MAGAZINE OF BUILDING

architectural **forum** edition

June 1952

This office was planned for permanent flexibility

Thanks to its walls, this beautiful office is a permanently practical investment. As space requirements vary in coming years, everything in this office—*including the walls*—can be moved or rearranged in a matter of hours.

Here, indeed, is the solution to future expansion problems for *this* company, and for the thousands of other American businesses—commercial, industrial and institutional—which now enjoy the many benefits of Hauserman *Movable* Interiors.

Today the demand for Hauserman *Movable* Interiors is the greatest in our almost 40-year history. Although production expansion already is underway, we urge you to *plan now*—as far in advance as possible—in order to insure delivery and erection of your clients' Hauserman installations *on schedule*.

Your nearby Hauserman Representative will gladly furnish you with complete information . . . or write *today* to The E. F. Hauserman Company, 7121 Grant Avenue, Cleveland 5, Ohio.

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Korweld* — the non-metallic panel construction which combines the best features of *all* types of interior partitions—is an *exclusive* Hauserman development. Ask your Hauserman Representative for facts about this revolutionary new product.

*Trademark

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permanent flexib
wherever
space needs var

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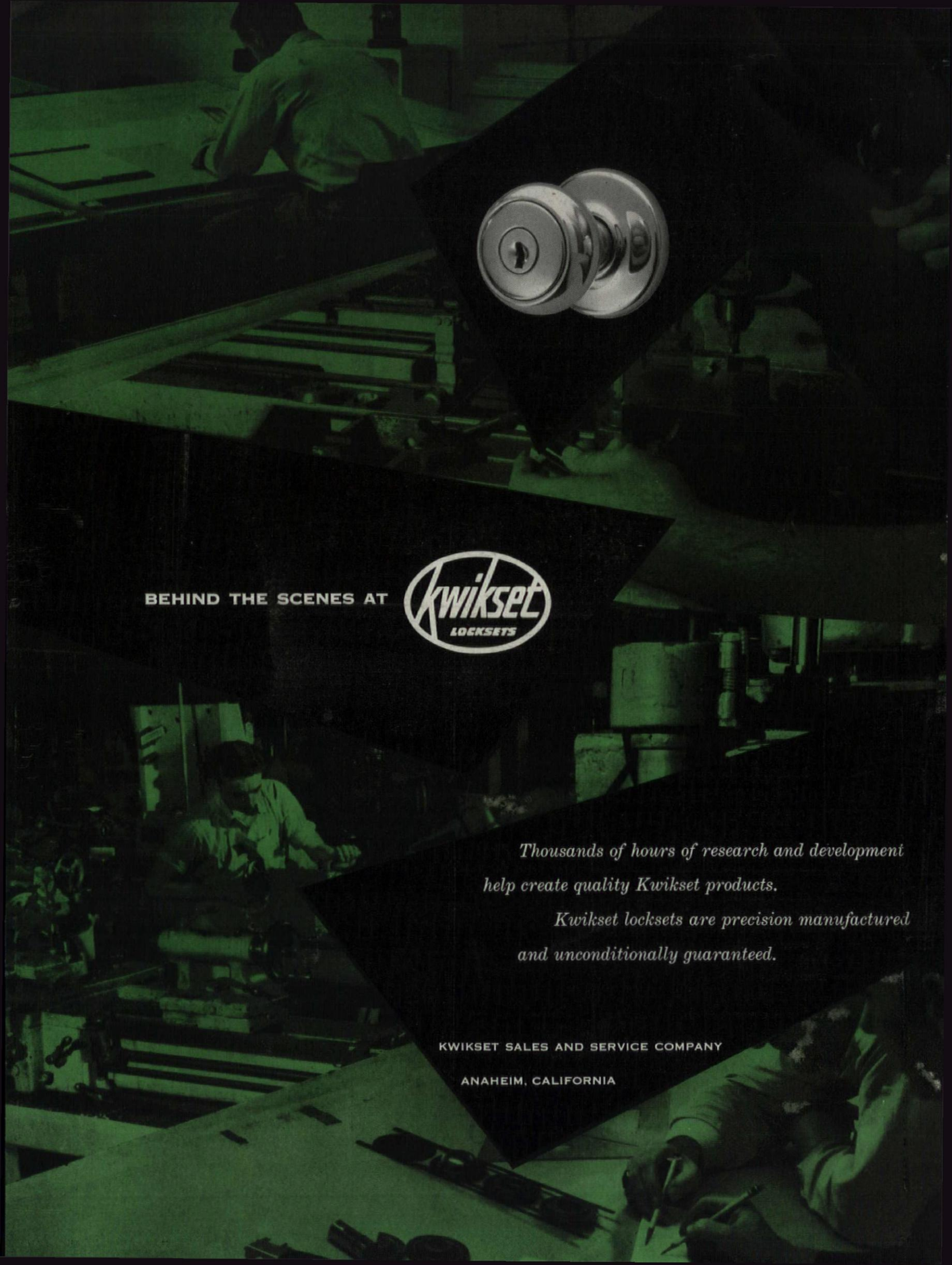
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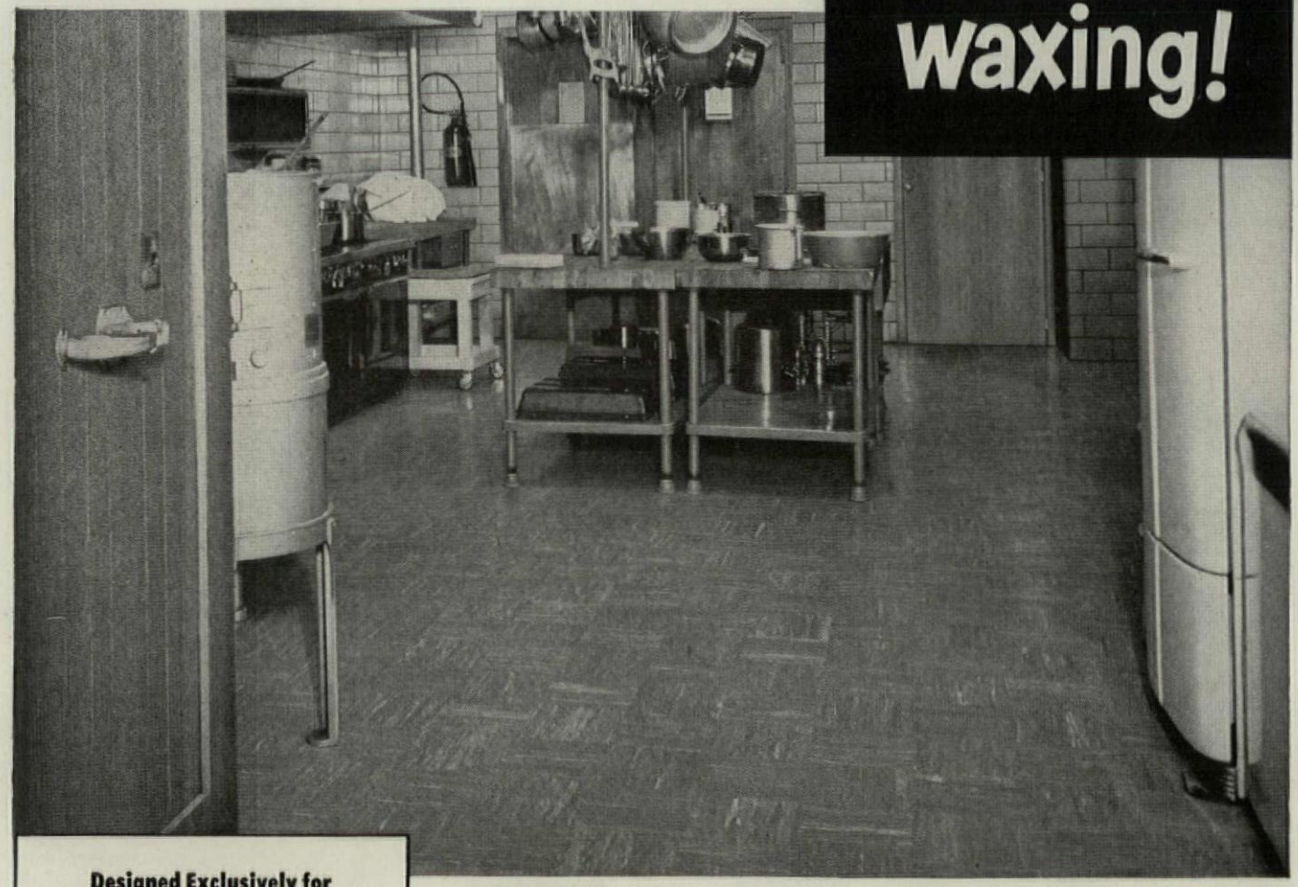

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VINYL·TILE is easy to install, perfect for showcase jobs, lends itself to "personalized" floors of your own original design.

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THE MAGAZINE OF BUILDING

architectural **forum** edition

JUNE 1952

Published by TIME Incorporated

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and
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VOLUME 96, NUMBER 6

Cover: Lever House, by Skidmore, Owings & Merrill. Photo: Ezra Stoller—Pictor

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grounded for safety

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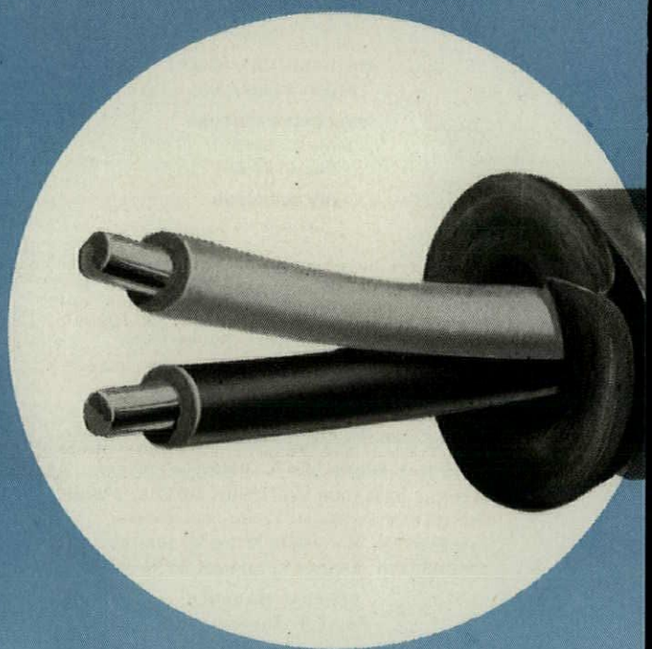

ABC is the *fastest* type steel clad system to install.

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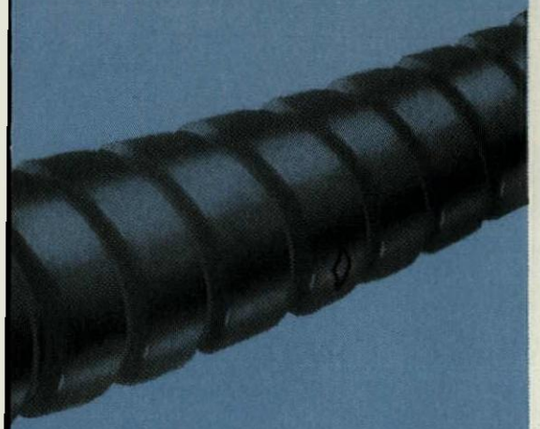

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- *Anti-Short Bushing*—Protects wires from armor edges.
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Other National Electric Steel Clad Wiring Systems

Conduit Systems

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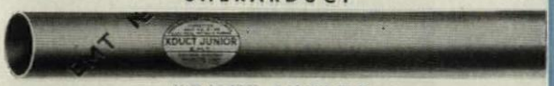

XDUCT JUNIOR

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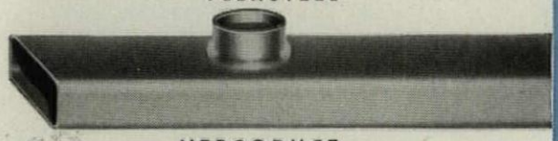
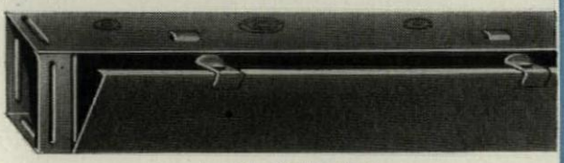
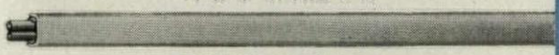


NEPCODUCT

Surface Raceway Systems



4 x 4 WIREWA



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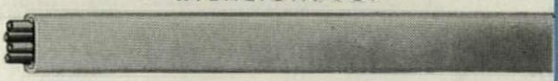
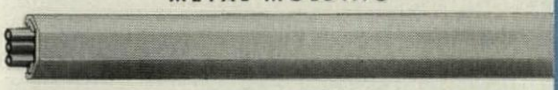


METAL MOLDING



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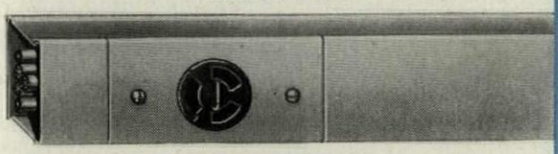

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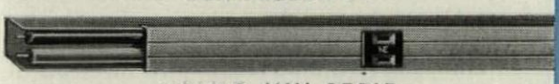
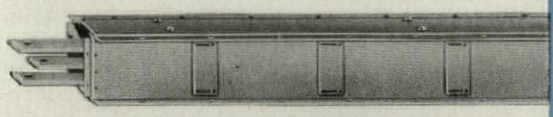
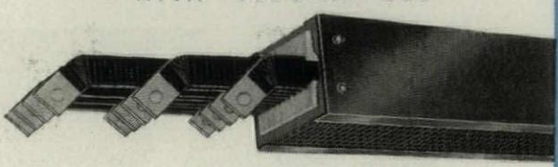


"PLUG-IN" STRIP

Busway Systems



I.P.I. "PLUG-IN" BUS



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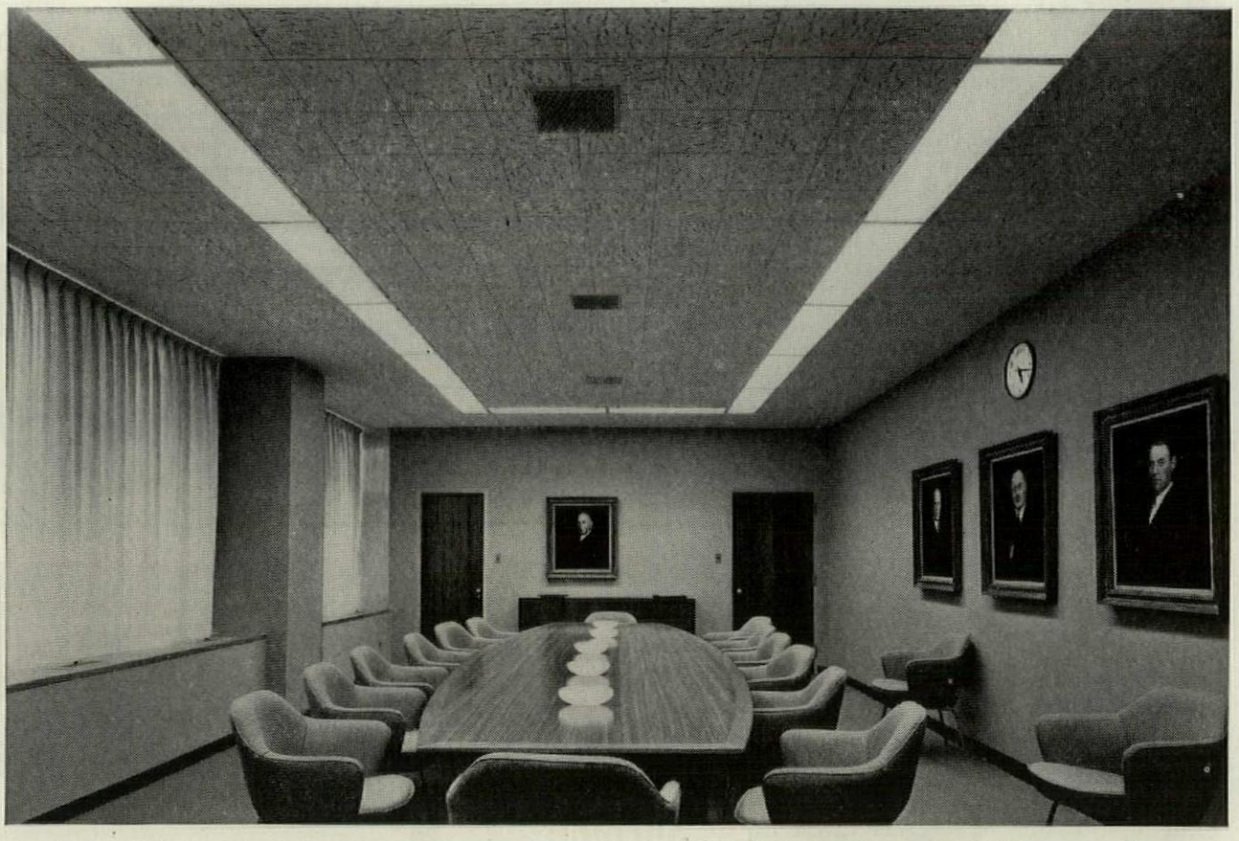
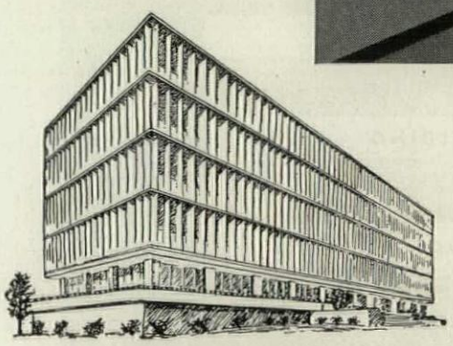
ACOUSTICAL MATERIALS AT WORK



Board room with Armstrong's Travertone ceiling



THE PAN-AMERICAN LIFE INSURANCE COMPANY BUILDING, New Orleans

Architect: Skidmore, Owings, and Merrill
Associate Architect: Claude E. Hooten
General Contractor: George J. Glover Company, Inc.
Acoustical Contractor: Clifford A. King

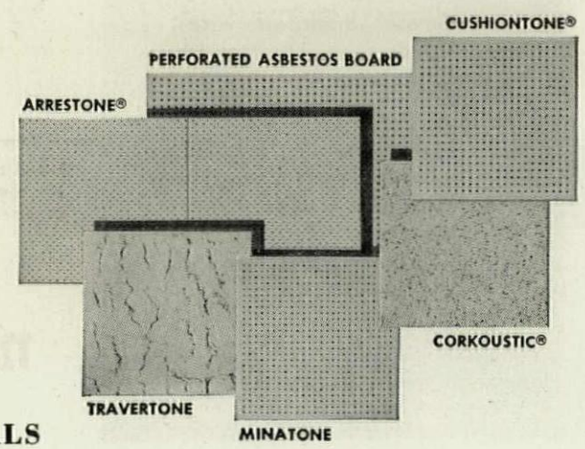
The entire top floor of the new five-story Pan-American Life Insurance Company Building has a quiet dignity well suited to the executive offices it contains. Much of this dignified atmosphere can be credited to the acoustical material on the ceiling.

For here, in keeping with the need for beauty, fire safety, and acoustical efficiency, the architects chose Armstrong's Travertone—a fissured mineral wool material.

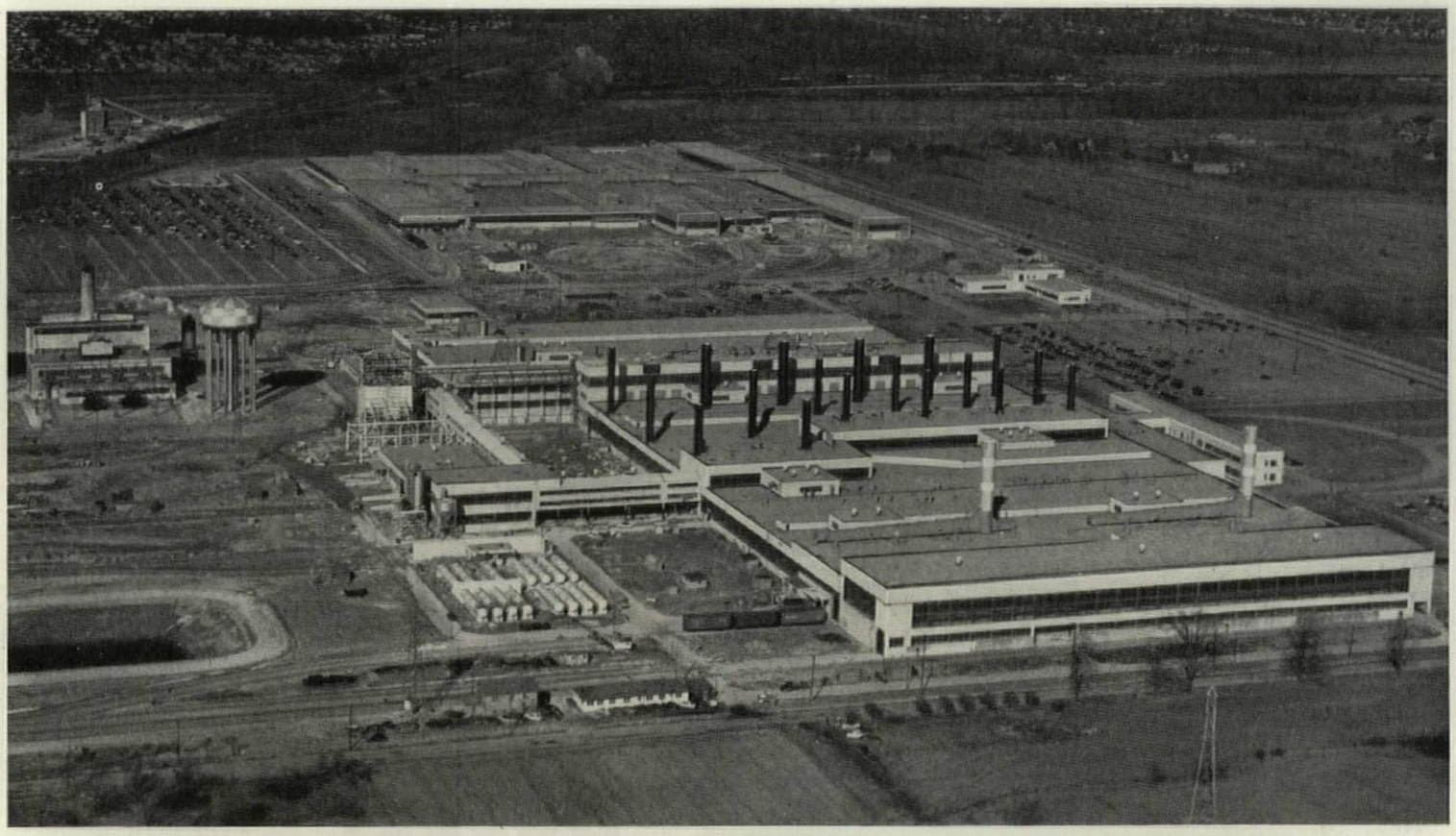
Travertone has many features that led to its choice: an attractive fissured surface, incombustibility, high light reflection, ease of maintenance and, of course, effective absorption of irritating noise. Travertone was also well adapted to the installation of the recessed lighting and ventilating fixtures.

The complete line of Armstrong's Acoustical Materials offers you a wide range of special features. Your Armstrong Contractor is ready to give you helpful advice with no obligation. For free booklet, "How to Select an Acoustical Material," write Armstrong Cork Company, 5406 Stevens Street, Lancaster, Pennsylvania.

Perforated "metal-pan" units of Armstrong's Arrestone were used to sound condition much of the general office area in lower floors. Unusually high in efficiency, these units greatly reduce noise levels, improve office efficiency and morale. Arrestone is completely incombustible. Its white enameled surface is high in light reflection and easy to clean.

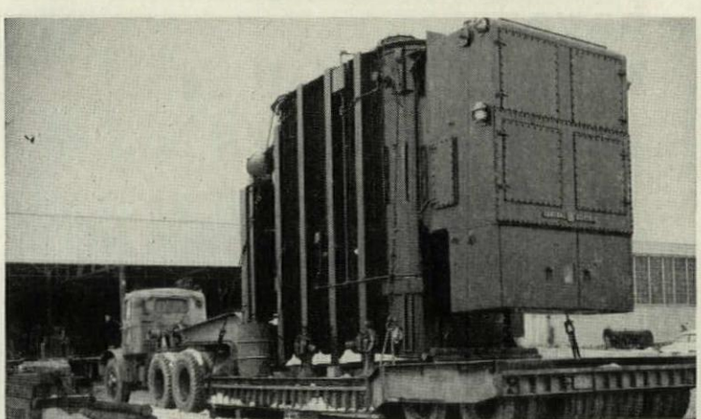


ARMSTRONG'S ACOUSTICAL MATERIALS



EASY TO SPECIFY AND INSTALL, G-E POWER DISTRIBUTION EQUIPMENT SERVES 1,000,000 SQ FT IN NEW ENGINE PLANT

"Packaged power" speeds Ford expansion



PRE-ENGINEERED to make system design easier, this 35,000-kva transformer is on its way to the plant substation. Two such units, supplied by separate sources, furnish power for entire plant.

EQUIPMENT ARRIVES in unit form ready for fast installation to conserve skilled manpower. Here, switchgear section of a load-center unit substation is moved into position in penthouse on roof.

Pre-engineered components save months on design and installation of power system for new plant

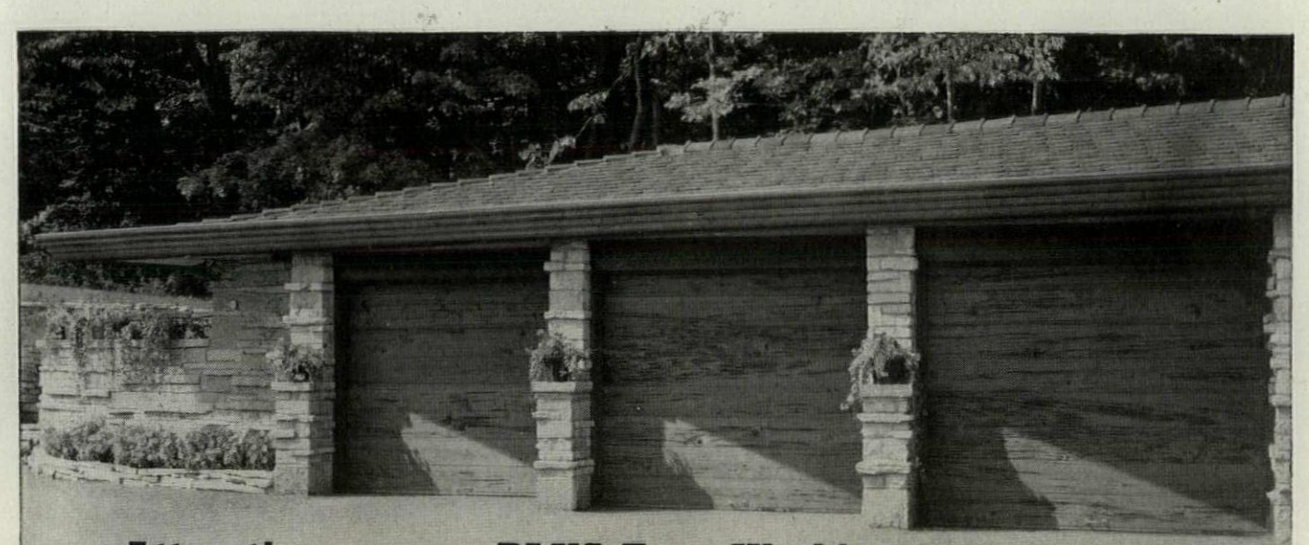
Use of many automatic machines and processes in the new Ford Motor Co. engine plant near Cleveland means a heavy power demand. That made planning, selection, and installation of the power distribution system one of the most important phases of plant construction.

Ford, and Hatfield Electric Co. electrical contractors, saved months of engineering and installation time by selecting a power system made up of G-E equipment. Here's how: (1) co-ordinated systems are readily designed using pre-engineered G-E components, (2) "packaged" G-E equipment is quickly installed and connected, and (3) lost time involved in "piecemeal" systems is eliminated since we co-ordinate manufacture and shipment of components.

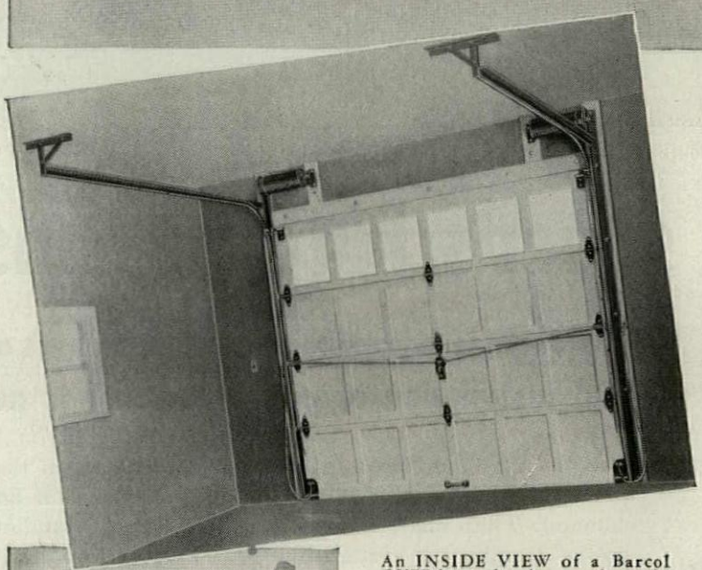
You can save time and money on industrial plant electrification by specifying user-preferred G-E equipment. And our engineers are ready to assist in such planning and design. Besides power distribution, they'll help on outdoor lighting and electric drives for plant service systems. Contact your G-E Apparatus Sales Office early in the planning. General Electric Co., Schenectady 5, N. Y. 665-117

Engineered Electrical Systems for Industrial Plants

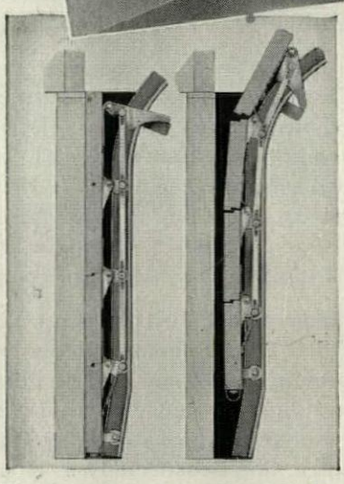
GENERAL ELECTRIC



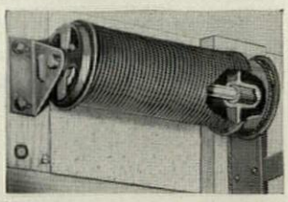
Attractiveness PLUS Easy Working
Weathertight Closing Long Life



An INSIDE VIEW of a Barcol OVERdoor, showing sturdy tracks with continuous vertical track brackets, twin springs, strong but light sections designed against warping or twisting, dual self-latching bolts.



This is how the exclusive Barcol Closing Action works. Right, door closing (moving downward), lever engages stop on track, pulls roller plates up, moves door to left. Left, door closed, roller plates up, door pressed uniformly top to bottom against jamb. Reverse of action gives immediate release on opening.



Close-up of one of the twin tailored counterbalancing coil springs that help make Barcol OVERdoors so easy working. Airplane steel cable runs from drum *direct* to bottom of door. Roller bearings insure smooth, easy, and quiet operation. Separate adjustments insure exact equal tension on both sides of door.

Barcol OVERdoors

have HIDDEN as well as VISIBLE VALUES

It takes a lot more than just what you can see *from the outside* to total up the sum of Barcol OVERdoor advantages. Barcol OVERdoors can be made in almost any exterior design desired. Take the special pecky cypress doors shown above — they make a beautiful blend into the design scheme; but the real reasons they *work* well as much as they *look* well — those reasons are *inside* the building. Look at the "inside" pictures and diagrams — here, in the mechanisms and in the hardware, the distinctive qualities of the Barcol OVERdoor are found. Here are the *hidden values* that mark the superior features and the superior performance of the Barcol OVERdoor. Look *inside* as well as outside to learn the whole story. Only then can you know how satisfactory the Barcol OVERdoor can be — *in every way.*

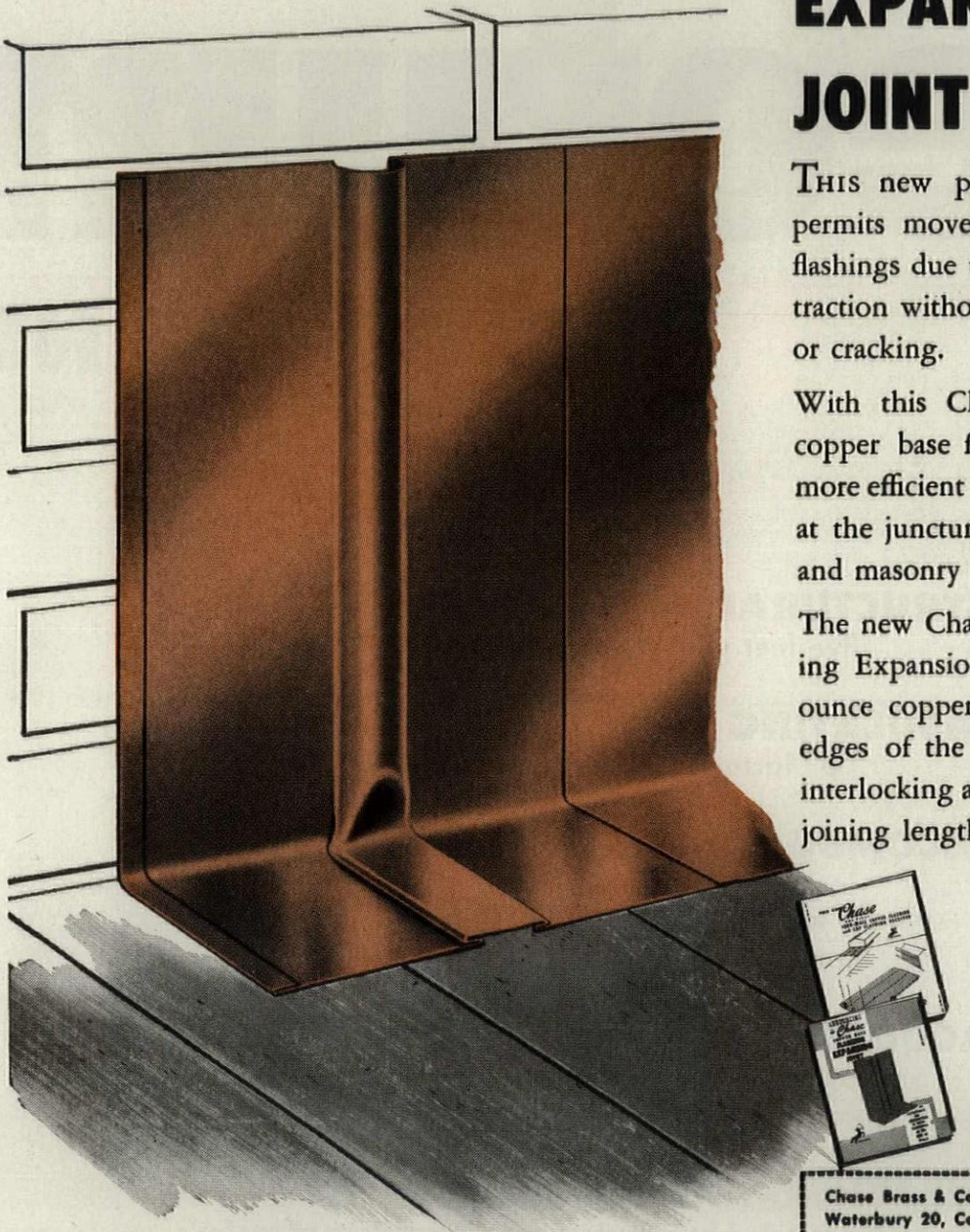
BARBER-COLMAN COMPANY

158 MILL STREET, ROCKFORD, ILLINOIS

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

Something new in Copper Base Flashing . . .

CHASE BASE FLASHING EXPANSION JOINT



THIS new patented Copper Joint permits movement of copper base flashings due to expansion and contraction without danger of buckling or cracking.

With this Chase Expansion Joint, copper base flashing becomes even more efficient and economical for use at the juncture of flat built-up roof and masonry wall.

The new Chase Copper Base Flashing Expansion Joint is made of 18 ounce copper. Open seams on the edges of the joint permit fast, easy interlocking and soldering to the adjoining lengths of base flashing.

FREE FOLDERS: *You will also want to know about the new Chase One-piece Thru-Wall Copper Flashing and Cap Flashing Receiver. Write for folders on both these new developments in copper flashing.*

Chase Brass & Copper Co., Dept. MB 652
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Please send me your free folders

- ☐ *Chase Copper Base Flashing Expansion Joint.*
- ☐ *The New Chase One Piece Thru-Wall Copper Flashing.*

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this is Tectum ROOF PLANK

STRUCTURAL Tectum Roof Plank spans up to five feet with a safety factor of 4.

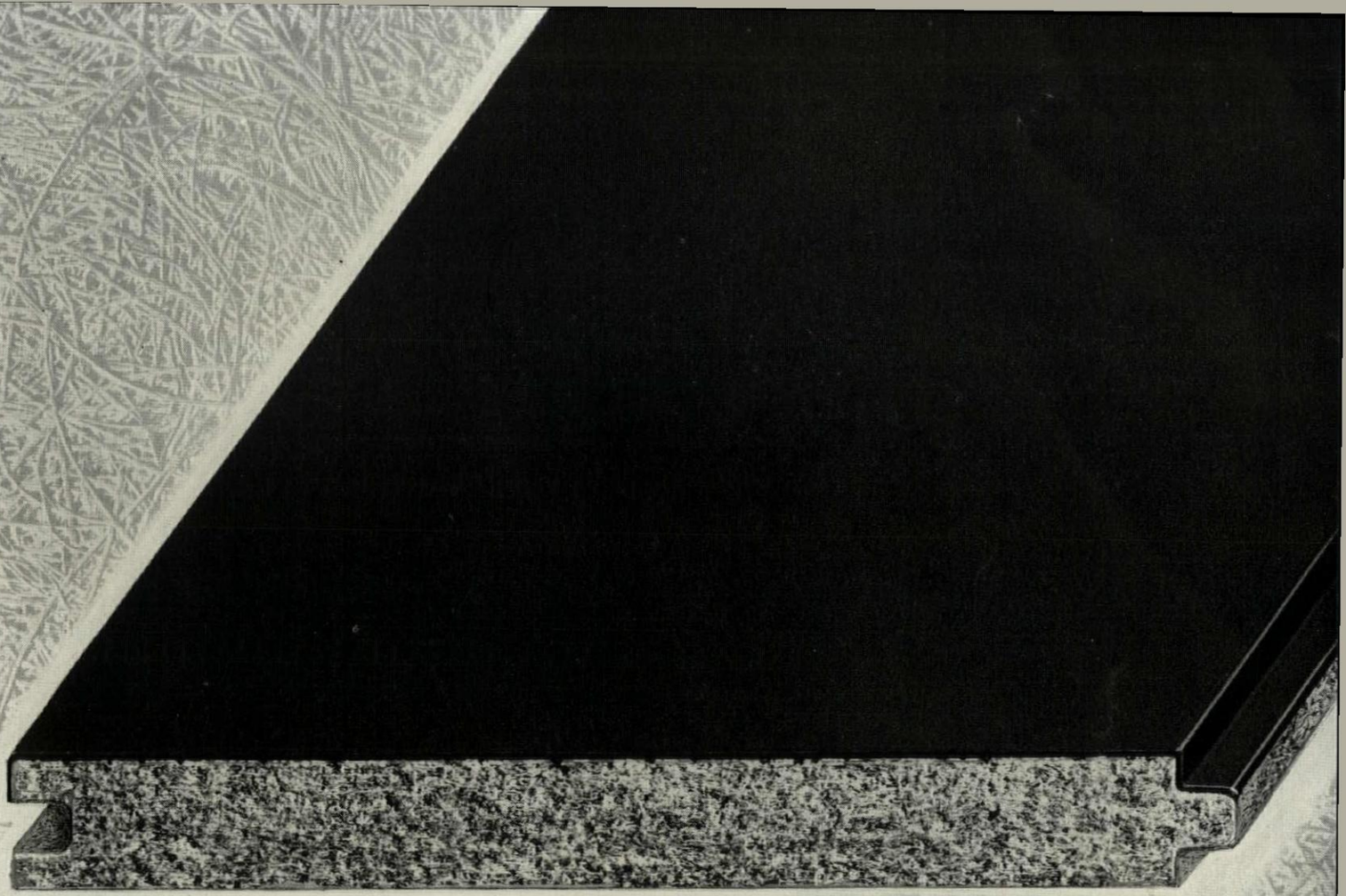
INSULATING 3" thick Tectum Plank has the low "U" factor of .16; 2" Plank, a "U" factor of .24.

INCOMBUSTIBLE Tectum Plank is rated incombustible under Federal Specification SS-A-118a; it has been already tested at Underwriters' Laboratories for Fire Hazard Classification.

ACOUSTICAL Tectum Plank has unusual sound absorption properties, with a noise reduction coefficient up to 85%.

WEATHER-TREATED Tectum Plank is weather-protected by a factory-applied surface of roofer's felt to permit laying in any kind of weather.

ECONOMICAL Light weight large plank sizes, 30" wide by up to 10'-0" long, lay fast . . . cost less installed.



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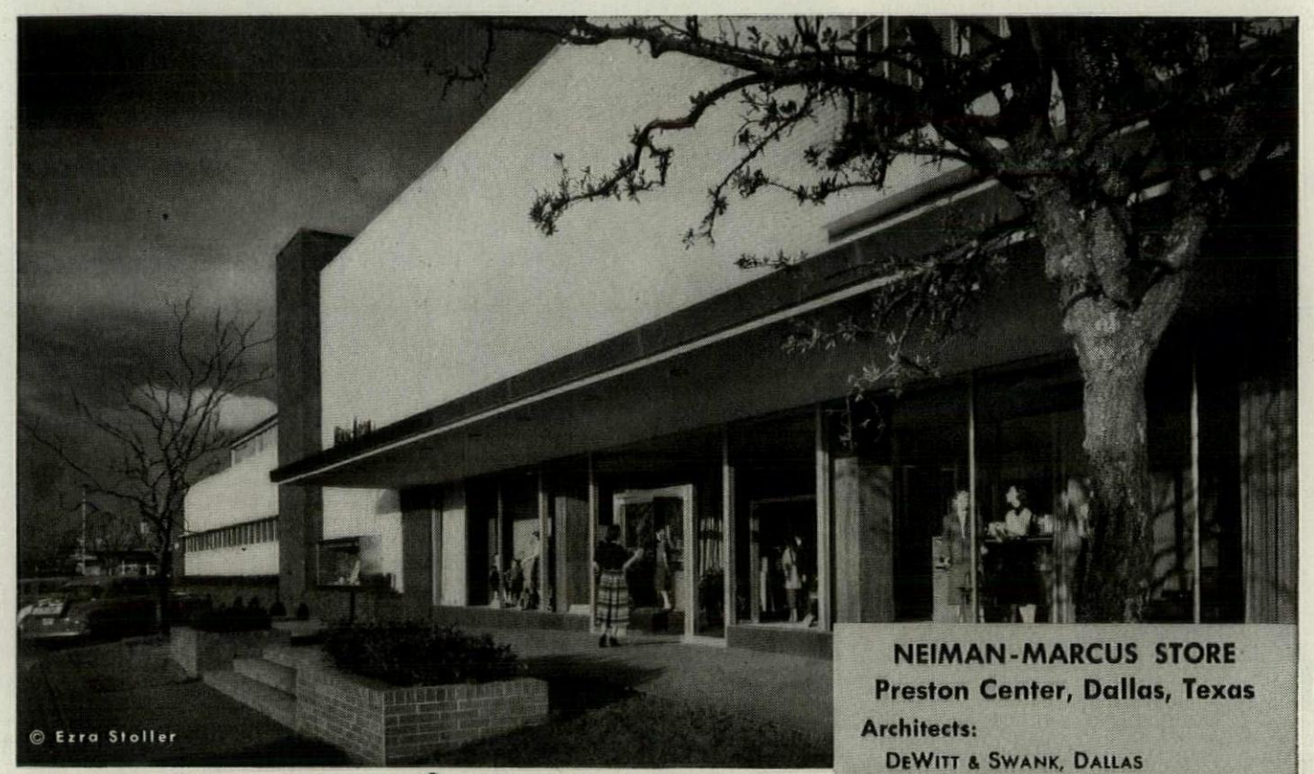

YOUR *roof* MADAME

Under this Ruberoid roof pass the fashion leaders of Dallas, Texas. For it's Neiman-Marcus' new "Station Wagon Store." Throughout the Southwest, Neiman-Marcus is recognized as the undisputed arbiter of style and fashion. And now they bring their unique combination of luxury and informality to suburban customers in Preston Center. In the mysterious world of *haute couture*, we wouldn't know a flounce from a ruffle . . . but when it comes to roofing, Ruberoid has the answer to every problem—from factory to exclusive specialty shop.

That's why DeWitt & Swank, Dallas architects, chose a tested Ruberoid specification for this smart modern store. Layers of coal tar pitch and tarred felt applied according to Ruberoid's complete instructions assure long years of satisfactory service. For like every Ruberoid roof, it's backed by over half a century of experience in the roofing business.

You'll find the right roof for your next job in "Ruberoid Bonded Built-Up Roofs and Flashings," the complete catalog of roofing specifications to meet every need. If you'd like a copy of this handy book, write us on your letterhead. Or refer to Sweet's Architectural Catalog 8A/RU. The Ruberoid Company, 500 Fifth Avenue, New York 36, N.Y.

NEIMAN-MARCUS STORE
Preston Center, Dallas, Texas

Architects:
DeWitt & Swank, Dallas

General Contractor:
A. J. Rife Construction Co., Dallas

Roofing Contractor:
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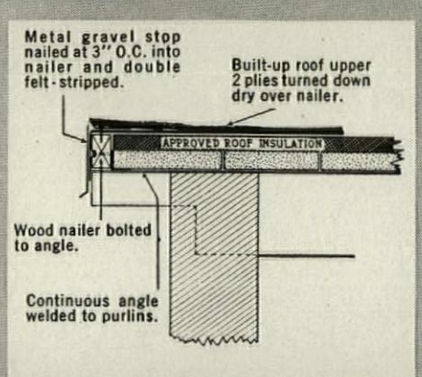

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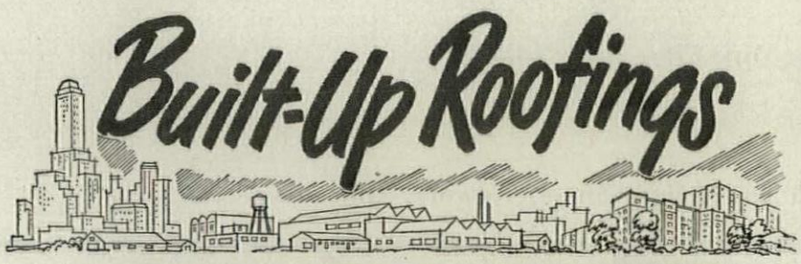

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deep shadows

the
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low contrast
soft shadows

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Easier to clean—reduces maintenance. Airflow Channel circulates air currents for longer ballast life.

GUTH Wyte-Liners are made in 2 and 3 lamp sizes for conventional 40-watt lamps and for 4- and 8-ft. Slimline. May we send you our 16-page Catalog 48-K with complete details?

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**KenRubber should not be installed on concrete in contact with the earth.*

THESE "K" FACTORS ARE YOUR GUIDE TO THE CHOICE OF RESILIENT TILE FLOORING FOR USE OVER RADIANT HEATED CONCRETE

KENTILE	KENCORK	KENRUBBER
4.5 BTU/sq. ft./hr./°F/in. thick	0.7 BTU/sq. ft./hr./°F/in. thick	4.5 BTU/sq. ft./hr./°F/in. thick
1/8" 36 BTU/sq. ft./hr./°F	3/16" 3.7 BTU/sq. ft./hr./°F	1/8" 36 BTU/sq. ft./hr./°F
3/16" 24 BTU/sq. ft./hr./°F	5/16" 2.2 BTU/sq. ft./hr./°F	3/16" 24 BTU/sq. ft./hr./°F
	1/2" 1.4 BTU/sq. ft./hr./°F	

Based on the "K" factors at top of each table, heat transmission rates through the various thicknesses of KENTILE, KENCORK and KENRUBBER are shown. The °F means that this is the transmission rate when there is 1°F difference between the top and bottom of tile. The heat transmission rate increases proportionately with an increase in the temperature difference between the top and bottom of the tile; e.g., with ⅛" KENTILE, heat transmission rate would be 180 BTU/sq. ft./hr. if there were 5°F difference between top and bottom of tile.

Write to the nearest office listed below for FREE folder that summarizes research data prepared to answer your questions about the use of resilient tile flooring over radiant heating.

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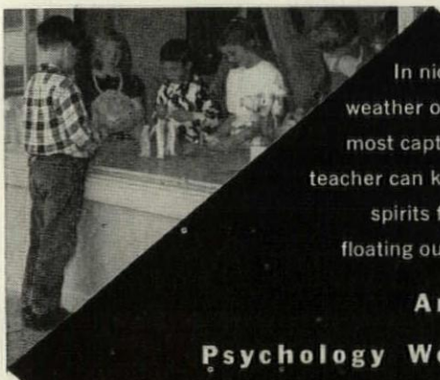
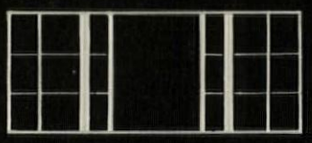


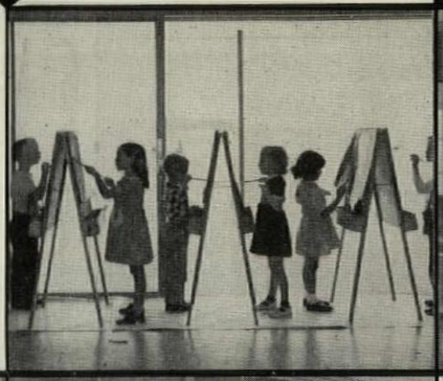
In nice weather only the most captivating teacher can keep young spirits from floating outdoors.

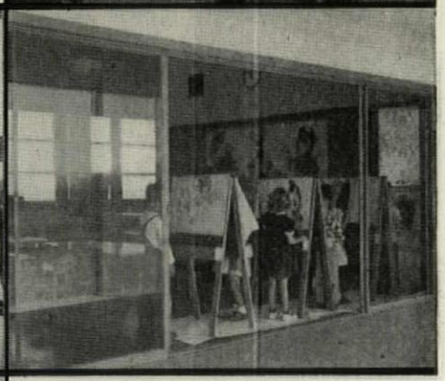
Architectural Psychology Works Classroom Wonders

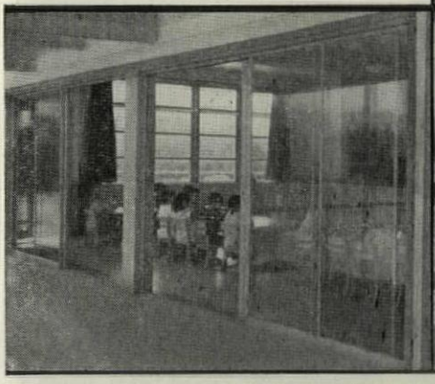


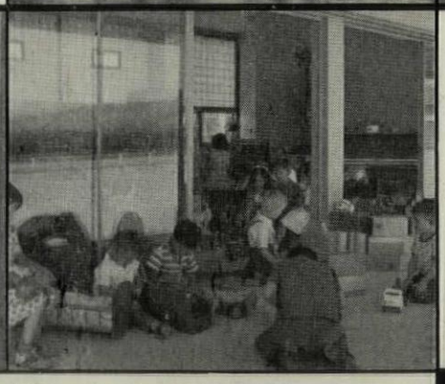
Robert Stanton, A.I.A., Carmel, California, keeps them happy though cloistered, with indoor-outdoor communication counters for work or play. Teacher supervision of all class activities is improved. "We have used Steelbilt sliding sash on five school projects and find them very satisfactory", Mr. Stanton stated.

Painting is lots more fun with plenty of daylight and fresh air. These young artists are doing some fancy brush work at the Bardin School, Salinas, California—also designed by Mr. Rowe.

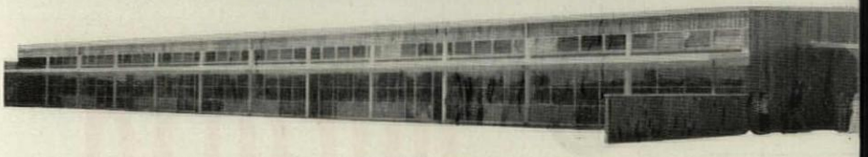








Steelbilt weathersealed sliding glass doorwalls constitute an entire longitudinal wall of the Howe School, Sacramento, California. Architect Gordon Stafford, A.I.A., Sacramento, specified protective muntin bars.



Architect William Henry Rowe, A.I.A., San Francisco, has made study or play an indoor-outdoor activity at the Gonzales, California, school. Even little Johnny can easily open or close the silently sliding Steelbilt doorwalls.

There are important reasons why Steelbilt is first choice with most architects. Find out why. Illustrated literature and full scale cross-sectional details sent on request.

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Here's how micarta® PLASTIC SURFACE solved a tough, indoor traffic problem

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This tough, decorative material is the practical solution where interiors take heavy traffic. Perhaps it's the answer to *your* particular surfacing problems. Get full information by filling out the coupon below.

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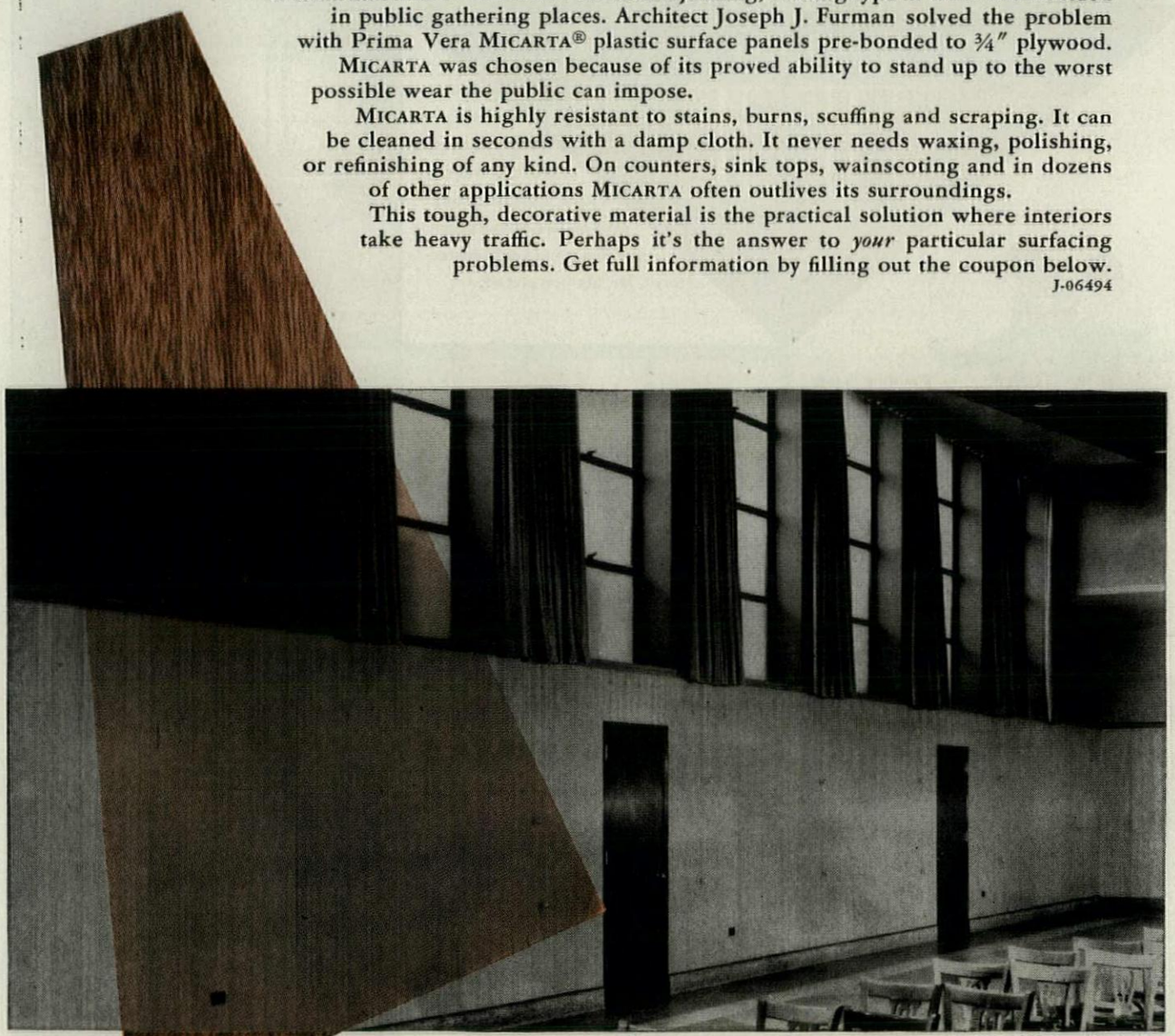

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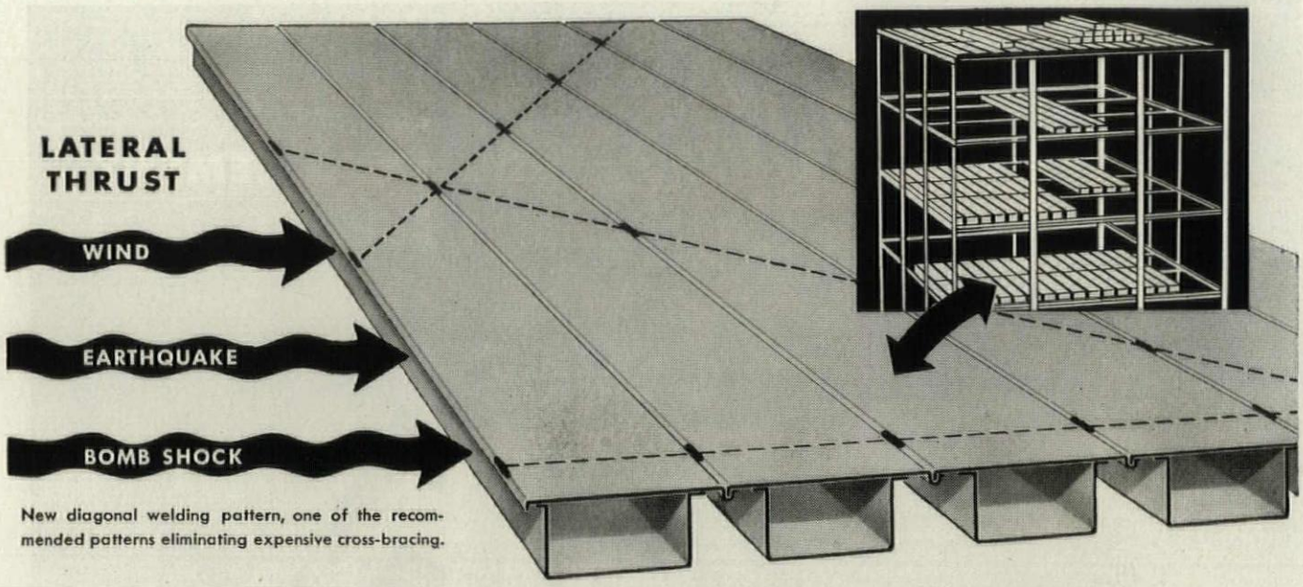

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Multi-purpose Fenestra Building Panels cut the cost of building. The long-span, structurally strong units interlock easily and quickly by male and female joints and are speedily welded into a continuous deck plate. They save time and labor on the site. And their diaphragm action is tremendously important in view of today's need for buildings with bomb-shock resistance.

