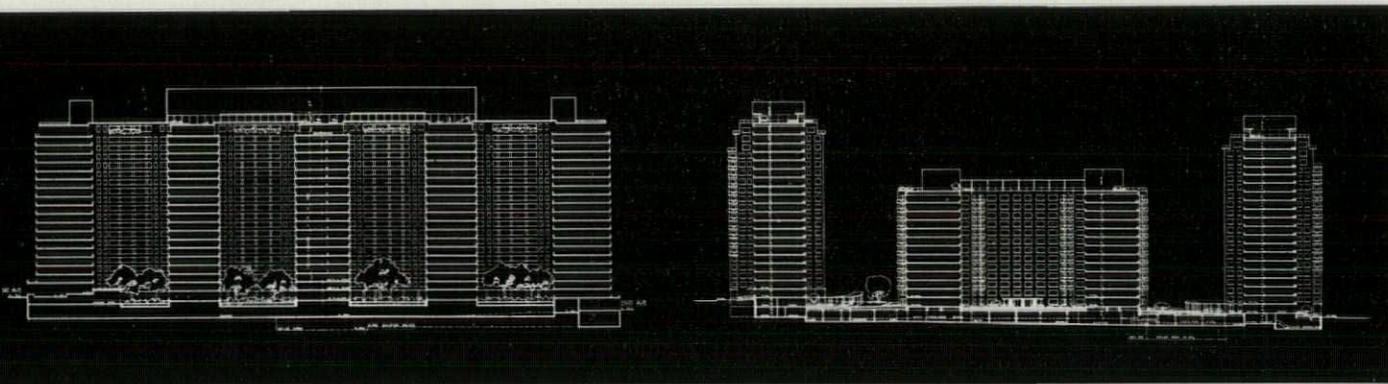
JAROS, BAUM & BOLLES  
Mechanical Engineers

CAULDWELL-WINGATE CO.  
General Contractor

*Esra Stoller—Pictor*



*View of east end from 66th St.*



Proposed sections are compared above. Single thin building (left) won because it has more apartments in quiet center of block

Torkel Korling

tages were their two firms of collaborating architects:

First, architects **Mayer & Whittlesey**, who have had long experience as pilots in the treacherous seas of New York apartment design, with its mysterious currents of market preference, many shoals of building regulations, and sharp-toothed official sharks.

Plus architects **Skidmore, Owings & Merrill**. The strong straight shape and direct detailing they gave this building is recognizably SOM, but is startlingly new among recent New York City apartment houses, most of which have been done in a hesitant style, contemporary without conviction.

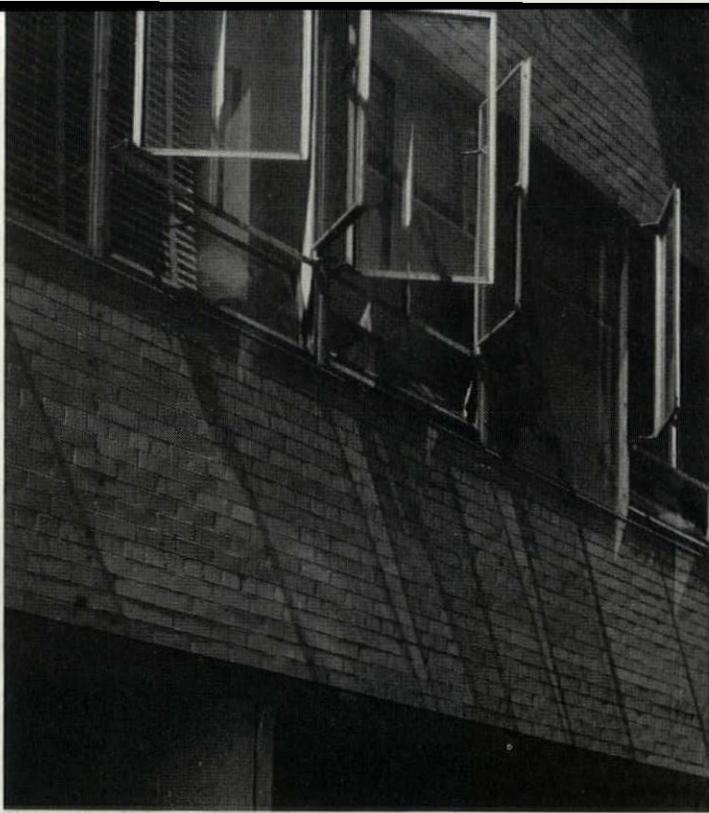
Manhattan House is successful. Although in New York City today some other high-rent apartments are going just a little stale, it is fully rented. It also has won architectural honors; the New York chapter of the AIA selected it as the outstanding apartment house constructed in New York City in the last two years, with a citation for "distinction of planning, mass, detail and use of materials contributing most to the metropolitan scene."

Manhattan House covers only 40% of the original block, but the site today is not as large as the original car barn area because the insurance company gave away a strip 40' wide and a block long to New York City in the form of a secondary crosstown street paralleling 66th St. This was not entirely an eleemosynary gesture. City zoning law restricts building heights at the property line basically to  $1\frac{1}{2}$  the width of the boundary street. Second and Third Aves. are wide enough to permit an 86' building height (after an initial setback of 12' over the store level) but the only way the designers could maintain a straight 18-story height (the top two floors are setback penthouses) across the full crosstown block was to increase the effective width of the narrower adjoining streets. This was accomplished on the uptown side by the gift of land to the city; on the downtown side an open garden stands between Manhattan House and the sidewalk, spacing the pilaster-like projections back from the street.

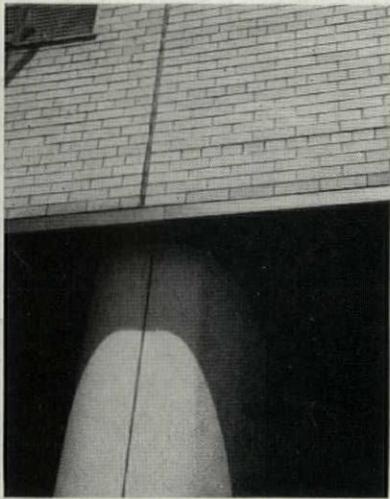
Early in the planning, this scheme was pitted against another that would have planted three separate buildings on the original block in an open park. The buildings at each end would have been high, the one in the middle low (see sections above). The single continuous solution was selected because it placed more apartments in the middle of the block, away from the traffic noise of Second and Third Aves., and gave more apartments south exposure.

From the street Manhattan House looks massive; actually it is a lean slab, with projections. In vertical organization Manhattan House is three inline + 's, connected, with a T at each end. There is through circulation only in the cellar, the sunroof, and the lobby floor; five sepa-

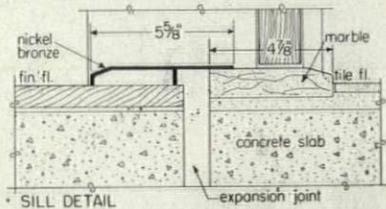




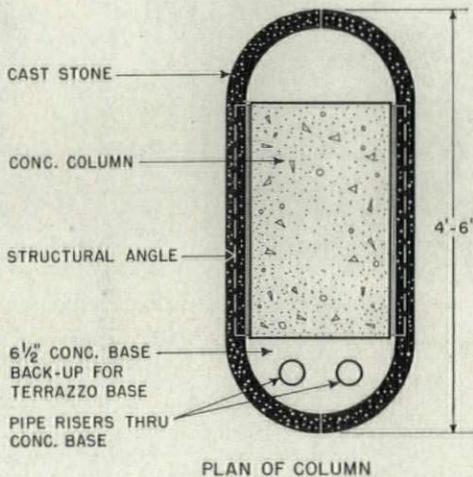
Photos: (top & bottom) Torkel Korling  
The veneer is glazed face brick (see also page 198).  
Its variations give the walls a pleasant texture.



Expansion joints were necessary because this building is 591' long. Simple vertical joint in column and exterior wall is shown in photo to left. But where the joint ran through the building it sometimes became more complicated. (See detail below of bathroom sill with expansion joint.)



Salvatore C. Valastro



Concrete columns are clad in precast cast stone skins, which were applied in two sections.

rate elevator banks (with starters, but self-service cabs) are spaced down the 591' length; and there are two formal entrances to the lobby with private drives off the tributary to 65th St. Because the ground slopes 18' down from Third Ave. to Second Ave., the lobby floor actually is an intermediate level. In relation to it, shops in the building fronting on Third Ave. are upstairs on the second floor, and shops fronting on Second Ave. are downstairs in the basement, although each set matches its adjoining avenue.

The apartments upstairs are carefully designed to avoid standardization. Says architect Whittlesey: "There always has to be a choice for prospective tenants, a range of selection, a little difference." This range is wide in Manhattan House (see p. 145). Besides various views and heights in the building, all with varying price tags, there are balconies above the sixth floor, and fireplaces above the twelfth. In rent balconies are worth \$250 per year on Manhattan; fireplaces, \$100 per year.

There are 581 apartments plus six doctors' suites, a superintendent's apartments, and ten separate servants' rooms and baths. Ranging from two-room apartments to seven-room penthouse apartments, there are a total of 22 different types and prices.

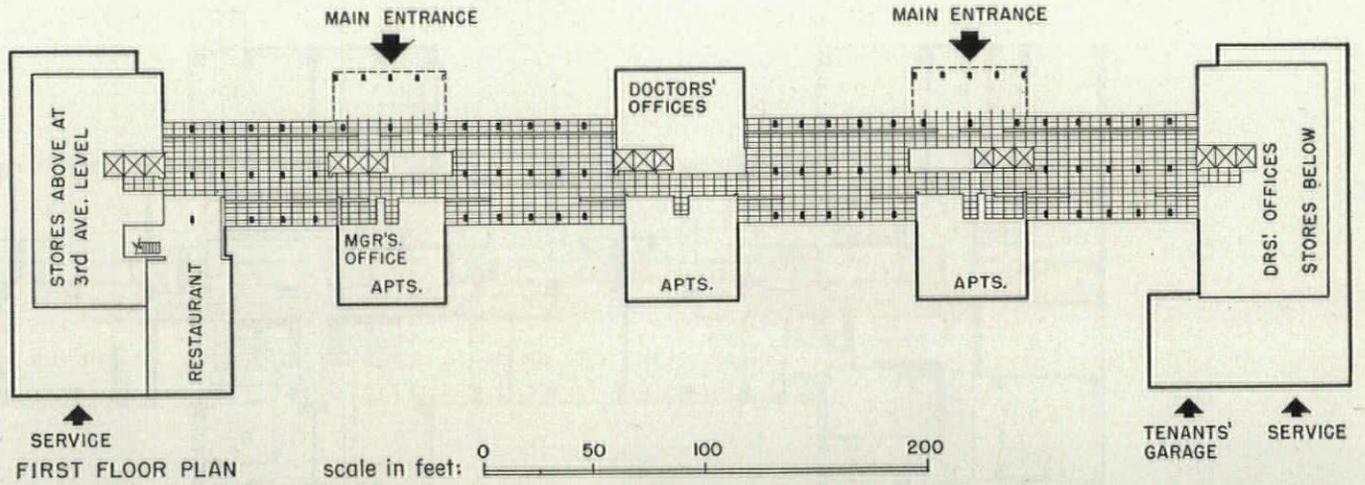
**THE COLUMNS.** Manhattan House is the biggest, highest reinforced concrete structure in New York City, and it expresses its structure clearly on the lobby level in rows of strong piers with a plastic form that is the distinguishing characteristic of the design at close range. (Compare these with the steel-framed Lever House's sharp-edged, stainless-swathed stilts, June AF, pp. 101 to 111.) This is the first time in New York the Building Code let designers value their controlled concrete at 4,000 lb. stresses for columns, instead of the old 3,500 lb. (The change stays in the code.) This not only cut down on dimensions; it also saved the owner \$50,000 worth of concrete.

To express their plastic material more clearly than square columns would, these piers are covered with curved cast-stone skins which also encompass space for heat risers.

This is one of the two drive-in entries on the north side, under a projecting wing of the apartment





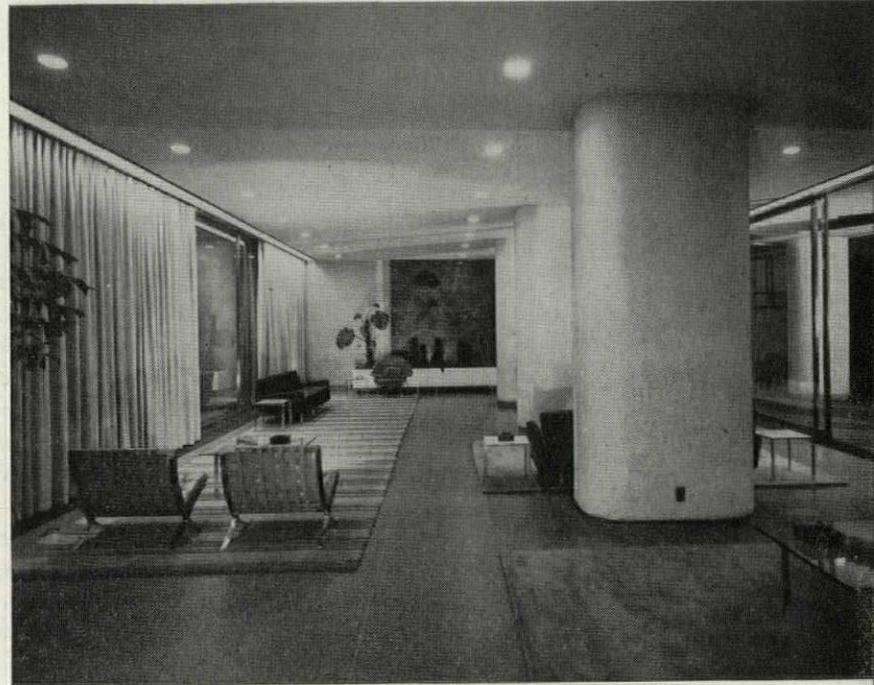


**IN THE LOBBY, FORMALITY; BESIDE IT, GARDENS**

The narrowness of Manhattan House's main slab is visible in the glass-sided lobby, some of whose walls slide back to merge the bosky ways outside with the handsome interior furniture groupings. The original plan was to break up the vast length of the lobby with free-standing murals set vertical to the long axis, but when the lobby was built, it was decided it would be better without them. It is; with garden on either side, and long vistas broken only by elevator banks, its impressiveness by sheer elegant space is unmatched in New York City apartments. This is real urbanity. (Further evidence of urbanity: of 581 tenant families, only 78 have children, and these families average fewer than two.)

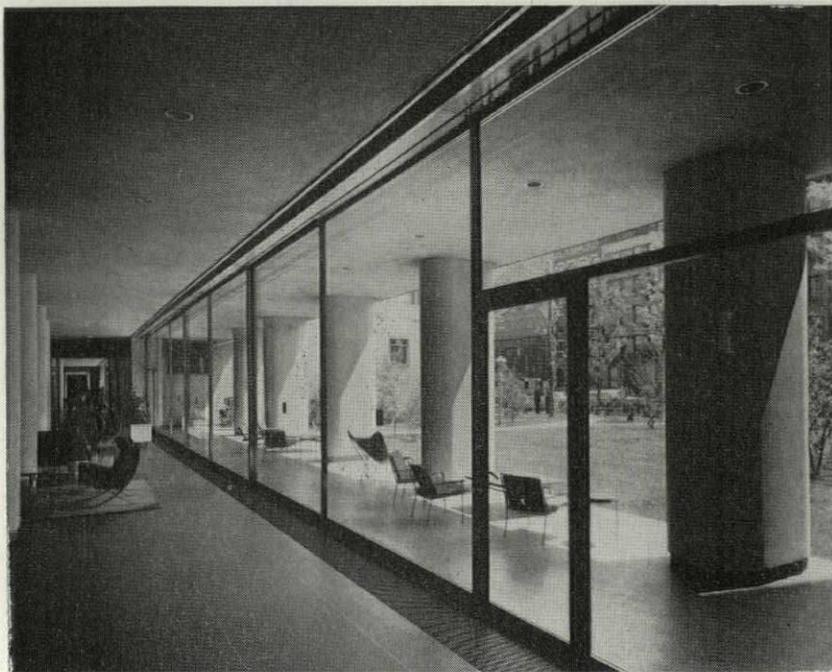
Manhattan House is officially middle-income housing, so designated by New York State, whose law forbids insurance companies from building high-rent structures. The two-room apartments (living room, dressing room, kitchen, and bath) start at \$95 per month. But from this mild beginning, the economy expands this way:

Rooms	No. of Apartments	Rent Range
2	35	\$95.00-157.50
3	104	142.50-237.50
3½	2	375.00
4	180	170.00-275.00
5	194	240.00-375.00
6	51	330.00-397.50-450.00
7	15	350.00-750.00

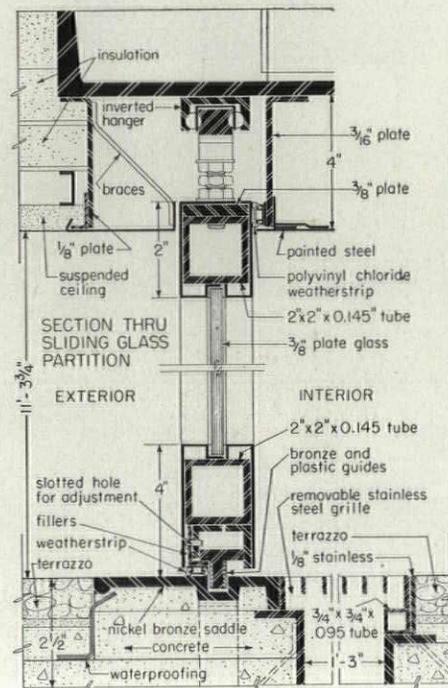


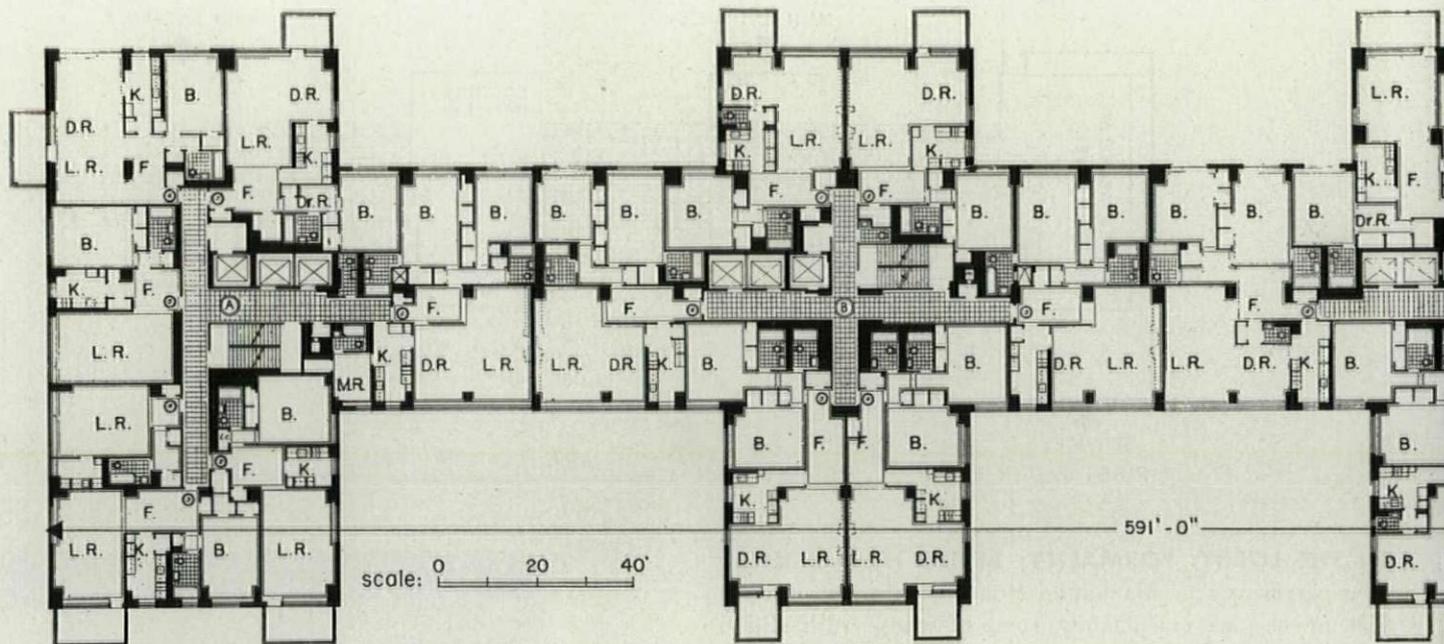
*Discipline of columns is extended by precise placement of furniture*

*On facing page: south side of Manhattan House, from near the sidewalk. Below, inside the lobby on same side, and detail of sliding-glass walls.*



*Photos: Ezra Stoller—Pictor*





TYPICAL FLOOR PLAN

**THE APARTMENTS.** Plan above of typical floor shows how the five separated elevator halls gave ample opportunity for **through ventilation**. Continuation of plan blocked in *on facing page* holds a flopover of same room arrangements.

The most distinctive feature of these apartments is shown well in the photograph *below*—the **wide spans of slabs without beams** that make the ceilings in Manhattan House apartments the flattest structural concrete ceilings in New York City. There are beams only at partitions; the flat slab attains spans as big as 22' x 25' in its continuous sweep down the building.

The structural columns of the frame are set in from the exterior wall, which makes a **deep beam** necessary inside the periphery (*see detail below*). The slot between this and the spandrel beam is used as a Venetian-blind pocket. The window is pushed far out to the exterior of the building, only 1½" from the face of the brick veneer, making a very deep window sill.

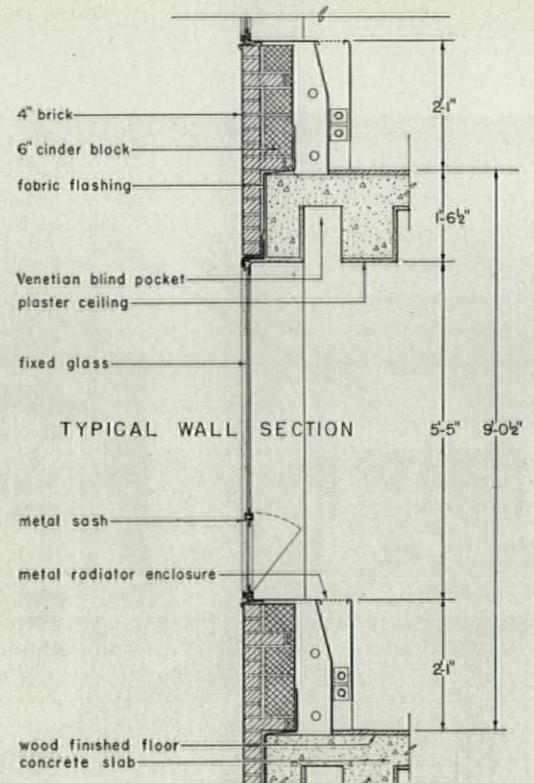
The apartment also pioneers the use of **higher air**

**pressure in the halls** than in the apartments, to prevent backleaks into halls of cooking odors. Manhattan House is the first apartment house in New York for which the City approved this kind of system, which ventilates halls, but puts no return ducts in them. The halls push air into apartments, instead of sucking it out.

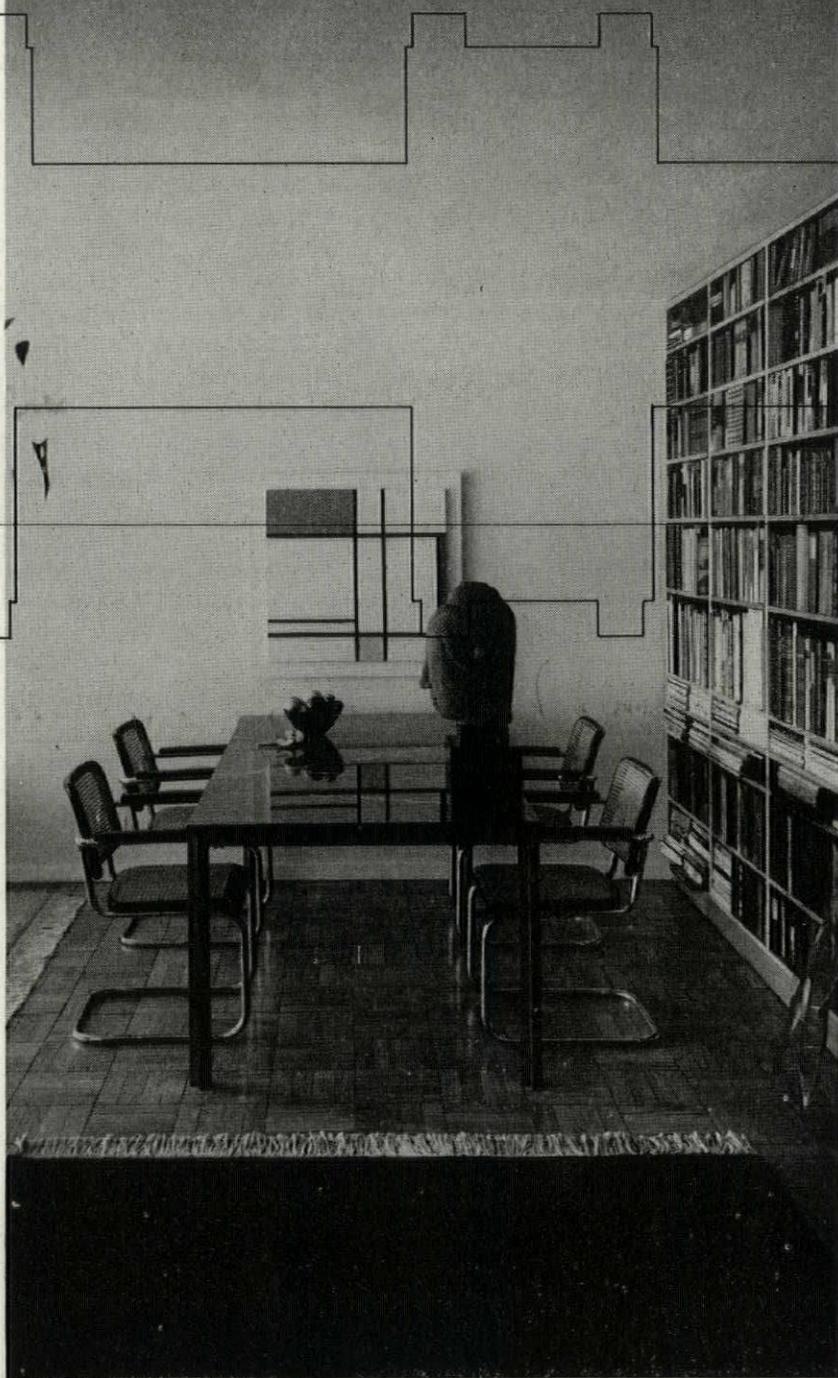
Manhattan House also has **the most complete communication system of any apartment in New York**. A tenant can pick up his phone and dial any other apartment, the doorman, the garage, the desk, or the restaurant (for room service) without going through a central switchboard.

**One thing Manhattan House does not have** is central air conditioning; its cost would have pushed the rents into the highest brackets, so it was ruled out. But if the company were building another Manhattan House, New York Life executives think that at least part of it would be centrally conditioned, with rents adjusted to this extra. In Manhattan House engineers anticipated

Deep beams at exterior walls support wide flat ceilings in these apartments



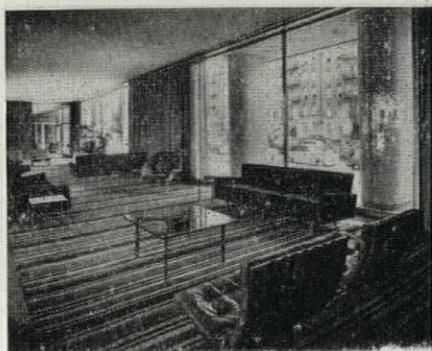
Wurts Bros.



that some tenants would install window units, so \$60,000 of extra wiring was built in to handle extra loads. But the load is even higher than anyone expected—a third of the tenants have already put in window units. One tenant in Manhattan House has installed in his apartment five window units for air conditioning, besides his electric dishwasher, washing machine, ironing machine, television set, radio-phonograph combination, and other appliances. Says an agent of the landlord, "We did not anticipate the way some tenants would try to use their apartments as electrical showrooms."

There is also a **higher demand than supply of parking space** in the basement garage, which will hold 225 cars. Although this convenience costs tenants only \$35 per month, compared with rents as high as \$65 per month for the few Park Avenue apartments that have their own garages, the \$35 per month is on a yearly contract basis. But there is a waiting list, as there is in almost every apartment garage in New York.

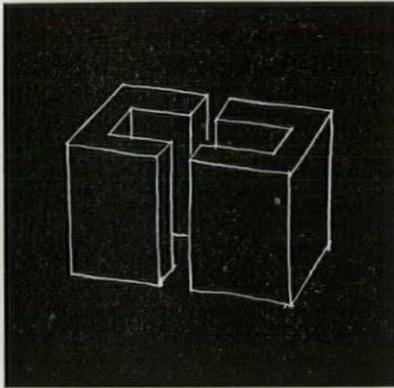
*Handsome apartment of Gordon Bunshaft, Skidmore, Owings & Merrill partner in charge of design, is shown partially in photos of dining room above and living room right. The living room furnishes a clue to the man who might have picked the furniture for the section of the lobby shown below.*



*Photos: Ezra Stoller—Pictor*



## MUMFORD versus MANHATTAN HOUSE



**Manhattan House has been criticized for its bulk.** Lewis Mumford, in the "SKY LINE" column in the *New Yorker* magazine, called it "This white whale of an apartment house." It, however, is a very lean whale; in plan its main body is more like an eel's.

Mumford, whose principal quarrel in print was with the lack of a legal ceiling on such densities as Manhattan House's, also suggested that it is better to build apartment houses around open courts, like the Hotel Marguery (see diagram). ". . . Such a quadrangle is pretty well insulated from the noises of the streets, and if the sleeping quarters are placed on this interior court the arrangement has much to commend it. The provision of quiet sleeping quarters is one of our most effective alternatives to phenobarbital and other sedatives." He conceded this plan might have been impractical for Manhattan House, however; and the designers rejected it early because, at 20 stories in height, the court would have become an airshaft. Any court building also walls its garden in, and has little chance of improving its neighborhood the way New York Life hopes to improve this one.

Mumford warned that much of the openness of Manhattan House's views might be blocked soon by similar projects adjoining it, but New York Life has made sure that their project will never face its mirror image across the street. They purchased and are now developing enough adjoining land to prevent this. This land includes the entire block fronts to the east and north, and key properties to the west and south.

Mumford also sighed at the balconies, ". . . I have scanned them a number of times by day at various seasons of the year, often without finding anyone on them. Those that are used, then, are presumably used largely at night, and my observations convince me that they are used principally in the summertime. These boldly projecting balconies have a minor aesthetic effect, but I question whether this form of decoration, however pure, is worth the effort."

Tenants who pay about \$250 per year extra in rent for their balconies may dispute this; and New York Life, who built each balcony for about \$750, can testify that the effort was worth it. Photo below shows how a balcony supplements the living room of an apartment.

*Of the apartments, 272 have balconies, and there are ten penthouse apartments with terraces. Note deep sills and substantial beam near exterior wall, a characteristic of Manhattan House.*

Martin Helfer





Top floor of Manhattan House is a set of spacious communal solaria and terraces, available for all tenants. Notice how the reinforced concrete columns here have slimmed down in their growth up from the first floor.

### ON THE JOB INSTRUCTION

Here are some of the specifics to be learned from this highly successful apartment:

**This kind of tenantry wants air conditioning,** and many of them will pay for it even when their payment is the cost of installing unit conditioners, a far higher rate than central air conditioning should demand. (Maintenance cost of painting the air conditioners, which New York Life has assumed in Manhattan House, is a substantial item too.) If air conditioning is not included, heavy wiring has to be planned to carry enough power to units all over high rent structures.

**Tenants readily accept operatorless elevators.** New York Life had feared that tenants in such posh surroundings might demand operators, in addition to elevator starters, and had even provided a contingency fund in their operating budget. But there have been no kicks.

Even in this economic level, **the tenants' laundry in the basement is used more than the maids' laundry** alongside it. Both are coin operated at 25¢ per whirl.

**But there is no paucity of maids living in the building.** New York Life provided 60 maids' rooms, 50 of them in apartments and ten in a central suite of individual rooms with baths. They estimate now they could use 15 to 18 more.

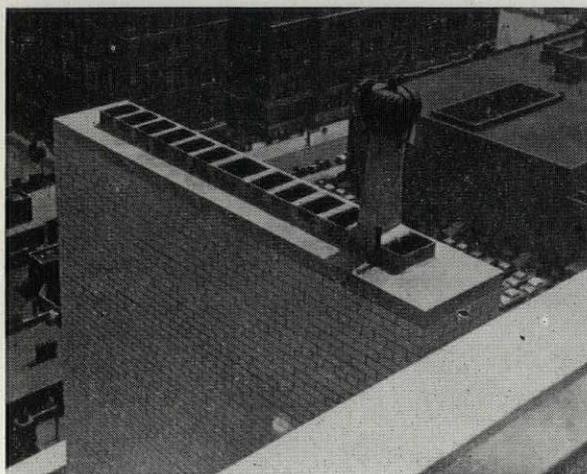
**Building a single large structure,** rather than several separate ones, is expensive because of the size of the standby crews which must be maintained on the job.

**New York Life's architects also perfected at least one new operating technique** in this building. There were two murals budgeted in the early stages, to decorate the communal roof rooms and sun decks. Rather than run the selection through committee, as is usual, the architects picked artists themselves, asked for sketches, then had them photographed in color, and made into slides. When the walls upon which the murals were to stand were completed, they invited the clients in, and using a projector "hung" the sketches in place. Agreement was reached quickly.

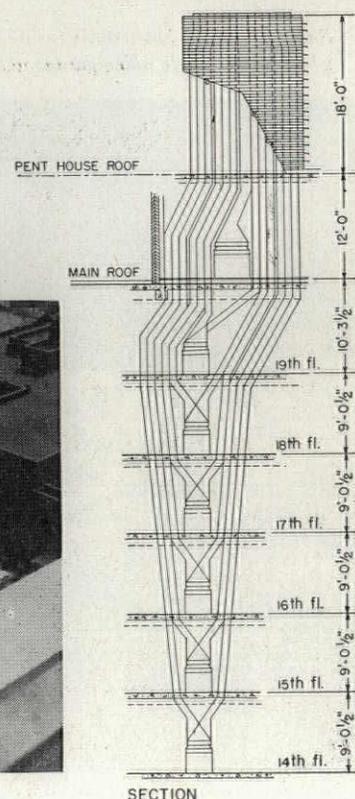


Photos: (above) Ezra Stoller—Pictor

Fireplaces from the lower floors made for some streamlined flues; right is an example. These emerge in stacks on top floor such as that shown in photo below. Draft inducers (not shown on drawing) give the topmost hearths a pull.



Salvatore C. Valastro



SECTION

**AN INVESTMENT WITH A VIEW**

Insurance companies have learned since the war that large housing groups as investments actually involve far more intangibles than the usual paper investments. As Otto L. Nelson, New York Life's vice president in charge of housing, puts it, "It is an investment with a very high visibility." And everyone is watching.

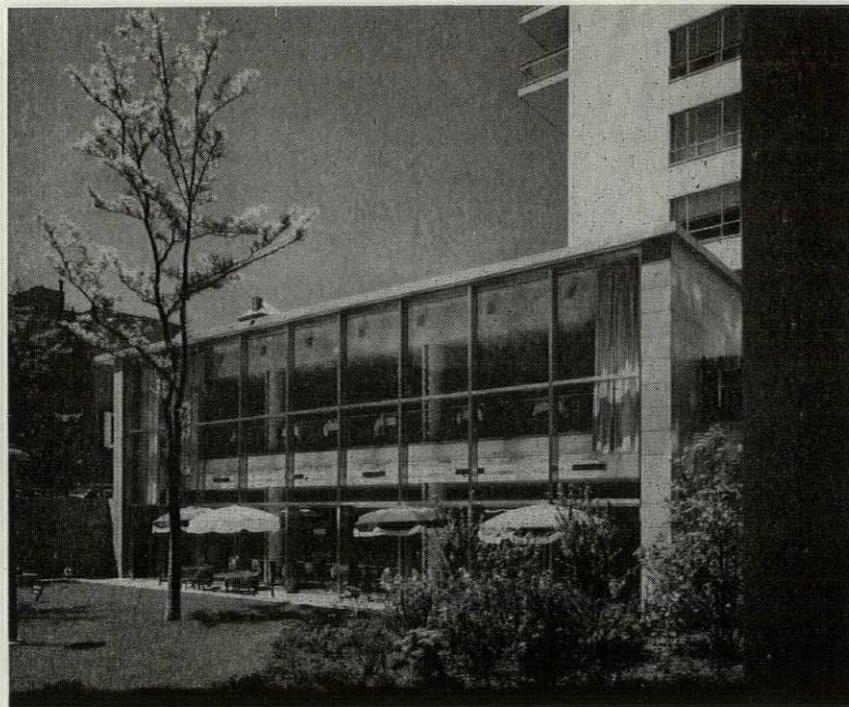
If the projects built by insurance companies are successful, they are good for public relations, but unsuccessful they can be extraordinarily bad.\* Success for a landlord who is also an insurance company involves considerably more than an assured monetary return, and New York Life has proceeded on the theory that a lot of the predictable portion of this extra respect can be earned by extra attention to planning and design.

So far their extra attention has proven out. Fresh Meadows, their medium-cost project on Long Island, is commonly held to be the exemplary project of its kind. Their medium-rent, slum-clearance project for Chicago's South Side, Lake Meadows, has aroused a bitter struggle over the closing of a street through the site, but has won this fight, and is expected to convince even the losers when the first of the Skidmore, Owings & Merrill (Chicago office) apartments are finished.

Manhattan House is their swankiest structure, and has been rented slowly to carefully selected tenants. With this and Fresh Meadows complete and Lake Meadows in Chicago underway, New York Life is not at the moment looking for new fields to build on. A new New York law allows insurance companies to invest in common stocks, and this new outlet may also slacken their appetite for real estate. But when the next clear opportunity for an investment "with a very high visibility" arises, New York Life will have an increased amount of experience in polishing it, and the building industry will be watching even before anyone else to see what happens.

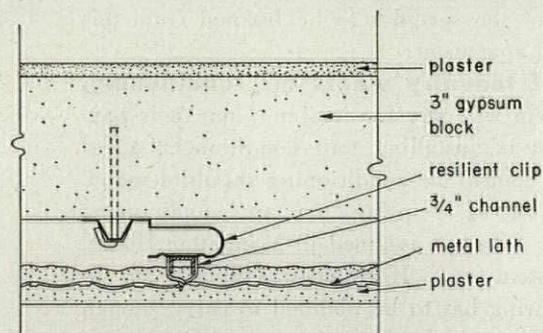
\* Example: The Metropolitan Life Insurance Co., offering New York City's biggest bargain in Stuyvesant Town, nevertheless has had a public relations problem with tenants over rent and segregation issues, and with architects over the design and site planning. And in Chicago, New York Life, standing by innocently, got some of the backlash when the city began evicting families and closing streets for the middle-income Negro housing it had asked New York Life to build.

Ramp to garage has treadle inside and outside door to open it automatically, which also signals office garage and pedestrians outside near door.



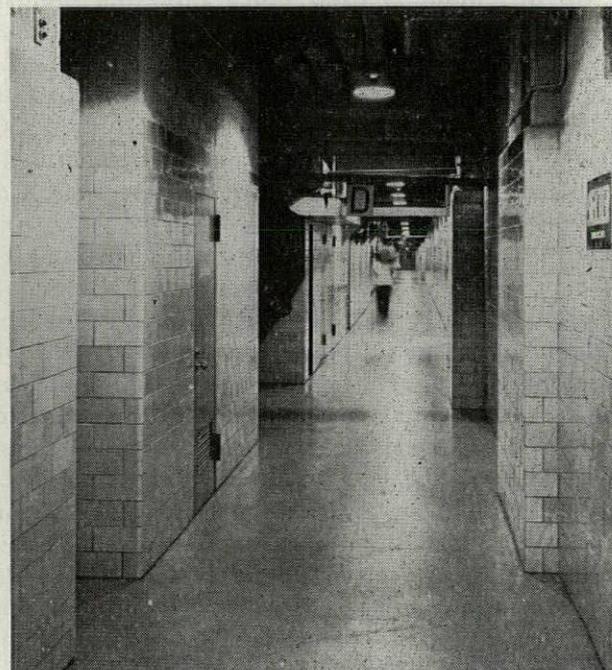
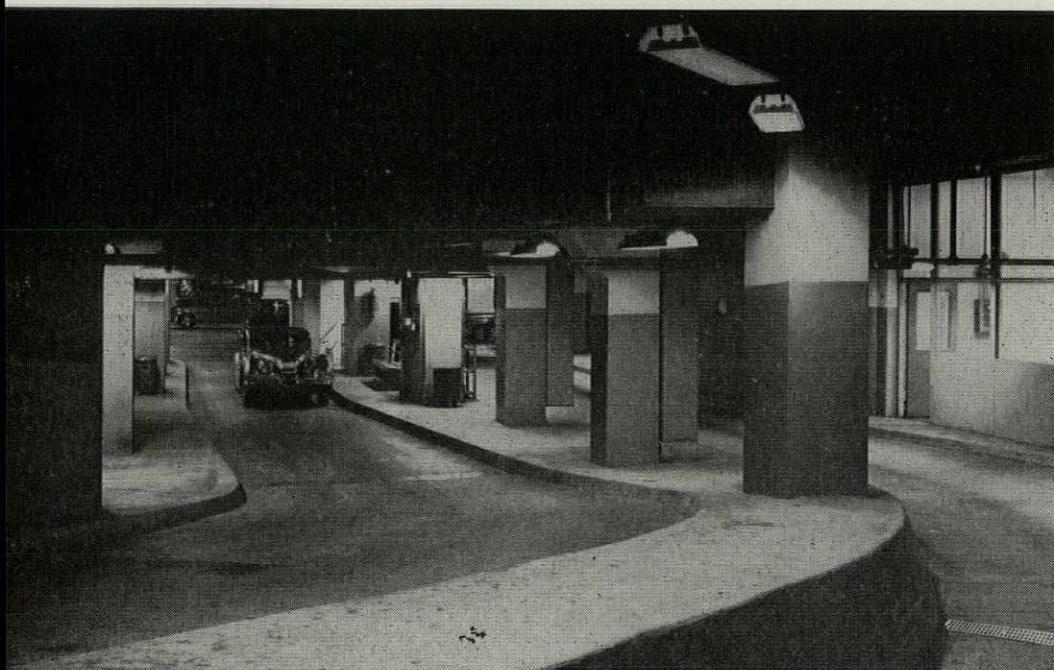
Photos: Ezra Stoller-Pictor

Restaurant at Second Ave. end of plot takes advantage of slope for a two-story exposure on the Southside garden. This view is from just outside the lobby's glass wall.



Sound insulation between apartments is achieved by using resilient clips to attach the furring channels which receive finish plaster to one side of the gypsum block cores of the partitions.

This is part of the corridor in the basement; and (facing page) the neighborhood in which Manhattan House lives.



Photos: Salvatore C. Valastro



# THE EXPANDING HOSPITAL

Some facts about the pressures of internal economics

and external community needs, plus two designs that face the facts

*At first glance the two hospitals on the following pages appear to have almost nothing in common.*

*One—the addition to New York's Mt. Sinai—was shoe-horned into a warren of middle-aged buildings; in itself it is lopsided, incomplete, a new cog in a complex urban medical, teaching and research center; it was designed by a large architectural firm for things-as-they-are.*

*The other—a proposed hospital for Long Island's Levittown—is a pristine plan for an empty field; it is complete in itself, a suburban general hospital where no hospital exists; it was designed as a student thesis with an inevitable tinge of things-as-they-should-be.*

But consider now some similarities:

Both recognize that future expansion is unpredictable as to *type*, but both plan for it nonetheless and have made those plans a controlling design factor;

Both sacrifice the old caste system to a democratic central dining room which serves everyone from director to boiler-room gang;

Both include nonhospital offices calculated 1) to bring in extra revenue, and 2) to expand the function of the hospital. These similarities are not happenstance. They are homologues, not analogues. They result from three certainties and one probability that apply to every voluntary hospital in the US. The significant point about both designs is that they face up to these few universal—but not universally recognized—facts.

## The certainties:

*Every successful hospital grows.*

*Hospital operating costs have skyrocketed even in comparison with general price rises; will soar further.*

*Hard as it is to raise hospital buildings funds, it is even harder to raise operating funds.*

## The probability:

*The three separate health protection fields—the hospital, medical, and public health professions—are coming closer together, are expanding the function of the hospital.*

## GROWTH WITHOUT SPRAWL

Paradoxically, most old US hospitals are easier to expand than new ones are. The old hospital was typically placed on the outskirts of town, managed to hang onto a slender buffer of land when the city engulfed it, was built on the pavilion system. Expansion meant a little more sprawl (the University of Pennsylvania hospital, for instance, having sprawled and sprawled is now engaged in growing into its own crevices).

This system provided leeway but it is monstrously inefficient to operate. First the reaction was the concentrated cruciform or slab built like a well-meshed machine and with about as much give. But now most hospital people are beginning to believe that the solution lies in a good compromise between expense of operating and expense of expanding.