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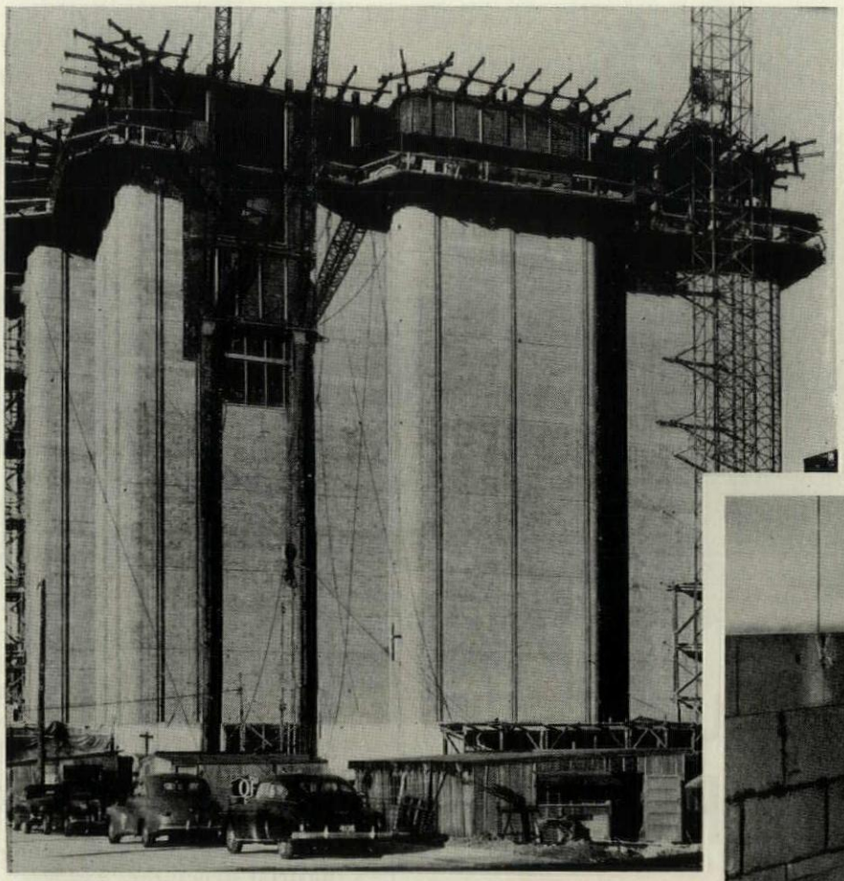
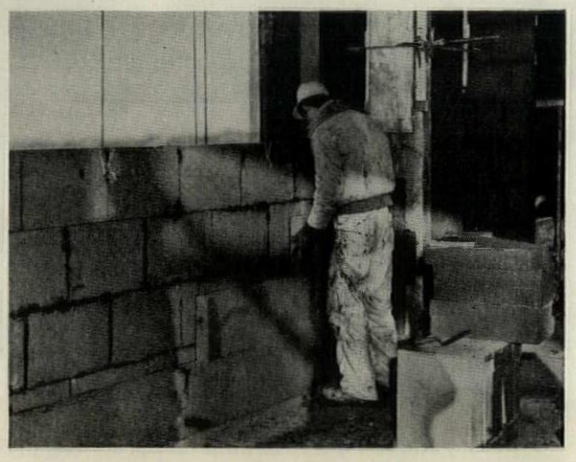


New 12-story stockhouse of the Miller Brewing Company, Milwaukee, Wisconsin, is the world's largest, with a capacity of 260,000 barrels. On walls and roof, FOAMGLAS helps maintain the required interior temperature of 28°F. Large photo shows exterior masonry wall being laid up against FOAMGLAS. The small photo shows the big light weight blocks of FOAMGLAS built up as a free-standing, self-supporting wall of insulation. Architect: Oscar Jannsen, St. Louis, Mo. Insulation Contractor: Sprinkmann Sons Construction Co., Ltd., Milwaukee, Wisconsin.



Time meant money – so they saved a year

Miller Brewing Company needed an enclosed, well insulated building, and they needed it right now. By erecting free-standing walls of moisture-resistant FOAMGLAS on the steel frame, the building was ready for operation nine to twelve months ahead of schedule, even before the exterior masonry was completed.

In walls, on roofs and under floors of all sorts of structures, FOAMGLAS has proved the ideal aid for maintaining both normal and low temperatures effectively, over long periods of time. You can safely recommend it to your most exacting clients with full confidence that they—and you—will be completely satisfied.

Be sure that the latest data on FOAMGLAS is in your insulation file. We shall be glad to send you a sample of the material and copies of our latest booklets. Just drop the coupon in the mail today.

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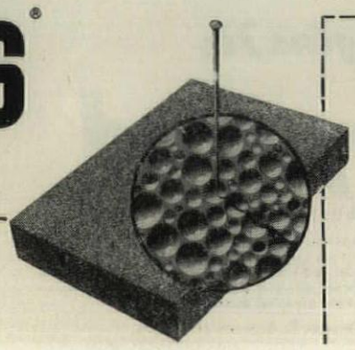
The *best* glass insulation is cellular glass. The *only* cellular glass insulation is FOAMGLAS. This unique material is composed of still air, sealed in minute glass cells. It is light weight, incombustible, verminproof. It has unusually high resistance to moisture, chemicals and many other elements that cause insulation to deteriorate.



Pittsburgh Corning Corporation
Dept. C-62, 307 Fourth Avenue
Pittsburgh 22, Pa.

Please send me, without obligation, a sample of FOAMGLAS and your FREE booklets on the use of FOAMGLAS for: Normal Temperature Commercial, Industrial and Public Buildings ☐ Refrigerated Structures ☐

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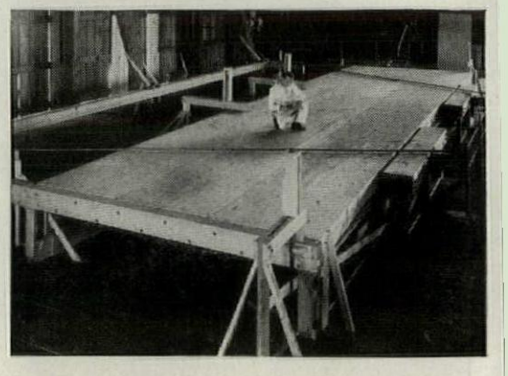
City.....State.....

PANEL DISCUSSION

Diaphragm Tests Prove Plywood Shear Strength



New specific design data which proves plywood's great resistance to shear forces set up by earthquakes and windstorms have been developed by plywood industry engineers in one of the most significant research projects of recent years.

Culminating 14 months of study, the new design data permits architects and engineers to specify plywood floor and roof construction with full confidence that the structure will withstand the great lateral stresses and shears due to high winds or seismic shocks which may be encountered in schools, warehouses, commercial and industrial structures.

As one result of this new design data, the Uniform Building Code has been amended to permit greater allowable plywood diaphragm shears. The new allowable lateral loading for plywood diaphragms are given below in condensed tabular form:

Plywood Thickness	Nail Size	Shear (lb-per-ft.-width) 2⅝" framing		
		Nail Spacing on all panel edges		
		6"	4"	3"
5/16", ⅜"	6d com.	185	280	315
⅜", ½", ⅝"	8d com.	265	400	450
½", ⅝"	10d com.	320	480	545

Tabulated shears should be reduced one-fourth for other than wind or seismic loads. Diaphragm width measured parallel with load.

In developing the material, it was assumed initially that a plywood floor or roof diaphragm would function as the load bearing web in a giant girder. Following tests with scale models, four full-size models were constructed using ½" plywood nailed across 2x10 joists. Sections were loaded with a truss system in which the loads were applied with two 30-ton hydraulic jacks.

Based on 15,000 numerical observations it was found that a floor or roof sheathed with plywood acts as a horizontal girder with a fully shear resistant web. This means that stresses in individual parts and the deflection of the member as a whole can be accurately calculated.

Complete data on the tests, including

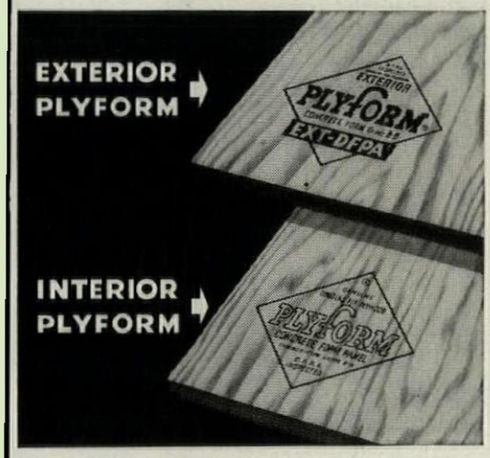
Advertisement)

simplified design information and a table of shears for various constructions are available free of charge from Douglas Fir Plywood Association, Tacoma 2, Wash.

PlyForm Grade Plywood Now Made In Two Types

West Coast plywood manufacturers are now using the familiar PlyForm grade-name to identify the special concrete form grades within both Interior and Exterior type.

Exterior-type PlyForm, a new grade-trademark, replaces the old Exterior Concrete Form grade-name. Identified by the new diamond-bar symbol shown below, Exterior PlyForm with 100 per cent waterproof glue is intended for use where forms will be re-used until the wood itself is worn



away, in excessively humid areas, or under extreme use or storage conditions. It is edge sealed with a distinctive red sealer.

Interior PlyForm is now manufactured with newly fortified moisture-resistant glues which, although not waterproof, will withstand as many as 10 or 15 re-uses. Interior PlyForm continues to be identified by the familiar diamond grade-trademark. Edges are sealed with distinctive green sealer.

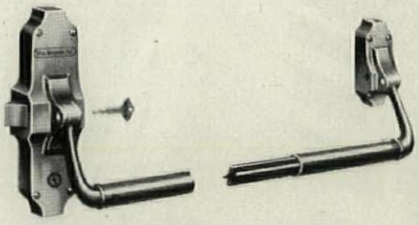
Both face and inner-ply construction of Interior and Exterior PlyForm are the same: faces are of B veneer which is smooth and solid but may contain small tight knots and neat circular repair plugs; inner ply construction (as in all Exterior fir plywood) of C veneer contributes to panel strength and rigidity. A folder which gives additional details and information on other plywood grades used for form work is available from Douglas Fir Plywood Association, Tacoma 2, Washington.

Slide Rule Calculator For Plywood Forms Available

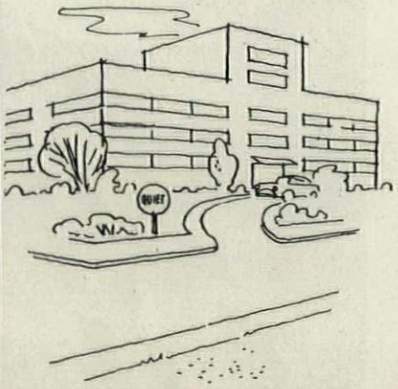
A handy new slide rule calculator which gives construction data for plywood forms is available for $1.00 from Douglas Fir Plywood Association, Tacoma 2, Washington. Included with the new calculator is the leaflet "Design Assumptions for the New Keely Calculator."

A²

Rim Type Exit Device

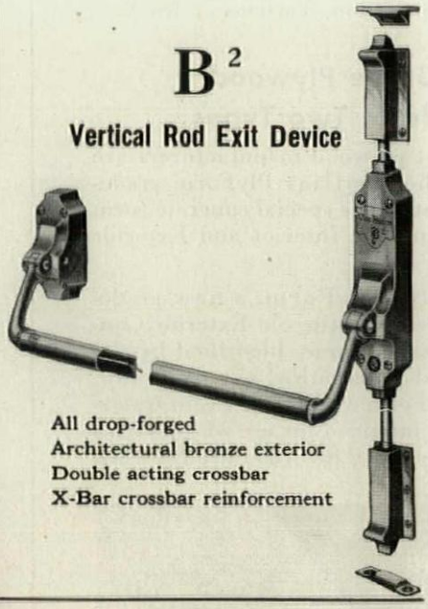


All drop-forged
Architectural bronze exterior
Double acting crossbar
X-Bar crossbar reinforcement

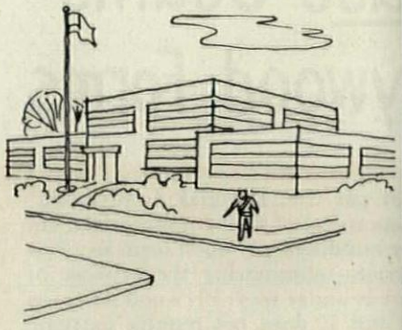


B²

Vertical Rod Exit Device



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



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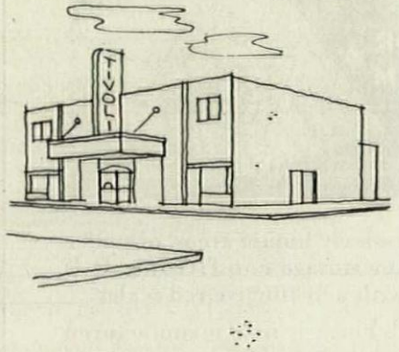
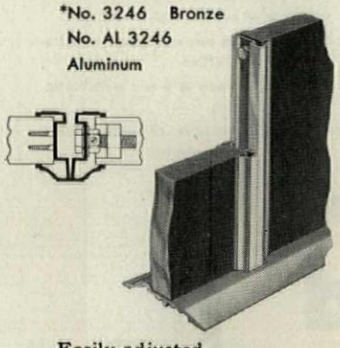


Compensating Metal Astragal

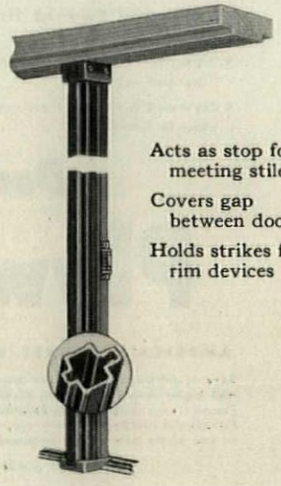
*No. 3246 Bronze
No. AL 3246
Aluminum



Easily adjusted
Eliminates gap between doors
Provides correct bevel
Permits independent door operation
**Subject to N.P.A. restrictions*

Frame Pattern REMOVABLE MULLION

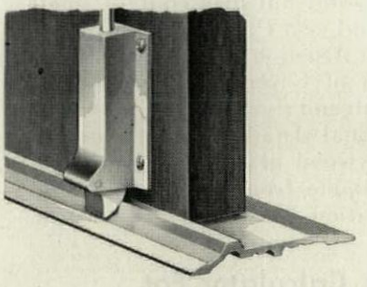
No. 1254



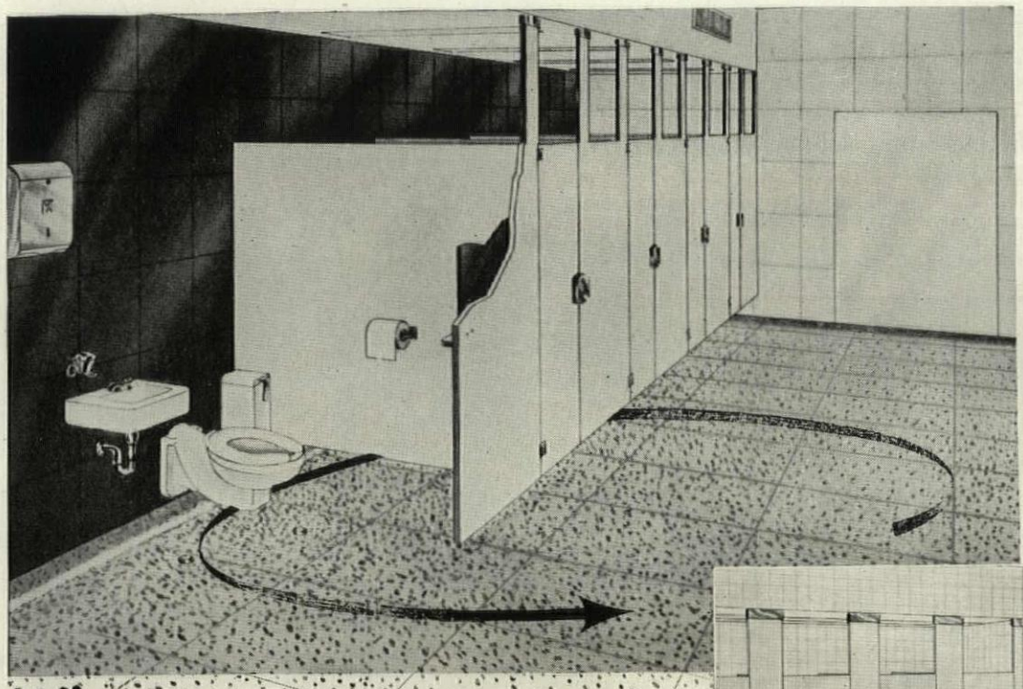
Acts as stop for meeting stiles
Covers gap between doors
Holds strikes for rim devices

LATCH TRACK Threshold

*No. 12390 Bronze
No. AL 12390 Aluminum

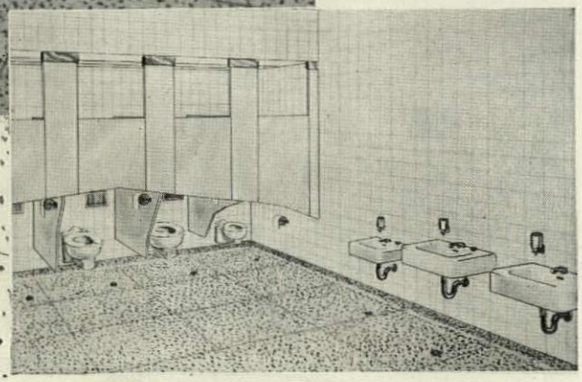


Sturdy extruded sections
Latching at any point
Full opening door stop
**Subject to N.P.A. restrictions*



Floors are cleaned faster, easier in this modern ladies' washroom with these off-the-floor fixtures:

1. Wall-hung toilets.
2. Floor foot-flush valves.
3. Wall-hung lavatories.
4. Ceiling-hung partitions.
5. Towel and tissue dispensers, fastened to the wall.



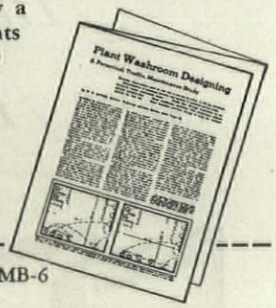
Why Off-the-Floor Fixtures are a "Must" for Modern Washrooms

"Keep the fixtures off the floor!"—A sound recommendation from the plant washroom designer who wants his client to have the best in employee health, morale and efficiency . . . a minimum of absenteeism and wasted man-hours. For example—wall-hung lavatories and toilets with ceiling-hung partitions aid a faster, easier cleaning operation. They reduce illness and absenteeism, too, by doing away with filth-catching corners and crevices, permitting better ventilation.

Labor and administration costs generally eat up 85-95% of a typical operation's sanitation budget. Stretch this figure out over the life of a building—50 years or more—and you'll realize the full importance of passing every possible washroom labor saving on to your client in his new building.

Advice on off-the-floor fixtures is only one of many services offered by your Washroom Advisory Service man. Call him in. Get *all* the details—*based on actual experience.* He has the know-how gathered by a group of Scott-trained consultants who have serviced over 500,000 washrooms.

Contact Washroom Advisory Service, Scott Paper Company, Chester, Pennsylvania.



Send for FREE Leaflet...
"Plant Washroom Designing"

Washroom Advisory Service, Dept. MB-6
Scott Paper Company
Chester, Pennsylvania

At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, *"Plant Washroom Designing."*

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Company_____ Title_____

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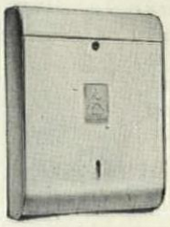
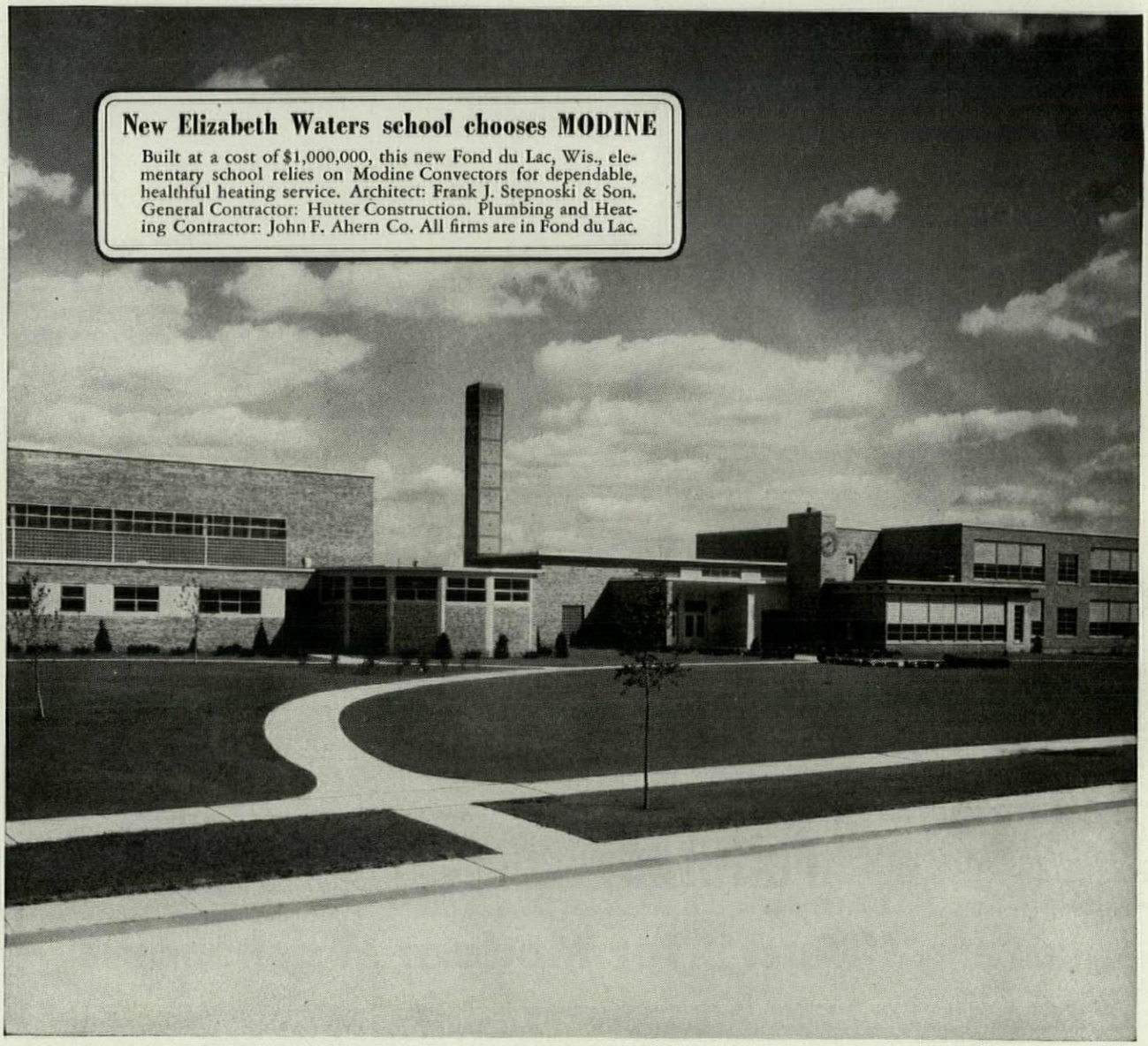


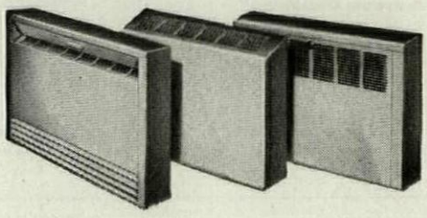
SCOTT

Symbol of Modern Washrooms

Trade Mark "Washroom Advisory Service" Reg. U.S. Pat. Off.



America's finest buildings use America's finest convectors



Choose from three enclosure types in Standard and heavy-duty Institutional models for free-standing, recessed or wall-hung installation.

FOR today's schools, superior heating performance must be teamed with attractive styling and long-life construction. On all counts, Modine Convectors meet exacting professional standards. That's why more and more Modine Convectors are being specified by leading architects and engineers. For full information on heating at its finest, call your Modine representative. You'll find him listed in your classified phone book. Or write Modine Mfg. Co., 1507 DeKoven Ave., Racine, Wis.

R-1137

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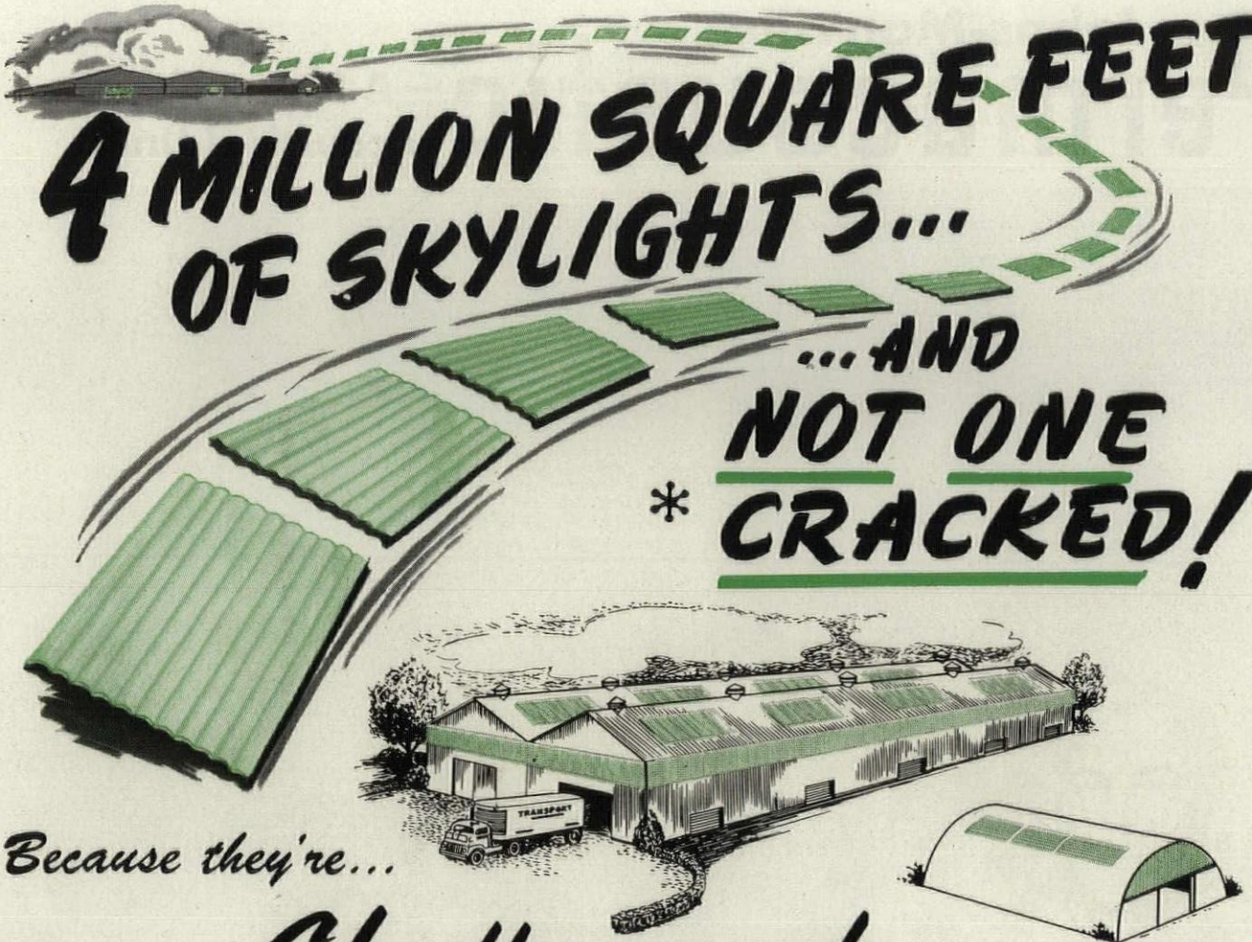

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All translucent Corrulux structural panels contain many miles of tiny tough glass fibers. This reinforcing makes Corrulux *shatterproof* . . . puts an end once and for all to cracked window panes and skylights. When Corrulux *goes in* maintenance costs *go out!*

Corrulux nests snugly with standard corrugated roofing and siding . . . nails, drills, saws with ordinary tools . . . easily installed in existing buildings.

Corrulux eases eye fatigue with soft diffused light . . . reduces heat transmission . . . saves up to 60% over ordinary skylighting.

Made in flat and corrugated panels.

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Johns-Manville Permacoustic*—A Decorative Acoustical Unit

J-M Permacoustic provides quiet, beauty and fire safety in this partial view of an attractive new restaurant.

For a noncombustible acoustical ceiling of high efficiency and unusual beauty, specify PERMACOUSTIC

Johns-Manville Permacoustic Tile provides beauty in addition to fire safety and noise-quieting comfort. Its textured surface, created by random fissures, is distinctive and attractive . . . combines decorative appearance and sound-conditioning wherever desired.

Made of baked rock wool fibers moulded into 12″ square panels, Permacoustic greatly reduces noise . . . the fissured surface increases the acoustical efficiency of the material which is in itself inherently highly sound absorbent. Noise reduction coefficient is 65% to 70%.

J-M Permacoustic is fireproof . . . it meets all building codes that require the use of noncombustible acoustical materials to minimize fire hazard. And because it is made of noncritical materials it is readily available . . . permits you to plan present and future construction work without fear of shortages.

Permacoustic is easy to install—either by application to existing ceiling or slabs, or by suspension using a spline system of erection.

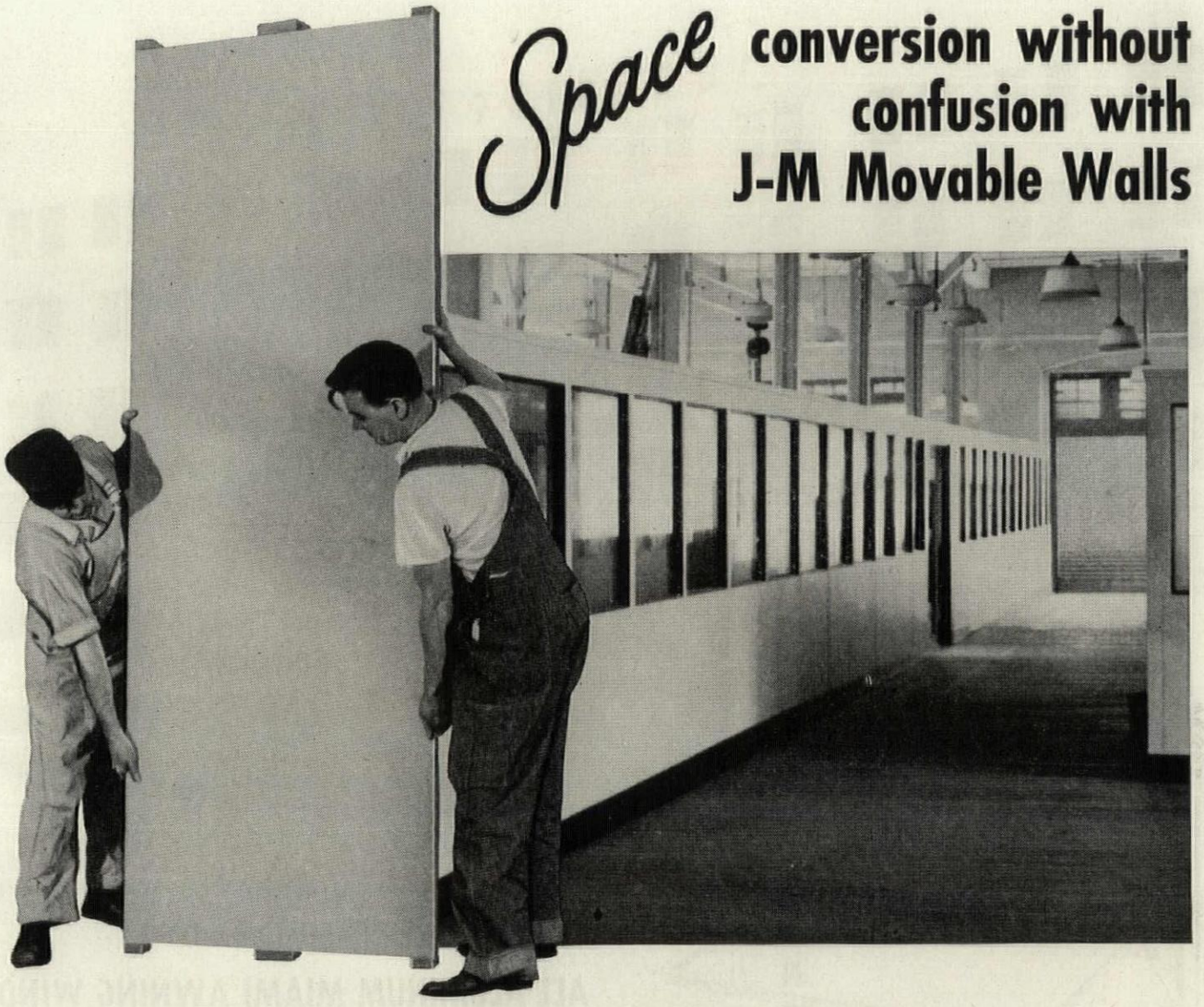
Send for your free copy of the new brochure about Permacoustic. Write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.

*Reg. U.S. Pat. Off.

JOHNS-MANVILLE JM PRODUCTS **Johns-Manville**

J-M Acoustical Materials include Sanacoustic* Units, Transite* Acoustical Panels, and drilled Fibretone*

Space conversion without confusion 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.

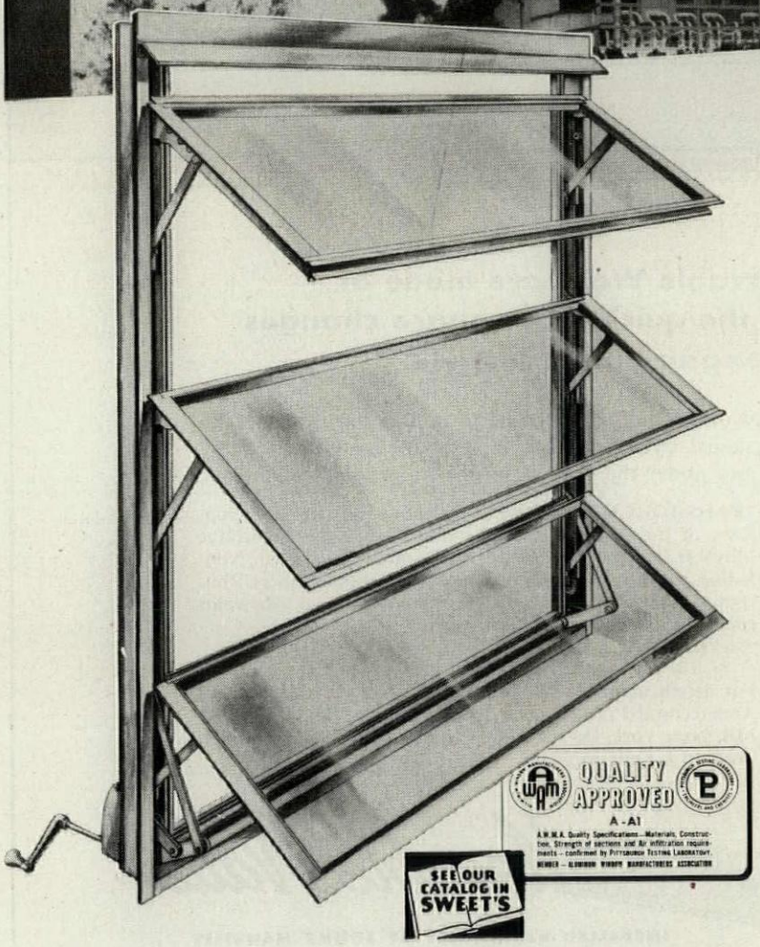
Johns-Manville Movable Walls may be used as ceiling-high or free-standing partitions. The complete wall, including doors, glazing and hardware, is installed by Johns-Manville's own construction crews and under the supervision of trained J-M engineers.

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 JM PRODUCTS **Johns-Manville** ASBESTOS *Movable Walls*

INSTALLED NATIONALLY BY JOHNS-MANVILLE



Architect Albert Anis specified

ALL ALUMINUM MIAMI AWNING WINDOWS

for the Surfside Plaza, Miami Beach

Problem: *to convert the 25 year old Surfside Plaza building into a modern hotel in keeping with the current trend of newly constructed hotel buildings.*

Solution: *"The most important element of such a change was to provide modern windows with the thought of architectural beauty as well as perfection is construction in daily operation of such windows"*

For fine installation in schools, hospitals, office buildings and small homes specify the **ALL ALUMINUM MIAMI AWNING WINDOW**

- **Constructed from extra heavy aluminum alloy sections (63-ST5). Both sides of vent sections are actuated with equal pressure through a patented, concealed torque shaft allowing easy, balanced opening and closing.**
- **Plastic weather-stripping optional.**
- **Available for immediate shipment.**

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MIAMI *Awning* **WINDOW**

Air Infiltration Tests Taken by Pittsburgh Testing Laboratories

MIAMI WINDOW CORPORATION

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No place for dirt to hide

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You'll find Facing Tile in today's most advanced food, drug, chemical and research plants—where essential cleanliness, low-cost maintenance and efficient operation must be combined.

Here's why walls of Facing Tile are top choice in this exacting building field—

For sanitation—Facing Tile's smooth, impervious surface provides no foothold for bacteria-breeding dust or grime, cleans like a test-tube with plain soap and water, is never harmed by repeated scourings.

For economy—Facing Tile builds a permanent structural wall and a handsome finish in one fast operation, eliminates refinishing and painting. First cost is last cost.

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Facing Tile gives you more for the dollar than any other single building material. Orders placed now will receive prompt scheduling and delivery as needed.

FOR ALL THE FACTS ABOUT FACING TILE

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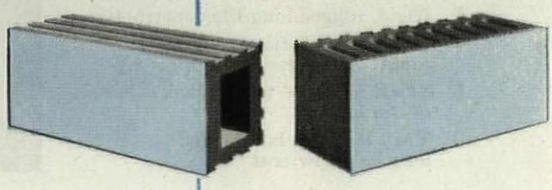

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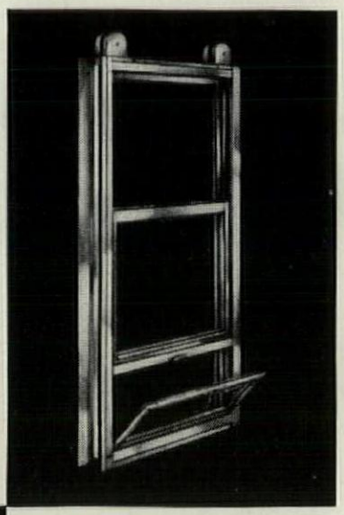
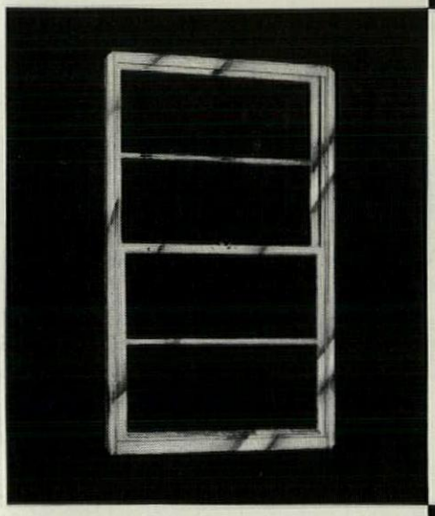


Here is Ceco-Sterling Double-Hung Aluminum Window, Series 200-B with Hopper Vent . . . especially adaptable for hospitals and schools.

Here is Ceco-Sterling Double-Hung Aluminum Window, Series 50-B for residences.



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Here are 9 reasons you'll prefer Ceco-Sterling Aluminum Windows

1. Made of ageless aluminum — won't rot, rust, rattle, stick, warp or swell
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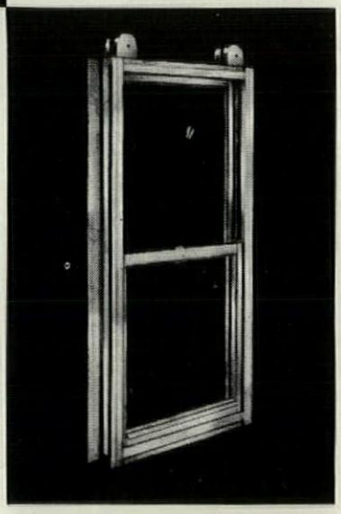
7. Feather-light, friction-free, raised or lowered with finger tip
8. Smart styling—with a look of the future
9. They last and last—offer long haul low cost



Here is Ceco-Sterling Double-Hung Aluminum Window, Series 200-B, used in commercial, monumental, office, and industrial buildings . . . also popular for hospitals and schools.

Adding a new member to our family of building products is something we do with a great deal of thought here at Ceco. Thought of you . . . the architect, engineer, contractor, builder, dealer and of course the owner, too.

So painstaking research guided us in deciding on the new member of our family.
Today we offer you Ceco-Sterling Double-Hung Aluminum Windows because you've stated your preference for such a product.
And since there was immediacy in your desire we acquired a product already in manufacture . . . the Sterling Aluminum Window . . . a leader in the field since 1937.

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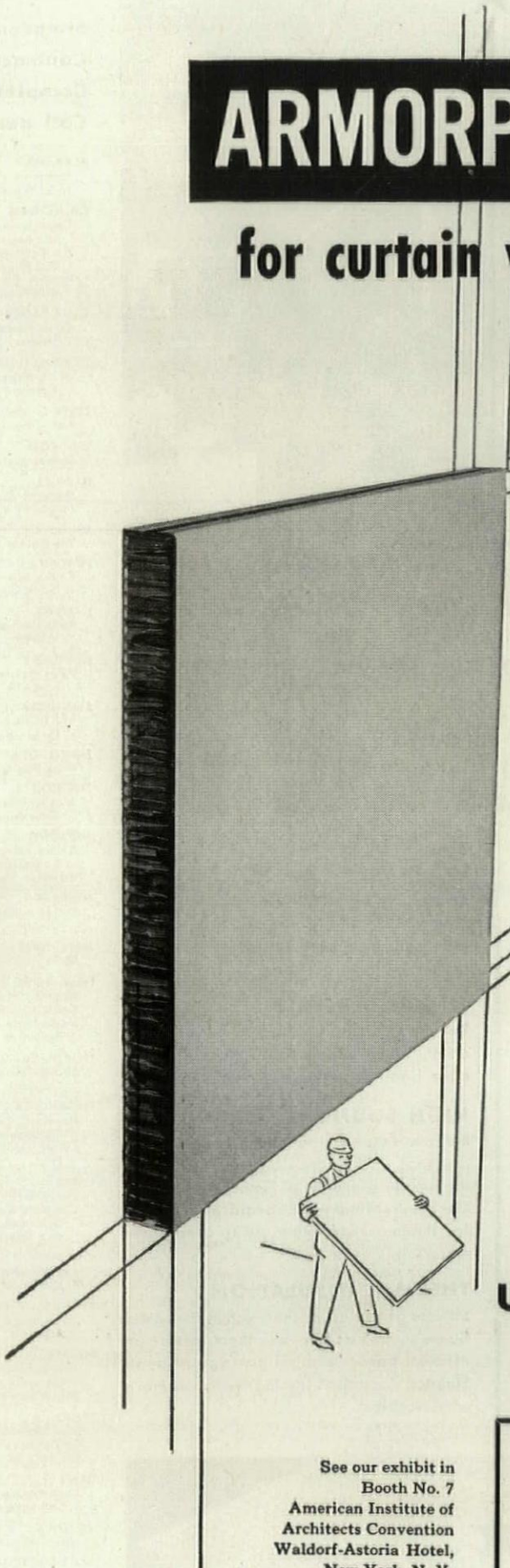
In construction products **CECO ENGINEERING** *makes the big difference*

ARMORPLY® revolutionary panels for curtain wall construction



You'll like the advantages the new Armorply Building Panel offers in curtain wall construction.

First of all, you will be amazed by its extreme flatness. You'll like Armorply's space-saving features. You'll like its variety of beautiful colors and surface finishes... its variety of core material... its wide range of insulating characteristics.

And you'll like its ease in handling... its low installation cost... its savings in maintenance.

Armorply Building Panels save space. Being only 2 to 3 inches thick they take the place of a masonry wall 12 to 15 inches thick.

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They can be of Honeycomb core construction (Armorply Honeycomb) or made with incombustible, mineral-type cores.

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And because they provide both an exterior and interior finished surface they require no painting or other decoration.

Remember, these Armorply Building Panels are always *made to order.* You get a panel, engineered to meet your customer's requirement on a particular job ... every time.

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ARCHITECT:
Luther Eskijian

ACOUSTICAL CONTRACTOR:
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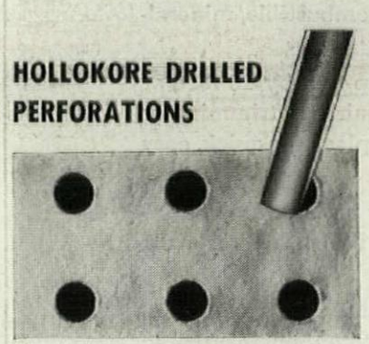
We're keeping this QUIET

HOLLOKORE DRILLED PERFORATIONS



The Hollokore Drill (cross section sketch shown above) developed by Simpson Research and Engineering, is responsible for the clean round perforations of Simpson Acoustical Tile. In the enlarged unretouched photograph reproduced above, notice the clean-cut holes . . . no fuzzy edges . . . no loose fibers to encourage unsightly bridging when repainting.

HERE is an example of sound-conditioning *and* smart interior finish—both aided through the architect's wise choice of Simpson Acoustical Tile. This architect-designed office is typical of many contemporary installations that take advantage of sound-conditioning with Simpson Acoustical Tile.

In multi-officed buildings and one-man offices; in churches and schools; in all types of commercial buildings—wherever people gather—Simpson Acoustical Tile provides *better* sound-conditioning.

Refer to Sweet's Architectural File for more complete information. Contact your nearest Simpson Acoustical Contractor for expert counsel.

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WASHABLE FINISH
Easily cleaned with a damp soapy cloth, then wiped with a damp cloth. New whiteness and high light reflection is quickly restored!

FINISHED BEVELS
Bevels are painted with the same washable paint, which adds so much to the smart, crisp beauty of Simpson Acoustical Tile.

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Independent tests, now backed by the experience of thousands of users, show that the sound absorption of Simpson Acoustical Tile is unexcelled when compared thickness for thickness with other perforated fiber materials.

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Millions of tiny air pockets within the wood fibers as well as between them, act as an efficient barrier against passage of heat. Simpson Acoustical Tile makes rooms more comfortable.

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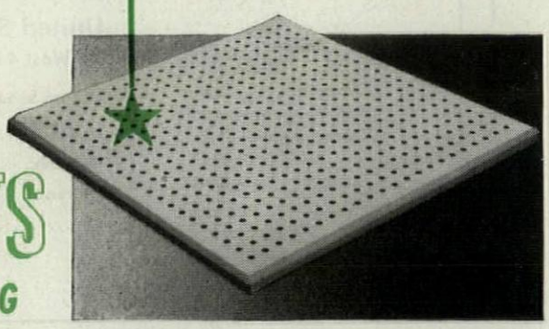
QUALITY SINCE 1895

ACOUSTICAL PRODUCTS
FOR BETTER SOUND CONDITIONING



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Simpson Acoustical Contractors Offer a Complete Service. Call nearest one:

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Coast Insulating Products, Los Angeles
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COLORADO
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Above: Engineers Club, Dallas, Texas, Architect: Everett Welch. Walls and upholstered furniture in bar covered in Special Tomato Red Kalistron.

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Kalistron cannot chip, crack or peel; minimizes maintenance costs. Cleans easily with a damp cloth. In 28 standard colors: special colors matched.

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†TRADEMARK

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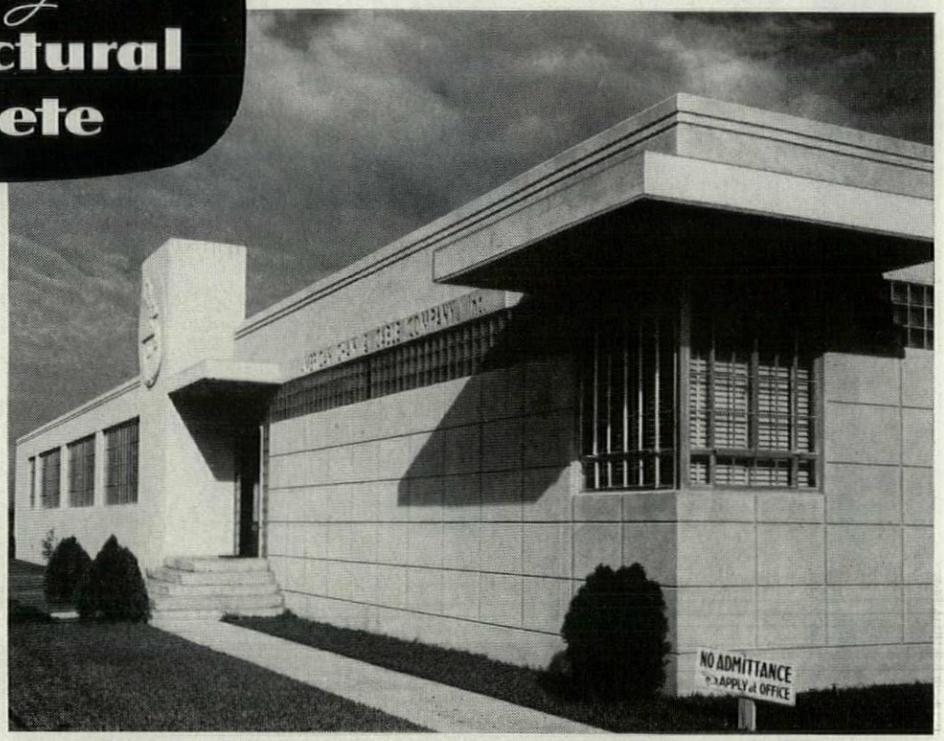

You can design economical, durable, firesafe industrial plants in architectural concrete. They can be functionally practical yet look clean, neat, attractive.

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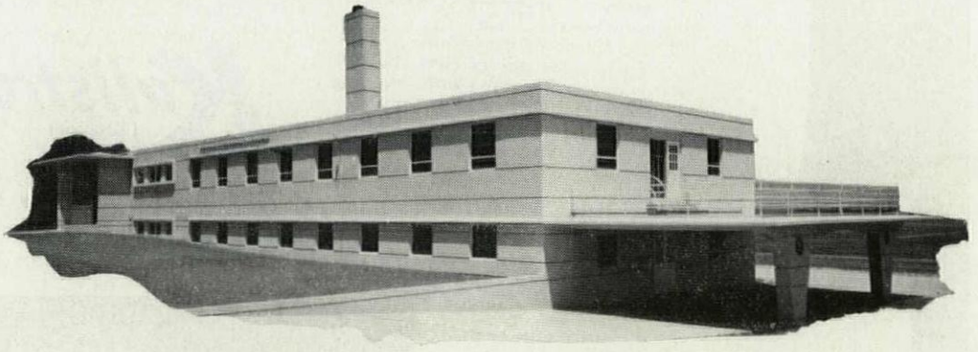
Hospitals, like other architectural concrete structures, are moderate in first cost, require less maintenance and give long years of service. Result: ***low annual cost.*** For more information send for free literature. Distributed only in the U. S. and Canada.



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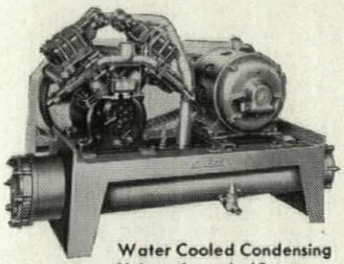
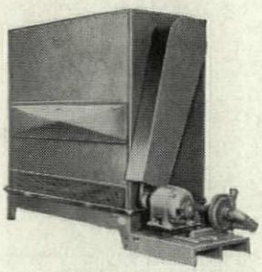
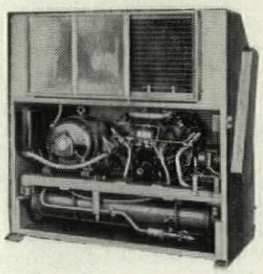


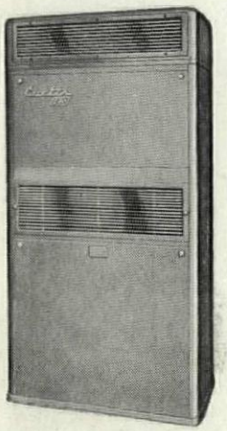
Water Cooled Condensing Units—through 40 tons



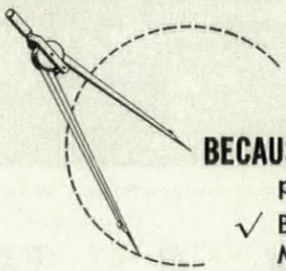
Evaporative condensers—cooling towers — and air handling units to match



Central Type—10-15 Ton Air Conditioning



2, 4, 6, 8 Ton—Packaged Type Air Conditioning



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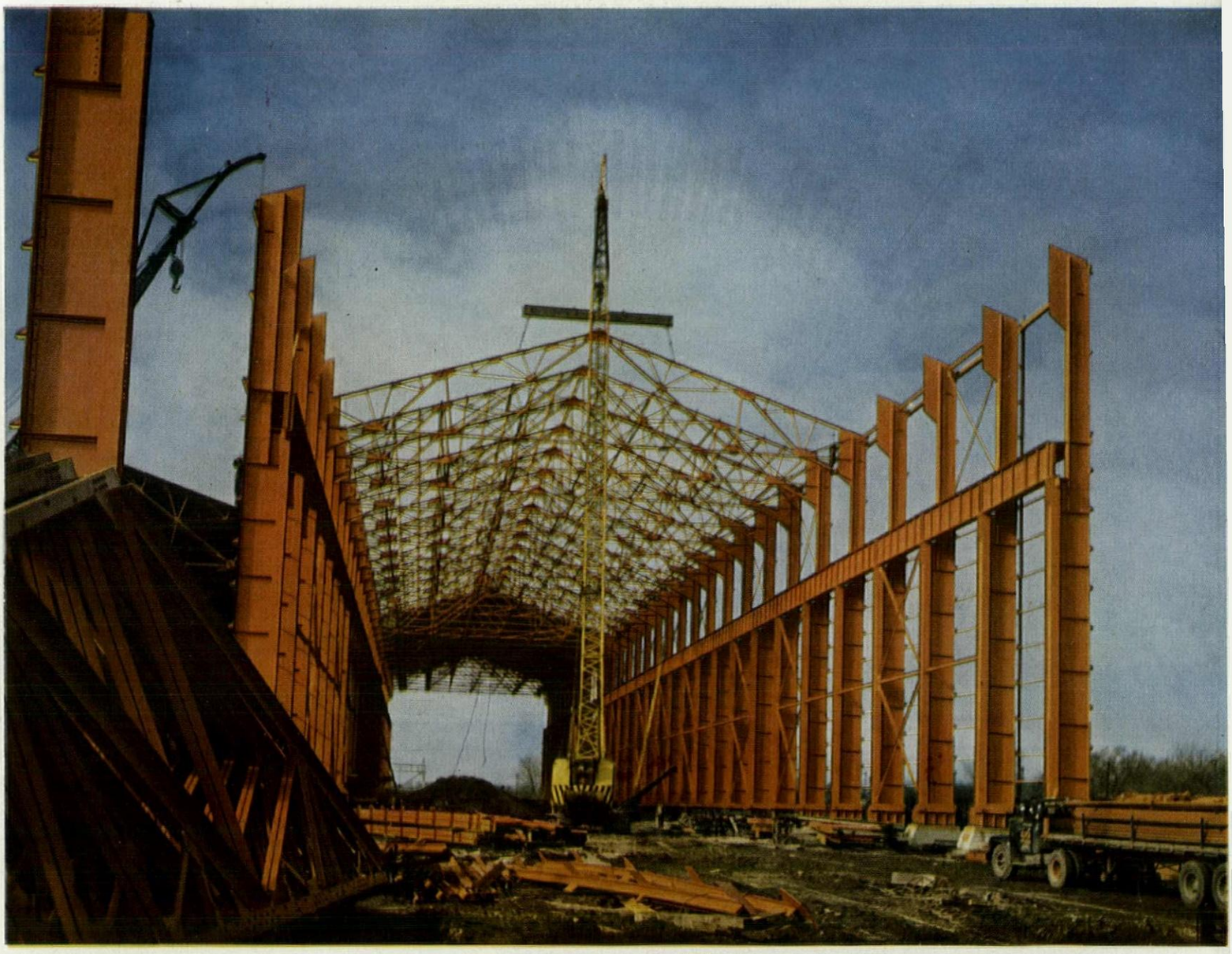
98 Years of Successful Manufacturing

R-52-1



New furnace building for Northwestern Steel and Wire Company, Sterling, Illinois. 4973 Tons fabricated.

Brains and brawn build rugged steel mills

Brains figure in a job like this where the columns are of such unusual proportions . . . nine feet three inches (9′ 3″) wide, seventy-nine feet (79′) high, and weighing twenty-three (23) to twenty-seven (27) tons each. How to lay out the work to meet exacting time schedules requires special skill. The shop equipment and floor area has to be of sufficient capacity to take it. The man power must be rugged to handle units of these unusual characteristics. Yes, not many shops can undertake such work. On all jobs where fabricated structural steel is specified, from a few hundred tons to many thousands, send your plans and specifications to Allied to be estimated.

- Clinton Bridge Corporation
- Gage Structural Steel Corporation
- Midland Structural Steel Corporation

Fabricators and erectors of structural steel for highway and railroad bridges; Industrial, office, school, and government buildings; Airport structures; Harbor facilities

Engineered WAYS TO BETTER BUSINESS

GLOBE-WERNICKE

TECHNIPLAN MODULAR OFFICE

SHORT TURN
to office efficiency

"BODY ENGLISH" by the office workers runs into a pretty (awful) figure in a year's time. That's the cost of turning the bodies to get at working accommodations.

TECHNIPLAN, the original complete modular office, provides the same work surfaces, superior job-fitted work facilities, all usable and available to the worker within a short, ¼-turn of the body. Your payroll buys *work* rather than torso exercises.

MORE WORKERS IN THE SAME SPACE is another great advantage of TECHNIPLAN to changing or expanding businesses. Space-saving is accompanied by complete flexibility; your office is always adjustable to your available space.

INTERLOCKING and interchangeable TECHNIPLAN units can be combined in innumerable arrangements, to fit the individual needs of workers or departments. The units are readily taken apart and rearranged—no special skills or tools needed. Yet they stand solidly, firmly—with height and leveling adjustments.

PARTITIONED PRIVACY, partial or complete, wherever you want it—in solid, part glass or sound-barrier partitions.

SMART APPEARANCE, modern and tasteful, adds impressive distinction to TECHNIPLAN offices—a morale builder for the staff, a prestige item for visitors. In wood, Walnut finish.

ASK FOR TECHNIPLAN FACTS—use this convenient Check List Request.

MORE THAN 4000 aids to better business originate with Globe-Wernicke—are sold and serviced by dependable G/W dealers, readily located through your classified 'phone directory listed under "Office Equipment."

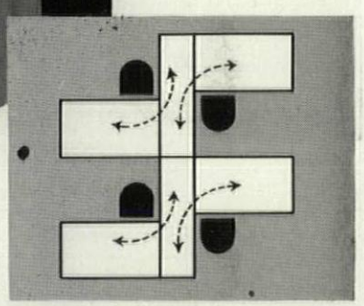
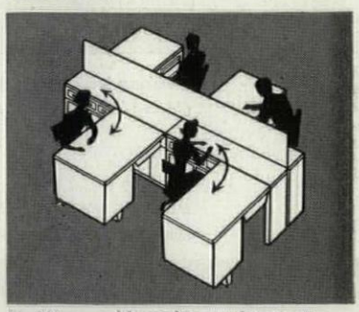


Diagram of illustrated arrangement, and the efficient ¼-turn work station.



Partitions add working privacy at ¾ or full height—same grouping.