Like a lot of good principles, this is pretty tricky to put into practice. Some planners do not try; a good many make only a poor try because of the unpredictability of hospital growth. Take for instance the case of a four-year-old 30-bed hospital in a small southern town with exemplary arrangements for expansion of bed space. Now, however, it turns out that bed space is ample; what this hospital desperately needs is an unforeseen and relatively big outpatient department—and there is no place to put it. Or adjunct facilities may give the trouble, as in an armed-service hospital (less than a decade old) which had no provision for vertical expansion of its low central facilities wing; a new wing was built introducing our old friend Sprawl again.

Nobody yet has figured out a way of, say, doubling the size of a hospital without major overhaul. But it is possible to allow for painless 20 to 30% bed expansion plus at least that much expansion for outpatient and adjunct facilities without sacrificing core servicing and efficient circulation. A plan incorporating *all* the following points is pretty well hedged against the future:

**1. Extra space distributed throughout central services** like kitchen, laundry, heating plant; room for another kettle here, a range over there, another couple of washing machines, an extra boiler. (Mt. Sinai, pp. 153-155, uses a variation of this device.)

**2. Land for horizontal expansion** reaching out from the ground floors, out from the ends of nursing units; corridors running full to outside walls wherever expansion beyond is contemplated. (A good point of the Levittown hospital, p. 156, is its arrangement for *interior* horizontal expansion.)

**3. Structural members sized to take vertical expansion.** As in that other complicated enterprise, the circus, the show must go on; replacement of light columns is rarely feasible in a functioning hospital. The University of Maryland hospital recently added two floors to its 8-story cruciform without rousing awareness among inhabitants of the building that anything was happening. (Mt. Sinai maternity addition provides for four- and nine-story portions to come up to ten stories.)

**4. Flexibility.** This means, for one thing, that floors should be at least 40' wide. Tempting as it may be to limit the width of a nursing wing to 30' for two 11' rooms and an 8' corridor, this will prove a poor economy if and when that floor must be converted to other use. Flexibility also means easy shifts between different types of nursing units—from maternity to medical for instance, from ward and private to semiprivate. (Mt. Sinai had to swallow a street to achieve—among other things—maternity-medical-surgical nursing flexibility.)

## A PENNY SAVED AND A PENNY EARNED

It is an old story that hospitals live from hand to mouth. The trouble is that the mouth is getting so big. Unlike US manufacturing or business enterprises which have found ways to use less labor in proportion to their product, hospitals steadily use more; unfortunately the more efficient and knowledgeable medical care becomes, the more people are required to administer it. Full-

time personnel in voluntary hospitals increased from 156 per 100 patients in 1946 to 181 in 1951. Moreover, because hospitals had a tradition as charity institutions and (like schools) as a pioneer field for women workers, for a long time they ran on an economy of peculiarly low pay. In recent years hospital personnel has been shucking off that particular economy, a process not yet completed. Payroll expenses per patient-day almost exactly doubled in voluntary hospitals between 1946 and 1951; total expenses rose from \$10.04 to \$18.01 on the average.

Patients' payments came to 90% of hospital cost in 1951, compared to 87% in 1946, but that remaining 10% is getting harder and harder to come by as tax rates strap former big donors and inflation and low-interest rates cut down endowment income. Worst off are the big medical centers with their heavy load of free patients (Johns Hopkins is reputed to have an annual deficit close to \$1 million). Some hospitals are now drawing on reserves for operation; economically these are like little Englands.

The specter that alarms everyone concerned is a vision of the day when the federal government first assumes part of the burden of voluntary hospital operating expense. The federal Hill-Burton Hospital Survey and Construction Act is popular among hospital people because the government's part is strictly confined to construction, ends there. The concensus is: "You can't mix the federal government and a voluntary organization in day-to-day operation. It has to be controlled by one or the other. And when Washington begins to supply operating funds, the government will begin to control."

How to stave off or, hopefully, escape the day? One answer lies in economies like the central dining room—a breakdown of caste and convention to the hard, hard exigencies of economics. But most hospitals must also find new sources of income.

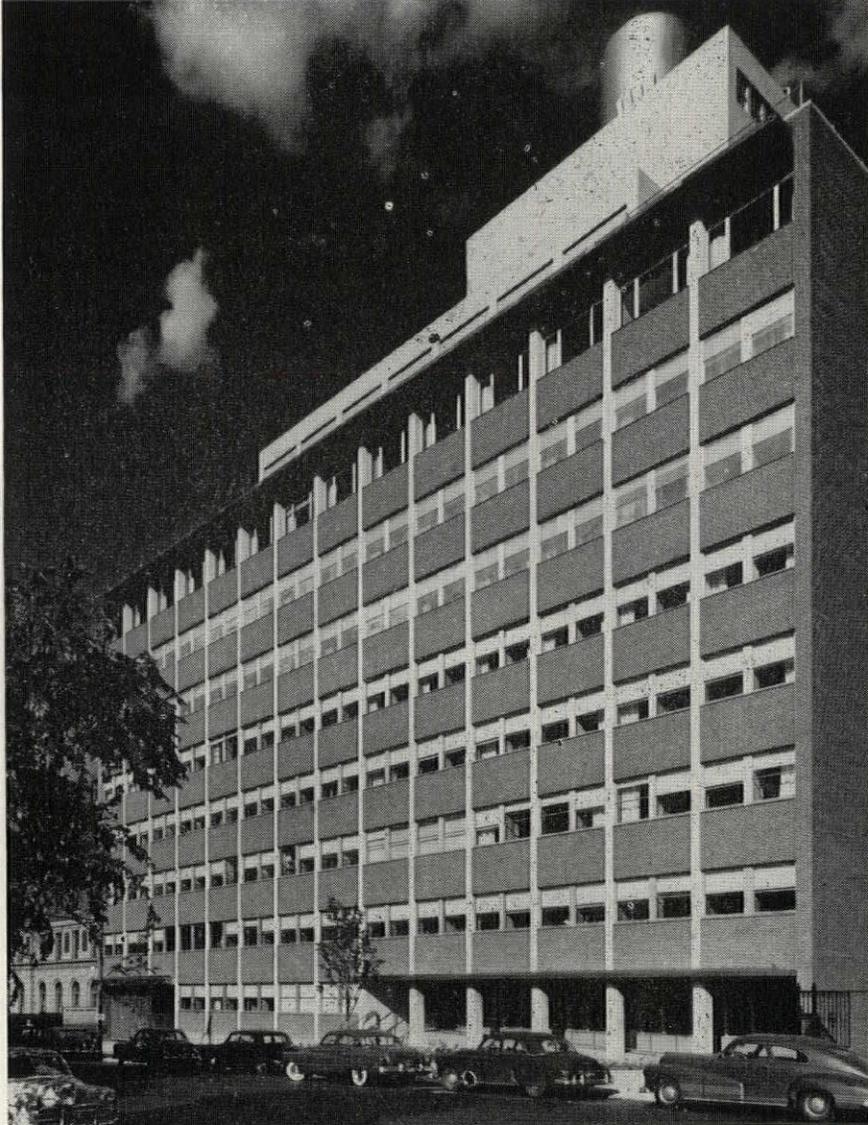
In remotely similar situations, country clubs install slot machines, theater owners add candy counters and popcorn vendors. Analogously, hospitals are experimenting with income-producing office space.

This question can be approached more high-mindedly from another side: What can the hospital provide to make its facilities of greatest use to the community and to make itself more truly a health center?

Either approach ends at the same logic: hospitals can rent office space at commercial rates to doctors and to public health officials (an indirect form of tax support).

Neither of these solutions is new, but both are still rare. In many places where combination of public-health offices and hospital was considered, mutual fear of loss of independence prevented a trial. But in several small communities where chance brought a happy enough juxtaposition of personalities to give the scheme a whirl, it is working well, is paying off in convenience to both sides, as well as in money for the hospital.

The Mt. Sinai addition includes only offices for doctors, renting at \$6 per sq. ft. (Across the street, in a housing project designed by the same architects, it will have an experimental clinic outpost in close cooperation with public-health officials.) The Levittown proposal has not only doctors' and public-health officials' offices, but also a variety of voluntary community health and welfare enterprises. It goes further toward the full health center than any existing US hospital.



Photos: Martin Helfer

*Brick and marble facade of Mt. Sinai's new maternity pavilion extends over what was once a minor street intersecting the medical center.*

## 1. UNDERGROUND EXPANSION

Many a hemmed-in city hospital has the same problem as Mt. Sinai: no horizontal expansion space.

Mt. Sinai has found the solution underground by 1) expanding its basement to include 130,000 sq. ft. previously unexcavated—part of it under a former city street—and 2) integrating old and new basements into a coherent, space-economical service base on which the pavilions will stand like towers instead of separate buildings.

New excavation gave the architects space to replace 14 former separate dining rooms and five kitchens with a central kitchen and employee-staff dining room and to put in off-street loading and huge sub-basement central stores. Thus far old basements, relieved of some of their previous space-eaters, have yielded a new cardiology department, X-ray expansion and central lockers.

Curiously, this master scheme was a by-product of piecemeal planning. The hospital needed a new 100-bed maternity pavilion and outpatient clinic, such assorted odds and ends as staff residence rooms, premature nursery, doctors' offices, and two laboratories to serve the entire 1,000-bed establishment. The only space was a blockfront 100' x 420'. To stretch it, hospital officials persuaded the city to deed over the 60' roadbed of 99th St. (Absorbing roadbeds of minor streets is a resource other hospitals might explore.) Thereupon, they saw and seized the chance to spread basements to the next block north. Excavation gave cheap space, required

**THE EXPANDING HOSPITAL**

blasting in only two small areas, used the 40' depth to rock that is needed anyway for new foundations.

Above ground, linking the two blocks enabled the architects to: 1) create a small oasis with an 80' x 300' planted court; 2) use a pleasant outlook west toward Central Park for the 160' nursing wing of the maternity pavilion; 3) join the maternity pavilion (at the same floor levels) to the existing private pavilion, creating in effect a 360' slab with a two-floor, 47-bed expansion of the private pavilion sandwiched into the new building and flexible use of rooms on other floors as maternity and general-patient loads vary.

Architect Jacobs sums up the job: "The last generation didn't give us much room to play with. We've done better by the next generation."

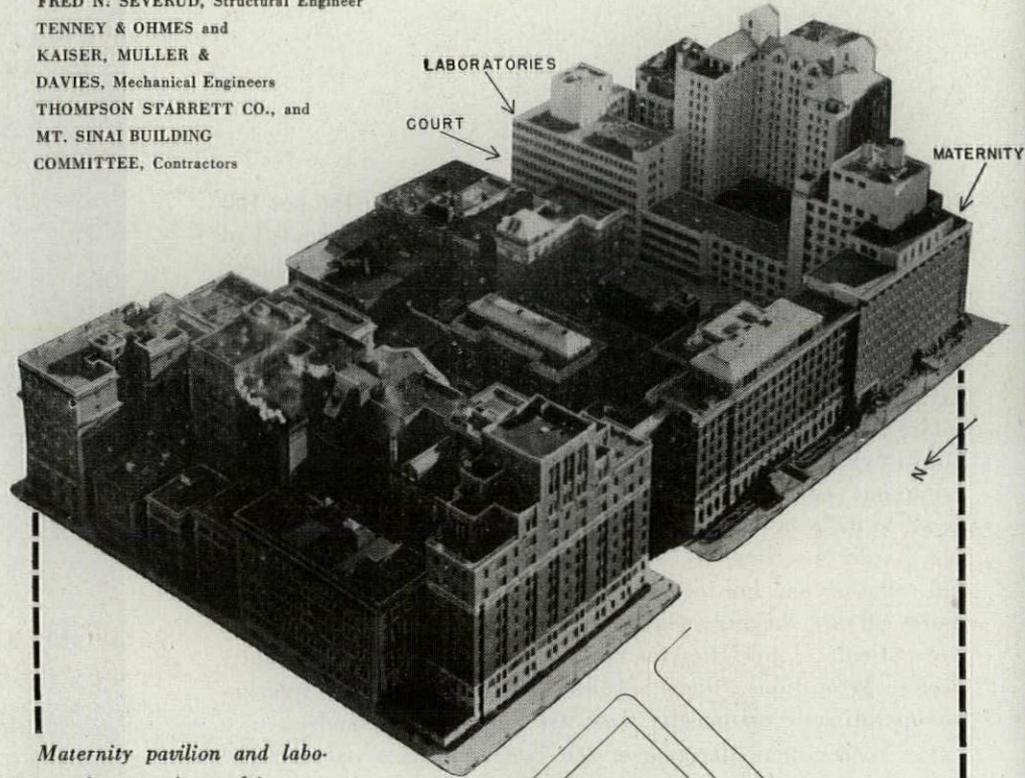
The legacy for the next generation now includes: 1) 33,000 sq. ft. of vertical expansion atop the maternity pavilion, so strategically located that 30,000 of it can be used either to enlarge the maternity facilities or the nurses' home; 2) a 3,000 servings-per-meal kitchen which can take a 33% expansion by more flexible use of equipment and tighter scheduling; and 3) the chance to replace the entire hospital-owned block of minor buildings between 99th and 100 Sts. (carefully untouched from the surface up and private pavilion back) with a skyscraper which can reap full advantage of the new base.

Most controversial feature of the \$11 million expansion and alteration job was the central dining room, because feeding internes side by side with staff physicians and maids across the aisle from directors implied a social revolution. This innovation was debated for two years before it was risked. In practice it has caused hardly a ripple.

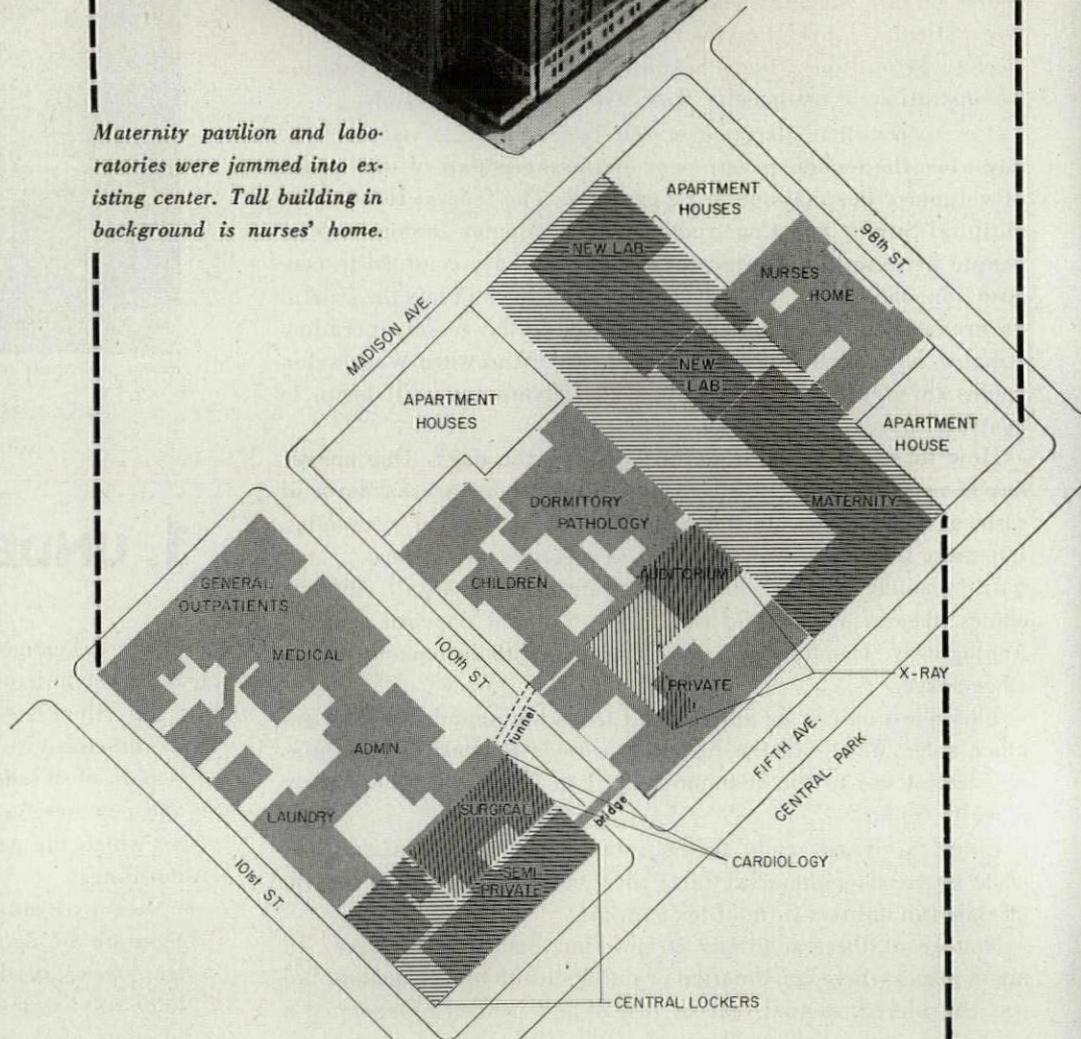
The maternity addition is carefully planned for earning as well as saving. Its special-income producers include: 1) the seven private obstetricians' suites on the first floor renting for \$6 a sq. ft.; 2) soda fountain and snack bar for personnel and public in the basement; and 3) an almost-intangible which might be called The Appearance of Difference, explained below.

In all essentials, the distinction between rich and poor within the maternity pavilion is very narrow, as it is in all modern hospitals. Medical care is the same, wards have grown small (here they are interchangeable with semiprivate and semiprivate is interchangeable with private). So superficialities of difference have to be accented. Here snob appeal

MT. SINAI HOSPITAL, New York City  
 KAHN & JACOBS, Architects  
 YORK & SAWYER, Consulting Architects  
 FRED N. SEVERUD, Structural Engineer  
 TENNEY & OHMES and  
 KAISER, MULLER &  
 DAVIES, Mechanical Engineers  
 THOMPSON STARRETT CO., and  
 MT. SINAI BUILDING  
 COMMITTEE, Contractors



Maternity pavilion and laboratories were jammed into existing center. Tall building in background is nurses' home.



**ERRATA:** in last month's hospital story ("Big Double Hospital," Lima, Peru) a group of the legends indicating circulation flow was reversed. The correct legends read:

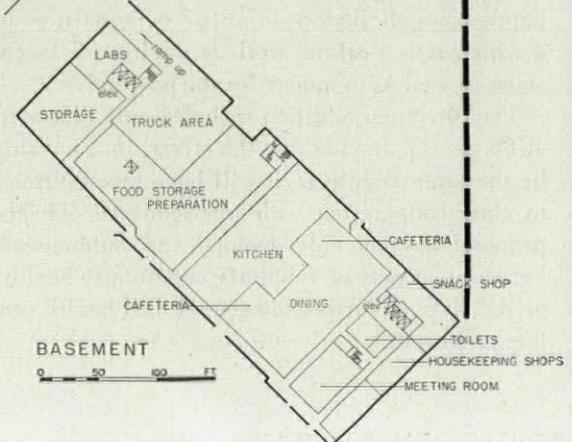
**GROUND FLOOR**

- Staff
- Visitors
- Maternity admitting
- General outpatients
- Maternity outpatients
- General admitting

**BASEMENT**

- Clean corridor
- Soiled corridor

Plot plan (above) shows beginning of unified basement system for whole center. Horizontal travel time from new kitchen to semiprivate and medical pavilions is 1½ min.

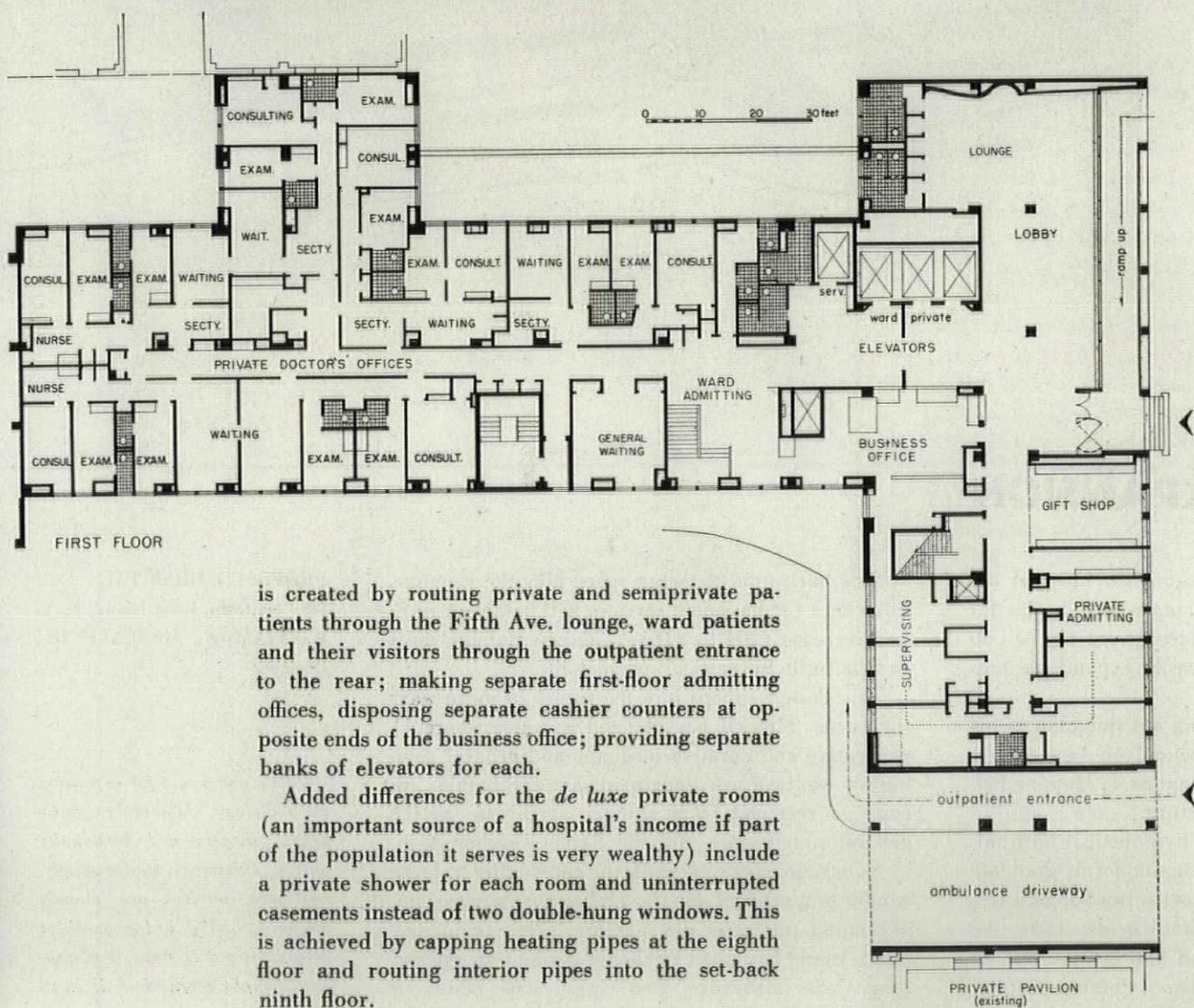




Acquisition of minor street gave the hospital this court and the basement space beneath. View shows rear of maternity pavilion and (foreground) small research laboratory.



Private maternity patients use Fifth Ave. entrance into lounge (right). Ward patients enter at ground floor rear.

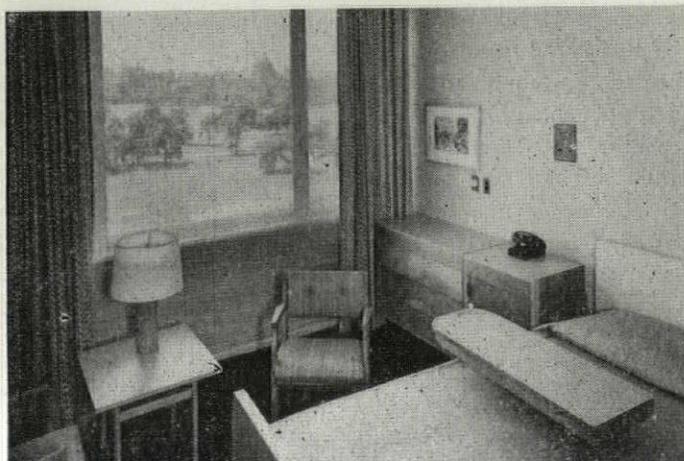


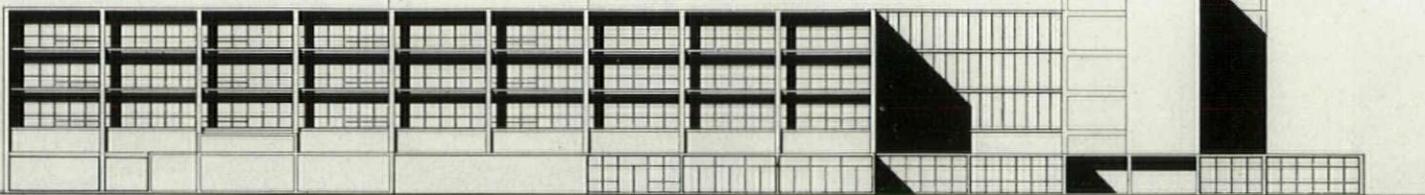
First floor of maternity pavilion. Juncture of west wing with the older private pavilion is interrupted on this floor by ambulance and outpatient-ward entrance. Private doctors' suites and separate ward and private circulation aid hospital finances.

is created by routing private and semiprivate patients through the Fifth Ave. lounge, ward patients and their visitors through the outpatient entrance to the rear; making separate first-floor admitting offices, disposing separate cashier counters at opposite ends of the business office; providing separate banks of elevators for each.

Added differences for the *de luxe* private rooms (an important source of a hospital's income if part of the population it serves is very wealthy) include a private shower for each room and uninterrupted casements instead of two double-hung windows. This is achieved by capping heating pipes at the eighth floor and routing interior pipes into the set-back ninth floor.

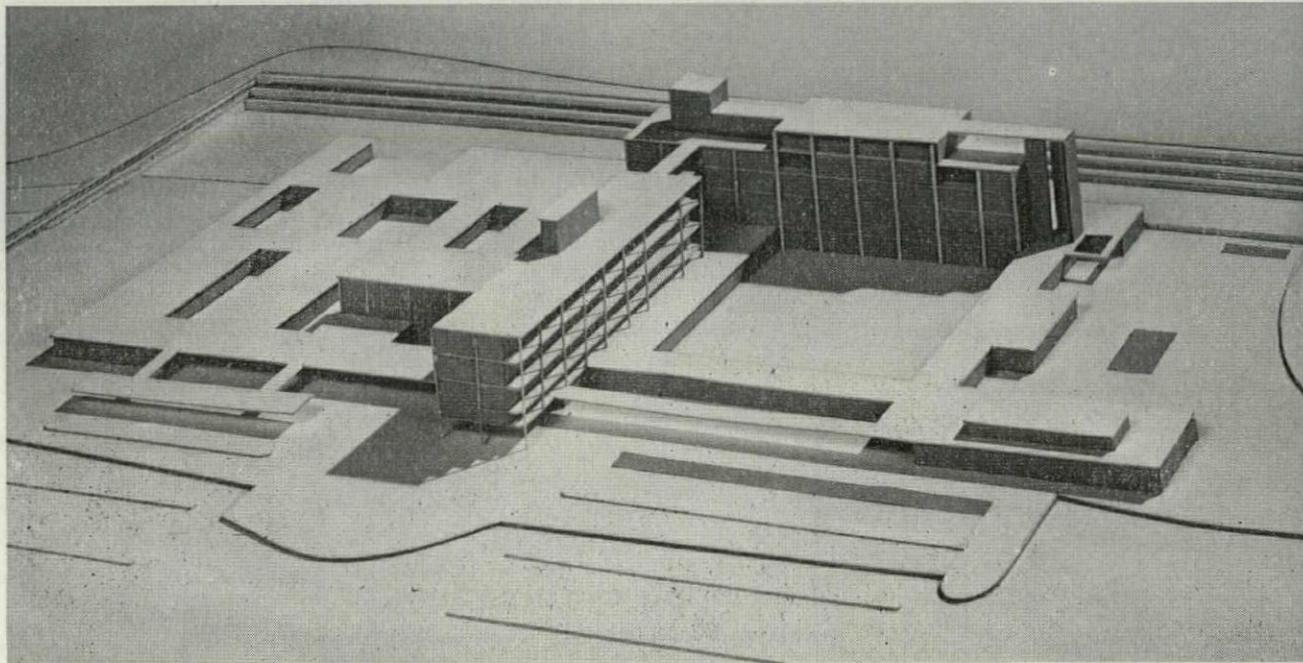
Welded structure, originally chosen for quiet construction, costs about 5% less than riveted, largely because of the lighter weight steel it permitted. Three 50-ton, story-high trusses, designed to carry nine stories of the laboratory across the 53' loading dock span, have butt-welded joints (permissible under a 1949 building-code amendment) instead of gusset plate connections. The hardest job in welding the big trusses to columns was getting them plumb without preliminary bolting; it was managed by no special tricks, simply painstaking care.





SOUTH ELEVATION

Community "health care center" includes public meeting rooms and swimming pool (right, on model), welfare offices (center foreground), physicians, and public-health offices (left) in addition to hospital proper. This is a new organizational concept in the US. View of model is from west; rendering shows east facade.



## 2. INDOOR EXPANSION

The pleasant patios in this suburban hospital are not a luxury. They are an ingenious device for cheap, orderly expansion. Indeed from top to bottom this is one of the most easily expandable hospitals ever designed.

Metcalf spent a year working out this plan as his graduate thesis at the Yale School of Architecture where he had won the first Magnus T. Hopper Fellowship in Hospital Architecture.\*

Levittown, site of Metcalf's hypothetical hospital, is a current happy hunting ground for graduate students; a city of 60,000 suburbanites where a few years ago there were only potato fields, looks like such a nice clean slate. Metcalf had the research of a Yale sociology student and two Columbia hospital administration graduates to build on, based his expansion provisions partly on their findings.

Here is how the patio expansion system works: when the day comes for radiology to grow into the garden to its south (see plan) the strip of patio next to the present department will be left as a departmental corridor and new radiology offices will occupy the rest of the patio. Almost any conceivable growth of first-floor facilities can be taken care of similarly or—in the case of the group practice offices—by pushing out the wall to the north.

This horizontal growing space plus the generous allowance for basement services will balance a 55% bed increase (204 to 316). The new nursing units can be built by vertical expansion.

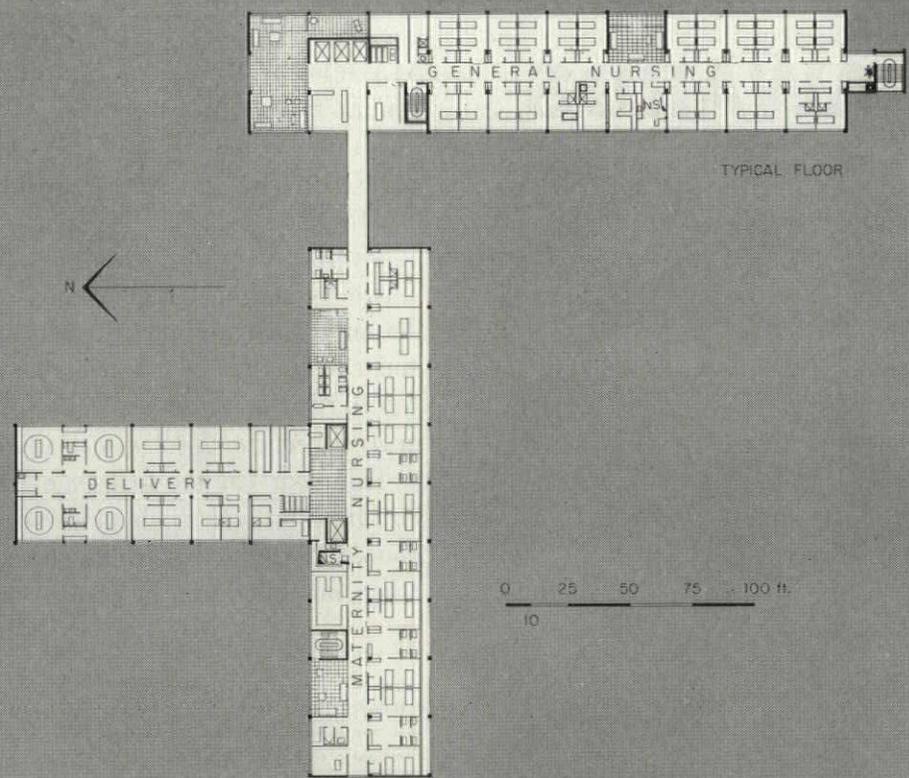
This design snoops into the future in more ways than one. Metcalf has planned a center where 1) preventive and curative medicine and general community welfare are integrated, and 2) regular income is received from sources as diverse as the general practitioner and the Parent-Teacher Assn.

As envisioned by Metcalf, the community at large would support and use the clubrooms, auditorium, swimming pool and day nursery. The community offices would be rented by the local adoption agency, Blue Cross insurance, Red Cross, state offices of mental hygiene and welfare, Community Chest, Veterans' Administration and the like. The municipal public-health department has its own suite. And in this solvent community, group-practice offices (rented from the hospital) take the place of the usual outpatient department.

\* This award (the only one of its kind in the US) was conceived by Charles F. Neergaard, veteran hospital consultant, and is supported by friends of the late Dr. Hopper as a device for channeling some of the best young architectural talent into hospital design.

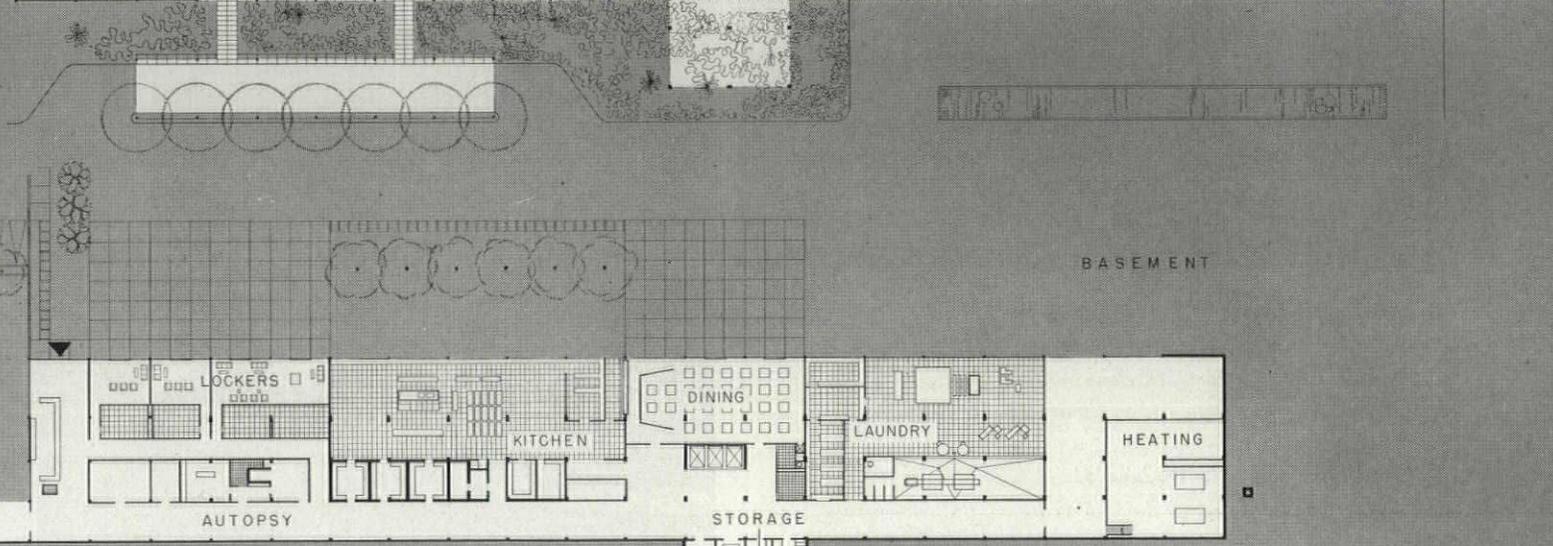
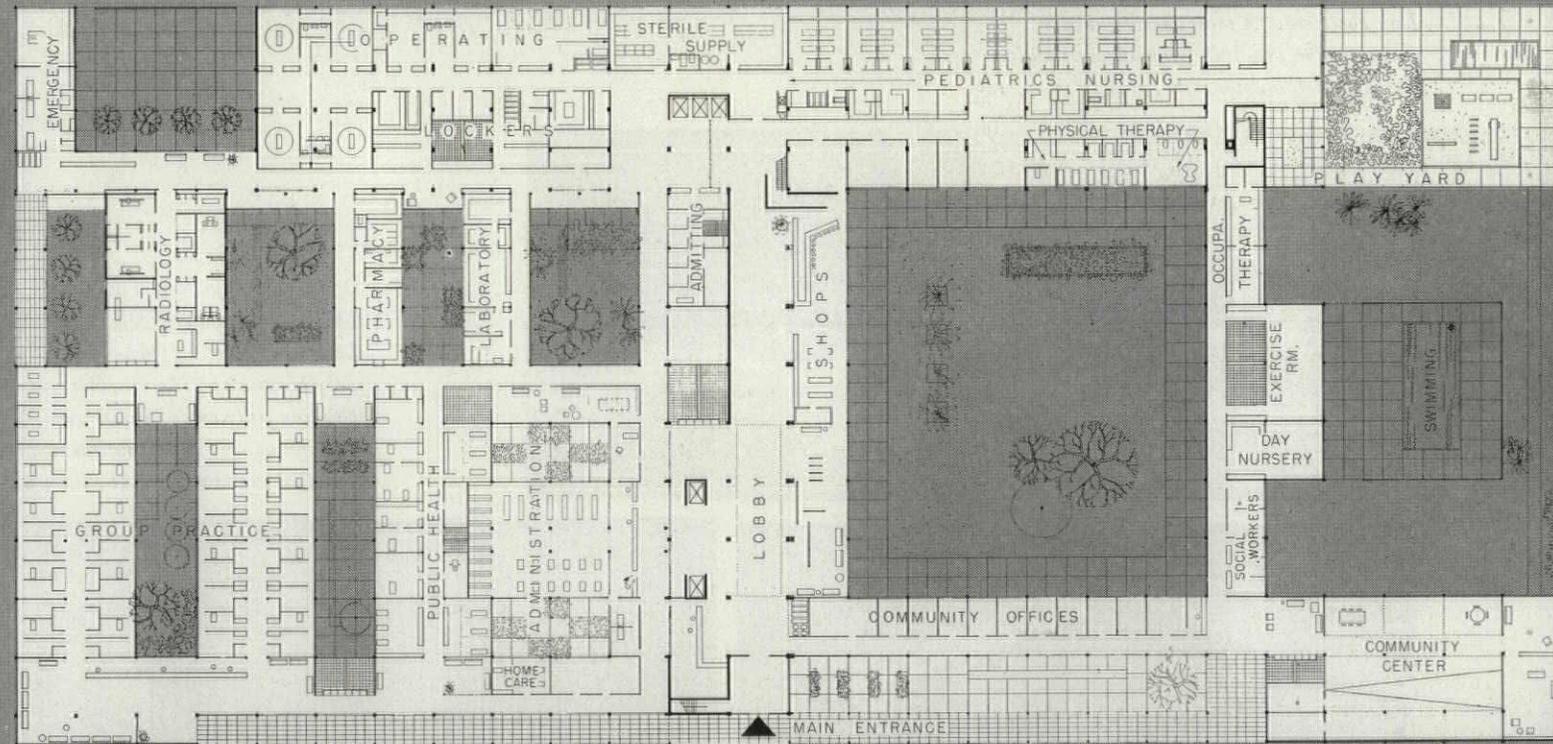
PROPOSED HOSPITAL  
for Levittown, Long Island, N. Y.  
WILLIAM A. METCALF JR.,  
Designer

*Gardens give space for expansion of radiology, laboratory, emergency, surgery and community offices. Pharmacy, sterile supply, basement services are already ample for 55% bed expansion; surplus space is more than usually thought economical, is justified here by rapid suburbanizing of Long Island. As population age changes, one maternity nursing unit would shift to general.*



TYPICAL FLOOR

FIRST FLOOR



BASEMENT

# AIA AWARDS

AIA selected these nine buildings as the best among 150 entered in its annual Honor Award Program at its New York convention last month. The three below were "deemed to have particular quality" and were given First Honor Awards; the other six (*right*) plus three houses\* earned Awards of Merit.

Seven of the award-winning buildings and houses came from California—two by architect Richard J. Neutra. Skidmore, Owings & Merrill were the only other architects to win two awards. Seven of the nine buildings and two of the three houses have been or will be presented in detail in ARCHITECTURAL FORUM and HOUSE & HOME. One has appeared to date in *Architectural Record*, one in *Progressive Architecture*.

This year for the first time AIA opened its Honor Award Program to buildings of all kinds, instead of just a pair of building types, like houses and schools. Although the field was thus larger than usual, many other notable buildings were still not entered.

**RESORT HOTEL** on Lake Wilderness, Wash.  
*Young & Richardson, Carleton & Dettie, Architects.*  
*Gaffney's Lake Wilderness, Inc., Owner*  
*Jury comment: "A most successful plan and elevation in a truly magnificent setting."*  
*Detailed presentation: AF, this issue, p. 136.*

\* House in Vina, Calif., for Moritz Thompen by architect Mario Corbett; house in Los Angeles for J. D. Hinde by architect Richard J. Neutra (both of these houses have been or will be presented in detail in *House & Home*); and community of houses in Brentwood, Calif. for Mutual Housing Assn. by Whitney R. Smith, A. Quincy Jones and Edgardo Contini, Associated Architects, Engineers and Site Planners, and Wayne R. Williams and James Charlton, Collaborating Architects.

**LEVER HOUSE** in New York City.  
*Skidmore, Owings & Merrill, Architects.*  
*Lever Brothers Co., Owner*  
*Jury comment: "The all-glass and metal building truly came into its own . . . pristine quality and beautiful mass."*  
*Detailed presentation: AF, June '52.*



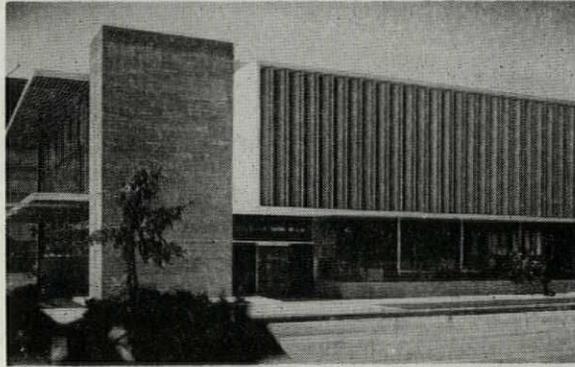
**ARCHITECT'S OFFICE** in Los Angeles.  
*William S. Beckett, Architect and Owner.*  
*Jury comment: "A compact, clean and well-integrated plan . . . an admirable choice of materials."*  
*Detailed presentation: AF, June '51.*



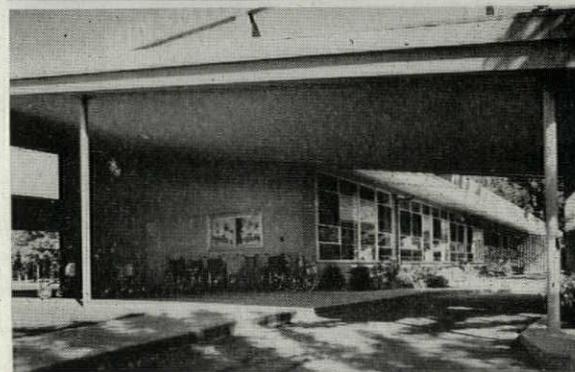
**APARTMENT HOUSE, "Eastgate,"** in Cambridge, Mass.  
*William Hoskins Brown, Vernon De Mars, Robert Woods Kennedy, Carl Koch, Ralph Rapson, Architects.*  
*New England Mutual Life Insurance Co., Owner.*  
*Detailed presentation: AF, May '51.*



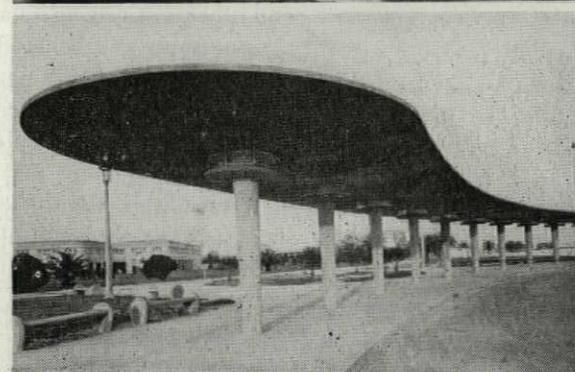
**OFFICE BUILDING** in Los Angeles.  
*Richard J. Neutra, Architect.*  
*Northwestern Mutual Fire Assn., Owner.*  
*Detailed presentation: AF, Feb. '52.*



**SCHOOL for Cerebral Palsied Children** in Fresno, Calif.  
*David H. Horn, Marshall D. Mortland, Architects.*  
*Fresno City Unified School District, Owner.*  
*Detailed presentation: scheduled for AF, Aug. '52.*



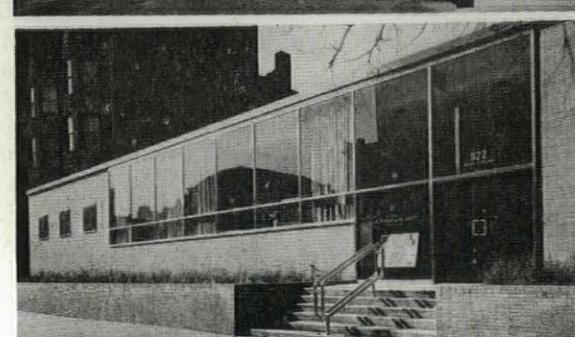
**BUS SHELTER** in New Orleans.  
*Freret & Wolf, Architects.*  
*Orleans Levee Board, Owner.*  
*Detailed presentation: scheduled for AF, Aug. '52.*



**REAL ESTATE OFFICE-RESIDENCE** in Los Alamos, Calif.  
*Edward A. Killingsworth, Architect.*  
*John E. Baird, Owner.*  
*Detailed presentation: Arch. Record, June '52.*

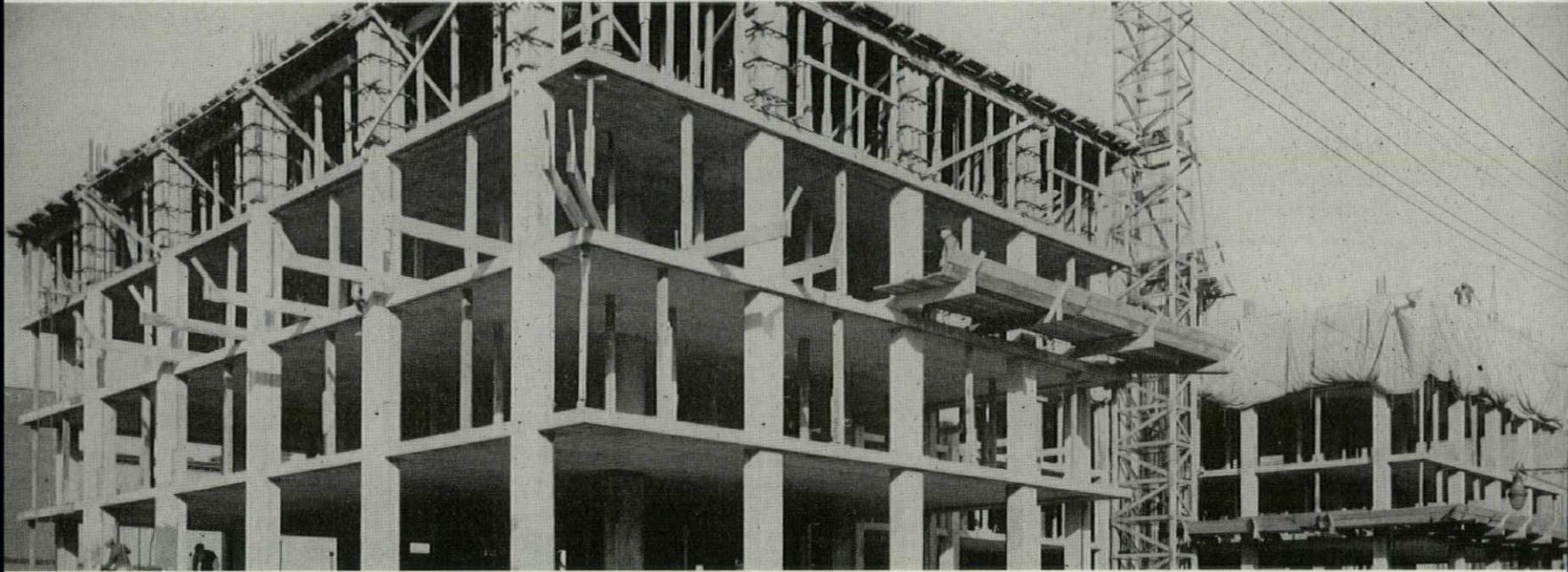


**OFFICE AND CLINIC,** Chicago, Ill.  
*Skidmore, Owings & Merrill, Architects.*  
*Illinois Children's Home and Aid Society, Owner.*  
*No detailed presentation to date.*



# BUILDING ENGINEERING

1. Concrete economies for low-cost apartments
2. Block panels for rapid wall and floor construction
3. Knee girders for a flexible one-wall hangar



## 1. CONCRETE ECONOMIES

**Simplified loft construction holds apartment costs to \$6.50 per sq. ft.**

Because it is so similar to Mies van der Rohe's famed Promontory Apartments in Chicago and because its \$6.50 construction cost per sq. ft.\* in 1952 lowers Promontory's 1949 cost by \$2 or 23%, the design of Flamingo apartments in Philadelphia has been called "poor man's Mies." Similarity between the two buildings rests mainly on their economical loft-type construction with windows and brick spandrels framed by exposed concrete floors and columns. (Its design has earned the

architects the local Producers' Council award for "the most imaginative and appropriate use of building materials.") The Flamingo's remarkable economy rests on a further simplification of Promontory's already simple concrete structure, plus several other cost-cutting details. (Its 75¢ cost per cu. ft\* is well below the 82-90 cent going rate for such buildings but *some* of the details represent a lower standard.)

Whereas Promontory's floors are of ribbed construction and required hung plaster ceilings, Flamingo's floors are flat slabs whose smooth undersides serve as finished ceilings.

Whereas Promontory's 25-story exterior columns were reduced in depth by a few inches every five stories to present the appearance of subtle buttresses and yield smooth inner walls, Flamingo's exterior column sections remain a constant 15" x 20" (projecting into the room) through their 15-story height, to simplify the forming operation. (Interior columns are reduced in one dimension every five floors—from 14" x 26" to 14" x 14"—but were poured inside the same adjustable column forms.)

Whereas Promontory's column-to-column windows rest on 2' 5½" cavity spandrel walls 12" thick with an interior air space and a concrete sill, Flamingo's are

set a little higher on a single thickness, 2' 7" spandrel wall of 8" solid brick and concrete block topped with a simple rowlock brick sill. (Promontory's brick is pale yellow; Flamingo's, red.)

Whereas Promontory's floor-to-floor heights are 9' 4" (ceiling height: 8' 3"); Flamingo's 6" flat slab construction helped cut this important dimension 9" to 8' 7", while reducing the ceiling height only 2" to 8' 1".

Other significant aspects of the Flamingo's economical concrete construction:

▶ Flat slab flooring permitted staggering of columns to suit the floor planning. Exterior columns are spaced 15' apart; interior columns are located midway between them and are spaced about 17' apart across the 50' width of the building.

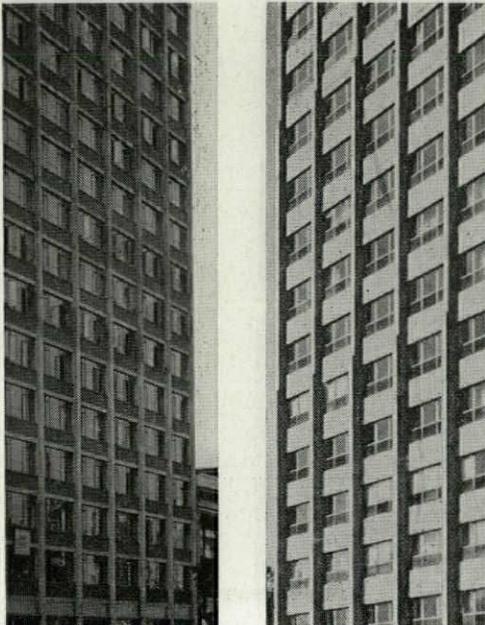
▶ The 6" slab is reinforced around its edge and around stair and elevator openings with wide shallow beams whose dimensions (8⅝" x 24") were governed by the stock sizes of lumber used in the forming—one-half a 4' x 8' plywood sheet for the soffit, a nominal 2' x 3' for the inside and a nominal 1' x 10' for the outside.

▶ Repetition of a standard floor-to-floor height (8' 7") and elimination of column capitals further simplified the forming operation.

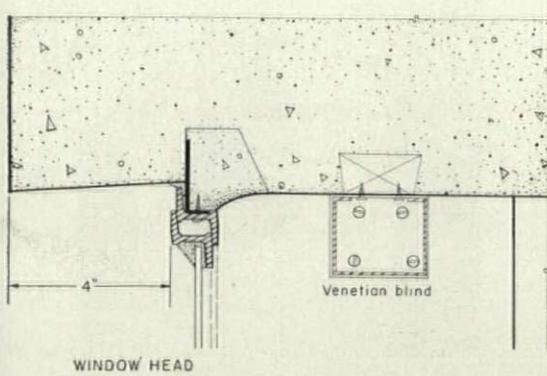
▶ To receive window heads and permit their easy installation flush with the ceiling, a small recess was cast in the underside of the spandrel beam and later filled with grout (*see detail*).

FLAMINGO

PROMONTORY

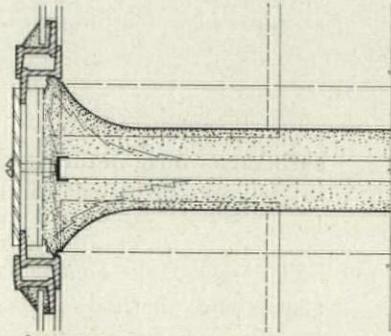


\* Flamingo's unit costs are based on a total cost of \$3 million, including the two-level garage. Construction of the concrete frame and foundation cost about \$2 per sq. ft. of supported slab.



Vertical section through spandrel beam shows how steel window heads are anchored in slab recess, how Venetian blind is hung from wood block cast into the slab.

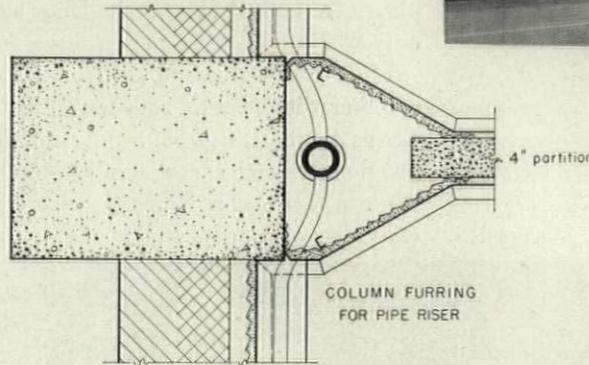
WINDOW HEAD



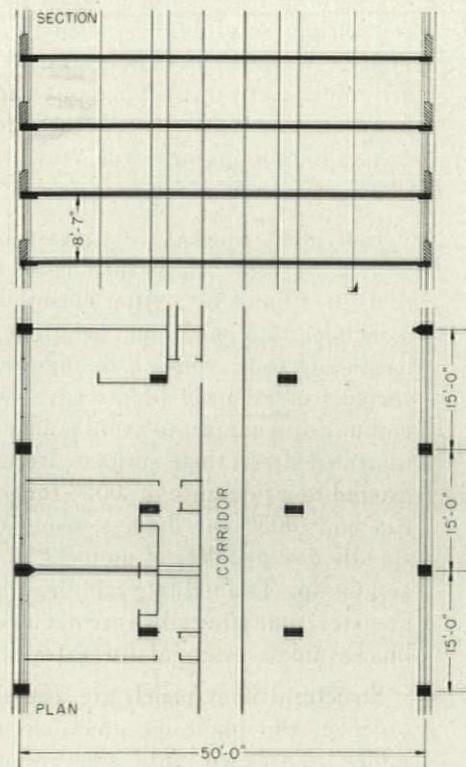
Horizontal section through exterior column shows how party walls stop short of column to make space for concealed risers serving baseboard convectors.

MULLION AT 2" PARTITION

Horizontal section through special mullion shows how 2" solid plaster partition is framed into the window.



Flamingo's 300 apartments are arranged in H-shaped plan atop two-tier subterranean garage and row of stores facing Philadelphia's Broad St.



Section and floor plan of typical wing shows simplicity of flat slab structure and staggered column spacing it permits. Note that all kitchens and bathrooms are arranged economically back-to-back within the central bay, that all party walls are framed into columns, that partitions within apartments are framed into window mullions.

- ▶ Also cast into the underside of the spandrel beam flush with the ceiling near the windows is a wood nailer from which venetian blinds are hung.
- ▶ Like the ceilings, the smooth surfaces of the interior columns needed only paint as a finish.
- ▶ Formwork was built from standard 4 x 8 plywood panels with a minimum of cutting and waste, and thanks to the identical construction of each floor, forms were reused six to seven times. They were braced on the underside with 3" x 4" ribs which, in turn, were supported by rigid 4" x 6" stringers to assure the leveling of all panels. The stringers were supported by shores set on the floor below.
- ▶ Pouring was done in two 9,000 sq. ft. sections per floor. Each morning one section was poured (200-220 cu. yds.). Finishers completed their job by about 4 P.M.; meanwhile layout men were able to prepare for the next day's pour. This carefully controlled routine kept the job moving without the need for overtime work. While the use of calcium chloride in the concrete (1-17% depending on whether the air temperature was above or below 70°) speeded the curing operation and would have permitted the forms to be stripped in six days, they were left intact for 21 days to meet local code requirements.

▶ Although two-way reinforcing of the slab was required over the interior columns for

continuity, outer bays are reinforced in only one direction—perpendicular to the spandrel beams. Spaced 5" to 10" apart, the bottom bars are 1/2" round, while the upper bars (over the columns) are 5/8" to 3/4". Stirrups spaced 10" apart strengthen the spandrel beams against torsion and are extended into the floor slab as top steel. Built of 3,000 psi concrete, each floor is designed for a combined loading of 190 psi.

▶ While all party walls are framed into exterior columns, apartment partitions of 2" solid plaster are framed into special window mullions (see floor plan and construction detail).

▶ The heating system (hot-water baseboard convectors) was designed so that risers are required only at every fourth or fifth exterior column to serve the series of baseboard convectors beneath the windows. Risers are housed in an 8" gap left between the masonry party walls and the columns. This device made possible the building's distinctive column-to-column fenestration.

Located on Philadelphia's Broad St., the Flamingo building was built with the aid of an FHA-insured mortgage. It is rented at an average of \$29 per room per month—the lowest for any elevator apartment building in the city.

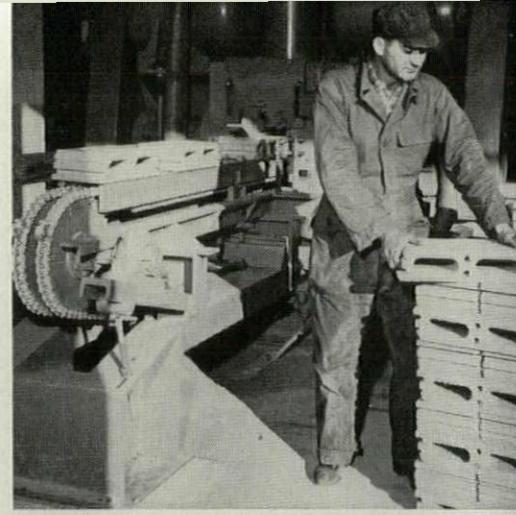
Architects: John H. Graham of Washington and Sweet & Swartz of Philadelphia. Structural Engineers: Jacob Feld. Contractor: Turner Construction Co.

## 2. PUMICE BLOCK PANELS

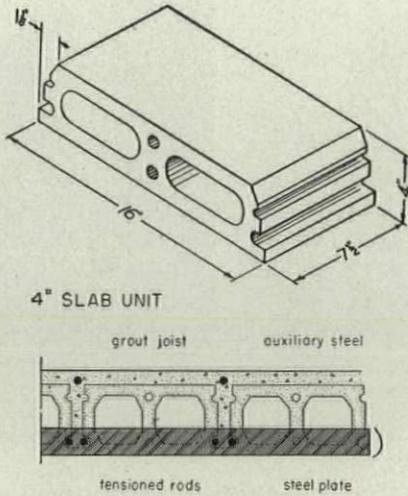
**Tensioned with steel rods, they go up quickly at cost of 81¢ per sq. ft.**

Economy of small building blocks assembled in large-tensioned structural panels is demonstrated in this refinery addition in California. On its continuously designed welded steel frame 16,259 sq. ft. of floors, walls and roof were hung by an eight-man crew in only 8½ days. Cost of the 4' x 10' structural floor and roof panels and the 4' x 6' and 4' x 12' structural wall panels was only \$13,140, or 81¢ per sq. ft. in place. This includes a site-labor cost of only \$3,170, or 19½¢ per sq. ft.

Floor systems assembled from tiles held together with steel tie rods were used in the US as far back as 1889. But now the tremendous capacity and quality control of modern automatic block fabricating machines is combined with the latest tensioning



Each block is machine ground for parallelism and flatness to avoid points of concentrated stress when assembled in panels.



Structural wall panels of tongue & groove pumice block are assembled dry, then bound together with ½" rods tensioned to 18,000 psi.



shrinkage which, in turn, reduces to a minimum the loss of tension in the reinforcing bars.

▶ The lightweight concrete used has good sound and thermal properties and can readily be nailed.

▶ Assembled panels can be erected as quickly as structural steel and even more quickly welded into position. They at once become a working platform and thus eliminate the need for false work.

▶ Undersurface of the carefully machined block panels is smooth enough to serve as a ceiling finish when painted.

▶ Hollow cores of the panels are available for wiring or piping. They may also be used for warm-air radiant heating and cold-air returns. By modifying certain blocks before assembly, they can be used to carry ceiling lighting fixtures with very little loss of strength in the floor.

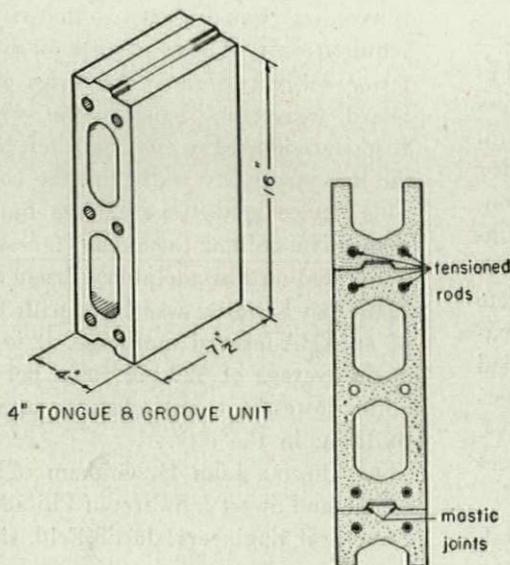
techniques to maintain precast hollow blocks in permanent compression. This technique claims many new advantages:

▶ It achieves a saving in concrete alone of 55% over ordinary cast-in-place construction—4" floor panels weigh only 28 lbs. per sq. ft., yet when reinforced with two ⅜" diameter bottom rods and one ½" diameter top rod (for continuity) they support 79 psf. This goes up to 118 psf with the addition of 1½" of concrete topping.

▶ The lightweight concrete sections have a net strength of 2,000 psi, thanks to the use of carefully graded volcanic pumice and expanded shale aggregates and low pressure, high temperature steam curing. The blocks are cured at 160° F. for 8 hours, followed by air drying for 28 days before final assembly into structural panels.

▶ Dead weight of the assembly is 45% less than equivalent cast-in-place concrete.

▶ High-temperature steam curing produces maximum early strength and accelerates



Individual blocks are precast in sizes 7½" x 16" wide and in thicknesses of 3, 4, 6, 8, 10, 12 and 16". After curing they are assembled into panels and held together by tensioning rods. Since it is important that surfaces of adjacent blocks have complete and uniform contact to avoid points of concentrated stress, these surfaces are machine ground to a tolerance of .002" for parallelism and .005" for flatness, using double-spindle disc grinders of up to 42" diameter and 60 hp. To facilitate grinding, hard aggregates containing silica are not used in the blocks unless essential for extra strength.

Structural floor panels are assembled to order at the plant on precision makeup tables. Threaded mild steel reinforcing rods are placed in splines molded into the sides of the precast elements and laced through corresponding holes in steel end plates. The nuts are tensioned to 18,000 psi by a torque wrench. (In computing the load-bearing capacity of the panel this

tension is not taken into consideration and therefore the panel cannot be called a true prestressed member.)

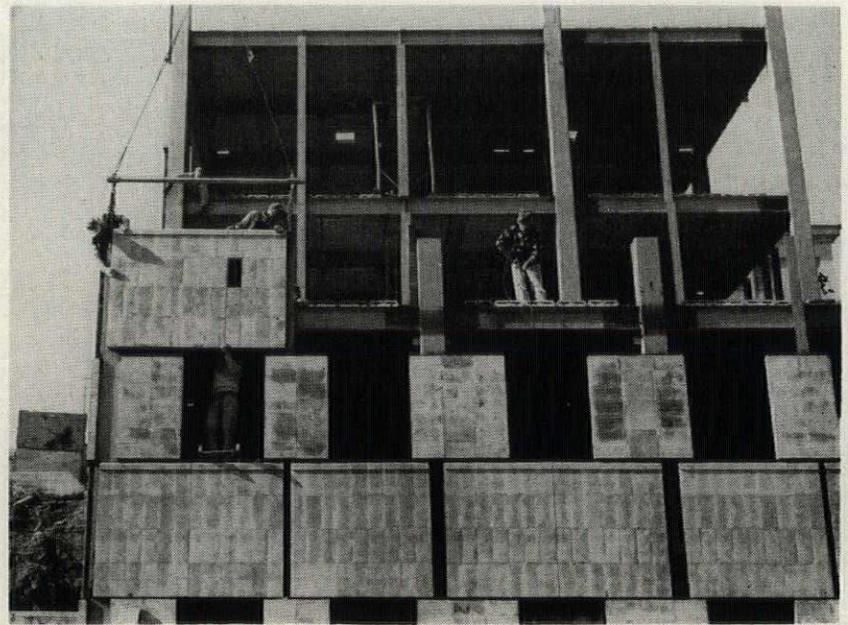
Wall blocks, instead of being splined, are T & G. Threaded reinforcing bars pass through holes in each block and are tensioned against steel plates at each end. Butt joints between blocks are sealed with waterproof cement paint after erection; T & G joints are sealed with mastic during assembly.

Ironworkers using a crane hoist the panels into position. Floor panels are swung up two or more at a time and each end is welded to the structural beams. After erection additional reinforcing is added as necessary and grout is applied between the adjoining panels to cover exposed steel and to key the panels together. (On this refinery an extra 1" concrete topping was applied to the floor for additional strength and negative steel was placed over the joists before grouting to develop continuity.)

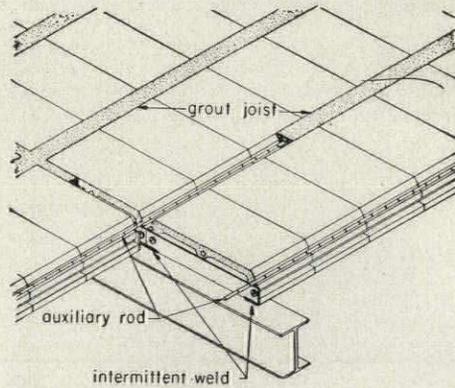
Once wall panels are in position their end plates are welded to the columns. The space between adjacent wall panels is dry-packed with cement and the outside surface coated with cement.

Walls may be made load bearing by substituting light steel channels for the flat end plates. The channels are welded together to form load-bearing box columns within the panel wall. These columns are then welded to a plate girder spanning between opposite walls so as to develop a rigid frame structure. Walls up to 22' 8" high and clear spans up to 56' have already been developed with this technique, the size being limited only by the capacity of the transportation available.

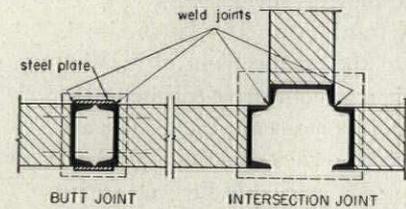
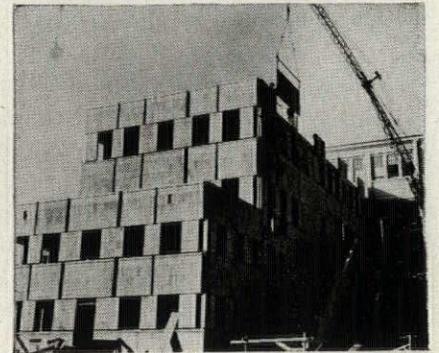
Called "Stresscrete," this system of construction was developed by Basalt Rock Co. of Calif. The refinery pictured above was engineered by Bechtel Corp.



Wall panels are positioned with aid of huge crane, secured by welding steel end plates to columns.

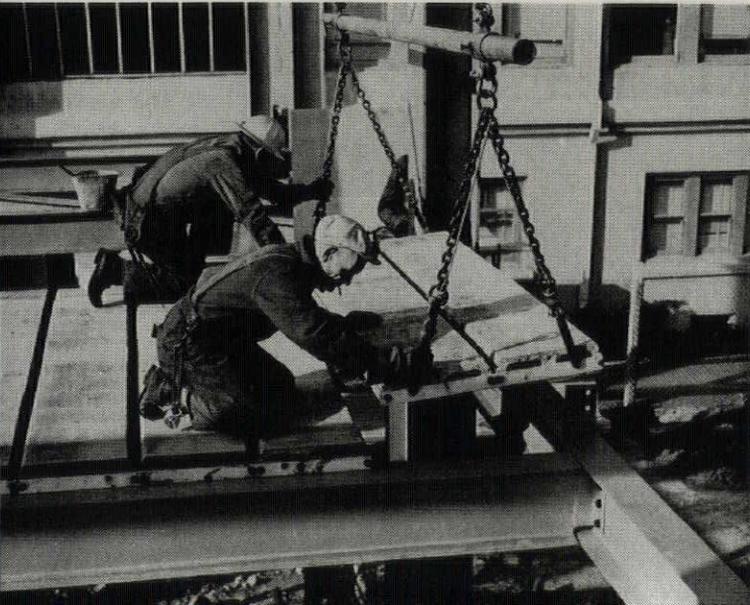
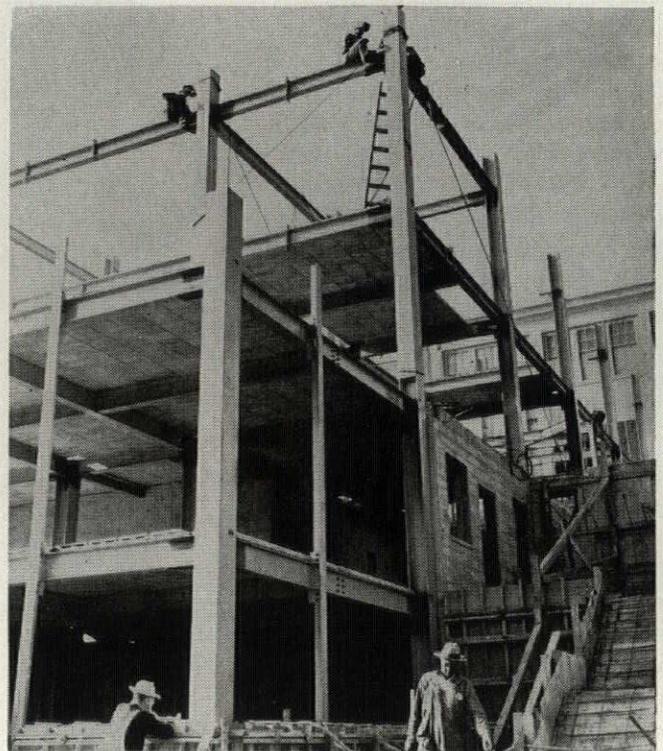


Roof and floor panels are supported between beams. Joints are grouted. Addition of top negative steel in 1" concrete topping provides loads carrying capacity of up to 118 psi for 4" thick panel 10' long.



Side channels of wall panels form box columns when welded together.

Floor panels, each 10' long, are swung into place two at a time and ends are welded to floor joists. Floor is later topped with 1" of concrete.



### 3. ONE-WALL HANGAR

**Huge steel girders cantilevered 42' provide flexibility for small airport**

To provide utmost flexibility of floor space, this small hangar has no structural wall at the front. This is made possible by framing the building with huge L-shaped steel girders which are anchored to a heavy foundation beam, supported by 22' high columns set 18' forward of the rear wall and cantilevered 42' to the front of the building. Spaced 25' apart, ten of these girders with their ten supporting columns produce a building 60' deep and 225' long. Under the curved knees of the girders and behind the columns is a low ceilinged (12'-8") workshop and office area 18' x 225'. In front of the columns is a 42' x 225' unobstructed hangar space with sloping ceiling (22' to 28').

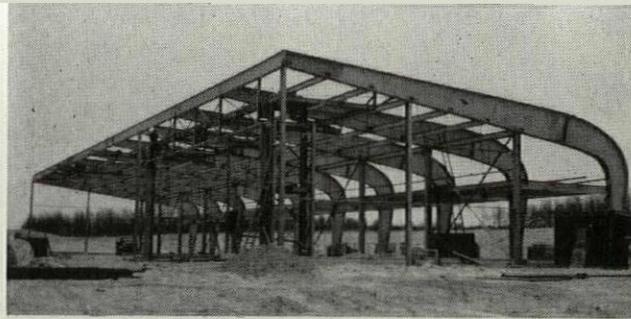
Because there are no supporting columns within the hangar area, it is easily expanded by the addition of bays at either end. For the same reason it can be easily subdivided with lightweight partitioning for various purposes. In this case—at Rhode Island's new state-owned Class 4 airport near Providence—the hangar area is divided into an enclosed 42' x 60' heated space for light planes and a doorless shelter 42' x 184' for the noses of transports. The latter size is big enough to shelter the front of a DC-4.

Designed in a smooth curve following the pattern of bending moments, the girders are 62' long, 30' high. They consist of 1" plate. All flanges are 16" wide, but the web varies in depth from 1' 3" to 4' 6", depending on the shear to be carried. Shop-welded in two sections to facilitate transportation, the girders are spliced at the site before erection.

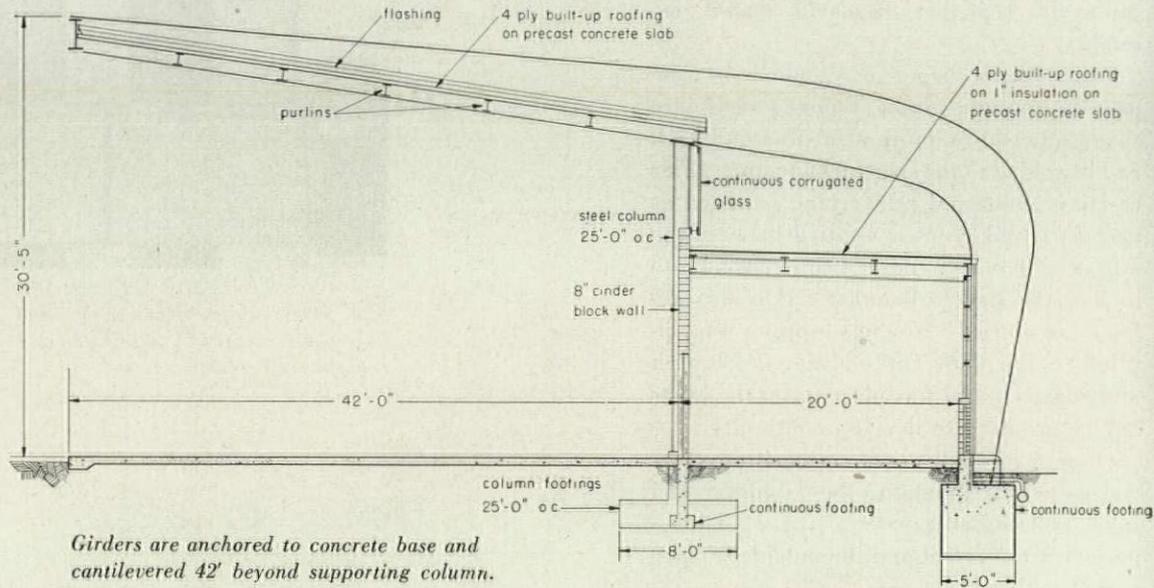
Once they are bolted to the 5' x 5' continuous reinforced concrete foundation at the rear of the building and supported by their 22' columns, the cantilevered girders are laced with 12WF27# purlins welded in place. To improve rigidity five of the nine bays are braced between columns and in the roof structure by 1 1/8" diameter tie rods tensioned by turnbuckles.

Roof of the structure consists of 3' x 6' precast concrete roof slabs 1" thick with 2 1/2" ribbed edges. They are covered with 4-ply built-up roofing. Large sheets of aluminum siding supported on light steel channels comprise the walls and partitions. The enclosed hangar, workshops and office areas are radiant heated by hot-water coils in the floor slab.

Cost of the completed hangar was \$170,000 or \$12 per sq. ft. Designers: Knappen-Tippetts-Abbott-McCarthy. Contractors: M. A. Gammino Construction Co.



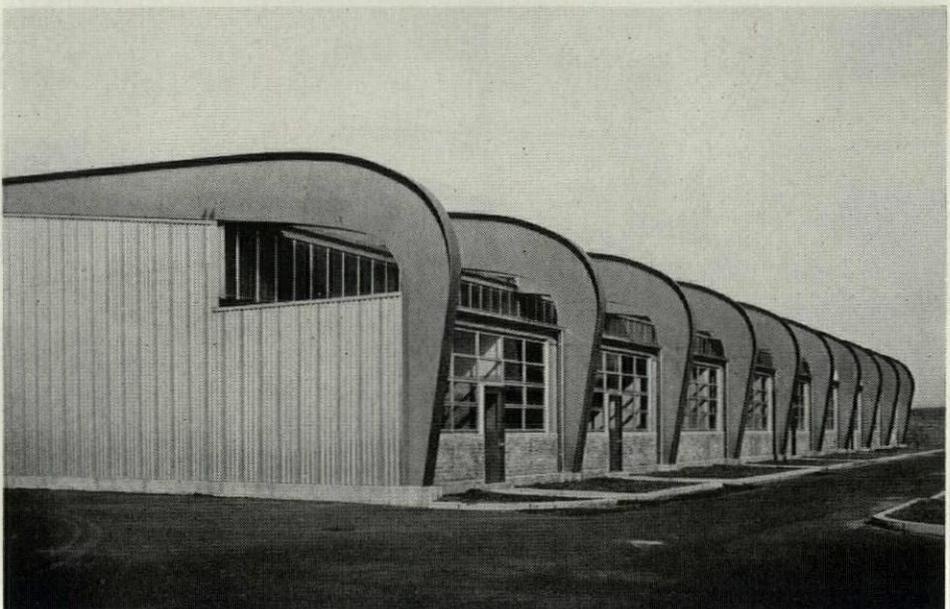
Frame for 60' x 225' hangar consists mainly of ten huge knee girders.



Girders are anchored to concrete base and cantilevered 42' beyond supporting column.

Finished hangar is largely an open shed (below), lighted at rear by clerestory above low-ceilinged shop and offices (bottom).

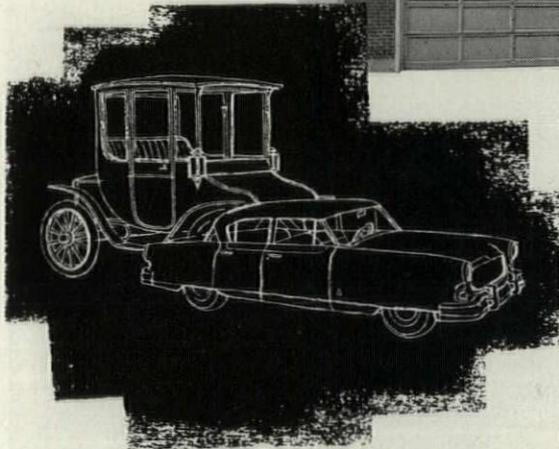
Photos: Morris Huberland



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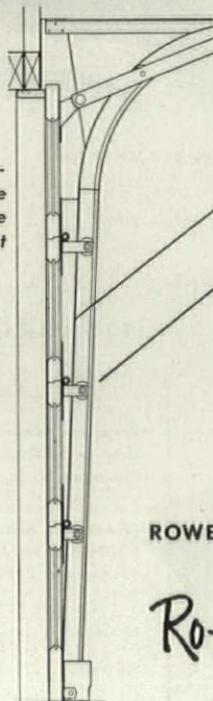
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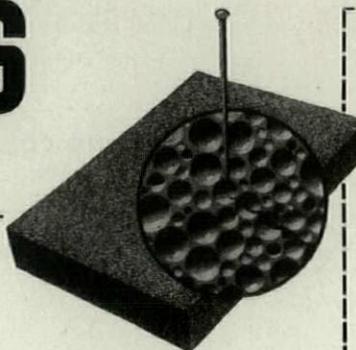
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# BOOK REVIEWS

**CIAM. A Decade of New Architecture.**  
 Edited by S. Giedion, Editions Girsberger  
 Zurich, 232 pp. Illus. 9 3/4" x 7 1/4". SFR 32.

The CIAM is a remarkable organization, a serious world-wide society with little more organization than a floating card game. The initials stand for *Les Congrès Internationaux d'Architecture Moderne*, a title adapted at the first meeting in Switzerland back in 1928. Who meets? . . . In this new book which grew out of the 1947 convention in Bridgwater, Eng-

land, Secretary S. Giedion speaks of the famous members of the CIAM mildly as "an association of friends." The friends include J. L. Sert (who is president), Serge Chermayeff, Richard Neutra, Le Corbusier, Alfred Roth, Alvar Aalto, Oscar Niemeyer, Mies van der Rohe, Vilhelm Lauritzen, Walter Gropius, Ernesto Rogers, Marcel Breuer, H. E. Mindlin, Werner Moser, C. van Eesteren, and many others. The aim of CIAM, as rephrased at this postwar meeting, is "to work for the creation of a physical environment that will satisfy

man's emotional needs and stimulate his spiritual growth." An earlier phrased aim (1928): "to watch over the contemporary development of architecture."

This handsome book issued under the CIAM seal is a partial report of the 1947 meeting in Bridgwater, England, and a record of what some of these friends were designing between 1937 and 1947, when there could be no global conventions. This 1947 meeting is described by member Mark Hartland Thomas (England):

"The reunion at Bridgwater was a very moving experience . . . Those who were meeting again after ten years of separation and vicissitude—several had endured the worst of the Nazi concentration camps—were frankly overjoyed to see old faces again . . .

"This emotional harmony was no surprise to those who were not new to a CIAM Congress. What did surprise was to discover, as the reports unfolded from groups all over the world, and the work of the special commissions got under way, that the development of ideas in the several groups had been proceeding on parallel lines in spite of the scanty contacts. It had been feared otherwise."

The record of what the CIAM members were designing during the ten-year hiatus is contained in the second part of the book—in 183 pages of photographs of buildings, furniture, and projects. It shows that Mr. Thomas was right—the members were thinking, and designing, along the same lines.

It is unfortunate that all this had to wait five years to find a patron and be printed. This, however, is a book which most architects will enjoy having anyway, because of its deft consolidation of so much good material, like Neutra's desert house for Kaufmann, Erik Bryggman's mortuary chapel at Abo in Finland, several good 1939 World's Fair buildings, Mies van der Rohe IIT designs, and Costa, Niemeyer, Reidy, Leao, Moreira and Vasconcelos' Ministry of Education in Rio. Since most of the material is already familiar, its impact has been succeeded by other work, but US architects will be interested in the preponderance of US homes in that section of this book, and also by the entire absence of US factories from the industrial section.

But the most interesting pages of this book are those in which a new concern was indicated by the CIAM. This is a concern for the universality of modern architecture, which may have become too submerged in its own attributes, too impersonal.

In the past, and in the present too, most modern architects have assumed that the presence of smoothness and body in their brew guaranteed the flavor. But perhaps it does not, except to the connoisseur or to the brewer. J. M. Richards of the *Architectural Review* in England asked the convention:

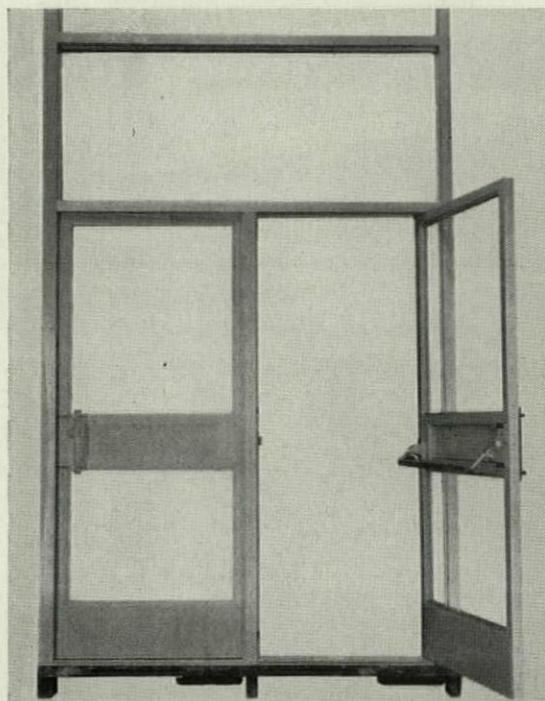
(Continued on page 174)

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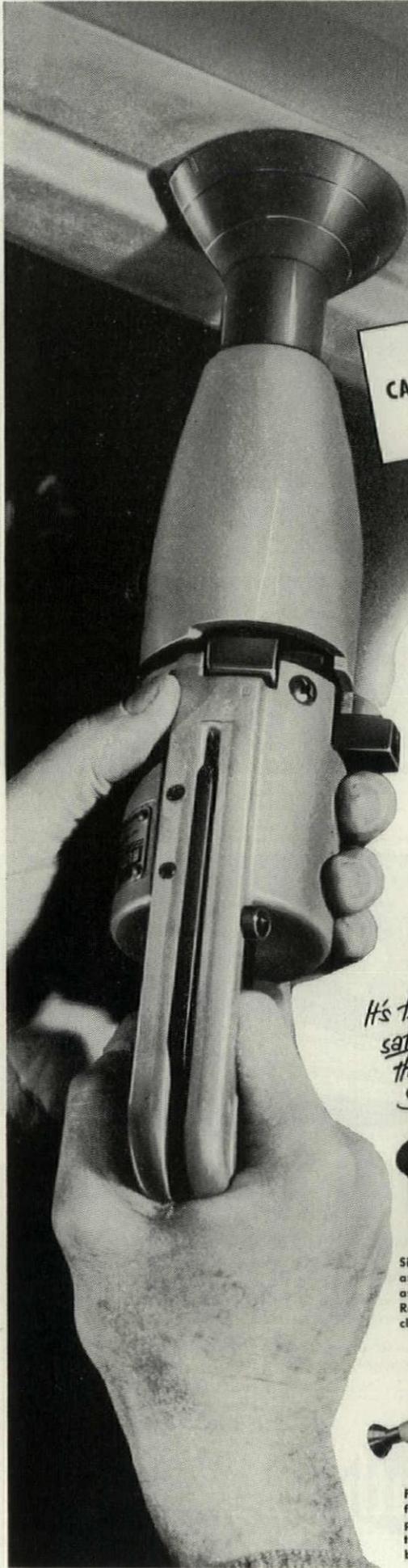
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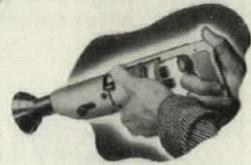
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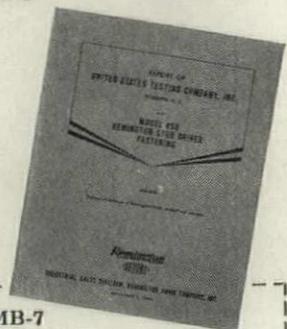
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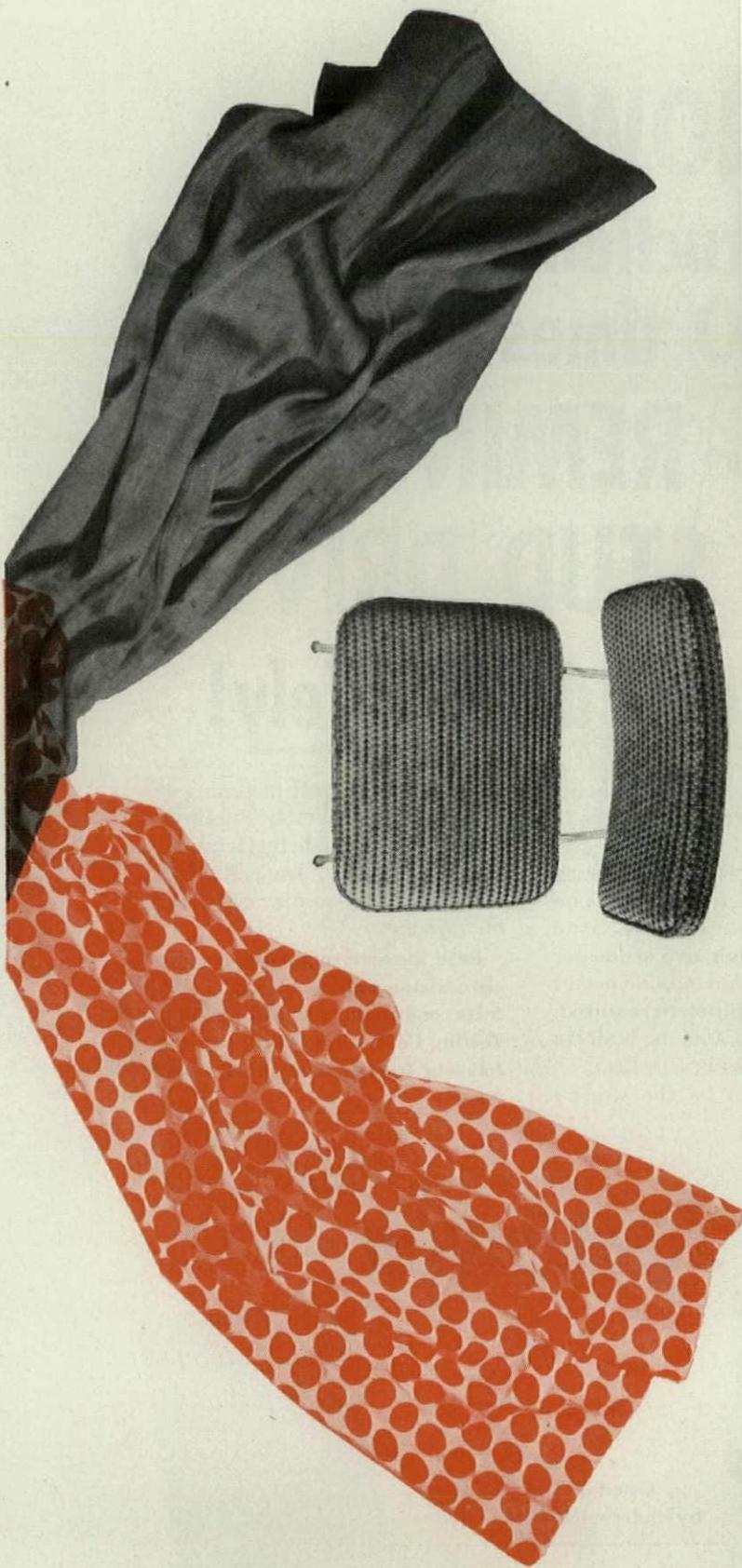
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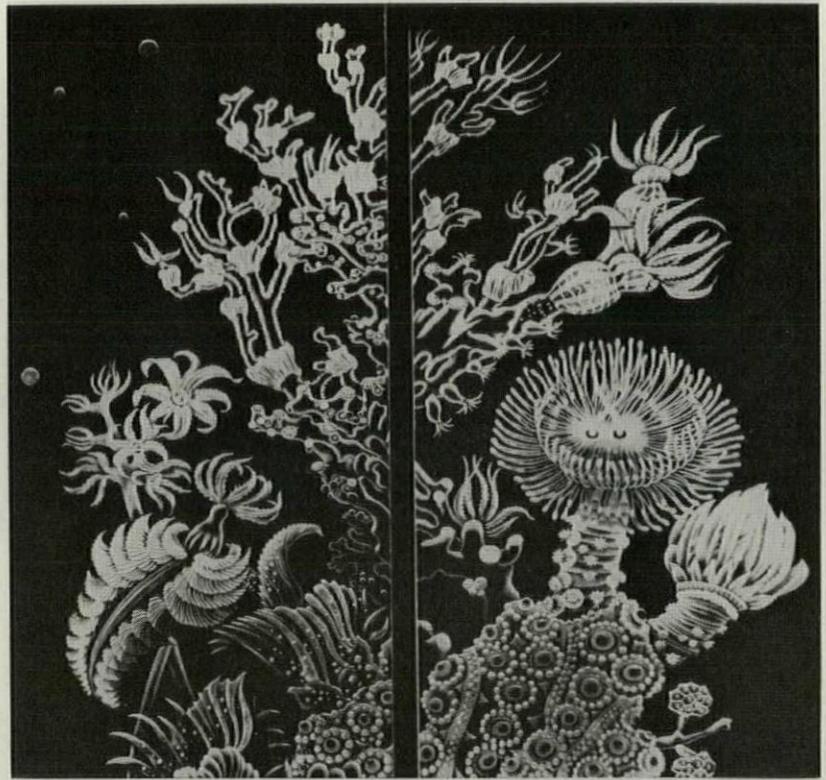
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Polar Bear White  
for better sight  
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with AIRFLOW channel

a new idea in factory lighting as different as white from black

white inside and OUTSIDE

the white upside helps lift ceiling gloom, reduces strong shadows and improves brightness-contrast ratios

surface 300° Permalux or Porcelain Enamel  
Airflow Channel circulates air for longer ballast life

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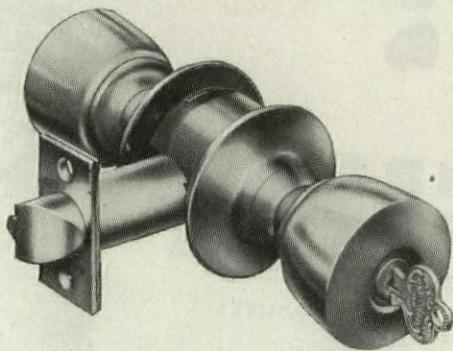
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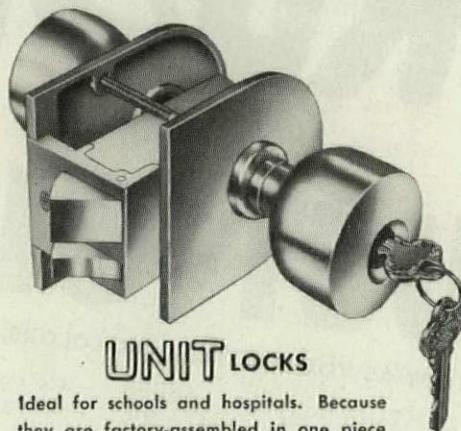


# KEY MEN IN BUILDERS'



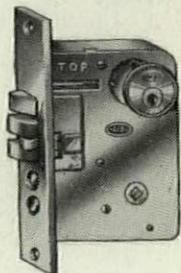
## CYLINDRICAL LOCKS

For every type of construction. Heavy-Duty, with extra-quality features, including  $\frac{3}{8}$  inch throw and the famous smooth-working, long-lasting roll-back Corbin Unit latch principle. 100% reversible. Made in 13 most-used functions.