GLOBE-WERNICKE

Engineering Specialists in Office Equipment, Systems, and Visible Records

Cincinnati 12, Ohio

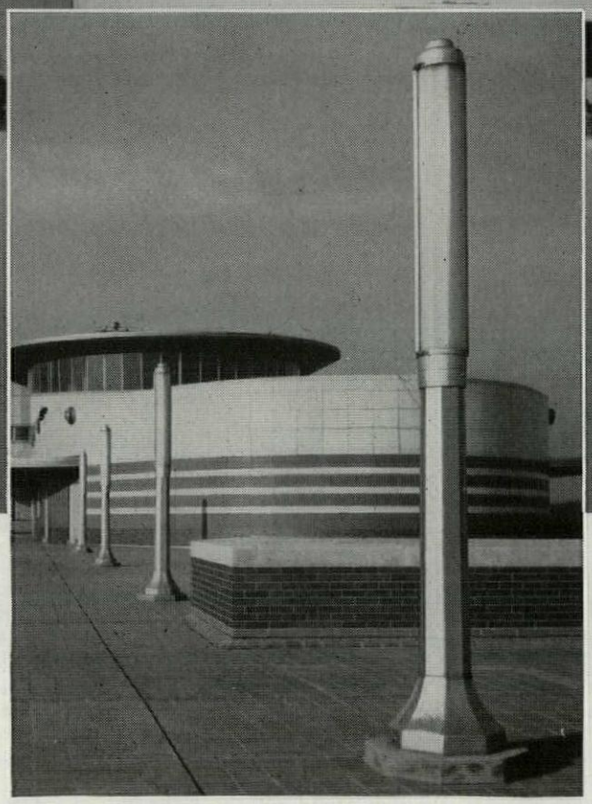
CHECK this LIST for wanted information—promptly furnished:

- ☐ TECHNIPLAN Facts
- ☐ Modern Filing Methods
- ☐ Visible Record Facts
- ☐ Special BIG Papers System

7-AF

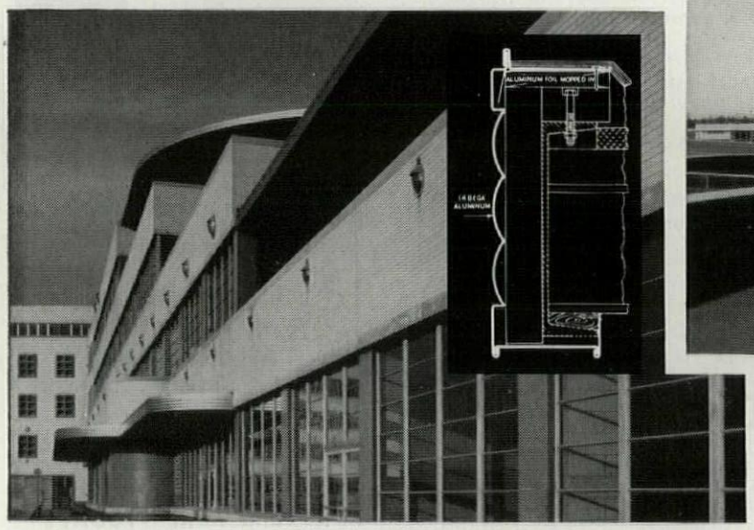
Check above, attached to your letterhead—and MAIL—TODAY!

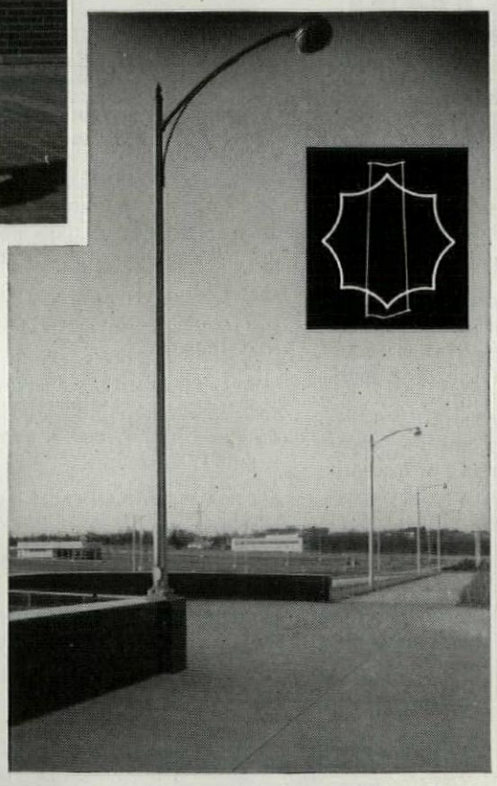
EVERY EXPOSED



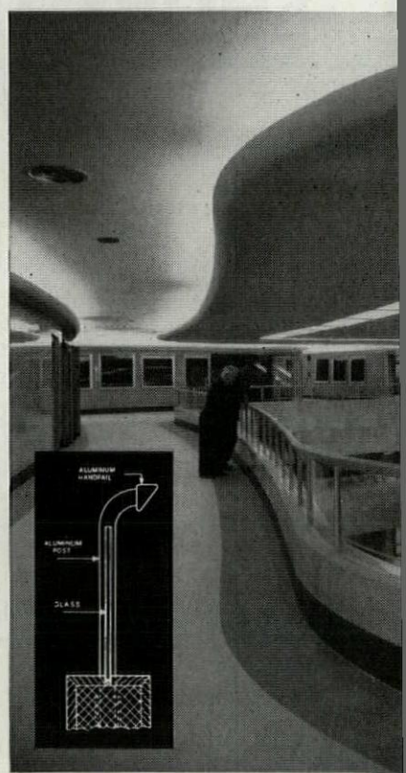
Aluminum luminaires light this public terrace outside the glassed-in main dining room.

Marquee, windows and spotlights employ Alcoa Aluminum at this passenger service entrance.

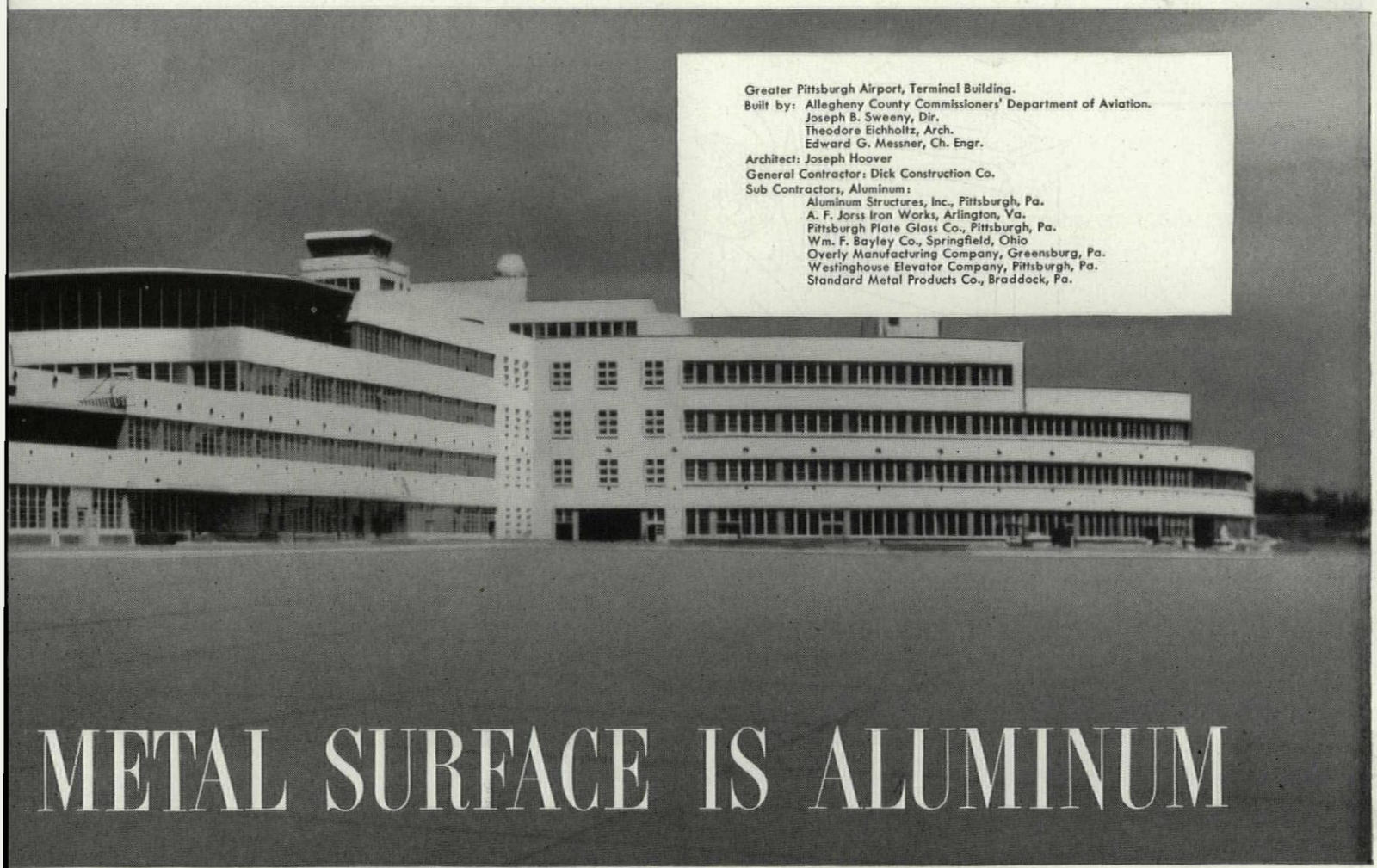




Aluminum light standards dot the approaches to the administration building and light the public parking area.

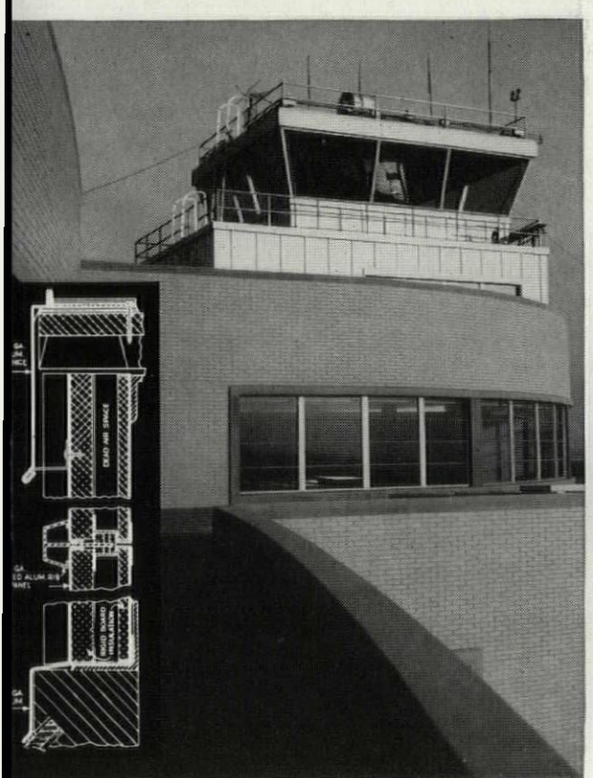


In the marble-faced rotunda there are two levels guarded by aluminum railings. Shop display windows are all framed in aluminum. Electric stairways trimmed in aluminum serve these floors.



Greater Pittsburgh Airport, Terminal Building.
Built by: Allegheny County Commissioners' Department of Aviation.
Joseph B. Sweeny, Dir.
Theodore Eichholtz, Arch.
Edward G. Messner, Ch. Engr.
Architect: Joseph Hoover
General Contractor: Dick Construction Co.
Sub Contractors, Aluminum:
Aluminum Structures, Inc., Pittsburgh, Pa.
A. F. Jorss Iron Works, Arlington, Va.
Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Wm. F. Bayley Co., Springfield, Ohio
Overly Manufacturing Company, Greensburg, Pa.
Westinghouse Elevator Company, Pittsburgh, Pa.
Standard Metal Products Co., Braddock, Pa.

METAL SURFACE IS ALUMINUM



Both the pilot tower and theodolite have insulated aluminum panel walls. Window frames and guardrails, too, are of aluminum.

When your aluminum transport next lands you at the new Greater Pittsburgh Airport, you'll find aluminum at work on the ground, too.

Designers with an appreciative eye for the efficient use of materials will see aluminum's advantages of strength, corrosion resistance, conductivity, workability and lasting good looks applied in hundreds of places. On the runway, in the control tower, in the great terminal building and the acres of parking area. In lighting, flashing, windows, doors, railings, ducts, walls and hardware.

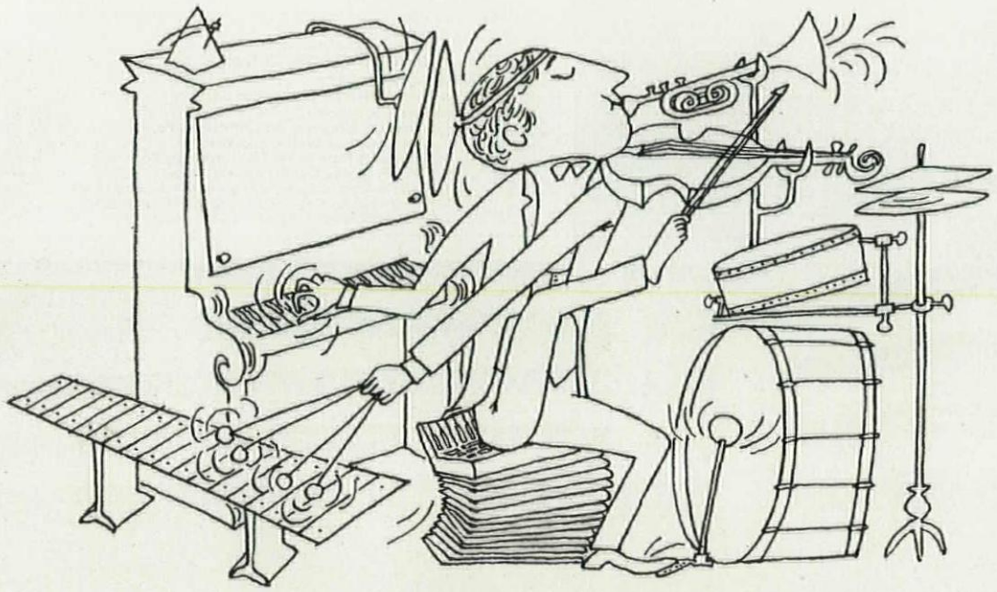
The next building you plan, consider aluminum for places exposed to wear and weather, wherever maintenance will be a problem; wherever you want distinctive appearance and lasting good looks.

For information on any application of aluminum, call your local Alcoa sales office or write:

ALUMINUM COMPANY OF AMERICA
1887-F Gulf Bldg. • Pittsburgh 19, Pa.

ALCOA

FIRST IN ALUMINUM



Air conditioning can be in concert too

If you've had problems air conditioning buildings that have a variety of heat loads, here's news that'll be music to your ears.

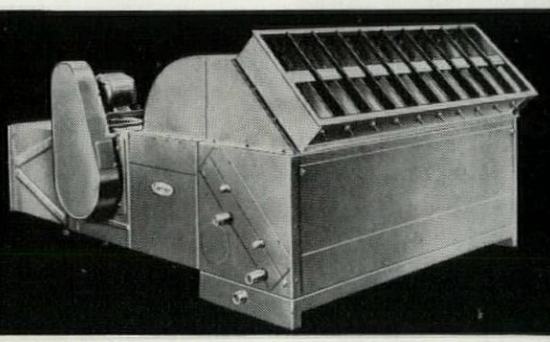
Our new Zoning Weathermaker is a year-round air conditioning unit that gives accurate temperature control of several different zones at the same time. A blow-through fan coil system, there are 14 possible zones available, each zone having a hot and cold damper placed at 90 degrees to each other, so one is closed when the other is open. And any degree of modulation is possible.

Sectionalized for easy installation, the Zoning Weathermaker can be suspended from the ceiling or floor mounted. And for greater flexibility of application, all piping connections can be made from either side.

This new Weathermaker joins Carrier's great family of products . . . products matched in size and performance to work together . . . products to meet every industrial or comfort air conditioning requirement your client may have. Carrier Corporation, Syracuse, New York. . . . *for 50 years — the people who know air conditioning best.*

Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL EQUIPMENT



The Carrier Zoning Weathermaker, available in 5 sizes with cooling coils in 4 or 6 row direct expansion . . . or 4, 6 and 8 row cooling coils for brine or chilled water. Cooling capacities from 15 to 80 tons, 4100 to 16,400 cfm.

Doorways that beckon you in

Doorways are truly entrances when the doors are *Tuf-flex**. They let the public see inside—and so more of the public *comes* inside.

It need not be a new shop. Many an old place has had its face lifted by installing *Tuf-flex* Doors. And with profitable results.

Tuf-flex Doors are crystal clear—but they're made tough to stand up to the traffic they invite. They're polished plate glass, ¾" thick, tempered to a strength three to five times greater than standard ¾" plate glass. They are available in a variety of sizes, with handsome bronze or alumilited fittings designed to take standard pivot hinges and other builders' hardware.

Why not go outside *now* and take a new look at your doors? See if they *look* inviting. If they don't, *Tuf-flex* Doors can make all the difference in the world. Your L·O·F Distributor or Dealer will be glad to show you the types available. Or send coupon for free literature.

*®

L·O·F GLASS

TUF·FLEX

Tempered

Plate Glass DOORS

MADE ONLY BY LIBBEY·OWENS·FORD GLASS COMPANY
8862 Nicholas Building, Toledo 3, Ohio

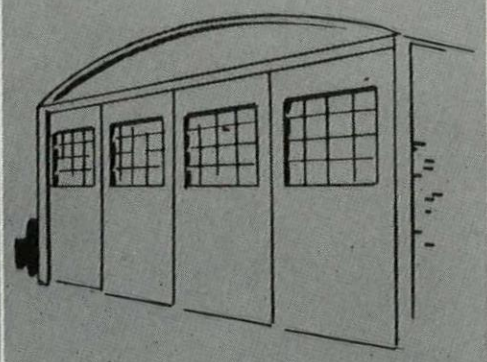
Libbey·Owens·Ford Glass Company
8862 Nicholas Building, Toledo 3, Ohio

Please send me a copy of your book showing uses of *Tuf-flex* Doors, as well as your installation detail folder.

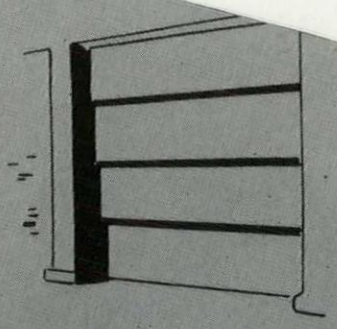
Name_____

Address_____

Company_____

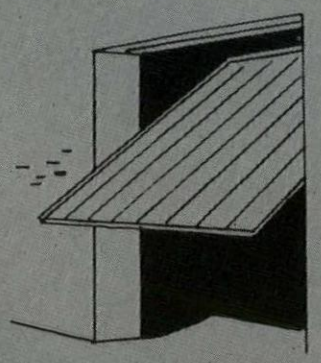


SLIDE DOORS



VERTICAL LIFT DOORS

for any plant . . . for any purpose . . . MORE DOOR PER DOLLAR

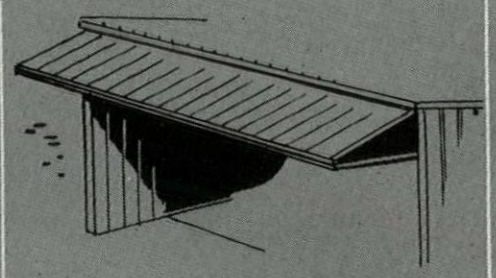


TURNOVER DOORS

Many long-standing installations—in industrial and commercial buildings the country over—attest to International Steel's policy of designing and producing doors to assure four permanent qualities:

(1) Easy, fast-acting operation.
(2) Utmost safety and protection.
(3) Longest trouble-free service.
(4) Lasting weather-tightness.

When planning industrial door installations for any project—from smaller slide doors to the very largest special installations . . . motorized or manually operated . . . inside or outside installations—International Steel's specialized experience can be useful indeed. Your inquiries concerning any phase of industrial door development will always be welcomed.

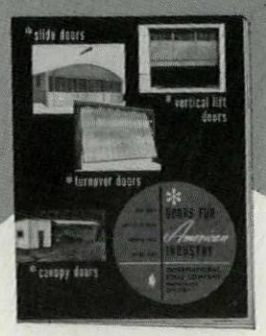


CANOPY DOORS

for detailed information, write or wire

INTERNATIONAL STEEL COMPANY

1909 EDGAR STREET • EVANSVILLE 7, INDIANA

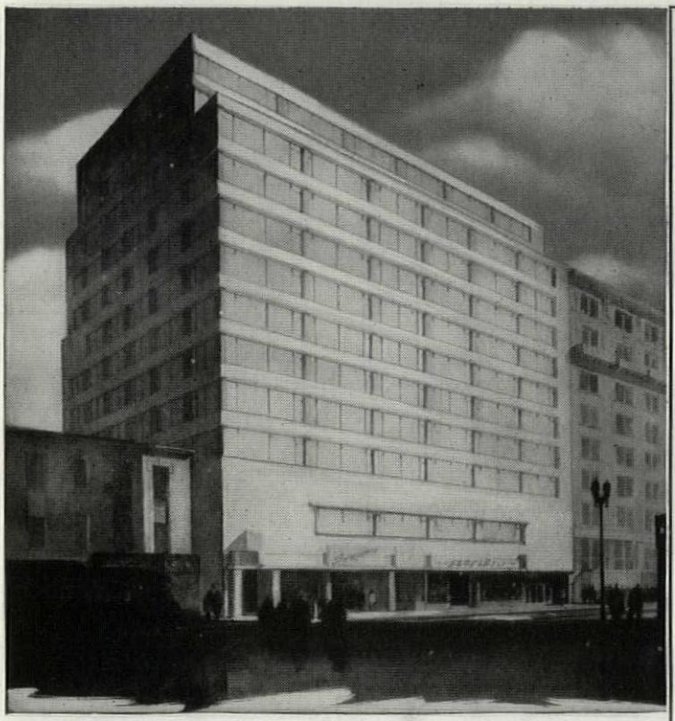


New complete guide to the latest and best in Industrial Doors—write for your personal copy, now!

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE

In a City of Beautiful Buildings

Celotex Roof Insulation is proving itself where it counts most: ON THE JOB!



KASS BUILDING, WASHINGTON, D. C.
specified Celotex Roof Insulation

Architect: James F. Hogan

Roofing Contractor: Easterday-Duckworth Company
Owner and Builder: Kass Realty Company, Inc.

Only the finest of materials were specified for the ultra-modern Kass Building — one of the newest office buildings in the nation's capital. Among these, naturally, was Celotex Roof Insulation.

Celotex PRESEAL Roof Insulation

- Has 0.33 Btu conductance ("c") for nominal 1" thick material.
- Both sides, all edges asphalt coated for complete moisture protection in storage and on the job.
- Controlled application of asphalt at mill protects insulation value by preventing further penetration during mopping.
- Smooth, asphalt-coated surface insures positive bond to both roof deck and roofing felt.
- Comes in a range of thicknesses to meet specific insulation requirements of each job.

OTHER TYPES of Celotex Roof Insulation—Preseal "30" and Regular—also available. Write for details.

In roof insulation, as in everything else, *the payoff is in performance!* And no other roof insulation can challenge the *job-proved* record for quality, durability and economy set by Celotex Roof Insulation through over 25 years of actual use in all types of installations, all over the country.

Celotex Roof Insulation is low in initial cost, easy to handle, exceptionally durable. It speeds application, reduces labor costs, helps assure a superior, long-lasting roof that requires less maintenance.

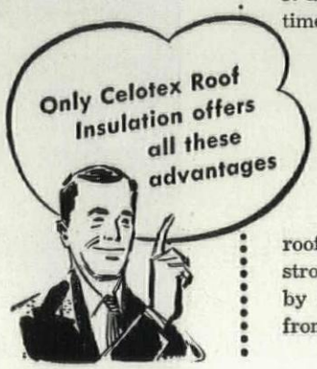
So why take risks with untried materials? For complete satisfaction, always specify Celotex Roof Insulation. There's a type to meet every job requirement. Write now for complete technical data! The Celotex Corporation, Dept. MB-62, Chicago 3, Illinois.

It pays to specify genuine

CELOTEX
REG. U. S. PAT. OFF.

ROOF INSULATION

The Celotex Corporation
Chicago 3, Illinois



1. High Insulating Efficiency means greater comfort the year 'round, plus reduced heating and air conditioning costs.

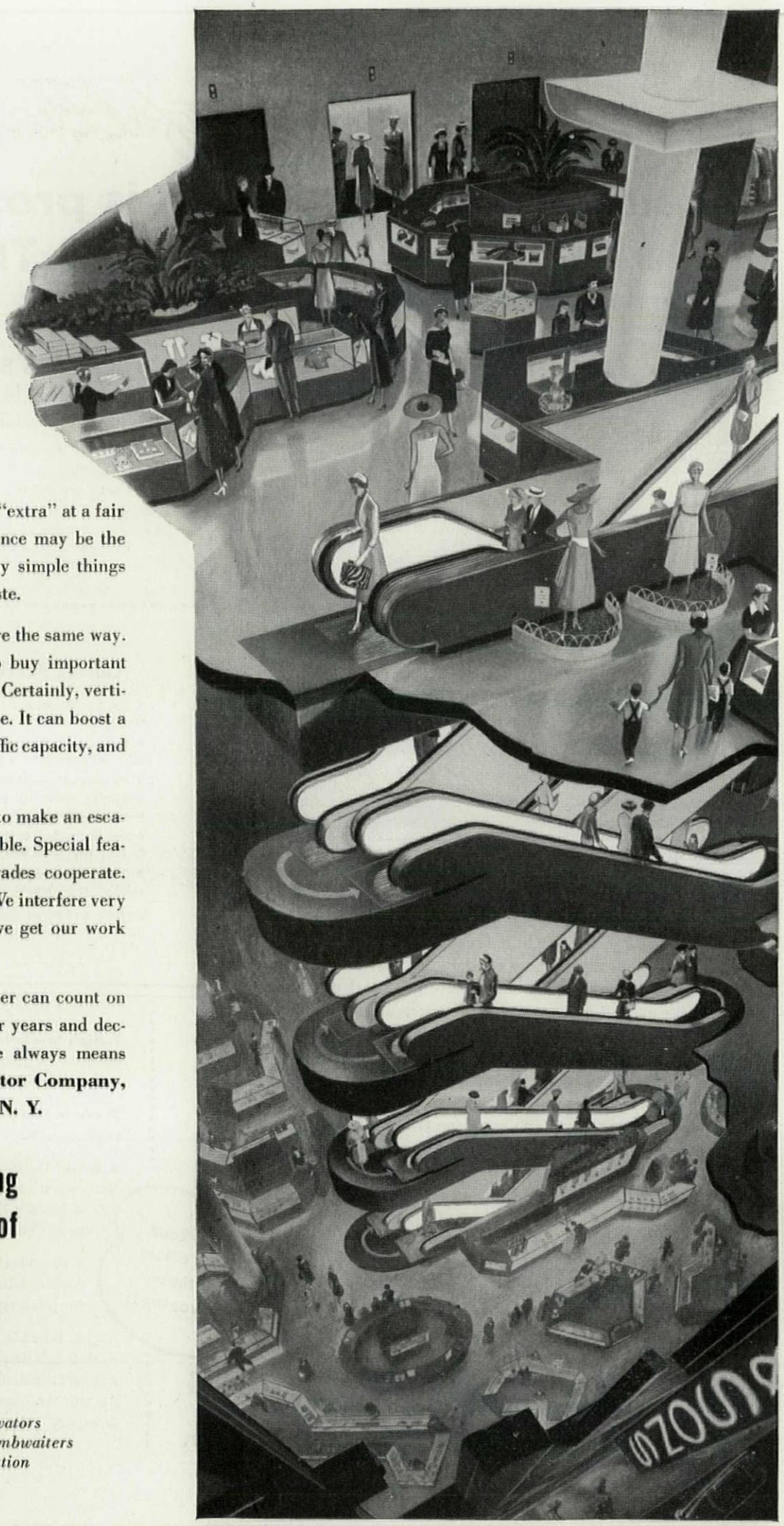
2. Low in Cost all three ways: initial, applied, maintenance.

3. Quick, Thrifty to Apply: installed with less time, work and cost because it's light and easy to handle. Strong and rigid—doesn't have to be "babied" on the job.

4. Provides Excellent Bond for hot mopped roofing felts of either the asphalt or coal tar pitch type.

5. Durable, Long-Lasting. It is the *only* roof insulation made of long, remarkably strong Louisiana cane fibres—and protected by the *exclusive* patented Ferox® Process from dry rot and termite attack.

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 elevatoring is the business of

Otis

Escalators • Passenger Elevators
Freight Elevators • Electric Dumbwaiters
Maintenance • Modernization

Just 20 words specify this building

It is easy to order any of the hundreds of possible size combinations of Armco STEELOX Buildings. For example, with just 20 words you can specify an exact duplicate of the building shown here. This is all you need:

SPECIFICATION
Armco STEELOX Gable Building, 12′ wide x 20′ long x 10′ high, including 4 windows, 1 service door, 2 ventilators.

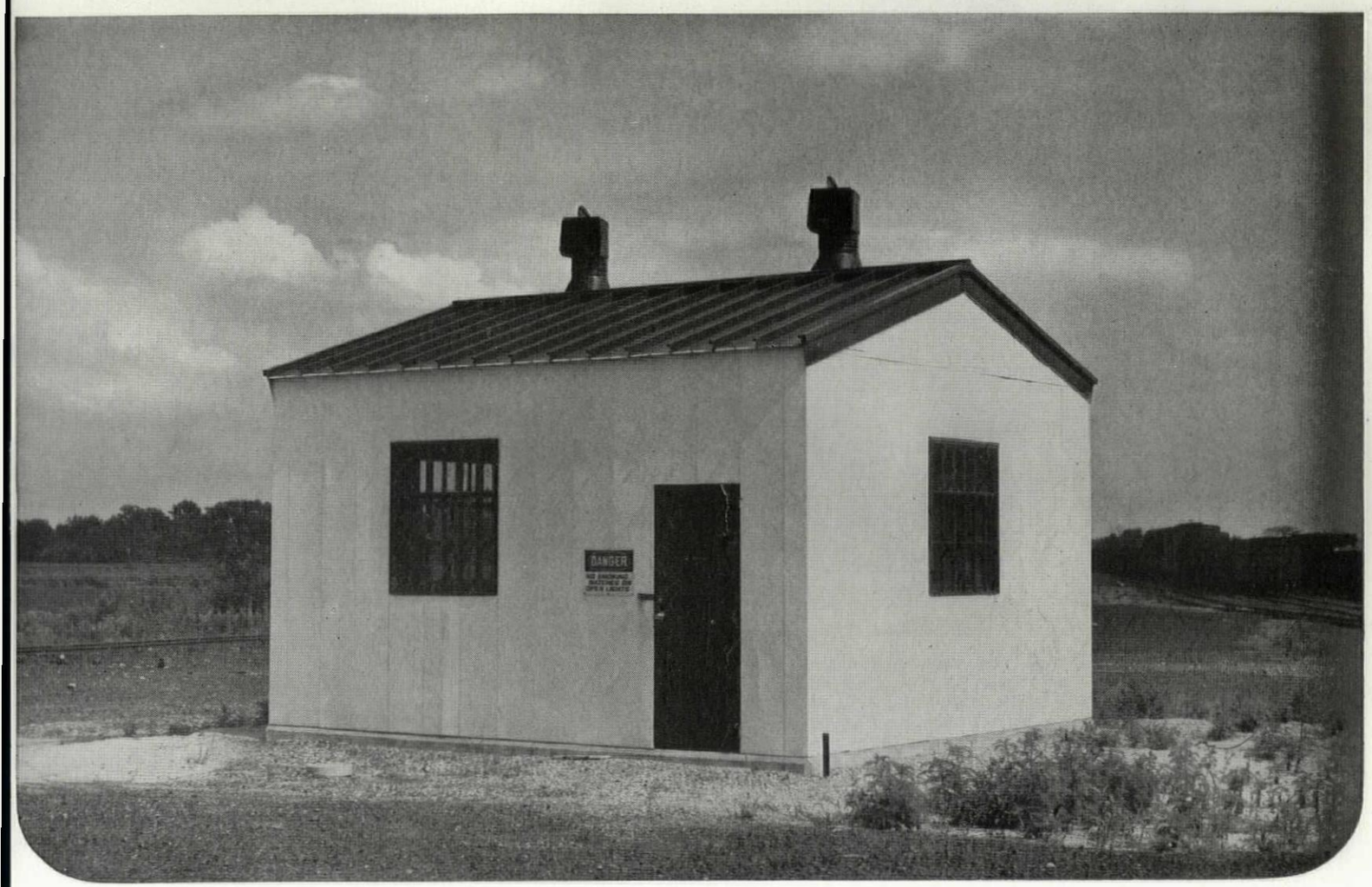
This covers a carefully designed building, including all structural members and exterior covering, ready for erection on a prepared foundation and any interior finish you desire.

Armco STEELOX is the easy, economical solution for service buildings—pump houses, meter houses, garages, tool sheds, locker rooms and clock houses. And these all-steel, prefabricated structures work equally well as warehouses, offices, schools and in other varied applications.

Erection is easy. Even with inexperienced labor, STEELOX Buildings go up in a matter of hours. Doors and windows go in almost anyplace. The buildings are fire-resistant, weatherproof, withstand wind and snow loads.

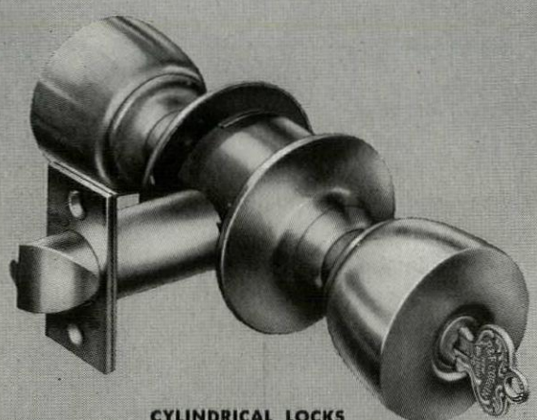
Write us for erection details, typical applications, sizes and other information. Armco Drainage & Metal Products, Inc., 2922 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

Armco Steel Buildings



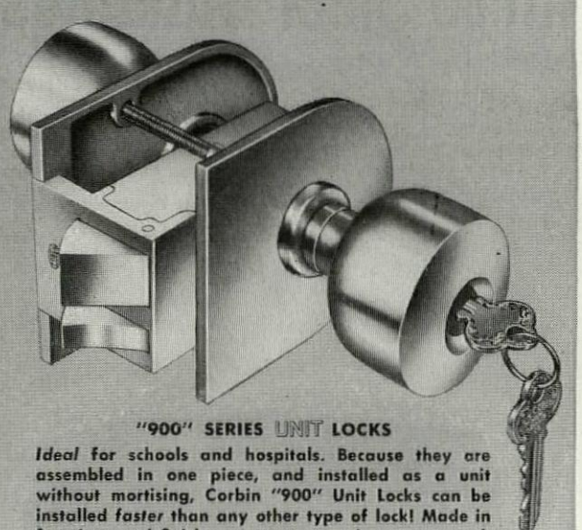
PRODUCTS LIKE THESE

... make CORBIN the world's



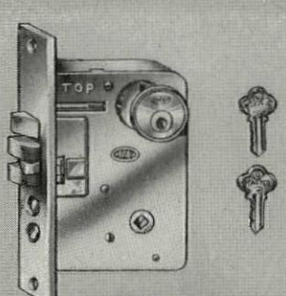
CYLINDRICAL LOCKS

For every type of construction. Heavy-Duty, with extra-quality features, including ⅝ inch throw and the famous smooth-working, long-lasting roll-back Corbin latch principle. 100% reversible. Made in 13 most-used functions.



"900" SERIES UNIT LOCKS

Ideal for schools and hospitals. Because they are assembled in one piece, and installed as a unit without mortising, Corbin "900" Unit Locks can be installed *faster* than any other type of lock! Made in functions and finishes to meet every important need.

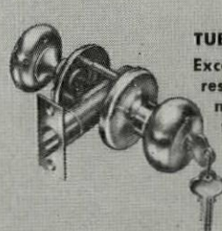


MORTISE LOCKS

Made in a variety of functions and weights for every requirement. Can be masted-keyed with other Corbin cylinder locks.

For convenience . . . for unsurpassed economy an satisfaction for your clients, it pays to base you specifications on the *complete* line of Corbin lock and builders' hardware. Take locks, for instanc Because Corbin manufactures *every major typ of lock,* you are never limited in choice. You ca switch from type to type *as requirements var* Yet all locks can be master-keyed as needed an harmonious in design. No need for costly ove specification or inadequate under-specificatio here! In addition, Corbin offers *all* the hardwar to equip a building . . . plus experienced repre sentatives whose up-to-date knowledge can be c invaluable help to you.

P. & F. Corbin
DIVISION
The American Hardware Corporation
New Britain, Connecticut, U.S.A.



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.

.. and MEN LIKE THESE!

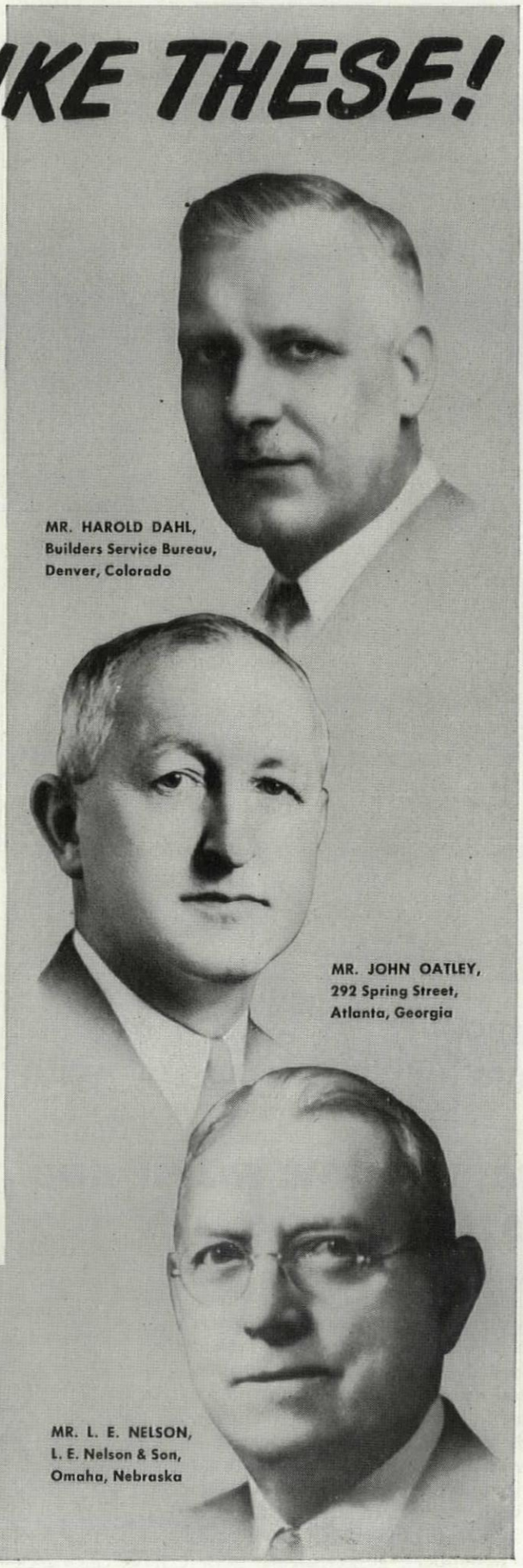
most widely used builders' hardware

FOR AUTHORITATIVE ASSISTANCE, CALL YOUR CORBIN REPRESENTATIVE

Years of close contact with the hardware and lock problems which confront architects and engineers have made these Corbin consultants among the top men in their field. There's a Corbin representative of similar high calibre in your locality who will gladly work with you in the selection of builders' hardware. Put his experience and integrity to work for *you* when plans reach the specification stage!

GOOD BUILDINGS DESERVE GOOD HARDWARE

CORBIN



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Builders Service Bureau,
Denver, Colorado

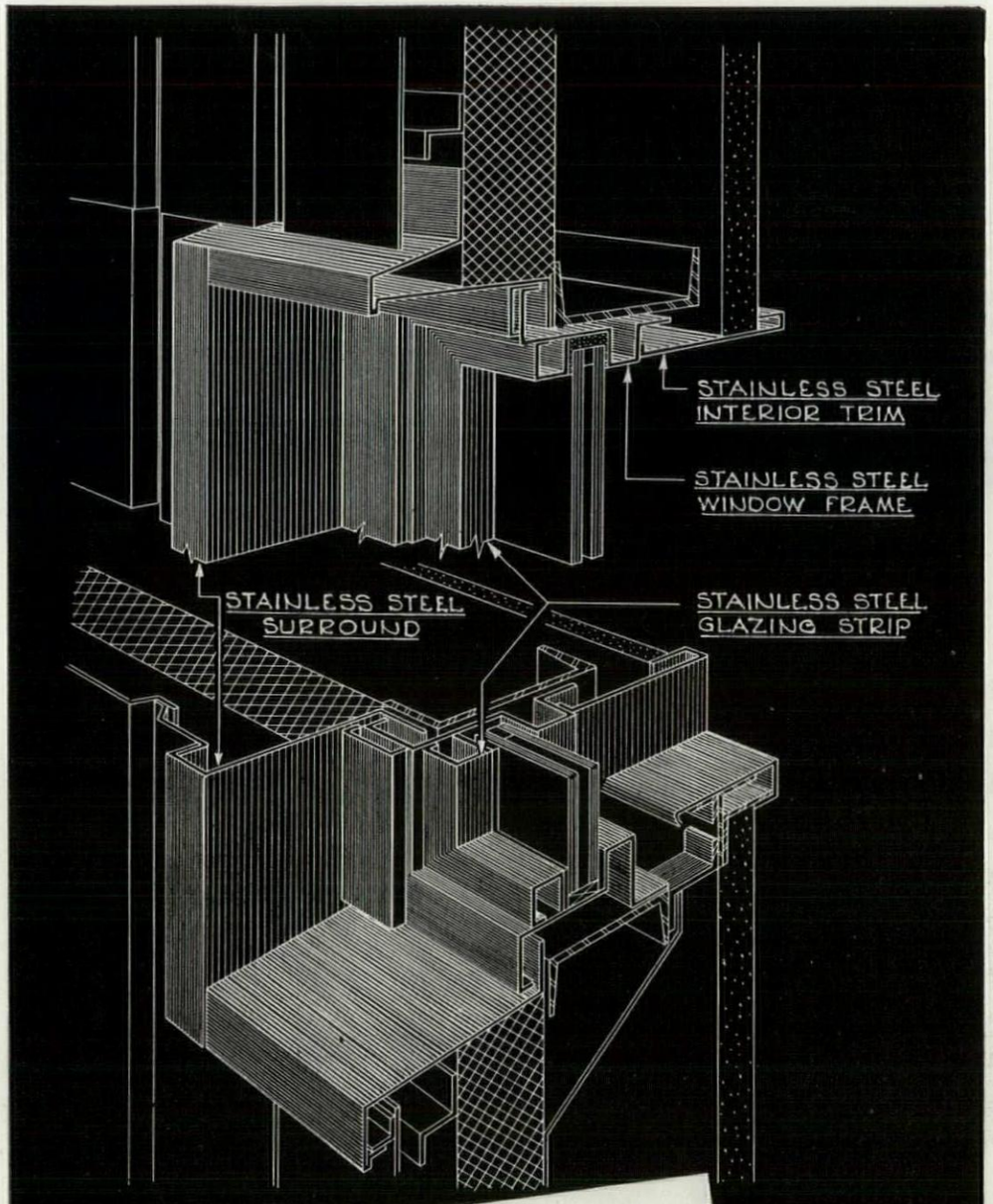
MR. JOHN OATLEY,
292 Spring Street,
Atlanta, Georgia

MR. L. E. NELSON,
L. E. Nelson & Son,
Omaha, Nebraska

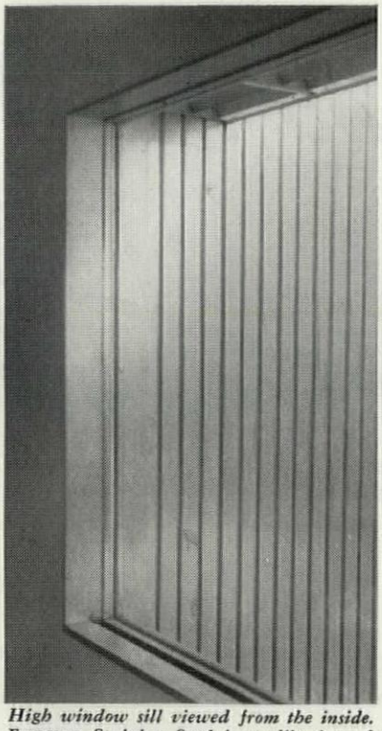
REVISED CORBIN CATALOG

Now Available

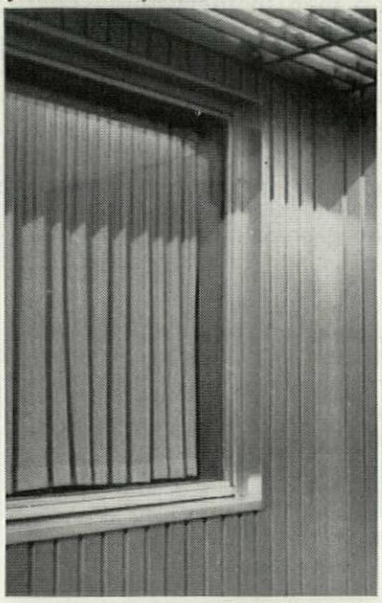
An up-to-date, abbreviated version of the Corbin Catalog, revised to meet today's unique conditions, is now available. Ask your Corbin distributor for your copy today.



Architectural ideas with Enduro Stainless Steel



High window sill viewed from the inside. ENDURO Stainless Steel is readily formed on regular sheet metal equipment by local fabricators everywhere.



High window sill viewed from the outside. Note that adjoining curtain wall panels are ENDURO Stainless Steel, too.

SURROUND, WINDOW FRAME AND GLAZING STRIPS

ENDURO Stainless Steel sparks *ideas.* Architects using it with imagination achieve handsome, striking effects . . . utility and beauty that outlast the years . . . resistance to rust and corrosion . . . ease of cleaning . . . and client enthusiasm. Even in space-saving thin sections, ENDURO is superbly strong and damage-resistant. Here you see it functionally applied in a striking window treatment. Its ultimate usage is as broad as your imagination—because the *combination* of structural "plusses" ENDURO offers can be found in no other commercial metal. File the name "ENDURO" with your future plans now. You'll find more details in Sweet's; for special help in developing *your* ideas, write Republic.

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GENERAL OFFICES • CLEVELAND 1, OHIO
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Copper, aluminum curbs eased but steel strike losses begin to pinch

In May 1951, when Chile agreed to sell 80% of her copper output to the US at 27½¢ a lb., the other 20% commanded as much as 54½¢ in the world free market. Last January, the world price sank to around 40¢. Chile began to let copper pile up unsold. Metal-hungry US fabricators were kept away from the tempting accumulation because the government would not let them pass along costs above the 24½¢ frozen price of domestic copper. For five months, the impasse stood. Finally, on May 8, Chile broke off her agreement to sell the 80% share to the US below the market price. Imports of vital ore dwindled. At mid-June, US mobilizers finally abandoned their feckless poker game over the price of copper.

Acting Defense Mobilizer Steelman announced a new set of rules—different but weird as ever. Starting July 1, OPS would let US copper wire and brass mills pass on 80% of the higher cost of foreign copper to their customers. NPA would issue copper allotments on the basis of 60% from price-frozen domestic sources and 40% as an "entitlement" to buy copper abroad with no price restrictions.

With the world price down to 35½¢ a lb., that worked out to a 3.84¢ a lb. price boost for all copper. Few in the copper industry expected the new plan to work. OPS must keep shifting the price lid as world prices fluctuate. And there was nothing to prevent well-heeled industries (e.g. auto makers) from bidding up the world price until other US users drop out of the market. If that happened, even some government economists agreed copper rationing would no longer be workable. Fowler insisted this would *not* happen, for one reason because the world copper market was soft even at 35½¢ a lb. Some industry experts thought it might break. The 3.84¢ a pound increase, electrical contractors thought, might boost the price of wire and cable about 8%.

More for everybody. With Chilean copper again moving north, NPA felt able to order the first big relaxation in copper use under CMP. Fowler admitted there was no more copper now than six months ago (when NPA spoke of it as "critically short"). But the government at last was facing the realities of world copper supply. Specifically, NPA:

- Upped self-certification limit on copper for all construction except roads and recreational building from 250 to 750 lbs. per project per quarter.
- Upped self-certification of copper for homebuilders from 35 lbs. to 50 lbs. where steel water pipe is used, and from 135 to 175 lbs. where copper pipe is used.

Aluminum tickets uncashed. A day later NPA eased aluminum self-certification. It assigned a different reason: nondefense aluminum users were not actually ordering the quantities of third-quarter aluminum they had been allotted. So NPA granted 1,000 lbs. of aluminum per project per quarter to all construction but recreation and roads, allowed homebuilders 250 lbs. per house provided it is not used for decoration.

Slow strangulation. The relaxations in copper and aluminum would mean little to the building industry while the CIO steel strike continued to cost the nation 2 million tons of steel a week—some 83% of capacity. Already, the strike had led the Federal Reserve Board to postpone its scheduled relaxation of Regulation X credit restrictions on commercial construction.

And as the strike stretched through its third week with the union and steelmasters far from settlement, chances grew that NPA would postpone its promised July 1 relaxations in CMP (AF May '52) which included an end to the ban on recreational building. It was mere co-incidence that NPA announced approval of 431 more commercial, religious, municipal and entertainment projects worth $168 million on June 17. They had been approved before the steel walkout. For the strike's duration, NPA was approving nothing.

About 50% of the steel fabrication industry was closed by mid-June (cutting off about 75,000 tons of structurals a week). The other half had sizeable inventories on hand, but already the pinch on some sections was beginning to be felt. Few plants foresaw operating after mid-July.

If the strike dragged into July, the loss of steel could be serious enough to begin to jar construction plans as far off as 1953.

WASHINGTON DIARY

5/28 NPA ups metal rations to civilian manufacturers for third quarter, 1952, allows 10% more steel, 15% more copper, 50% more aluminum than current quarter.

6/1 Army Engineers complete two-year design program, produce plans for 245 military building types to be constructed in event full mobilization.

6/2 NPA forbids steel shipments to manufacturers of less essential items because of steel strike.

6/5 NPA revises scarce-materials list, drops more than a score of items (lead, zinc, antimony, cadmium, wood pulp, etc.), adds others (cryolite, fluorspar, etc.).

6/11 NPA allots materials for construction of 830 industrial expansion projects for third quarter, 1952 pending outcome of steel strike. Cost: over $1 billion.

6/13 NPA officials predict cancellation of moves taken last month to ease building restrictions (to affect fourth quarter, 1952, allocations).

6/13 DPA approves fast tax write-offs on 247 defense facilities amounting to $135 million. To date: 10,869 projects approved for accelerated amortization of $19.6 billion.

6/17 NPA steps up copper allotments to civilian industries by 100 million lbs. for third quarter, 1952. Reason: anticipated big upturn in foreign copper shipments due to new price policy.

House, Senate compromise on 35,000 public housing starts; L.A. vote stirs new rumpus

Last year, when Congress reduced public housing starts to 50,000 a year it was only a token defeat for public housers. With their unwieldly program, that was about all the housing they could begin physically. But now, the program has picked up steam. Without restrictions, it could reach 75,000 to 100,000 units in fiscal 1952-3.

So when House-Senate conferees compromised late this month on a 35,000 starts limit for public housing next fiscal year, it was a tremendous setback for public housers. The ceiling could not be raised during the remaining legislative path of the independent offices appropriation bill. It would probably not be lowered, either.

Permanent ban. Moreover, the 35,000 limit would bar PHA from laying plans to build more than that much housing in any future fiscal year. Public housers managed to avert one possible disaster. Conferees modified a House proposal to bar federal funds from public housing in which live Communists or members of organizations on the attorney general's subversive list. All that remained was an admonition against admitting left-wingers.

Popular defeat. On the eve of political conventions, public housing also suffered a critical defeat at the polls. After one of the hottest campaigns on the issue yet waged in a US city, Los Angeles voters disapproved a $110 million federally subsidized program by a surprising 59 to 40% margin. The final ballot count: 378,343 against; 258,718 for. The vote, however, lacked

legal standing to halt the 10,000 unit program, because the California Supreme Court had ruled the city could not break its 1949 contract with the LA Housing Authority.

While City Attorney Ray L. Chesbro prepared an appeal to the US Supreme Court for a review of the California court decision, Los Angeles' public housing program marked time. Latest strategy of builder-realtor groups: tie a rider onto the first possible bill in Congress to bar public housing in cities where citizens have voted against it. Efforts to squeeze this into the Defense Production Act and the Independent Offices Appropriation bill were defeated on the ground they were not the proper vehicle for such legislation.

AIA switch? Architects convening this month in Manhattan for AIA's 84th convention may also be confronted with the public housing issue. So far, AIA is the only major building industry group which has endorsed public housing. Now, AIA's Utah chapter was fostering a policy amendment reversing that stand because it "no longer has the backing of the membership."

Hearings end on anti-bid shopping bill; action by Congress doubtful this session

After hearing a final flurry of pro and con arguments on the anti-bid shopping bill, the Kilgore subcommittee of the Senate judiciary committee retired to an executive huddle to debate what if any action it would recommend. By mid-month it had not made up its mind. There were hints that Chairman Kilgore was readying a favorable report to speed the measure through the Senate. But informed observers doubted that on the eve of the summer recess and the political conventions Congress would be in the mood to take on a postponable controversy.

Reni

AGC's counsel John C. Hayes (l) and Managing Director H. E. Foreman were among 22 contractor witnesses who opposed measure.

Generals fear cost rise. In final hearings, general contractors repeated all their previous arguments with added emphasis, uncorked a few new ones. They insisted that the Associated General Contractors' code of ethics would be far more effective in cleaning up government bid letting procedure than the bill's elaborate policing system if only the subs would help make it work. Contractor H. C. Turner, Jr. of New York testified the bill would "increase costs to the government and encourage collusive bidding."

H. E. Foreman, AGC's managing director, complained: "The bill provides that any saving between the amount of the specialty contract bid named by the general contractor and a lower bid subsequently used shall revert to the government. There is no provision that if the subcontractor named is unable or unwilling to perform the work and the general contractor has to use a higher bid that he shall be compensated for that difference."

Other loud protests were voiced over the diminished authority prime contractors would be able to exercise in trying to boss federal jobs and the difficulty of attempting to report the names of subs. Wailed one general after another: "How can we name them and report on their bid amounts when the bids don't come in until the last minute?"

Opposition replies. Specialty contractors supporting the bill retorted vigorously. Pointedly, President D. B. Clayton of the National Electrical Contractors Association suggested that any genuine fears about the implications of the measure would be dispelled by a reading of companion bills introduced in the House. The House measures were drafted later, were altered to answer some major objections. Among other features, language is inserted to prevent the relationship between the government and the general contractor from being disturbed —though supporting groups have always denied that anything approaching a separation of bids is involved. The House drafts also refer more broadly to mechanical specialty work without spelling it out. This eliminates the squawk that any important subs are being excluded.

Clayton agreed that subs submit their bids late. They have to, he argued because if the specialty contractor's bid goes to the general contractor before the last minute, there is likely to be a leak somewhere, for some favored concern, or maybe to just anyone who would ask, in hopes of getting a cut price.

House approves $2.7 billion military construction bill

Resigned to the fact that expensive military base construction is inescapable in times of military expansion, the House this month approved a $2,758,313,000 public works bill for the armed forces. The bulk of the money—$2,089,277,000—would go to the Air Force to expand toward its 143 wing goal. Senate action was expected before the July recess.

Playing second fiddle, the Army was alloted $383,291,000. The Navy trailed with $285,750,000. The bill specifically earmarks funds for 136 Air Force installations, 72 for the Army, 65 for the Navy, besides a score of secret projects in the US and abroad. The Air Force would get a green light on seven new hospitals, two of which would be permanent. The Navy would be authorized to expand its hospital facilities around the Norfolk Va. area by 800 beds.

Chopped out of the bill by committee action was a $450 million request to help build North Atlantic Treaty Organization airfields and other bases in western Europe. As the committee members saw it, such funds should be provided under the mutual aid program.

After several members denounced waste and bungling in military construction, Rep. John E. Lyle (D., Tex.) announced that he was drafting a bill setting up more controls over construction costs and practices.

Bill to upset Wunderlich case heads toward enactment

For years, government contracts had carried a disputes clause making the decision of bid letting agencies final. To allay the fears of contractors who wanted the door left open for appeal in case they were not satisfied with settlement terms, contracting officials always had a soothing answer ready: "Don't worry," they said. "Despite this technicality, we are not going to stop you from going into the courts if you think you are treated unfairly."

Last November, the Supreme Court upset that tradition. In the Wunderlich case, it ruled that there could be no such appeals unless the contractor could prove fraud. Contractors' cries of anguish were little assuaged when a lower court later held that the language cut both ways—precluding intervention by the General Accounting Office where there were grounds for thinking the contractor had been overpaid.

Last month, the Senate judiciary committee approved a bill to give both the courts and the General Accounting Office power to review government contracts notwithstanding any conflicts in administrative regulations and forms. Enactment by Congress was expected before the summer recess.

Government forecasts $32.2 billion year for building; architects find work spotty

It was three months since NPA had begun taking the materials shackles off commercial and nonindustrial public building. How much was business picking up for architects and contractors? The answer seemed to be: only a little so far.

There were signs that the spring slowdown in general business was ending. But uncertainties over future markets tended to make some firms ponder a little longer before deciding whether or not to build. The implication for architects was much the same as for other businesses: get out and sell the customer—in this case, on the wisdom of building before costs go higher.

Hotels, skyscrapers. A sizeable array of commercial projects was unveiled in newspaper real-estate pages during April and May. Some of the biggest: a 700 room Statler Hotel in Dallas and a 450 room Statler in Hartford; Prudential Insurance Co.'s 41-story $30 million Chicago office (which will be the Windy City's first big skyscraper in 20 years).

But many an architectural firm found itself, like giant Skidmore, Owings & Merrill, busy principally with a flood of defense designing. Said Louis Skidmore: "I have some new evidence of interest among private clients who postponed jobs, but no new contracts."

Prosperous fifth. An AIA survey among 19,000 U.S. architects told much the same story. During the first half of this year, 45% reported less business than last year. But 25% of the firms covered had more work—generally because of defense designing. Thus, concluded AIA, "The busy architects are those with defense jobs. But only one architect in five was working on defense projects."

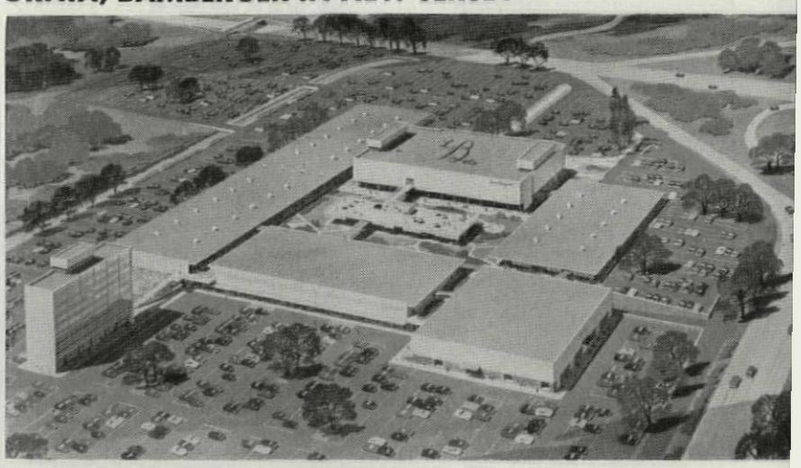
A survey by FORUM in 10 US cities found not nearly enough projects were coming out of mothballs to satisfy architects. In San Francisco, Architect Milton Pfleuger said "Commercial building has not started up yet. I hear some talk, but nothing specific." Gardner Dailey reported that an insurance client had canceled plans for a $700,000 office building because he was not making money, but noted a rush of schools, hospitals and hotels.

A question of sales. In Chicago, Architect Joseph Z. Burgee of Holabird, Root & Burgee declared: "The most extensive projects on our boards are work to be done by the telephone company. They seem to be going ahead full speed on expansion plans. For most companies the question used to be: 'Can we build now because of materials controls?' Now it is: 'Should we build now in the face of business conditions?'" But Burgee added: "There's still plenty of prospective work in sight."

A lot of other architects seemed to agree that work was there—if the psychological climate was right to bring it forth. Said Architect Thomas D. Broad of Atlanta: "Two of our projects which had died on the vine came back to life in the last three weeks. I think firms with building plans finally realize that prices are going to remain high and they might as well launch their building projects." Observed Minoru Yamasaki of Hellmuth, Yamasaki and Leinweber in St. Louis: "Hudson has wanted to build for so long they are now determined to go ahead short of a major depression. Our feeling is that the big reason people have been holding back so long on building is high costs and priorities . . . not the business slump. . . . We feel encouraged about the prospects. . . ."

Overbuilt suburbs? Much of the commercial work that was surging ahead consisted of suburban shopping centers. Among the largest were J. L. Hudson's $20 million store on the outskirts of Detroit (AF, May '52), a $6 million Macy's (*see cut*) near San Francisco, a multi-million Bamberger's at Paramus, N. J. (*see cut*), and a $5 million Stern's also at Paramus. All this activity moved Neil Petree, president of Los Angeles' Barker Bros., largest home furnishing store in the US, to counsel caution. Wrote Petree in the *Review* of the Society of Residential Appraisers: "There are

SHOPPING CENTER BOOM JOINED BY MACY IN CALIFORNIA, BAMBERGER IN NEW JERSEY



$6 MILLION MACY STORE, the company's biggest suburban branch yet, will soon go up in builder David Bohannon's Hillsdale development on the San Francisco Peninsula. The store will form part of a 42-acre shopping center (model of which Macy President Wheelock H. Bingham and Bohannon are inspecting at left) under the design of Welton Becket & Associates. A bus-taxi terminal is included because site adjoins major artery, US 101.