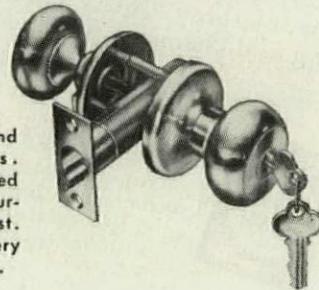
## UNIT LOCKS

Ideal for schools and hospitals. Because they are factory-assembled in one piece and installed as a unit, Corbin Unit Locks can be installed faster than any other type of lock! Made in functions and finishes to meet every important need.



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Made in a variety of functions and weights for every requirement. Can be master-keyed with other Corbin cylinder locks.

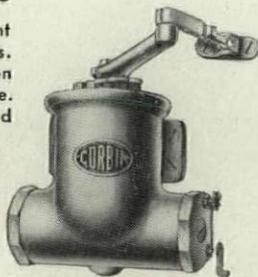


## TUBULAR LOCKS

Excellent for use in residences and apartments. Corbin time-tested pin tumbler security at low cost. Functions for every residential door.

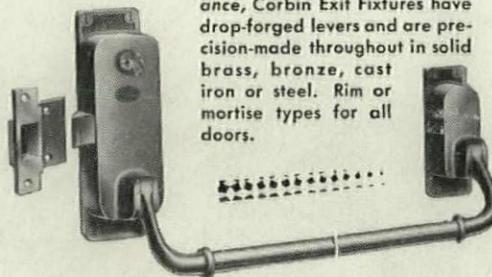
## DOOR CLOSERS

Can be used on right or left-hand doors. Adjustable hold-open attachments available. Made in six sizes and all popular finishes.



## EXIT FIXTURES

To insure unfailing performance, Corbin Exit Fixtures have drop-forged levers and are precision-made throughout in solid brass, bronze, cast iron or steel. Rim or mortise types for all doors.



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Years of close contact with the builders' hardware problems which confront architects and contractors have made these Corbin consultants among the top men in their field. In your locality there is a Corbin representative of similar high calibre who will gladly work with you in the selection of builders' hardware. Put his experience and integrity to work for you *now!*

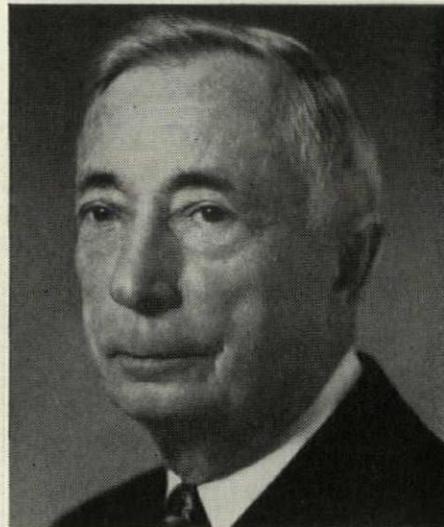
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## BOOK REVIEWS

"Need the architect concern himself with the reactions of the man in the street? As long as he has faith in his own integrity as an artist, should he not follow his own inspiration, without worrying about popular appreciation? That is one question modern architects must answer; in particular whether modern architecture has a duty to provide the means of self-expression to the man in the street. . . ."

The answer of the convention was yes, and

Secretary Giedion nailed this golden doubloon to the mast of CIAM for the new voyage: "CIAM is concerned with those problems that are just emerging over the horizon. In 1928 it was the industrialization of building materials; then standardization; then the development of contemporary town planning. Now we consciously promote another step. A step toward a rather intangible subject; esthetic problems or, you may prefer to say, emotional expression."

**BAUHAUS 1919-1928.** Edited by Herbert Bayer, Walter Gropius, Ise Gropius. Charles T. Branford Co., Boston. 223 pp. 10¼" x 7¾". Illus. \$5.50.

This is the long-awaited second printing of the famous Bauhaus book which was originally published by the Museum of Modern Art in connection with its Bauhaus exhibition of 1938. Since the first edition has long been out of print, and the demand for more copies has been voiced in many parts of the world, this new edition will fill an urgent need.

**BUILDING IN ENGLAND DOWN TO 1540.** By L. F. Salzman, F.S.A. Oxford University Press, New York, N. Y. Text 355 pp., Appendix 274 pp. 6¾ x 9½". Illus. \$12.50.

This documentary history deals with the organization, labor, rates of pay and costs of materials of the building industry in medieval England down to 1540. In it Mr. Salzman has concentrated upon craftsmanship in an effort to throw light upon the question as to whether the exquisite details of some of the buildings of this period were created by individual craftsmen or by overall designers; as early as the 12th century he finds that the master mason provided detailed working drawings which were followed closely by the builders.

The appendix brings together notable descriptions of building operations and typical contracts of the period, while a 29 page index facilitates the use of the book as a reference work. Mr. Salzman completed the manuscript in 1934 but publication was delayed until 1949 when a grant was obtained from the Society of Authors.

**COMMUNITY PLANNING FOR HUMAN SERVICES.** By Bradley Buell and Assoc. New York Columbia University Press. 464 pp. 6½" x 9". \$5.50.

The thesis of this book is documented by new materials from a comprehensive, statistical study of the St. Paul, Minn. community set-up. Conducted by Community Research Associates, Inc. (directed by Mr. Buell), the survey brings together community-wide data on a family-by-family basis, about the incidence and interrelationships of the four major human problems: dependency, ill-health, maladjustment and recreational need.

**THE WORKS OF MAN.** By Lishe March Philipps. The Philosophical Library, Inc., 15 East 40th St., New York City. 330 pp. 5½" x 8½". Illus. \$4.75.

This work of art criticism, first published in 1911, is a complete "bird's-eye view" of the great creative epochs of art. The author examines each of these periods separately—Egyptian, Greek, Roman, Gothic, Arab—and deduces from them the distinguishing qualities and points of view of the races which produced them.

### The Perfect Industrial Plant FLOOR . . .

**A SLAB OF SOLID ROCK MOUNTAIN!**

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"Absorption Process"  
**GRANOLITHIC CONCRETE TOPPING\***



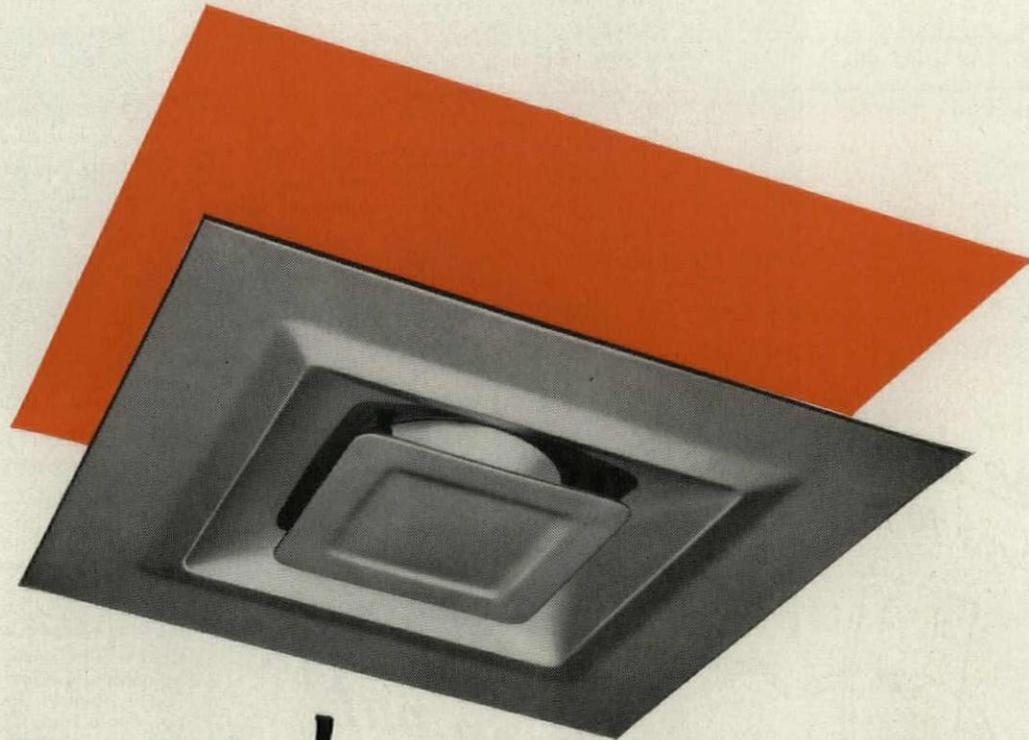
Over 250,000,000 square feet of this superior heavy-duty topping have been specified by America's leading industrial concerns. Kalman is a national organization, equipped to handle the complete floor installation. Experienced Kalman crews, in every section of the country, assure uniform quality control from start to finish . . . and Kalman takes full responsibility. Write for free descriptive booklet.



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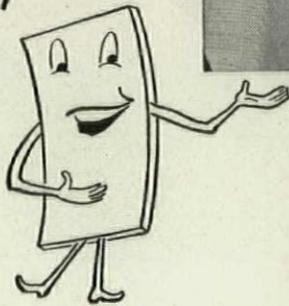
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Fire Doors used in the offices  
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*"Come in!"  
it says to you...*



*"Keep out!"  
it says to fire*



## ...The Weldwood® Fire Door

Visitors feel right at home when greeted by the soft, friendly beauty of Weldwood Fire Doors.

But these doors also present a tough, *keep out* attitude where fire and heat are concerned.

With Weldwood Fire Doors on the job, *no* fire can spread should it break out in any office.

And if fire should invade from elsewhere, the Weldwood Fire Doors, with their remarkable mineral core, stand ready to give the kind of protection that earned them the hard-to-get Underwriters' Label.

So be sure your buildings have this protection.

Also, remember the Weldwood Stay-Strate Door where a labeled door is not necessary, but where fire resistance is a desired advantage.

The Weldwood Stay-Strate Door is available in the same wide range of beautiful hardwood faces as the Weldwood Fire Door . . . and offers the same advantages except that the edge banding is not fireproofed.

Like the Weldwood Fire Door, it has striking beauty...unusually light weight . . . exceptional stability . . . extraordinary durability . . . and is proof against rot, vermin and decay.

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### WELDWOOD FIRE DOOR SPECIFICATIONS

**Face Veneers**—Face veneers are thoroughly kiln-dried hardwood of standard thickness — 1/28" — and smoothly belt-sanded. Rotary-cut unselected birch is standard; other sliced or rotary-cut domestic or foreign woods are available.

**Core**—The core is made of incombustible Kaylo\* composition, having a normal density of 20 pounds per cubic foot. The core sections are joined together with tongue-and-groove joints, as approved by the Underwriters' Laboratories. The core is smoothly sanded prior to application of crossbands and face veneers.

**Banding**—The edge banding is of birch, treated with Class "A" fireproofing agent. The top banding is 1/2" in thickness; the side banding 3/4"; and the bottom banding is 1 1/2" in thickness, made by laminating two 3/4" pieces.

**Crossbands**—Crossbands are thoroughly kiln-dried hardwood, 1/16" thick, extending the full width of the door.

**Adhesives**—The core and edge banding are bonded together with a waterproof resin glue. The entire core is sized on two sides to insure perfect glue bond between core and crossband. The core, crossband and face veneer are bonded with waterproof Tego film phenolic glue by the hot plate process.

**Sizes**—The thickness of all fire doors is 1 3/4". Available in range of standard sizes up to and including 4' by 7'.

**Vision Panel**—If required, a vision panel frame for a 10" x 10" light (only size available) shall be provided carton-packed and complete with screws. A baked finish of light brown metal paint is provided on all surfaces. Glazing with 1/4" wire glass shall be done by others.

\*T. M. Reg. Owens-Illinois Glass Co.



United States Plywood Corporation carries the most complete line of flush doors on the market including the famous Weldwood Fire Doors, Weldwood Stay-Strate Doors, Weldwood Honeycomb Doors, Mengel Hollow-core Doors, Mengel and Algoma Lumber Core Doors, 1 3/8" and 1 3/4" with a variety of both foreign and domestic face veneers.

## WELDWOOD® FLUSH DOORS

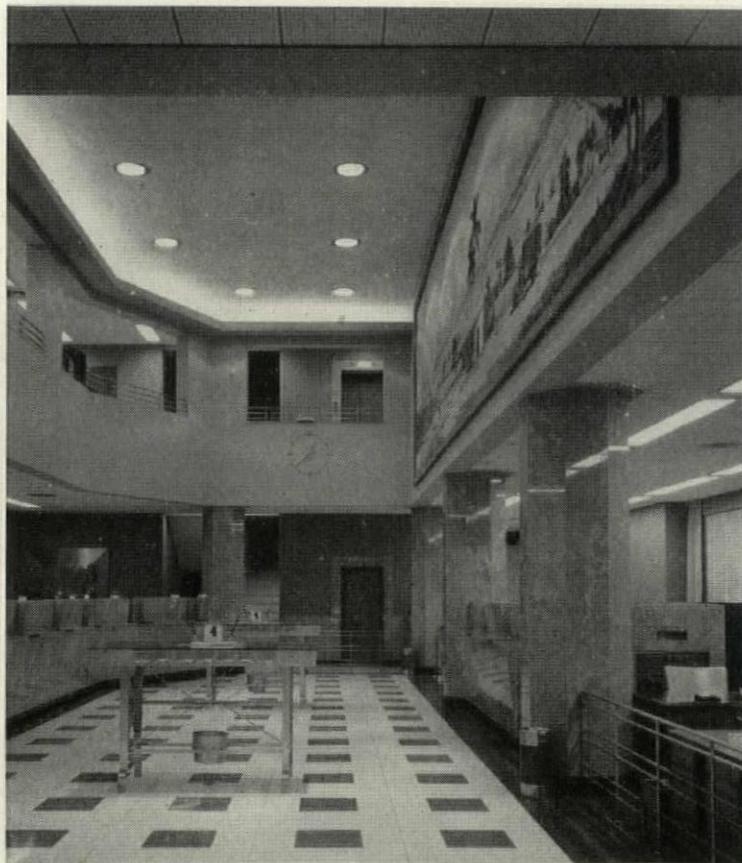
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Monsanto Penta (pentachlorophenol) is a stable chemical developed specifically for wood preservation. It does not leach . . . does not wash away in rain or ground water. It protects against termites and other wood-boring insects. It prevents decay.

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DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle, Twin Cities. In Canada, Monsanto Canada Limited, Montreal.

Design and Construction

Bank Building & Equipment Corporation of America, St. Louis, Mo.

Wood Treating Preservative

Monsanto Chemical Company, St. Louis, Mo.

Wood Treating Application

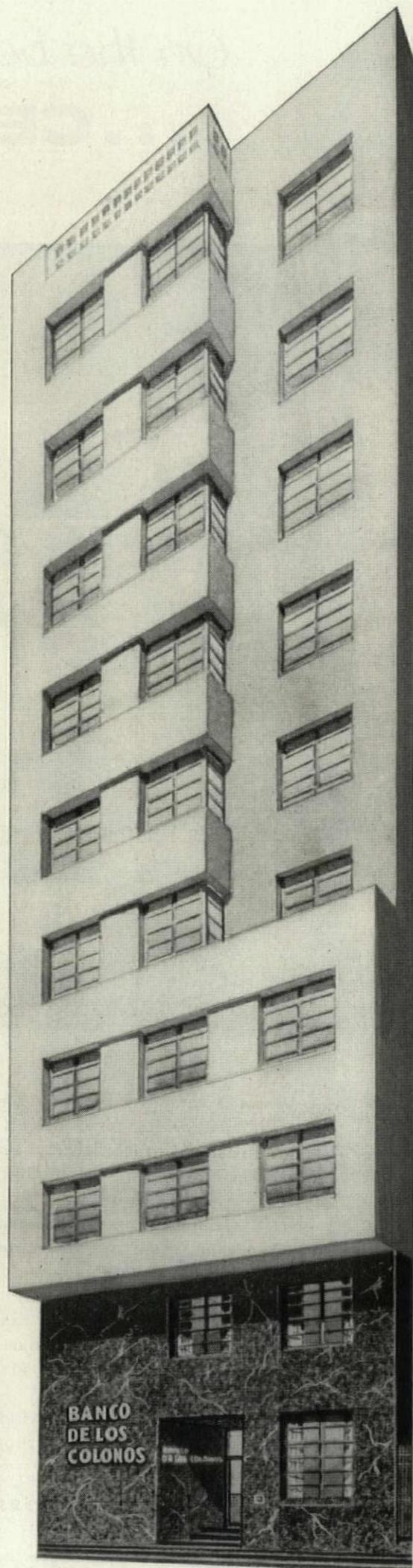
Associated Wood Preservers, St. Louis, Mo.

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**EXCELLENCE**

*in Design and Construction*

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When a company begins a long range building program in critical times there's need for greater care in selecting materials and services. That was the situation facing the Sunbeam Corporation, their architects Olsen and Urbain and the contractors Campbell-Lowrie-Lautermilch, Inc.

Where could they be sure of steel products of engineered excellence? Where could they be sure of a follow thru detailing service? Could all this be found at ONE source to save time . . . increase efficiency? Such a challenge led to us here at Ceco for we had been delivering that kind of service day after day . . . year in year out.

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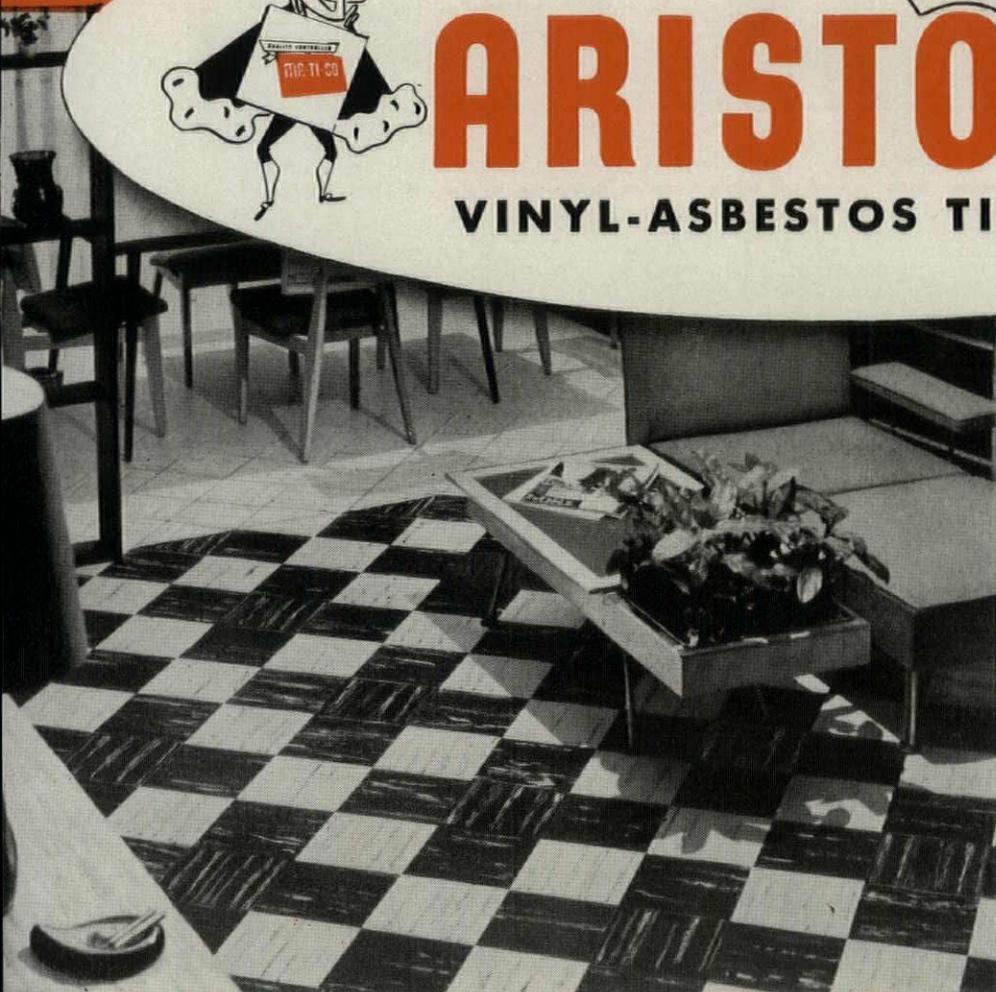
simplifies planning . . . cuts building and remodeling costs

LOW-COST, STANDARD-GAUGE



# ARISTOFLEX

VINYL-ASBESTOS TILE FLOORING



- Resistance to acid, grease, and alkali make it ideal for such installations as laboratories, cafeterias, hospitals.
- Durability is outstanding. It's vinyl-asbestos through and through—no felt backing.
- Sparkling colors and easy-to-clean surface make it perfect for all installations.
- Recommended for installation ON, ABOVE, or BELOW GRADE.
- May be laid direct on concrete, terrazzo or ceramic.
- Can be installed on wood over 15-lb. saturated felt . . . over gypsum, plank or unfinished concrete slab with suitable underlayment . . . and over magnesite, above grade.
- LOW COST is comparable to grease-proof asphalt tile.

Now the problem of selecting the right flooring is simplified. New MATICO ARISTOFLEX does the jobs of many floorings . . . its modern, vinyl-asbestos qualities meet the requirements of practically all installations.

And the low price of standard-gauge ARISTOFLEX—comparable to that of grease-proof asphalt tile—meets thrifty budgets. Installation is easy and economical. No special cements are required, ordinary asphalt tile adhesive does the job. ARISTOFLEX lays in tightly, immediately, due to square corners and clean edges . . . cuts clean without use of a torch.

ARISTOFLEX is vinyl-asbestos from top to bottom—no felt backing. It resists household acids, alkalis, petroleum solvents, oils, greases, turpentine, and fire . . . is tough and flexible . . . and has excellent indentation recovery. Vivid colors and marbleization go clear through each tile. As a result, ARISTOFLEX is one of the most durable of floorings. It wears for years and years . . . and steadfastly maintains its sparkling beauty. The smooth surface sheds dirt . . . wipes clean with a damp mop. Maintenance costs are low. Available in 9" x 9" standard gauge and 1/8" tiles.

For vinyl-asbestos flooring quality with economy, look to ARISTOFLEX.

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TILE FLOORING

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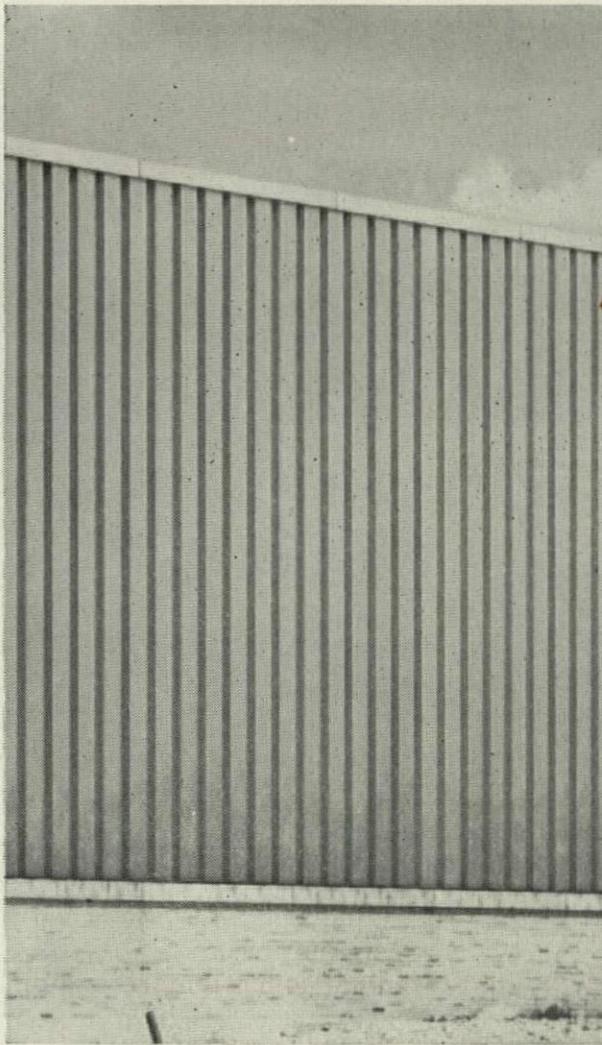
Send specification data and complete details about low-cost MATICO ARISTOFLEX vinyl-asbestos tile flooring.

NAME \_\_\_\_\_

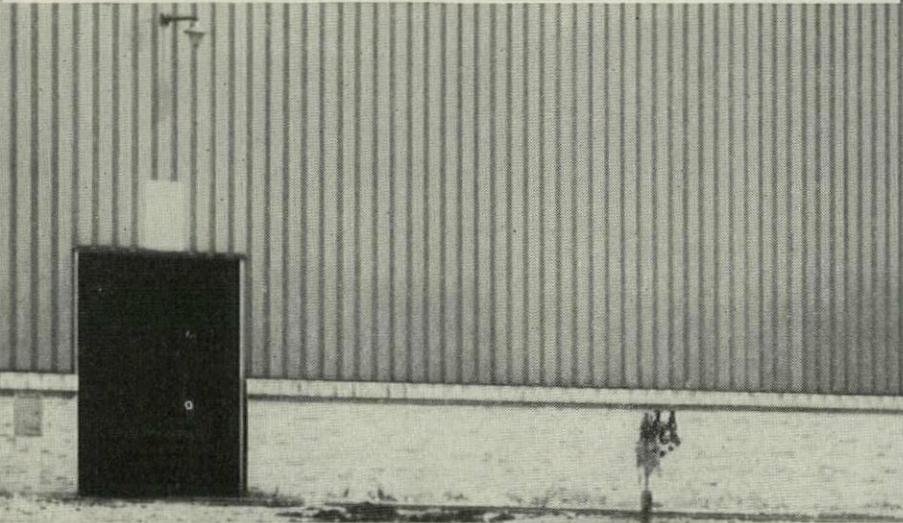
FIRM \_\_\_\_\_

STREET \_\_\_\_\_

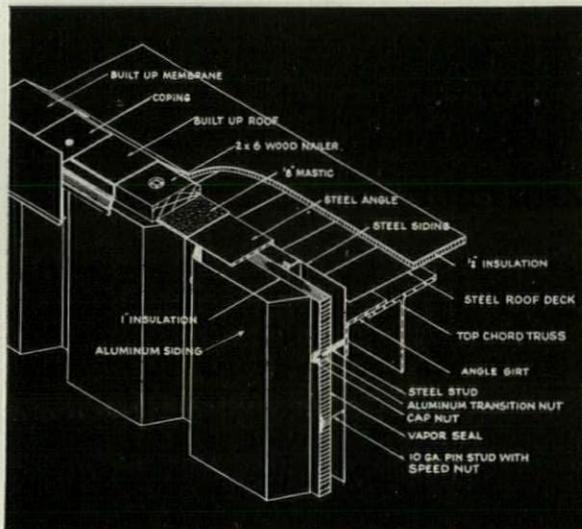
CITY \_\_\_\_\_



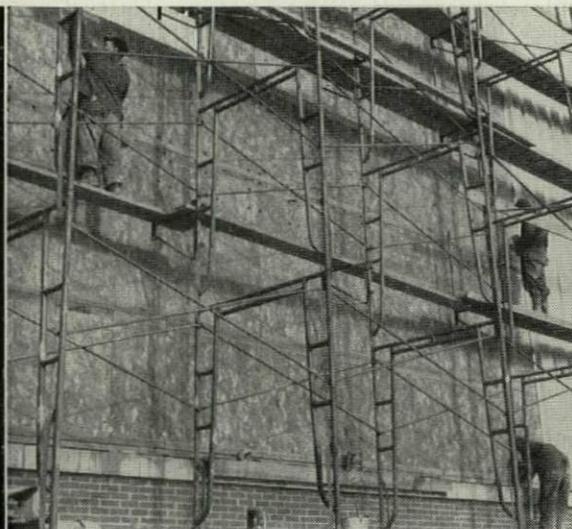
Lincoln Electric Company plant, Cleveland, Ohio. Designed and built by The Austin Company. Exterior walls of Alcoa Aluminum fabricated by Truscon Steel Company. Ornamental aluminum by Ornamental Metal Company.



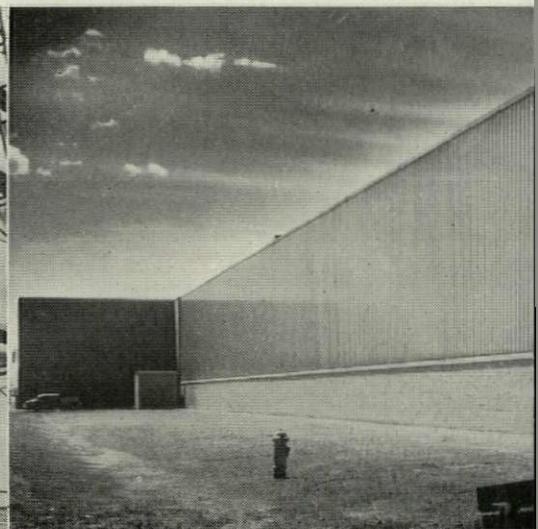
# BUILT TO SAVE MONEY



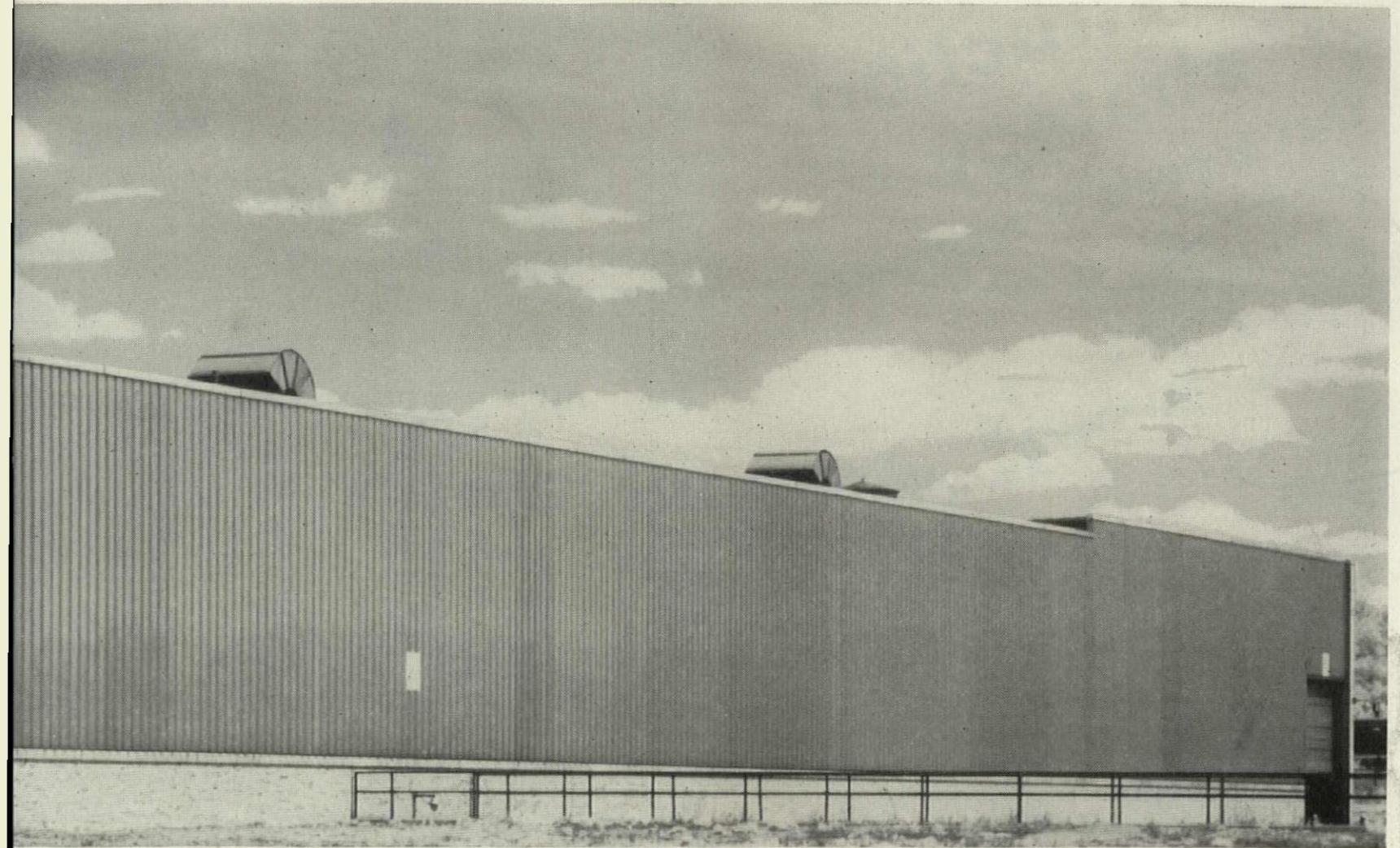
Detail of wall panel. Completed wall has heat-transfer coefficient of .25 BTU per sq ft, is 6 1/4 inches thick, weighs 3 3/4 lbs per sq ft. Compare with .50 BTU for 8 inch brick wall weighing 50 lbs per sq ft.



Speed clips over ten gauge, headless pins welded to inner wall hold Fiberglas insulation in place. Aluminum exterior panel then is fastened to studs with aluminum transition and cap nuts.



Twenty-five foot, inner (Ferroboard) panels fit over studs fastened to girts at sill line and parallel to top and bottom chord of trusses. Fourth girt, carrying additional row of studs is arc welded to inner panel.



# ..Inside and Out

Dedicated to a policy of constant cost reduction, Lincoln Electric Company built a complete new plant designed to slash or eliminate materials handling, storage, maintenance and other indirect production costs of manufacturing welding equipment.

Insulated, aluminum-faced panels were used for exterior walls because they were, "faster to put up, lower in cost for equal insulating value, require less maintenance."

Alcoa engineers worked with the builders of

this plant as they have with the designers of nearly every pioneering use of aluminum in the building field. They will be glad to work with you. Nowhere else will you find so many men who know so much about aluminum. For information on any application of aluminum call your local Alcoa sales office or write:

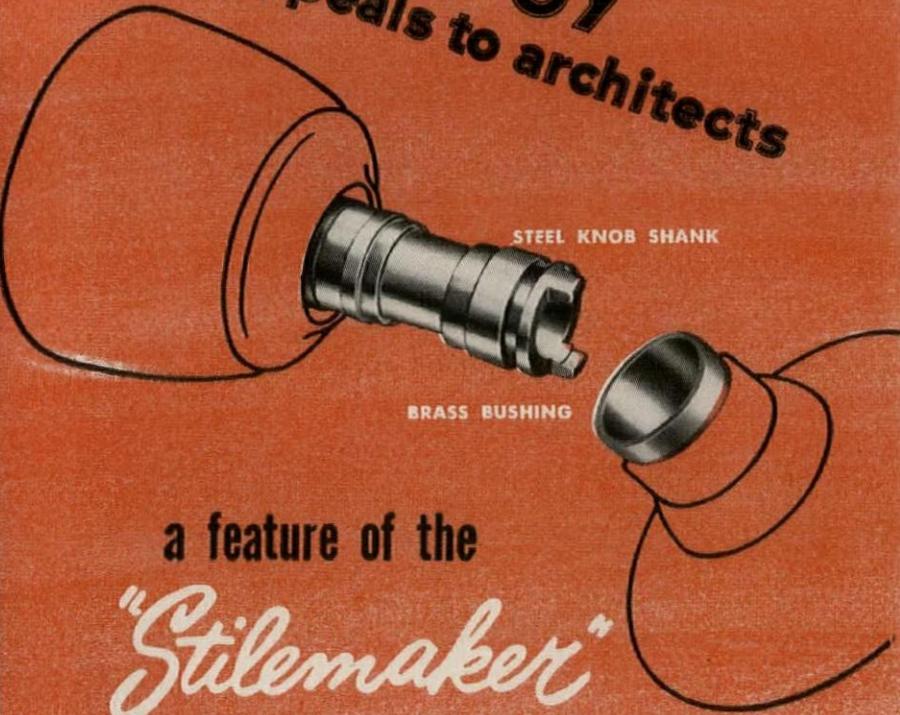
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# ALCOA



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From your engineering background, you'll recognize the advantage of making a knob shank of steel and bushing of brass. The use of two, time-proven bearing metals assures extra long service life... a feature of the Russwin "Stilemaker". In addition, "Stilemaker" construction employs the same shifting roll back principle used so successfully in \*UNIT locks... another assurance of long service life as well as smooth, positive operation.

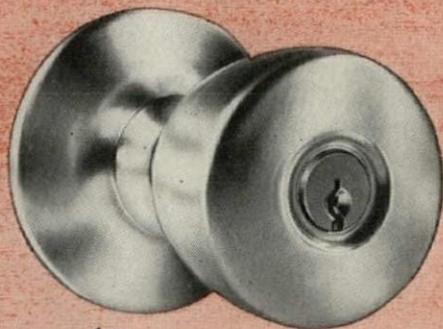
The appeal of "Stilemaker" construction is reflected everywhere in more and more architects' specifications. Russell & Erwin Division, The American Hardware Corporation, New Britain, Conn.

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Engineered to  
Architect's  
Specifications

All Popular Functions

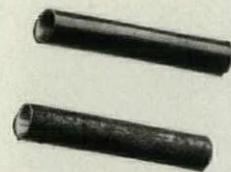
Knob Styles...  
in wrought or cast  
bronze or brass



**RUSSWIN**<sup>®</sup>  
*"Stilemaker"*

BY THE MAKERS OF THE ORIGINAL KEY-IN-THE-KNOB LOCK

## PRODUCT NEWS

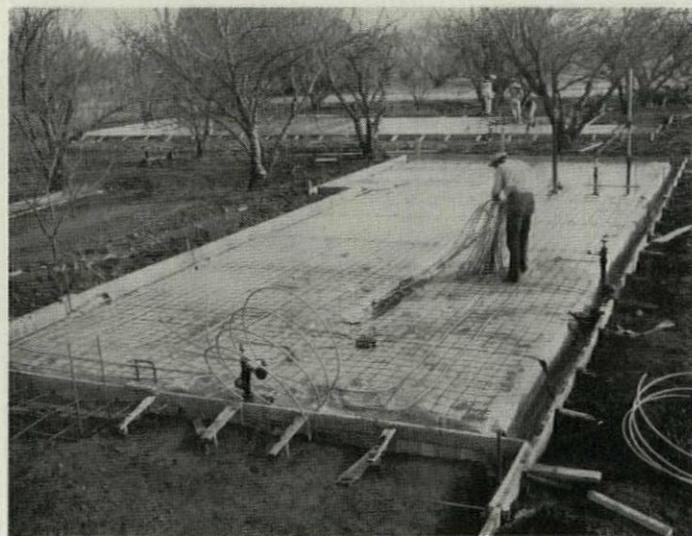


After a 425 hr. salt spray the plastic-coated tubing showed no change, while a piece of terne-plated metal developed rust spots after a 24 hr. spray exposure.

### PLASTIC-COATED STEEL TUBING practical for radiant panel heating systems

Prompted by the copper shortage, California manufacturer Ellis Rother turned to the Stanford Research Institute in the fall of 1950 for help in developing a steel tubing that would have the anticorrosion characteristics of the more critical metal. The result of the Stanford study is *Therma-Koil*, a flexible steel tubing with a modified phenolic epon type coating. Resistant to abrasion and chemicals, the high density film bends with the tubing and will take rough handling. In a salt-spray test, it is said to have remained unchanged after 425 hours of exposure.

Although the price of  $\frac{3}{8}$ " *Therma-Koil* is on a par with copper,  $\frac{1}{2}$ " tubing—the size commonly specified for heating coils—costs about 25% less. The new product comes in lengths up to

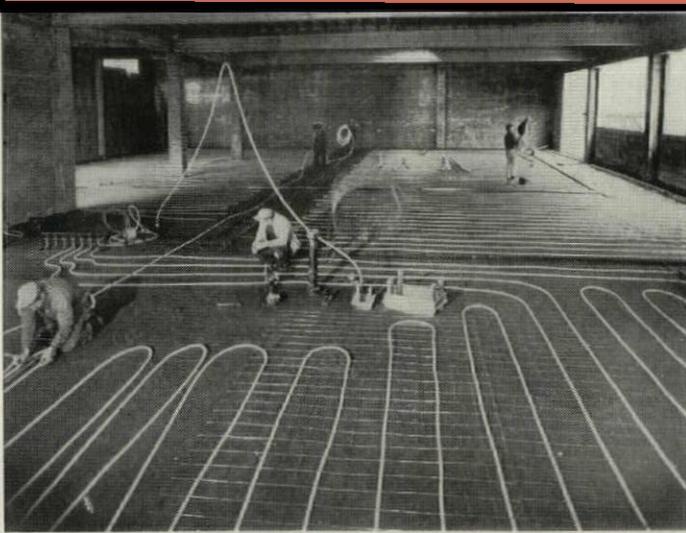


240'—as compared with 60' for copper—so that large continuous floor panel can be formed. Where joints are necessary, they are made with compression type fittings.

Manufacturer: Thermapanels Inc., 342 Lincoln Ave., San Jose, Calif.



Unlike copper, *Therma-Koil* requires no heat for joints; mechanical fittings are employed.



**POLYSTYRENE TUBING used as radiant-heating coil in concrete slab construction**

Carlton flexible plastic tubing makes an effective, economical panel for hot-water radiant-heating systems. Priced between copper and galvanized steel, the translucent tubing is extruded of polystyrene, material which has good flow characteristics and is highly resistant to rot and electrolytic corrosion. Weighing  $\frac{1}{8}$  as much as steel (100' of 1" tubing is only 10 $\frac{1}{2}$  lbs.) the flexible tubing is easy to install as radiant-heating coils. It is laid over the rough flooring and held in place with hooks while forming the return bends. Leakproof connections may be made quickly by cutting pipe sections to required length with a



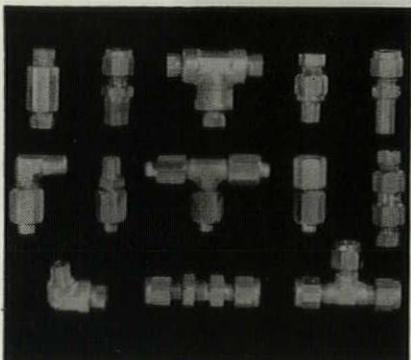
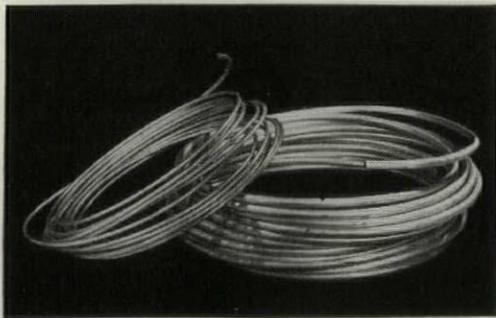
hand saw and joining them with molded plastic fittings. A layer of wire mesh is then tied to the tubing with binder twine at 2' intervals and the hooks are removed. The entire system is then filled with water to eliminate air in the line. To prevent the plastic from collapsing, water pressure is maintained until the concrete topping is poured.

Manufacturer: Carlton Products Corp., 10225 Meech Ave., Cleveland 25, Ohio.

**ALUMINUM TUBING. Corrosion resistant and easily worked, it costs less than copper**

Fabricated of an aluminum alloy that can be bent by hand (B50S) Alcoa's *Utilitube* weighs one-third less than copper and costs about 60% as much. Its lightweight and good forming characteristics make it easy to handle in long lengths; in small diameters, rolls of 1000' are said to be economical and practical. The new tubing may be joined by any of the usual methods:

*(Continued on page 190)*



Compression and flare type fittings made of aluminum are available.

**the new "look" in the San Francisco area**

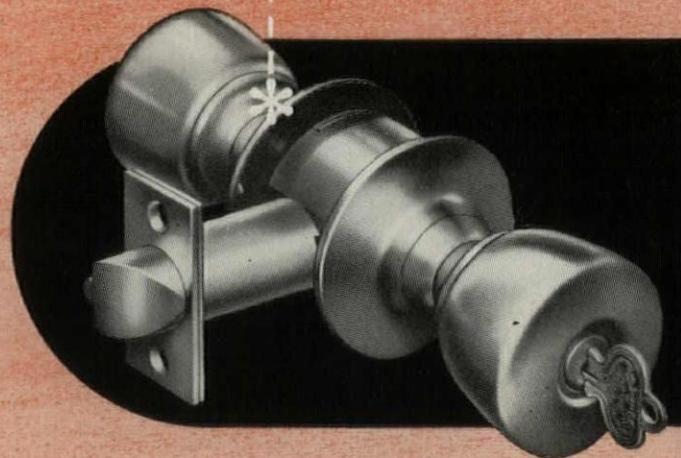


New Classrooms, Dormitory, Library, Cafeteria Buildings — College of Notre Dame, Belmont, Calif.

ARCHITECT — Vincent G. Raney, A. I. A., 233 Post St., San Francisco

GENERAL CONTRACTOR — Carrico & Gaultier, San Francisco

**gets the new lock in builders' hardware**

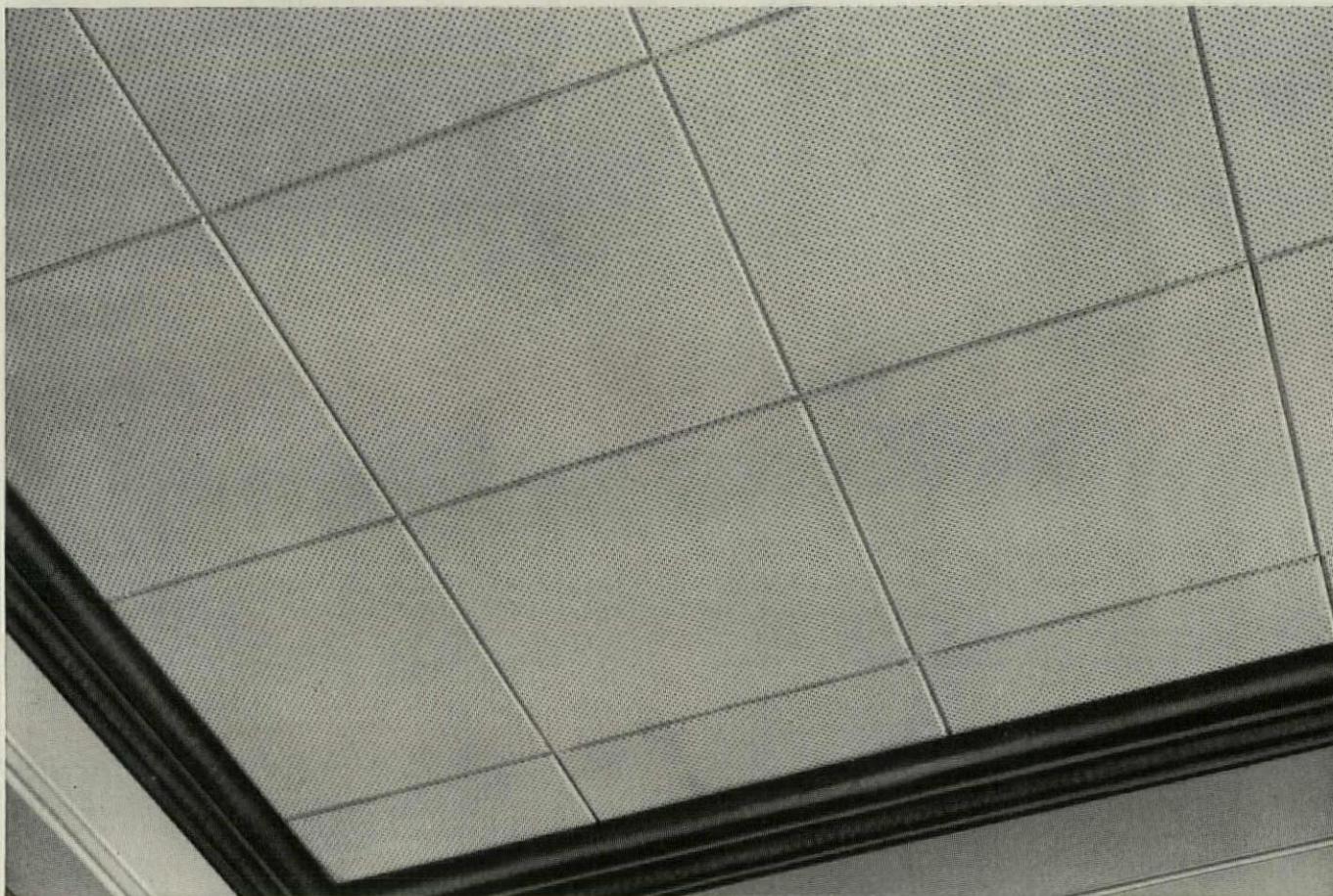


Russell & Erwin Division  
The American Hardware Corporation  
New Britain, Conn.

**RUSSWIN®**  
*"Stilemaker"*

HEAVY-DUTY CYLINDRICAL LOCK

Johns-Manville  
**Sanacoustic** \* ... a perforated  
metal acoustical unit.



**J-M Sanacoustic Units are noncombustible, easy to clean. Wherever installed they provide the highest acoustical efficiency plus safety, economy and attractive appearance.**



J-M Sanacoustic Units are noncombustible, demountable, easy to clean.

In addition to high sound-absorption qualities, J-M Sanacoustic Panels combine all the important advantages that are desirable for all-round acoustical ceiling efficiency. They are fireproof, easy and economical to clean, removable, and have high light reflection.

As a result, millions of square feet of Sanacoustic have been installed in institutions, offices, schools, hospitals, hotels, and other places of public assembly where quiet is important.

Consisting of perforated metal panels backed up with a fireproof sound-absorbing element, Sanacoustic Ceilings will not burn, rot, or disintegrate. They may be applied over new or existing construction;

and can be painted, if desired, without affecting acoustical efficiency.

An exclusive J-M patented construction system permits interchangeability of flush-type fluorescent lighting and acoustical ceiling units.

Other Johns-Manville acoustical ceilings include *Fibretone*\*, a drilled fibreboard; *Transite*\*, made of perforated fireproof asbestos; and *Permaacoustic*\*, a textured, non-combustible tile with architectural appeal.

Send for the free Johns-Manville brochure, "Sound Control" that tells about these acoustical ceilings. Write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 199 Bay St., Toronto 1, Ontario.

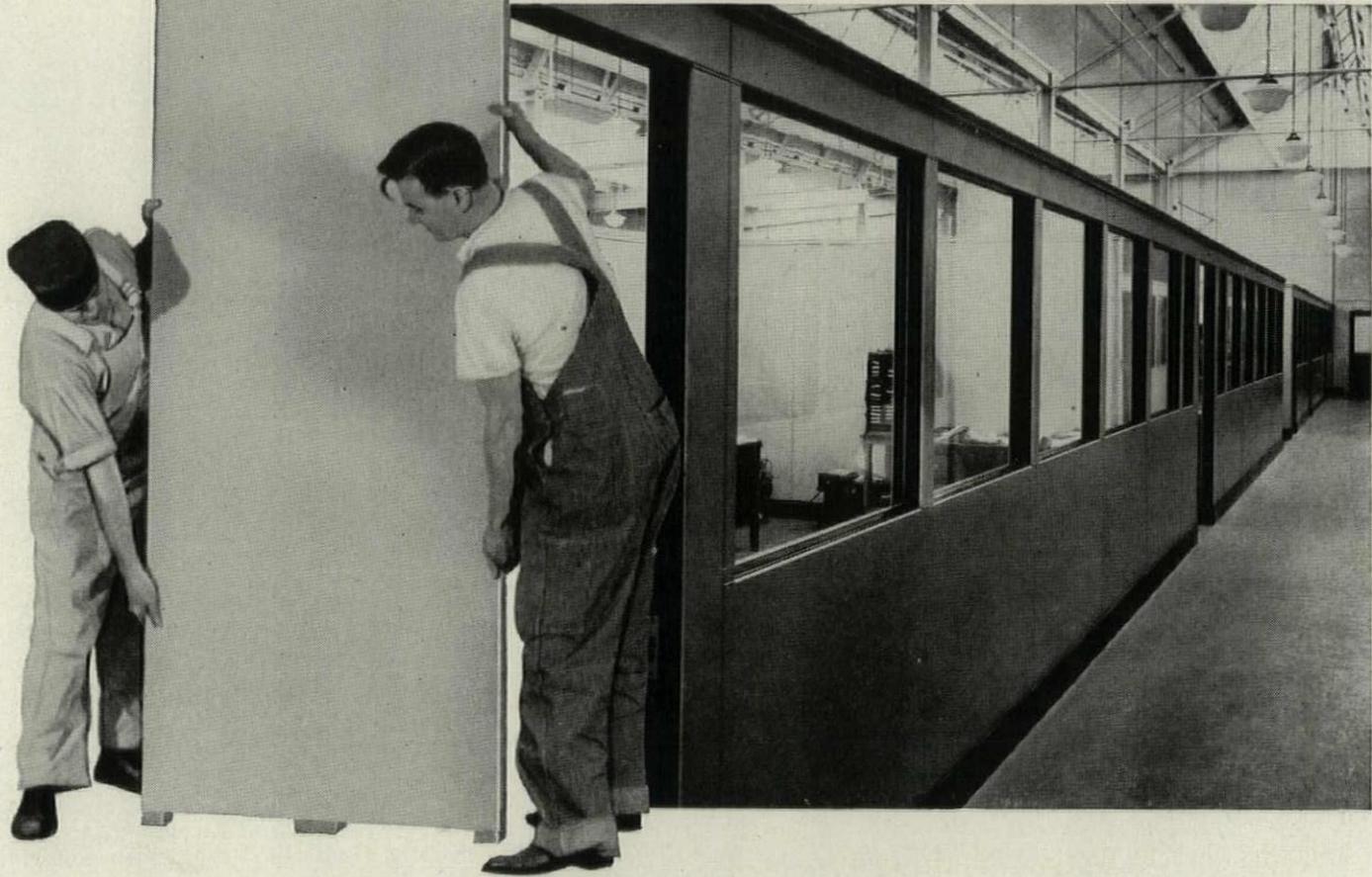
\*Reg. U.S. Pat. Off.



**Johns-Manville**

**J-M Acoustical Materials include Sanacoustic Units, Transite\* Acoustical Panels, and drilled Fibretone\***

*Keep pace* with  
**space needs**  
 with **J-M Movable Walls**



**Johns-Manville Asbestos Movable Walls are made of noncritical materials. They permit the quick, easy space changes vital to today's rapidly expanding industries.**

● Reallocation of existing space and partitioning of new space can be done easily and quickly with Johns-Manville Universal Movable Walls. Made of asbestos, these walls are ideally designed to help business and industry meet the space problems involved in the defense effort.

The flush panels have a clean, smooth surface that's hard to mar, easy to maintain, and will withstand shock and abuse. They're light, easy to erect and to relocate. The "dry wall" method of erection assures little or no interruption to regular routine.

Johns-Manville Movable Walls may be used as ceiling-high or free-standing partitions. The complete

wall, including doors, glazing and hardware, is installed by Johns-Manville's own construction crews and under the supervision of trained J-M engineers.

**TRANSITONE Movable Walls**—A recent and unique development of the Johns-Manville laboratories is the Transitone Movable Wall, with asbestos panels integrally colored. Non-fading pigments are blended into the asbestos fibres, thus eliminate the cost of periodic decorative treatment. The color goes all the way through each panel.

For details about J-M Movable Walls, consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Dept. MB, New York 16, N. Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.



**Johns-Manville**

**ASBESTOS**

*Movable Walls*

**INSTALLED NATIONALLY BY JOHNS-MANVILLE**

50 years ago this month,  
Willis H. Carrier founded the  
air conditioning industry

A printer in Brooklyn was having his troubles. Moisture content of the air was making his paper swell and shrink. But nobody could do anything about that . . . or could they?

Willis Carrier, then a young engineer with Buffalo Forge Company, thought he could. He designed a system that controlled the temperature and relative humidity in that print shop, winter and summer. This was the pioneer air conditioning installation.

Dr. Carrier and his associates formed the company which today leads the industry. And Carrier Corporation has virtually written the history of air conditioning. Carrier created the machines, opened the markets, blazed the trails.

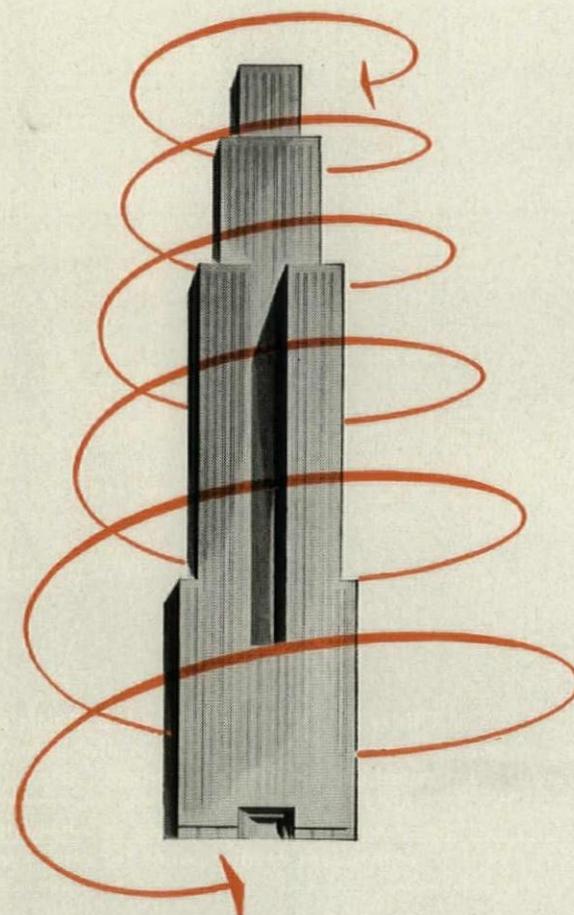
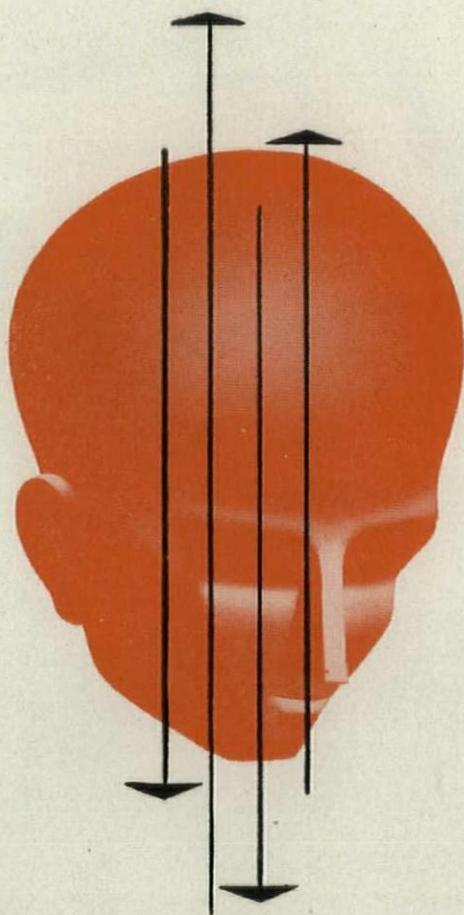
That you are kept comfortable by air conditioning in bus, plane and train . . . restaurant, store and theater . . . office, factory and home . . . is due to the pioneering of this one company.

But Carrier has made even more important *indirect* contributions to your well-being. For air conditioning is also a production tool that is essential to the manufacture of synthetic fabrics, radar and electronic equipment, pharmaceuticals, precision aircraft parts, optical instruments, photographic film and scores of other products.

Air conditioning is an important part of your life today. But tomorrow it will be more important. For this industry of ours is very young. And its field of service is unlimited.



AIR CONDITIONING • REFRIGERATION  
for 50 years—the people who know air conditioning best



## HOW **SELECTOMATIC** ORGANIZES CONFUSION

Up, down, down, up, down . . . push the button . . . and wait and wait and wait. This could be a typical elevator traffic pattern in buildings using ordinary control systems. And the starter . . . must be guide, dispatcher, traffic cop and public relations man all at once? If any of these problems disrupt the flow of elevator traffic in your building, Westinghouse has the answer.

To organize confused elevator traffic conditions . . . to take the guesswork out of your starter's job, let Westinghouse Selectomatic take over. This will mean syrup-smooth flow of traffic all day long. For at the setting of a switch, Selectomatic matches calls, cars and floors, concentrates its unique "electrical brain" on putting cars where they're needed, when they're needed. With amaz-

ing Selectomatic at work in your building, your starter is free to handle his number one job, full time . . . directing lobby traffic.

And now, Selectomatic installations include fabulous Synchro-Glide Landing Control, the exclusive Westinghouse development that makes accurate landings super-fast and feather-soft.

But test-ride a Selectomatic installation and see for yourself why your elevator plans should include this investment-wise Westinghouse control system. Contact your nearest Westinghouse Elevator Office for the name of a Selectomatic installation in your locality. Or write Westinghouse Electric Corp., Elevator Division, Dept. F-1, Jersey City, N. J.

*For years, Westinghouse engineering developments have stimulated the vertical transportation industry to strive for ever higher standards of quality and efficiency. In every phase of vertical transportation—equipment, maintenance, and service—Westinghouse has been the vanguard for progress. So, whatever your traffic problems may be—there's a Westinghouse Integrated Vertical Transportation System to solve them completely. Look ahead with the leader . . .*

YOU CAN BE SURE...IF IT'S

# Westinghouse

J-98624



This is MOBILEX with Moulded Plastic Panels, one of three shielding elements available to provide a variety of pleasing patterns. Glass, Plastic and Louvered frames are interchangeable and hinge from either side to allow the most convenient arrangement for easy servicing.

# MOBILEX

BY DAY-BRITE

## A NEW IDEA IN LIGHTING

MOBILEX introduces a new lighting tool to help you plan attractive, well-lighted, low-cost ceilings with a custom-designed look. This recessed lighting system is designed for use as an integral part of the newly developed grid-type suspended ceiling which consists of interlocking "tees" supporting Fiberglas\* Ceiling Board. MOBILEX, in 2' square and 2'x4' modular units, gives you complete flexibility, high efficiency, is extremely easy to install and service.

*\*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corp., Toledo, Ohio.*



Easy to install. Simply compress the sides of the fixture and insert into grid opening.

This is MOBILEX with Boxco® Louvers. MOBILEX is available in 2' x 2' units for two, three or four 20-watt fluorescent lamps and in 2' x 4' units for two, three, or four 40-watt fluorescent lamps. Units may be used singly, end to end, or side by side . . . and in any combination.



# MOBILEX

## GIVES YOU NEW LIGHTING FLEXIBILITY AND NEW OPPORTUNITY TO KEEP COSTS DOWN

Now you can dig into those tough remodeling jobs and new projects with low budgets and really come up with a client-pleasing answer!

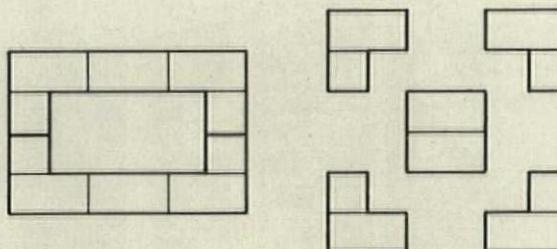
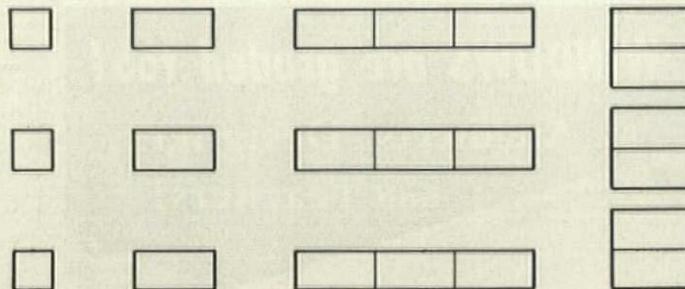
By combining MOBILEX and a grid-type suspended ceiling, you can plan beautifully lighted interiors that not only keep costs down and keep your clients happy, but satisfy your own sense of good design as well.

You can go to patterns of light, if you like . . . or continuous runs . . . or unit applications. MOBILEX flexibility gives your imagination room to roam! You can choose the intensity of light you need. You have a choice of plastic, glass or louvered shielding.

There's something else you can count on MOBILEX to do for you, too. Structurally, MOBILEX is built to *last* for a long, long time and to *perform* efficiently every day it's on the job.

Features like die-formed and welded steel construction . . . HOT-BONDED SUPER-WHITE enamel finish . . . RAPID-SMOOTH START ballasts on all 40-watt units . . . are just a few of the reasons you can recommend MOBILEX, *knowing that your client is getting the most for every lighting dollar he spends.*

Why not write for the complete MOBILEX story today?

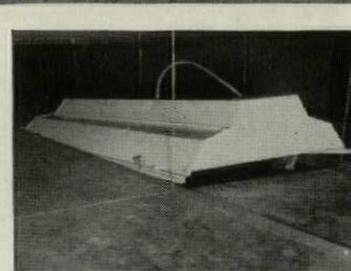
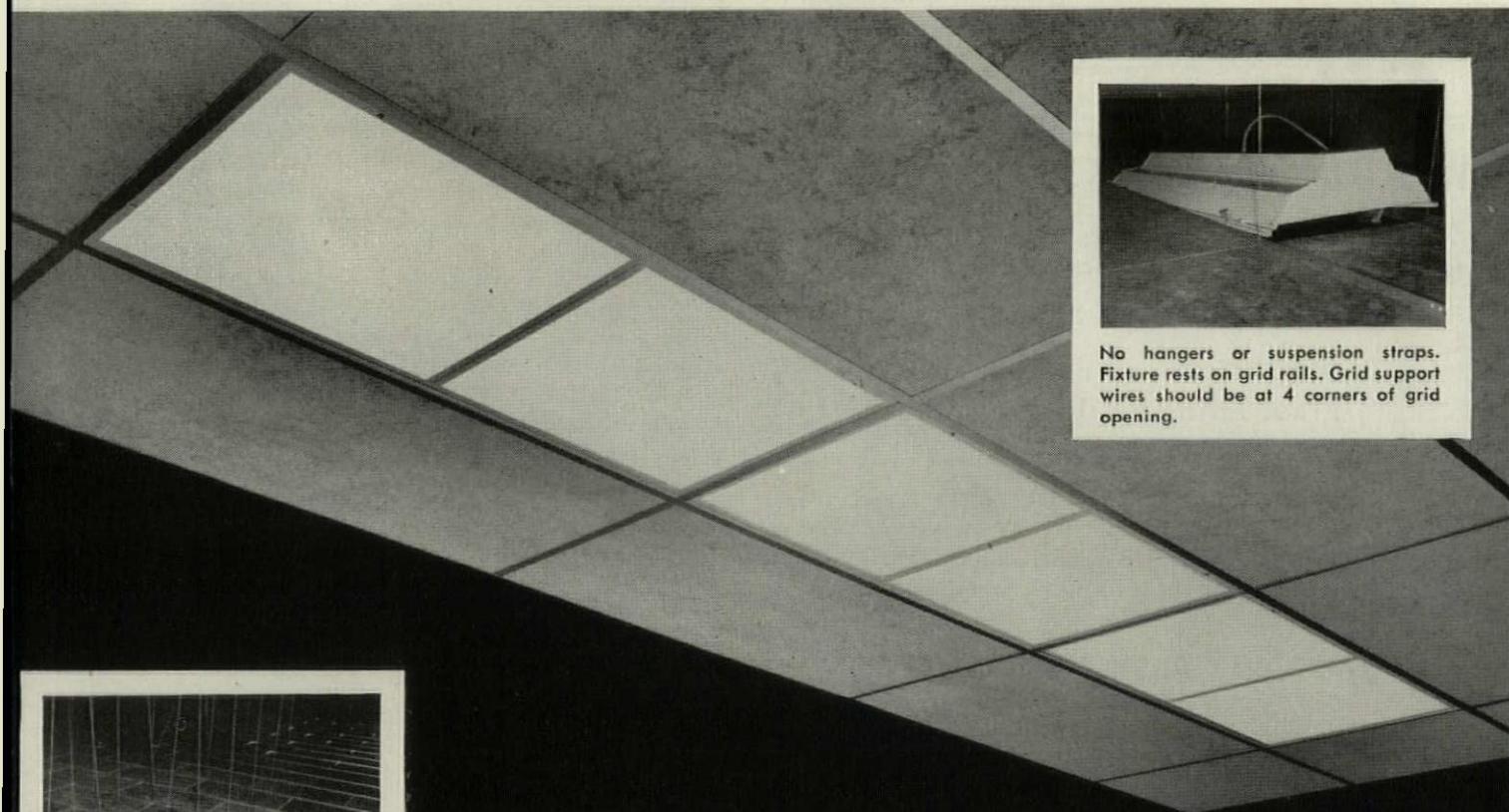


## UNLIMITED PATTERNS OF LIGHT

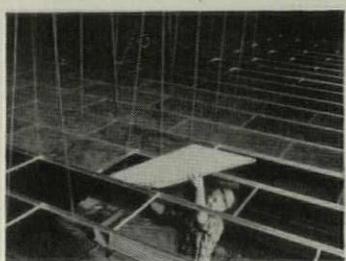


Write for Bulletin OD-561  
 Day-Brite Lighting, Inc.,  
 5471 Bulwer Ave.,  
 St. Louis 7, Mo. In Canada:  
 Amalgamated Electric Corp.,  
 Ltd., Toronto 6, Ontario.

257



No hangers or suspension straps. Fixture rests on grid rails. Grid support wires should be at 4 corners of grid opening.

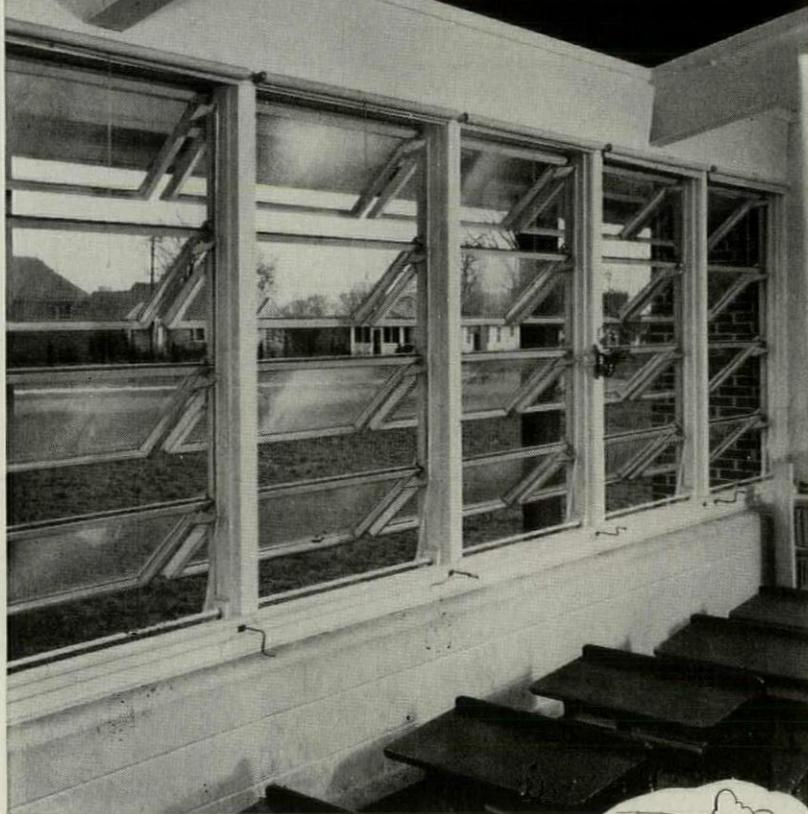


Truly flexible. Fixtures can be added or changed at any time by simply removing ceiling panels.

This is MOBILEX with Skytex Glass Panels. MOBILEX installation is simple, saves time and money. Compress the sides of the fixture to clear ceiling rails. Insert the fixture into the grid opening and let it rest on the rails. End baffles lock the compression feature in place. Make electrical connections, add hinged shielding frame and your installation is complete.

## SCHOOL WINDOWS are graded too!

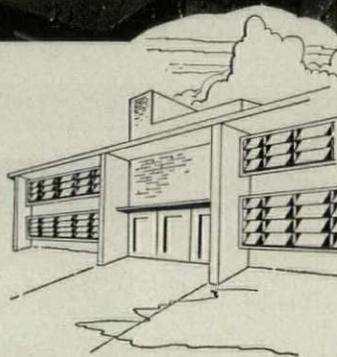
By Architects, Designers  
and Teachers!



Architects specify

## Gate City AWNING WINDOWS

because of their performance  
durability and lasting beauty.



Teachers give them top-  
grade rating for their comfort  
and protection features.

For a good report on GATE CITY  
preservative-treated WOOD AWN-  
ING WINDOWS in school buildings,  
see your local building supply  
dealer or write to

**GATE CITY SASH & DOOR CO.**

"Wood Window Craftsmen Since 1910"

P. O. Box 901, Fort Lauderdale, Florida

**MAIL THIS COUPON TODAY**

GATE CITY SASH & DOOR CO. AF-7  
P. O. Box 901, Fort Lauderdale, Fla.

Gentlemen: Please send me complete information  
on Dealer offer for GATE CITY Awning Windows.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

Refer to Sweet's File,  
17c-GA

Our free engineering  
service will assist you  
with any window  
problem.

## PRODUCT NEWS

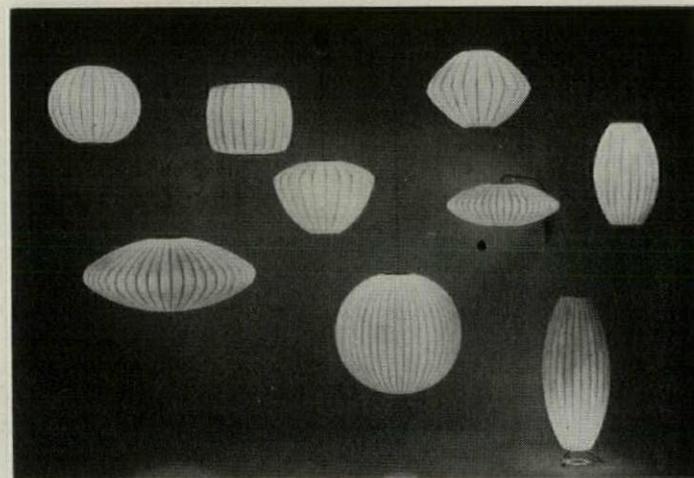
mechanical fittings (aluminum is recommended where moist-  
ure is present); welding or brazing; or resin bond.

*Utilitube's* applications extend from industrial processing to  
heating and refrigeration lines. Its bursting strength will meet  
most required operating pressures with an adequate safety  
margin, and its mechanical properties are reported to improve  
at subzero temperatures. The alloy will not discolor or stain  
wood or masonry and, except under unusual conditions, the  
tubing needs no painting or coating.

Manufacturer: Aluminum Co. of America, Pittsburgh 19, Pa.

### SPHEROID LIGHT FIXTURES have vinyl skins sprayed over steel skeletons

In a prediction made over a parfait in Chicago during the hectic  
Summer Market opening, George Nelson told earnest shelter  
and building book editors that we all may soon be living in  
Bucky Fuller domes. Perhaps in these plastic lighting balloons,  
the prolific Mr. Nelson drew inspiration from B-F's geodesic  
structures—or, maybe from the season's first watermelon. In



scale the new fixtures lie somewhere between nature's garden  
and Bucky's shelters. The parabolic beret, (*above, left*) is a  
yard wide and the big bubble is 26" in diameter.

Actually the simple lamps provide as much good atmospheric  
light as they do good fun. Their sprayed vinyl skins diffuse the  
light from ordinary 300 w. (or less) lamps evenly and take on  
the color of any bulb used. Most of the fixtures could float  
happily only in spacious showrooms, lobbies or high-ceilinged  
reception rooms. A few of the interesting shapes—the smaller  
beret and the little (13" high) tom-tom (which was tapped for  
the current Good Design show)—are suitable for contemporary  
homes. Retail prices range from \$25 to \$50. All the fixtures  
have the same size rings on top and bottom which may be at-  
tached either to a 3" high tripod floor stand (\$4) or a mahogany  
and brass swing arm (\$10).

Manufacturer: Howard Miller, Zeeland, Mich.

Distributor: Richards Morgenthau, 225 Fifth Ave., New York,  
N. Y.

(Continued on page 198)

Some light is shed on designer  
George Nelson by one of his  
new lantern lighting fixtures.





# **BRIXMENT ASSURES A GOOD BOND**

After all is said and done, the first function of a mortar is to form a good, tight *bond* with the brick. Upon this characteristic depend both the strength and the water-tightness of the wall. A good bond is particularly important in securing water-tight walls, because most cases of leakage are caused by the passage of water *between* the brick and the mortar.

Brixment mortar assures a good, strong, *thorough* bond because: (1) Its great plasticity permits a more complete bedding of the brick, and an increased area of contact between the

brick and mortar.

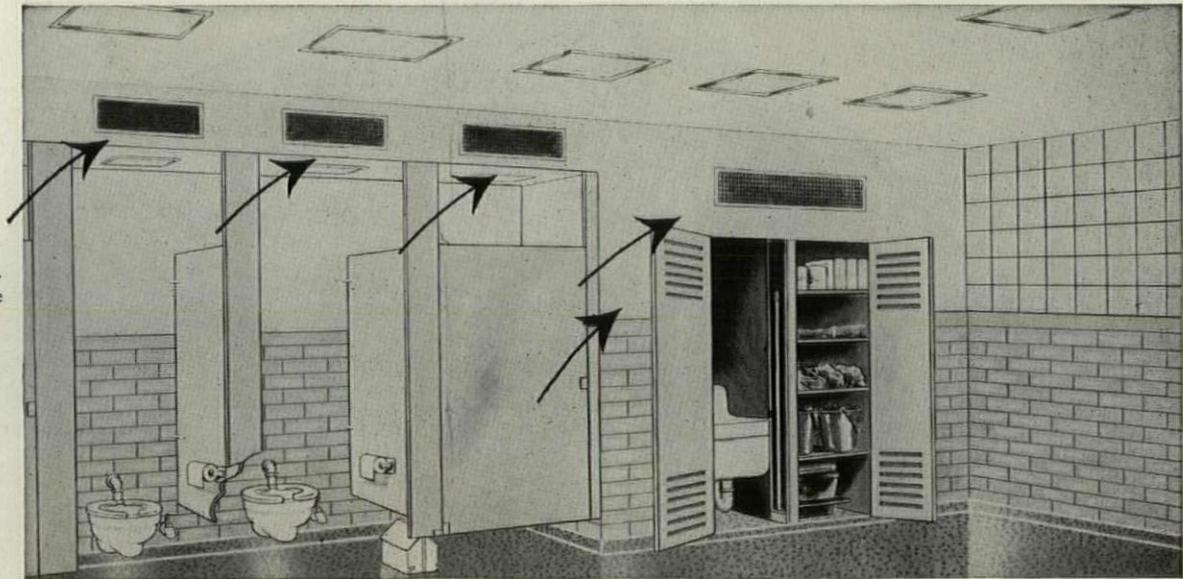
(2) Its high water-retaining capacity keeps the brick from sucking the water out of the mortar too fast, and prevents the mortar from congealing before the brick is thoroughly bedded and bonded.

(3) It hardens slowly enough to permit deeper penetration and more thorough keying into the pores of the brick.

Because of these characteristics, Brixment mortar makes a *better bond*. Isn't this what you want in *your* brickwork?

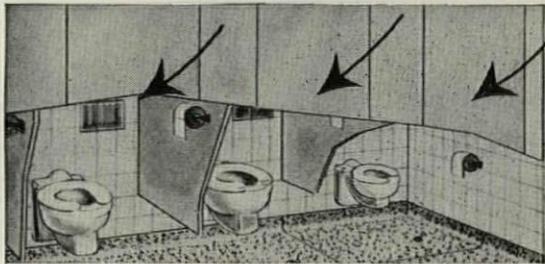
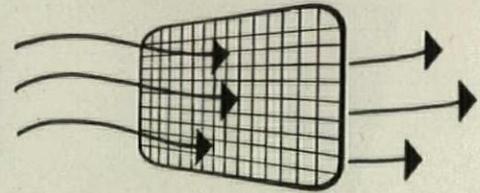
**LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE 2, KY.**

For best air circulation, odor and fume removal . . . use adequate vents on storage locker doors, recessed exhaust vents high on the wall.

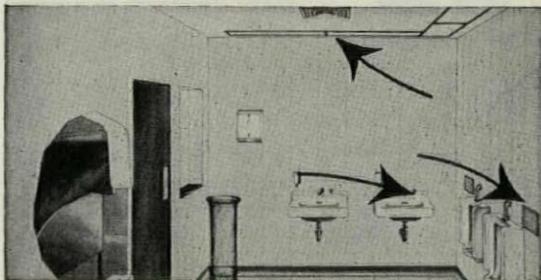


# Ventilation planning

can make or break a modern washroom



In large washrooms, recessed wall vents near each toilet remove odors quickly. Correct positioning is important for best results.



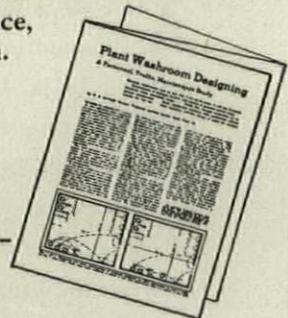
Combination of recessed ceiling vents and wall vents close to urinals—a successful arrangement for smaller, heavily used washrooms.

WASHROOM VENTILATION has a noticeable effect on the health and morale of employees. When a washroom has a fresh clean smell about it, you can be sure it has correctly positioned, properly functioning vents. Look for good production records, less illness and absenteeism, too.

In your next building plans, make allowances for correct washroom ventilation. It's a wonderful opportunity to give your client good employee relations for years to come—*built right into his plant!*

QUESTIONS? Call in your Scott Washroom Advisory consultant. He's one of a group of trained specialists who have gained real know-how from servicing over 500,000 washrooms. And he's ready to give you the answers to any of thousands of questions on modern washrooms.

Contact Washroom Advisory Service, Scott Paper Company, Chester, Penn.

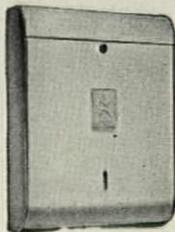


Send for **FREE Leaflet . . .**  
**"Plant Washroom Designing"**

Washroom Advisory Service, Dept. MB-7  
 Scott Paper Company  
 Chester, Pennsylvania

At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, "Plant Washroom Designing."

Name \_\_\_\_\_  
 Company \_\_\_\_\_ Title \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



**SCOTT**  
 Symbol of  
**Modern Washrooms**

Trade Marks "ScottTissue," "Washroom Advisory Service" Reg. U. S. Pat. Off.

# now! MENGEL MAHOGANY Flush DOORS

Available at  
less than many  
Domestic Woods!



"Believe it or not"—Mengel Flush Doors with faces of genuine African Mahogany can now be bought for less than comparable doors built with many conventional domestic woods!

Why? Because Mengel, drawing from its own vast logging concessions in the heart of Africa's Gold Coast, brings its fine Mahogany veneers to America in tremendous volume. Second, Mengel has the wood-working equipment and know-how to manufacture its top-quality doors *with mass-production economy and efficiency!*

Use the coupon to get full details about Mengel Mahogany Doors. Until you know the facts, you'll never appreciate the extra luxury, the extra *values* now immediately available for *any* kind of job.



THE MENGEL COMPANY  
Plywood Division, Louisville 1, Ky.

Gentlemen: Please send me full information on Mengel Mahogany Flush Doors—Hollow Core and Stabilized Solid Core.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

The Mengel Company . . . America's largest manufacturers of hardwood products  
• growers and processors of timber • manufacturers of fine furniture • veneers •  
plywood • flush doors • corrugated containers • kitchen cabinets and wall closets

## INTEROFFICE CORRESPONDENCE

TO: P. A. Nichols

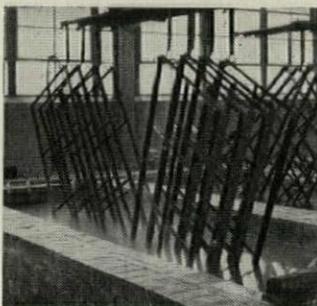
FROM: E. C. Hodges

Phil:

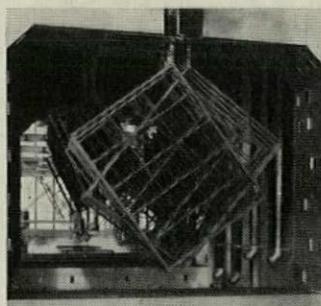
See attached ad on saving thousands of dollars by eliminating window painting with Fenestra Super Hot-Dip Galvanized Steel Windows...Check for the new plant...

Thanks, E.

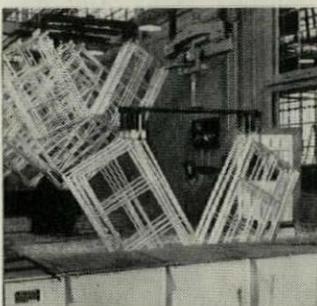
## Now You Can Eliminate Maintenance Painting!