A second shopping center (above) will be built by a Macy affiliate, Newark's L. Bamberger & Co., at the junction of Routes 4 and 7 in Paramus, New Jersey. New York architects Abbott, Merkt & Co. have designed an air-conditioned building group with escalators, ramps and underground loading areas. Bamberger's four-story store will contain one-third of the center's floor space.

only $8.50 a square foot to build this excellently daylighted school

The architect's "secret"? . . .

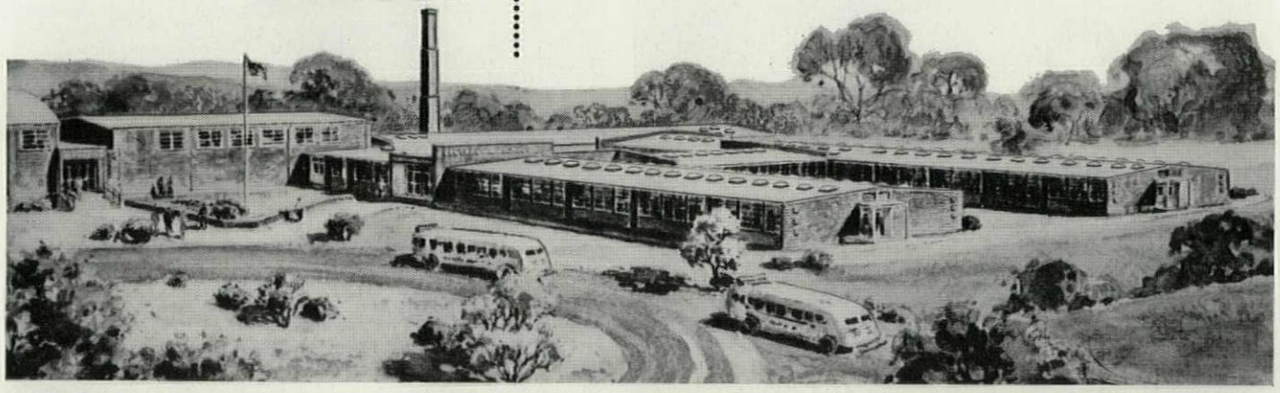
Toplighting with Wascolite Skydomes

What daylighting scheme would *you* use to get excellent classroom lighting and low construction cost at the same time? Most architects are now turning to schemes combining Wascolite Skydomes with perimeter sources. Why? *Better lighting . . . economy, simplicity and speed of construction.* The experience of architect William Roy Wallace of Winston-Salem, N. C., on his Central High School project is typical.

The original scheme required that the central roof section be raised to allow the construction of a line of clerestory windows over and within each classroom. Careful study revealed that the two-level ceilings and roofs would require complicated roof framing and flashing plus considerable labor and time.

But by using prefabricated, weatherproof, translucent plastic Skydomes, the roof construction was reduced to continuous simple mill construction with exposed rectangular laminated wood beams and mill decking ceiling which, at the same time, supports the Skydomes, insulation and roofing materials. This scheme was chosen for its speed of construction, simplicity, efficiency and economy. Costs, not including kitchen equipment, shop equipment, classroom and other furniture, are $8.50 per sq. ft.

You can achieve excellent daylighting at low cost by specifying Wascolite Skydomes and taking advantage of our Daylight Engineering Service. Simply mail a floor plan of your project and a description of your lighting requirements. We will analyze your needs, then submit a Skydome daylighting layout, as well as illumination and distribution curves. No obligation, of course.



Prefabricated Wascolite Skydomes are installed in minutes . . . are weather-proof, shatter-resistant and maintenance-free . . . come in three basic shapes and with clear colorless or white translucent, light-diffusing acrylic domes.

Central High School, under construction in Davidson County, North Carolina. Architect: William Roy Wallace.

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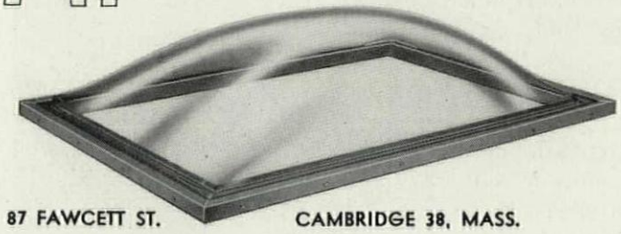
PATENT PENDING



WASCO FLASHING COMPANY 87 FAWCETT ST. CAMBRIDGE 38, MASS.

probably too many of these satellite shopping centers now on the drawing boards . . . The resultant overlaping and encroachment of trade territories will eventually cause the same deterioration that has taken place in some central shopping areas. Much money will be lost in some of these centers where this whole type of development has been overdone."

How big a year? In late May, the Commerce and Labor Departments, revising their own estimate of construction's prospects, predicted that 1952 will see $32.2 billion spent on all types of building—about $1 billion more than last year:

NEW CONSTRUCTION ACTIVITY

Estimate for 1951 and Forecast for 1952

(Millions of dollars)

Type of Construction	*1951*	*1952*	*% Change*
Total new construction	$31,025	$32,175	+4
Private construction	21,684	21,225	—2
Residential (nonfarm)	10,973	10,850	—1
New dweling units	9,849	9,700	—2
Additions, alterations	934	975	+4
Nonhousekeeping	190	175	—8
Nonresidential (nonfarm)	5,152	4,680	—9
Industrial	2,117	2,200	+4
Commercial	1,371	1,000	—27
Warehouses, offices, lofts	544	425	—22
Stores, restaurants, garages	827	575	—30
Other nonresidential	1,664	1,480	—11
Religious	452	340	—25
Educational	345	360	+4
Social, recreational	164	115	—30
Hospital, institutional	419	400	—5
Miscellaneous	284	265	—7
Farm	1,800	1,700	—6
Public utilities	3,695	3,925	+6
All other private	64	70	+9
Public construction	9,341	10,950	+17
Residential building	595	725	+22
Nonresidential building	3,471	4,000	+15
Industrial	958	1,650	+72
Educational	1,531	1,550	+1
Hospital, institutional	498	450	—10
Other	484	350	—28
Military and naval	1,019	1,900	+86
Highways	2,400	2,500	+4
Sewer and water	706	700	—1
All other	1,150	1,125	—2

The federal forecast was based on the assumption of no "major" interruption of steel or copper production. Whether the steel strike would merely shade the figures or knock them haywire remained to be seen.

Too high a hope? Without even raising this question, some experts already were challenging the conclusions. The official forecast put the total for commercial stores, restaurants and garages only 30% down from 1951. So far this year, this type of work had slipped 45% behind 1951. With Regulation X still putting its brake on commercial building, with no flood of applications to NPA, it was unlikely that commercial building would spurt that much.

It seemed doubtful also that recreational building, now near half of 1951's volume, could recover to 70% of last year's mark as the government predicted. If homebuilders continue to shift into lower price brackets to escape the market doldrums above $12,000 still caused by Regulation X, housing would probably not reach the dollar figure the government expected, either.

Builders fret as Doolittle urges land-planning upheaval

The presidential commission led by Lt. Gen. James H. Doolittle (ret.) handed down advice on airport safety that promised a lot of homework for land planners, architects and homebuilders. The commission noted that hazard to people on the ground is limited almost completely to the fan-shaped areas at the end of runways. So the commission urged that new airports have single or parallel runways pointed away from thickly populated sections, with 1,000′ wide, half-mile long overruns and, beyond that, a two-mile by 6,000′ strip zones against public and residential construction and towers that could menace planes.

Within the month, the Veterans Administration ordered its offices to submit to Washington headquarters all loan apraisals on GI homes within four miles of an airport. The move presaged a new and stiffer attitude to be defined in a forthcoming regulation. It worried homebuilders.

Colleges vie for federal fund to finance dormitories at under-the-market interest

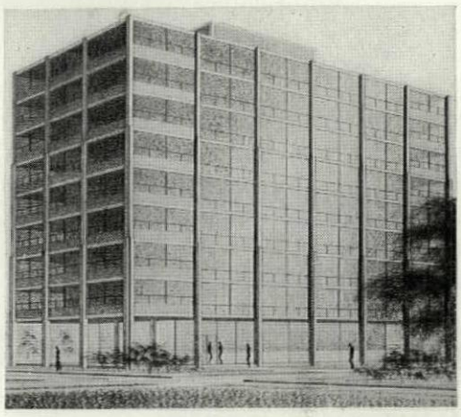
US colleges, with too many students and too few dormitories to put them in, have been queuing up in increasing numbers to take advantage of the Housing Act of 1950's Title IV—a $300 million loan kitty of which President Truman has released $60 million since Jan. '51.

So far 22 institutions in 17 states have borrowed a total of $21.5 million to build 6,217 student units and 158 faculty apartments. Most are small schools. Loans run up to 40 years and carry a 3.01% interest rate. They are granted, *providing private financing isn't available on comparable terms,* to colleges who show their housing needs are related to the defense effort either through:

- an expanding ROTC program,
- an expanding curricula of subjects related to defense needs,
- have government defense contracts,
- or having a campus located in a critical defense-housing area.

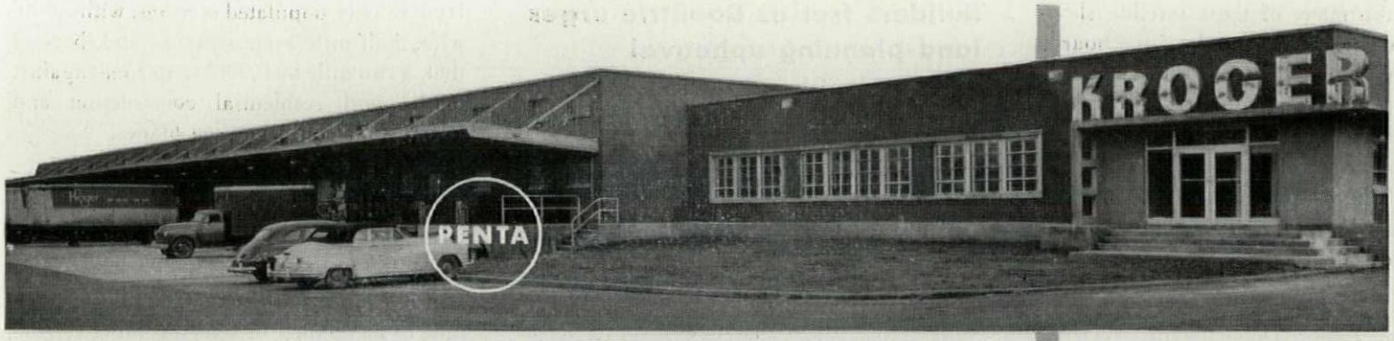
The long payoff and cheap interest rate (in itself a club over the heads of lenders who see in federal lending the gradual socialization of the nation's banking system) has probably made the difference to many a university between being able to build and not being able to. Most colleges feel they cannot even charge as much as $30 a month room rent. Said a University of Florida official recently: "If we had accepted private rates and amortization terms for our loan ($2 million for 632 units) we would have had considerably to increase our dormitory charges . . . or substantial sponsor's contributions would have been required to reduce the actual amount of the loan."

HHFA's community facilities service administers the program with advice from the US Office of Education on the individual institution's educational and defense needs. As proof of colleges' interest, the HHFA and US Office of Education have been swamped with almost 1,000 inquiries.

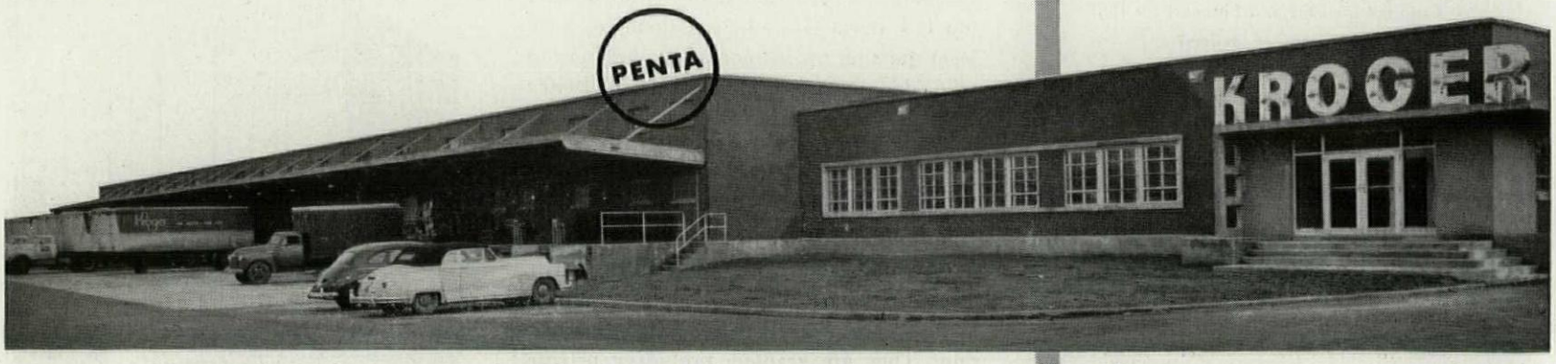


MIES VAN DER ROHE'S 96-unit student-faculty apartment building for Illinois Institute of Technology's Chicago campus will cost $1,085,000. HHFA loaned $1,045,000.

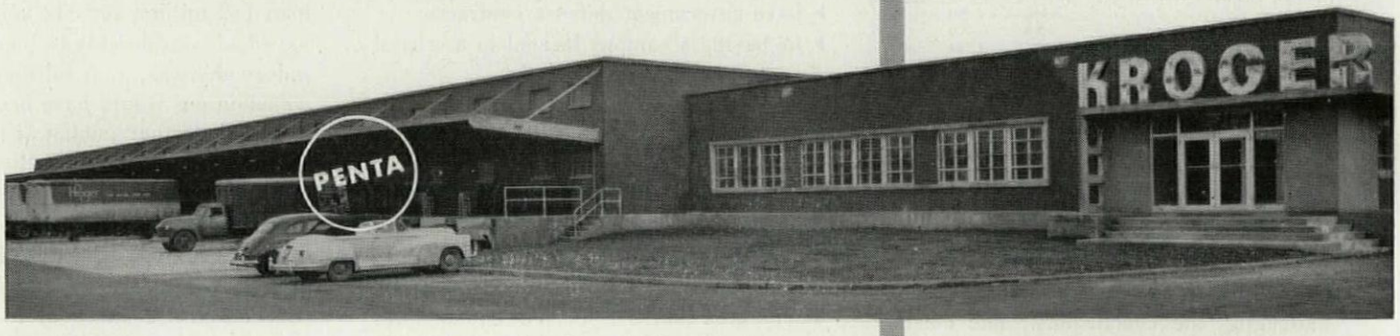
MEN'S RESIDENCE HALL at University of Washington in Seattle was designed by Young & Richardson, Carleton & Detlie. It was financed by a $1.5 million loan under Title IV, will accommodate 604 students. Bedroom-studies will have studio couches, beaverboard wall panels for collegiate pin-ups. Students will sleep in tall wings, eat in low central buildings.



Penta preserves wood



in new Kroger building



Much of the wood used in the new Kroger office and warehouse in Nashville, Tennessee, is protected by Monsanto Penta preservative. Penta is used in all timbers of the loading dock bumper, in lumber around the perimeter of the roof and in the 8 x 8 buck timbers of the cold room.

Monsanto Penta protects lumber against attacks by termites and other wood-boring insects. It prevents decay caused by fungi. Monsanto Penta is a stable wood preservative. It does not leach. It does not wash away in rain or ground water. Properly formulated penta leaves wood clean, so it can be painted or finished by other methods.

For information on the use of Monsanto Penta for preserving wood . . . for names of custom treaters . . . for a list of dealers who supply ready-treated wood . . . contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

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Businessmen explore car-parking problems, weigh merits of private vs. public action

There are some 50 million cars in the US today—2½ times the number there were in the 'Twenties. Yet cities, in their shortsight, have so neglected the alternatives of finding parking space for them or providing adequate mass transit that communities like Sacramento, Calif., note property values declining 65% in some areas and downtown merchants packing up and moving out. In New York City, bulk-merchandise delivery costs have risen 25% in the last three years (14% of the furniture and fuel can't even be unloaded in the first attempt) because of parking ills.

What can be done? Lately, emphasis has turned to parking systems that either require less labor to operate, or cost less to build—often by using open-deck design and lightweight materials. But controversy over whether private or public money should pay for construction remained at a high pitch. The gamut of opinion was reflected this month at the National Businessmen's Conference on Urban Problems in Portland, Ore. June 23-24.

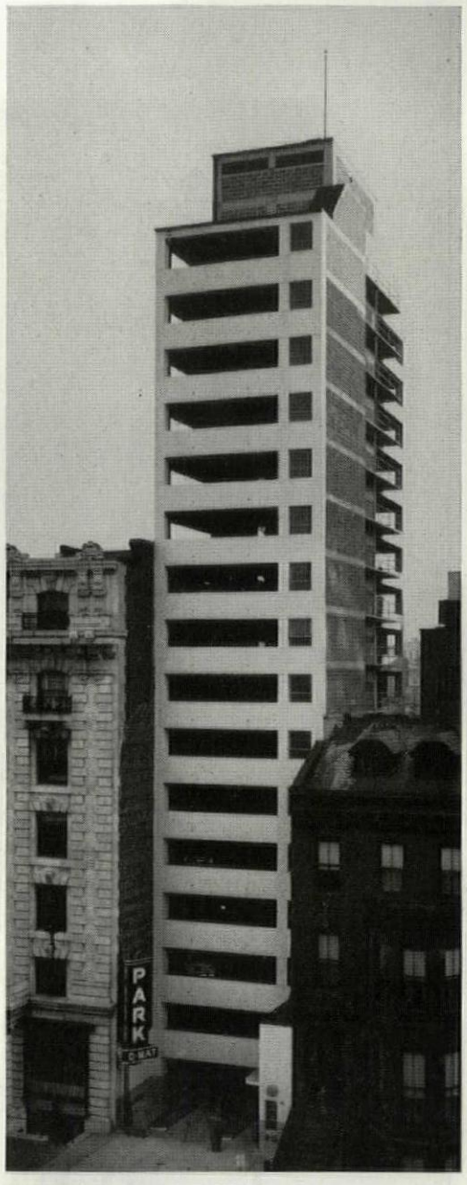
Said Frank E. Cox, of the Kawneer Co. of Berkeley, Calif.: "Where property values reach $3 a sq. ft. multistory parking is the most economical solution." Costs, he said, range from $500 per stall for a mechanical parking device to $1,500 for the conventional ramp type, and still more for underground garages. "Where the cost runs over $900 the necessary rate defeats the very intent of the enterprise."

Private enterprise. Said B. M. Stanton of Norfork, Va., president of the National Parking Assn.: "[to provide customer parking facilities] is definitely the responsibility of the merchant, just as it is his responsibility to provide escalators and air conditioning. . . . Cities would be far better off, in lieu of investing in municipal parking, to reduce the tax burden on public transit companies, enabling them to relieve the strain on both traffic and parking."

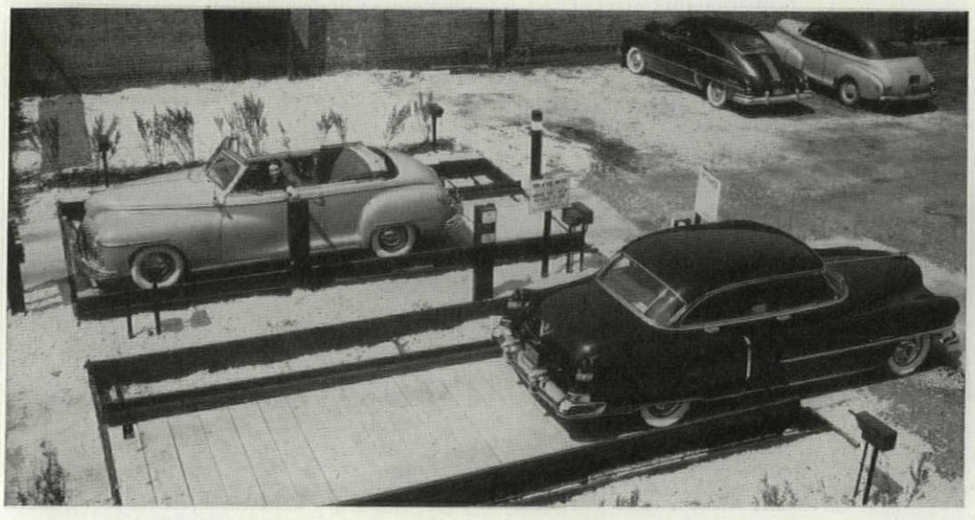
Municipal government. Said William E. Brown, mayor of Ann Arbor, Mich.: "Private enterprise has failed to furnish water service, sewer service and the third utility, parking. Therefore it becomes the duty of the community to furnish it." Charging 10¢ for the first two hours and 5¢ for each successive two hours, Mayor Brown said his city now nets $110,000 annually on the 700 stalls of its six lots (one of which is a three-deck structure). "I can directly trace (from this) 12 major improvements, all of which tended to increase our assessed valuation from $2 to $3 million."

Both business and government. Said D. Grant Mickle, of the Automotive Safety Foundation: "We must look to cities to take the leadership in solving, *or helping private enterprise to solve*, the problem. . . . Cities which have made the most progress are the cities where local governments themselves have assumed logical responsibilities."

One type of municipal action was the proposed amendment to the Milwaukee zoning ordinance requiring existing as well as proposed buildings to provide their own off-street parking. (Milwaukee already has an anti all-night parking law.)

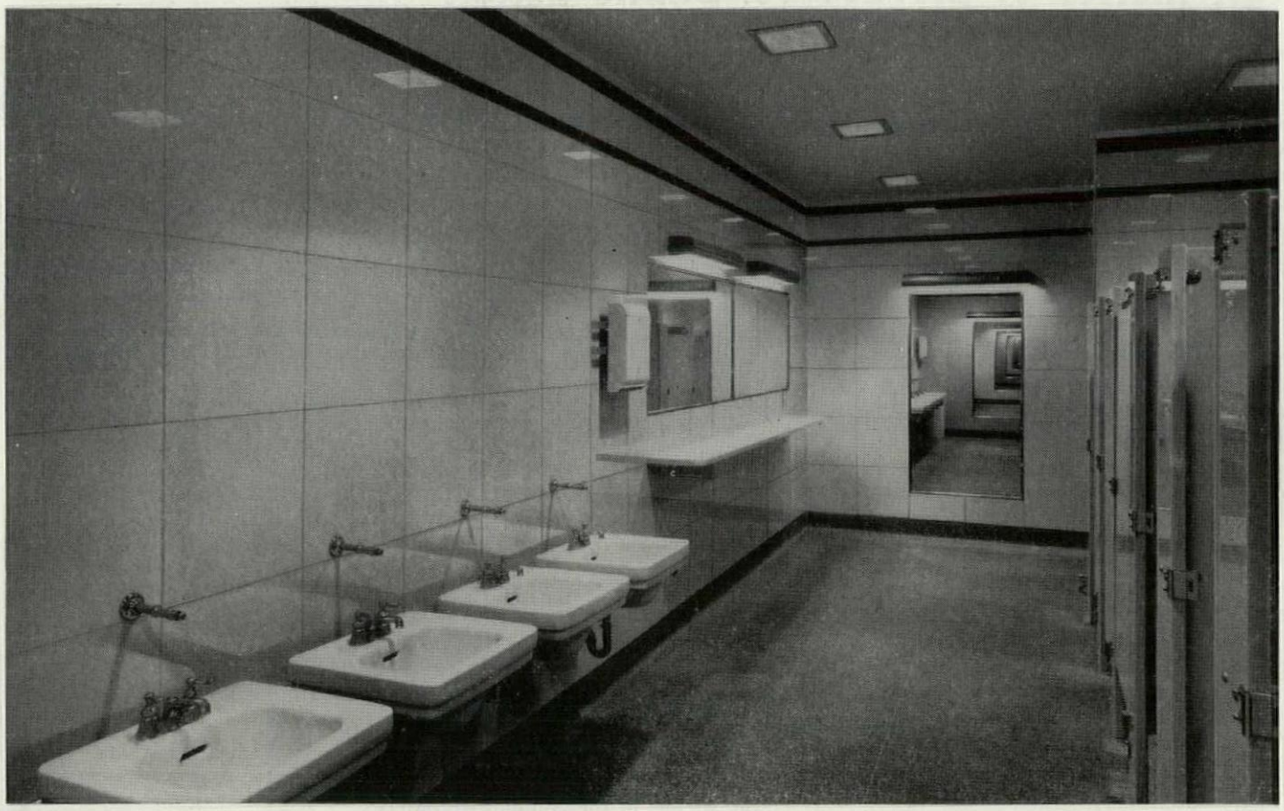


FULLY-AUTOMATIC GARAGE in Washington D.C. is privately owned, holds four cars on each of 18 floors. The garage had to be built high because its K Street lot was so small. Before construction could begin 22 amendments in local building code were required.



CHICAGO CARPARKER requires no attendants. Driver steers car on ramp. Dime inserted in slot causes ramp to shift to right, enabling driver to by-pass barricade and enter lot. Same process is repeated in leaving. An automatic computing device subtracts exiting autos from entering ones, inactivates incoming ramp motor when lot is full. CarParKer lot is designed and owned by William Spencer. It cost $10,000 to build, $200 a month for rent, $24 monthly for electricity to run motor and provide night lights. Lot holds only 50 cars but device can accommodate any size lot.

TWO ELEVATORS handle cars on a "positioner" push-button principle evolved by inventor Richard Sinclair after watching the expandable knobbed sizer with which his wife was being fitted for new shoes. Attendant only pushes buttons, positioner and elevator do the rest.



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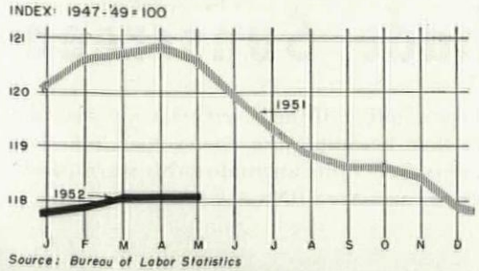
Wage raises in steel, building labor promise price increases

Indexes of materials and building costs presented a divided picture this month. Bureau of Labor Statistics figures showed building materials prices remained on their two-month plateau. BLS' overall index of wholesale prices dropped for the seventh month in a row (to 111.6% of the 1947-49 average). But private indexes of building costs were climbing because 1) the steel strike settlement was sure to result in a price increase on steel which would affect long-term construction jobs and 2) construction labor was winning surprisingly big wage increases in spring bargaining (*see table, right*).

Smith, Hinchman & Grylls expected its building cost index to shoot up another 10% by the end of this year as steel and labor wage increases multiply their effects throughout the building industry.

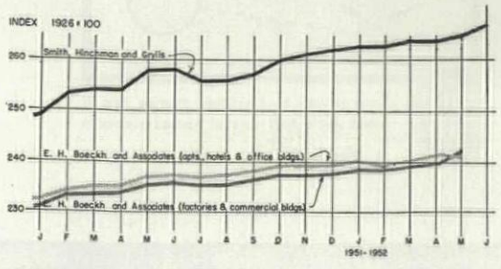
Taking a longer view, Economist Sumner H. Slichter predicted the US has entered an era of slowly climbing prices with price fluctuations "much milder than they have been in the last 150 years." To Slichter, that meant "more employment, more output and a higher standard of living than (under) the economy with a stable price level."

MATERIALS, BUILDING COSTS



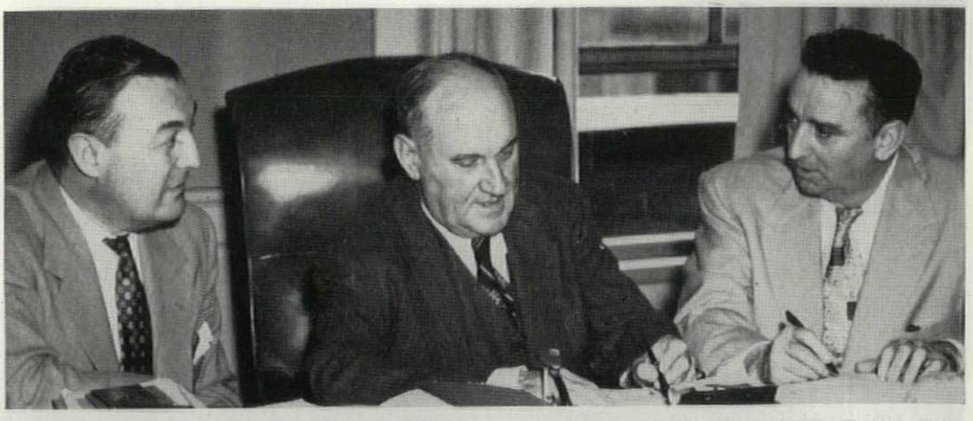
Source: Bureau of Labor Statistics

MID-MAY MATERIALS PRICES remained static at 118.1% of 1947-9 average. Lumber prices inched up in Boston, but on the West Coast producing belt, No. 2 Douglas fir dimension fell $4 below May levels. Softwood plywood wholesalers were cutting prices to shave inventories.



NEW RISE in building cost indexes was caused chiefly by labor wage increases. Boeckh's index for factory buildings climbed 1.4 points to 241.5. Its apartment-office building index rose 0.8 points to 242.7. Smith, Hinchman & Grylls' index rose to 267, two points above May and four above January.

Mike Elkins



NEW YORK WAGE BOOST for 100,000 building tradesmen will amount to 15¢ hourly, effective Aug. 1. The agreement, covering 17 Manhattan trades (but not electricians, bricklayers, plasterers, painters and plumbers who have separate contracts), is good until June 30 '53, has provisions for cost-of-living increases. Signing the new contract were (left to right): Fred J. Driscoll, president of the Building Trades Employers' Assn.; Peter W. Eller, chairman of the BTEA board of governors; and Howard McSpedon, president of the AFL Building Trades Council. Unions promised to try to increase productivity lest craftsmen be "well paid—but unemployed."

Strikes plague builders coast to coast; one brings surprise benefit to St. Louis

Spring brought a wave of strikes by AFL building tradesmen. Construction trades strikes are an old May custom, because many of the nation's major wage agreements expire then. But this year's crop of walkouts got a big boost from the Wage Stabilization's advance approval of wage and welfare increases totaling 10% above mid-1950 levels plus 15¢ an hour. In Miami, it almost blew apart a deal already negotiated to give five trades 10¢ an hour more now, with another 5¢ Oct. 1. The fact that construction employment was off 6,000 persuaded labor to accept without striking, however. In New Orleans, many a contractor found himself with bids out on the expectation of a smaller pay raise than the 26¢ WSB's action made it impossible to resist. Typical bitter industry comment came from Earle Devalon, manager of Colorado's Contractors Association: "They have no business setting wage rates now. The welfare policy is way ahead of the industry."

At the beginning of this month at least five major strikes were in progress affecting 14,600 workmen directly and an untold number indirectly. Settled in May were at least 19 more strikes, 13 of them involving wage or welfare disputes, six of them stemming from jurisdictional arguments. Where strikes were avoided, wage increases were running as high as the 42½¢ Philadelphia plumbers won—far higher than observers thought they would have asked without WSB' encouragement (*see table*).

Still festering. Five major strikes involved wage and welfare fund demands:

▸ In Southern California, operating engineers and iron workers struck the second week of June for a wage boost and turned down an employer offer for a 19¢ increase.

▸ In Philadelphia, 1,000 operating engineers struck May 1 over some 40 issues including retroactive pay back to 1951, a pension plan, a 37-item safety code and working condition changes constractors call featherbedding. Philadelphia's public works program was tied up as well as state highway projects, and sidings for the new Fairless Works.

▸ In Chattanooga, carpenters, cement finishers, iron workers, operating engineers, laborers, and truck drivers struck May 1 for something over the WSB formula.

▸ In Niagara Falls, 1,000 carpenters, laborers and lathers stopped work on the city's new airport, an army priority job.

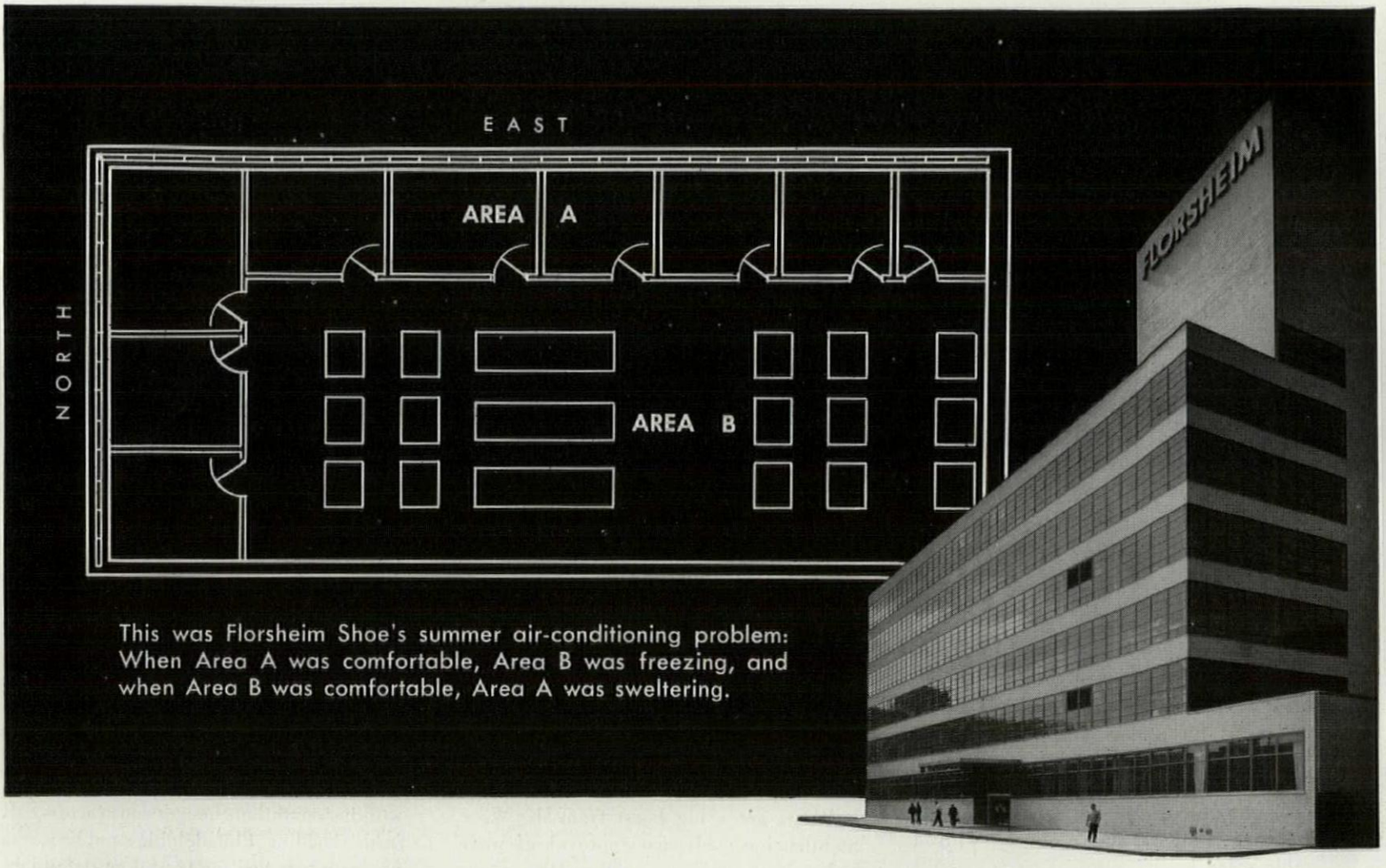
▸ In Wilmington, AFL sheet metal workers struck seven contractors when they failed to agree on a health and welfare plan.

Two major strikes have been settled:

▸ Some 12,000 carpenters in the San Francisco Bay Area returned to work June 2 after winning their original demands: a 15¢ increase on their $2.45 hourly wage, plus a 7½¢ employer contribution to the

RECENT WAGE SETTLEMENTS

City	Trade	Wage Increases Raise	New Scale	Welfare Raise
New York	17 bldg. trades	15¢	to $2.05-$3.40	
	carpenters, hoisting engineers	25¢	to $2.95	5¢
Chicago	brickmakers	9¢	to $1.65-$1.88	
San Francisco	carpenters	15½¢	to $2.60½	7½¢
Los Angeles	carpenters	22¢	to $2.57	
	cement masons, teamsters, laborers	19¢	to $1.94-$2.94	
Philadelphia	plumbers	42½¢	to $3.17½	
New Orleans	carpenters	26¢	to $3.06	
Cleveland	excavators, bldg. supply drivers	7½¢	to $3.00	7½¢
Newark	bricklayers	40¢	to $3.65	
Detroit	carpenters	13¢	n/a	5¢
Milwaukee	5 bldg. trades	11½¢	n/a	5¢
Miami	7 bldg. trades	15¢	to $1.30-$2.90	



This was Florsheim Shoe's summer air-conditioning problem: When Area A was comfortable, Area B was freezing, and when Area B was comfortable, Area A was sweltering.

Here's how Florsheim Shoe solved their office heat problem with KoolShade® Sunscreen

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KOOLSHADE SUNSCREEN on the windows kept the sun's heat out, and let in cool, glareless light

Florsheim installed KoolShade sunscreen on the east, south and west office windows and blocked out the heat before it ever entered the offices. KoolShade sunscreen not only solved the conflicting air-conditioning problems in the offices, it reduced the peak load demand on their air-conditioning unit by 35 tons . . . or 20%.

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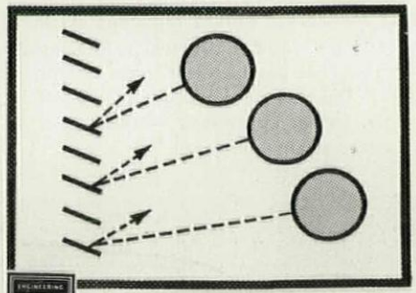

Cross section of KoolShade showing how it blocks sun's heat rays at various elevations

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Ingersoll KOOLSHADE® Sunscreen

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welfare fund. Thousands more in 42 Northern California counties settled a week later for a 21¢ boost. The strike began March 31, brought construction to a standstill.

▸ In Chicago, 600 AFL Clay Workers struck eight brickmaking plants May 1 for a 15¢ increase on their $1.56 to $1.79 scale. Chicago's daily production of 1,250,000 common bricks was knocked out. Construction on 90% of the city's commercial and industrial projects was delayed. The union settled June 16 for a 9¢ boost.

Jurisdictional disputes. At US Steel's Fairless Works in Bucks Co., Pa. 8,500 AFL bridge & structural iron workers left their jobs in a dispute with six other construction trades over who was to install machinery. It was the third such stoppage in recent months. After four days the AFL's National Board of Jurisdiction Awards abruptly ordered the men to return to work.

In Missouri, 500 electricians, plumbers, steam fitters and sprinkler fitters were off between May 16 and June 11 at Ford's $30 million bomber wing assembly plant outside Kansas City. The four crafts walked out after Orville L. Ring, head of the teamster building-materials-haulers local tried to lay down the law to them on the unloading and handling of materials.

In St. Louis, a two-day jurisdictional strike at a new $45 million Union Electric Co. power plant, oddly, did a great deal of good. The AFL Building and Construction Trades Council had long been considering the problem (said Council Secretary Joseph C. Payne: "These jurisdictional fights are hurting the council as well as the boys themselves"). Following the Union Electric trouble, 33 trades, representing 27,000 members, decided they had had enough: hereafter unions not directly involved would continue at work and ignore picket lines.

Pitched battle. Homebuilders kept a wary eye on the dispute at Levittown, Pa. The AFL Building and Construction Trades Council of Philadelphia began a major effort to force builder William J. Levitt to use union labor for his 16,000-home development in nearby Bucks County. As he has on Long Island for years, Levitt was building with an open shop. Moreover, the AFL objected to Levitt's waste-saving practice of allowing skilled mechanics to do a variety of jobs. It charged he was paying on a piecework basis (which Levitt denied).

After considerable stone throwing and other violence by as many as 400 pickets, a local judge, the governor and 40 state troopers reduced the picketing to manageable proportions by preventing more than five pickets at each of the project's 20 gates. And Levitt went back to building homes.

Building owners cheered by forecast that downtown areas will survive tenant exodus

Many a downtown building manager, caught between rising taxes and clients who might join the trek to the suburbs if confronted with another rent raise, has viewed the future with gloomy foreboding. Last month, the 45th annual convention of the National Association of Building Owners and Managers in Chicago was reassured.

Counter trend. Said James C. Downs Jr., knowledgeable president of Chicago's Real Estate Research Corps. "There is no truth to the often repeated statement that downtown areas of our cities will become ghost towns. There is plenty of room for the pendulum to move the other way. . . . For example, the heavy swing from public to private transportation which has seen the riders on our local Chicago Transit Authority drop from 90 million in March 1948 to 59 million in March 1952 will be reversed when we come to realize the true cost in subsidy involved in a man driving to work in his own car and when we realize that modernization of mass transit is more than just buying new equipment.

"Urban redevelopment has only just started. Within the next 20 years we will see a tremendous revival in the close-in areas where the real benefits of urban living are to be found. It will be economic folly to abandon the millions of dollars in utilities, cultural institutions and basic facilities which are located there. Once we outgrow the wasteful practice of dividing our metropoltan areas into scores of separate political units, we will adopt a mature set of planning, zoning and living patterns. In the interim, downtown areas will continue to act as the center of legal, financial, transportation, governmental, corporate, transient and other activities. While the retail business will decline in relation to the total volume and will change in character, its volume will remain greater than that of its individual satellites."

Recipe for profits. For building owners beset by lower net operating incomes because wages, taxes and other expenses are rising faster than rents, Downs suggested: include fewer services in basic rents or even adopt the English pattern under which tenants pay for all services, including taxes.

OUTGOING PRESIDENT James Cook congratulates successor, James M. Bradford.

From S. W. Toole, second vice president of Prudential Insurance Co., NABOM's 1,100 delegates (biggest turnout ever) got a financial argument for big cities. Said Toole: "It seems completely illogical for general offices of any size seriously to consider leaving the city. . . . If many offices were to move out they would eventually be confronted with the same headaches they had in the city." All in all, said Toole, "it is more economical to stay in the city than to move." His reasons:

▸ Construction costs for new quarters will be "greater than normal" because premium pay or overtime will be necessary to assemble the labor.

▸ Employers will find they must "contribute liberally" toward employes' moving expenses, as well as their own moving costs.

▸ Usually, part of the company must be left behind (e.g. sales and executive offices). This increases telephone, transportation and mail costs.

▸ Building maintenance employees may have to be paid extra to work in the suburbs.

The convention also heard a prediction from Ralph E. Thomas, manager of Detroit's Buhl building, that television aerials would become more and more necessary for office buildings because occupants will insist on viewing "world series, political conventions, and Kefauver hearings." He charges $10 a month rent for the rooftop aerial the first year, $1 a month thereafter. New officers: James M. Bradford of Seattle, president; Sterling H. Bigler of Philadelphia, first vice president; Maynard Hokanson of Indianapolis, secretary-treasurer.

• • •

A few days before NABOM's session, 100 apartment landlords met in Chicago, took preliminary steps to organize a National Rental Owners Association. Chief motive, explained Acting Chairman Theodore H. Maenner, former NAREB president and Omaha's biggest landlord, was that NABOM had neglected apartment house problems in its devotion to office building management and ownership.

Deferred until the group collected a bigger bankroll, was the election of officers, incorporation and permanent establishment. The new group planned to have a code of ethics, support local ordinances for enforcement of minimum standards, work for urban re-development under private aegis.

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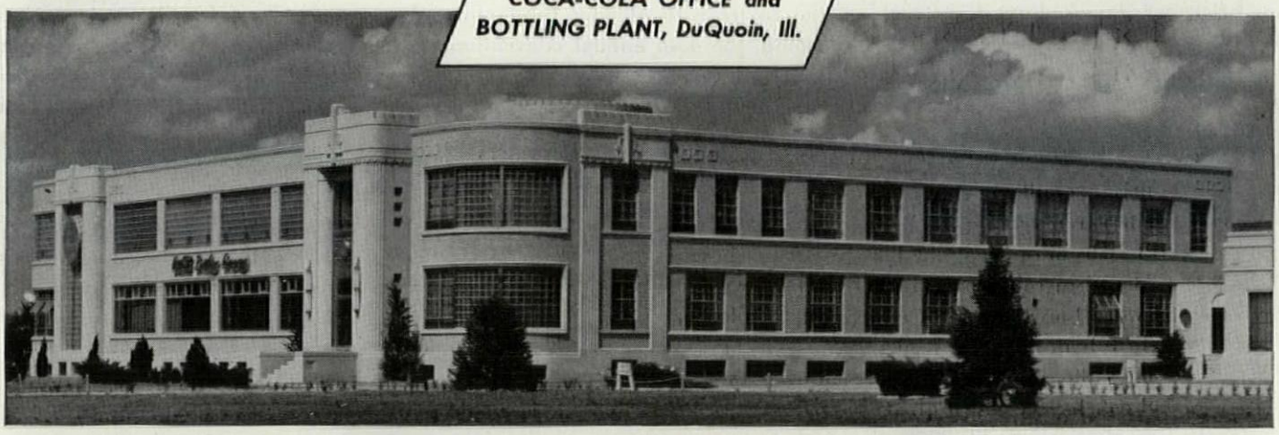

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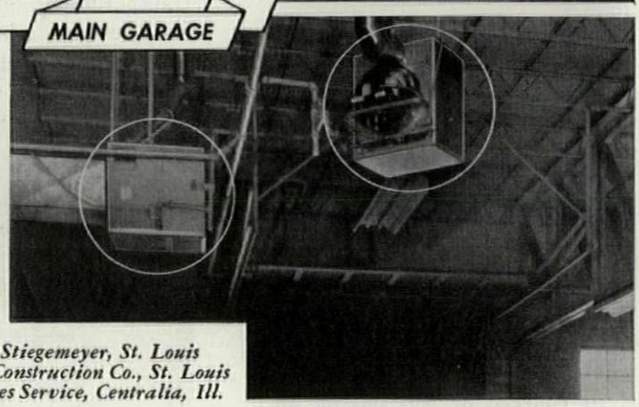

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New emphasis in NAREB: President Lund plugs slum repair, soft pedals denunciations

In the postwar years, the National Association of Real Estate Boards, whose 47,000 members make it the building industry's biggest single organization, has earned a reputation as the nation's most strident voice of opposition to public housing, rent control and other schemes which infringe on economic freedom for real estate.

It is probably a moot point whether such fighting sincerity has paid off. NAREB can point to legislative results, such as shifting rent control into the defense program where presumably it will be easier to end when the defense program tapers off, and last year's easing of an owner's income-tax liability on profits from sale of his own house. But NAREB's bitter-end opposition to Truman Administration housing plans also has won it a stigma that makes other building industry groups wary of co-operating publicly—even on mutual goals.

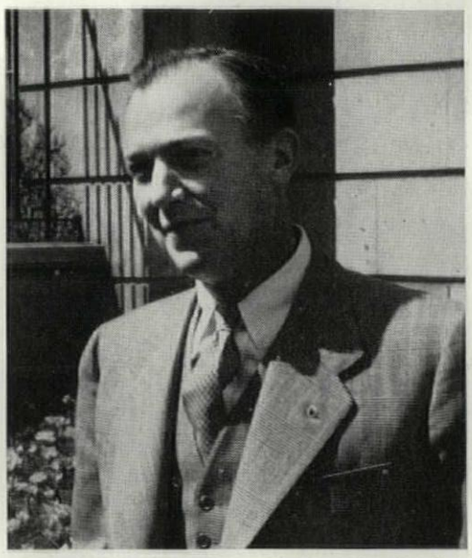
New viewpoint. To Joseph Wheelock Lund, the trim, youthful (46) Boston grandfather who became NAREB's president last January 23, a remedy was urgent. Says Lund: "We had to get something in the way of a more constructive emphasis—and we *are* getting it."

The Lund formula: play down NAREB's opposition to items like public housing, rent control, emphasize how private industry can foster urban rehabilitation without leaning on federal aid.

The Lund method: hammer home his ideas in meeting after meeting with realtors and business leaders across the nation.

Like the president of any industry association, Joe Lund covers a lot of territory. By the end of May, his journeys had taken him to 43 cities in 27 states. By the end of his term of office next January, he will probably speak in 75 more.

Lund tries to avoid talking just to the men of his own calling. His favorite session is lunch with about 20 community leaders where specific problems can be discussed back and forth. Recently, in Louisville, Ky., at what he regards as a particularly successful meeting of this kind, Lund sat down with the head of General Electric's new appliance plant, the head of the city's biggest department store, the publisher of the Louisville *Courier-Journal*, and several leading bankers. The reaction? So far, says Lund, it is "verbal interest—a great deal of interest. They want to know how to go about doing things."



PRESIDENT JOE LUND of NAREB, shown here in front of his Beacon St. home in Boston, got into the real-estate business when he graduated from Harvard in 1926, is now executive vice president of R. M. Bradley & Co., Inc.

Double-barreled task. As Lund sees it, the problem of urban rehabilitation breaks down into two steps: 1) Renovation and reuse of individual properties by individuals and 2) a longer range, more important effort in which "businessmen may be able to take over the country's redevelopment effort" from the federal government. To a Kansas City meeting, he put his sales talk for individual rehabilitation this way: "I don't think we are going to sell as many new homes in the next five years as we have the last five. A lot of realtors are going to have to go into rehabilitation. A touch of beauty here, a little imagination there will work wonders. And it can be done on a local level, without any help from Uncle Sam. . . . If only two or three cities needed rehabilitation, we would figure that they were busted down and needed help. But every city has the problem. We can't just build a new house for every family in the nation. It would wreck the cities. That property is mortgaged and you can't chip away at values like that by having everyone move out in the suburbs."

Lund likes to point to the "excellent starts" at rehabilitation already made by Baltimore, Charlotte, N. C. and Philadelphia. Charlotte, he told 500 members of the Chicago real-estate board recently, "is your pilot city." There, property owners and real-estate operators have joined to rehabilitate 8,500 dwelling units—one fourth the city's total—since World War II. This added $4 million to the tax rolls.

INP

CHICAGO SLUM CLEARANCE: some 1,000 civic leaders lunched last month to celebrate progress on Chicago's pace-setting redevelopment project No. 1—the 2,000 unit Lake Meadows project being built by New York Life Insurance Co. Said President Devereux C. Josephs (left, with Mayor Kennelly, former Illinois Gov. Dwight Green and New York Life Vice President Otto Nelson): "When the success of this enterprise has been demonstrated beyond doubt, Chicago should have offers of capital willing to make similar investments ($42 million). If we do not succeed there will be no followers."

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In his long-range goal of getting the private building industry to lead the fight against blight, Lund casts himself in a salesman's role. He told Chicago newsmen: "My job this year is to get realtors to take the lead. . . . They must get the politicians to set up special courts to enforce building law violations. They must sell the program to banks and insurance companies so adequate mortgage money will be forthcoming." Lund would like to see more cities follow the lead of the Chicago Land Clearance Commission, which, using local tax revenue, buys land and sells it at a write-down to private investors for redevelopment. As he sees it: "In the long run, the redevelopment cost is paid by the increase in taxes paid on the new construction. There's no point in each city taxing itself to pay a federal redevelopment group which then sends the money back."

Villainous motorcar. To these two tactics for fighting urban decay, Lund adds one more: "*The worker has to be shown that even if he pays 25¢ for a trolley ride, he still is getting a better buy than driving his own car.*" Driving home this insight will be no easy business. But Lund is freshly armed with a revealing statistic: in Boston, a team of Harvard graduate students, working under Associate Prof. William Wheaton, studied the total cost of public vs. private transportation. They found that a good public transportation system requires a capital investment of $1,000 per rush hour commuter; construction of adequate roads and parking lots for auto transportation requires a capital investment of $4,000 per commuter. The trouble, as Lund declared in Kansas City, is that public transportation "has been a political football up to now." Politicians will not let transit systems raise fares enough to stay solvent, even though the resulting chaos and traffic congestion costs the public far more money. For instance, says Lund, "Detroit is having to tear down the city (for parking lots) because it has failed to solve its mass transportation problem."

A long project. Joe Lund knows that enticing private industry into urban redevelopment will be a long, hard job. For one thing, only 24 states have permissive redevelopment acts giving cities power of eminent domain. Only Baltimore and Charlotte so far have had the horse sense to establish a real estate court—"an absolute must" in slum repair because other courts usually mete out token $10 or $20 fines in slum enforcement cases. A slum landlord would far rather pay the fine than spend $500 or $600 to repair an unsafe or unsanitary building. Moreover, to win the fight against blight, says Lund, "you have to have a sparkplug in every city. About all we can do is set up a clearing house of information."

Rising support. Across the country, there was a lot of evidence that cities at last were waking up to the need for action.

- In Washington, Edward Carr, who is president of the Capital's Real Estate Board, heads a group of homebuilders who formed a corporation for the purpose of rehabilitating neglected residences.
- Pasadena, Calif., a prosperous city of 39,000 residences, congratulated itself on razing 96 makeshift living quarters in a six-month drive to enforce existing building, health and fire codes. Not a cent of federal money was involved.
- Corpus Christi, Tex., counted 100 complete demolitions and 1,000 law enforcement actions in a year-old (and continuing) rehabilitation drive backed by private industry.
- Los Angeles, Miami and Memphis, after studying the success of Baltimore's pioneer block-by-block improvement program, planned to launch similar enforcement drives of their own.

No less than NAREB's President Lund, NAHB's President Alan Brockbank was preaching the gospel of urban repair in *his* cross-country junketing. Starting later, NAHB was now moving faster than realtors in ballyhooing the war on erosion through neglect.

No matter who did what, private enterprisers could be grateful that the building industry had begun to act concertedly against one of its toughest problems. Too long, the war on slums, by default, had been waged chiefly by public officialdom.

PEOPLE: Fisher pleads for more industry idea exchanging; McCarthy keeps the Shamrock; AIA honors Greenes

In Louisville to address the American Planning and Civic Association, architect **Howard T. Fisher** expounded to the *Courier-Journal* on why the "coming revolution of the construction industry" is too slow in arriving. Said Fisher: "Contractors live in a world by themselves. The materials manufacturer rarely seeks the advice of an architect. The architects are suspicious of contractors. Contractors put architects up on a social pedestal, and also call them long-haired dreamers. . . . Look at the field of pharmaceuticals. Eighty per cent of the drugs in use today were unknown ten years ago. Doctors and the drug manufacturers have been working as a team —testing new products, putting them into use in a hurry. The drug-medical industry has set a pattern that can revolutionize the construction industry."

Bachrach

FISHER

Some Fisher suggestions for bringing together construction's "separate groups": 1) big materials making firms should hire architects to test and introduce new products; 2) building codes must be made uniform; 3) architectural schools should get contractors, mortgage bankers and other building experts on their faculties just as medical schools welcome practicing doctors.

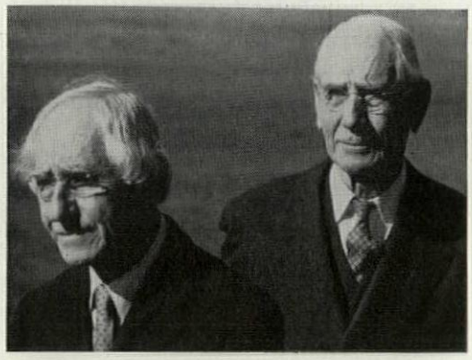
Realizing that without showman **Glenn McCarthy,** Houston's Shamrock Hotel might become just another inconveniently located commercial hotel, New York's Equitable Life Assurance Society formally announced a reconciliation. After many hot words and the airing of a multimillion loan inventory (AF, Apr. '52), Equitable decided the Shamrock "will continue to have the benefits of Mr. McCarthy's management and supervision." McCarthy, however, will

Gretchen Van Tassel

AIA and ASCE leaders confer on joint problems

Leaders of the American Institute of Architects and the American Society of Civil Engineers met around a green baize table at The Octagon last month to discuss setting up a permanent system of joint action on common problems. Biggest step was a motion directing AIA and ASCE secretaries to plan co-operative approaches to legislation. Pictured are (left to right): ASCE's G. Brooks Earnest, Joseph Ehlers, Alvin E. Harley and Craig P. Hazelit, and AIA's Leonard H. Bailey, Mason G. Lockwood and Edmund R. Purves. They will meet again soon in Louisville.

have to adhere to a strict schedule of amortizing the $34 million loan Equitable gave him to finance the hotel and the McCarthy Oil & Gas Corp. (whose chairmanship he has been forced to resign). In return for all this, Texas Glenn has Equitable's blessings on Glenn McCarthy, Inc., a wildcatting venture for which 10 million shares of stock will be sold for $2 each.



CHARLES S. (L) AND HENRY M. GREENE

Right after the turn of the Century the scion of an old Californiano family visited the Pasadena office of two brothers just beginning their architectural practice. He asked for an up-to-date version of the rambling adobe house with patio his forebears had enjoyed. What architects **Henry M.** and **Charles S. Greene** drew up was a board-and-batten house, one-room deep, forming a U-shape around an outdoor living area. Greene & Greene had created the California ranch-style house. But the brothers' part in this creation, along with their superb use of wood, was given little recognition until a half century later (Oct. issue '48). On June 3 the venerable pair (Henry is now 82 and Charles 80) received special AIA citations for their part in shaping American architecture when the Pasadena Art Institute opened an exhibition of their work.

DIED: **Thomas C. Jeffers,** 62, landscape architect and chief of projects and designs for the National Capital Park and Planning Commission, May 11 in Washington, D. C.; **Elroy J. Kulas,** 72, president of the Midland Steel Products Co., May 13 in Cleveland; **Llewellyn N. Edwards,** 78, former US Bureau of Public Roads structural engineer and authority on bridge construction, May 13 in Washington, D. C.; **William W. Farley,** 77, Upstate New York and Florida realtor and former chairman of New York's Democratic State Committee, May 21 in Albany; **Myron Hunt,** 84, architect for such Southern California monuments as the Hollywood and Rose Bowls, the Huntington Art Gallery and Library and Los Angeles' Ambassador Hotel, May 27 in Pasadena; **John L. Perry,** 71, former president of the Carnegie-Illinois Steel Corp. and the Columbia Steel Co., May 27 in Pittsburgh, Pa. **William H.**

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Hoover, 63, president of the Anaconda Copper Mining Co., June 6 in Butte; **W. R. Niver,** 74, structural designer for the H. K. Ferguson Co. and an expert in steel and concrete construction, June 9 in Cleveland; **Edwin E. Slick,** 83, board chairman of United States Glass Co., June 9 in Pittsburgh; **A. Stewart Walker,** 72, architect for many of New York's major banks, the homes of J. P. Morgan partners and designer of the Leviathan, June 10 in Manhattan.

Representatives of the Illinois Institute of Technology's Institute of Design this month will constitute an American delegation to a 20-day international design seminar in Oslo. The team is composed of **Konrad Wachsmann,** architect-inventor; **Ray Pearson,** architect; **Hugo Weber,** sculptor-painter; **John Walley,** industrial designer-painter-sculptor; **Jane Walley,** ceramist; and **William Friedman,** architect.

Metropolitan Life sues New York City to grant rent raise

New Yorkers often bemoan the fact that virtually no middle-bracket rental ($60 to $90 a month) housing is being built in their city. Cried the New York *Times* last month: "Unless something is done on a large scale to provide more apartments for middle-income families, most housing experts believe New York will become an urban core inhabited mainly by those wealthy enough to afford luxury apartments or poor enough to remain in slums or qualify for public housing."

Within the fortnight, Manhattan had a vivid demonstration of one of the biggest reasons why investors are now planting their funds elsewhere. In 1943, the city signed a contract with Metropolitan Life Insurance Co. to induce it to erect its celebrated 8,755 unit Stuyvesant Town on the site of lower East Side slums. The contract granted benefits of eminent domain and a fixed tax formula (based on the pre-development assessment of the site) for 25 years. In return, Metropolitan agreed to limit profit on its $112 million investment to 6% a year, provided rents could be raised if the return fell below that. Now, Metropolitan wanted to raise rents $7.87 per room to maintain the 6% rate. City finance experts did not dispute the company's figures. But the city's Board of Estimate, bowing to tenant pressure, voted 15 to 1 to ban the rent rise. Metropolitan went to court, where it seemed likely to win. But the damage to the investment climate could ripple across the nation. Many a shrewd observer felt New York's officialdom was only reflecting a growing big city fixation which singles out rent as a political untouchable.

Code unity group changes name in effort to heal rift

Along the tortuous path toward reducing the country's 2,500 building codes to a sensible half-dozen or so, one of the biggest hurdles is local and regional jealousy. Chief enemy of code unification so far is the Southern Building Code Congress. Its 217 Dixie members profess to see the threat of a Yankee-federal national building code behind the plodding efforts of the Joint Committee on Unification of Building Codes to wrest more uniformity from the rival codes of the nation's major regional building code groups. Lately, mutterings from SBCC had grown so ominous that one worried official of the joint committee confided: "We've almost got a civil war on our hands."