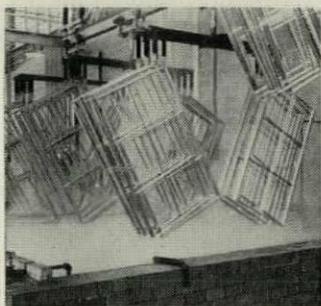
**FLUXING.** After cleaning, pickling and rinsing, Fenestra Windows dip into a flux bath that provides a film to prevent contamination of the cleaned steel as it passes to galvanizing tank.



**DRYING.** In this oven, the flux is dried on. Of course, in the galvanizing tank, this protective coat of flux volatilizes on contact with the molten zinc to permit a strong zinc-iron bond.



**GALVANIZING.** Assemblies dip deep into molten zinc, and come up with a heavy, smooth, uniform coating. Temperature and timing are automatically controlled with laboratory accuracy.



**BONDERIZING.** Here you see the galvanized assemblies being Bonderized to give the surface a soft silver color and to provide a holding surface for decorative paint, if it is ever desired.

Here's why it will pay you to check, too:

A window painting bill for a typical plant can run around \$3,000 every few years.

The most practical answer to that—and any other window problem—is Fenestra\* Super Hot-Dip Galvanized Steel Windows. They are rugged, rigid—and completely protected from rust.

Here's why they are called *Super Galvanized*: Fenestra has developed a Hot-Dip Galvanizing system designed specifically for steel windows, and has built a special plant around it. It is the only one of its kind in America.

Completely automatic controls move Fenestra window assemblies through a series of special tanks where they are cleaned and pickled, rinsed, fluxed, dried, galvanized and Bonderized. Every step is laboratory controlled.

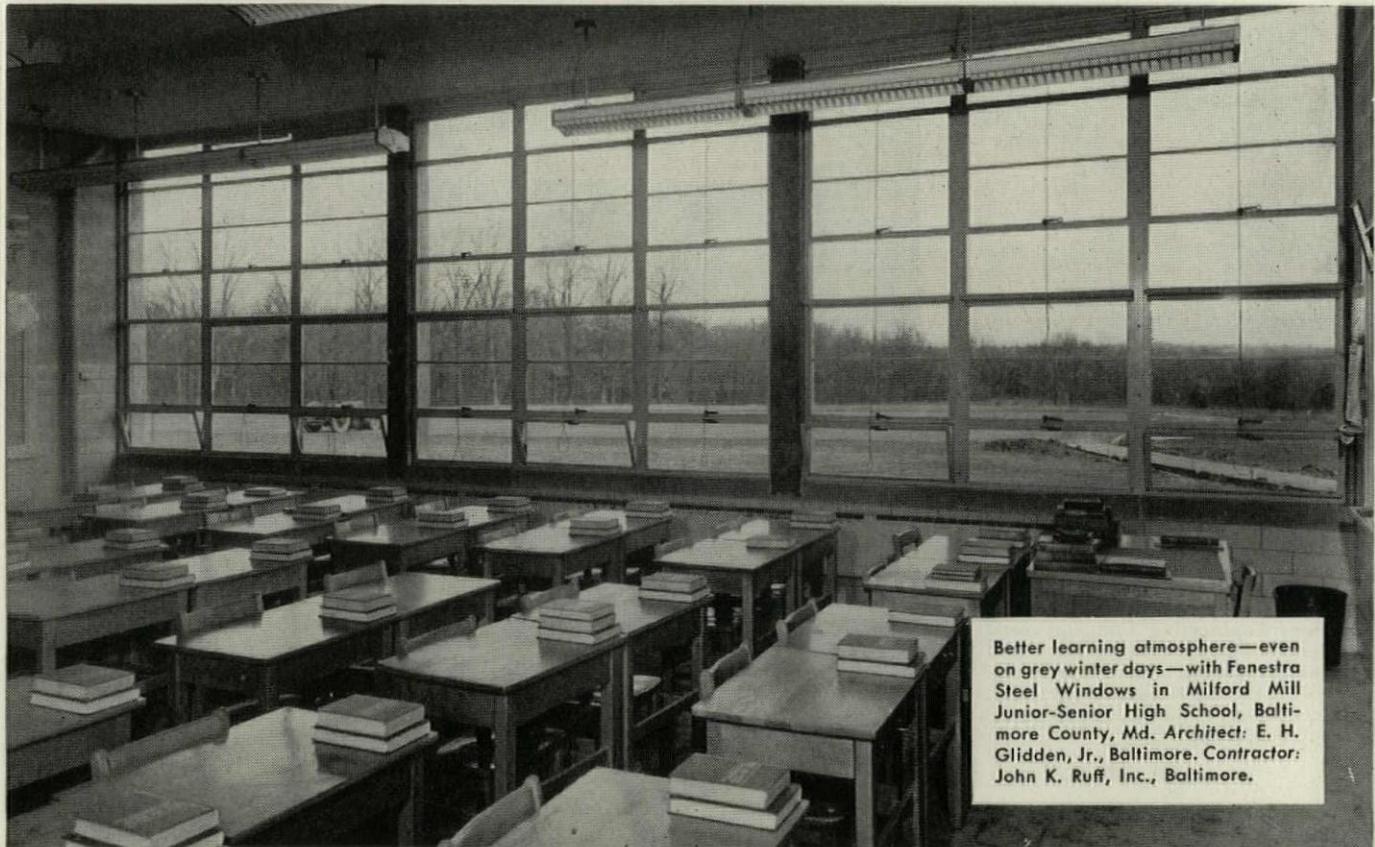
So add Super Hot-Dip Galvanizing to other Fenestra advantages . . . such as integral ventilator butts that increase window strength, precision machining of window bars for perfectly uniform window size, automatic assembly of ventilators for perfect fit, continuous double contact for weather tightness all around vent openings, rigid *interlocking* muntin joints.

And, remember, Fenestra's volume production, permitted by standardization of types and sizes, keeps the cost of Fenestra Windows low.

Call your Fenestra Representative or write Detroit Steel Products Company, Dept. MB-7, 2296 East Grand Boulevard, Detroit 11, Mich.

\*®

*Fenestra* SUPER HOT-DIP GALVANIZED STEEL WINDOWS  
from America's first plant especially designed to galvanize steel windows



Better learning atmosphere—even on grey winter days—with Fenestra Steel Windows in Milford Mill Junior-Senior High School, Baltimore County, Md. Architect: E. H. Glidden, Jr., Baltimore. Contractor: John K. Ruff, Inc., Baltimore.

## Better atmosphere for learning developed by FENESTRA'S Daylighting System

The proper correlation of steel windows, controls, decoration and seating provides new high standards of daylighting for classrooms — develops a better atmosphere for learning—and does it economically!

That was proved conclusively after two years of extensive research at Southern Methodist University by R. L. Biesele, Jr., Lighting Expert, and his staff.

First, you need to bring a *lot* of daylight into the room—nothing brings in more light than clear glass. The intake of light can be controlled with simple shades to give students the *right amount* of light for each task. Light-reflective room surfaces, of course, spread the incoming light throughout the room.

For the best daylighting, an environment of comfort and alertness and brightness—you need a ceiling-high, wall-to-wall, bank of slim-lined, *economical* Fenestra\* Intermediate Steel Windows. They don't shut out the

light . . . they bring it in. Even on dim days daylight fills the room. (As you can see from the picture above.) And they don't give students a closed-in, trapped feeling—they give them a wide-open view.

Fenestra Windows give you more glass area, more daylight, more view than most windows because their frames are especially designed to be strong without being bulky. You get controlled fresh air through protecting vents . . . even when rain is pouring down! You get economical upkeep because Fenestra Windows are washed and screened from *inside*. And they are available *Super Hot-Dip Galvanized*, on special order, to eliminate any need for maintenance-painting.

Fenestra Windows are the mark of a *modern* school . . . a school *children like*. For full information call the Fenestra Representative. Or mail the coupon.

WINDOWS THAT OPEN YOUR SCHOOL TO DAYLIGHT...

*Fenestra*

### FREE AUTHORITATIVE BOOKS . . .

Detroit Steel Products Company  
Dept. MB-7, 2296 E. Grand Blvd., Detroit 11, Mich.

Please send me:  Better Classroom Daylighting  
 Fenestra Hot-Dip Galvanizing

Name \_\_\_\_\_

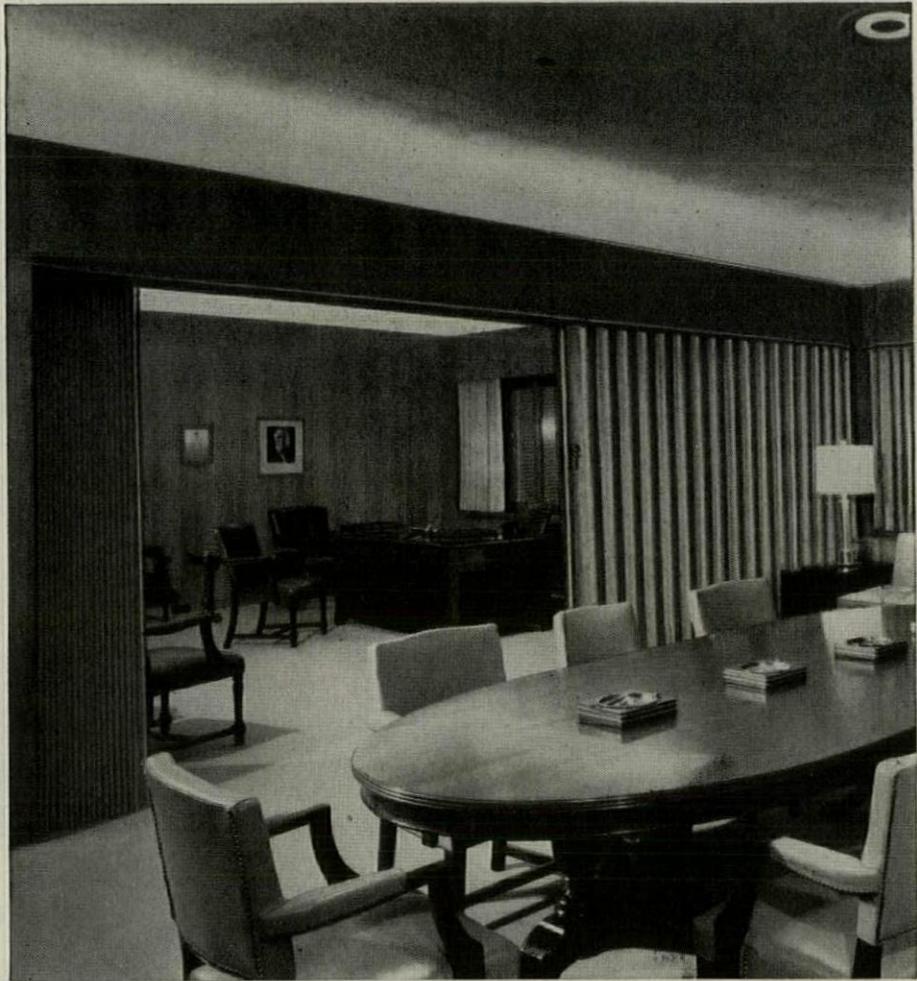
Address \_\_\_\_\_



## Space that changes shape in seconds

One minute this is a private office with a large waiting room or lounge . . . the next, a conference room "walled off" by a graceful "Modernfold" door. Making two rooms out of one is good business . . . and easy to do with "Modernfold."

Sessions Engineering Company used "Modernfold" doors to separate and combine this space to meet the day-to-day needs of the Powers Regulator Company, Skokie, Illinois . . . quickly . . . economically . . . beautifully.



## Your ideas come to life . . . for life with "MODERNFOLD" doors

For every room division or door closure problem, there's a simple, economical, space-saving solution. That's "Modernfold," the original folding door.

Specifying "Modernfold" doors keeps clients happy. For these steel-framed, vinyl-covered doors can't be equaled *anywhere* for quality of design . . . for quality and strength of materials.

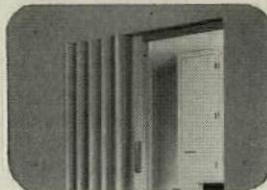
And because this line is *complete*, you're sure to save time and get exactly what you want when you specify better looking, easier operating, longer lasting "Modernfold" doors.

**Sold and Serviced Nationally**

NEW CASTLE PRODUCTS, NEW CASTLE, INDIANA

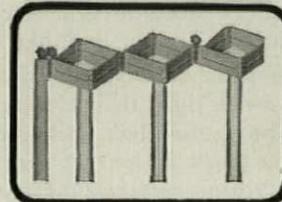
*In Canada:*

Modernfold Doors, 1315 Greene Avenue, Montreal



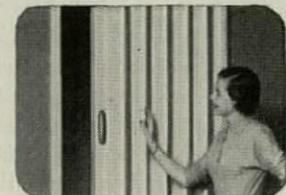
### Better Looking

Fabric covering conceals all operating mechanism. No cornice needed. Adjustable trolleys keep doors hanging flush to jamb.



### Longer Lasting

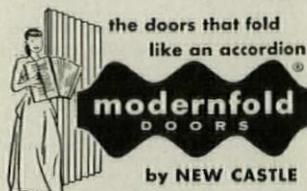
Balanced hinge construction both top and bottom. Trolleys attached at hinge intersections. No sidewise twist or pull.



### Better Background

Over 100,000 "Modernfold" doors now in operation—a backlog of space engineering experience that's your guarantee of satisfaction.

### YOU CAN'T GET MORE IN A FOLDING DOOR



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New Castle Products  
Box No. 805  
New Castle, Indiana  
Please send full details on "Modernfold" doors.

Name.....

Address.....

City.....County.....State.....

# Leader



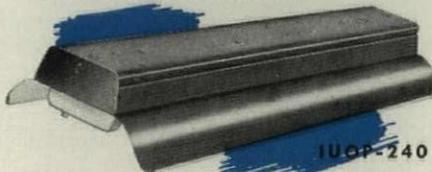
## While the city sleeps . . .

*Leader* LIGHTING  
FOR INDUSTRY



UCOP-240

NEW Diffuser Unit—Designed to modify the contrast between lighted work areas and upper dark areas. 7% indirect lighting component. All-steel construction. For 2 or 3 40-watt lamps, in open or closed end models. Porcelain reflector if desired.



IUOP-240

Other Leader industrial units are available in open and closed end styles, for 2 or 3 40-watt, 2 85-watt, for 2, 3 or 4 slimline lamps. Rugged construction, many convenient features, choice of mounting. Write for complete information. No obligation.

- . . . industry hums, with the production of vital defense matériel, the manufacture of more and better products to meet America's expanding needs. Lighting plays an indispensable part in maintaining production at continuously high levels . . . and Leader plays an important role in providing proper lighting for industrial production. The Leader line includes fixtures for all general and many specialized industrial requirements . . . and all units afford top performance, ease and flexibility of installation, economy in first cost and maintenance.

Sold and installed by the better  
electrical wholesalers and contractors

*Leader* America's No. 1 Lighting Equipment Manufacturer

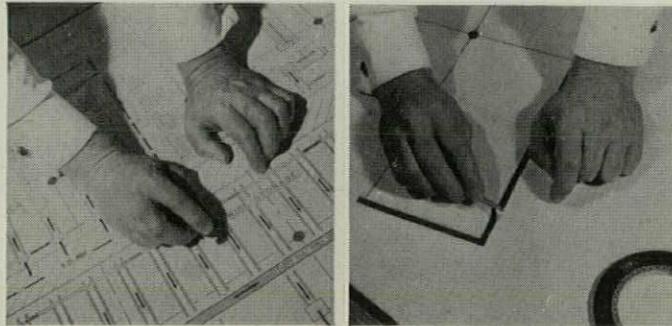


LEADER ELECTRIC COMPANY — 3500 North Kedzie Avenue, Chicago 18, Illinois  
Leader Electric—Western: 800 One Hundredth Avenue, Oakland 3, California  
Campbell-Leader, Ltd.—Brantford, Ontario, Canada

## PRODUCT NEWS

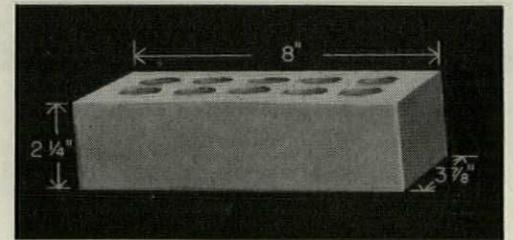
### PRINTED TAPE cuts plant layout time

Labelon has taken 45 factory layout symbols—ranging from conveyors and railroad track to aisles and H-columns—and printed them on acetate tape. Even 1/16" and 1/4" wide poché are included in the line. Drawn to 1/4" scale, the standard plant components should be useful in designing new schemes or rearrangements. In a recent drafting job for General Electric's gas-turbine plant, Labelon tapes were credited with saving one-third of the board work. They are available on opaque or transparent backing; either type may be peeled from the plan and reset without tearing or crinkling paper or tape. Produced in 324" and 648" lengths, 1/4" to 2 1/2" wide, the layout aids sell for from \$1 to \$7.50 a roll. A kit including 20 assorted rolls and a razor-blade knife lists at \$33. Discounts of 10% are made on orders of 25 or more kits. *Manufacturer:* Labelon Tape Co., Inc., Rochester, N. Y.

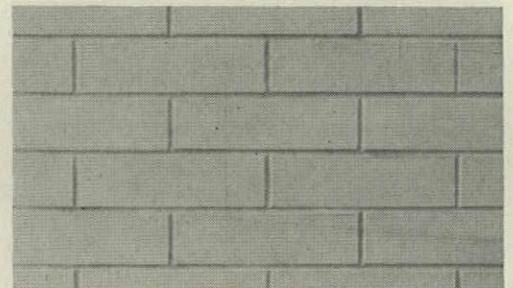


### SATIN GLAZED BRICK. Dirt washes off face

Even under the onslaught of city grime, the two million pale brick used to face *Manhattan House* (see p. 142) should stay pale. Toned in the same cool grays as limestone, these *Claystone* units do not have the natural stone's affinity for soot. Fired with a matte-



finish vitreous ceramic glaze, the face brick needs only the wind and rain to keep its kiln-fresh complexion. In addition to gray, *Claystone* is produced with a light or dark green glaze, and—for buildings where the entire absence of grit might be too disturbing—with uniformly distributed fine black specks. Other



colors will be made to order. The brick is standard size—8" long x 3 7/8" deep x 2 1/4" high—and sells for about \$74 per 1000 F.O.B. factory at Shawnee, Ohio. Each unit weighs 4.35 lbs.

*Manufacturer:* The Claycraft Co., Columbus 16, Ohio.

(Continued on page 206)

## GRAND ENTRY

THE HECHT CO.

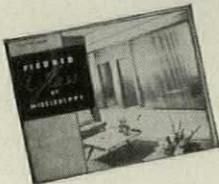
a  
half acre of  
Glass forms  
gleaming beacon  
for buyers at  
The Hecht Co's.  
modern store

The use of translucent glass, the modern material, in tomorrow's merchandising and manufacturing structures is an established trend. Designers and architects everywhere appreciate the beauty and utility inherent in this versatile, new medium. One of the most recent and attractive indications of this important movement is the facade of the new Hecht Co. department store in Parkington, Arlington, Va.

Described as "America's most beautiful suburban department store," this impressive building features an exterior wall gleaming with 15,000 square feet of sturdy Mississippi Hammered Wire Glass. This handsome, fire retardant wall is striking by day and night . . . it is also a giant poster used to publicize community events and store activities.

Figured Glass by Mississippi is the newest thing in design, fast replacing conventional materials for interior partitions as well as exterior walls. Glass offers many distinct advantages . . . is easy to install and maintain . . . never loses its lustrous beauty.

The properties of Mississippi glass can solve many design problems. It is available in a wide variety of patterns and textures wherever quality glass is sold. Listed in Sweet's Catalog. Samples on request.



Write today for free catalog, "Figured Glass by Mississippi." Photographs of actual installations. Many ideas on ways to use this exciting new medium in all types of commercial buildings.



The new Hecht Co. Department Store in Parkington, Arlington, Virginia is an outstanding example of modern design.



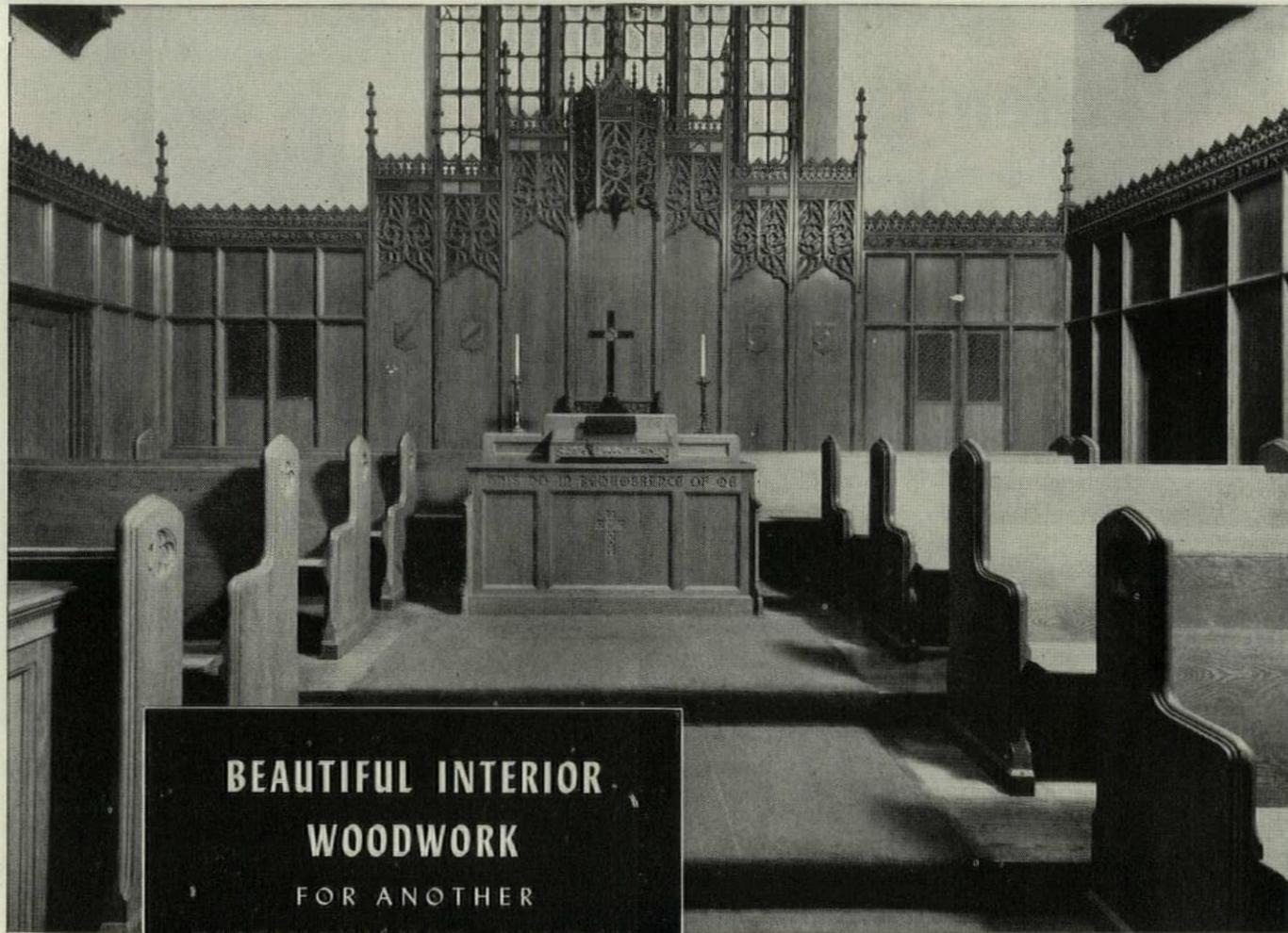
MISSISSIPPI *Glass* COMPANY

88 ANGELICA ST. SAINT LOUIS 7, MO.

NEW YORK • CHICAGO • FULLERTON, CALIF.



WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS



**BEAUTIFUL INTERIOR  
WOODWORK  
FOR ANOTHER  
DISTINGUISHED CHURCH**

Chancel, First Presbyterian Church, Wilmette, Illinois,  
Architect, Stanley M. Peterson.

*Built, Finished and Installed By ONE Group of Craftsmen*

Effective blending of traditional Gothic design and the beauty of fine architectural woodwork gives the chancel of the First Presbyterian Church of Wilmette an atmosphere of divinity that inspires a mood of reverence in every visitor. The reredos and paneling are of fine mission oak, constructed and finished precisely to the architect's specifications by the craftsmen of Woodwork Corporation. The completed work was installed in the church by Woodwork Corporation installation experts.

The skill of Woodwork Corporation craftsmen, the Woodwork policy of adhering pre-

cisely to the architect's specifications, and the completely coordinated construction-finishes-installing service which Woodwork Corporation provides are your guarantee of complete satisfaction. Woodwork's one-group control eliminates errors and delays and guarantees completion of the work on schedule with efficiency and economy. However large or small your custom woodwork plans, it will pay you to get an estimate from Woodwork Corporation.

**WRITE FOR ILLUSTRATED FOLDER**  
describing Woodwork Corporation services



SEND US YOUR PLANS AND SPECIFICATIONS FOR PRICING . . . or  
ask for further information on Woodwork Corporation services.



**WOODWORK CORPORATION OF AMERICA**  
1427 WEST TWENTY FIRST STREET, CHICAGO 8, ILLINOIS  
*Serving Architects, Designers and Contractors For Nearly Half a Century*

This ad is one of a series telling industrial and commercial Management the story of Coolair Breeze Conditioning.

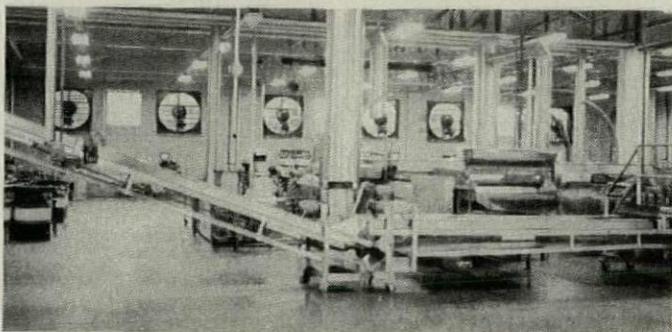
# When It's **HOT**

## Don't Be Wishing You Had Bought



### Still Time to Enjoy Cool Working Conditions *this summer*

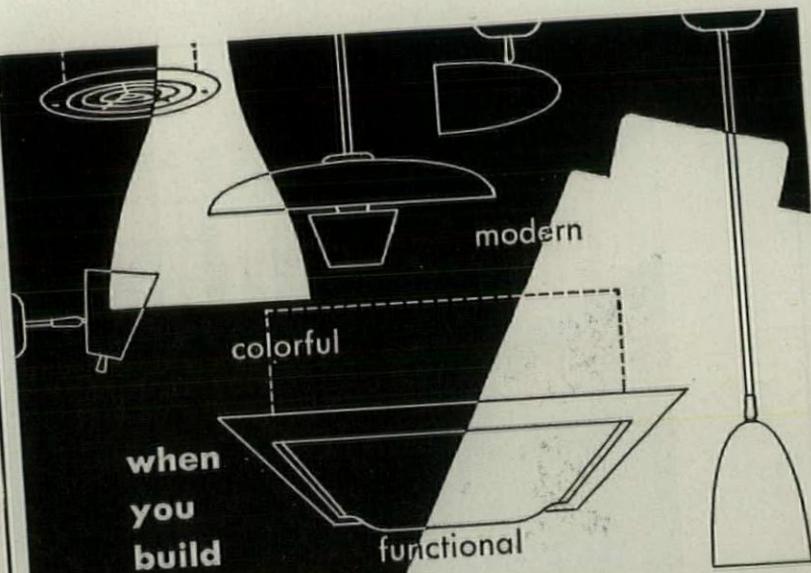
Simplicity of installation eliminates long delays . . . puts Coolair Breeze Conditioning to work cooling your plant or factory within few days. First cost is low. Installation at a minimum. Operation and upkeep negligible. No water required! Brings the breeze inside.



Production in this food plant never sags in hot weather! Coolair Breeze Conditioning sweeps entire plant with cooling breezes—improves morale, production.

The complete line of Coolair Breeze Conditioning Fans includes mouse-quiet, spring-mounted models for cooling homes, offices, schools, churches.

**Low-Cost Cooling?** You'll be surprised how little Coolair Breeze Conditioning costs! Write TODAY for complete information and the name of your local Coolair representative. American Coolair Corporation, Jacksonville 3, Florida.



when  
you  
build  
or  
remodel  
specify ----

## PRESCOLITE

contemporary  
**LIGHTING**  
for any installation



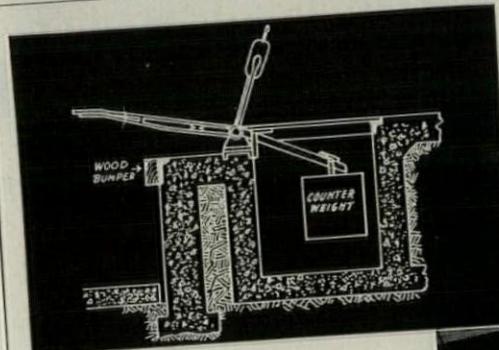
Write for  
Complete Catalogs

R-7 RECESSED FIXTURES

S-2 SWIVEL LITES

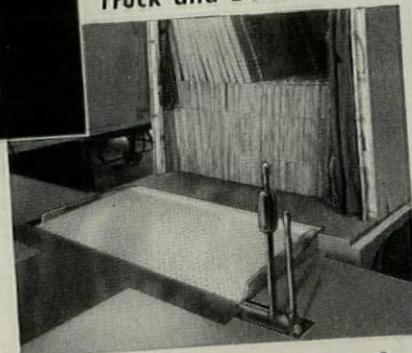
A-1 ARCHITECTURAL FIXTURES

**PRESSTEEL  
COMPANY**  
800 BANCROFT WAY  
BERKELEY 2, CALIFORNIA



Simple-Low Cost  
Installation

Note perfect  
Bridge between  
Truck and Dock



To Design  
**TOP-EFFICIENCY**  
Specify  
**RITE-HITE**

**Adjustable Loading Docks**

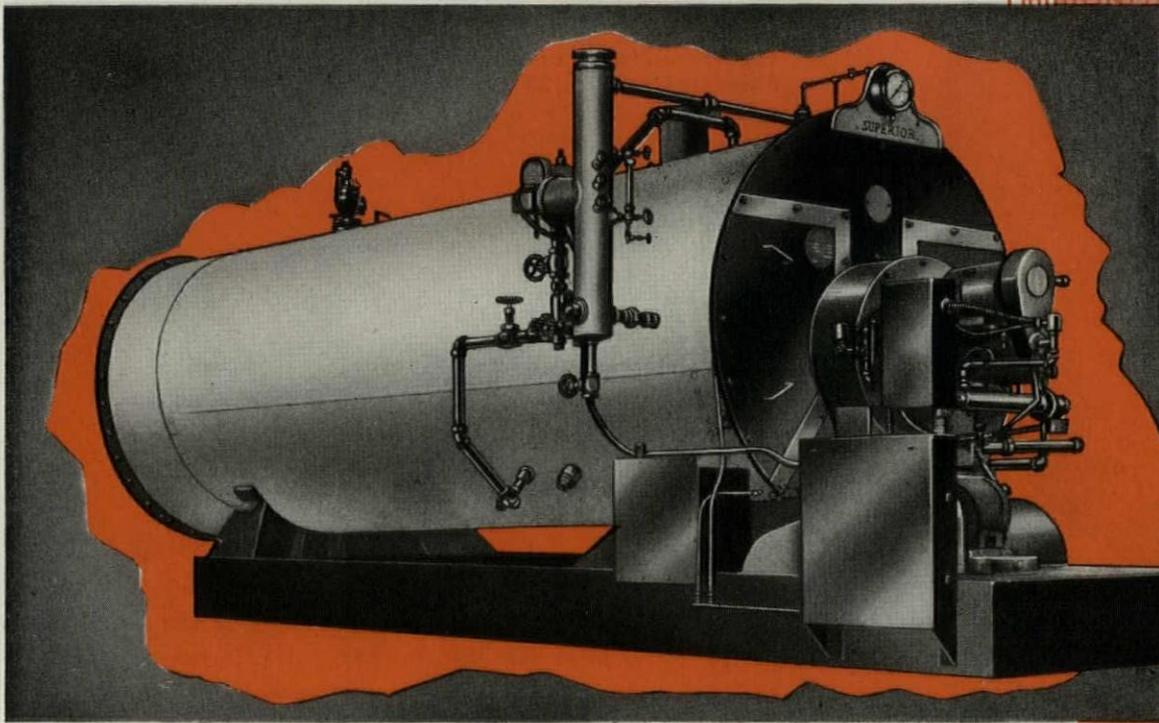
For the perfect bridge between truck and dock, specify the Rite-Hite Adjustable Loading Dock. The answer to the Architect's design problems. Low-cost installation, plus trouble-free service and lack of maintenance cost, guarantees client satisfaction.

- No piping ✓
- No compressors ✓
- No pumps ✓
- No motors ✓
- No lubrication ✓
- No machinery ✓
- No operating expense ✓
- Counter-balanced ✓
- Easy to operate ✓

For further details, sizes, capacities, plans and specifications, write to: DEPT. — 106

**LOOMIS MACHINE CO., CLARE, MICHIGAN**  
(RITE-HITE DIVISION)

# GOOD FOR THE *School*



# GOOD FOR THE *Budget*

**Superior Steam Generators** are an ideal solution to the problem of heating schools. Shipped completely assembled after factory test, they are backed by the undivided responsibility of their maker. Installation is simple and inexpensive. No special foundation is required. Rugged and compact, they fit into small space.

Superior's built-in induced draft eliminates the need of an expensive chimney, and also provides that extra measure of safety so desirable in school installations by preventing the escape of combustion gases into the boiler room and the rest of the building.

Built for years of dependable low-cost operation, Superior Steam Generators reduce maintenance to a minimum and earn their cost many times over through long-lived efficiency. They are guaranteed to generate their maximum capacities at thermal efficiencies in excess of 80% and will burn the cheapest grades of fuel oil (or gas) fully automatically.

Clean, quiet, safe, reliable operation, plus fuel savings of 20% or more over conventional boiler installations, make Superior Steam Generators ideal for both the school and the budget. A full range of sizes from 20 to 600 b.h.p. for pressures from 15 to 250 p.s.i., or in the hot water type, provides units of proper capacity for every school.

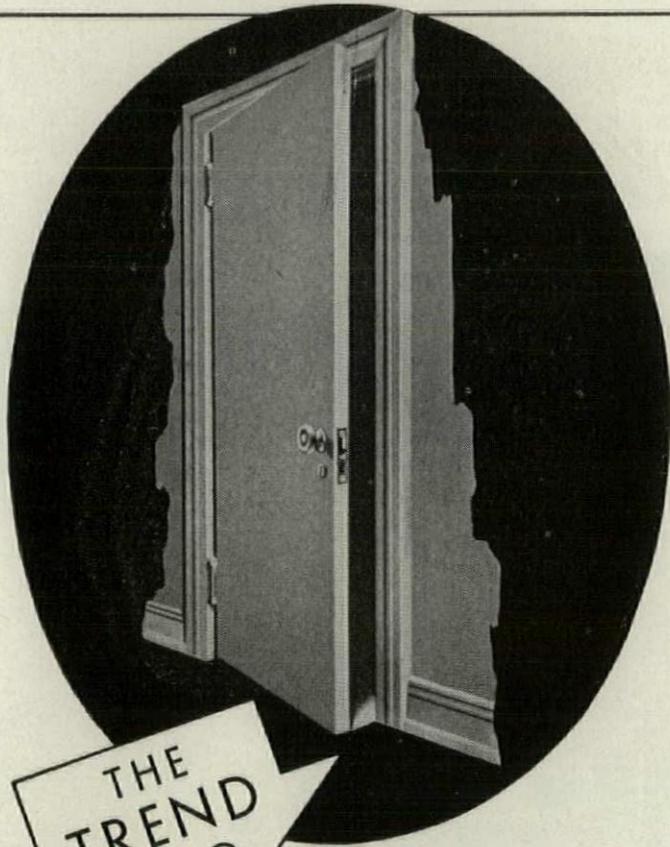
*For complete details, write for Catalog 412.*

for performance you can **BANK** on

**SUPERIOR COMBUSTION INDUSTRIES INC.**  
TIMES TOWER, TIMES SQUARE, NEW YORK 18, N.Y.

**SUPERIOR**  
STEAM GENERATORS

**MORE AND MORE**



THE  
TREND  
IS TO

# Thomason FLUSH DOORS

(ALL WOOD THROUGHOUT)

From coast to coast, architects are specifying and builders are using THOMASON Flush Doors. It requires practically the entire production facilities of one of the two large plants of the THOMASON PLYWOOD CORPORATION to meet the demand.

**AVAILABLE WITH  
THESE FACE VENEERS**

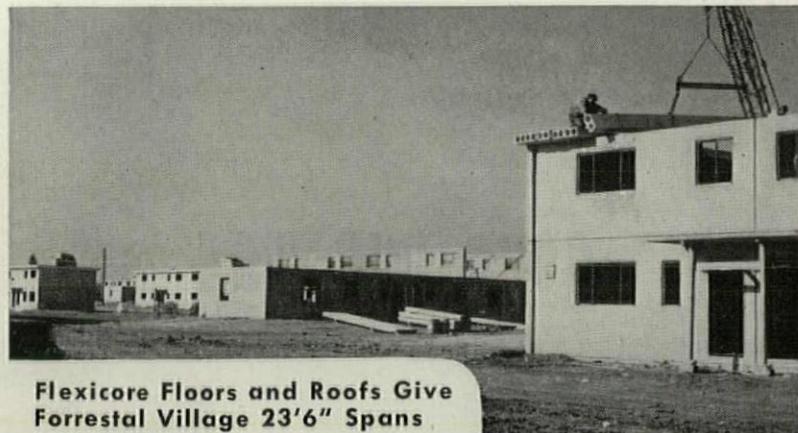
In addition to the Gumwood faced door, the THOMASON Flush Door comes faced with veneers of Mahogany, Walnut, Oak, Birch, Knotty Pine, Cativo, or in any face veneer desired.

**ALSO MADE FOR  
EXTERIOR USE**

Available either plain or with any one of five standard patterns of light opening. Or you may have the THOMASON Flush Door with a solid all-wood core, faced with any type of veneer desired.

**Sold Only Through Distributors**

**THOMASON**  
PLYWOOD CORPORATION  
FAYETTEVILLE • NORTH CAROLINA



**Flexicore Floors and Roofs Give  
Forrestal Village 23'6" Spans**

High-speed erection of Flexicore saved time and money on this \$8,600,000 naval housing job, Great Lakes, Ill.

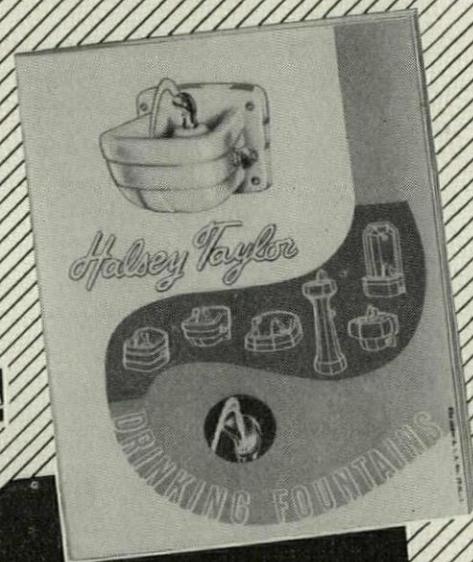
Standard precast concrete slabs clear-spanned 23'6" building widths to allow complete flexibility of interior walls. Smooth underside of slabs eliminated all ceiling plaster.

For catalog and nearest manufacturer, write The Flexicore Co., Inc., 1752 E. Monument Ave., Dayton 1, Ohio.



**flexicore**® PRECAST CONCRETE  
FLOOR & ROOF SYSTEMS

Your copy is ready\*



Write also for catalog on Coolers

\* Page after page of information and illustrations on the complete Halsey Taylor line

THE HALSEY W. TAYLOR CO., WARREN, O.

# AT LEVER HOUSE

## it's Armco Stainless Steel

**ARCHITECT:**

Skidmore, Owings and Merrill  
New York, Chicago and San Francisco

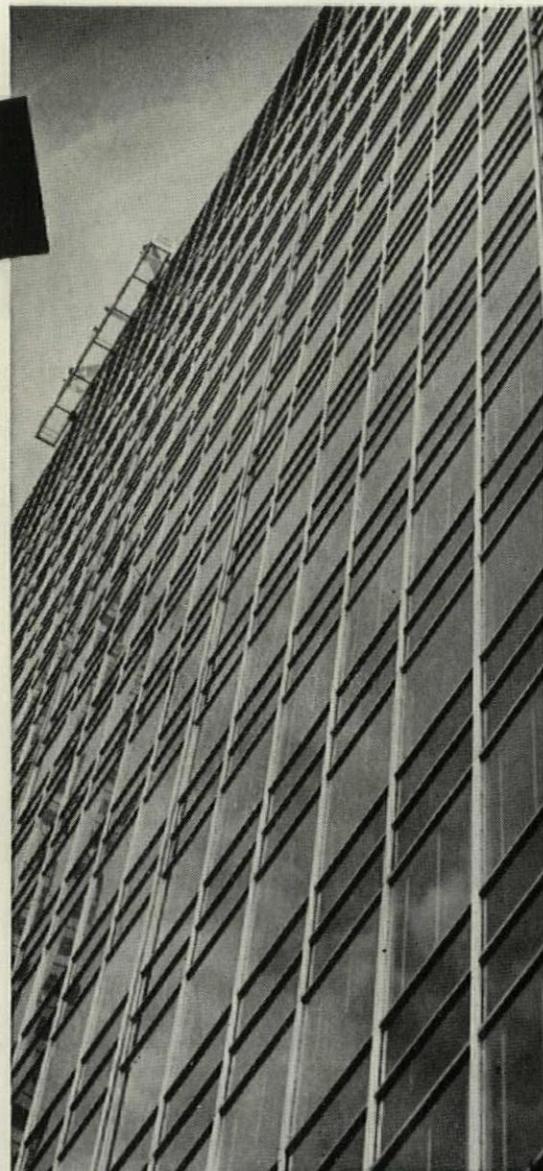
Here is the way an Armco 18-8 stainless steel lattice ties the glass walls of Lever House to its steel skeleton. In keeping with modern design requirements, the stainless steel is functional, decorative and economical. It not only holds the wire-glass spandrels firmly, but preserves the window seal for air-conditioning and transmits loads to the building frame.

The architect recognized that conventional building materials cannot be kept spotlessly clean from month to month. So this New York skyscraper was covered completely with stainless steel and glass—among the

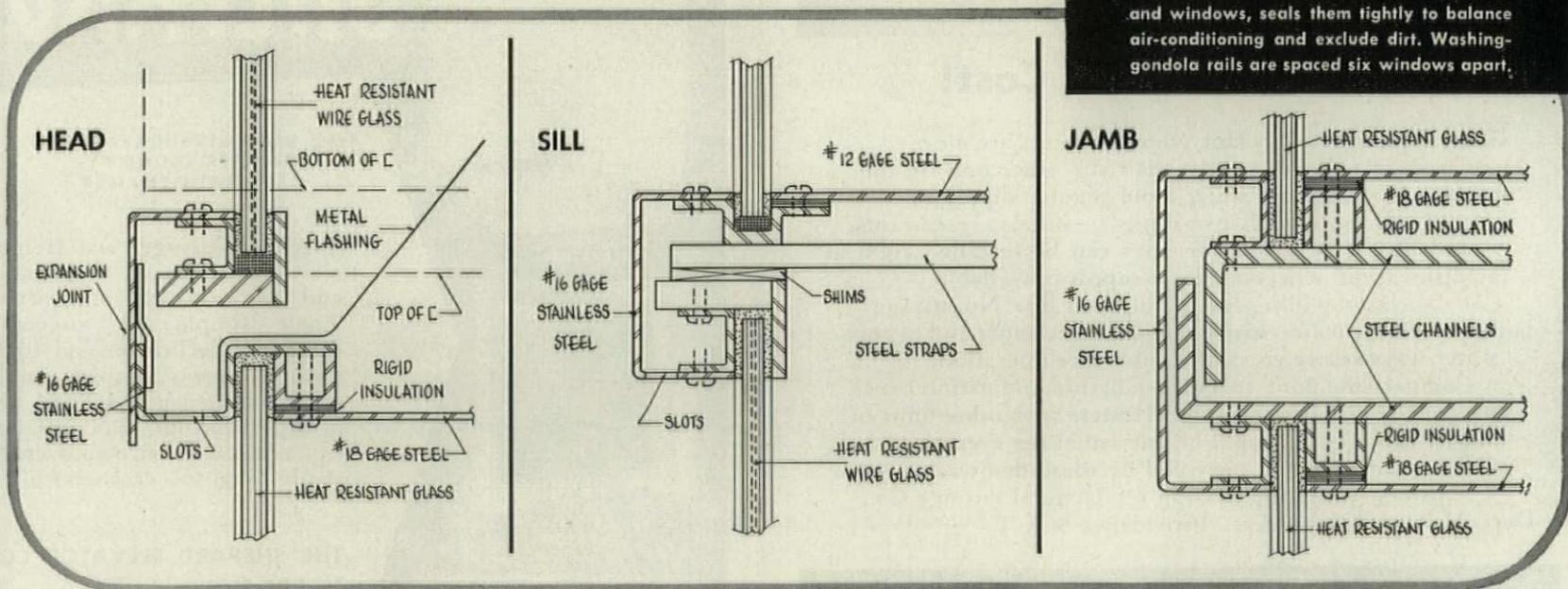
most easily cleaned of materials.

More than 75 tons of Armco Stainless Steel was used in this outstanding example of modern architecture. Although chromium-nickel stainless steels like Armco 18-8, Type 302, are now restricted by Government regulations, the chromium stainless steel Armco 17, Type 430, is readily available. It is free from restrictions and suitable for most architectural applications except those in severely corrosive atmospheres.

For complete information on Armco Stainless Steel and its applications, write us at the address shown below.

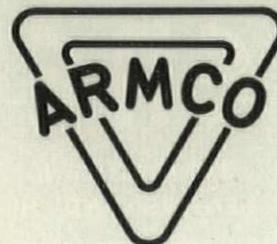


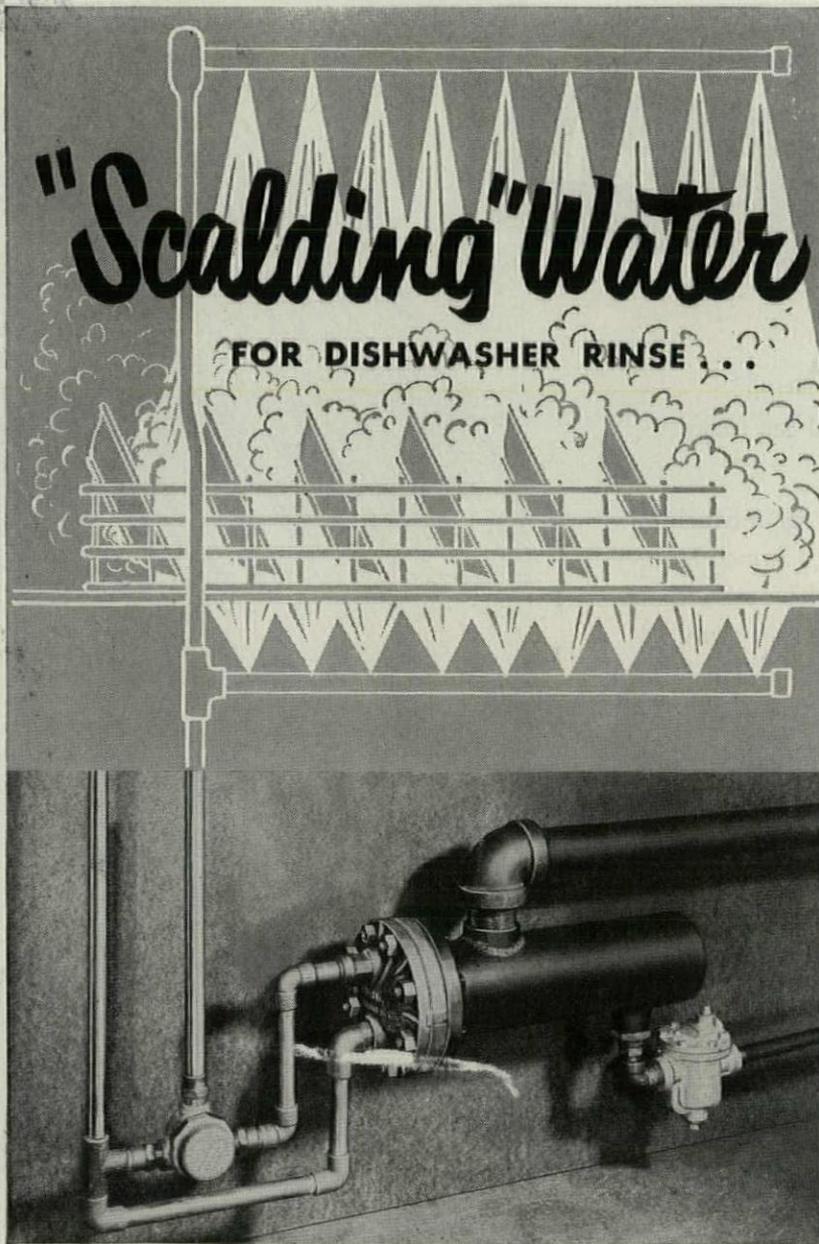
Utility, beauty and economy are embodied in this stainless steel lattice. It holds spandrels and windows, seals them tightly to balance air-conditioning and exclude dirt. Washing-gondola rails are spaced six windows apart.



### ARMCO STEEL CORPORATION

3502 Curtis Street, Middletown, Ohio • Plants and sales offices from coast to coast • Export: The Armco International Corporation





# "Scalding" Water

FOR DISHWASHER RINSE . . .

**. . . at Low, Low Cost!**

General Instantaneous Hot Water Boosters are more compact, lower in cost than any other unit on the market . . . boost hot water from regular supply to 190° for sanitary dishwashing in hotels, restaurants, and hospitals. Moreover, they can be installed right at the dishwasher, wherever steam supply is available

. . . just tap into present hot water line. No storage tank or periodic maintenance required . . . copper and bronze water-ways assure years of trouble-free operation.

Compare the floor space, installation and maintenance costs of General Instantaneous Heaters with other units of equal capacity . . . you'll be amazed at the greater efficiency and savings provided by these dishwasher boosters. Write for Catalog 60. General Fittings Co., Dept. H, 123 Georgia Ave., Providence 5, R. I.

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TANKLESS AND INDIRECT  
WATER HEATERS AND HEATING SPECIALTIES

EVERYTHING IN AIR CONDITIONING

Blowers

*Designers and manufacturers of a complete line of cooling, heating, ventilating and refrigerated air conditioning equipment for jobs you can be proud of*

Write Dept. AF 752

Individual Room Cooling And Heating Units

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MINNEAPOLIS 14, MINNESOTA

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*for* HIGH DEPENDABILITY  
GREATER ECONOMY  
LESS MAINTENANCE

Shepard passenger and freight elevators are quiet, dependable and extremely trouble-free. Their simple yet ruggedly designed mechanism and fool-proof controls require minimum maintenance. Liberal use of ball bearings, practical design and precision manufacture assure long, low-cost service.

**THE SHEPARD ELEVATOR CO.**  
5007-G2 BROTHERTON RD.  
CINCINNATI 9, OHIO

# ELEVATORS

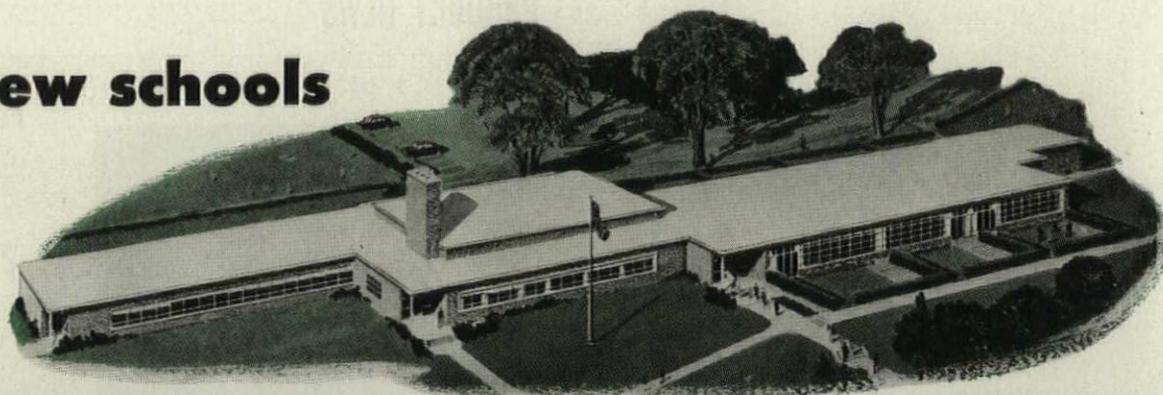
• PASSENGER ELEVATORS

• FREIGHT & SERVICE ELEVATORS

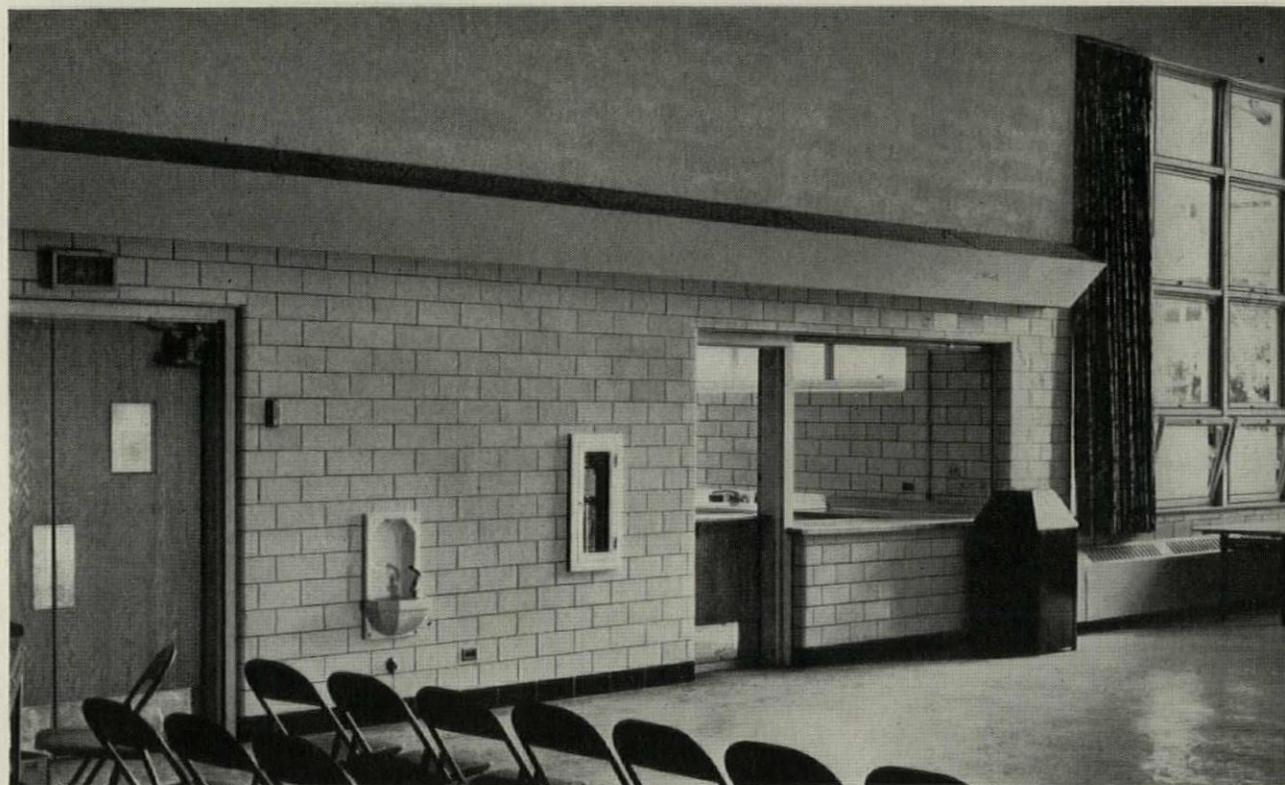
• DUMBWAITERS

# How to make new schools

**Stay  
new**



One of the five prize-winners in a nationwide design competition sponsored by School Executive Magazine, this Yonkers, N. Y. elementary school has walls of Facing Tile wherever the hardest usage can be expected. Architect: Edward Fleagle.



## FOR ALL THE FACTS ABOUT FACING TILE

glazed or unglazed, send for free booklets, "Catalog 52-C," "The Scientific Approach to Color Specification" and "Facing Tile Construction Details." Just address your request to any Institute Member or Dept. AF-6 of our Washington or New York offices.

## LOOK FOR THIS SEAL



It is your assurance of highest quality Facing Tile. This seal is used only by members of the Facing Tile Institute...these "Good Names to Know."

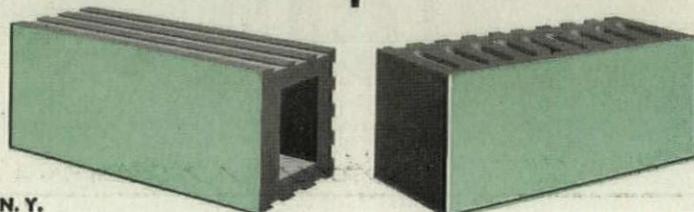
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# Build interiors of Facing Tile

Facing Tile interiors will keep a new school just as you designed it—bright and cheerful for years to come.

With "color-engineered" Facing Tile you can build-in colors that will be *right*—for the life of the building. Facing Tile colors are scientifically designed to help you aid pupils' vision, cut lighting costs, improve efficiency and morale. These colors never fade, never require any type of refinishing.

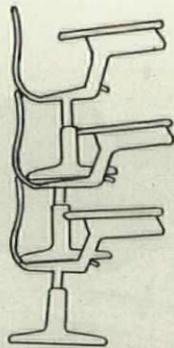
Facing Tile means lasting beauty at minimum maintenance cost. It lets your school clients spend more for education, less for housekeeping. They'll also like the speed of building with Facing Tile. Made in large modular-sized units, it provides a wall and a finish in one economical operation.



## FACING TILE INSTITUTE

1520 18th Street, N. W., Washington 6, D. C. • 1949 Grand Central Terminal, New York 17, N. Y.

## PRODUCT NEWS



Four-legged and pedestal models of the molded plywood classroom chair are available. Both styles have cut out handgrips for easy moving.



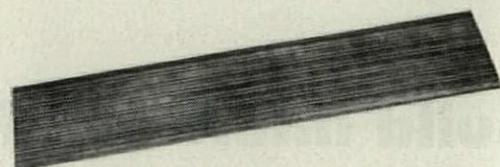
### PEDESTAL DESK AND CHAIR takes little classroom floor space

School planners, administrators and goers each should find features particularly appealing in General's classroom seat and desk. Designed by William James Bargaen, the adjustable unit branches both the chair and work top from a single stem—taking up a minimum of floor space for a janitor to sweep around. Set off center, the cast iron pedestal does not inhibit student knee action; and the base is mounted on a neoprene shoe to keep it on an even keel under a youngster energized by the most potent of breakfast cereals. Molded of birch-finished plywood, the one-piece seat encourages good posture. The work surface, available with either a birch or plastic finish, has an extension to support the student's writing arm (*right or left*) comfortably. Both the seat and desk top may be raised or lowered by means of a ratchet wrench provided in each shipment. The units range in price from approximately \$26 for a stripped junior size to \$34 for a senior model equipped with the works: metal book box, "tip top" inkwell, plastic double arm top, and pencil tray. The larger unit, fully assembled, weighs about 50 lbs. It can be moved easily for varied class activities, and may be stacked for storage.

*Manufacturer:* General School Equipment Co., 44 So. 12th Street, Minneapolis 3, Minnesota.

### DOOR SADDLES made of rugged wood-plastic laminate

The processed wood that made its debut a few years ago on svelte steak knives is now available in a building item—a door threshold. Fabricated of Formica's *Strata-wood*, the new saddle combines the warmth of natural wood with the durability of plastic resins. *Strata-*



*wood* is made of layer upon layer of wood veneer impregnated with melamine. It looks good no matter how it is sliced and has a hard, lustrous finish. Literally "surface" all the way through, the material will not show wear readily. It has excellent dimensional stability and is said to be resistant to moisture



and chemicals. Made in 4, 5 and 6" widths with grooved or plain finishes, the saddle retails for from \$2.19 to \$3.04 per lin. ft. including pre-cutting, mounting screws and drilling.

*Manufacturer:* The Formica Co., 4703 Spring Grove Ave., Cincinnati 32, Ohio.

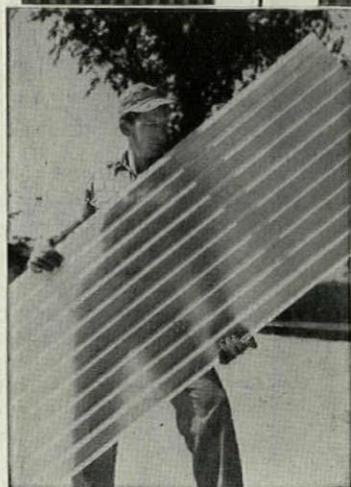
(*Technical Publications page 214*)

# NOW!

# SKYLIGHT

WITH

# RESOLITE



Resolite is shatterproof. It can be worked, sawed, drilled with ordinary tools, and its installation ease is economical of man-hours.

### TRANSLUCENT STRUCTURAL PANELS

Resolite makes large skylight and wallight areas economical for corrugated industrial buildings because no special framing is required, either for support or weatherproofing — it nests with any standard corrugated sheet. Resolite permits substantial savings in plant lighting by its efficient diffusion of daylight through the building interior.

Structurally rugged, chemically immune to weather extremes, and most industrial fumes, Resolite gives long life without protective treatment. Resolite is molded in standard sheet sizes and corrugations, made of polyester resins, reinforced with fiberglass mat — a quality product with controlled uniformity of thickness for strength and durability.

### SPECIAL ARCHITECTURAL USES, TOO!



Interior and exterior decorative beauty is easy to obtain with Resolite's wide variety of colors and corrugated patterns. Store fronts, marquees, bar facings and patio covering are simplified in structure and assembly. While transmitting light freely, Resolite is impervious to vision, making it ideal partitioning for offices, shower stalls and toilet compartments.



Write for free literature

## RESOLITE CORPORATION

ZELIENOPLE, PA.

# What brings customers back again?

You know the answer. It's something "extra" at a fair price. In a store, shopping convenience may be the extra. Or, patrons may be drawn by simple things like friendliness and trusted good taste.

Customers for Otis escalators are the same way. Like shoppers in stores, they try to buy important things wisely, from sellers they trust. Certainly, vertical transportation is a major purchase. It can boost a store's sales. Yet mistakes may cut traffic capacity, and they're very costly to correct.

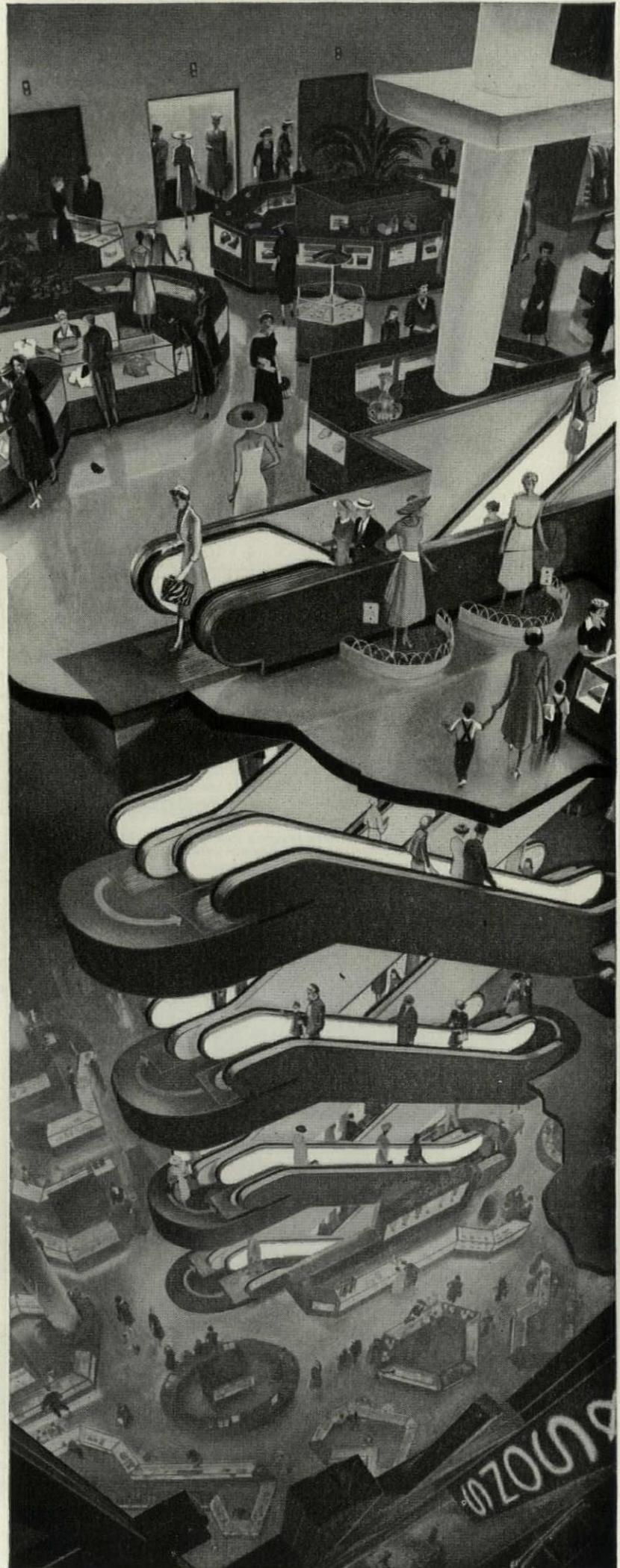
Otis has solved many problems to make an escalator installation as painless as possible. Special features help craftsmen of different trades cooperate. This cuts installation time and cost. We interfere very little with shopping activities, and we get our work done promptly.

Most important, an Otis customer can count on good performance, day after day, for years and decades. The responsibility we assume always means an extra value for you. **Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.**

**Better elevating  
is the business of**

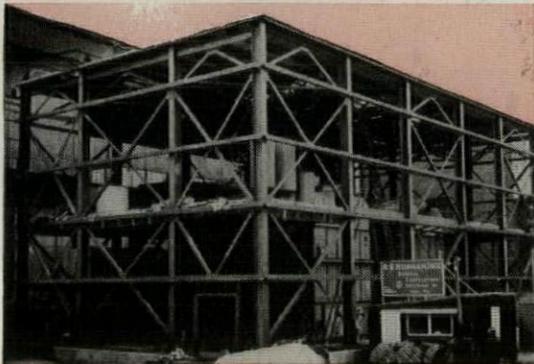


*Escalators • Passenger Elevators  
Freight Elevators • Electric Dumbwaiters  
Maintenance • Modernization*



**USING LIGHTWEIGHT,**

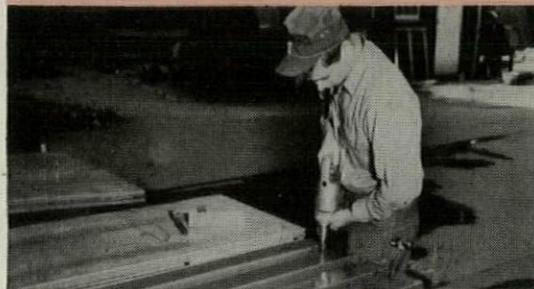
# Complete walls of



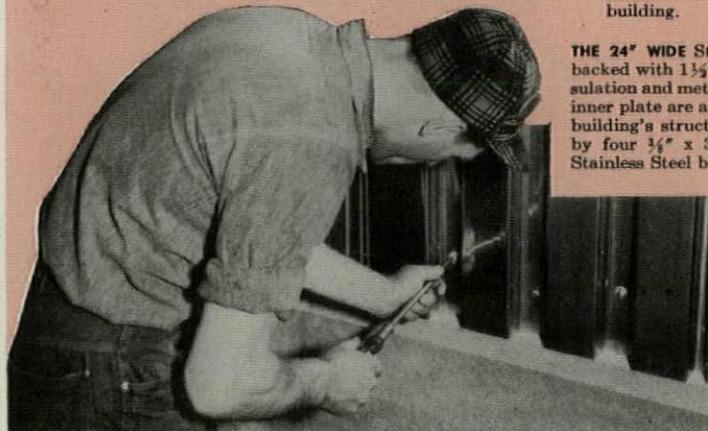
**STRUCTURAL STEEL** framework of the building, ready for installation of insulated Stainless Steel panels.



**PROTECTIVE PAPER** covering that kept the panels completely damage-free during fabrication and shipment is removed with a commercial preparation.



**ON THE GROUND**, panels are drilled for bolts which are used in erection. Two holes are positioned at the top and two at the bottom of each panel.



**THE 24" WIDE** Stainless panels backed with 1½" Fiberglas insulation and metal-coated steel inner plate are attached to the building's structural members by four ¾" x 3" round-head Stainless Steel bolts.

**M**ORE than 7,000 square feet of U·S·S 17 Stainless Steel insulated panels form the complete walls of this new building which is an addition to existing steam generating facilities at the jet engine overhaul line at Olmsted Air Force Base, Middletown, Pa.

These Stainless Steel panels were installed by a crew of eight men in only 11 working days. One group of four men removed the protective paper and drilled the panels, and a second group of four drilled the girts and bolted the panels into place.

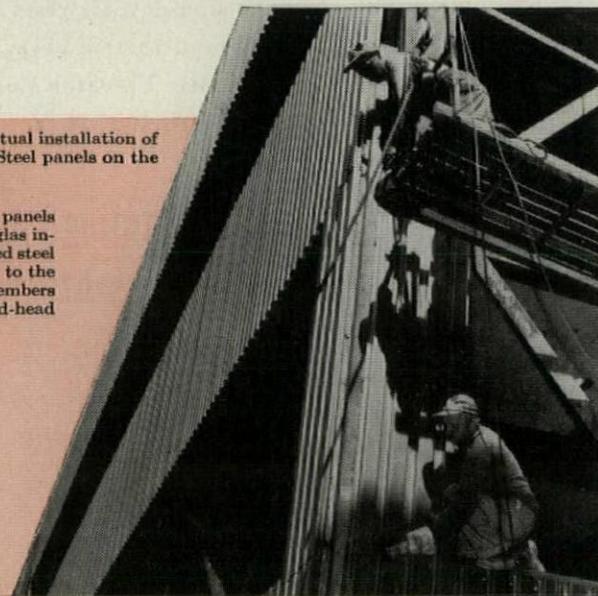
Quick installation like this—in any weather—means much lower labor costs. And that's but a part of the dollars-and-cents advantage of using Stainless Steel panel construction.

In the long run, the durability and corrosion resistance of Stainless Steel walls, the light weight in comparison to conventional building materials, the low "U" value or heat transmission factor all indicate that the cost-per-year will be lower than many building materials that may have a slightly lower initial cost.

Best news of all is that U·S·S 17 Stainless Steel for walls is available now for use on your current projects. You can obtain it without CMP tickets for use on any authorized construction.

No matter what type of building you are designing—factories, mills, warehouses, power plants, service or office buildings—U·S·S 17 Stainless Steel deserves your careful consideration. If you'd like additional information, write for our book, using the coupon below. Remember, United States Steel only produces the Stainless sheet and strip from which panels of this type are made; the panels themselves are fabricated by a number of our customers whose names will be sent you on request.

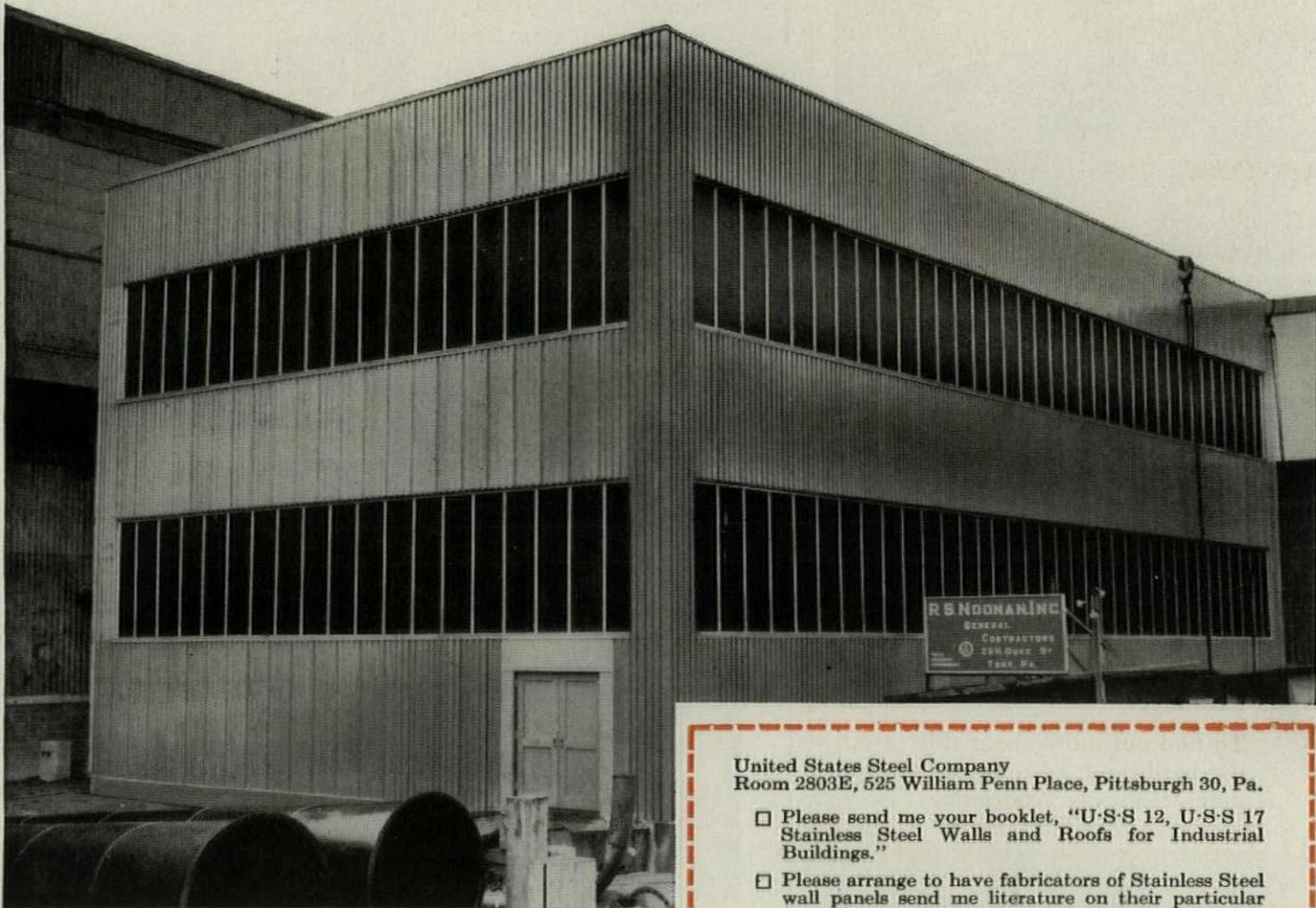
**TWO MEN** handle actual installation of insulated Stainless Steel panels on the building.



**LONG-LASTING, INSULATED BUILDING PANELS**

# U·S·S 17 (Type 430) Stainless Steel

installed in 11 working days



**NEARING COMPLETION** in this photograph is this addition to steam generating facilities at Olmsted Air Force Base, Middletown, Pa. The 86½' by 46' building is sided with panels of U·S·S 17 Stainless Steel. Architect-Engineer: Gannett, Fleming, Corddry & Carpenter, Inc., Harrisburg, Pa. General contractor: R. S. Noonan, Inc., York, Pa. Stainless Steel panels fabricated and erected by H. H. Robertson Co., Pittsburgh, Pa.

United States Steel Company  
Room 2803E, 525 William Penn Place, Pittsburgh 30, Pa.

- Please send me your booklet, "U·S·S 12, U·S·S 17 Stainless Steel Walls and Roofs for Industrial Buildings."
- Please arrange to have fabricators of Stainless Steel wall panels send me literature on their particular type of construction.

Name ..... Title .....

Address .....

City ..... State .....

UNITED STATES STEEL COMPANY, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO  
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS  
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

## U·S·S STAINLESS STEEL

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS



UNITED STATES STEEL

2-1252

# philippine mahogany

for **COMMERCIAL BUILDING**



**BEAUTIFUL**

**PERMANENT**

This modern Philadelphia Beverage Store is a fine example of the advantages of using Philippine Mahogany for interior paneling and trim, and exterior siding. Beauty, minimum upkeep and the ability to withstand the wear and tear of heavy traffic on the inside and exposure to wind, rain and sun on the outside, make Philippine Mahogany ideally suited for commercial building.

To find out more about this versatile hardwood, write to the Philippine Mahogany Association.



**PHILIPPINE MAHOGANY ASSOCIATION, INC.**  
Dept. M, 111 West Seventh Street, Los Angeles 14, Calif.

THE PHILIPPINE LUMBER PRODUCERS' ASSOCIATION, INC. Manila

# LEMCO

## Series 62

MONUMENTAL

### ALUMINUM WINDOWS

are being specified by architects throughout the country for buildings where requirements call for the highest quality in aluminum awning windows. A recent outstanding example is the new plant, office and laboratory building of White Laboratories, Inc. at Kenilworth, New Jersey, incorporating the latest design features, including "Lemco" Series 62 Monumental Aluminum Windows. In planning any architectural project, look to "Lemco"—see our catalog in Sweet's Architectural File or write for descriptive literature.

**CROFT STEEL PRODUCTS, INC.**

16 MARKET STREET . . . . JAMESTOWN, N. Y.

America's Oldest Casement Window Manufacturer



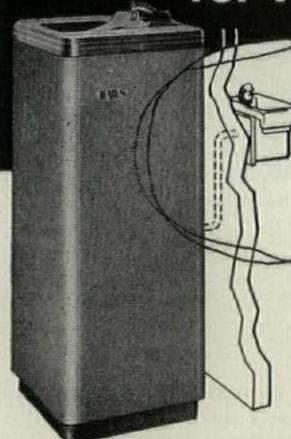
White Laboratories, Inc.  
Kenilworth, N. J.

A. M. Kinney Co.  
Consulting Engineers

Always specify

# HAWS

for Highest Quality



**HAWS Electric Water Coolers** easily adapt to remote installations of **HAWS Drinking Fountains**... thus serving several locations.

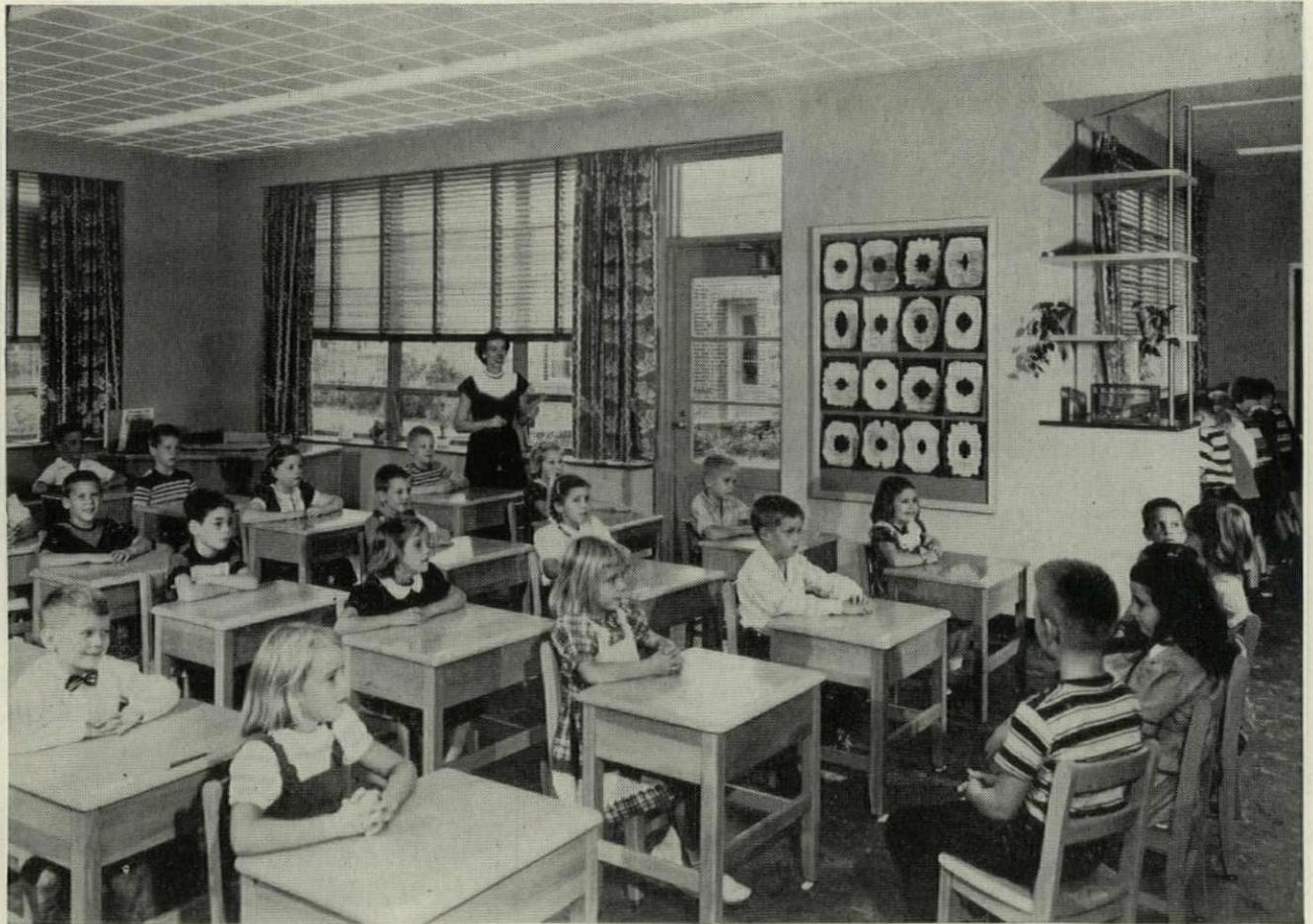
- A COMPLETE LINE of coolers, fountains, faucets, equipment, filters and accessories.
- A reputation for reliability since 1909.
- Check in Sweets, or write for complete HAWS catalog.

**HAWS DRINKING FAUCET CO.**

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Agents and Sales Representatives in All Principal Cities

**Building:**  
Penn Valley School,  
Lower Merion, Pa.

**Architects:**  
Walter Kirtcher &  
Livingston Smith,  
Philadelphia, Pa.



Classroom in Penn Valley School, Lower Merion, Pa. Over 54,000 sq. ft. of Fiberglas Acoustical Tile were used in this building.



*individuality...quiet...*  
*fire safety* for little children

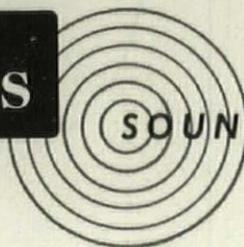


The high objectives of this outstanding school included self-contained classrooms, work alcoves and individual play yards for key age groups . . . all in character with the well-to-do community served.

One important must was sound control at *reasonable cost* that offered *fire safety* as well as high acoustical value . . . and this was found in Fiberglas\* Acoustical Tile. Its low cost, non-combustibility and sound absorption qualities were supplemented by other important values . . . high light reflection, dimensional stability and lightweight . . . in all, a combination of values that is unique.

For data on Fiberglas Sound Control products, get in touch with your Fiberglas Acoustical Contractor listed in the yellow pages. Or write to: OWENS-CORNING FIBERGLAS CORPORATION, Dept. 67-G3, Toledo 1, Ohio.

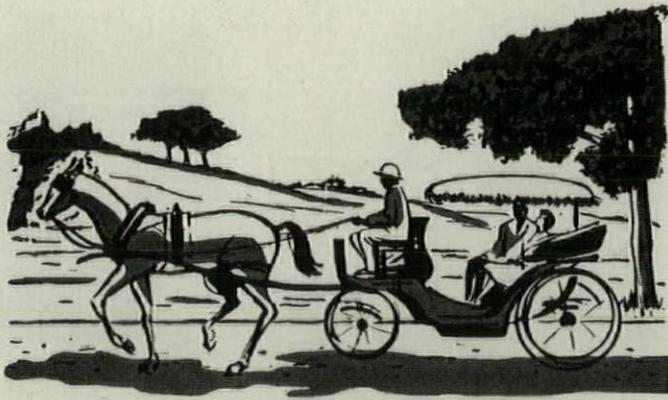
OWENS-CORNING  
**FIBERGLAS**  
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**SOUND CONTROL PRODUCTS**

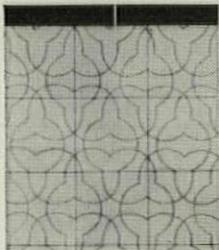
\*Fiberglas (Reg. U.S. Pat. Off.) and Sonofaced and Noise-Stop are trademarks of Owens-Corning Fiberglas Corporation.

Textured, Perforated and Sonofaced\* Acoustical Tile • Ceiling Board • Noise-Stop\* Baffles

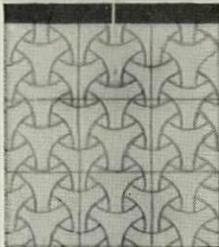


ROBERTSON

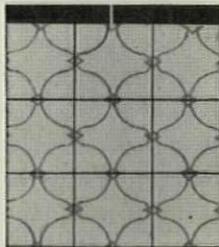
# Bermuda TILE



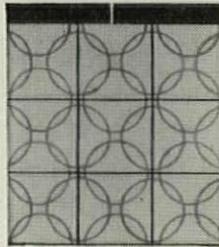
Bermuda Tile No. 1  
3 3/4" x 4 1/4"



Bermuda Tile No. 2  
3 3/4" x 4 1/4"



Bermuda Tile No. 3  
4 1/4" x 4 1/4"



Bermuda Tile No. 4  
4 1/4" x 4 1/4"

Its Early American decorative charm offers an unusual design freedom and a pleasing change from the lackluster monotony of solid colors. Four delectable colors and four refreshing patterns for distinctive and effective combinations. Write on your letterhead for free samples.

*4 colors*

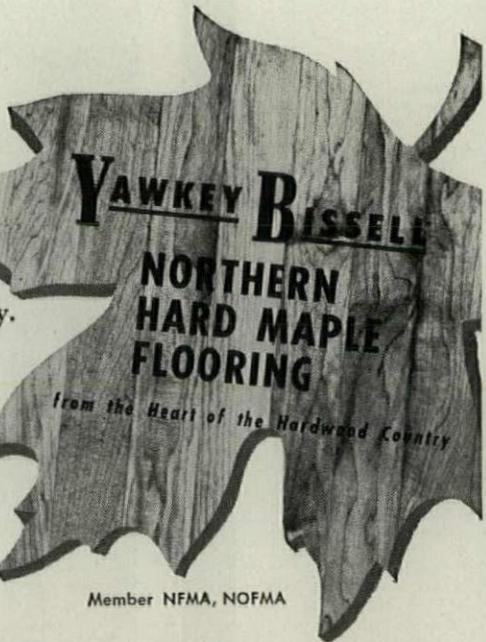
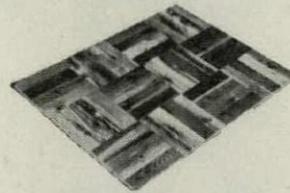
GRAY • PEACH  
TAN • GREEN

**Robertson**  
MANUFACTURING COMPANY  
**TILE DIVISION**  
Trenton 5, N. J.

BERMUDA TILE • FLOOR TILE  
SNOWHITE TILE • WALL TILE

Your requirements for block and strip hardwood flooring (Northern Maple, Oak and Birch) can be met most satisfactorily from our well-balanced inventory.

Ask about the new Y-B Mixed Hardwood "Economy Blox" . . . the most distinctive, attractive and economical hardwood block flooring you have ever seen!



Member NFMA, NOFMA

"Economy Blox" are made up from carefully selected mixed hardwoods . . . northern maple, birch and oak . . . in all grades.



RALPH C. HARRIS, ARCH., CENTRAL MOTOR FREIGHT ASSN., CHICAGO

### Background Sometimes Helps

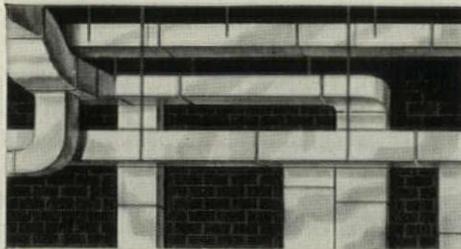
. . . and this K & F Photomural installation shows just how important it can be. Whether your problem is transforming the atmosphere of a restaurant, office, home, hotel lobby or other commercial interior, K & F Photomurals are the one medium that meets most decorative problems with solutions limited only by the designer's imagination.

Our brochure, "Making Blank Walls Live," brings many of these applications to you in full color and complete detail. It's yours for the asking. Write today.

**KAUFMANN & FABRY CO.**  
MB-3 425 S. Wabash Avenue, Chicago 5, Ill.

## Architectural Service

### Better Ductwork



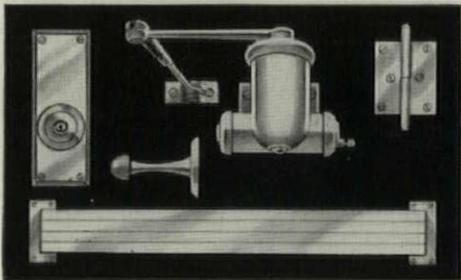
It's smart to specify aluminum for ductwork because, at one-third the weight of other metals, aluminum cuts tons from added weight to reduce structural loads. Aluminum will not rust from condensation in cooling systems . . . is a natural insulator. Non-sparking aluminum also is ideally suited to the removal of inflammable and explosive dust and fumes in industrial installations. And, with all of these advantages, aluminum ductwork installation is easier—usually costs less, particularly when handling larger sections.