Last month, the JCUBC deemed it wise to make a tactical, conciliatory and semantic retreat. Meeting in Detroit, the committee voted to drop "unification" from its title "to emphasize that the committee [has] no intention of writing a national building code or of superseding existing code writing groups." New name: Joint Committee on Building Codes. That done, the committee plunged ahead with its work by tentatively adopting eight more segments of a building code.*

BOCA convention. The Building Officials Conference of America, one of the joint committee's major supporters, agreed at its convention in Detroit to admit building-materials manufacturers to membership (but without power to vote on proposed code revisions). This is contingent, however, on a request to merge BOCA's subordinate affiliate, the Building Officials Foundation, to which some 50 materials firms now belong.

BOF Chairman William Gillett, vice president of Detroit Steel Products Co., explained the merger was aimed at attracting more industry money to support BOCA's work, which is chronically on a bare subsistence financial diet. Strapping Joseph P. Wolff, Detroit building commissioner who was re-elected BOCA president, told the 234 delegates that FHA and VA construction rules are "antiquated, inflexible and in conflict with local codes."

* "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings (Riveted, Bolted and Arc-Welded Construction)," revised June 1949, of the American Institute of Steel Construction; "Standard Specification for Open Web Steel Joist Construction," revised and adopted Oct. 20, 1949 of the Steel Joist Institute; "Light Gauge Steel Design Manual," Jan. 1949 of the American Iron and Steel Institute; American Standard Association's "Specifications for Gypsum Plastering, A42.1-1950," "Specifications for Portland Cement Stucco, A42.2-1946," "Specifications for Portland Cement Plastering, A42.3-1946," and "Specifications for Interior Lathing and Furring, A42-1950"; and three sections of language for a code on prefabricated construction, providing that a building official may accept a certificate from the manufacturer or a testing laboratory that a prefab unit which cannot be inspected on the site meets local code requirements.

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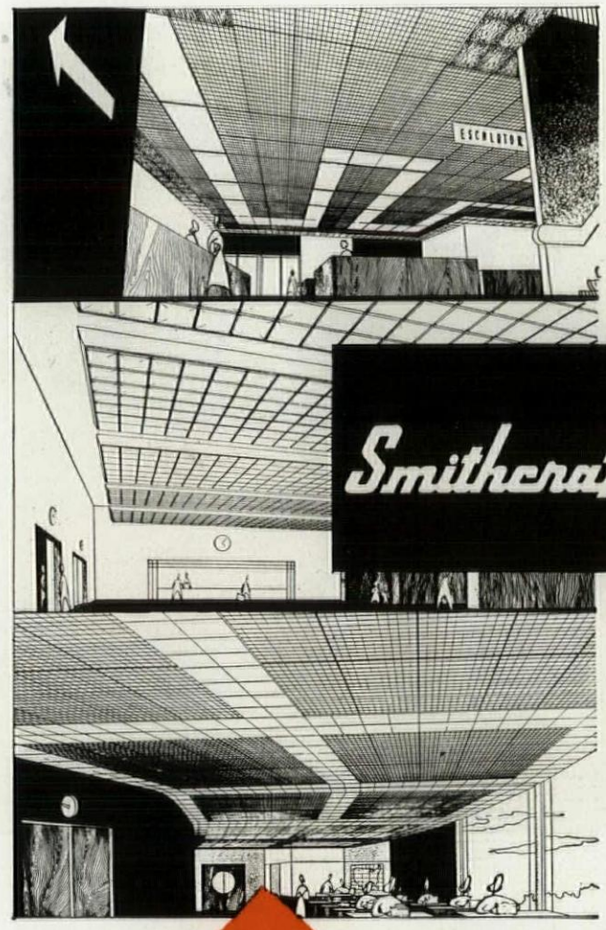

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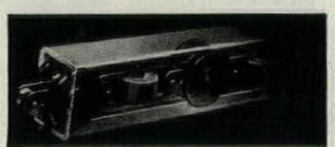

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LETTERS

FLLW'S MUSEUM

Sirs:

I am most happy to know that Frank Lloyd Wright's spiral museum (AF, Apr. '52) will finally go ahead. . . .New York and America will have another great building. Again, FLLW's untiring spirit and imagination will serve to inspire all.

It is very satisfying to have bet on Mr. Wright on the nose against the field for a long time and to see him continually win, going away.

Only Wright would have the tenacity to meet the challenge and change the codes and to present the inspiration for history.

KARL KAMRATH
MacKie & Kamrath, Architects
Houston, Tex.

Sirs:

What a wonderful thing not only for New York City, but for the whole Eastern Seaboard to have a major Frank Lloyd Wright building so easily accessible, and what a brilliant use of engineering inventiveness to produce unprecedented compositions!

Everyone in the art world will anxiously await its completion to see how Mr. Wright's revolutionary proposals for handling of museum visitors and the remarkable suggestions for the display of art will work out. This surely is one of the most exciting architectural events of our times.

JOHN COOLIDGE
Fogg Art Museum
Harvard University
Cambridge, Mass.

Sirs:

I consider Frank Lloyd Wright the greatest living builder of our time; everything he creates will enrich all of us.

The only thing I regret is that he will give the authority of his great name to a museum for nonobjective art.

JACQUES LIPCHITZ, *Sculptor*
Hastings-on-Hudson, N. Y.

GROPIUS ON CORBUSIER

Sirs:

The decisive difference of *L'unité d'habitation* (AF, Mar. '52, p. 142) in comparison to other modern highrise buildings—being

Corbu's apartments

mostly agglomerations of so many added-up units—is Le Corbusier's approach towards finding an *organic* answer to the innumerable potential requirements of a diversified family life. Nothing essential seems to have been forgotten which would serve and entertain people of all ages from babies to elderly people. The building appeals to me as being indeed truly functional, and that includes fulfillment of the emotional functions of human beings as well as of their comfort requirements.

Of course, we do not know yet how well Marseilles families will feel and behave in this building; it has to be tried out. The French government should not hasten to get rid of the building by selling the apartments, but should carefully screen the potential tenants in favor of progressive minded families and should put in the best possible management, able to collect objective information on the functioning of the building. If the rents should be too high, the Government should also absorb a part of the building cost as a reasonable laboratory loss; for it is next to impossible for an architect to construct a completely new type of building and to make it also the cheapest in the same stroke. In industry every model made for multiplication costs many times more than the manufactured end product.

The architectural quality of the building and of its setting in a park with large trees is the highest imaginable. I do not hesitate to state that I consider it the most beautiful, the most mature modern edifice I have seen. I am convinced that France will become mighty proud of this building and its creator.

WALTER GROPIUS, Architect
Cambridge, Mass.

UN's THIRD COUNCIL CHAMBER

Sirs:

In the case of architect Arnstein Arneberg vs. ARCHITECTURAL FORUM, I rest my case with the following two exhibits:

A. Page 109 of the defendant's issue for May '52: "Architect Arneberg's Security Council Chamber does not measure up to the other two. . . ."

B. Page 110 of the same issue: "It seems only fair to await the completion this fall of the General Assembly Building. . . .before rendering a final verdict."

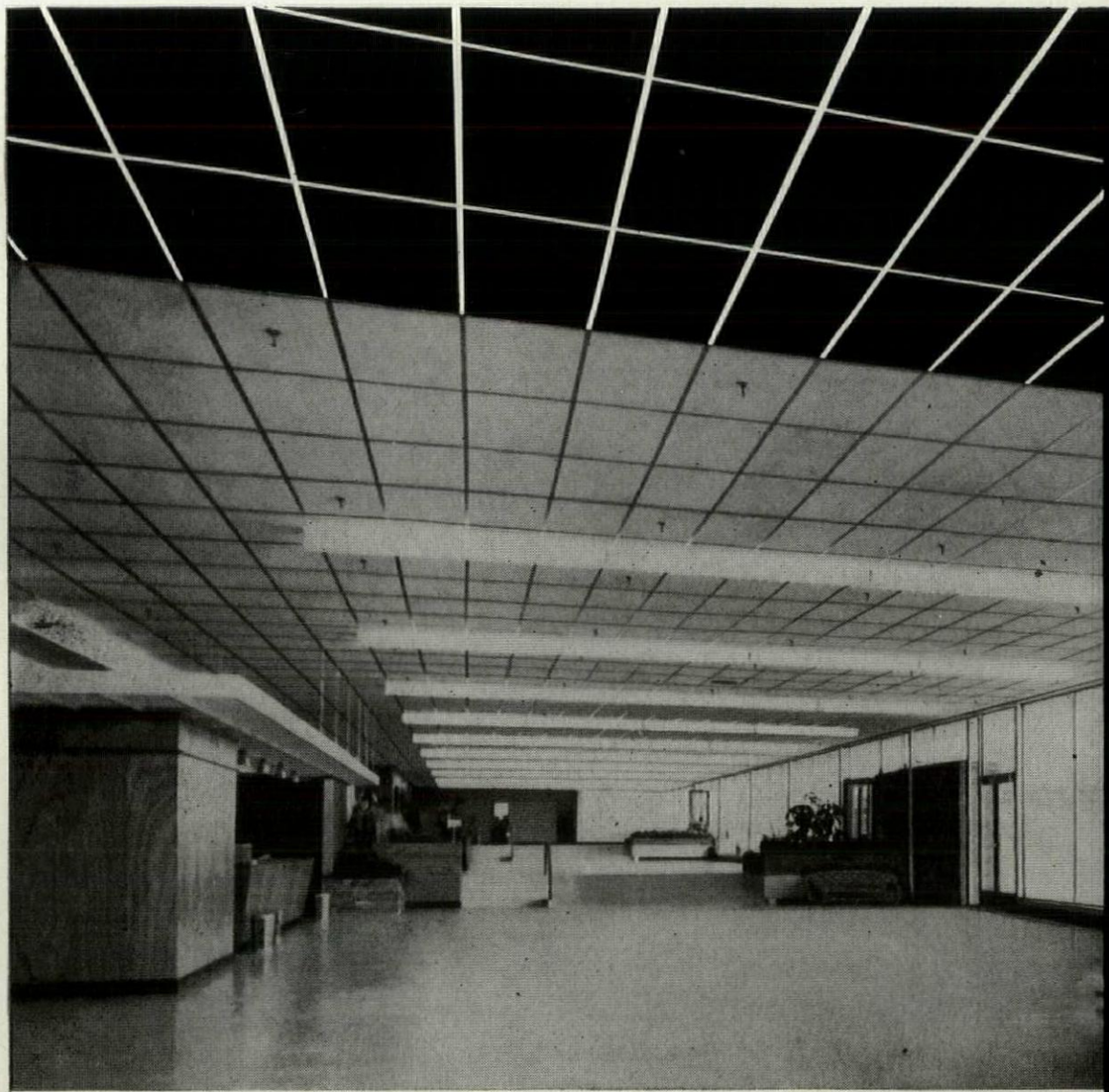
Touché. . . .

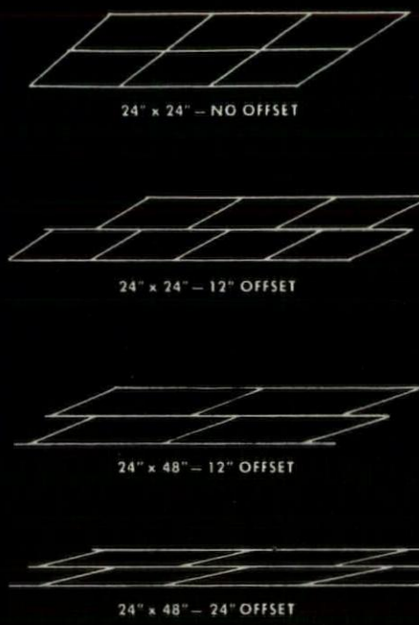
R. B. CUTLER
Manchester, Mass.

Sirs:

On reading your April article about the UN conference building, one is almost immediately aware that only two of the three council chambers are illustrated. This would appear to be a sufficient slight to the designer of the third, but in this same article one is astonished to read, "Architect Arneberg's Se-

(Continued on page 78)





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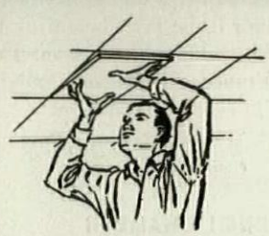

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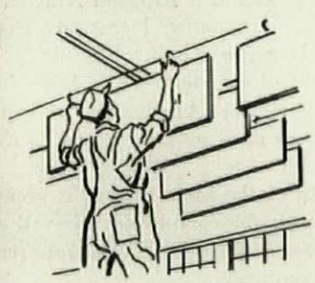

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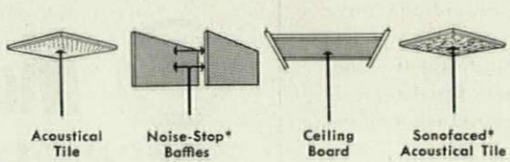

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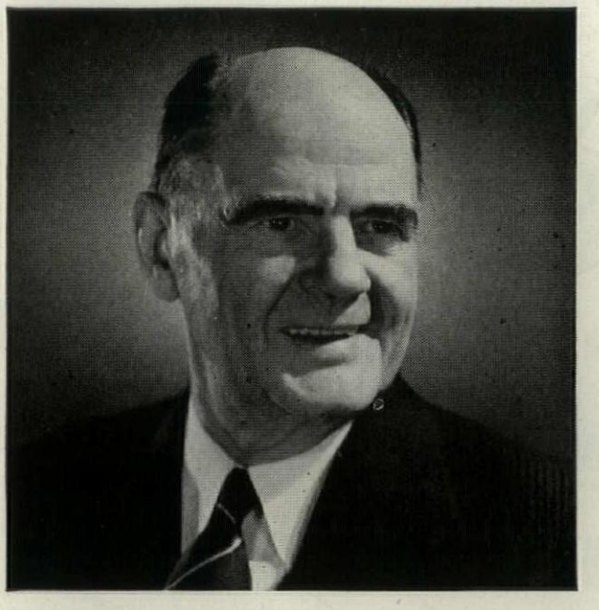

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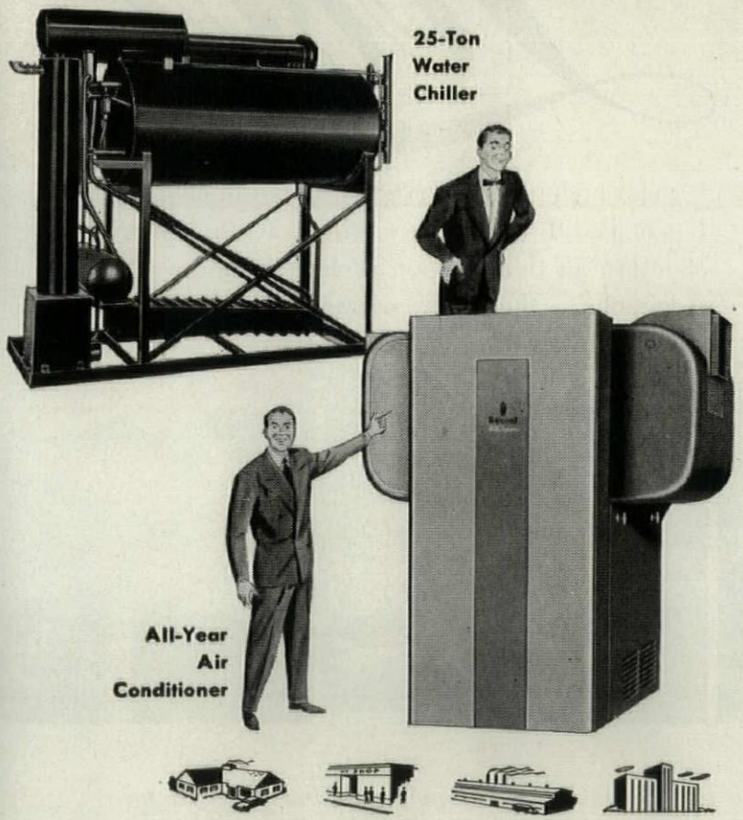

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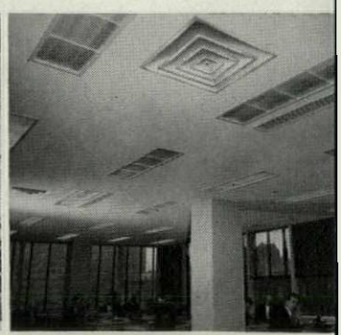
This high pressure system resulted in elimination of a costly penthouse on the roof, elimination of return air ductwork on each floor, and a 50% reduction in the space normally required between furred ceiling and floor above.



Tuttle & Bailey Type HPD High Pressure Supply Air Units selected for installation throughout Lever House were specially designed to handle the branch duct velocity of 3500 FPM. Supply air entering the housing from the branch duct passes through an airfoil type high pressure damper into an expansion silencer chamber where pressure is reduced from a branch duct pressure of 4" to 0.4" water gauge. A circular jet induces room air into the unit where it mixes with the primary air stream, and then discharges through the diffuser face.

Other Tuttle & Bailey equipment installed includes Type D square return air units designed to match supply diffusers . . . Type AL Aeroline return inlets . . . and, in the lobby, a special combination supply and return linear unit.

From preliminary stage to job completion, Tuttle & Bailey engineers worked closely with the engineering and architectural staffs. To be closely associated with so important a development as the high pressure air conditioning installation in Lever House is a unique experience for any manufacturer of air distribution equipment. Only through such experience in the field — coupled with a continuing program of laboratory research — is leadership maintained.

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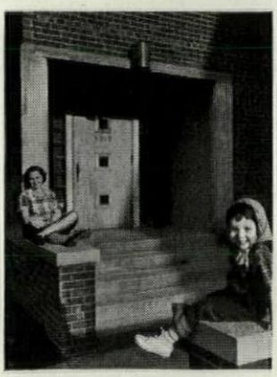
Increased "rentability" will be an important factor in the years ahead

Lots of sun, fresh air, room for children to play—these all appeal to tenants at Meadowbrook Apartments, a garden apartment development in Indianapolis, Indiana.

And so does Honeywell Customized Temperature Control that gives each tenant *individual temperature control*, an advantage unfortunately not enjoyed by many apartment dwellers.



For at Meadowbrook there's a thermostat in each and every apartment.

When you talk to tenants about the heating system and the individual temperature control they enjoy, they agree both are the best they've ever known, that they're equal to what you find in the finest private homes.

And the resident manager of Meadowbrook, Henry C. Dickson, feels that Honeywell Customized Temperature Control definitely helped increase "rentability" at the time the buildings were finished.

What's more, he feels Honeywell Customized Temperature Control will give him a definite competitive advantage, tenant-wise, for years to come.

The Honeywell thermostat in the typical apartment at right is located on the wall between the living and dining areas. Individual thermostats give each tenant *his own* temperature control as he wants it and when he wants it. Result: comfortable tenants. And comfortable tenants are satisfied tenants.

For Comfortable, Even Temperature in New or Existing Buildings – of Any Size, Specify Honeywell Customized Temperature Control

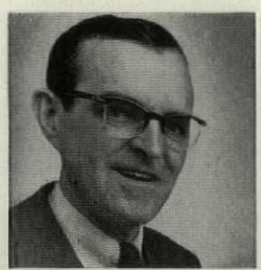
Whether it's an apartment, office, store, factory, school, garage – or any size building – new or existing – Honeywell Customized Temperature Control will meet your clients' heating and ventilating problems.

Once equipped with Honeywell Customized Temperature Control, they'll have the right kind of controls to keep their employees, customers and tenants comfortable. And, besides, they'll save on maintenance – and cut fuel costs.

For complete facts on Honeywell Customized Temperature Control, call your local Honeywell office. There are 91 across the nation. Or mail the coupon today.

Architect J. Lloyd Allen, above, of Allen and Kelley, Indianapolis, looks on as designer R. K. Zimmerly describes how Honeywell Customized Temperature Control helped solve a knotty exposure problem. The model shows clearly the varied exposures of Meadowbrook's 37 buildings, its 647 one- and two-bedroom apartments that are located on the 50-acre tract.

Meadowbrook was designed to give families all the convenience and comfort of apartment life, yet retain many advantages normally only available in private homes.



"It's no trouble at all when it comes to maintenance," says William D. Gill, Meadowbrook's superintendent of buildings and property.

"Tenants are happy with Honeywell Customized Temperature Control because it gives them individual comfort. But for my money it's ideal because it requires very little maintenance."

MINNEAPOLIS
Honeywell

First in Controls

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. MB-6-158, Minneapolis 8, Minnesota
Gentlemen:
I'm interested in learning more about Honeywell Customized Temperature Control.

Name.....

Firm Name.....

Address.....

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

LETTERS

curity Council Chamber does not measure up to the other two, is therefore not illustrated," —which seems unnecessarily rude.

JAMES LAWRENCE JR., *Architect*
Boston, Mass.

• FORUM selects work for presentation on the basis of its contribution to architectural and building progress; saw no such contribution in the omitted council chamber (*see photo*).—ED.

UNations

BETTER MASONRY

Sirs:

Your article, "Better Masonry Walls" by Professor Walter C. Voss of MIT in the April issue is one of the best written on the subject in a long time and should go a long way, if heeded, to enhance greatly the beauty, strength and durability of new masonry units.

MARTIN J. YOHALEM, *Design Engineer*
The Procter & Gamble Co.
Cincinnati, Ohio

THE PHILADELPHIA CURE

Sirs:

Regarding the well conceived article on "The Philadelphia Cure" in your April issue, it certainly appears that Philadelphia's approach is a logical one and deserves the study of other cities and planning groups.

We need more of this kind of article, for the problem of rehabilitating our cities will certainly be less difficult if everyone can be acquainted with the urgent need for such rehabilitation and with the good work that is being done along these lines in many cities.

JOSEPH M. DARST, *Mayor*
St. Louis, Mo.

Sirs:

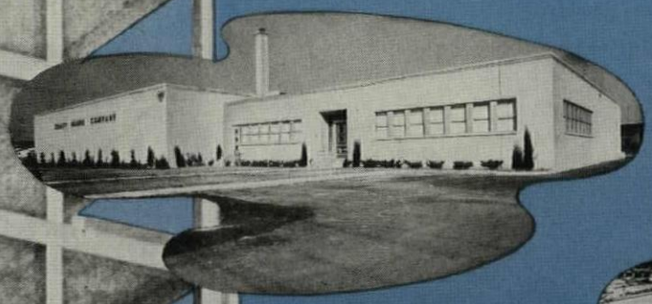
I am delighted with your Philadelphia piece in the April FORUM. This is the kind of thing that other cities desperately need if we are to make "three dimensional planning" mean something, and you have shown them what needs to be done and at least one way of going about it. . . .

FREDERICK GUTHEIM
Assistant to the Executive Director
The American Institute of Architects
Washington, D. C.

Sirs:

The article "The Philadelphia Cure" in the

(Continued on page 86)



GPX sets the pattern for lower construction costs

Over and over again, in countless construction projects throughout the nation, GPX plastic-faced plywood is setting the pattern by slashing labor and material costs for concrete construction.

Lightweight, silky-smooth, armor-hard—these unbeatable GPX qualities paid off for the Lipton Tea Company whose new building in Texas is an outstanding example of monolithic design. V-joints between GPX forms eliminated costly finishing, provided an unusual architectural treatment.

Over and over again . . . contractors for U. S. Steel's Fairless Works expected about 30 re-uses of their GPX forms, but rugged GPX forms delivered over *50 repeated uses.*

The beautiful new Kraft Foods Company building in Louisville is another testimonial to GPX efficiency. The builders re-used their GPX forms 26 times . . . they were still serviceable for other jobs.

Take advantage of Georgia-Pacific's expert technical service. G-P is equipped to advise you on any construction problem you may have. Contact your local warehouse, or write . . .

GPX is made of top-quality exterior Douglas Fir Plywood, with a superior plastic overlay applied under heat and pressure when the plywood is bonded. RESULT: the plastic flows, densens and sets, forming a hard plastic surface that is *part of the plywood itself!*

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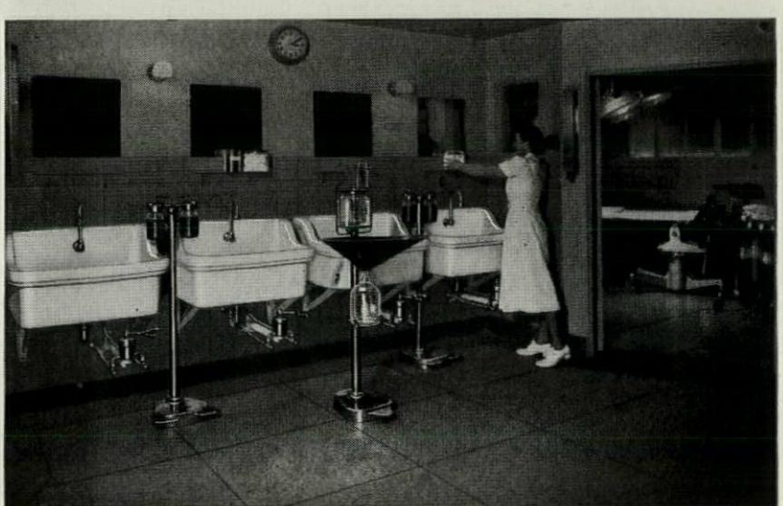
AMERICAN-Standard

First in heating . . . first in plumbing

Palomar Memorial Hospital adds new wing – it's completely AMERICAN-Standard equipped



THESE SURGEONS' SCRUB-UP SINKS in the new addition to the Palomar Memorial Hospital are easy to keep sparkling bright and sanitary. They're made of smooth, non-absorbent genuine vitreous china. And to facilitate use, the sinks have knee-action mixing valves and non-tarnishing Chromard gooseneck spouts with spray nozzles. American-Standard offers a complete line of plumbing fixtures to meet the most specialized hospital needs.

IN the new wing of the Palomar Hospital of Escondido, California, American-Standard plumbing fixtures are on the job helping to make the demanding tasks of staff and attendants easier . . . helping to make the patients more comfortable.

American-Standard fixtures are famous for their smart styling and sturdy construction. And in buildings all over the country they have *proved* their dependability and ease of maintenance through long years of trouble-free service.

American-Standard plumbing fixtures are available in a wide variety of styles and sizes, making it easy for you to select exactly the right products for your particular needs, whether you're planning an institutional building like the one shown here, or a commercial, industrial or residential structure. Ask your plumbing contractor for details about smartly-designed, long-lasting American-Standard fixtures.

Architect: Lee B. Kline, Los Angeles
Plumbing contractor: Edward Rohde Co., San Diego
Plumbing wholesaler: Western Metal Supply Company, San Diego

American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.

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P. J. WALKER COMPANY
general contractors

HOWE BROTHERS
plumbing contractors

KEENAN PIPE & SUPPLY CO.
plumbing wholesalers

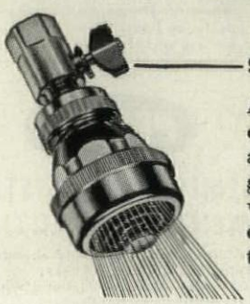
ABOVE • *New home of General Petroleum Corporation, Los Angeles.*

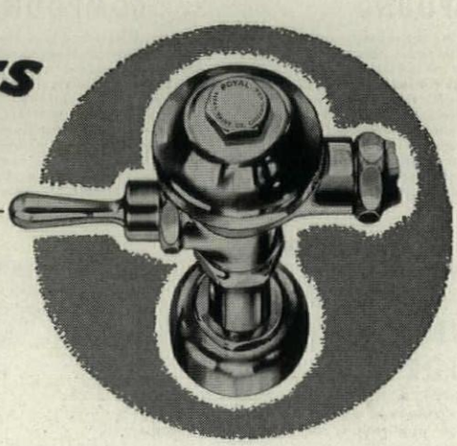
AT LEFT • *Spiral garage of revolutionary design, for General Petroleum employees. Over 450 cars can be parked by drivers themselves, at right angles to the center traffic lanes on the continuous ramp 60 feet wide.*

A LIMIT?..YES AND NO!

In Los Angeles the building height limit is 150 feet, but there is no limit on architectural innovations. This is ably demonstrated in the praiseworthy General Petroleum Building, the exterior of which is distinguished by huge vertical aluminum fins which shield office windows from the intense sun. Inside, movable partitions permit offices to be expanded or contracted quickly and at trifling cost to meet changing space needs. These and other unique features make the West Coast home of the "Flying Red Horse" a business building of high rank. In both buildings pictured, as in thousands of other high ranking buildings, efficient, economical and enduring SLOAN *Flush* VALVES were installed throughout—more proof of preference that explains why . . .

more SLOAN *Flush* VALVES
are sold than all other makes combined





SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. When turned on it delivers cone-within-cone spray of maximum efficiency. When turned off it drains instantly. It gives greatest bathing satisfaction, and saves water, fuel and maintenance service costs.

Write for completely descriptive folder

Giant building or modest home, PECORA weatherproofing materials assure every advantage for the lasting, durable job. For almost a century, PECORA has been a standard of quality for materials in the construction of better buildings and better homes.

PECORA BRAND

CAULKING COMPOUND

Recognized as the top-quality sealing compound to repel cold, wind, rain, snow, and rot wherever building materials are joined together . . . adheres tenaciously to wood, stone, terra cotta, concrete, iron, steel, glass or other materials of construction, allowing expansion or contraction as temperature and conditions change, without opening leaks . . . protects the structure itself, as well as the occupants!

PECORA BRAND

GLAZING COMPOUND

An easily handled material for bedding and facing glass in either wood or metal window frames . . . eliminates drafts, leaks, and expensive maintenance operations . . . preferred by professional glaziers, maintenance men, and "handymen" alike for the production of a durable, neat-appearing sash. Meets Federal specifications for Glazing Compound, and is available in natural, gray, and aluminum colors.

PECORA BRAND

WEATHERTITE ROOF COATINGS

Coatings available in several grades and colors to caulk and lengthen the lifetime of new roofs, as well as patch and renew the life of old roofs. Troweling consistencies are used to patch and caulk, liquid forms for complete coverage of roofs . . . resists sun, rain, snow, as well as chemical fumes from chimneys. A special aluminum pigmented grade is available to insulate against the summer sun, as well as black, red, and brown-colored compounds.

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SEALING AND DAMPPROOFING COMPOUNDS

Colorless liquids or asphaltic products used to protect masonry structures from penetration of moisture, either above or below grade. *KLERE-SEAL:* a colorless liquid with the consistency of thin varnish for sealing above-grade masonry on the exterior surface; will not discolor the masonry. The asphaltic sealers are available in paste or liquid form and used on the exterior surface of below-grade masonry, or the interior surface of above-grade masonry.

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of Wall Tile • Floor Tile • Ceiling Tile • Wall Board • Structural Glass
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SPECIFY PECORA AND YOU SPECIFY QUALITY

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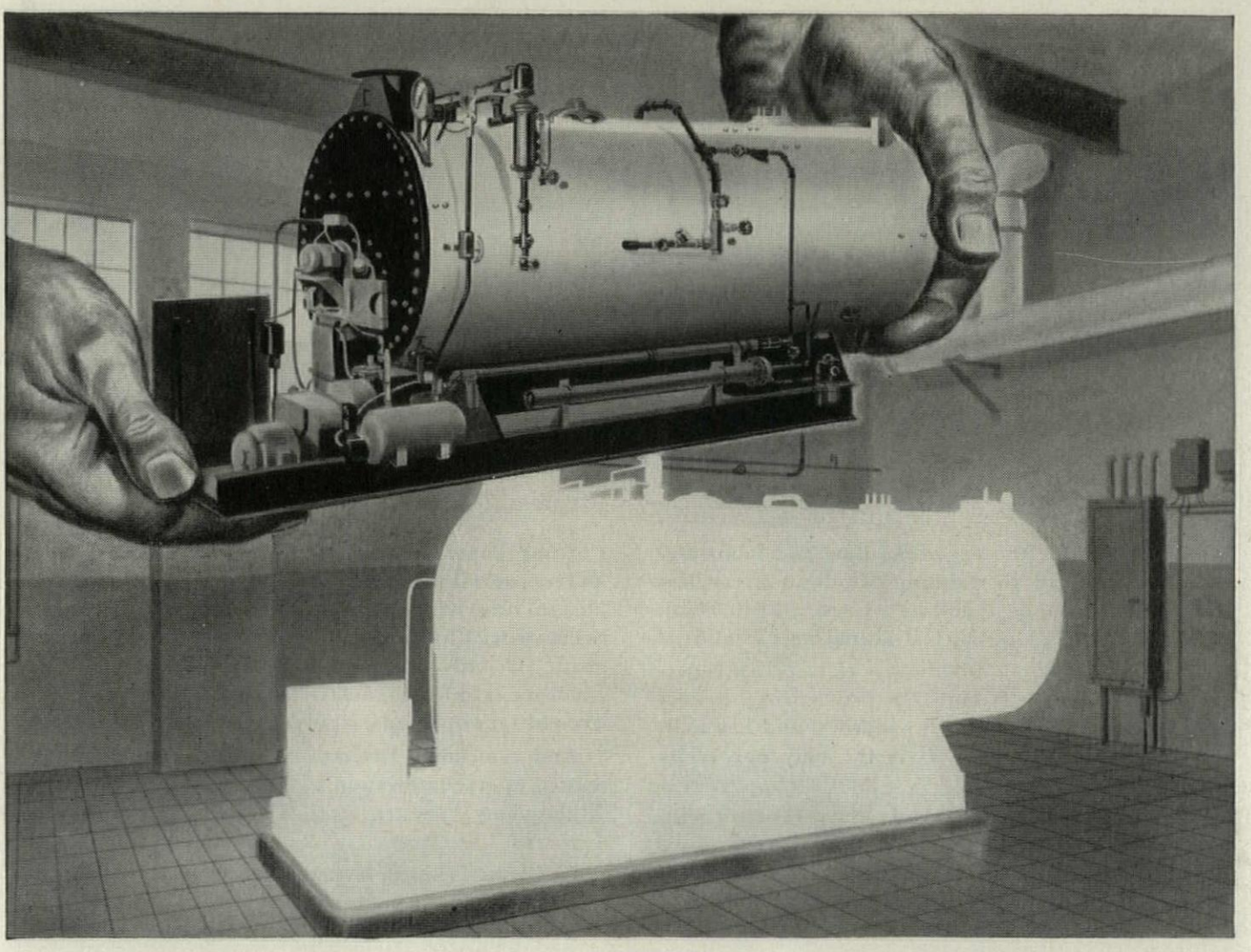

Save Installation-Construction Time — Expedite Emergency Installations — Serve Immediate Temporary Steam Needs — With a Cleaver-Brooks Self-Contained Boiler

WHEN speed is vital, you can save weeks of valuable installation time with a Cleaver-Brooks boiler — delivered to location as a complete, factory assembled and tested, self-contained unit, with much of the trim and accessories provided.

In an emergency the installation time can be reduced to as little as 48 hours, by following a properly planned and coordinated procedure of providing in advance the required facilities — foundations, headers, service and blow-off lines, fuel tanks and lines.

Prior to the completion of your building, Cleaver-Brooks boilers can be placed in operation to serve immediate steam needs. When permanently installed the change-over takes place with a minimum of labor and expense and the avoidance of interrupted steam service.

Cleaver-Brooks are the first and finest in modern, self-contained boilers — operate at a guaranteed efficiency of 80% — burn the fuel most available and economical in your area, gas, oil, or combination gas and oil — fully meet all codes — standard models available in sizes 15 to 500 hp; 15 to 250 psi.

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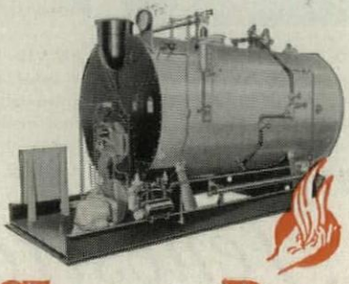
Write for latest, fully illustrated and descriptive Cleaver-Brooks Steam Boiler Catalog.

WHY INSTALLATION TIME IS CUT:

- Simple Low-Cost Stack
- No Job-Site Brickwork — No Special Foundations
- Boiler Delivered as a Complete, Factory Assembled, Tested, Self-Contained Unit
- Centralized Responsibility — No Waiting on Multiple Sources of Supply



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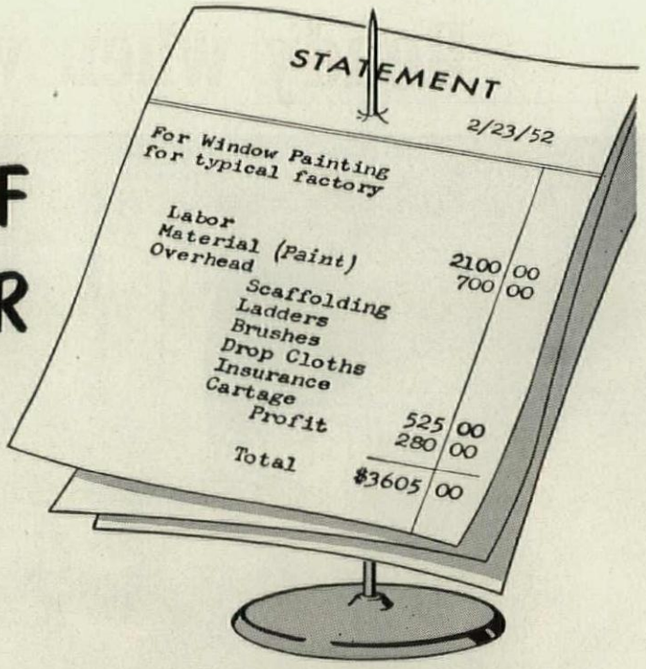
Builders of Equipment for the Generation and Utilization of Heat • Steam Boilers • Oil and Bitumen Tank-Car Heaters • Distillation Equipment • Oil and Gas-Fired Conversion Burners

SAVE THOUSANDS OF DOLLARS EVERY YEAR

...use Fenestra super-galvanized steel windows



No more bills for the expensive time and labor and materials involved in painting windows every few years. Save thousands of dollars every year by insisting on Fenestra* Super Hot-Dip Galvanized Steel Windows!

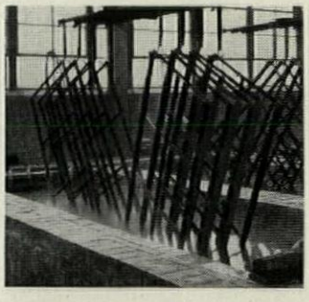
Here's why they are called *Super* Galvanized: Fenestra has developed a Hot-Dip Galvanizing system designed specifically for steel windows, and has built a special plant around it. It is the only one of its kind in America.

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. Timing, temperatures—every step—is laboratory controlled.

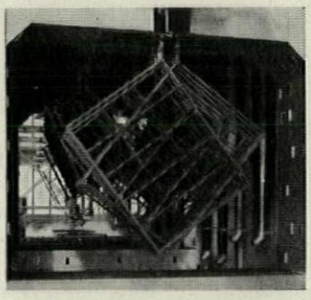
So add Super Hot-Dip Galvanizing to your present list of Fenestra advantages... such as integral ventilator butts that increase window strength, precision machining of window bars for perfectly uniform window size, automatic assembly of ventilators for perfect permanent fit, continuous double contact for weather-tightness all around vent openings, rigid *interlocking* muntin joints.

And, remember, Fenestra's volume production, permitted by standardization of types and sizes, gives you high-quality Fenestra Steel Windows at remarkably low cost.

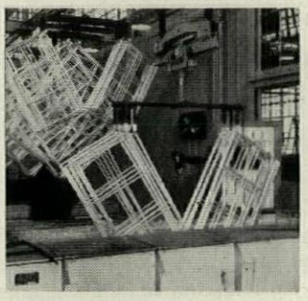
Call your Fenestra Representative or write Detroit Steel Products Company, Dept. MB-6, 3401 East Grand Boulevard, Detroit 11, Michigan. *®



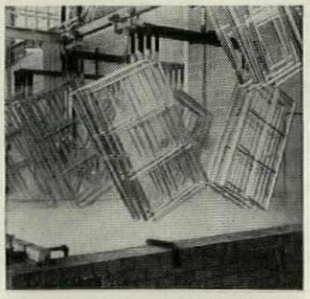
FLUXING. After cleaning, pickling and rinsing, Fenestra Windows dip into a flux bath that provides a film to prevent contamination of the cleaned steel as it passes to galvanizing tank.



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.

Fenestra SUPER HOT-DIP GALVANIZED STEEL WINDOWS

from America's first plant especially designed to galvanize steel windows

LETTERS

April FORUM was a masterful job of presenting what we are trying to do here in redevelopment planning. It seems to me to be an extraordinary thing how you caught what I consider to be the special characteristic of Philadelphia. It continually surprises me to see so much of what we had in mind better expressed in so few words, than we were able to make it.

One detail seems to warrant comment because it involves a basic matter of policy in the relationship between the Philadelphia City Planning Commission and the Philadelphia Chapter of the AIA.

Louis I. Kahn, and his associates, Kenneth Day, Louis McAllister, Doublas Braik and Anne G. Tyng, were not nominated by the Philadelphia Chapter, AIA, as the over-all consultants. The selection was made entirely by the Philadelphia City Planning Commission, based on the remarkable demonstration by that group of their ability in redevelopment planning in the proposals they made for the Mill Creek Redevelopment Area.

This matter was carefully discussed with the Executive Committee and the Committee on Civic Improvement of the local AIA Chapter. The Chapter agreed that it was proper for the Philadelphia City Planning Commission to retain local private architects as over-all consultants to advise it and to co-ordinate the work of other private architects on redevelopment projects. The Chapter declined to accept the responsibility of making nominations for the consultants and recommended that the selection be made by the Planning Commission.

It was extremely helpful to have a clear understanding with the Chapter on these subjects and without its co-operation our method of procedure would have been impossible.

EDMUND N. BACON, *Executive Director*
City Planning Commission
Philadelphia, Pa.

J & J'S FACTORY PHILOSOPHY

Sirs:

I have read "Dual-Purpose Plants" (AF, Feb. '52) with much interest and I must say that Albert Kahn, Associated Architects and Engineers, have tackled a problem which is extremely difficult.

To create a design and structural facility which will be flexible enough to make both defense materials and peacetime products, and do both with the utmost efficiency, is no small assignment. . . .

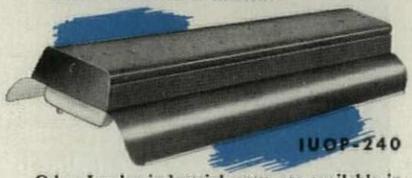
I subscribe wholeheartedly to the idea that any new unit should be built out in open space: this feature not only provides flexibility of expansion and flexibility of servicing the building by transportation facilities, but also provides an external environment, through good architecture, good landscaping, easy parking, etc., which means much to the general morale of employees.

(Continued on page 90)

While the city sleeps . . .

Leader LIGHTING FOR INDUSTRY

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.



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 materiél, 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 importat 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*

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PEELLE ENGINEERED

SPECIAL PURPOSE DOORS

solve SPECIAL ENGINEERING PROBLEMS

When planning projects requiring specially engineered doors, you can usually save much time and structural expense by consulting Peelle before plans are too far advanced. The reason is readily seen when you consider the important part played by large, special purpose doors in the planning of structures for defense production or other modern industrial purposes. More often than not, it is advantageous to build the structure around such doors rather than to fit the doors into an already planned building.

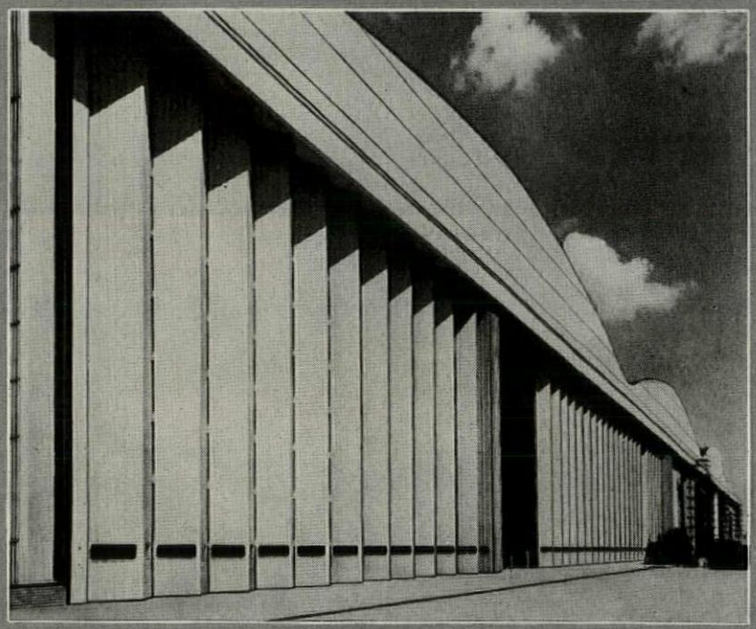
Peelle engineering service is based on long experience in specializing in the unusual . . . in designing and constructing doors requiring the use of unorthodox materials . . . in the imaginative application of sound engineering principles . . . and in the solution of many door problems that had to be answered for the first time.

Get the full benefit of Peelle engineering cooperation—write The Peelle Company in the early planning stage whenever your projects call for special purpose doors.

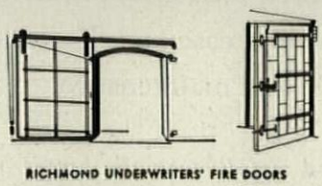
Peelle-Esavian Door - The front of this huge, three-bay hangar presents a continuous opening of 1045' in width and 65' 9" in height. To close this opening it was necessary to build one of the largest doors in the world, consisting of 3 pairs of sliding-folding aluminum-covered sections. Motive power is housed in the power mullions at each leading edge of the door structure.

The Peelle-Esavian Door is based on an entirely new principle which eliminates the necessity for expensive structural features in the building. The entire weight of the door is carried on the bottom track and the motivating power is on the door. This door offers many unique advantages, particularly for large openings of unusual height.

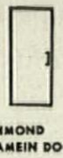
Write for new Peelle-Esavian Brochure.



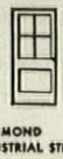
BRISTOL AEROPLANE ASSEMBLY PLANT—Filton, England



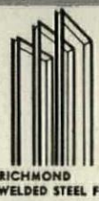
RICHMOND UNDERWRITERS' FIRE DOORS



RICHMOND KALAMEIN DOORS



RICHMOND INDUSTRIAL STEEL DOORS

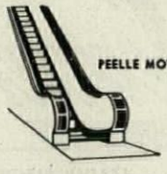


RICHMOND WELDED STEEL FRAMES

PEELLE FREIGHT ELEVATOR DOORS

PEELLE MOTORIZED CAR GATES

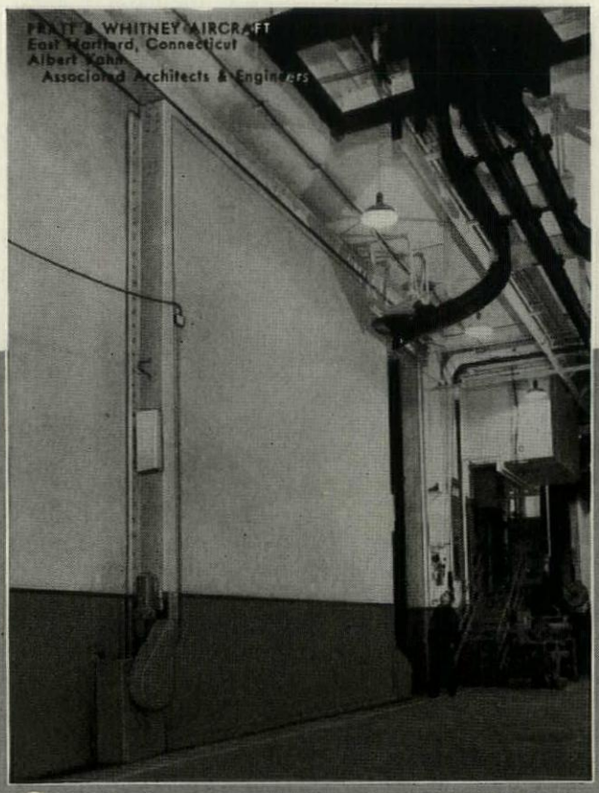
PEELLE DUMBWAITER DOORS



PEELLE MOTORSTAIRS

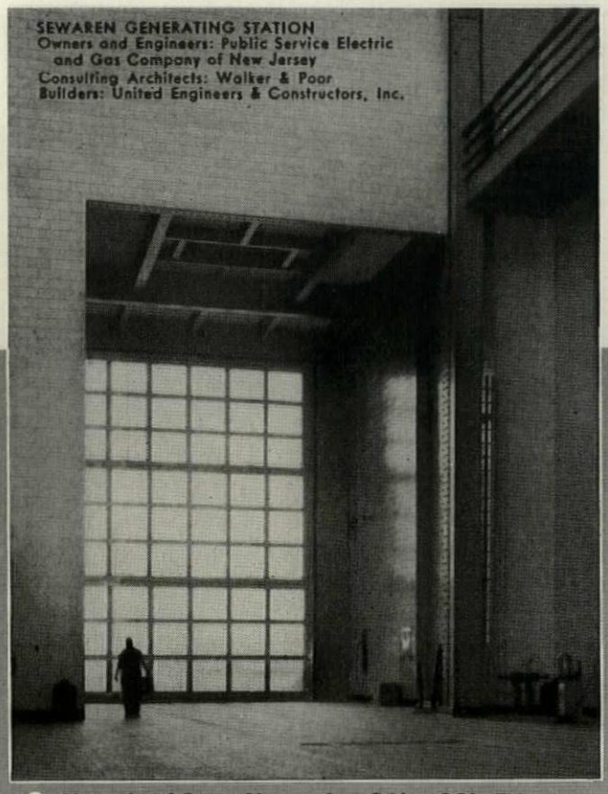
PEELLE-RICHMOND — One Reliable Source for a Wide Range of Equipment.

The Peelle Company and its wholly owned affiliate, The Richmond Fireproof Door Company of Richmond, Indiana, offer you wide variety of doors for industrial and commercial buildings, as well as Peelle Motorstairs. Illustrated here are some of the products of the Peelle-Richmond organization which are in wide use throughout the country. Specifications and details of any of these products will gladly be sent on request.



PRATT & WHITNEY AIRCRAFT
East Hartford, Connecticut
Albert Kahn
Associated Architects & Engineers

Jet Engine Test Cell Door - To contain and deaden the roar of jet engines on test, Pratt & Whitney Aircraft had The Peelle Company design and build ten of these huge concrete and steel doors for its new jet engine test cell block. Big enough to admit the most powerful engines of today and the even bigger ones to come, these doors had to be built as thick as the walls of the cells themselves to control the enormous volume of sound produced by the engine while running. Constructed in place, these dense concrete doors weigh 45 tons each, yet their electric motor drive travels them horizontally at the rate of 10 feet per minute quite easily. And, from outside the closed door, only a moderate hum can be heard of the earth-shaking roar of the jet engine running inside.



SEWAREN GENERATING STATION
Owners and Engineers: Public Service Electric and Gas Company of New Jersey
Consulting Architects: Walker & Poor
Builders: United Engineers & Constructors, Inc.

Motorized Door Measuring 24' x 35' - This towering stainless steel and glass door was engineered and built by The Peelle Company to carry out the architectural treatment of the building and to satisfy the engineering requirements. Three vertical sliding panels in the door are counter-weighted and are operated by a triple parallel gear head reducing unit with brake. Door panels move at varying speeds to arrive simultaneously at open position.

This is one of many types of motorized doors and partitions designed and built by The Peelle Company for factories, power stations, warehouses, terminals, hangars, mills, garages, hospitals and schools. Peelle Engineered Doors merit consideration in *your* plans.

OSCODA AIR FORCE BASE—Oscoda, Michigan
Contractors: A. J. Etkin Construction Company

Hangar Door - This motor-operated, 14-section, horizontal sliding hangar door was designed and built by The Peelle Company for an opening 160 feet wide by 25 feet high. It is made with 6" channel framing and 13 gauge steel sheeting. Two inch Cellotex is used for insulation. The tail door is the overhead sliding type.

The Peelle Company builds hangar doors of all types and sizes for airports, aviation manufacturers and the U. S. Armed Forces.

"it's
PEELLE
engineered"

THE PEELLE COMPANY

47 STEWART AVENUE, BROOKLYN 37, N. Y.

OFFICES IN PRINCIPAL CITIES

SEE OUR CATALOG IN SWEET'S

LETTERS

Flexibility of the structure itself cannot be overemphasized. With the progress industry has made thus far and the many unforeseen changes which must come, we can safely say that the only thing we know about our buildings is that we do not know what we will be using them for in the future.

So far as floor area is concerned, I agree that it should be unobstructed. Our experience has taught us that a square bay has merit. This gives the same dimension both ways and has no influence on the layout man. Many times layout efficiency is sacrificed because the wider dimension seems to call the turn. If there were no columns in a building we would see some very dramatic schemes of equipment at various angles.

So far as employee facilities are concerned we have placed them upstairs and down in the basement. In one instance of the upper level we limited our flexibility to a marked degree. Buildings should be built with six-way flexibility, four sides and up and down. A specific type of industry might use one and another type use the other. Surely, cafeterias and other public rooms should be above ground. The character of such rooms should be such that a complete change of environment will occur and the individual receive the utmost in relaxation when eating or resting. Too many of us house off the corner of a plant for an eating space and do not even change our color scheme.

The windowless plan does not conform to our thinking. We believe people should see what is going on outside, and we also believe that a certain amount of daylight mixed with artificial lighting is beneficial to the human. We therefore favor a strip window with monitors. True, this runs up costs, but if lighting is policed properly it will help amortize the added cost. Many plants have full glass side walls. Brightness is at its best around the periphery of the building. This area is largely used for the ingress of materials. Make a strip window and use the rest of the glass in low, wide monitors and in the average size building, the glass area and its resultant heat losses will be no greater, and (depending on shape of building) may even be less.

To such forward-thinking groups as the Kahn organization we must give much praise. The modern industrial institution is an extremely efficient tool. Gone are the days of building the old factory confined within several city streets. Such men as these, combined with the forward-thinking executive managements have transformed our industrial plants from sweat shops to industrial institutions where the dignity of the workman has been reestablished.

F. Nason Manley
Director of Construction
Johnson & Johnson
New Brunswick, N. J.

(Continued on page 94)

Now MATICO offers a SUPERIOR, NEW PLASTIC FLOORING for on, above or below grade

- Impervious to petroleum solvents, oils, greases, turpentine, alkalis and household acids.
- Extremely resilient. Good sound absorption.
- Smooth, non-porous surface sheds dirt — wipes clean with damp mop.
- Excellent indentation recovery.
- Fire-resistant—will not support flame.
- Wide variety of bright, clear, non-fading colors.
- Easy to install—no special adhesives needed.
- Available in 9" x 9" standard gauge and ⅛" tiles.

ARISTOFLEX

THE ARISTOCRAT OF RESILIENT FLOORING

PLASTIC—ASBESTOS . . . NO FELT BACKING

New MATICO Aristoflex Tile Flooring is plastic-asbestos through and through. It's extremely tough, very flexible. Vivid, sparkling colors and marbleization go clear through each tile. Long wearability and enduring beauty are assured.

Aristoflex may be laid direct on concrete . . . over terrazzo or ceramic . . . on wood over 15-pound saturated felt . . . and over magnesite (above grade).

Installation is unusually easy, and less costly. No special cements are required, ordinary asphalt tile adhesive does the job. It lays in tightly, immediately, due to square corners and clean edges.

Write for free Aristoflex samples and specification data.

Dept. 66

QUALITY CONTROLLED

MA·TI·CO® TILE FLOORING

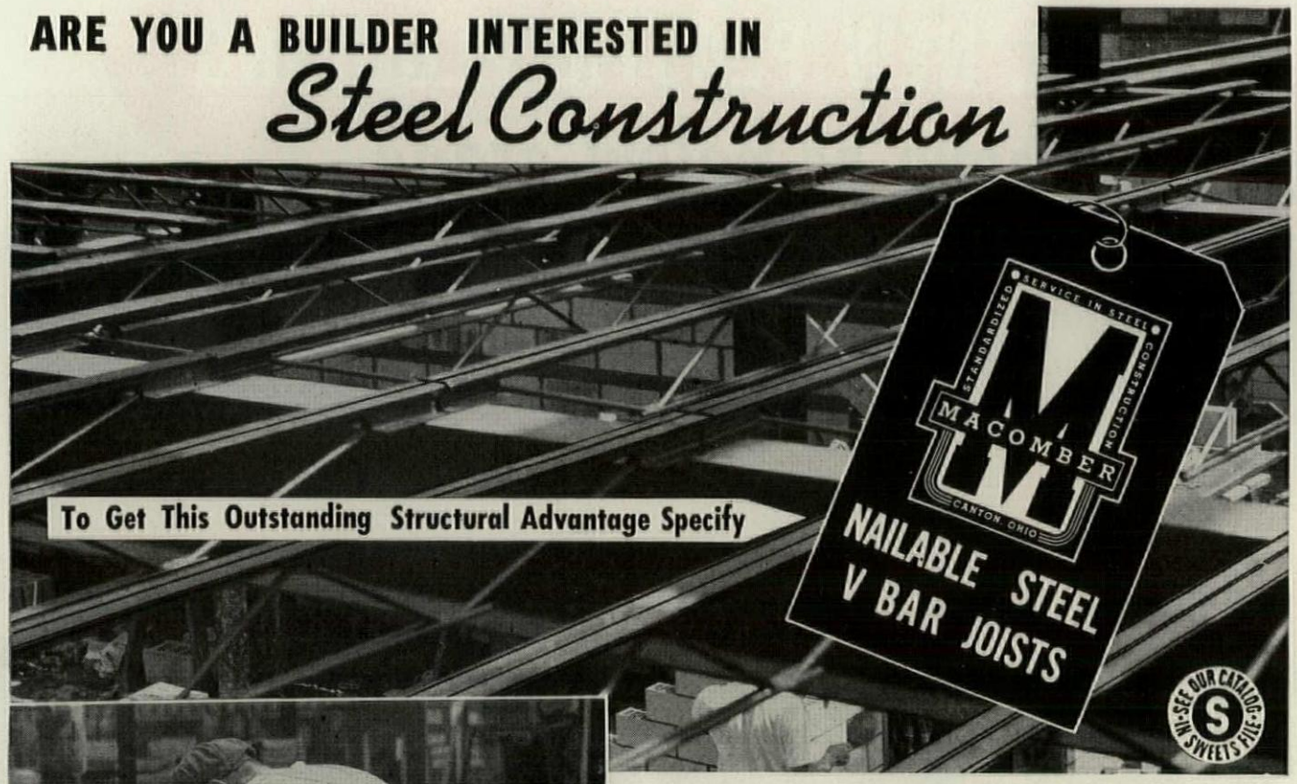
MASTIC TILE CORPORATION OF AMERICA

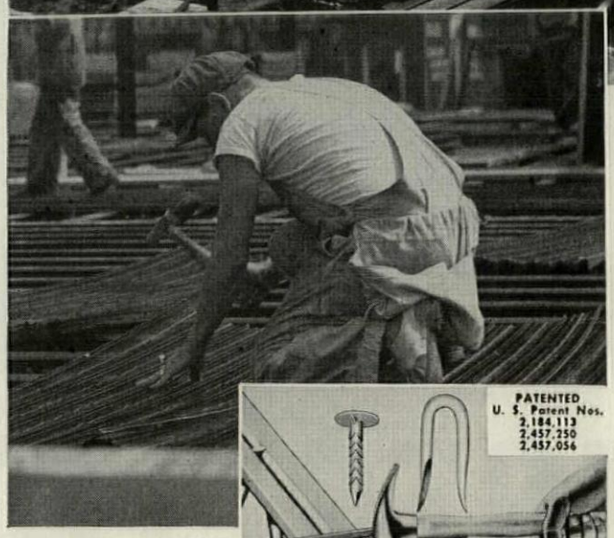
Member Asphalt Tile Institute

Joliet, Ill. Long Beach, Calif. Newburgh, N.Y.

World's largest producer of asphalt tile

ARE YOU A BUILDER INTERESTED IN *Steel Construction*





NAILING gives you a solid anchor, prevents deep pockets of wasted concrete between joists.

MACOMBER NAILABLE STEEL JOISTS

NAILING into V Joist Steel Top chords gives you a non-combustible anchor 2½ times stronger than wood.

ARCHITECTS AND BUILDERS who consider fire-safety and the economy of ready-to-install steel members as essential ingredients of good construction have something very special in Macomber Steel Joists.

That special something is NAILABILITY.

These all-steel structural units have a nail gripping power 2½ times that of wood.

Result? You can build fire OUT and safety IN when you specify Macomber Nailable Steel Joists.

In addition you can:

1. Attach centering faster with nails.
2. Prevent pockets of wasted concrete between joists when centering is stretched taut.
3. Build a fire barrier to floors above.
4. Prevent the unsightly results of shrinkage and deflection.