### Curtain Walls and Spandrels

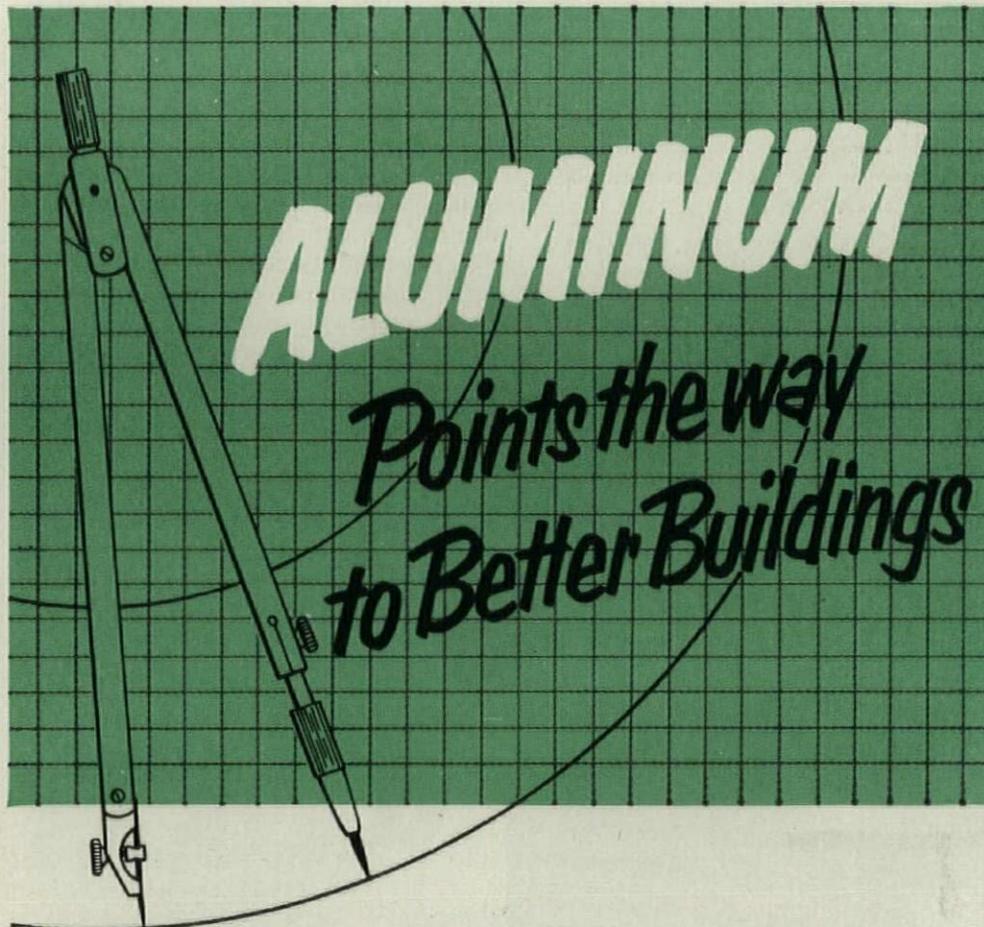


Corrosion-resistant aluminum curtain walls and spandrels retain their attractiveness for years and years. Lightweight for minimum building load and easy handling of large sections; choice of sheet, extruded or cast designs; corrosion-resistance and freedom from destructive rust; high heat reflection; and the wide range of durable, decorative finishes all make aluminum the material of first consideration for curtain walls and spandrels. Here again, aluminum's unlimited flexibility compliments the design skill of experienced architects.

### Attractive Hardware



Aluminum hardware completes the white metal theme in modern design. Like other aluminum trim, the natural color of aluminum hardware, in a wide range of finishes, harmonizes with all decorative schemes. Aluminum hardware won't rust or corrode—stays bright and attractive. A full line of aluminum hardware—closers, escutcheons, knobs, strike plates, push bars, kick plates, hinges, stops—is available. Write to Reynolds for list of aluminum hardware manufacturers and for information on any other architectural aluminum applications.



## Put Reynolds Architectural Service to Work on Your Designs



Aluminum, the modern metal, points the way to better buildings at lower cost . . . and, Reynolds Architectural Service points the way for architects to get the most from aluminum. Reynolds Architectural Service

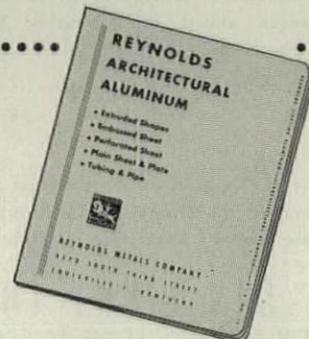
is available to architects for the asking. It's a specialized service set up to work with you on aluminum design problems.

Aluminum extruded shapes and tubing, structurals, sheet and other mill products point the way to better building through unlimited design flexibility, wide range of finishes, lightweight, great strength, resistance to rust and corrosion and low cost. Remember—*aluminum is the only mass-produced metal that costs no more today than before World War II.*

Take advantage of Reynolds Architectural Service on special designs, but be sure to specify aluminum for all of its advantages in standard products, too. For complete information call the Reynolds office listed under "Aluminum" in your classified telephone directory or write direct.

### FREE BOOKLET!

Send for your copy of Reynolds Architectural Folio today! A complete, up-to-date kit on architectural aluminum. In loose leaf form with drawings for direct tracing. Free when requested on business letterhead. Write to Reynolds Metals Company, 2528 So. Third St., Louisville 1, Ky.



# REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND

## TECHNICAL PUBLICATIONS

**SANDWICH CONSTRUCTION.** Symposium on Structural Sandwich Constructions, Special Technical Publication No. 118. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa., 120 pp. 6" x 9". \$2.

The strong lightweight laminates that have attracted aircraft, refrigeration and building industries (in that order) were the subject of a significant symposium held by the American Society for Testing Materials last year.

To acquaint a wider audience with the authoritative papers presented and the discussions that followed, ASTM has put them all down in book form. MIT's A.G.H. Dietz, chairman of the committee which sponsored the study, states in the introduction: "Structural sandwich constructions, as usually employed, consist of laminated materials in which the faces are relatively thin, strong, and dense, whereas the cores are relatively weaker than the

faces. The more or less obvious objective is to obtain a structure which is strong and stiff because of its construction, but is at the same time light in weight, or has other desirable attributes not obtainable with the components used singly."

Among the articles contained in the book are: *Developments and Trends in Lightweight Composite Construction*, *Strength of Sandwich Construction*, *Paper Honeycomb as a Core for Structural Sandwich Construction*, *Aluminum Honeycomb Sandwich Construction*, *Developments in Building Panels Having Inorganic Cores*, and *Fabrication Techniques*. Illustrated with charts and graphs and footnoted with bibliographical references, the papers should hold particular interest for designers of homes and large buildings.

**INSTRUMENTS.** Dwyer Instruments for Science and Industry. F. W. Dwyer Mfg. Co., 317 S. Western Ave., Chicago 12, Ill. 12 pp. 8½" x 11".

Air filter gauges, hook gauges and smoke gauges are featured in this catalogue on precision instruments.

**ELEVATORS.** Otis Colors. Otis Elevator Co., 260 Eleventh Ave., New York 1, N. Y. 6 pp. 2½" x 8".

To acquaint architects and contractors with the wide range of baked enamel finishes readily available for elevator car interiors and hoistway entrances, the manufacturer has printed this folder with 48 color swatches.

**ROOFS.** Specifications for Hallemite Cold Process Built-up Roofs. The Hallemite Manufacturing Co., 2446 West 25th St., Cleveland 13, Ohio. 6 pp. 8½" x 11".

Step-by-step instructions for laying cold process built-up roofs (of one and two plies) are contained in this specification booklet.

**WATERPROOFING.** Monoseal Liquid Water Prellent. The Monroe Co., Inc., 10703 Quebec Ave., Cleveland 6, Ohio. 2 pp. 8½" x 11".

How Monoseal, a silicone base waterproofing, penetrates into masonry surfaces and coats the pore walls is described in this recent bulletin. Methods for applying the invisible coating and some test results are illustrated.

**FLOORING.** Mulsomastic Flooring. The Tremco Mfg. Co., 8701 Kinsman Road, Cleveland, Ohio. 4 pp. 8½" x 11".

Wearing and comfort advantages of resilient asphalt mastic floors are discussed in this illustrated brochure. Described as water, fire, acid, and vermin resistant, the lightweight mastic topping is said to be capable of withstanding heavy traffic over a considerable length of time. Its use as an underlayment for asphalt tile and other floor coverings is also detailed.

(Continued on page 220)

## When you buy or specify Gas Unit Heaters LOOK FOR THESE 4 Features



The four features pictured at the right typify today's finest Gas Unit Heater Construction. When you buy or specify Unit Heaters that have these features, you can be sure that your customers are going to enjoy the best of automatic gas heating.

Humphrey engineers originated these design improvements and numerous others, in the course of their continuous program of research aimed at increasing Unit Heater dependability and economy.

Today, every one of these superior features is a Humphrey exclusive, available only on Unit Heaters made by General Gas Light Co.



It is this kind of construction that has earned the Humphrey its reputation as the world's finest Gas Unit Heater.

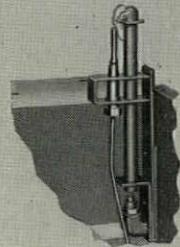
**GENERAL GAS LIGHT COMPANY**  
KALAMAZOO, MICHIGAN

*Humphrey*

**AUTOMATIC  
GAS**

**UNIT HEATERS**

1



### NON-CLOGGING PILOT

Most dependable pilot ever developed for Gas Unit Heaters.

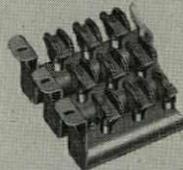
2



### TILTING FRONT

Directs heat downward without restricting the flow of air.

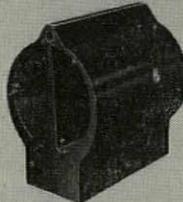
3



### DUAL FLAME BURNER

With Stainless Steel burner tips, assures high efficiency plus long service.

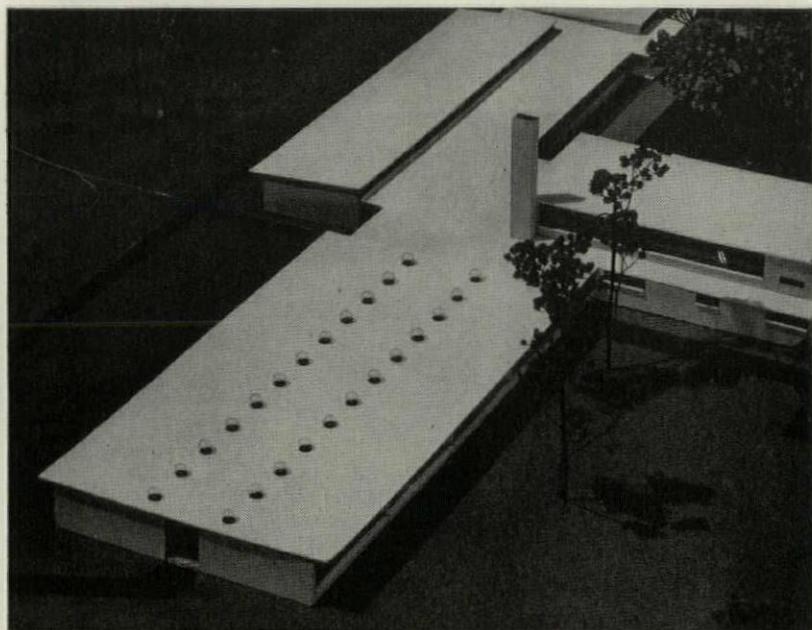
4



### FREE-FLOW HEAT EXCHANGER

Provides maximum radiating area, plus freedom from clogging. No tubes to clean.

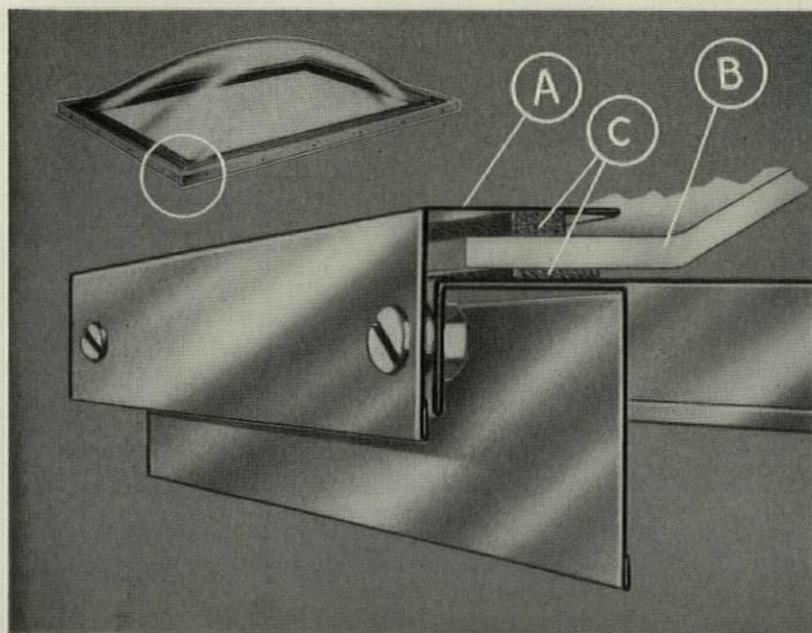
# WHY specify Wascolite Skydomes for daylighting?



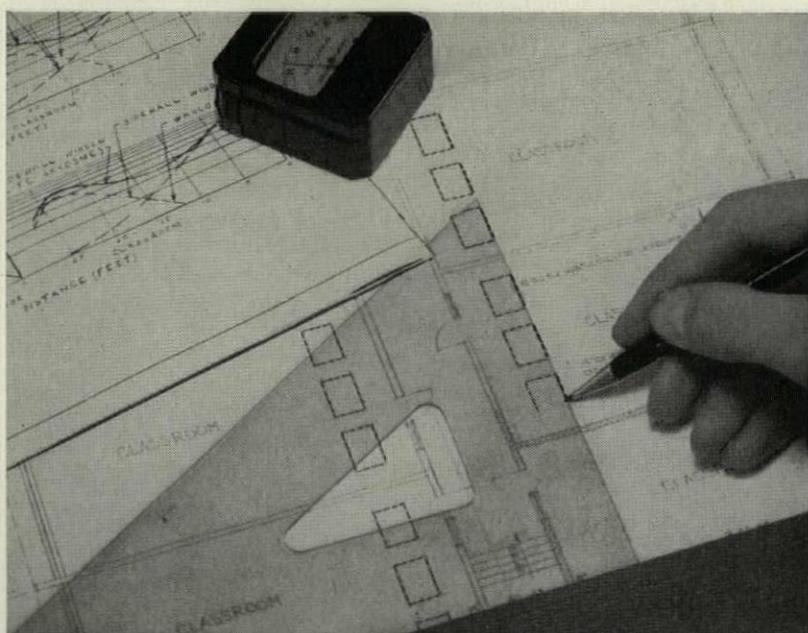
**EXCELLENT LIGHTING PLUS BIG SAVINGS** are reasons of The Architects Collaborative, Cambridge, Mass., for specifying Skydomes in Flagg St. Elementary School, Worcester, Mass. (model shown). They say: "Not only do Skydomes give very efficient lighting but, by making a flat roof and low ceiling possible, their use effects a reduction in cubage of the structure and consequently definite economies."



**WHEN PRODUCT QUALITY DEPENDS ON DAYLIGHT,** Skydomes are indispensable to many manufacturing processes. Here, Skydomes replaced a wood-and-glass penthouse at the Cold Spring Bleachery, Yardley, Pa., because they assured abundant, glarefree natural light for the critical task of shade matching during textile dyeing.



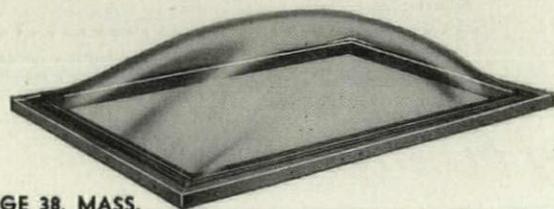
**SUPERIOR ENGINEERING** assures trouble-free performance from weather-proof, shatter-resistant Skydomes. Method of protecting otherwise exposed edge of acrylic plastic dome is typical: retaining frame (A) encloses plastic (B) yet allows plastic to "float" freely between neoprene gaskets (C) as it expands and contracts with temperature changes. Plastic must "float" to adapt unit for wide climatic range.



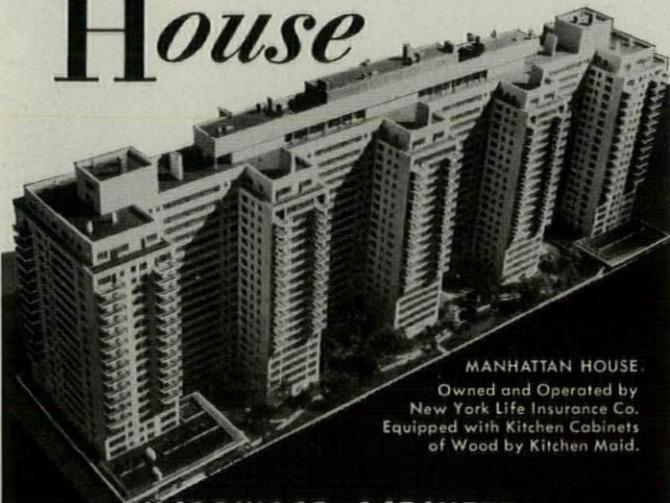
**EASY FOR ARCHITECT** to achieve correct daylighting with aid of Wasco Daylight Engineering Service. Just send floor plan of project and tell lighting requirements; Wasco recommends number, type, size and spacing of Skydomes to insure correct lighting for the specific task. Light distribution and illumination data included. No obligation.

**WASCOLITE** <sup>®</sup> **SKYDOMES**  
 PATENT PENDING

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Magnificent Manhattan House, the remarkably modern residential apartment project recently completed in midtown New York, contains many notable advances that contribute to the comfort, pleasure and convenience of its occupants. It is not surprising, therefore, that the owners selected Kitchen Maid Flo-Line cabinets of



Kitchen Maid builds kitchens for apartment houses, residences, schools, hospitals and other public buildings. Above—a typical residential installation.

warm, friendly wood. By their use in scores of modern apartment buildings and thousands of fine residences throughout the land, Kitchen Maid has proved their superiority time and again. Builders appreciate especially, the modern Flo-Line styling, the fine cabinet work, the flexibility and permanency of wood construction, and

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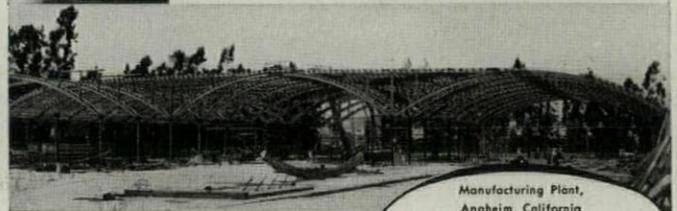


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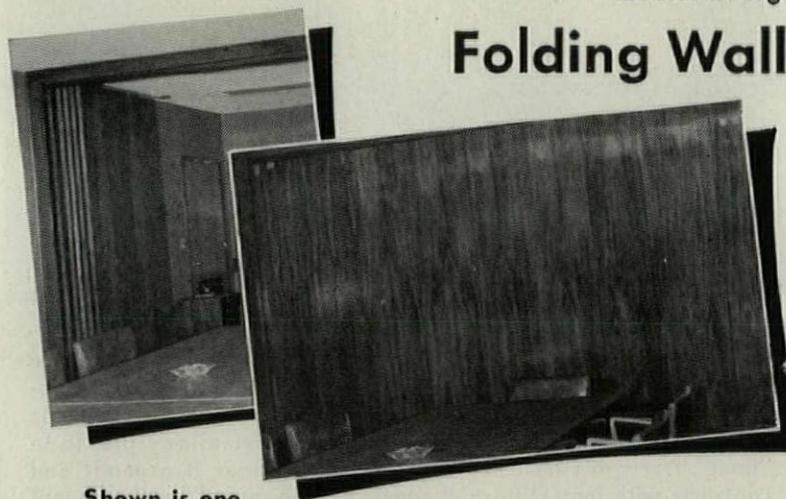
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**INSTALLATIONS**

**Fairhurst**  
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Shown is one of five Fairhurst Unitfold folding walls in the office building at 260 Madison Ave., NYC. Independent specification by three leading New York architects—Carson & Lundin, George B. Post & Sons, and Kenneth H. Rippen Co.—emphasizes the wide acceptance of Fairhurst installations for a variety of office uses.

Above: Commercial Solvents Corp.; Top illustration shows units in stacked position. Architect: Kenneth H. Rippen Co.

**John T. Fairhurst Co., Inc.**

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Some of the cracks shown in the picture at right are 2 inches wide! Above, they've disappeared, covered by a coating based on VINYLITE Brand Resins.

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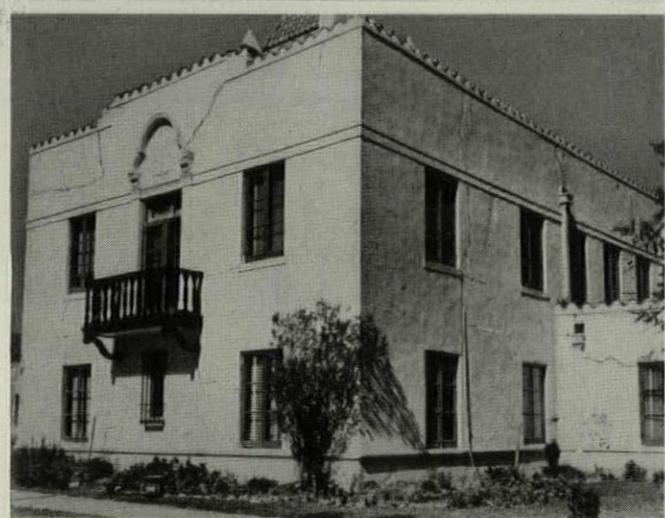
Here's a coating that covers surfaces with a tight, smooth elastic skin—bridges over cracks and scars—shuts out weather, moisture and fungus!

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With a wide variety of colors, it makes a decorative, long-wearing vapor-sealing finish for interiors and exteriors alike. It

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Whether you're tackling a giant structure or a bedroom—a hospital, school, bakery, or public building—protect it, make it look better, keep it on the job longer. Specify this coating based on VINYLITE Brand Resins. Correctly applied to new buildings or old, its tough, impervious skin will hold maintenance costs down, for it has the unique properties of VINYLITE Brand Resins that are so useful to scores of products in defense and basic industry. For more information and a list of suppliers, write Dept. NO-14.



Data and photo on Dennis Chemical Co. and R. M. Hollingshead Corp. coatings, courtesy Surface Engineering Co., Wichita, Kansas.

# Vinylite

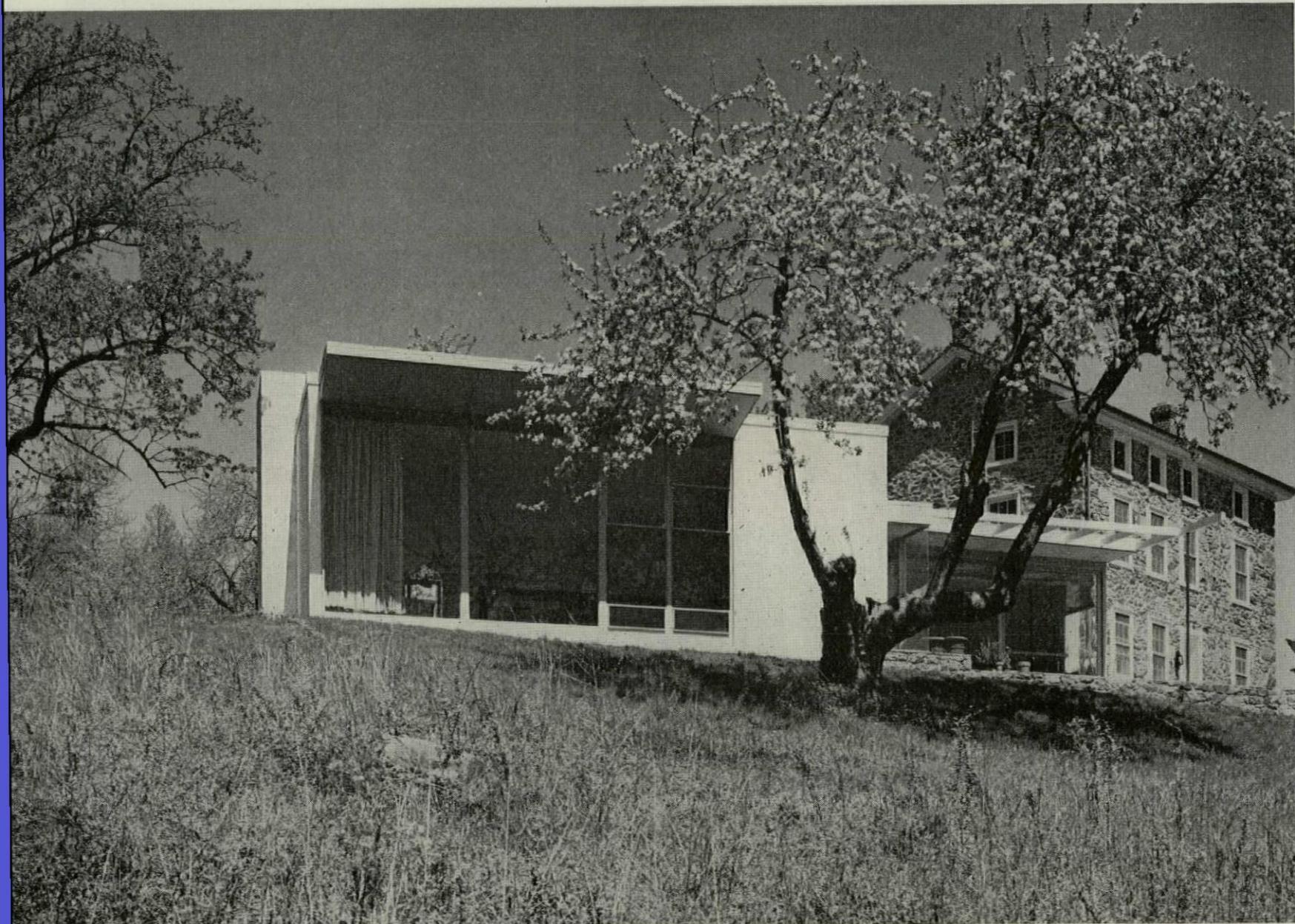
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*Oscar Stonorov, architect.*

*Cortlandt V. D. Hubbard, photo.*

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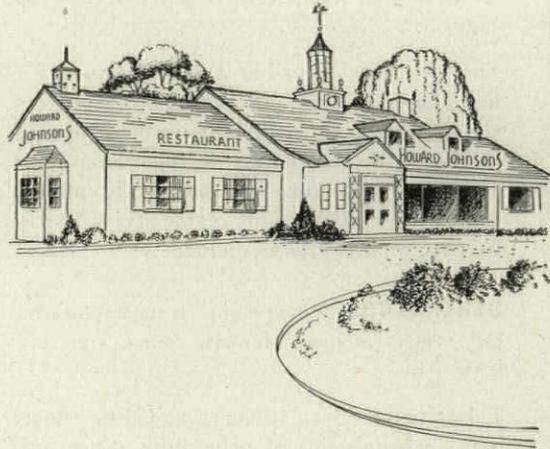
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**ACOUSTICAL  
MATERIALS  
AT WORK**



Main Dining Room with Armstrong's Travertone.

**HOWARD JOHNSON RESTAURANT, Milwaukee, Wisc.**

*Architect:* Grassold & Johnson

*Associate Architect:* Joseph A. Cicco

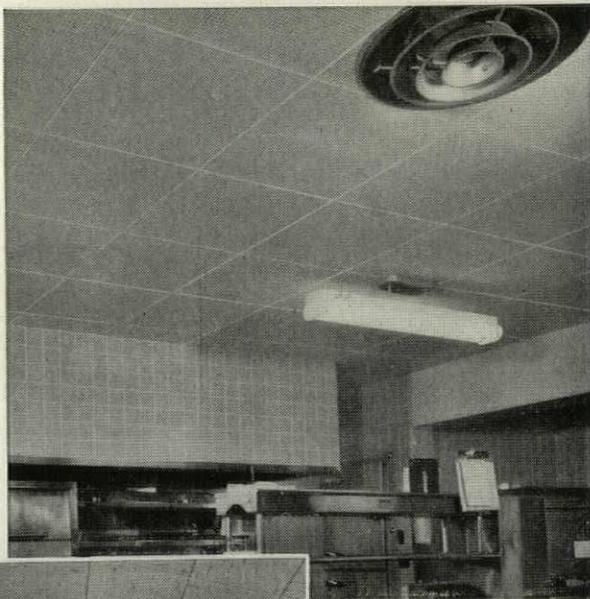
*General Contractor:* Peters Construction Company

*Acoustical Contractor:* DeGelleke Company, Inc.

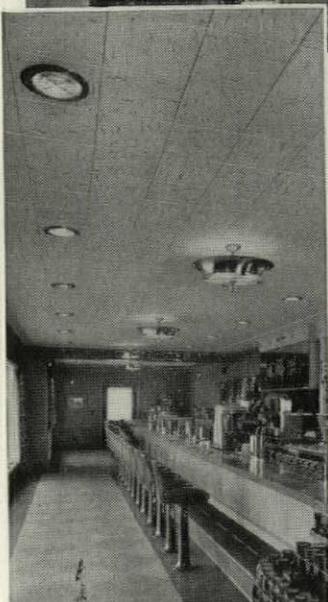
A restful graciousness strikes the keynote in the dining room of this new Howard Johnson Restaurant. Missing is the disturbance of clattering dishes and trays encountered so often in restaurants. Here, patrons are welcomed into quiet, attractive surroundings. The acoustical ceiling of Armstrong's Travertone contributes much to this pleasant atmosphere.

Armstrong's Travertone is a beautifully fissured, mineral wool tile. Good looks and high acoustical efficiency, however, were not the only reasons for its choice. Incombustibility, better light reflection, and easy installation were other important factors in its favor.

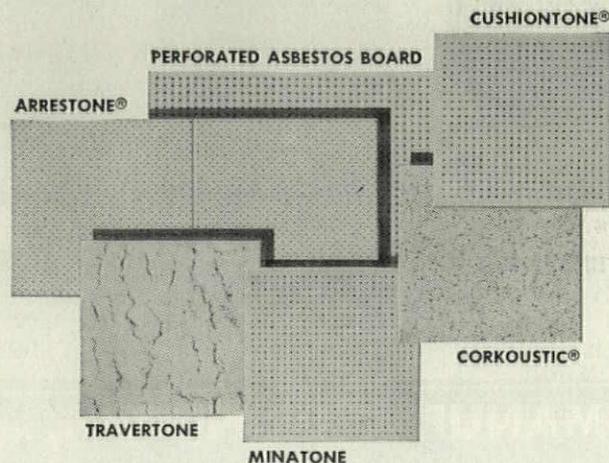
Your Armstrong Contractor will be glad to give you full details on the complete line of Armstrong's Acoustical Materials. For the free booklet, "How to Select an Acoustical Material," write to Armstrong Cork Company, 5407 Stevens Street, Lancaster, Pennsylvania.



Above: Armstrong's Perforated Asbestos Board, used in the kitchen, is high in acoustical efficiency, easily maintained, and will withstand the deteriorating effects of steam.



Left: Armstrong's Travertone was used to sound condition the counter area as well as the main dining room.



**ARMSTRONG'S ACOUSTICAL MATERIALS**

**FLOOR MAINTENANCE.** American Floor Finishing and Maintenance Material. The American Floor Surfacing Co., Toledo 3, Ohio. 38 pp. 9" x 11".

Comprehensive reference data on the preparation, finishing and maintenance of floors is available to builders and architects. Compiled in a convenient loose-leaf folder, the bulletins cover care for such flooring materials as wood, cork, concrete, terrazzo, asphalt tile, rubber

tile, plastic tile and linoleum. Specification sheets on the manufacturer's sealers and floor finishes, and a 3' long data chart on coverage and drying time are also contained in the file folder.

**WIRING.** Jefferson Transformers for Mercury Vapor Lamps, Bulletin 521-5. Jefferson Electric Co. Bellwood, Ill. 16 pp. 8½" x 11".

Indoor and outdoor types of transformers for

operating 400 w. mercury lamps are described in this two-color bulletin. Diagrams show mounting methods and dimensions.

**WIRING.** 20 Questions and 20 Answers on Safety Mineral Insulated Wiring. General Cable Corp., 420 Lexington Ave., New York 17, N. Y. 4 pp. 8½" x 11".

This brochure describes a self-contained wiring system. Made up of solid conductors, spaced and insulated by noncombustible magnesium oxide, the wiring is reported to have exceptional moisture and heat resistance. A complete tabulation of cable types, sizes, weights, and lengths is included.

**GENERATORS.** Katolight. Kato Engineering Co., 1415 First Ave., Mankato, Minn. 4 pp. 8½" x 11".

This circular gives capacity and dimensional data on Kato's line of generators, converters, and power plants. A portable AC lighting plant is also pictured and described.

**VALVES.** Engineering Data Bulletin No. 851. Marine and Industrial Products Co., 3731-35 Filbert St., Philadelphia 4, Pa. 16 pp. 8½" x 11".

Contained in this bulletin are charts which show the capacity required from safety valves to give complete protection in cases of pressure reduction valve failure. Many models of Mipco valves are illustrated and tables give capacities at various pressures.

**FILTERS.** Viscous Panel, Range Hood and Spray Booth Filters. Bulletin #100. Dollinger Corp., 11 Center Park, Rochester 3, N. Y. 8 pp. 8½" x 11".

Illustrated with photographs and performance charts, the bulletin presents engineering data for various types of dust filters.

**ROOF DECK.** Airtherm Decking. Airtherm Mfg. Co., 700 S. Spring, St. Louis, Mo. 10 pp. 8½" x 11".

Redesigned steel roof deck is described in this data sheet. Reporting that roofs constructed with the new fireproof deck have a greater load-bearing capacity and therefore permit longer spans than earlier *Airtherm* types, the booklet gives complete details on sizes, weights, stresses and physical properties of the improved deck.

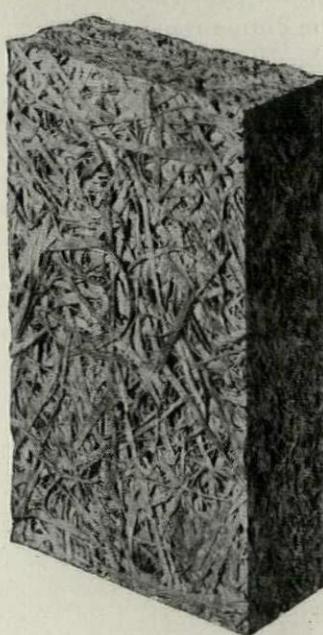
**WATER REPELLENT.** Flexseal, the Invisible Raincoat for Masonry. Building Products Division, Flexrock Co., 36th and Filbert Streets, Philadelphia 4, Pa. 4 pp. 4" x 10".

Technical data and instructions for applying *Flexseal* clear coating are presented in this two-color bulletin. A silicone-base water repellent, the compound is said to form a penetrating protective film over masonry.

# POREX WALL FURRING

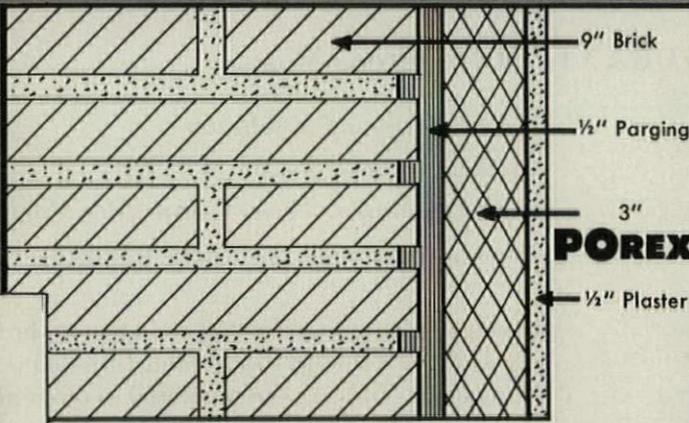
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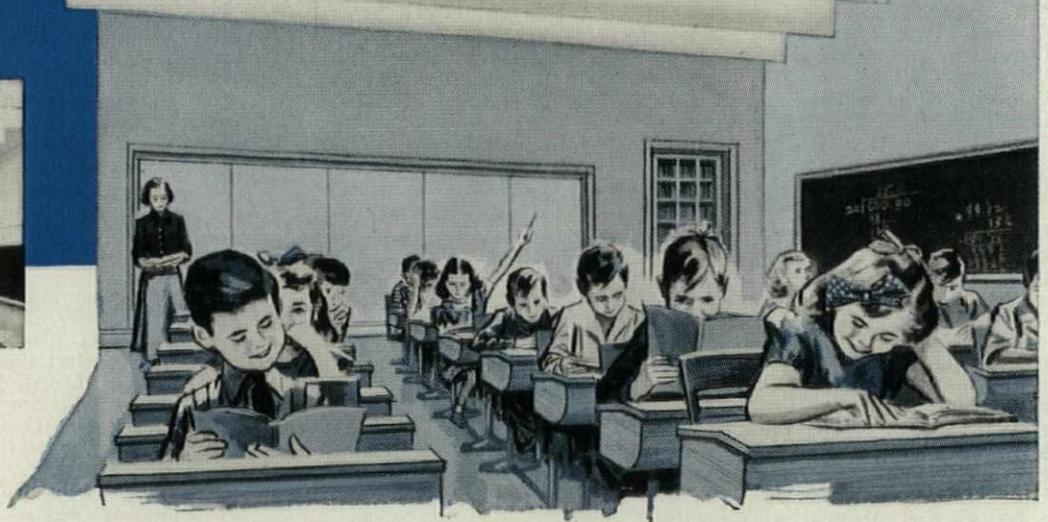
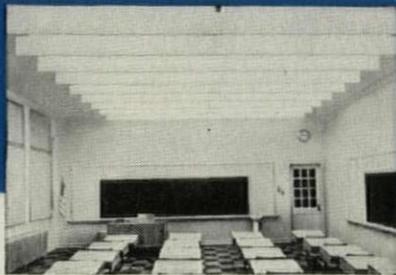
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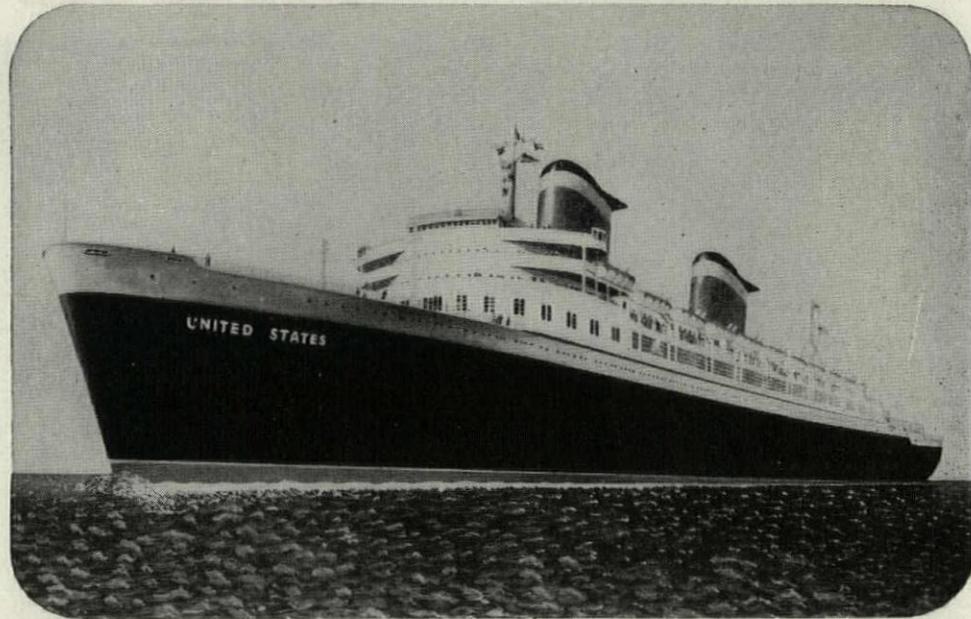
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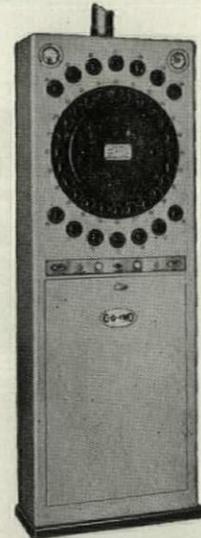
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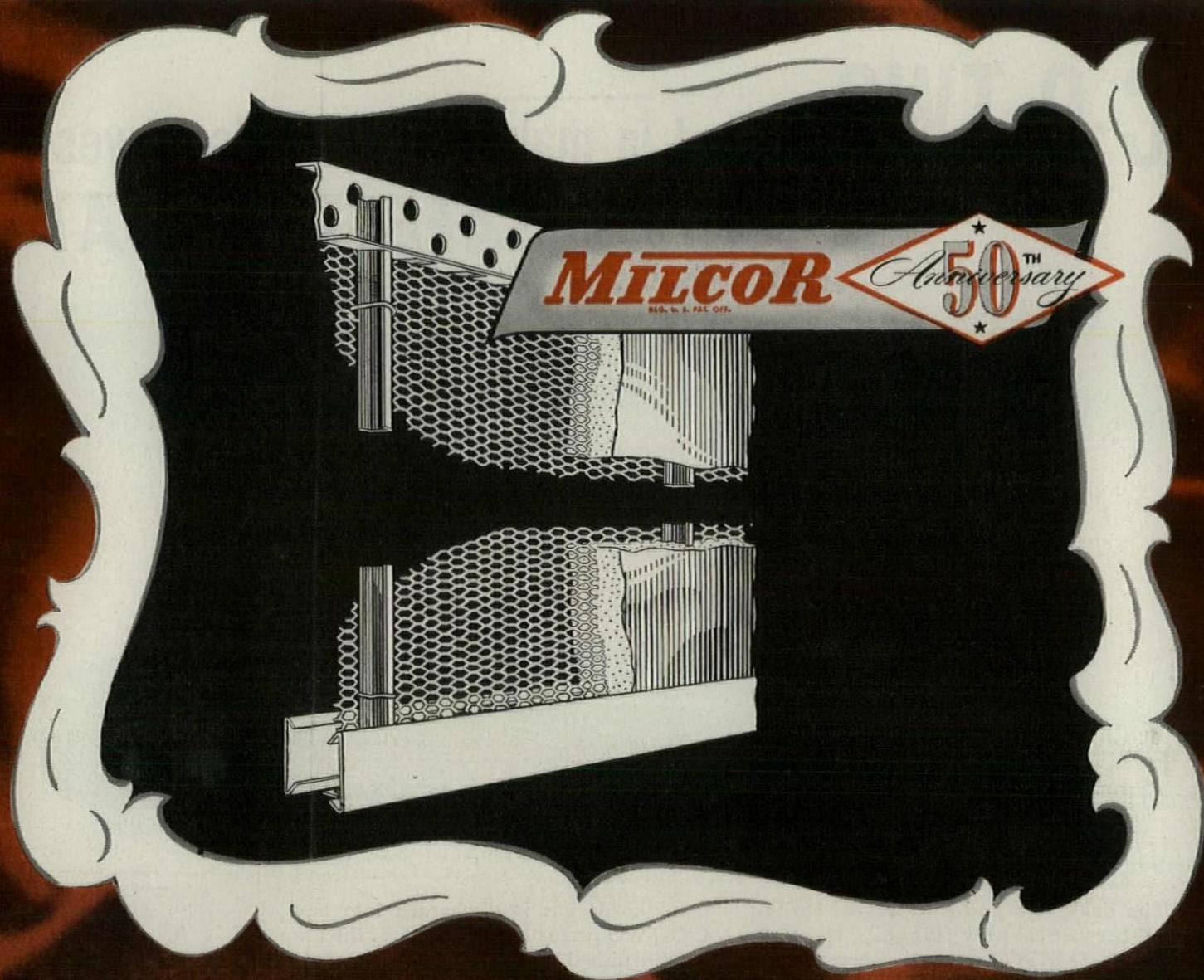
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# Modern Buildings...

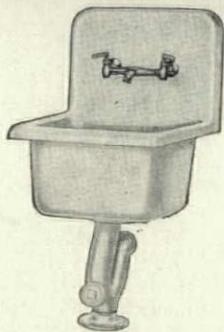
East Greenbush School  
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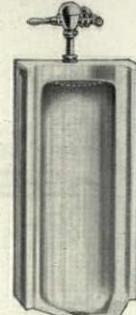
Model E-3290-A—Vitreous China Lavatory with fittings illustrated. Concealed overflow. Sizes: 22" x 18" and 24" x 20".



Service Sink E-2700-M—Acid Resisting, Enamelled Cast Iron with iron trap standard to floor or wall, as required. Sizes overall: 22" x 18" and 24" x 20". Depth inside: 13".



Sanus E-5910-V—Vitreous China, Syphon-Jet Closet, with elongated rim. 1 1/2" top inlet for flush valve, as specified. Projection from wall, 28 1/4". (With round front, projection from wall, 26 1/4".)



E-8001-V—Vitreous China Stall Urinal. Straight sides. Use singly or in battery. Width, 18", height from floor, 38", height over-all, 42". 3/4" top inlet for flush valve, as specified.

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