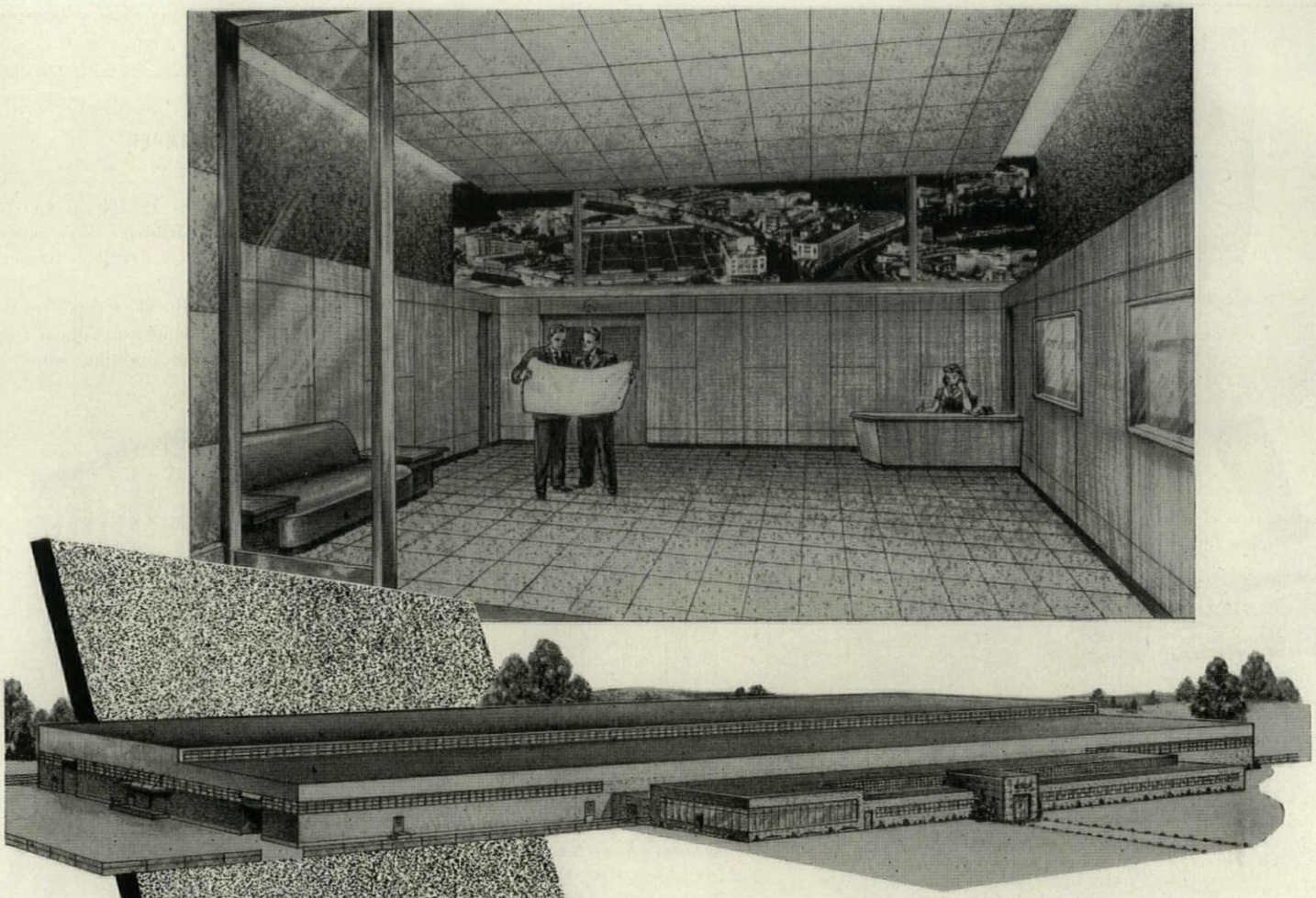
Yes—if you are a builder interested in Steel Construction, you pay no more for the ONE STEEL JOIST that gives you ALL of these advantages. Write us.

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER • INCORPORATED

CANTON, OHIO

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK



Safety IS WELCOME HERE

. . . in this machine tool plant of the future.

One of the largest single units for grinding machine manufacture is this 6½ acre Norton plant nearing completion. It embodies both the most modern machine tool design techniques and the last word in straight-line production methods. Practical consideration is given to the comfort and *safety* of employees and visitors. In the attractive lobby permanent protection against slipping is provided by wear-resistant Norton Non-slip Floor Tile. Terrazzo floors in kitchen and washrooms . . . wherever water, grease, etc. might be present . . . make use of other Norton non-slip floor products. For helpful information as to colors, types and suggested specifications write for catalog #1935-FAC.

NORTON COMPANY

7 NEW BOND STREET · WORCESTER 6, MASS.

MAKING BETTER PRODUCTS TO MAKE OTHER PRODUCTS BETTER

NORTON

LETTERS

MILAN'S SKYSCRAPER

Sirs:

In the December 1951 issue you published photographs of European skyscrapers under the heading "Europe Emulates American Skyscrapers."

Unfortunately, the skyscraper we built—the tallest in Milan—did not appear. Here is a photograph of the building which we constructed during 1950-'51 from the plans of architect Mario Bacciocchi. The skyscraper is 63.2 meters high and numbers 18 floors above ground, with a total of 350 rooms.

C. R. E. S. I.
Milan, Italy

METAL FABRIC FOR PLASTER

Sirs:

Your article, "How to Fireproof a Light Steel Frame" (AF, Feb. '52) shows a partly completed floor test specimen and implies that the construction had been tested at this Bureau and qualified for the 2-hr. rating mentioned. The floor was tested for fire endurance and failed under load at 1 hr. 41 mins.; therefore, it could have been rated as having 1½ hrs. fire resistance, but not 2 hrs.

You will be interested to know that the same kind of floor with an even lighter ceiling, the plaster of which was reinforced with metal fabric weighing about 1 lb. per sq. yd., has qualified for a rating of 3 hrs. A lightweight fabric used to reinforce plaster applied to gypsum lath has been found to have much merit in producing increased fire resistance of both column encasements and ceilings. . . .

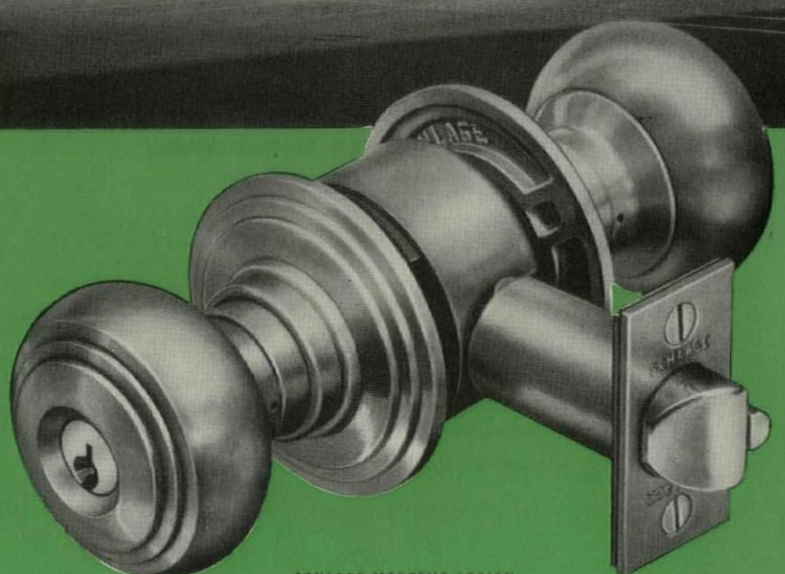
NOLAN D. MITCHELL, *Consultant*
National Bureau of Standards
Washington, D. C.

SCHLAGE® CYLINDRICAL LOCKS...Time-Proven

In 15 years, no replacements...no repairs to SCHLAGE LOCKS installed at Western Merchandise Mart, San Francisco

Few buildings give locks heavier use than this "billion dollar market center of the West."

The 1100 Schlage Cylindrical Locks at the Western Merchandise Mart began their record of trouble-free service in 1937. Ten years later a wing was added and 700 more Schlage Locks were installed. "We specified these on the strength of Schlage's performance in our main structure," says "The Mart's" President, Frank K. Runyan. "And we have not had to replace or repair a single lock."



SCHLAGE MODERNE DESIGN

SCHLAGE®

THE Time-Proven CYLINDRICAL LOCK

SCHLAGE LOCK COMPANY · 2201 BAYSHORE BOULEVARD, SAN FRANCISCO, CALIFORNIA
SCHLAGE LOCK COMPANY OF CANADA, LTD. · VANCOUVER, B. C.

Manhattan House, New York. Wall-Tex "grasscloth" pattern used in all corridors of this New York Life Insurance Co. project. Skidmore, Owings & Merrill, Architects.

WALL·TEX
fabric wall coverings

an "Investment Favorite" for Manhattan House

Wall-Tex has built a solid reputation as something special in wall decoration for housing projects, hotels and public buildings of all kinds. No bleak, austere walls—instead inviting, luxurious Wall-Tex wall fabric with time-tested service features.

Recent research tests show remarkable color fastness of Wall-Tex—great resistance strength (controls plaster cracks)—and ability to withstand 2000 scrubbing strokes without signs of wear. Safely washable Wall-Tex looks new for years.

Now 24 inches wide, pre-trimmed

New pre-trimmed 24-inch Wall-Tex is ready to paste and hang. Easy to apply. Straight, true edges, invisible seams. 200 beautiful patterns and colors. Mail coupon for swatches and File Folder.

Columbus Coated Fabrics Corporation
Dept. AF-62, Columbus, Ohio

Send your new File Folder on Wall-Tex and Sample Swatches.

Name_____

Street_____

City_____ State_____

Colonial Room, Hotel Roosevelt. Architects: Warner-Leeds. Arrow indicates stacked units.

Fairhurst
T.M. Reg.

Unitfold

Folding Walls— at the HOTEL ROOSEVELT
NEW YORK CITY

Fairhurst Unitfold was chosen for the Roosevelt as a result of proved superiority in an earlier installation at the Caribe Hilton. Says Frank G. Wangeman, formerly manager of the Caribe Hilton and now general manager of the Roosevelt: ". . . your Fairhurst Unitfold partition has given us excellent service. The ease of its operation as well as its soundproof qualities make it exceptionally suited for the division of our feature Dining Room . . . it is standing up well under constant use."

10 panels, covered with imported French wallpaper, form a solid, rigid wall 34' long. Access door provides direct communication between room sections.

John T. Fairhurst Co., Inc.
45 West 45th Street New York 19, N. Y.

PROTECT YOUR BUILDINGS

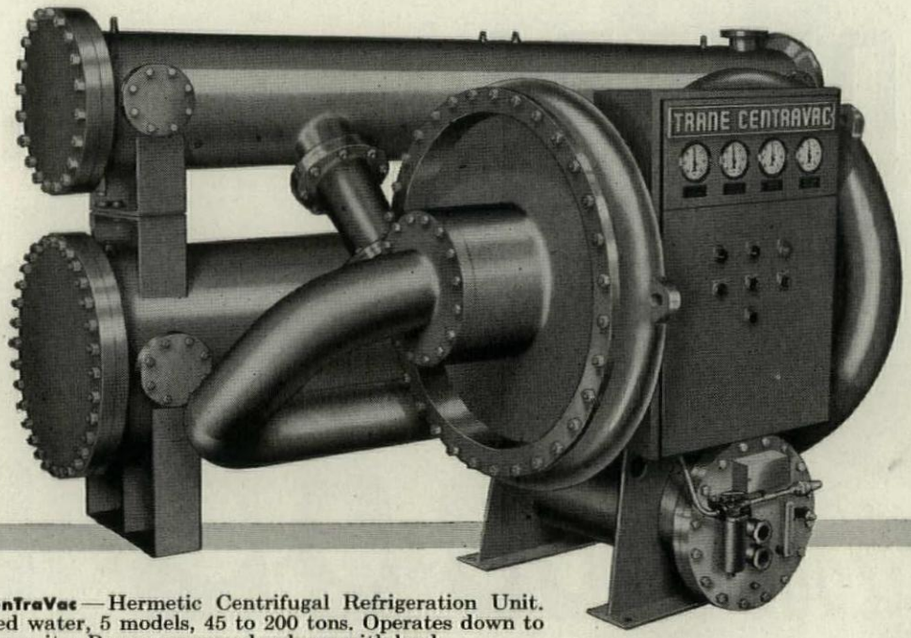
SPECIFY
WESTERN WATERPROOFING COMPANY
FOR:

- Protection from Water Damage (above or below ground, interior or exterior)
- Building Restoration
- Building Cleaning
- Tuckpointing

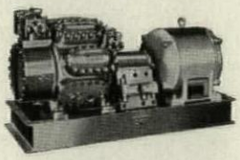
Over 35 years experience serving building owners and architects throughout the nation.
For detailed folders on these services write:

WESTERN WATERPROOFING CO.

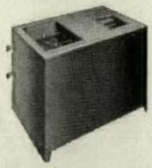
Engineers and Contractors
1223 SYNDICATE TRUST BLDG. ST. LOUIS 1, MO.
A Missouri Corporation Giving Nationwide Service



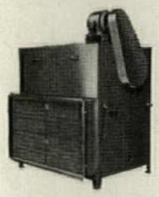
TRANE CenTraVac—Hermetic Centrifugal Refrigeration Unit. For chilled water, 5 models, 45 to 200 tons. Operates down to 10% of capacity. Power consumed reduces with load.



Reciprocating Compressors

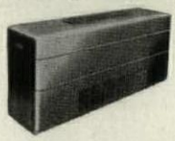


Evaporative Condensers

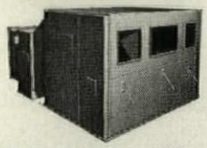


Climate Changers

Self-Contained Units



UniTrane Room Air Conditioners



Multi-Zone Air Conditioners

Cooling Coils

Centrifugal Fans

Matched TRANE products give the air conditioning results you want!

The air conditioning results you want . . . you *get* . . . with TRANE products. Big, complex jobs . . . small, simple jobs . . . TRANE matched products fit together to deliver the precise heating and air conditioning requirements you have in mind. This *complete* line contains all the equipment needed to do a superlative job. Consider these advantages:

1. One responsibility—TRANE'S full line assures you the undivided responsibility of one manufacturer.

2. One source of supply—You save time by dealing with *one* competent specialist—the TRANE sales engineer.

3. One set of catalogs—All the information you need is in one complete and handy set of catalogs—another time saver.

4. Complete flexibility—The TRANE line is so complete you can create up to *ten different* 50-ton air conditioning systems!

For more complete information on any TRANE product contact your nearest TRANE sales engineer.

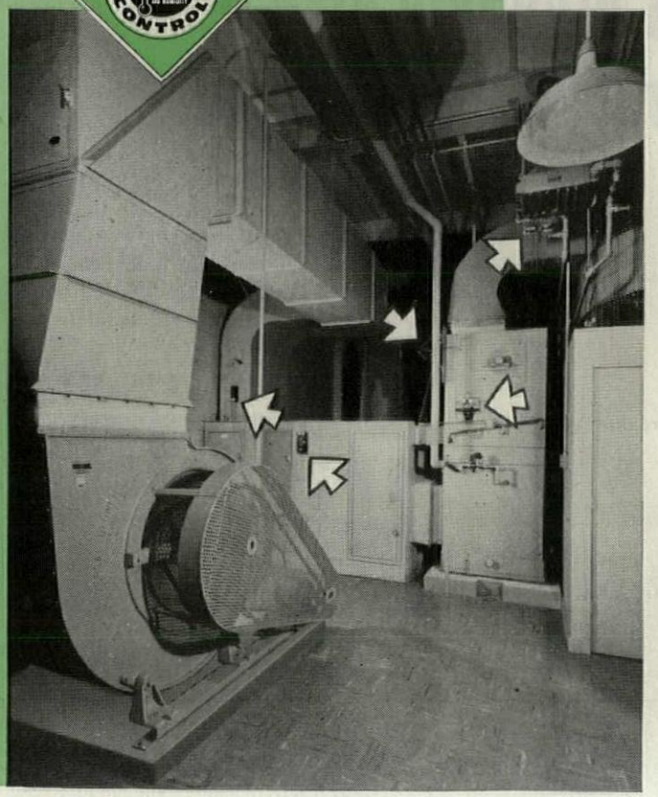
TRANE

THE TRANE COMPANY, LA CROSSE, WIS.
Eastern Mfg. Division, Scranton, Pa.
Trane Company of Canada, Ltd. . . . Toronto
Offices in 80 U. S. and 14 Canadian Cities

MANUFACTURING ENGINEERS OF HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT

POWERS for Heating and

PNEUMATIC CONTROL SYSTEMS

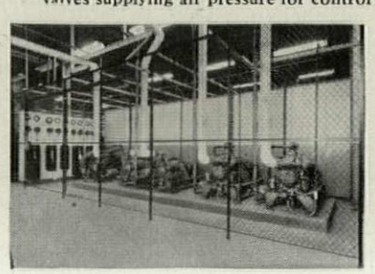


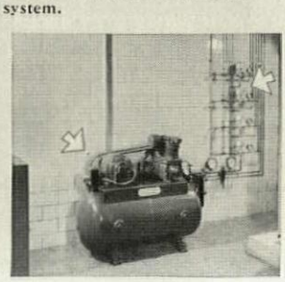
POWERS Design for MODERN CONTROL PANEL

In the unique functional design of this Control Panel are integrated various types of POWERS pneumatic controlling, indicating and recording instruments. It masterminds the operation of four complete year round air conditioning systems in the modern plant shown on the next page.

Photos at left and top and bottom of next page show air conditioning systems regulated by the Control Panel. Arrows indicate Powers controls.

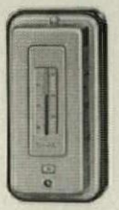
Photo below, left—shows four refrigerator compressors, one for each air conditioning system; photo right—Powers air compressor and pilot valves supplying air pressure for control system.





Air Conditioning

Assure Superior Performance at Lowest Cost for Operation and Maintenance



Room Thermostat for Offices

POWERS TEMPERATURE and HUMIDITY CONTROL SYSTEMS

prevent OVER-heated air in offices, factories, process rooms and other spaces. Comfortable, healthful room temperature

★ **Increases Output of Workers**—Overheated air hastens fatigue, causes mistakes, accidents, increases colds, absenteeism and reduces production.

★ **Cuts Heating Costs up to 25%**—Keeping each room at its proper temperature prevents waste of fuel from OVER-heating.

Constant Temperature and Humidity conditions in each room can be maintained at any predetermined point with Powers control. It can be installed in existing as well as new buildings.

25 to 40 Years of Dependable Service with very low maintenance cost is reported by hundreds of users. Powers control is notable for its continuous accurate performance.

Precision Control for Processes—Wherever product uniformity and quality are dependent upon precise temperature and humidity regulation, use Powers controlling, indicating or recording instruments.

New modern plant commemorating 60th anniversary of The Powers Regulator Co., pioneer in pneumatic operated controls for heating, air conditioning systems and industrial processes.

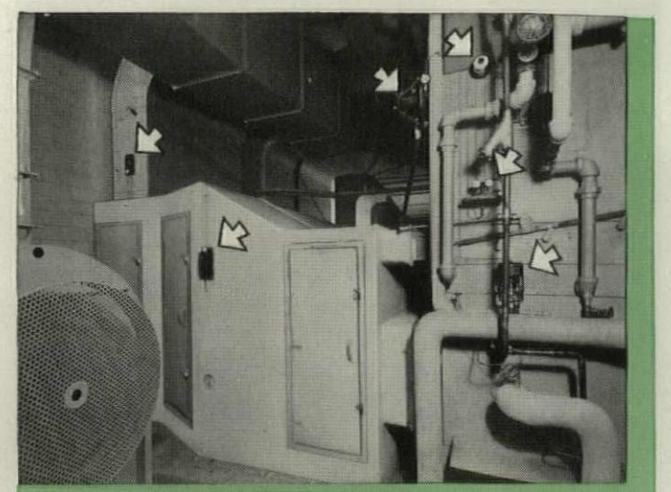
Phone or write our nearest office for help in selecting the type of automatic control that will give best results for your requirements. There's no obligation.

THE POWERS REGULATOR CO.

Established 1891 • SKOKIE, ILLINOIS • Offices in Over 50 Cities

CHICAGO 13, ILL., 3819 N. Ashland Ave. • NEW YORK 17, N. Y., 231 E. 46 St.
LOS ANGELES 5, CAL., 1808 W. 8th St. • BOSTON 15, MASS., 125 St. Botolph St.
DETROIT 1, MICH., 2631 Woodward Ave. • TORONTO, ONT., 195 Spadina Ave.
PHILADELPHIA 32, PA., 2240 N. Broad St.

(a83b)



POWERS

Above: Arrows indicate some of the many controls applied to air conditioning system: Powers Duct Hygrostat, Duct Thermostat, Pneumatic Switch, Diaphragm Valves and Damper Motors Static Pressure Regulators, etc.

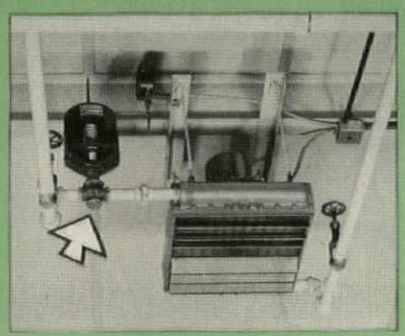
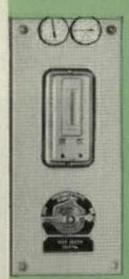
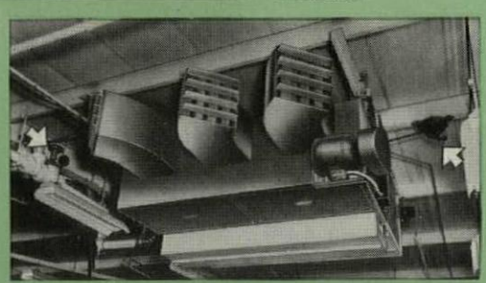


Photo at right shows ceiling type unit heater used in factory. It is controlled by wall type thermostat which also regulates Vulcan fin type radiation below windows.

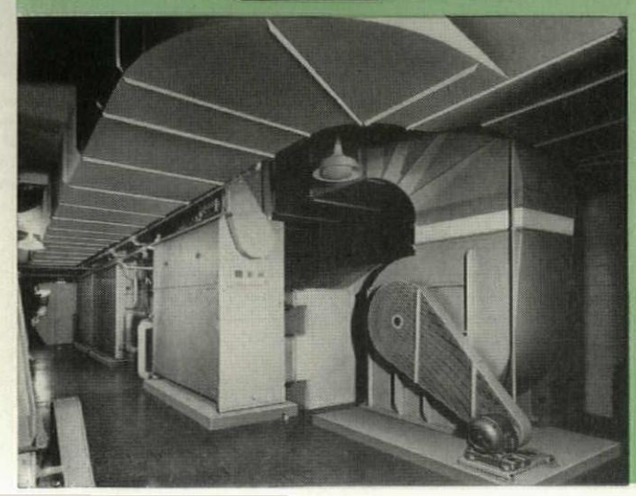
Left: Instrument panel for Powers **MASTROL** System of forced hot water temperature control for heating.

Below: Factory fresh air ventilating units heat and filter **outdoor air**, providing two air changes per hour in winter and ten in summer.



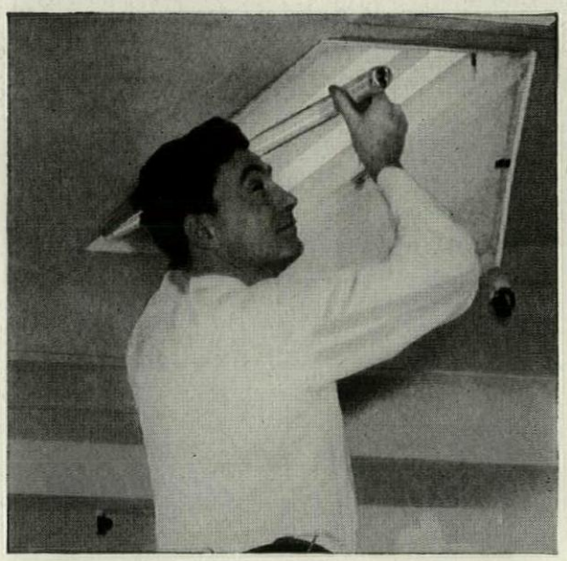


POWERS



For stores, office buildings . . . Check wiring costs against the

New 277-Volt Lighting System



Standard lighting fixtures of any make are used with 277-volt lighting. Simply specify 240-280 volt ballasts. Lamps are the same.

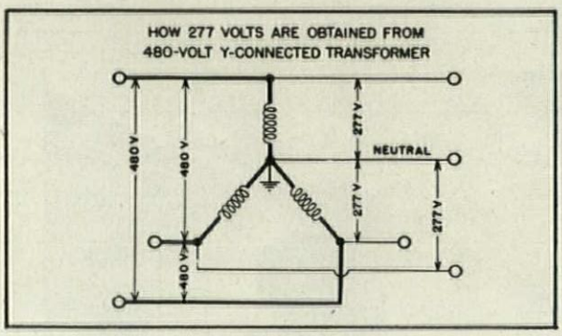
With the G-E remote-control relay and switch it is now practical to use 480Y/277-volt, 3-phase, 4-wire distribution for fluorescent lighting in stores, office buildings, and other commercial structures.

Only 24 volts are brought down below the ceiling level to wall switches. Switches and switch wiring can be moved as easily as telephone connections.

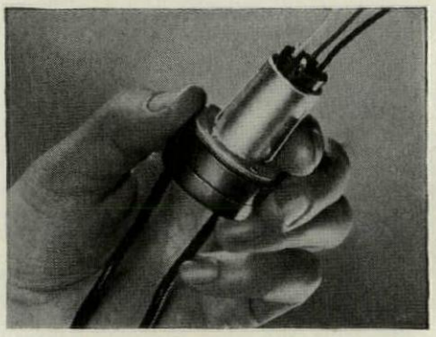
The use of this system for lighting circuits saves copper, cuts number of circuits required, and makes it possible to use the same distribution system for both lighting and power.

This 277-volt lighting system is already widely used in industrial buildings. Now G-E remote-control wiring makes this higher-voltage distribution system economically practical for new stores and office buildings, or for modernization of older ones—wherever large-scale fluorescent lighting is used.

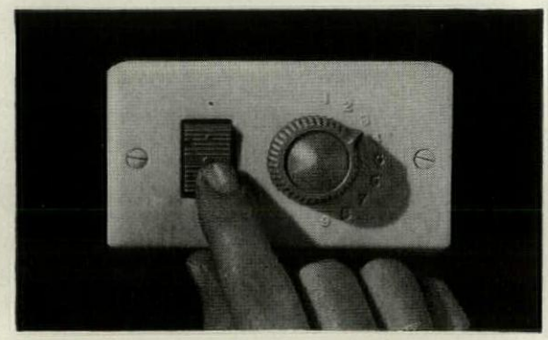
For additional information, or for a copy of the *G-E Remote-Control Manual of Layout and Installation*, get in touch with us. Address Section D15-64, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.



With the common 480-volt, 3-phase, 4-wire distribution system, voltage between any line and ground is 277 volts. For 120-volt needs, small dry-type transformers are used.



Heart of the 277-volt lighting system is this RR-2 remote-control relay. It will switch up to 5 amperes of fluorescent load. Operates on 24 volts, mounts through ½-inch knockout of outlet box or fixture.



Individual switches are for surface mounting or flush mounting. Or you can use a master selector switch like this RMS-2 to operate up to nine relays. Control wire carries only 24 volts, less than most telephone circuits.

You can put your confidence in—

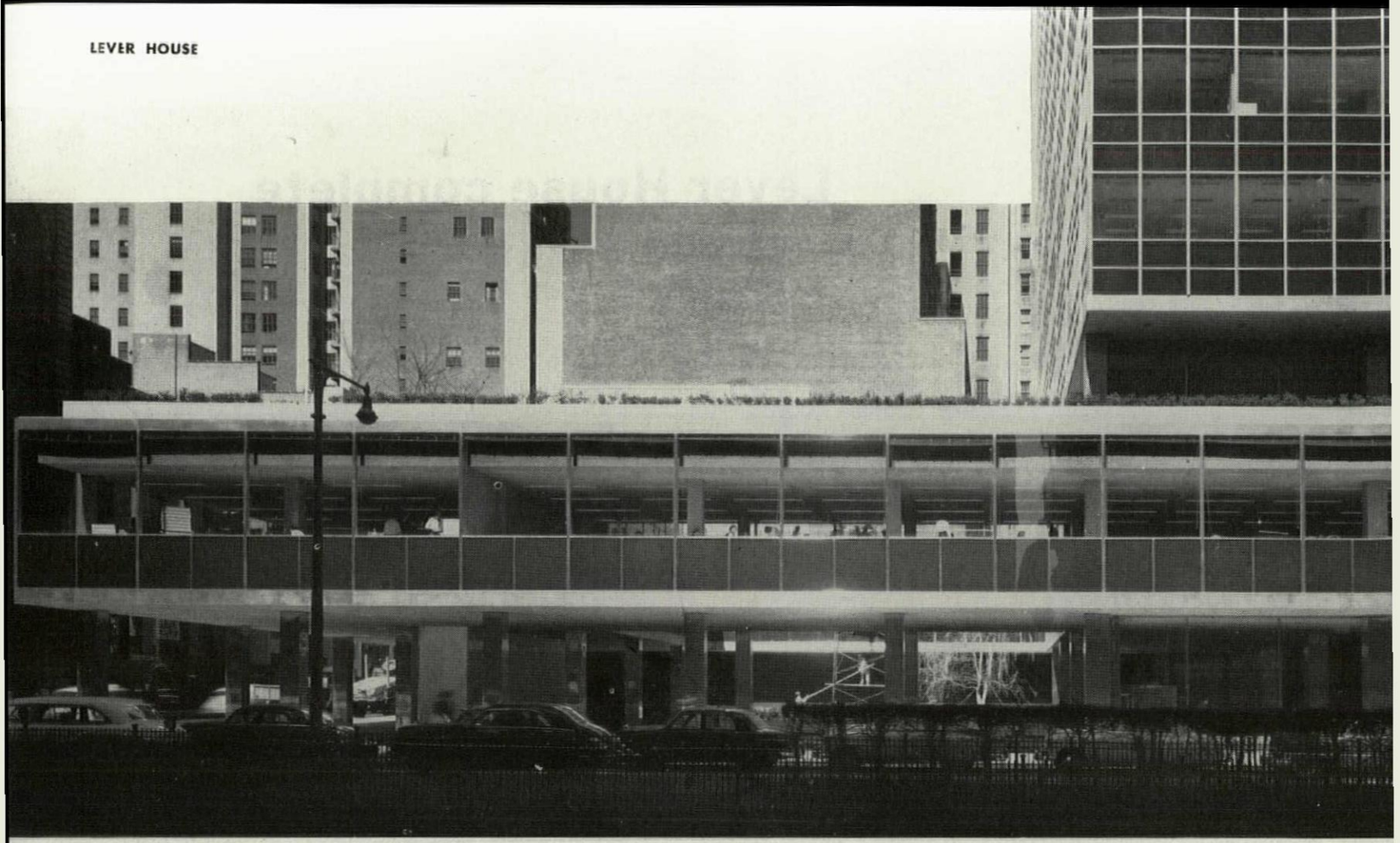
GENERAL ELECTRIC

THE MAGAZINE OF BUILDING architectural forum

Lever House complete

The lights go on in New York's newest office building

LIFE: *Ezra Stoller*



FROM ACROSS PARK AVENUE Lever House is a horizontal streak of stainless steel and green glass suspended on rows of tall columns whose metal skins have a cool wavering sheen. Within the rows of columns, deep inside the large emptiness of the sidewalk plaza, is an open court around a proud little garden; this is set in a marble box, paralleling the island of green down the middle of New York's most majestic avenue. Up from the third floor of the new building rises another glass and metal streak, a vertical one, the tower.

The architectural significance of Lever is something beyond this flashing first impression, however; it is the *shape* of this building which is impressive, more even than the gleaming materials. For there are other buildings in the US which have the same sleek metal and glass excitement. You can find them in Portland, in Davenport, in New York City itself (and in the walls of 10,000 diners along the continent's highways . . . the short order cooks discovered stainless steel before the architects did). Behind their tense polished surfaces, these other office buildings have part—but only part—of the character of Lever House. They have walls which seem to say, "Here I stand in complete clarity, without mystery. Look, here are my structural columns, my office space, my circulation system—all visible, evident and obvious. It's easy to see I am completely expressive of this industrial age. Look at me and I'll reflect back your image, darkly—but no more dramatically than you would like really to be. My personality is the image of yourself you see in my shining walls, as you stand before me in a luxurious suit made in Rochester and wonderful shoes made in St. Louis, with an airline ticket to California in your pocket. I'm you. I'll be standing here

SKIDMORE, OWINGS & MERRILL, Architects
Partners in charge: William S. Brown—Co-ordination
Gordon Bunshaft—Design

GEORGE A. FULLER CO., General Contractors

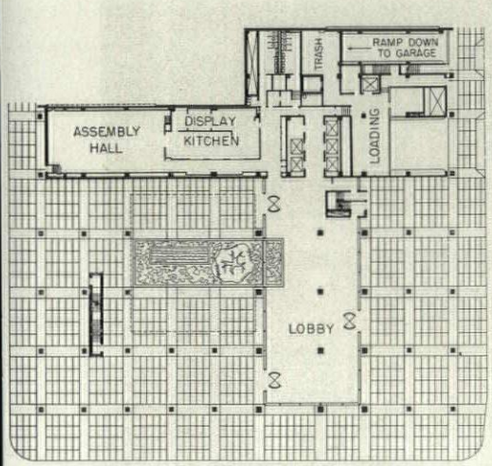
JAROS, BAUM & BOLLES, Mechanical Engineers

WEISKOPF & PICKWORTH, Structural Engineers

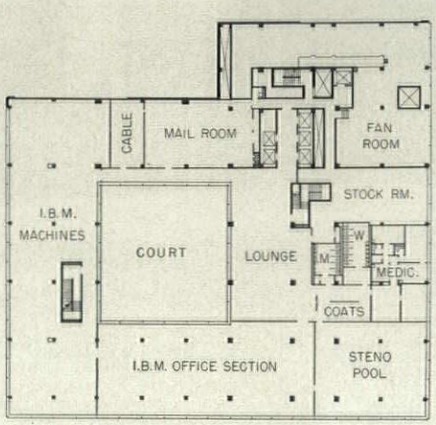
RAYMOND LOEWY ASSOCIATES, Interior Design

FROM UPTOWN

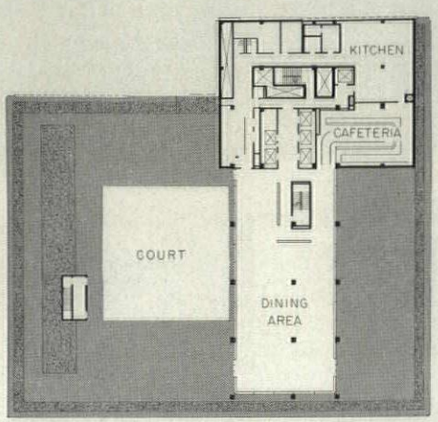
Photos: Ezra Stoller—Pictor



GROUND FLOOR



SECOND FLOOR



THIRD FLOOR

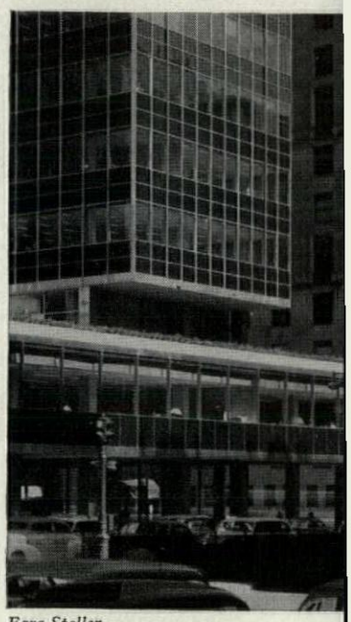
when you're gone, to say what you were like. I'm you, but I'm bigger than you."

The Lever Co. and Skidmore, Owings & Merrill obviously were not satisfied with this statement of physical appearance. So out of the machined surfaces of the slick hard walls with their blank, watchful industrial expression, the architects created a strong intellectual form, and this is their achievement. Declining to be hypnotized by the brilliant geometric patterns of their materials, refusing to submit blindly to the obvious zoning ordinance on their site, they shaped a building which is infinitely more spirited and dignified than any other commercial office building in New York.

Because of this, Lever is only a *small* skyscraper. It uses open space as significantly as enclosed space, filling only a fraction of its zoning envelope (for complete details on Lever House, *see* AF, June '50). The sidewalk level is almost entirely open, save for services, an auditorium, and sheets of glass enclosing a reception lobby. Above, the second story does cover the whole site, except the court, but then the lean tower rises with extravagant restraint into Park Ave.'s valuable air, housing a set of small office floors. Compared with the usual rich (but tasteless) wedding cake office building of New York, Lever is a wafer. There is no office space to spare for rent; nobody lives here but Lever.

Within the general shape which the architects preserved for the building, one detail more than anything else characterizes Lever House. This is the notch (*photo*) which is cut into the Park Ave. facade where the tower begins. As much as the entire open first floor and the thin taut materials, this idea makes the building stand clear and light and multiplies the significance of its industrial components; at the same time this detail of design also asserts the architects' function in our civilization beyond that of being merely a good mechanic. When several thousand other architects from all over the country attend the AIA convention this month at the Waldorf-Astoria, just down the avenue from Lever House, this should mean something to them.

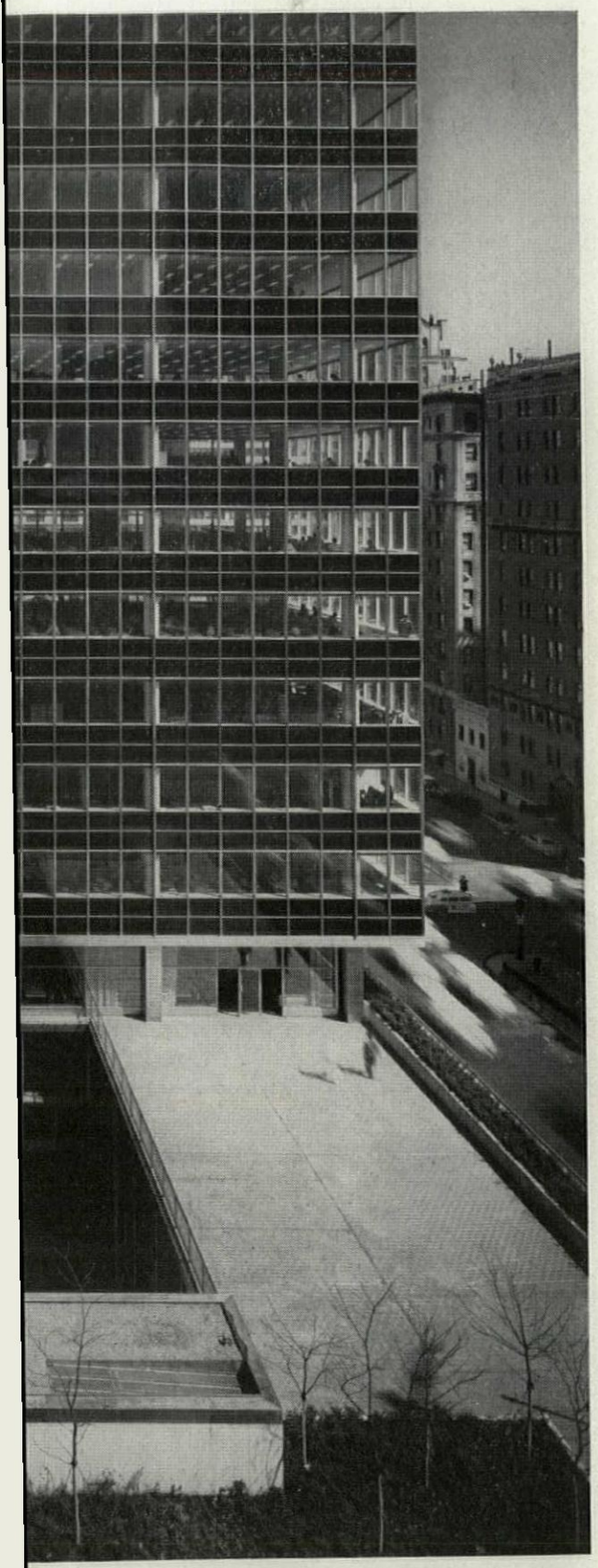
THE NOTCH



Ezra Stoller

FROM LAMPPOST LEVEL

J. Alex Langley

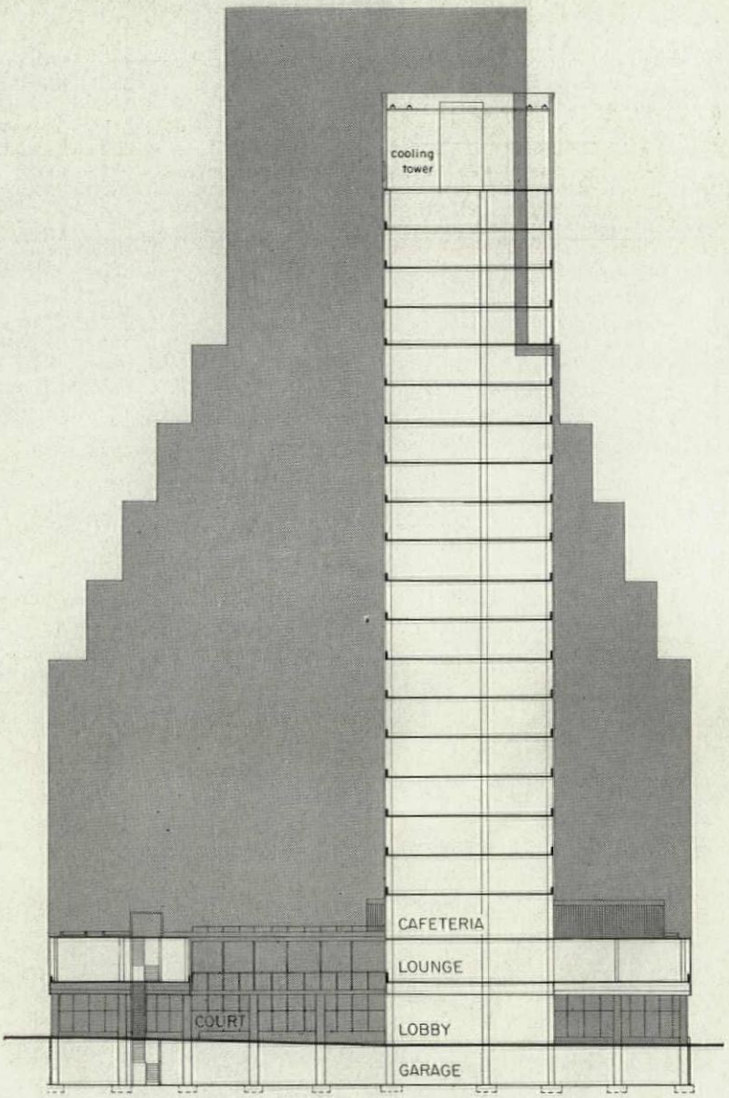


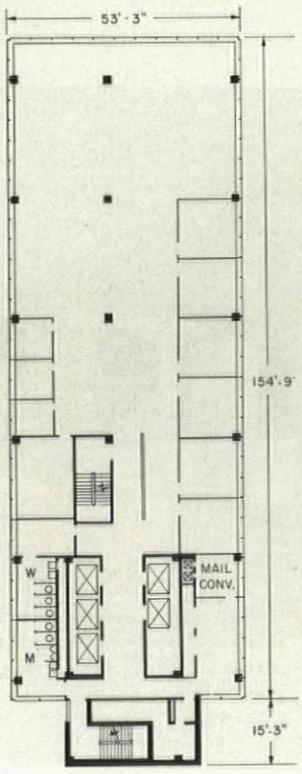
FROM THE ROOF NEXT DOOR. The third floor terrace opens off an employees' cafeteria and extends around the light well which is open on the garden court below. Columns are set back 10′ from Park Ave. so they avoid the tracks or superstructure of the New York Central Railroad, which runs underground below this part of Park Ave. Instead, the columns sit directly on Manhattan's rock base.

A THIN STACK OF OFFICES on a broad base is the section *below* cut parallel with Park Ave. The outline shown in tone on this drawing indicates a contrasting conventional approach to the construction of office space on this kind of plot in New York City; this tone marks the limits of the zoning "envelope" which local regulations would permit an office building on this plot to occupy. Following the letter of this law, Lever's 290,000 sq. ft. could have been housed in an eight-story building, and a higher scheme filling setback patterns to the limit might have added a great deal of rentable revenue-producing space. But Lever was interested only in housing its own staff, and in doing an outstanding job of it. So the architects took advantage of a provision in the zoning law which permits a tower of any height (without setbacks) if it does not occupy more than 25% of its lot. Lever's lot measures 200′ on Park Ave., by 155′ on 53rd St., by 192′ on 54th St. Tower floors measure 53′ x 180′.

. . . WELL WINDBRACED. The slim 21-story-tall tower (height to thickness ratio: 6-1) called for special windbracing, which was provided by transverse wind bents designed as rigid frames and spaced every 28′ down the general office space. (There is only one row of columns down the center of this space.) Other transverse and longitudinal bents toward the rear of the tower are based on the heavier construction of the elevator shaft.

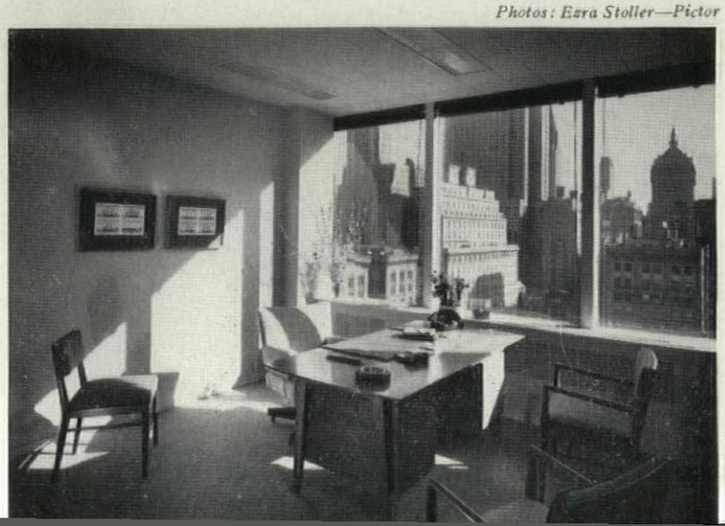
A vertical correspondence conveyor links all these floors, cutting elevator use somewhat and saving the company about $150 per week for office boys. A 55-car garage is in the basement.





THE OFFICE SPACE INSIDE has the blessing of all the daylight in New York, and no desk is more than 25′ from the exterior wall. But Venetian blinds come in for plenty of use even on sunless north side to control glare. Photo *above* is taken from near the elevator hall and shows a partitionless office floor. Plan *left* of a typical office floor shows how private offices have been partitioned down either side on some floors (without darkening the office pool). Plans for enlarging this building, if it becomes necessary, call for duplicating this office space on the other side of elevator lobby with new wing perpendicular to this one, to the south. Below is shown a typical office, which is not large, but is made spacious by the wide view.

Photos: Ezra Stoller—Pictor



WITHIN THE COURT flowers bloom and the spacious tradition of Park Ave. is more than maintained in this interpretation by Skidmore, Owings & Merrill. The photograph *above*, taken toward Park Ave., shows the colorful spandrel treatment clearly in the second floor wall overlooking the court. Dark green color is the result of spraying green "cocoon" plastic on the back of tempered glass panels. Columns swathed with stainless steel take fingerprints, but are designed to be polished regularly to reflect the Lever Co.'s creed of cleanliness. Photograph *right* is from inside the lobby through the glass wall to the court. Handsome upholstered bench is 10′ long, in scale with the rest of this great space for visitors and displays.

Photos: J. Alex Langley

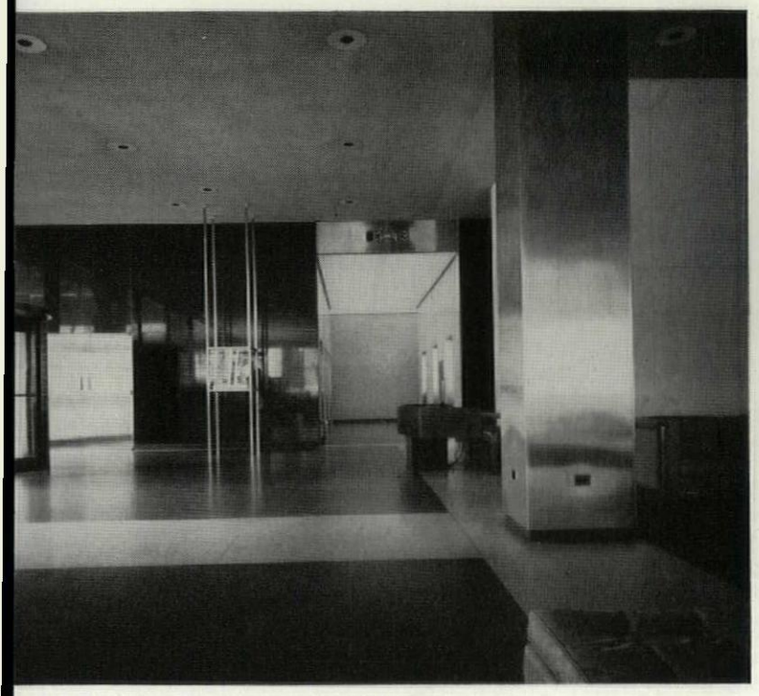
Photos: Ezra Stoller—Pictor

WITHIN THE BUILDING Raymond Loewy Associates did the decorating on a very firm basis of efficiency, sales atmosphere, and comfort (three executives asked for fireplaces in their top-floor air conditioned offices, and got them).

Top photo *right* is ground floor meeting hall, a place for company gatherings which overflow the tower conference rooms. Adjoining this space (*see plan on p. 103*) is an experimental kitchen, used in connection with Lever's food products.

Below is a view of the lobby, looking toward the receptionist's desk and the elevators. Court is to *left*.

INTERIOR COMFORT is produced mechanically



Air conditioning is by means of a split system—individual window units for the glazed periphery of the structure fed with high pressure water and air, and in the center of the office space a duct system (also high velocity) which distributes its air through special new ceiling diffusers. Heat absorbing glass blocks 45% of direct sun heat penetration compared with 10% by normal glass, cutting the cooling load considerably. This glass is also effective in fighting glare, although blinds still are necessary. The greenish color of the glass made interior decorating somewhat more complicated than it might have been. Emphatically *warm colors* were used to compensate for its cool tone.

Acoustical control in the glass-walled building is attained by use of absorbent ceilings of acoustical tile, perforated metal and acoustical plaster. Office partitions are 3″ gypsum block plastered on both sides, connected to the 3½″ mullions by metal fillers. Freestanding partitions are prefabricated, and can be moved.

Lighting is aimed at a level of 40 foot-candles at desk level and is provided by flush fluorescent fixtures in the ceiling, covered by glass diffusing lenses.

A total of five passenger elevators and one freight elevator serve the structure, but there is an elevator shaft now empty, for an additional elevator when needed.

In construction, cellular steel floors saved an estimated 30% of floor weight over conventional slabs, and went in faster.

Cost: original contract price for the building was slightly above $6 million on a lump sum bid, a price which does not include what are considered tenant changes in other commercial buildings.

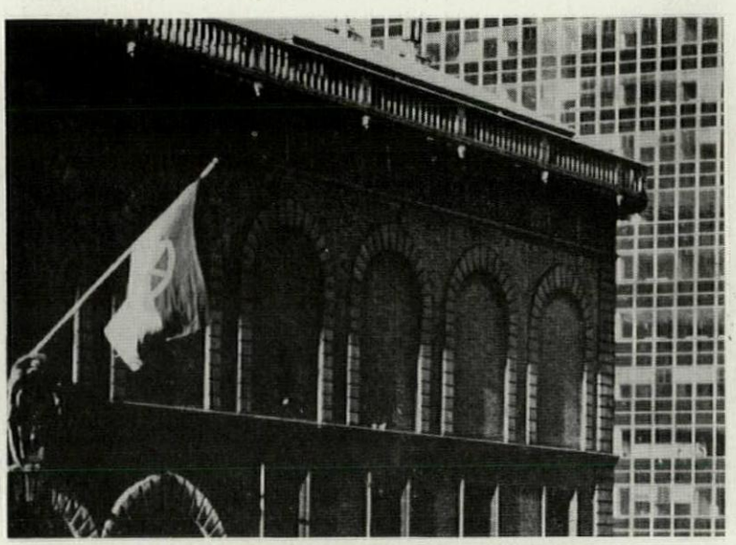
Neighbors on Park Ave. like this building, although some are worried about reflected glare. This fortunately is not a major problem in this neighborhood because the only tall building nearby is to the north and gets little reflected sunlight except in early morning. Slick walls reflect considerable heat too, particularly into the court.

Salvatore S. Valastro

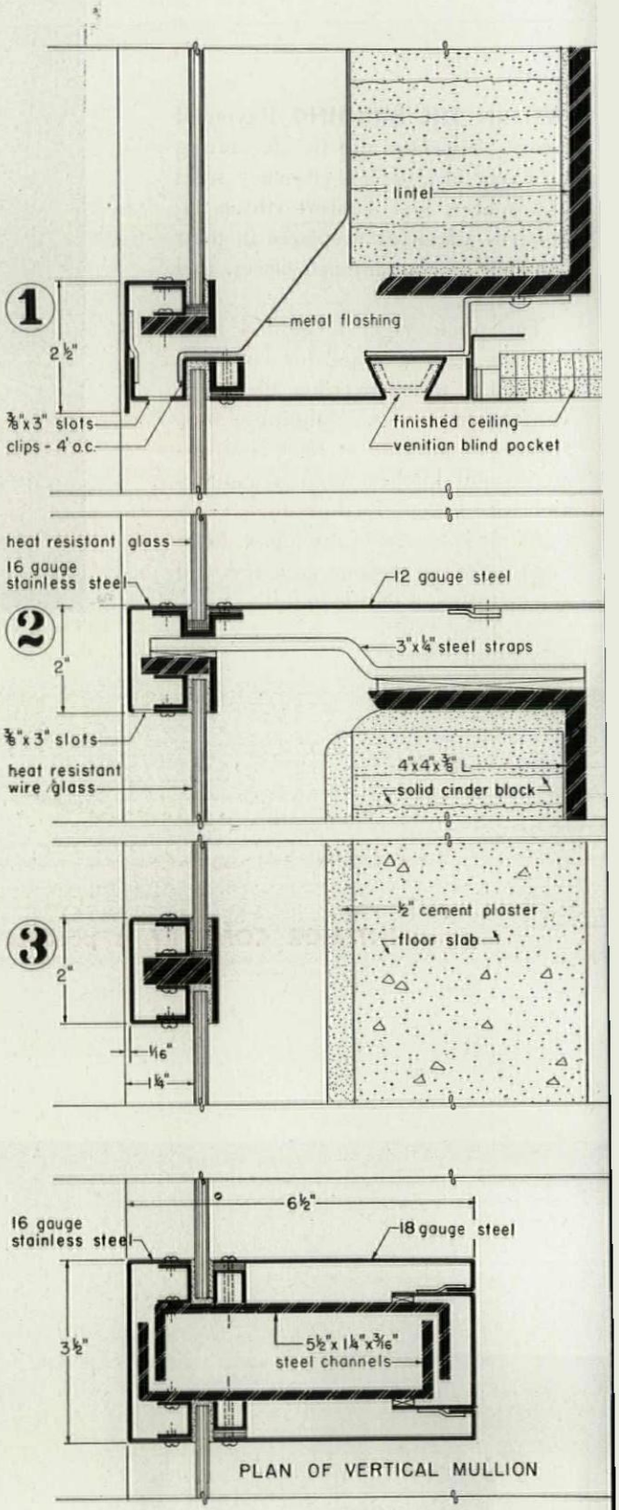
REFLECTIONS of the sky and neighborhood decorate the smooth blank face of Lever House. Here are superimposed the image of clouds and the masonry facade of the Racquet and Tennis Club across 53rd St. This strong building (wall photo *below*) was completed by McKim, Mead & White in 1918, and is an interesting neighbor for Lever. Contrast the determinedly rusticated exterior of only 34 years ago with the intense smooth surface of today, the stone-surrounded windows of that era with the narrowly framed glass expanse of this.

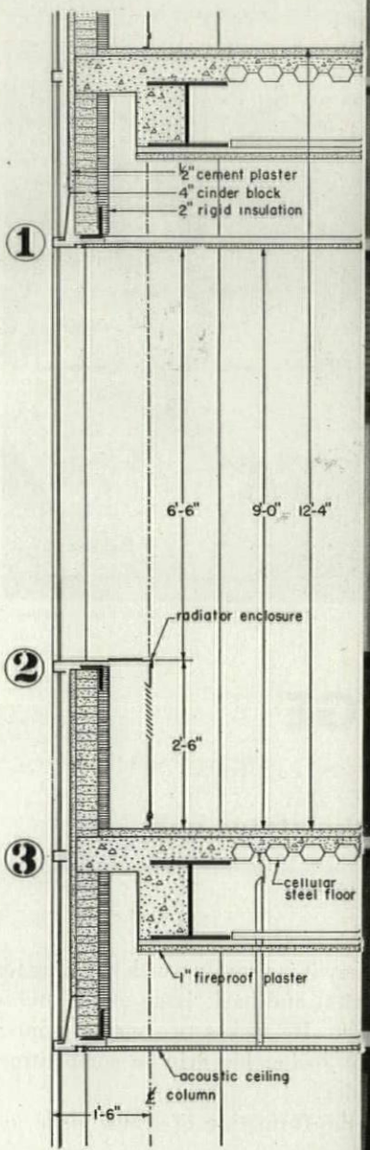
Lever's wall (details *right*) has virtually no windows in the strict sense of the word. Nearly all the glass is fixed, and ventilation is a function of the complete air conditioning system. Windows (and framing too) are washed from an already famous motor-driven gondola suspended by a 10½ T crane which runs around the periphery of the roof on standard railroad tracks. Vertically, the gondola is guided on flanged stainless steel tracks which are part of the facade.

The glass surface of the tower is equivalent to about 5,000 windows but can be washed by two workmen in 116 man-hours. A complete washing of all glass in the building, inside and out, takes about 600 man-hours, and is done regularly. The Lever Co. wanted a building they could keep at a high sparkle.



THE WALL

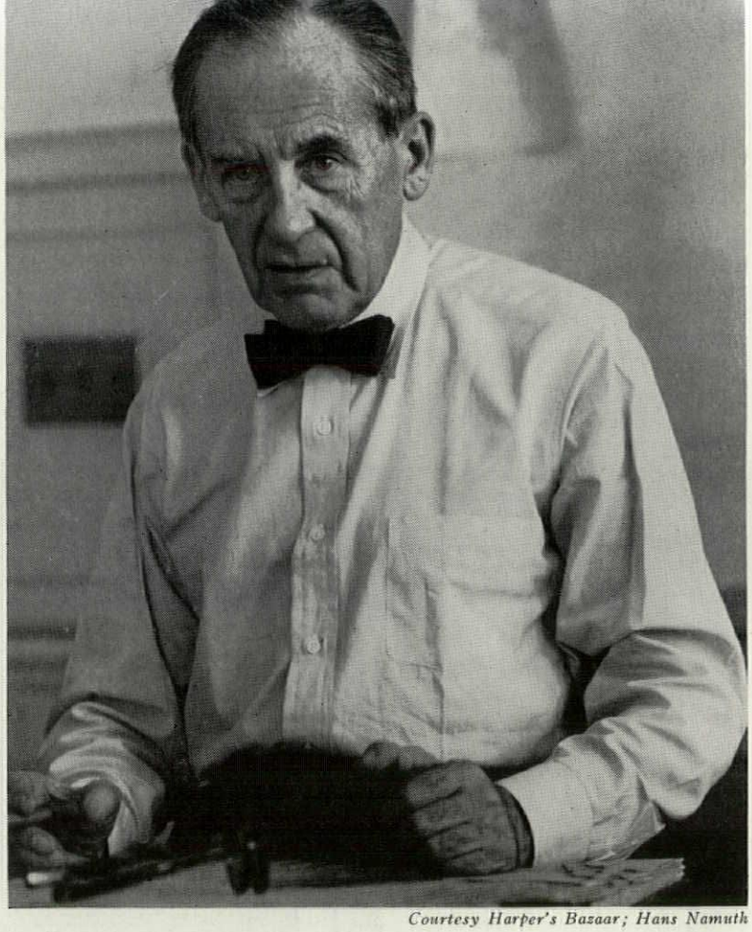




LIFE: *Ray Shorr*

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

Now, his contemporaries have studied this proposal and give their . . .



Courtesy Harper's Bazaar; Hans Namuth

REACTIONS TO THE GROPIUS CHALLENGE

Most agree with his conclusions, if not his reasoning; only a few favor the status quo

Many new self-appointed design prima donnas are being produced today with little knowledge of the myriad details of the manufactured parts that go into building, and little interest in taking a part in developing them.
ROBERT LAW WEED, Architect.

Architects are being educated for the role of the idealist in a developing society of materialism, presumably without realizing that this foundation for the position of leadership is gradually dissolving.
ERNEST J. KUMP, Architect.

How can architects climb to the secure spot as leaders of the industry? First—general improvement of the quality of architectural services, particularly from the small offices. Second—a vigorous campaign to appraise all governmental bodies of the function and usefulness of architects. Third—a most energetic, imaginative and comprehensive campaign on public information.
L. MORGAN YOST, Architect.

Engineer Paul Weidlinger:

Whenever Gropius has anything to say it is usually worth listening to. This time he has raised *the* most vital and basic issue of the architectural and engineering professions. He makes two major points:

1. The architect is in danger of losing his grip in competition with the engineer, scientist and builder.

2. To remedy this he suggests the formation of teams made up of these competitors.

The arguments of Professor Gropius in favor of this move are compelling and the advantages of such a co-operation are very clear to me since I had opportunity, for a number of years, to work in South America as a member of such a team. Such co-operation may very well produce most of the advantages Gropius envisions, but it may not accomplish one of them and it will engender two other dangers:

1. I am somewhat pessimistic about any hope for regaining the most eminent status of the professional and scholar without important simultaneous changes in the economic structure of our society. The present position of the professional is too intimately tied in with economic factors which will not be materially influenced by the formation of the proposed teams.

2. Co-operation with industry will lead to the loss of the identity of the professional members of the team and may relegate the creative designer, architect or engineer to the status of the copywriter in the advertising agency. Today the architect or engineer, through his independence, may still to some degree disassociate himself from the dictates of the sales manager.

However, I feel that a great deal could be accomplished by formation of architect-engineer teams and thus strengthening the status

of the profession, before joining with the builders. This would lessen the danger of being swallowed up by the economically stronger member of the association. In any event these decisions should not be restricted by AIA rulings.

Architect Morris Ketchum:

Every successful building project is the result of teamwork. Today, as always, the key men on the team are owner, architect, builder. In turn each team member heads his own team of expert technicians. The over-all building team thus consists of a complex group of specialists in many varied fields.

This building team does not always function smoothly or successfully, simply because it often functions without the builder until the project is ready for construction. Obviously, the builder should be an active team member from the start, or the work of both architect and owner may be frustrated. It is then the architect who is the chief victim.

I agree with Gropius and Belluschi that it is time for the architectural profession to re-examine its rules of practice so that better teamwork can be achieved. I hope that AIA will undertake this re-examination, formulate a practical program and actively promote its realization. Otherwise, there is real danger that the architect, like the beaver hat, may vanish from the American scene.

Educator Henry L. Kamphoefner, Dean, School of Design, N. Carolina State College:

Modern architectural education is in its early childhood. It started in America no earlier than 16 years ago, when Joseph Hudnut brought Walter Gropius to Harvard. The 16 year old has not yet made a significant impact on the physical environment needed to accompany our much older industrial society.

Most of the architectural schools have moved one step out of the academic rut of traditional eclecticism to a newer but not-so-much-more-dynamic eclecticism of our own time. Up through the 30s the student of architecture, trained to design "Palaces for Exiled Monarchs," was indeed a luxury to all but the very wealthy. The architect priced his product and himself out of the market. Now a newer cult of the "Googie" develops a newer prima donna in an even more rarified atmosphere of isolation from industry.

In a few architectural schools, the architect is given some encouragement for a new role as a co-ordinator in an industrial society by studies on the industrialized house, the autonomous house, prefabrication, and like recognition that the telephone is here to stay. Bringing men like Buckminster Fuller to a dozen of the schools also induces a positive awareness of the need for the co-ordinating design to the industrial process. But generally the school faculties are not fully equipped to carry out the new philosophy of design, and most students are not spiritually and intellectually aware of their full responsibilities or needs as comprehensive designers in a machine society. When they do respond to the "call" of industry, they lack the maturity to fulfill the other more humane needs of modern man.

Architect Pietro Belluschi, *dean of MIT's School of Architecture and Planning, expressed his agreement with most of Dr. Gropius' conclusions, if not his reasoning, in a detailed statement following the Gropius challenge in the May issue p. (113).*

Architect-Engineer Fritz Kramrisch, Albert Kahn, Associated Architects & Engineers, Inc.:

The architect is losing ground only relatively. The engineering requirements in connection with the building industry have increased so tremendously that it would represent a Herculean task to master all of them satisfactorily.

Wherever the architect, due to his inherent

(Continued on page 114)

Architect roundly criticizes Gropius for underestimating industry stature and future of today's young architects

Architect Ernest J. Kump:

There is little question that the architect's position in our industrial society is faltering.

However, this is not due merely to a loss of contact and co-operation between the architect and building production. The problem concerns itself with much deeper underlying principles:

1. The prevalent standard of materialistic values dominant in contemporary society, and
2. the change in character necessary for the role of leadership in our building work today as a result of these prevalent values.

We are witnessing the popular ascendency of scientific materialism as a means of achieving (through a process of analysis, efficiency, and mass production) desired popular objectives of material convenience and material security. Obviously, this shifts the emphasis for the role of leadership from the architecturally trained idealist to the technically trained executive engineer.

In a developing society of materialism, architects are still being educated for the role of the idealist, presumably without realizing that the idealistic foundation for leadership is gradually dissolving. This has created most of the architects' frustration and the anomaly of the position of the AIA felt so strongly by Dr. Gropius. The return of the architecturally educated man to his rightful position will come only with the inevitable return of society to a more noble standard of values.

Architect Igor B. Polevitzky:

I am unalterably opposed to Dr. Gropius' entire attitude toward the profession of architecture.

Yes, the architect needs to be better trained yes, he needs better and closer co-operation with industry, for it is from industry that he gets the materials, methods and equipment with which to work; yes, he needs to be a better businessman to advise his clients wisely on the economic and social uses of the land and the structure which he plans.

Does that mean that the architect should stand in such awe of these problems as to admit his inability to cope with the modern world? Does that mean he should abandon the leadership of the building industry which is now within his grasp and immerse himself into the obscurity of "industrial design teams"? Does that mean he should make an idol of the machine and its by-products to the exclusion of all the great qualities which make up the human spirit? I, for one, refuse to assume such a defeatist attitude.

Yes, the world is more complex today. The by-products of the machine are complex. The materials and methods available to the architect are more complex. *Yet,* to a man of big enough stature, these are still tools and not masters. Maybe that is what Dr. Gropius has failed to mention: today more than ever we need men of stature in the profession and not "worry warts."

The entire discussion about AIA paragraph No. 7 to me is ludicrous—a Tempest in a Teapot. No architect who loves and really practices his profession has ever been able to keep his hands out of the concrete and plaster of his work. The architect does not have to contract for a building to have control and vital interest in every stage of its construction. Does Dr. Gropius imply that the architect must have a financial interest in the building before he can enjoy "organic reunification in the mastery of the know-how in building"?

Let us all voice an inspiring optimism to the young men who are about to become architects. We have nothing to be ashamed of: we, the ones of us who really love our profession and practice it because we would rather be in it than eat or sleep, have contributed much to our modern society.

We have worked with and inspired manufacturers to change and improve their methods and their techniques and to produce new materials and new assemblies; we have met with our civic groups and have talked to them about the importance of good planning and imagination and esthetics in their buildings; we have educated builders to cleaner, more direct and more imaginative thinking. And we have just started. This is the beginning of a new era, and the young architects of America are just getting the bear by the tail! I personally believe that these young men have gone way beyond Dr. Gropius' conceptions.

Status of the architect has never been higher. Architects today are better off, receiving more commissions, and designing a larger share of the building output of the nation than ever before.
EDMUND R. PURVES, Executive Director, AIA.

The emphasis today is on utility rather than cultural and esthetic value. . . . Today's finest buildings are produced by a combination of the owner, the architect, the engineer and the builder sitting around a table, working together.
H. C. TURNER JR., President, Turner Construction Co.

Architectural silk purses cannot be made from mass-produced sows' ears. . . If all architects today were suddenly told to handle building contracts, they would perform a series of abortions that would make the profession look silly.
ALFRED SHAW, Architect

Today more than ever we need men of stature in the profession and not "worry warts". . . . Let us all voice an inspiring optimism to the young men who are about to become architects. We have nothing to be ashamed of: we, the ones of us who really love our profession and practice it because we would rather be in it than eat or sleep, have contributed much to our modern society.
IGOR B. POLEVITZKY, Architect.

With full credit to Dr. Gropius for restating the case, it is true, nevertheless, that Frank Lloyd Wright was saying the same thing more than 50 years ago.
BUFORD L. PICKENS, Director, School of Architecture, Tulane University.

The counterpart of the old master builder might be considered to be the leader of the team that has taken his place. . . . He may be an architect, an engineer, a construction man or a lawyer, but he must be a leader and organizer, and he must want to produce buildings.
JOHN W. DUNHAM, Supervising Structural Engineer, General Services Administration, Washington, D. C.

ability for planning and foreseeing, will be able to embrace all phases of engineering concerned with a structure and to co-ordinate them efficiently and successfully he will be able to maintain his reputation and his value.

He will do this best, for himself and for his client, if he stays independent of a builder or contractor. Only this way he will remain in the position to find through free competition an economical solution for his plans.

Furthermore the architect will maintain his high standard best if he realizes not only his capabilities but also his limitations. If he is willing to work with a team and to participate in its advantages, he must submit himself also to it. In a proper teamwork none of the participants is entitled to a beforehand supremacy. The leading figure should be chosen every time in due recognition of the purpose of the structure. In this respect I would consider it only correct if for instance the mechanical or electrical engineer would be called upon to co-ordinate the team for a power project or if the structural engineer would assume this task for a bridge or for an intricate building.

Architect Robert Law Weed:

I cannot feel "regretful" in agreeing with Mr. Belluschi's conclusion "that the architect's salvation will come from joining with the scientists and industrialists." Any collaborative effort for professional good should be encouraged, not regretted. The architect's place on any team will depend on the values of his contribution to the combined effort.

While not defending AIA's rule No. 7, I cannot agree to single it out as *the* reason for the architect's lack of closer contact with building production. His contacts can be as close as he desires them to be. I cannot see any great know-how accruing to the architect from his engaging in "building contracting." If he is capable of creative leadership and teamwork with scientists, engineers, industrialists and businessmen, he will take his important place in the building industry. Probably he will be too busy to be a contractor too.

Many new self-appointed design prima donnas are being produced today with little knowledge of the myriad details of the manufactured parts that go into building, and little interest in taking a part in developing them. Experience in the field and in the workshops of industry? No; manufacturers' catalogues are enough.

If the architect cannot take his due place in the building industry of today because of the insufficiency of his contributions, then we should do something about seeing that he does become sufficient.

Government's John W. Dunham, Supervising Structural Engineer, General Services Administration, Washington, D. C.:

Because of the mental and physical limitations of humans and the enormous body of knowledge about building that has accumulated and to which, please God, we are still adding, no individual can contribute as big a proportion of the things that produce a building as did the master builder of yore. So we use many men of many professions to do his work, and we produce better buildings than the world has known before. In like manner, those who follow us will do better than we.

In another sense, the counterpart of the old master builder might be considered to be the leader of the team that has taken his place. This person must be a leader and an administrator.

Training may improve him as an administrator, but it cannot make him one. He may be an architect, an engineer, a construction man or a lawyer, but he must be a leader and organizer, and he must want to produce buildings.

Engineer says his profession is ready to take over when architects reach end of their path to extinction

Engineer Jacob Feld:

As an engineer who for 30 years has worked for, with and against architects, I record full agreement and sympathy with Dr. Gropius' attempt to awaken architects to the facts of life. It is fortunate for them that they have such prophets unless, of course, the profession is satisfied to continue on its present path to extinction, becoming as outmoded as the dinosaur. (Extinction will come for the same reason—the unbalanced design of important organs.)

The architect in placing himself outside and above the level of the industry which he serves (most of them would not even agree to the word "serves") has lost the confidence of the client for whom the industry exists. Whereas the engineer is considered an economically desirable expense, the architect, because of legal requirements and the customs of the financial interests, is considered a necessary nuisance.

The architect will not convince the client that his services are economically desirable until he can clearly explain the purpose of his services, and that he cannot do before he understands the problem himself.

Since any structure is merely a tool to serve a purpose, the architects' part in the team to produce that tool is to understand its purpose, to crystalize the owners' requirements, and to modify the owners' ideas where they are not consistent with a plan which is consistent within itself, balanced in its various departments and progressive enough to provide for the future trend in the owners' needs.

If he does not see the problem, the architect will eliminate himself from the industry; and, frankly speaking, the engineer is ready to take over.

Builder notes vastly increasing importance of engineers in solving the complexities of today's building operation

Builder H. C. Turner Jr., President, Turner Construction Co., New York:

In by-gone days, architects designed structures consisting largely of stone and mortar and the architectural conception was of prime importance. Today most buildings are being built to house a manufacturing process, a retail establishment, a business office or some other material need. The emphasis today is on utility rather than cultural and esthetic value.

Plumbing, heating and electrical work formerly represented a minor item from both the design and cost standpoint, but today mechanical and electrical installations comprise from one-third to one-half of the entire cost. Thus, the functions of structural engineers, mechanical and electrical engineers as well as other consulting engineers have vastly increased in importance. Building today has become a very complex business and the over-all job of the general contractor is as much management as that of builder.

Today's finest buildings are produced by a combination of the owner, the architect, the engineer and the builder sitting around a table, working together. By training, the architect and the engineer are concerned with the function of design and also by training the builder and usually the owner are concerned with production, with particular consideration given to the elements of time and cost. Mr. Belluschi supports this view when he states—"A contract let on a fixed-fee basis permits architect and contractor to draw on each other's specialized knowledge, before and during the preparation of plans, to everyone's advantage."

Educator Buford L. Pickens, Director of Architecture, Tulane University:

Dr. Gropius' statement as condensed in the FORUM does not get to the root of the problem. If we are to improve the status of the architect and the quality of our architecture, we need certain other changes in addition to the repeal of AIA rule No. 7.

Suppose, as things are now, every AIA firm were encouraged to team up with a builder or an industrialist. How many would produce better buildings and better communities? How many would, for one reason or another, get beaten down to the level of the "builder-architects" who now operate in every large city, usually outside AIA restrictions?

Dr. Gropius weakens his argument by pointing to the industrial designer as a successful member of a team. Is he not in most instances rather a creature of the sales and advertising executives? Look at his most conspicuous product—the automobile. Where is the overall design correlation in the sense that Dr. Gropius conceives it—a fusion of art, science and business?

The root of the problem lies in the crass inversion of this tripartite entity. It was well stated by Dr. Gropius, himself, in the first half of his original appraisal. (Not included in the FORUM condensation—ED.) Herein lies the nub of Dr. Gropius' message which, in my opinion, cannot be omitted:

". . . architecture as an art starts beyond the demands of construction and economy on the psychological plane of human existence. The satisfaction of the human psyche resulting from beauty is just as important for a full, civilized life, or even more so than the fulfillment of our material comfort requirements. The sickness of our present chaotic environment, its often pitiful ugliness and disorder have resulted from our failure to *put basic human needs above economical and industrial requirements.*"

Architect Robert Allan Jacobs:

Dr. Gropius is way off the beam. Techniques today have demanded the closest co-operation in the building industry—architect, engineer and builder. The architect is the master builder of the 20th Century. He co-ordinates the efforts of the businessman, the scientist, the engineer into a harmonious whole (occasionally), but above all he is the idea man, the philosopher and the designer. He is not going to burden himself with details of techniques, but he will co-ordinate and be creative.

The reason today's student has trouble adjusting himself to his profession is that his school training has been too specialized, too "technical," too intellectual. He does not learn to paint with a broad brush; he is too versed in the theory of design, not in design itself. He is taught principles of planning, not planning itself. He is not a composer but a dialectician. He is taught to be an intellectual, not to be an artist. Last but not least, he is not taught to draw, which is still a very important way for an architect to express himself.

But considering the world upheaval since 1941 I think it is nothing short of miraculous that the American architect has been so fortunate. When in the history of our country has the architect had such a good time! Our economy has boomed, and with it has come large-scale planning in terms of housing, commercial enterprises, institutional work, industrial projects.

Competition from the industrial designer, the "packaged construction" deal and all the others, has sharpened our senses, and we are better off for it. The contractor has as much to worry about on the packaged deal as we have, perhaps more, but he will survive, and so will we. In 50 years to come we will still be the leaders in the building industry.

Engineer Fred N. Severud:

The other day I heard an owner say: "I am not going to build a monument to neurotic architects." I mention this only to lead up to my conception of the architect's function. Clearly he must not exaggerate putting the stamp of his own personality on buildings. Personalities will be expressed in anything that is done, but if good principles of economy and building function are violated for self-glory, the architect has broken faith with his client.

An architect, either individually or with his team, is selected because he has convinced the owner that he is the very best choice for the job. He maintains that he will spend the owners' money in a way that will give him the best results for the least amount of money.

This may not necessarily mean a structure that costs the least to build. There may be elements of publicity, beauty or the personal desire of the owner himself to be considered. All these considerations must be translated into the flesh and blood of a structure by intelligent use of all information available. This means, in our complex technical age, highly developed co-operation between the various members of

(Continued on page 116)

AIA spokesman finds the profession in excellent health, suffering only from normal growing pains

AIA's Edmund R. Purves:

Professor Gropius maintains that rule 7 serves to disintegrate the working relationships of certain elements in the construction industry and to retard progress and achievement. The experience of the profession would not bear out his contention. On the contrary, article 7 is a factor in guiding the designer and builder, each in his appropriate sphere, and thus establishes a firm basis of co-operation.

As for the average income of the architect and the bricklayer, a comparison of their *annual* incomes would bring a different result from what he has implied. Possibly he was thinking of their *hourly* rates of pay. (According to AIA's 1950 survey, the median annual income of AIA members in individual practice ranges from $5,400 at age 27 up to $14,000 at age 62.—ED.)

The status of the architect never has been higher. Architects today are better off, receiving more commissions and designing a larger share of the building output of the nation than ever before. The problems of the profession are healthy problems, growing pains. The AIA is facing these problems with facts—$80,000 worth of them, resulting from our Carnegie-financed survey of the entire profession.

The building public is less interested in a service than it is in the finished product. . . . Except for headaches not of our choosing —architecture is now so much fun! Anything much different is unpleasant to contemplate.
ERNEST PICKERING, Dean of Applied Arts, University of Cincinnati.

Clearly the architect must resist the impulse to exaggerate putting the stamp of his own personality upon buildings. Personalities will be expressed in anything that is done, but if good principles of building function and economy are violated for the purpose of self-glory, it is obvious that the architect has broken faith with his client.
FRED N. SEVERUD, Engineer.

Close collaboration with engineers and scientists (whose approach to the solution of the problem is similar to that of an architect) is more desirable than combination with builders.
DOUGLAS ORR, Architect.

Although many attractive adjectives have been introduced to explain the new trends in architectural design, the architect's predominant approach remains the historical artistic. . . If he would recapture his position as competent adviser to his client, the architect should give as much time to the inside of his structure as he does to the outside lines and features.
W. R. WOOLRICH, Dean of Engineering, University of Texas.

Architects and engineers should keep abreast of the times and develop organizations that seek first to do what is in the best interests of the client. . . . There might be fewer arbitrary restrictions by labor unions today if architects and engineers had been foresighted enough to have set a better example than they have.
J. K. GANNETT, Vice President and Director of Engineering and Research, The Austin Co.

Economically interdependent co-operation with industry will lead to the loss of the identity of the professional members and may relegate the creative designer, architect or engineer to the status of the copywriter in the advertising agency.
PAUL WEIDLINGER, Engineer

the large family of which the architect is the head.

I would fully endorse a requirement of field experience before graduation. Once this has been accomplished, gaining knowledge and understanding through actual constructing should no longer apply.

Architects are of such different makeups that each should analyze himself and formulate a program in relation to his own abilities, to accumulate as efficiently as possible the essential fund of information and a mature judgment. Some may find that it is only by contact with actual building that they can absorb all the little details which are so important in gaining a good picture of how buildings are put together. Others may have the facility to absorb such information and develop maturity without having to go through the physical routine of being personally involved in executing the details.

Architect Douglas Orr:

The architect's situation is not quite as desperate as Dr. Gropius indicates. Even though architects are designing only 20% of U. S. buildings today, I believe that 50 years ago the percentage was even smaller.

I have seen the so-called "complete package" working for many years, and I know in many instances how dissatisfied owners have been with their "package," and they do not use it again.

I still believe the architect's position should be professional and one of trusteeship. Close collaboration with engineers and scientists (whose approach is similar to the architect's) is more desirable than combination with builders. In those instances where architects have joined with builders they are usually absorbed in the organization and do not maintain any leadership, but are rather submerged in the general business of construction.

The facts of life to me are: that regardless of what profession a young man may follow or into what business he may go, it is still a stiff up-hill fight, and there are no short cuts.

Architect Alfred Shaw:

Gropius is right, the profession should be stronger. It can be improved by getting stronger recruits. Architectural silk purses cannot be made from mass-produced sows' ears.

This is partly the result of unrealistic education in architectural schools, including Dr. Gropius' Harvard. Graduates need years of reality to make efficient contributions as architects and more years to handle the tougher (if less esthetic and technical) responsibilities of contracting. There is no school for contractors except an architect's or contractor's office. (If all architects today were suddenly told to handle building contracts, they would perform a series of abortions that would make the profession look silly.) As our profession becomes known for weakness and low income, it fails to attract the star prospects. Cause and effect are intermingled. Improvement can only be achieved as a slow and steady movement, like the deterioration. This will take time, experience, intelligence and a lot of men with a lot of guts, but it's worth the effort.

AIA's paragraph No. 7 is certainly too arbitrary.

Architect Harris Armstrong:

I agree with Dr. Gropius on many points, but we certainly cannot return to the architect-builder concept of the preindustrial era.

If the architectural profession has lost ground with the American public in the last 20 years, there is at least one logical reason: The average practicing architect 20 years ago had little knowledge of and no use for industrial techniques. His architecture actually tried to deny their existence. These reactionary attitudes are still alive, walking around in exclusive clubs, sitting on the boards of many charitable institutions, and giving the general public a backward concept of architecture.

To the older men who are in executive positions in large corporations these aging architects also represent our profession. Their attitude, so completely at variance with the scien-

"Package builder" claims man who limits his interests to architecture alone cannot hope to captain team

Engineer J. K. Gannett, Vice President and Director of Engineering and Research, The Austin Co., Cleveland:

Dr. Gropius' article is timely, constructive, and will, I believe, be helpful to the architectural profession. It is bound to be very provocative.

Dr. Gropius' article can be summed up by stating that both architects and engineers should keep abreast of the times and develop organizations that seek first to do what is in the best interests of the client. This result can't be accomplished by establishing protective ethics nor by taking any steps—legal or otherwise—which tend to build up monopoly and increase the cost of work to the client.

Conceivably there might be fewer arbitrary restrictions by labor unions today if architects and engineers had been foresighted enough to have set a better example than they have.

While it is natural for the architect to think of himself as the leader of the team, which both Dr. Gropius and Mr. Belluschi propose, the opportunity for leadership should never be restricted to any one profession or trade. We should not lose sight of the fact that the most challenging and important job is the complete co-ordination of all efforts, and isn't the architect, by limiting his participation to only one important phase of the work, actually reducing his capabilities as the "leader of the team"?

tists and industrialists, is one reason architecture has lost ground.

Another thing that contributes to lack of public confidence is that the press quite naturally tends to present only the spectacular and sometimes questionable aspects of modern architecture and its authors.

Actually, during the past five to ten years the architectural schools of US have sent a flood of young architects out into the world without any knowledge whatsoever of the orders of architecture and all that goes with it, but rather with a philosophy of building which does recognize the nature of materials. It will take time for these young men to prove themselves and make themselves felt in their society, but there is no question in my mind that the position of the architect is better and not worse than it was 20 years ago.

Already the knowledge an architect must have is staggering. To add first-hand knowledge of all of the highly specialized branches of construction would mean that other and possibly more important and significant things might be neglected.

There are firms that supply "complete building service," including plans and specifications of a sort. These firms could use the Institute seal further to reduce the importance in the public mind of the profession if AIA rule No. 7 was abrogated.

Engineer Walter H. Wheeler:

The design and construction of buildings have been changing from a problem in monumental architecture to a problem in engineering with a fringe of architecture and a core of planning and co-ordination. The result has been the recent rapid growth of organizations that undertake the entire job of planning, designing and building in which the architect is one cog in the wheel. There is no indication that this trend will reverse itself.

Architect L. Morgan Yost, President, Chicago AIA:

Dr. Gropius first presented his talk on "The Architect Within an Industrialized Society" at the March meeting of the Chicago Chapter AIA. As the Chapter directed, I appointed our Committee on the Practice of Architecture to make a study and report on the advisability of changing paragraph 7 of the Mandatory Rules of the Institute to allow architects to enter contracting.

A comprehensive four page report has just been returned to the Executive Committee. The conclusion, adopted as Chapter policy, is: "The Practice of Architecture Committee believes that paragraph 7 should remain in the Mandatory Rules but should be further explained, showing that it is permissible for the architect to supervise letting of separate contracts between each trade and the owner; and that the paragraph is not intended to prevent an architect working with a contractor who will guarantee an estimate to compete against a 'package deal,' while the architect still remains free to advise the client in a completely unbiased way".

Architectural dean admits quandry: should he train his students for a profession, a business, or an industry?

Educator Ernest Pickering, Dean of Applied Arts, University of Cincinnati:

I agree with the diagnosis by Dr. Walter Gropius but I am not sure that he has the right cure.

The confusion about the trends—actual or potential—in the practice of architecture is particularly disturbing for those of us who are educating the architects of tomorrow. Should we train them for: 1) architecture as a profession, or 2) architecture as a business, or 3) architecture as an industry?

Architecture is struggling to remain a profession, but it is so very much concerned with the production of a form of capital goods—buildings. Law and medicine are each a profession; they sell a service, not a product to be built or manufactured.

The building public is less interested in a service than in the finished product. Clients want buildings, complete with walls, openings, roofs, equipment and landscaping. They care little about traditional ethics, professional standards or the separation or amalgamation of designer and builder. The architect has difficulty explaining his business philosophy to those accustomed to buying a ready-made suit of clothes or a ready-made house.

The architect designs—he lays his brain child on the doorstep of the builder and, from a distance, watches it grow and develop. Except for improving his techniques or strengthening his position, he has gone as far as he can in the matter of planning, awarding contracts and supervising construction. He, then, has three alternatives: 1) Continue as at present as a professional man, with an aggressive effort to "sell" his services. 2) Become a business man by associating himself with a builder or builders. 3) Become an industrialist for the actual production of buildings—with the aid of assembled materials.

With the last two schemes of operation, creative design as we have known it would probably become a second-rate art, subordinate to big business. Except for headaches not of our choosing—architecture is now so much fun! Anything much different is unpleasant to contemplate.

What should the architect do? What can he do? He is part of a confused world of changing political, economic and social patterns. The future of the profession will probably be decided by forces over which the individual architect has little control. In the meantime—if an architect wants to get into the business of building and if he can retain his creative ability and his professional integrity, let him try his hand at the new approach. As he and thousands of others practice architecture, either as a profession or as a business, the pattern will be set and we shall have the answer to the challenge stated by Dr. Gropius.

Engineering educator finds architects inadequately trained in science, economics and design mathematics

Educator W. R. Woolrich, Dean of Engineering, University of Texas:

An examination of the AIA-approved curricula of architecture in the universities of the US might explain some of the difficulties experienced by the architectural profession, as told by Dr. Gropius. Most of our professional architects are not educated to come to real grips with the more profound mathematical design problems that must meet the rigid engineering and scientific requirements of modern structures.

Although many attractive adjectives have been introduced to explain the new trends in architectural design, the architect's predominant approach remains the historical artistic. Much of his educational preparation is woefully superficial in scientific and economic analyses. The architectural student is led to believe that in his professional work he will be privileged to gather about him the specialists from each field and that he, as architect, will be the master mind to co-ordinate and synthesize. There are many pitfalls for a man so educated.

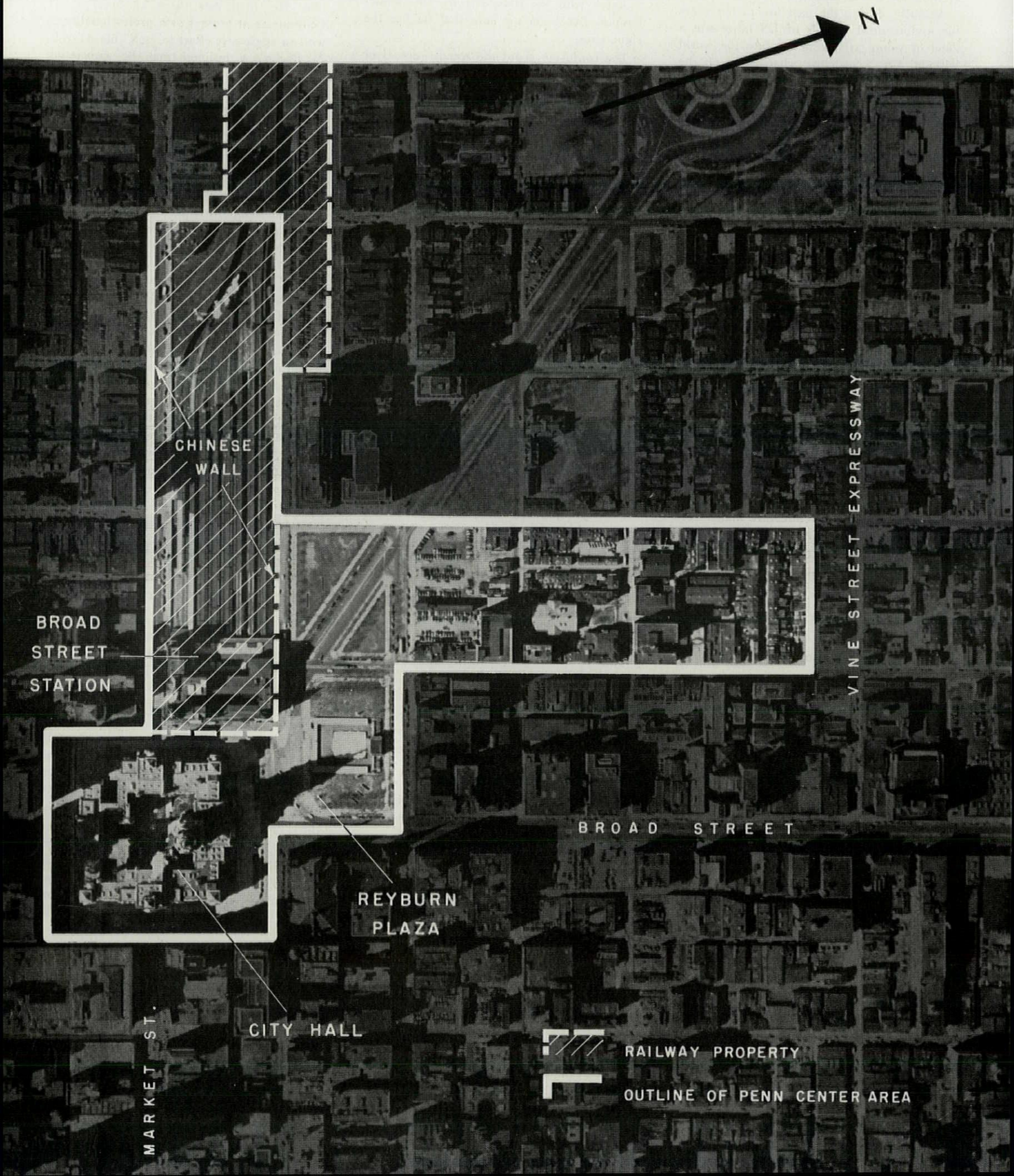
For example, many modern structures offer limited possibilities in architectural expression. Their major problems are of an engineering and scientific nature, and it is more fitting that the co-ordinator be predominantly a scientist or engineer.

Again, many buildings represent a relatively small potential commission. Under these conditions, the design fees are too small to be split between too many individuals. An architectural engineer is probably more capable of handling these situations than most architects.

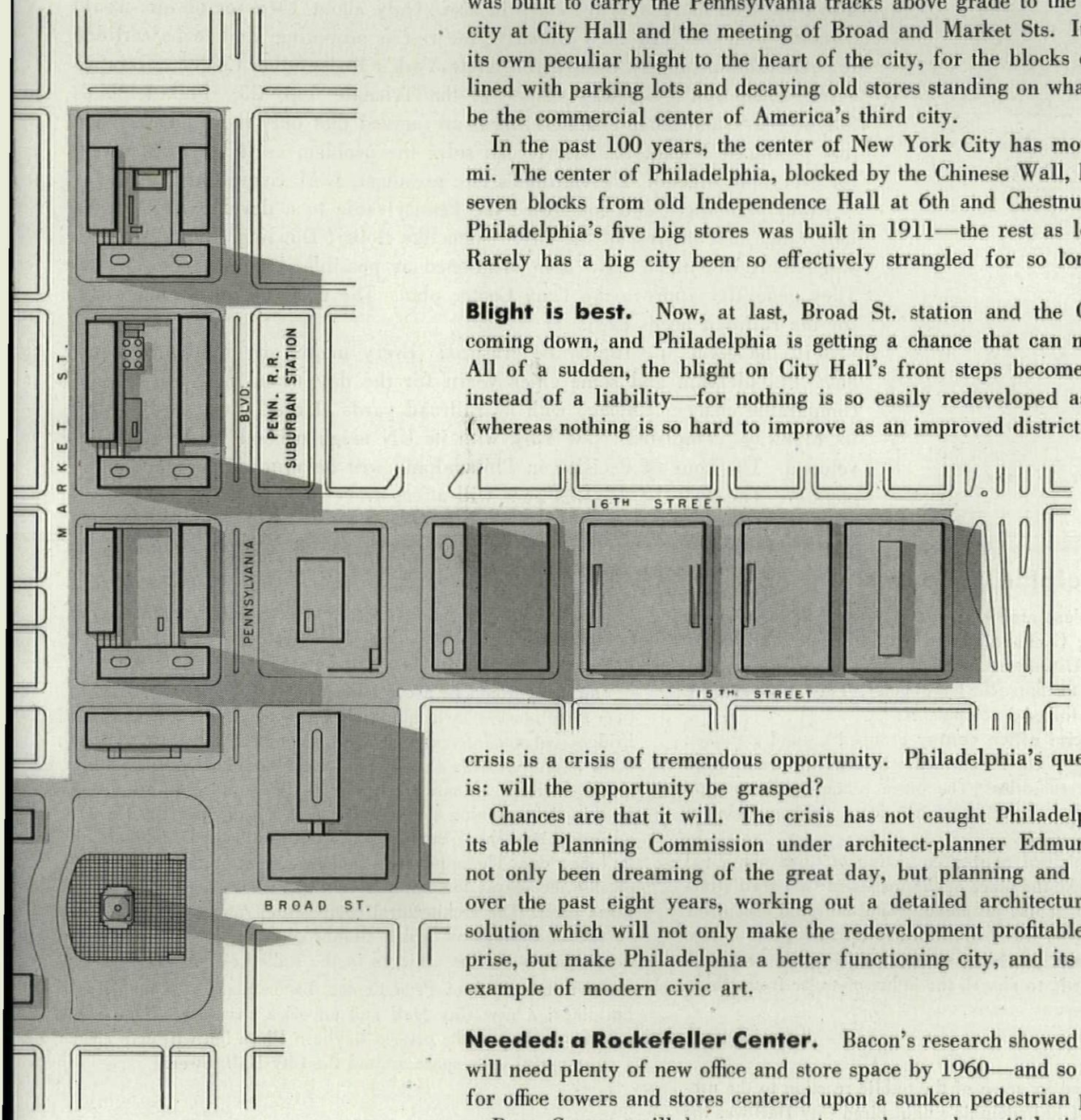
In basic research the architect has given little of his time to fundamental investigations. He has devoted his greatest effort to the more artistic features of his creations. If he would recapture his position as competent adviser to his client, he should give as much time to the inside of his structure as he does to the outside lines and features.

To those who have worked close to the architectural profession there can be no question of the freshness of their approach and the creativeness of their thinking. If Dr. Gropius' recommendations on educational procedure would capture a fair portion of the business now being done without benefit of professional advice of the architect, I believe it would be well to follow them.

PHILADELPHIA'S HOUR OF DECISION



Third-largest US city opens up 22 acres in heart of downtown section, plans multilevel traffic hub, 1.6 million sq. ft. office center, new municipal buildings, parking garages, truck and bus terminals and 150 new stores —all around a sunken pedestrian plaza that adds a fourth dimension to city planning



Penn Center plan (above) covers 14 out of the railroad's 22 acres, plus additional 15-20 acres earmarked for redevelopment. Aerial view (left) shows center of Philadelphia and affected areas.

For half-a-century the natural development of downtown Philadelphia toward the west has been blocked by the "Chinese Wall." This blackened stone rampart was built to carry the Pennsylvania tracks above grade to the very heart of the city at City Hall and the meeting of Broad and Market Sts. It has also carried its own peculiar blight to the heart of the city, for the blocks on either side are lined with parking lots and decaying old stores standing on what might otherwise be the commercial center of America's third city.

In the past 100 years, the center of New York City has moved north by 3½ mi. The center of Philadelphia, blocked by the Chinese Wall, has moved hardly seven blocks from old Independence Hall at 6th and Chestnut. The newest of Philadelphia's five big stores was built in 1911—the rest as long ago as 1880. Rarely has a big city been so effectively strangled for so long.

Blight is best. Now, at last, Broad St. station and the Chinese Wall are coming down, and Philadelphia is getting a chance that can never come again. All of a sudden, the blight on City Hall's front steps becomes a definite asset instead of a liability—for nothing is so easily redeveloped as a blighted area (whereas nothing is so hard to improve as an improved district). Philadelphia's crisis is a crisis of tremendous opportunity. Philadelphia's question of the hour is: will the opportunity be grasped?

Chances are that it will. The crisis has not caught Philadelphia napping, for its able Planning Commission under architect-planner Edmund N. Bacon has not only been dreaming of the great day, but planning and replanning for it over the past eight years, working out a detailed architectural and economic solution which will not only make the redevelopment profitable to private enterprise, but make Philadelphia a better functioning city, and its center a first-rate example of modern civic art.

Needed: a Rockefeller Center. Bacon's research showed that Philadelphia will need plenty of new office and store space by 1960—and so his plan provides for office towers and stores centered upon a sunken pedestrian plaza. This plaza —Penn Center—will be an open-air market, a beautiful city square, and an open-to-the-sky concourse that will link the Suburban Station to the north, the subway concourses under City Hall Square, a proposed intercity bus terminal to be erected at the west end of the plaza and other transport facilities. The purpose of all this is to have just as much pedestrian traffic as possible along the entire length of the sunken plaza. There is some reason to believe that

whoever undertakes the redevelopment may put his first big office tower at the far end of the plaza in order to pull people in that direction.

That there would be a strong directional pull exerted by Penn Center as a whole is obvious. Just as Rockefeller Center pulled the center of gravity of Manhattan from 34th St. to above 42nd, so Penn Center is likely to pull the center of gravity from east-of-Broad to west-of-Broad-Street. Today, Philadelphians spend five times as many dollars east-of-Broad than they do west-of-Broad; Penn Center will probably affect that trend, may encourage some of the big old Philadelphia stores to move with the rest of downtown.

The hour of decision. As envisaged by Bacon, Penn Center would directly affect an area more than 30 acres in size. Only about 14 acres of this would coincide with the railroad's property; the rest is adjoining land to be certified for redevelopment. By comparison, New York's Rockefeller Center covers 13 acres, Pittsburgh's Gateway Center at the Triangle Tip, 23. Philadelphia's Mayor Clark and other leading citizens are agreed that only the kind of vision that produced Rockefeller Center can solve the problem as it must be solved, for everybody's good. The railroad's vice president, J. M. Symes, has called for "careful planning," and committed the Pennsylvania to a development "in the long range best interest of the city." Men like Robert Dowling, John Galbreath and Albert Greenfield have been mentioned as possible, interested developers. They generally approve the Penn Center plan. The decision must come soon, for the railroad needs cash.

Will the great opportunity be grasped? Every major city in the US must envy Philadelphia and some cities yearn for the day when *they* will have a comparable chance: Chicago with its railroad yards cleared, Los Angeles with its Freeways completed, New York with its UN neighborhood ready to be developed. The hour of decision in Philadelphia will be watched throughout the country. The way the decision goes will affect every major city in the US.

What Philadelphia proposes:

The Penn Center plans are the result of close collaboration between the Planning Commission, its retained architect, Vincent Kling, and an A.I.A. Chapter Advisory Committee (which, however, did not agree to endorse the final plans). They envisage three separate but closely linked developments:

1. **A commercial office center** grouped around a sunken pedestrian shopping plaza into which will feed all traffic from adjoining transport facilities. The office center would occupy about 14 acres out of the 22 available, leave the remainder to smaller-scale developments.

2. **A new municipal center** consisting of three municipal office buildings to take the place of the inefficient City Hall structure. The City Hall, it was proposed, would be razed except for its tower landmark with the famed statue of William Penn on top.

3. **An elaborate parking garage and truck terminal complex** to the north, to absorb the influx of traffic from Philadelphia's new expressway system.

NEW CENTER

Almost overshadowed by some of the public reaction to the proposed amputation of Philadelphia's uninspired City Hall was the real core of Bacon's proposal: the new office center. As designed, this would be an extension of the commercial development on Market Street to the east. Its heart would be a sunken plaza whose level would coincide with that of the Suburban Station's underground waiting rooms to the north (which would open into the plaza through long glass walls) and with the level of the subway concourses to the south and east. It would also adjoin a new bus terminal at its west end and would receive underground shuttle-trolley traffic from the parking garages to be located near the exits from the new expressway to the north.

The plaza would be a continuous open space 1,400′ (or more than three blocks) in length, and 150′ wide. Cross streets would bridge (*but not interrupt*) it at three points, and three 20-story office towers on stilts (14,000 sq. ft. per floor) would straddle it along the lines of these cross streets. These office towers would be thin slabs running north-south (so as not to shade the plaza), while two-level shops, running east-west, would screen the plaza on its long sides. The upper-level shops would serve the higher level outside the plaza; the lower-level shops would serve the sunken plaza itself. The architectural composition suggests a succession of spatial experiences which Cranbrook-trained Ed Bacon likes to compare with that achieved in the walled city in Peking.

Off to the north of Penn Center, Bacon placed the municipal buildings: a new City Hall and an office structure. These will occupy portions of the present Reyburn Plaza but will help clear a more useful open space around the City Hall tower.

CITY BEAUTIFUL—AND SOLVENT

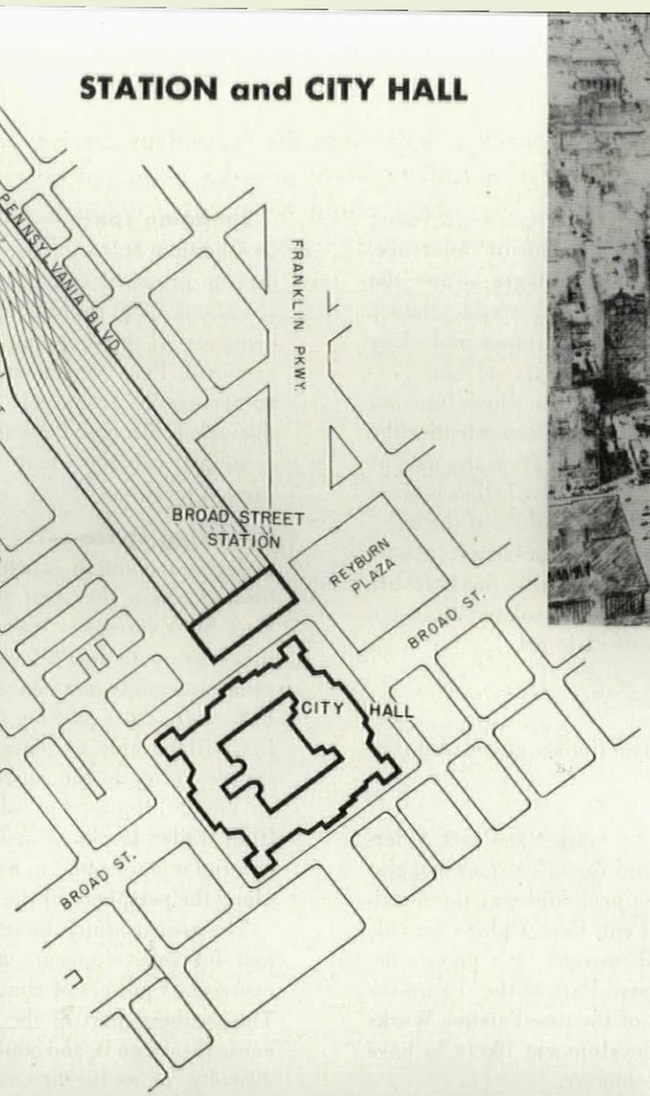
An outstanding fact about the Philadelphia Plan is that Ed Bacon is an architect trained in Eliel Saarinen's school of three-dimensional planning. Unlike most city planners in the US, Bacon knows that the city is not a chart but a plastic organism, a series of visual sensations produced by a succession of spaces and forms of different size and shape. After nearly half a century of *financial*

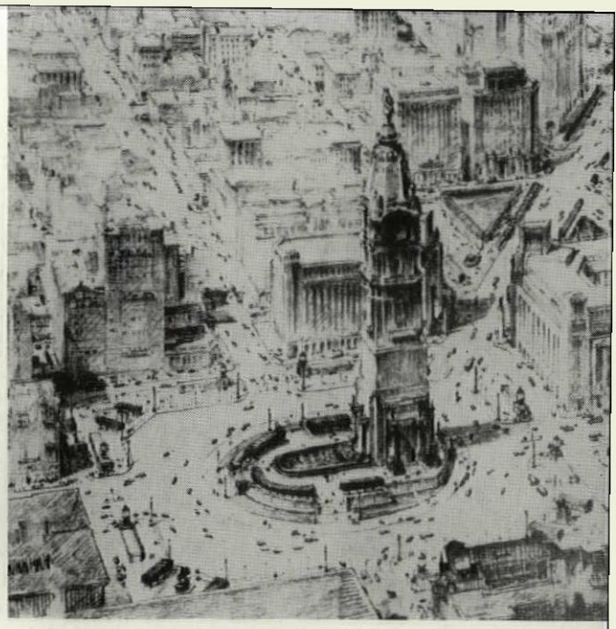
STATION and CITY HALL

William H. Rau

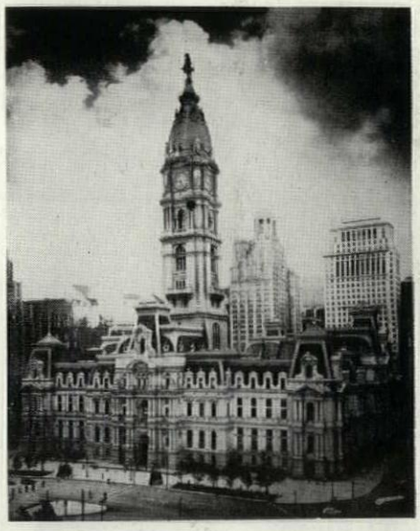
BROAD ST. STATION *and Chinese Wall (above) are in the process of being razed. Built in 1881, the station has now been superseded by Suburban and 30th St. Stations. Train shed shown in this picture burned down in 1923, was never replaced.*

Laurence S. Williams





CITY HALL *(below) is famous Philadelphia landmark. Bacon's suggestion that it be razed (except for the tower) brought forth cries of anguish. Asked one* Bulletin *reader: "Why do some people want... its good, cultural sculpture torn down?" Bacon's answer is to point to that lover of tradition, Philadelphia's late, great Paul Cret, who made a similar proposal in the 20's (above).*



Here is how Philadelphia's City Hall Square (with its stripped-down City Hall) would look if the Chinese Wall were razed and Penn Center built. At left are commercial office buildings, at right is new municipal office center. Traffic would be vastly improved, and a useful open space would be created at the intersection of Broad and Market Sts.

functionalism, here is a planner returning to McKim's old vision of the city beautiful—the city beautiful with a lot of difference. For apart from the obvious esthetic difference, there is now the new yardstick of whether or not the city beautiful would produce income: Bacon had to prove—in these days of taxes and close figuring—that the city beautiful would also be a city solvent.

Incidentally, Bacon's plan may be one of those in which function follows form as much as the reverse. Who is to say whether the idea of a sunken shopping plaza arose primarily from the idea of linking railroad and subway at platform level—or whether it arose from the idea or having a pleasant walk in the middle of the city? In any event, form and function, beauty and solvency, plastic expression and flow diagrams have here become so inextricably joined that no one part of the solution can be isolated from the next. This is truly an integrated work of civic art.

SPACE NEEDED IN 1960

Bacon's plans meet a real need in Philadelphia's crowded downtown area.

Office space—Careful projections by market analysts Alderson & Sessions of probable future demand for office space suggest that, by 1960, Philadelphia will require an additional three million sq. ft. in the central district. The Penn Center plans provide only 1.6 million sq. ft., may be revised upward by a private developer if he is satisfied with the analysis. Part of the reason for this expected growth is the construction of the new Fairless Works between Philadelphia and Trenton, a development likely to have far-reaching effects on Philadelphia's economy.

Shopping space—Although there are now some empty shops on Chestnut St. to the south, the Planning Commission is certain that its proposal of 290,000 sq. ft. of retail space on two levels (or about 3,000 running feet of frontage) will barely meet 1960's demands. If the shopping facilities are developed on two levels as proposed, Penn Center should have around 150 stores (assuming an average 20′ frontage). The heavy pedestrian traffic that will be channeled through the sunken plaza will make these shops exceedingly valuable, may draw existing stores away from their present locations.

Parking space—The Bacon plan proposes parking facilities underground and in garages for 2,500 cars. These facilities will be located where they can absorb the flow of traffic from the new Vine St. Expressway (which will eventually tie up with an expressway out to the Philadelphia Airport) and keep some cars from penetrating into the congested areas on downtown Philadelphia. (There are other parking garages projected farther south.) Motorists will be able to leave their cars, then take an underground shuttle-trolley to the sunken plaza. Similarly, the truck terminal on Vine St. Expressway will be the transfer point for merchandise from trailer trucks to small delivery trucks; these, in turn, will proceed underground to a delivery loop located beneath the stores along the periphery of the sunken plaza.

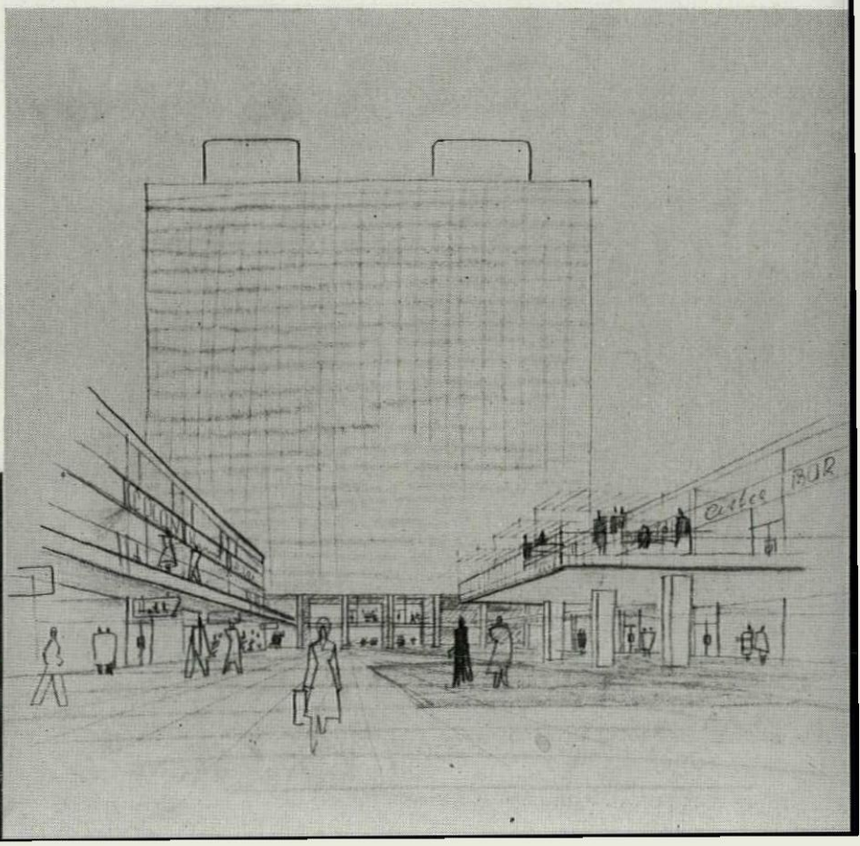
The area in which these facilities will be located has been certified for redevelopment, and the Redevelopment Authority may exercise its powers of condemnation here under Pennsylvania law. The southern part of the parking proposal has few buildings of consequence on it, and could be developed independently with little difficulty, or as the first stage of the whole project.

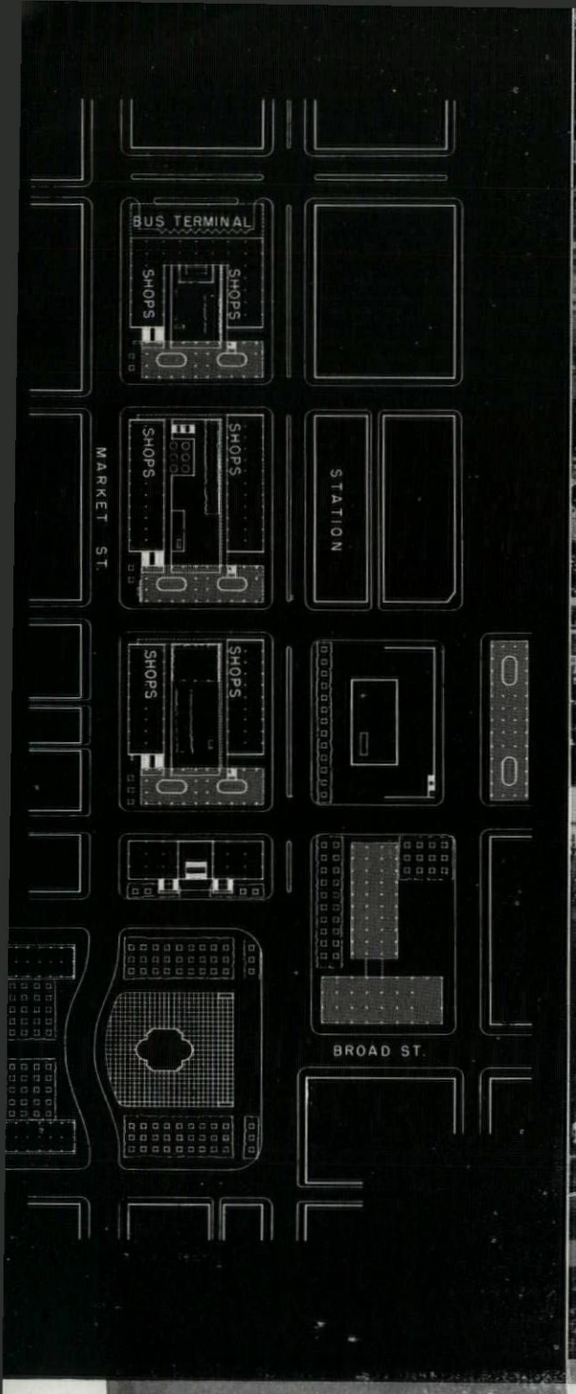
SUNKEN PLAZA

Picture at left of New York City's Lever House shows what the Penn Center's sunken plaza would look like to pedestrian visitor.

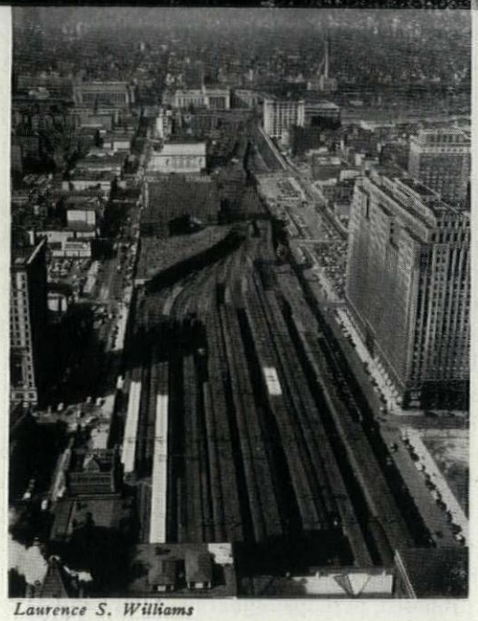
At right is architect Vincent Kling's impression of sunken plaza. Below is Rockefeller Center's skating rink, originally intended as open air concourse for commuters using trains brought into RCA Building's basement from across Hudson. This concept was never realized.

LIFE: *W. Wolff*



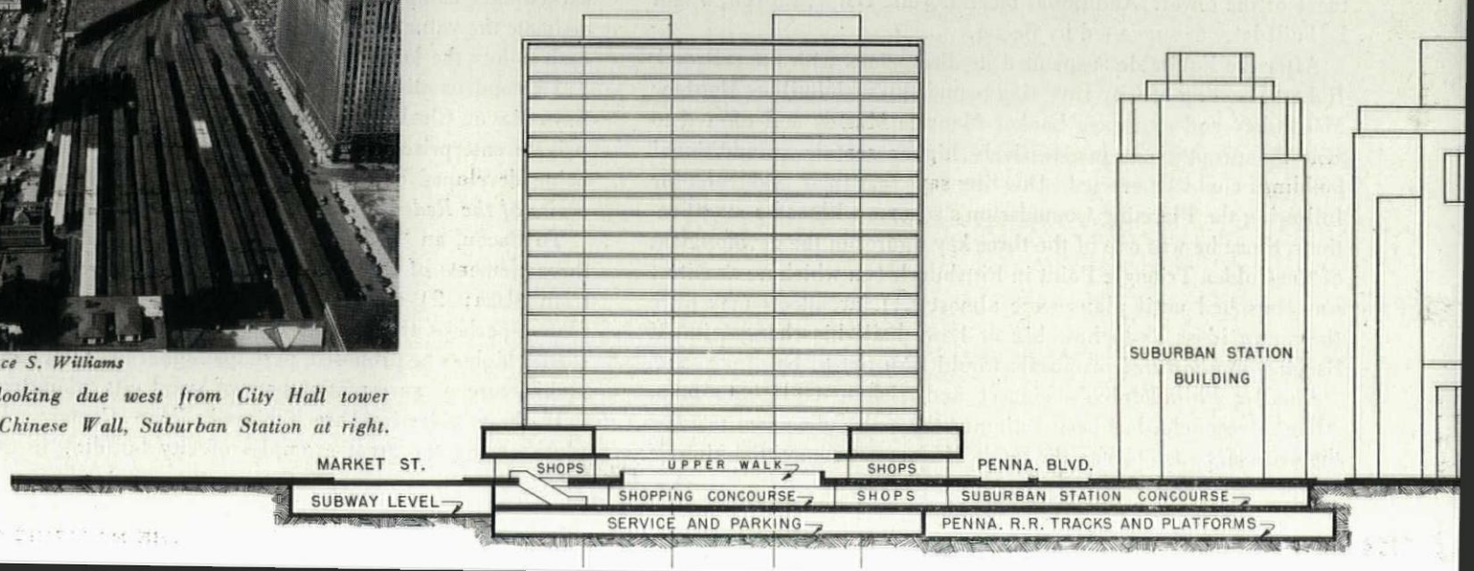


View of new Penn Center office buildings to west of City Hall tower. In the distance is 30th St. Station on other side of Schuylkill, and additional railroad property not covered by Bacon's plans. At right are proposed municipal office buildings.

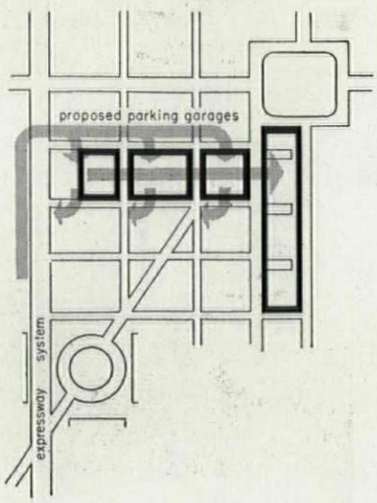


Laurence S. Williams

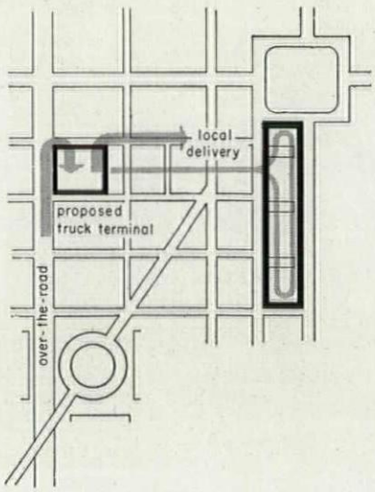
View looking due west from City Hall tower shows Chinese Wall, Suburban Station at right.



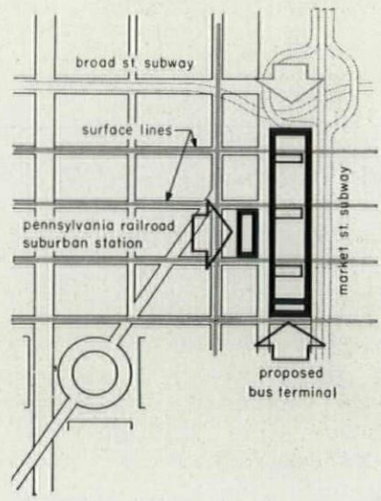
TRAFFIC PATTERN



Diagrams show sunken plaza in relation to various transport facilities. Above: parking garages off Vine St. Expressway. Shuttle trolleys take motorists from garage to plaza.



Intercity trucks would use terminal to transfer loads to delivery trucks, which, in turn, would take merchandise to plaza's stores by underground route.



Most people would enter sunken plaza from underground railroad or subway concourses, or from intercity bus terminal. All these would open onto plaza through wide glass doors.

Most important: who will do the job?

Whether private enterprise can and will meet the Philadelphia challenge will soon become apparent. To do the job right, the Chinese Wall must be redeveloped as a whole instead of piecemeal. Everybody seems agreed on that—the Railroad, the Planning Commission, Mayor Clark and several interested developers.

First best hope of getting the Chinese Wall redeveloped as a whole came from the Equitable Life Assurance Soc. which became very much interested in the project last winter and actively discussed with the railroad the possibilities of leasing the 14-acre tract on a long-term basis. Equitable's idea was to let the railroad retain title to the land and thus control its redevelopment in accordance with a long-term master plan. Although the Equitable's discussions with the railroad have been suspended, the insurance company is still interested.

Another developer who was interested in the project is John Galbreath, the big Columbus, Ohio, real-estate man who built Fairless Hills for US Steel and the Mellon-US Steel Building in Pittsburgh, and who is a past president of the National Association of Real Estate Boards. Galbreath had architect Wallace K. Harrison develop a scheme that envisaged a single office tower at the west end of the plaza, with a bus terminal "drawing card" in the basement of the tower. Additional office towers, Galbreath felt, might be built later as suggested by Bacon.

After the Equitable suspended its discussions with the railroad, Robert Dowling of City Investing teamed up with builder Matthew McCloskey and mortgage banker Maurice Massey and offered to rent the property at progressively higher rentals as additional buildings could be erected. Dowling says that their plan calls for following the Planning Commission's scheme with some modifications. Since he was one of the three key figures in the development of the Golden Triangle Point in Pittsburgh (on which no architect was consulted until plans were almost set), architects may have their own ideas as to how big or how small his changes in Ed Bacon's *architectural* proposals would turn out to be.

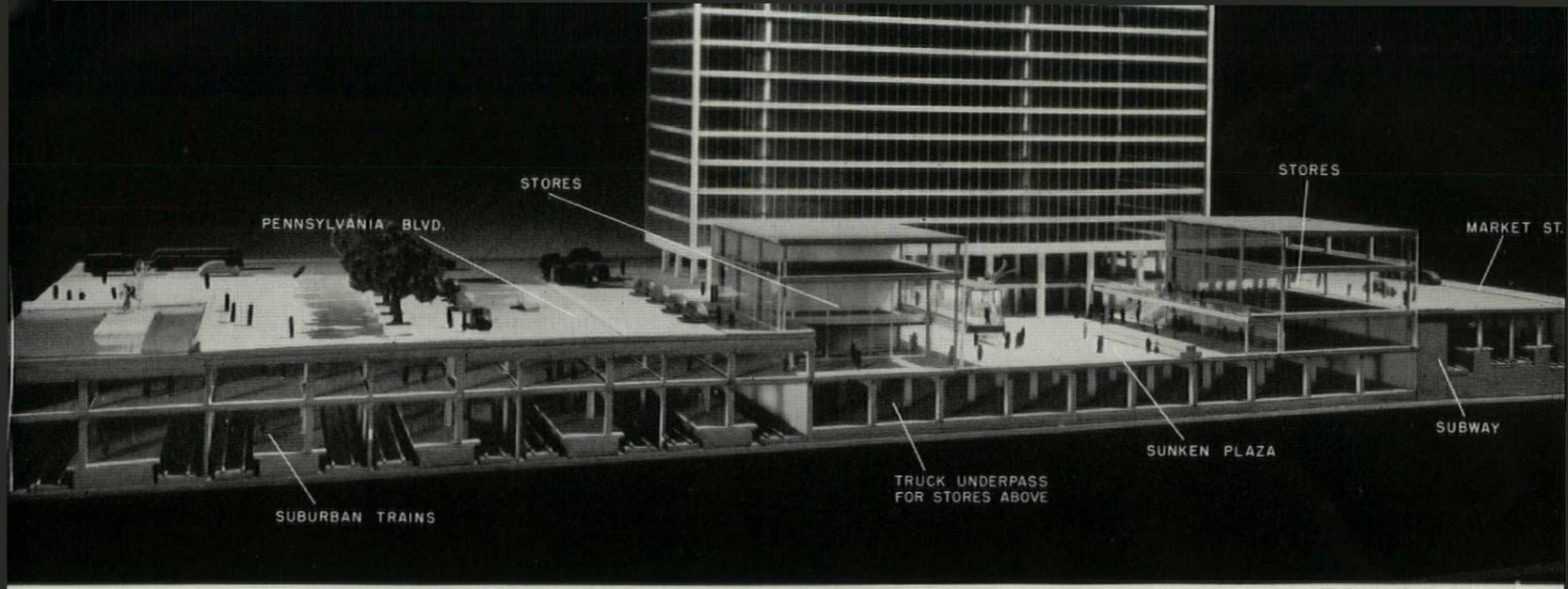
Finally, Philadelphia's biggest and richest real-estate man, Albert Greenfield, has been acting as the railroad's agent to raise the necessary cash to buy the land. He has not committed himself to any particular redevelopment plan and there is always the possibility that if he bought the 22 acres wholesale he might proceed to resell them retail—instead of developing them as a unit. On the other hand, few men have a greater stake in a unified development than Greenfield, for some of the owners he represents already control much of the blighted land on the south side of Market St., and that land should certainly profit vastly from a Rockefeller Center type of development to its north. Said Greenfield of Bacon's proposal: "I generally approve." A lump sum offer has been made to the railroad through Greenfield, and a decision on this is due momentarily.

Some Philadelphia pessimists, however, still believe that the danger of a piecemeal development of the Chinese Wall area is real. To them, Bacon will say that the Penn Center Plan has already demonstrated that the way to get the most value out of the railroad's property is to develop it as a unit, making all existing and projected transport facilities serve to render the overall development more profitable and therefore more valuable. When the pessimists demand that the Redevelopment Authority institute condemnation proceedings to assure unified development of the Chinese Wall area, Bacon suggests that such proceedings would be exceedingly complicated since there is no yardstick by which to estimate the value of the land, and since the city may not have the cash to buy the land anyway.

Yet condemnation proceedings as a last resort are still possible. Says Mayor Clark: "I would prefer to see this done entirely by private enterprise, but if there were any probability of its not being developed on an acceptable plan, *I would recommend exercise of the Redevelopment Authority's power of condemnation.*"

To Bacon, an "acceptable plan" would mean keeping at least three elements of the Penn Center scheme: 1) the sunken pedestrian plaza; 2) office towers straddling (and not shading) the plaza—perhaps three as he proposed, perhaps four; perhaps 20 stories high as he proposed, perhaps higher or lower; and 3) good architecture as an essential part of good city planning.

If these objectives are achieved, Penn Center will take its place among the great examples of city building in our time.

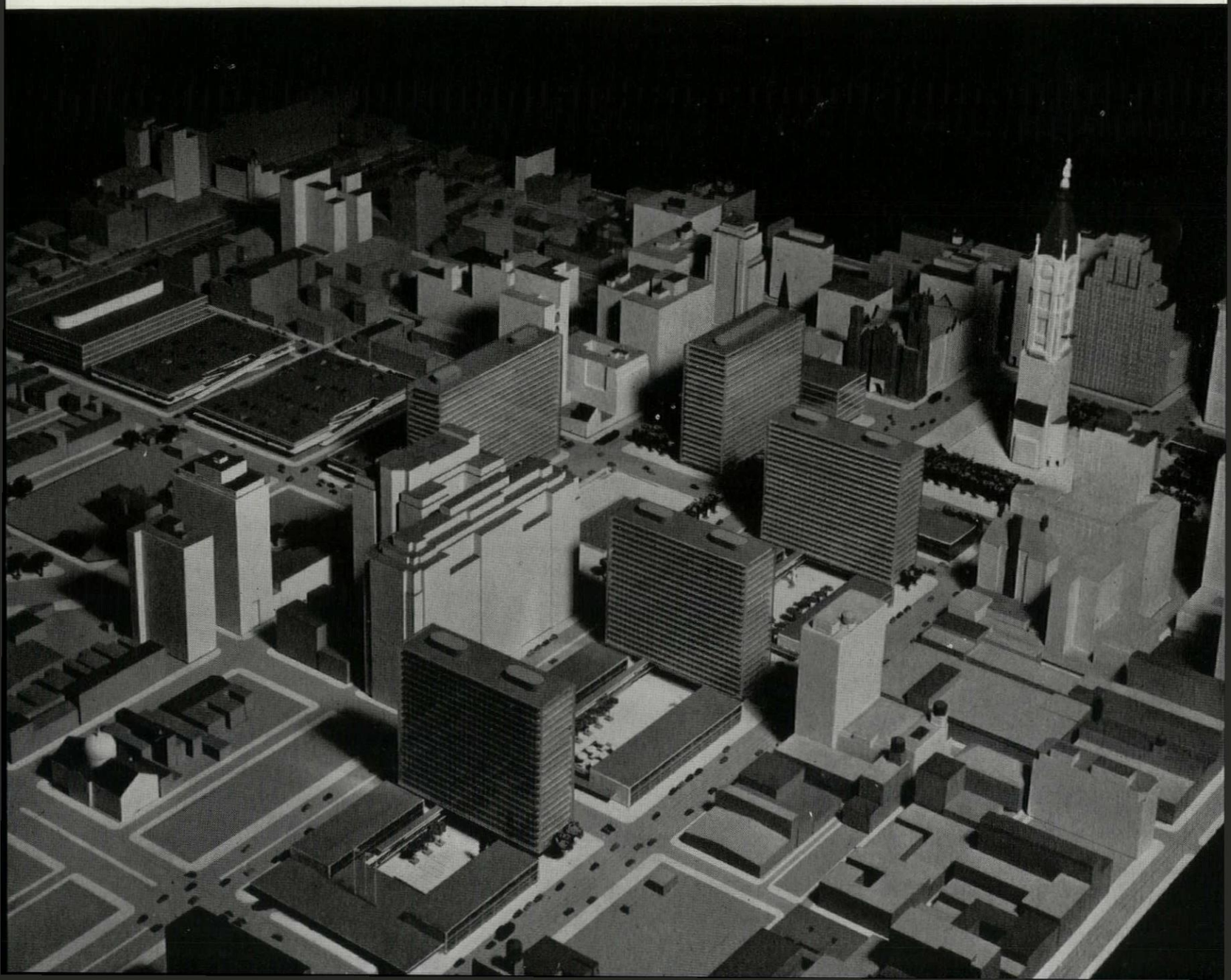


Cortlandt V. D. Hubbard

Cut-away model (above) shows the function of sunken plaza as an open-to-the-sky concourse linking railroad and subway stations and other transport facilities. Two-level stores line the plaza on two sides. Level under plaza is for truck deliveries to stores.

Overall view of project (below) shows its impact on Philadelphia's heart. Area covered is more than twice that of Rockefeller Center.

Laurence S. Williams



LOCATION: Houston, Tex.
HERMON LLOYD, W. B. MORGAN
and MILTON McGINTY, Architects
WALTER P. MOORE, Structural Engineer
LOCKWOOD & ANDREWS, Mechanical Engineers
BROWN & ROOT, INC., Builder

New stadium design

reduces construction to nine months,

simplifies problem of handling crowds

Plasant in form, extraordinarily efficient in plan, Rice Institute's new stadium achieved its best performance in construction time: two months in design, nine months abuilding. Despite this speedy execution, it is so well thought out it can disgorge 70,000 people in 10 mins.

Chief feature of the new stadium and the one that contributes most to its visual and functional success is the complete separation of upper stands (seating 30,000) from the lower bowl (seating 40,000). The two upper tiers, flanking the playing field, float free on thin (30″) columns above the broad main concourse that encircles the lower bowl. The two sections of the stand overlap about 17′. Beneath each upper tier the concourse is double-decked, with the two levels connected by wide ramps. All this has two practical results: 1) it provides broad daylight traffic ways to every section of the stands, which are entered half-way up without the need of any dark tunnels; 2) it creates a venturi between upper and lower stands to suck in the breeze and give better—though not quite adequate—ventilation for the depressed playing field (a ventilation which is doubly important in hot Houston).

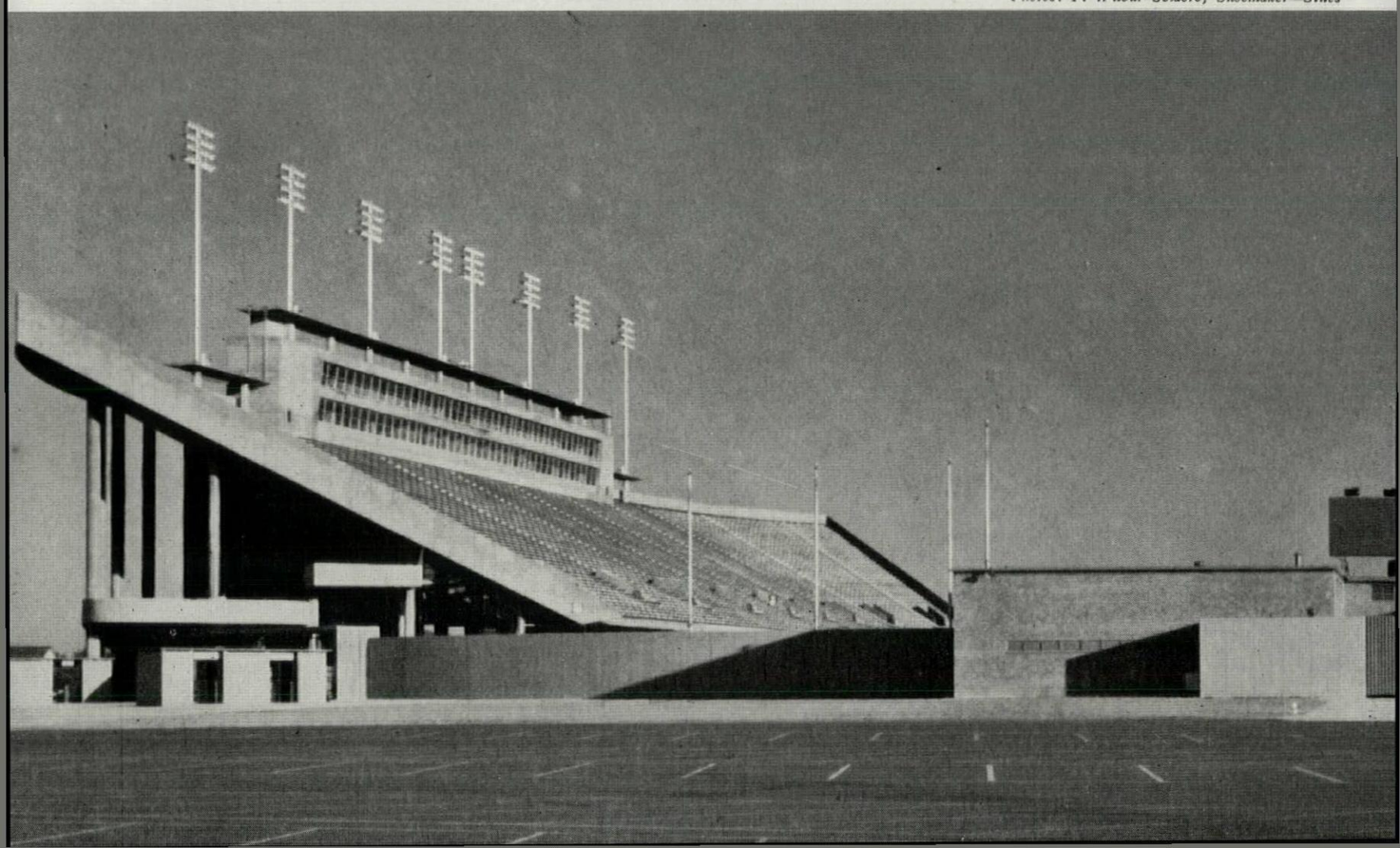
Second most important feature of the stadium is the proximity of every seat to the playing field. By eliminating the traditional ¼ mi. track and by wrapping the stands closely around the rectangular football field every seat was brought at least 45′ closer than would have been possible otherwise.

The stadium's record traffic movement rate comes from exhaustive traffic and crowd psychology studies. Section entrances, concourses, stadium entrances, parking lot locations and street approaches all were placed and related to speed the flow of traffic. The result is not unlike that of a giant sponge capable of absorbing and discharging a great number of people at the amazing speed of 7,000 per min.

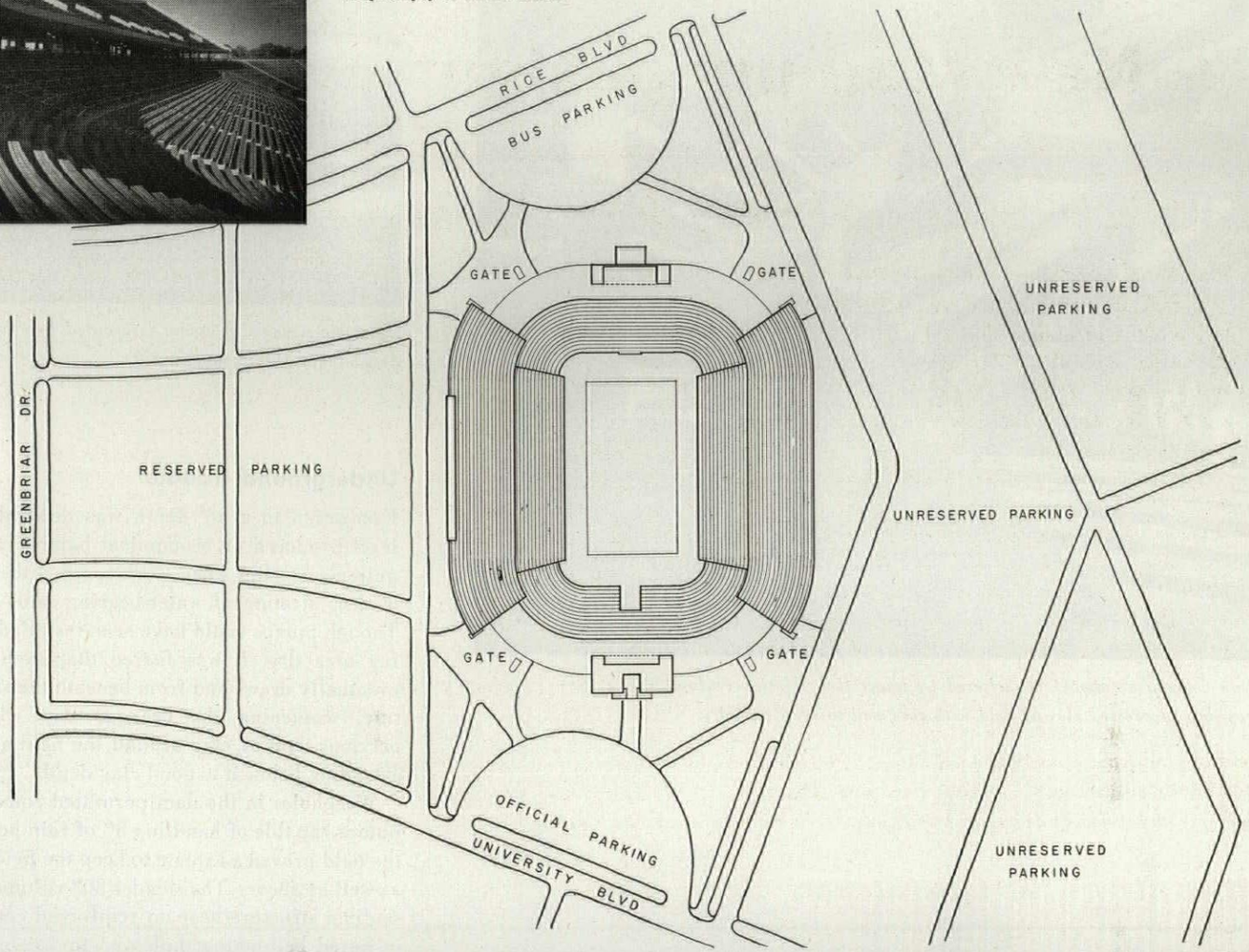
To aehieve the construction time record of nine months from ground breaking to kickoff required unparalleled co-operation between engineer, builder and architect. For one thing, the builders agreed to take the job at cost in a burst of civic pride. Design was undertaken only two months prior to ground breaking and throughout construction swift engineer-builder-architect conferences solved on-the-job problems. After excavation, two shifts worked alternate 10 hr. periods—almost around the clock—to complete the job by pouring 150 cu. yds. of concrete per day.

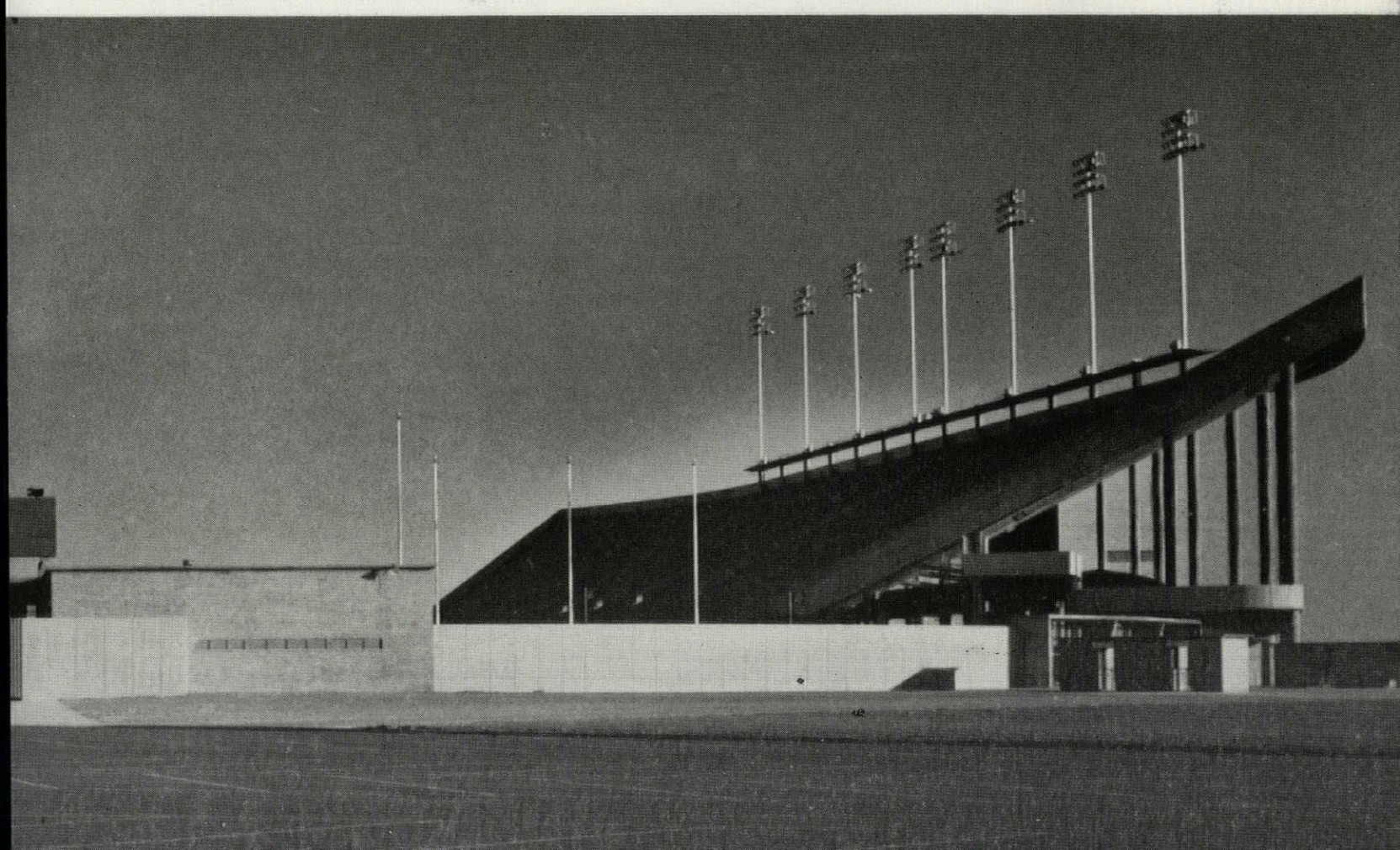
Flanking upper tiers—free of lower bowl—characterize Rice Institute's new reinforced concrete stadium

Photos: F. Wilbur Seiders; Shoemaker—Stiles

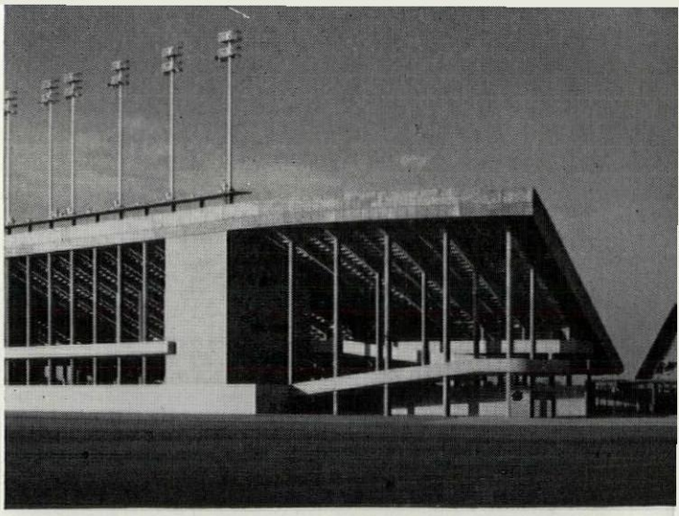


Stadium seats 70,000. Well related approaches, parking lots, entrances help empty it in 10 mins.





Main concourse (above) is sheltered by upper tier. Section (below) shows press box, depressed playing field with core wall to keep field dry.



Usual massiveness of stadia is avoided by "floating" upper tiers on thin (30") columns.

Underground trouble

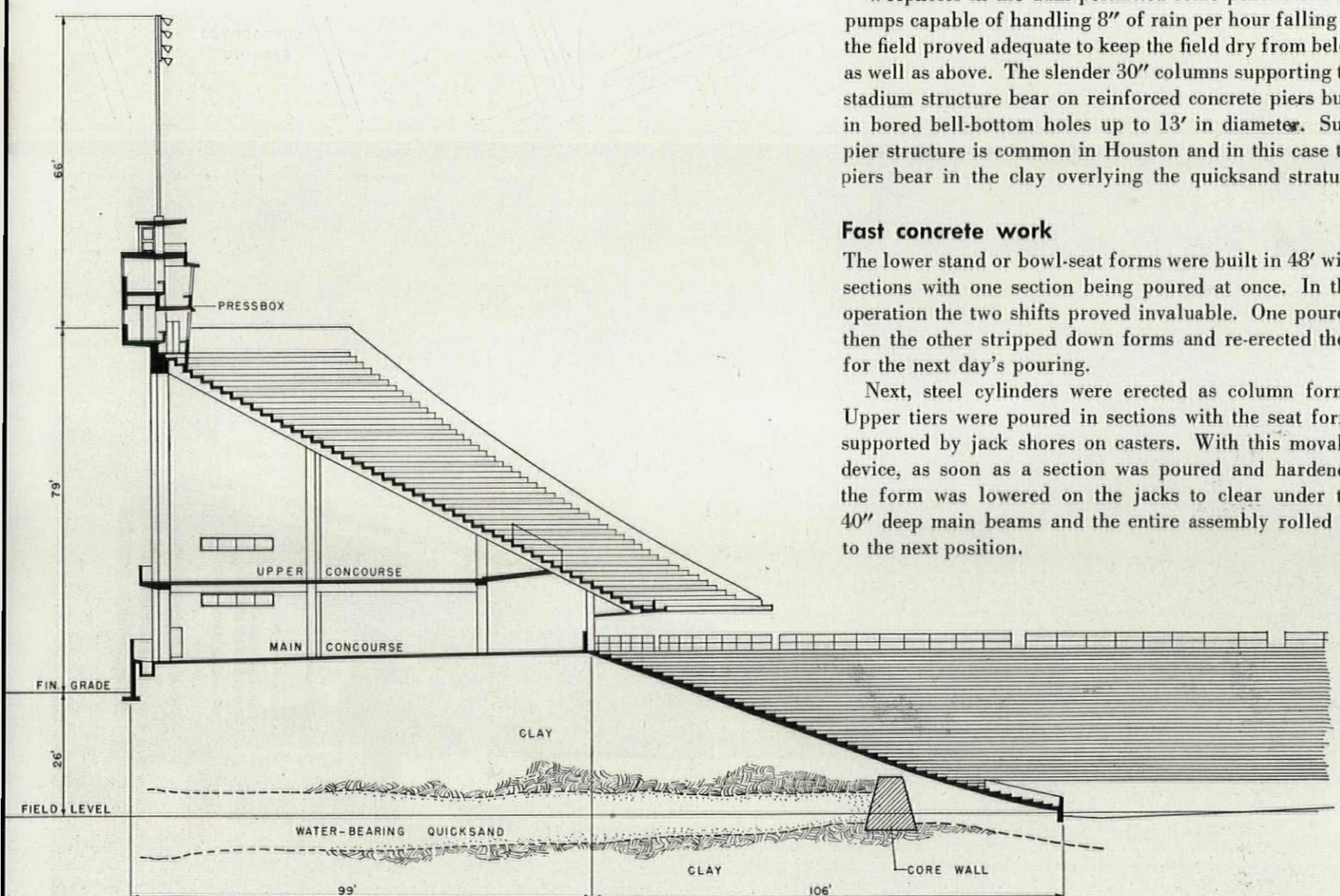
Excavation to a 26′ depth was decided upon since that level produced an economical balance in cut and fill requirements. But when work reached the 20′ level, a 6′ to 8′ deep stratum of water-bearing sand was encountered. Though pumps could have been installed to keep the playing area dry, it was feared that such pumping might eventually draw sand from beneath the surrounding structure, weakening the bearing clay. Solution: an impervious dam of clay around the field at the water level, extending below it to good clay depth.

Weepholes in the dam permitted some penetration but pumps capable of handling 8″ of rain per hour falling on the field proved adequate to keep the field dry from below as well as above. The slender 30″ columns supporting the stadium structure bear on reinforced concrete piers built in bored bell-bottom holes up to 13′ in diameter. Such pier structure is common in Houston and in this case the piers bear in the clay overlying the quicksand stratum.

Fast concrete work

The lower stand or bowl-seat forms were built in 48′ wide sections with one section being poured at once. In this operation the two shifts proved invaluable. One poured, then the other stripped down forms and re-erected them for the next day's pouring.

Next, steel cylinders were erected as column forms. Upper tiers were poured in sections with the seat forms supported by jack shores on casters. With this movable device, as soon as a section was poured and hardened, the form was lowered on the jacks to clear under the 40″ deep main beams and the entire assembly rolled on to the next position.



Press box de luxe

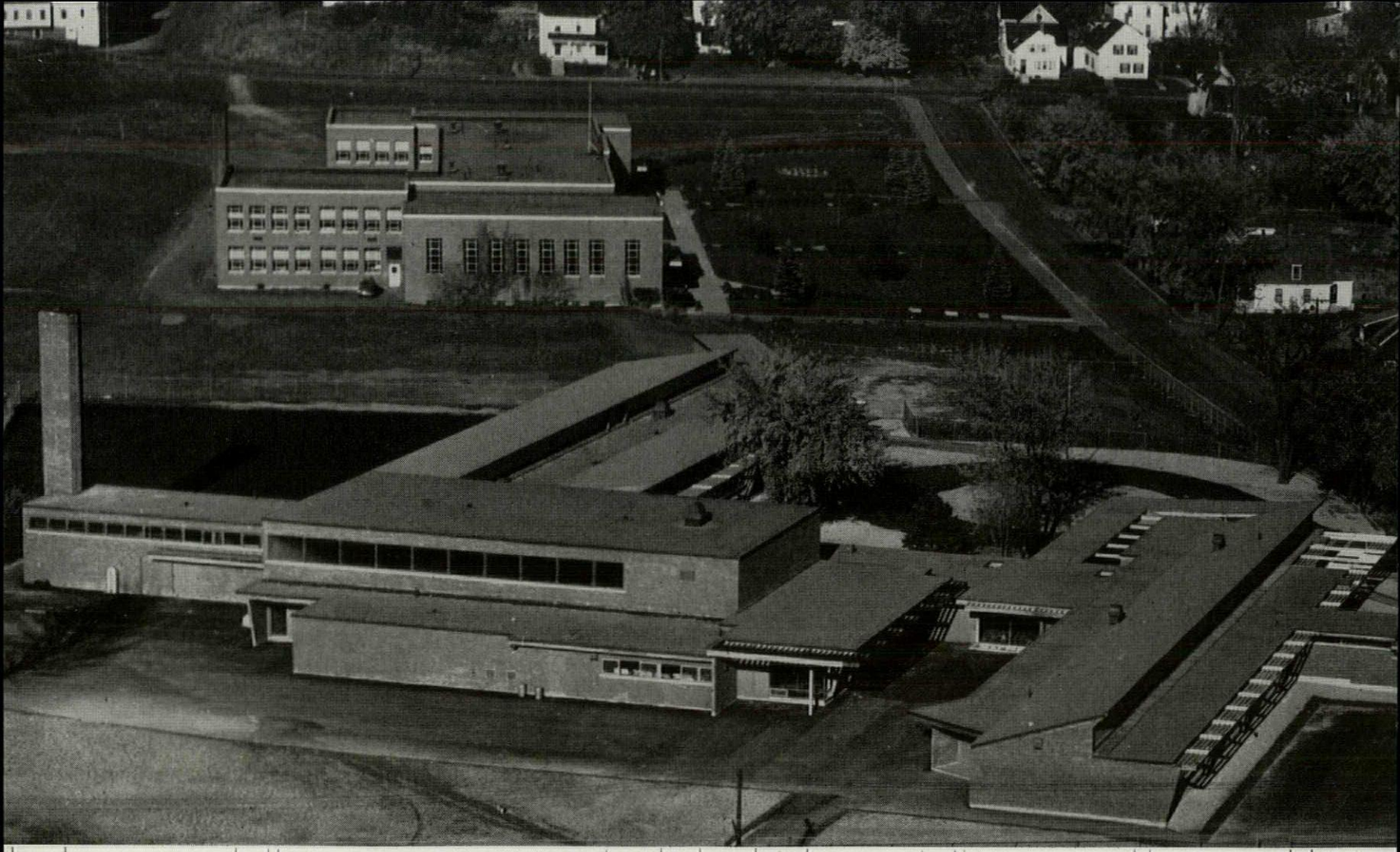
A luxurious three-level, glass-enclosed press box caps the upper tier on the west side of the stadium. Space is provided for 300 television and radio broadcasting personnel plus equipment with additional space available for visiting dignitaries. Rest rooms, snack bars, a photographic dark room complete this space which even boasts an elevator to whisk newsmen to that highest level.

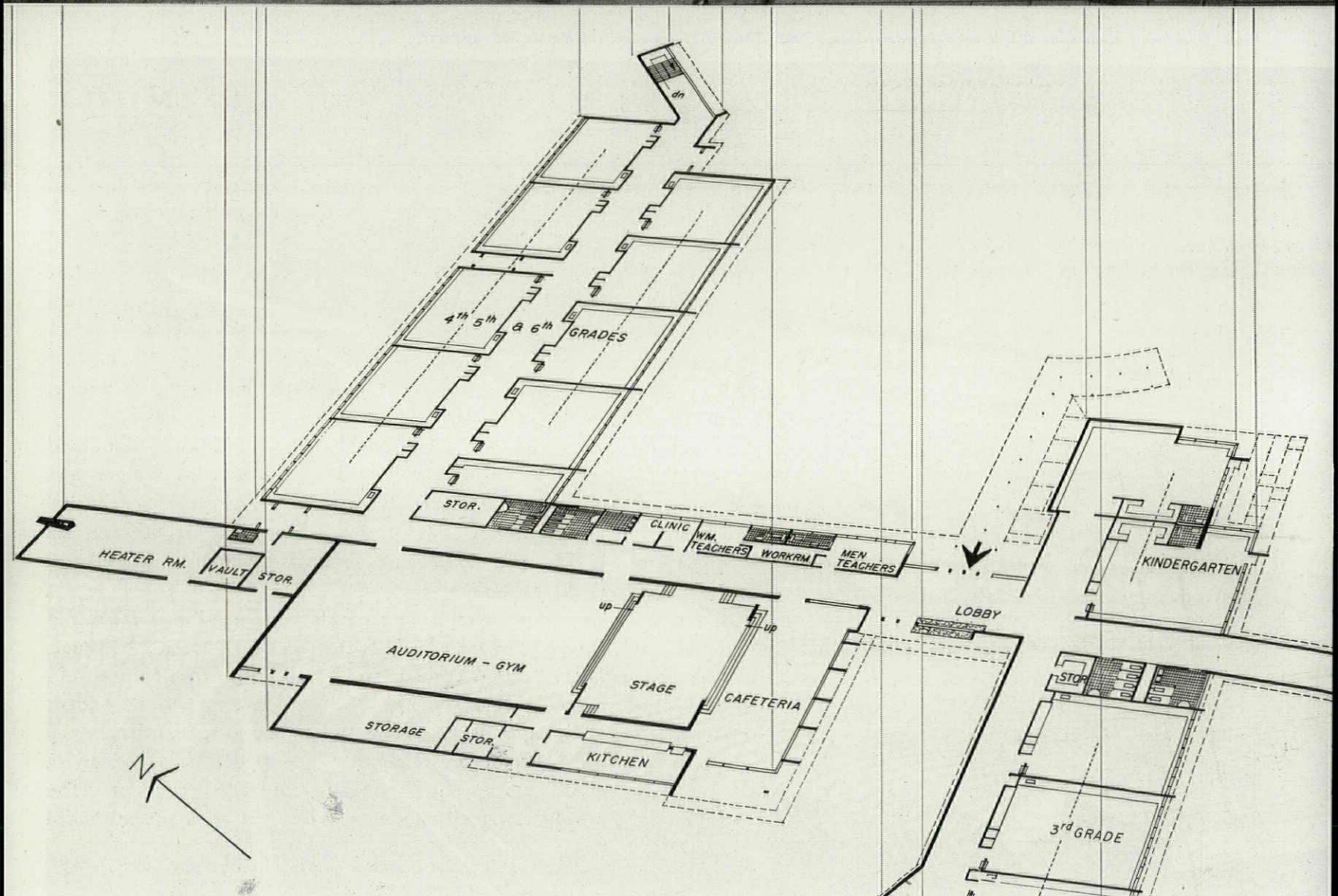
All spectators have a good view. Sight line clearance from each row to the far side of the playing field is 3″ above the row in front. The 3″ was chosen to give maximum visibility yet keep the stands from being too high. (Top row is 74′ above normal grade.)

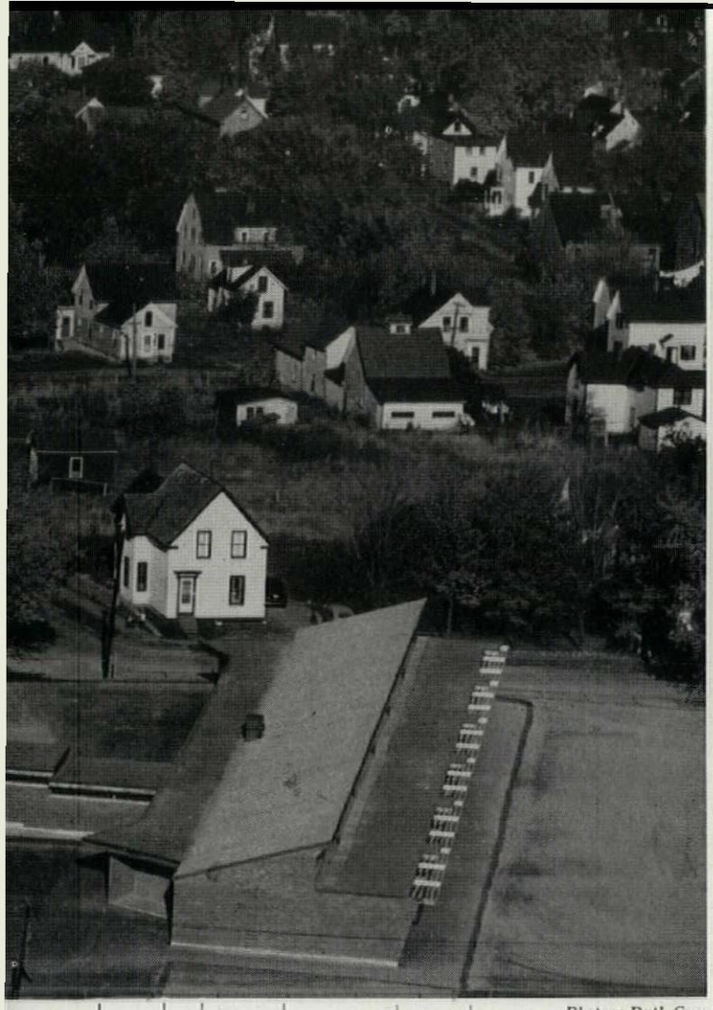
At present the stadium can hold 70,000 people. Future plans call for extending the upper tiers around the ends, raising capacity to 112,000.

Wide ramps lead to upper concourse and upper stand seats

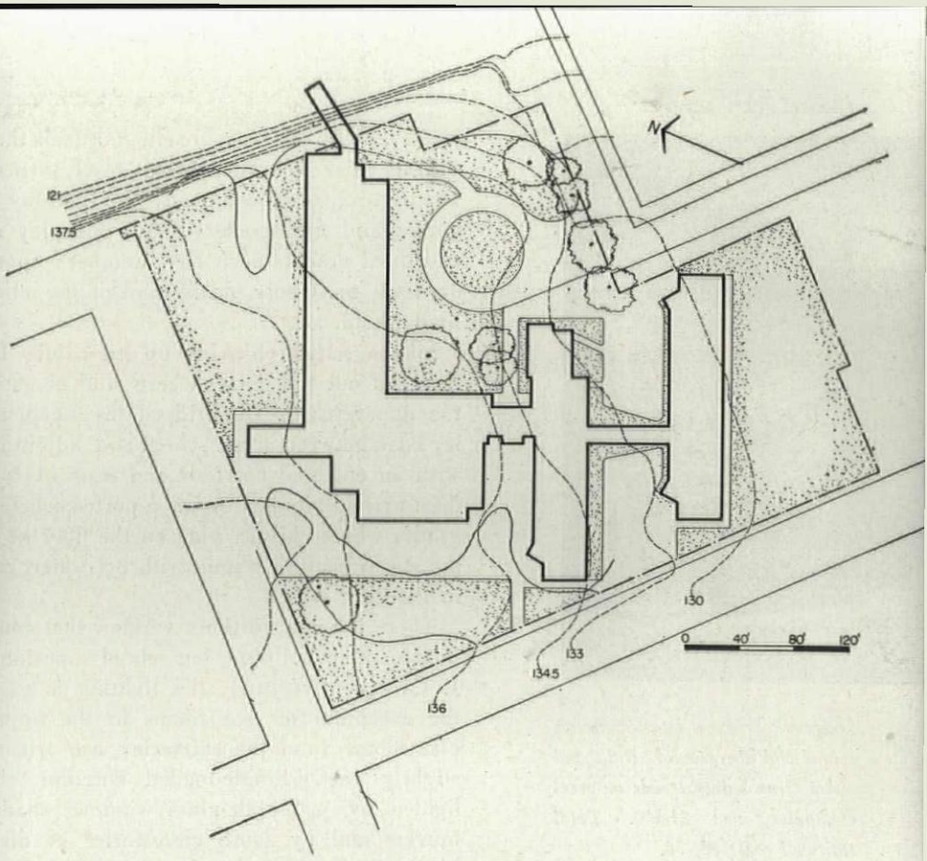
Lower bowl below grade seats 40,000, each upper tier seats 15,000. Three-story press box can handle 300 reporters




dn
4th 5th & 6th GRADES
STOR.
CLINIC
WM. TEACHERS
WORKRM.
MEN TEACHERS
HEATER RM.
VAULT
STOR.
KINDERGARTEN
LOBBY
up
up
AUDITORIUM - GYM
STAGE
CAFETERIA
STOR.
STORAGE
STOR.
KITCHEN
3rd GRADE
N



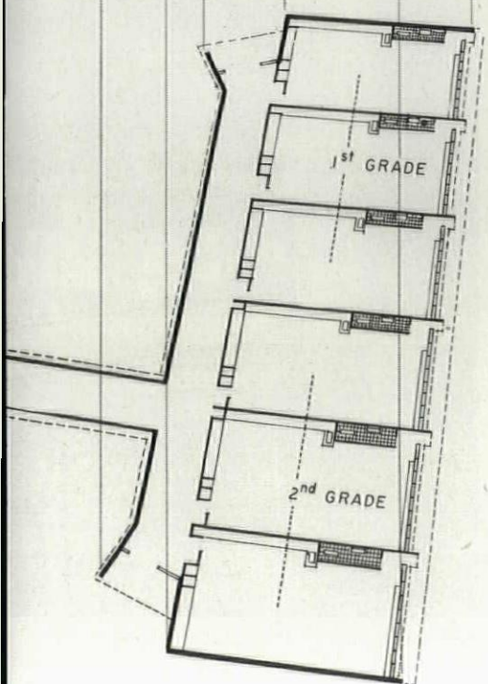
Photos: Ruth Gray



Prize-winning school in Maine weatherproofs the . . .

FINGER PLAN FOR THE SNOW BELT

VINE ST. ELEMENTARY SCHOOL, Bangor, Me.
EATON W. TARBELL & ASSOCIATES, Architects
VERRIER CONSTRUCTION CO., Contractor
WILLIAM K. WILSON, Consultant to School Committee



The finger-plan idea, tailored for the California climate, was just too good to leave in California. It has steadily been moving north and east. With this school* it has made the full trip—all the way to Maine.

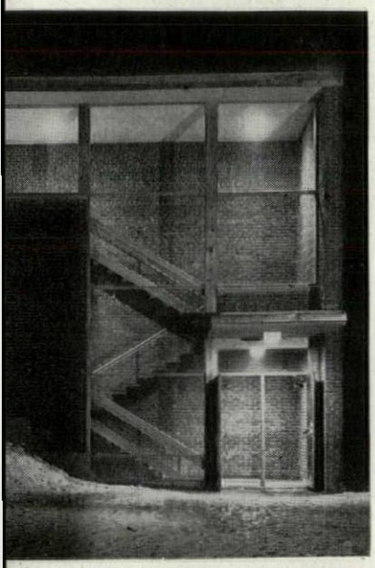
Architect Tarbell, reanalyzing the idea for one of the most rigorous climates in the US, has made the finger plan practical for temperatures that hit –30° and hover long around the 0° mark. His adaptations: 1) shorter fingers; 2) orientation for maximum solar heating; 3) heavily insulated northern exposures; 4) roofs designed to utilize the insulation value of snow; 5) courts sheltered against winter winds and snowdrifts.

Result: heating costs for Sept. '51–June '52 were $2,393.70 compared with $3,700.17 during the same period for a conventional Bangor elementary school with the same number of classrooms and comparable assembly area (37,500 gal. of oil for the new school, 57,900 for the conventional school). Cost of construction was an economical $11.32 per sq. ft., 75¢ per cu. ft. at 1950 prices.

This school is the first of several to be built in a long-range expansion and overhaul of Bangor's entire educational plant. It's three classrooms per grade and capacity of 600 students bring it to the maximum enrollment envisioned in the Bangor program; no new fingers will be added.

Main entrance, administration and special-activities areas divide the building into a lower school of single-loaded corridors reached by a corridor-ramp, and an upper school with double-loaded corridor. The architect would have preferred all single-loaded corridors, a scheme made

* One of the five top award winners in *School Executive* magazine's competition (AF, Apr. '52).

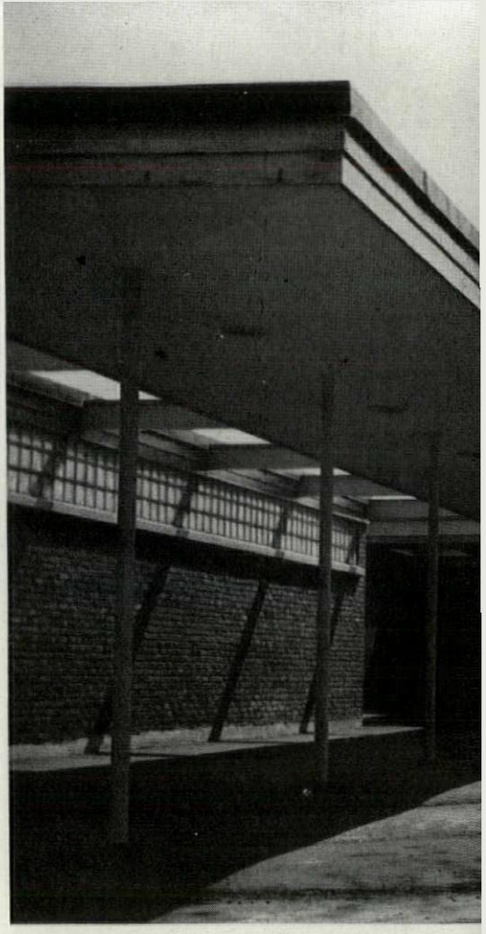


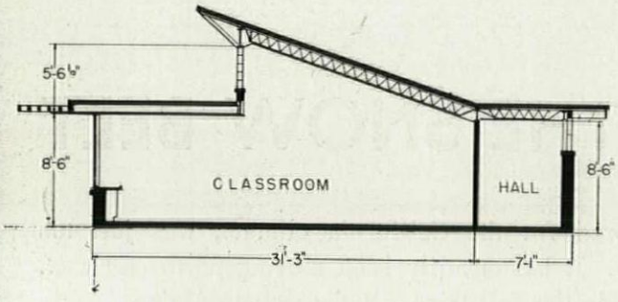
Stairwell bridges bank between school and playground. Rails and stairs (iron safety treads on steel channels) cost $1,500. Total stairwell cost: $8,750.

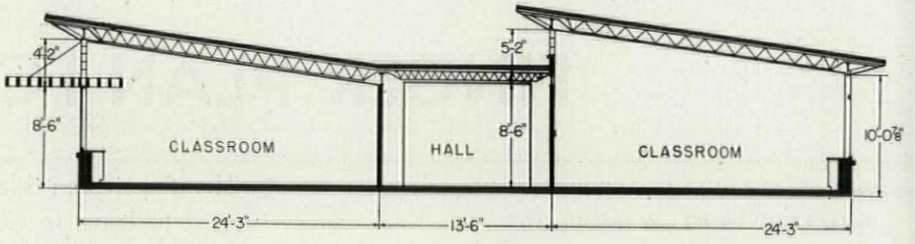
impossible by the 3½-acre site, but feels that the solution with its clear separation of age levels turned out happily. The division is carried neatly into the play areas: kindergarten and first graders share one play court; second and third graders each have another; upper-school children use the 6-acre playground of the adjoining junior-high school.

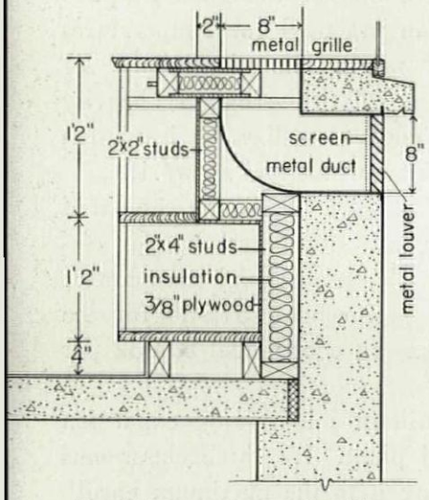
Like a settler chinking up his cabin, Tarbell warily searched out the points where cold or snow might gain the upper hand. He bridged the steep and sometimes icy bank between upper school and adjoining playground with an enclosed corridor and stair well; he gave children arriving by bus or car a porte-cochere; in the lower grades where childen play on the floor he supplemented the steam heating system with hot-water, radiant heating in the floor slab.

There is not a northern window that could be avoided in the whole building, but school superintendent Roland J. Carpenter reports, "the lighting is excellent." With the exception of five rooms in the upper school, all classrooms (and the cafeteria) are oriented south and slightly east. Single-loaded corridor classrooms are lighted by ¼" plate-glass windows shaded with fixed louvers and by south clerestories of directional glass block. Tarbell's decision to use this kind of cross section was determined from tests on models and on actual classrooms in five Maine schools he had previously built.









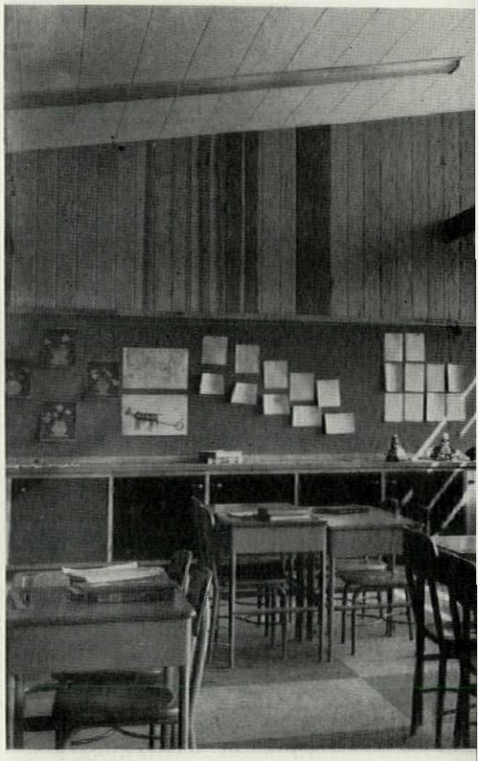
Ventilation panel, operating like a drawer beneath windowsill, controls intake of air through wall louvers. Device was used experimentally in two offices, has worked out well.

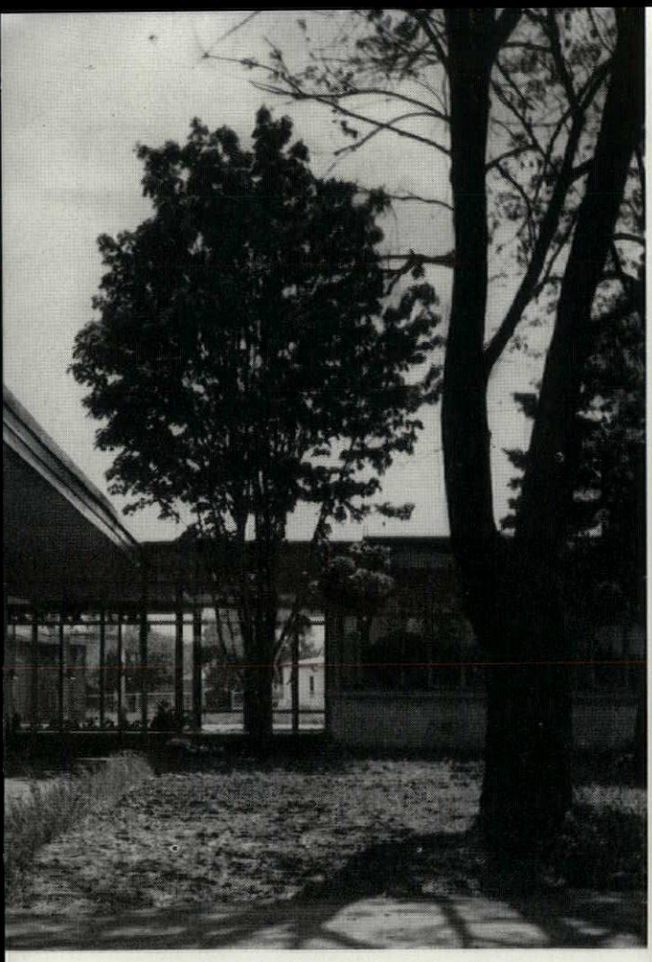
In the double-loaded corridor wing, south classroom windows are surmounted by glass block, with fixed louvers below the glass block carried through the wall into the classroom. Northern classrooms in this wing have double-glazed windows and south clerestories.

All classroom windows are fixed. Pneumatically controlled unit ventilators supply 18 cu. ft. of warmed air per minute per pupil. Return air is taken from the floor through the wardrobes by a duct and fan system. Administrative rooms have casement windows except for the clinic and women-teachers' lounge. There the architect experimented with his own design of a horizontal sliding ventilation panel which controls air coming into the room through the window sill (*see detail*). It has been so successful he plans to use it extensively in future buildings.

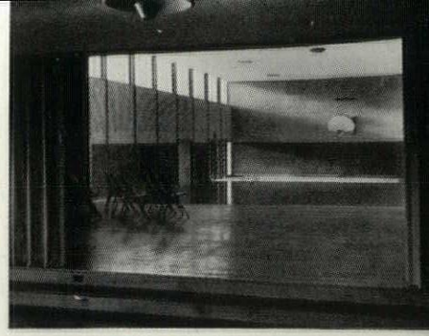
Along its northern faces, the building is armored against the full onslaught of the Maine winter. Corridors are lighted with one or two rows of glass block; walls are 8" brick with 2" insulation batts.

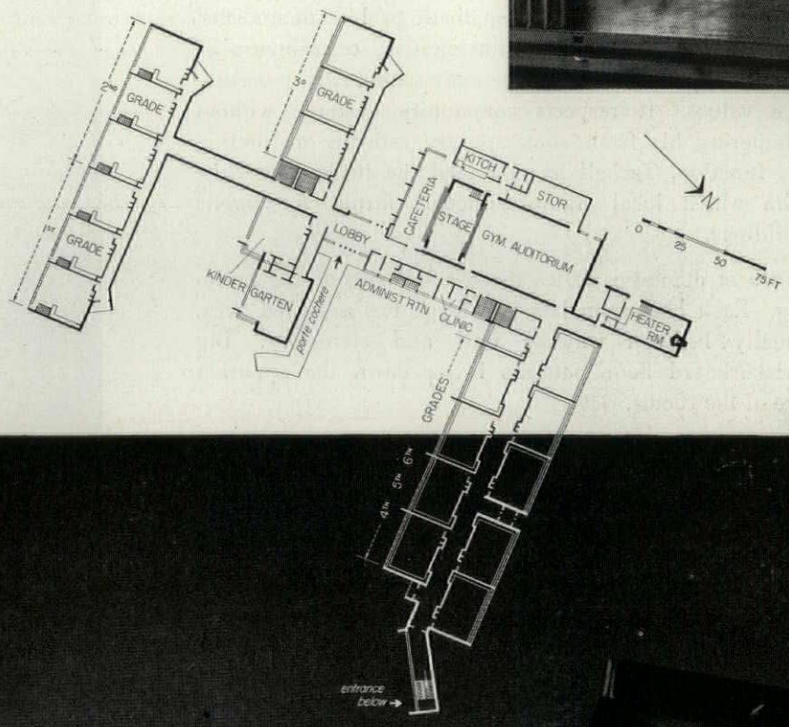
For some of the qualities that make this a good school for any region, *see the next page.*





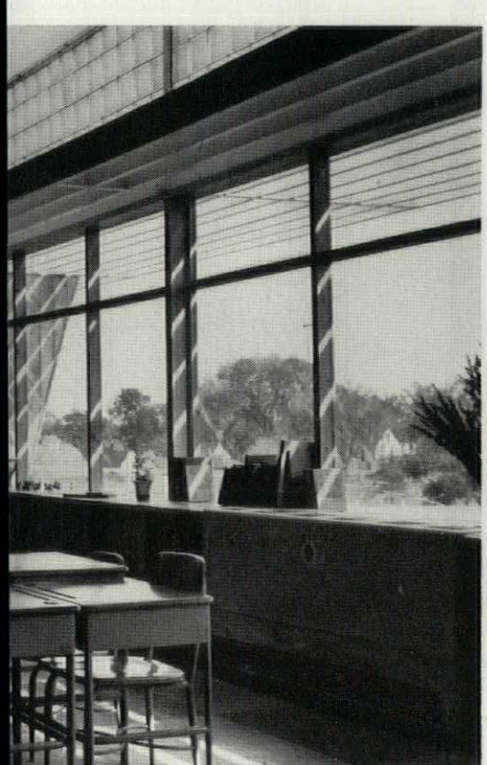
Special-activities stage is versatile. Its sound-resisting folding walls open, front or rear, into large gymnasium or small cafeteria.

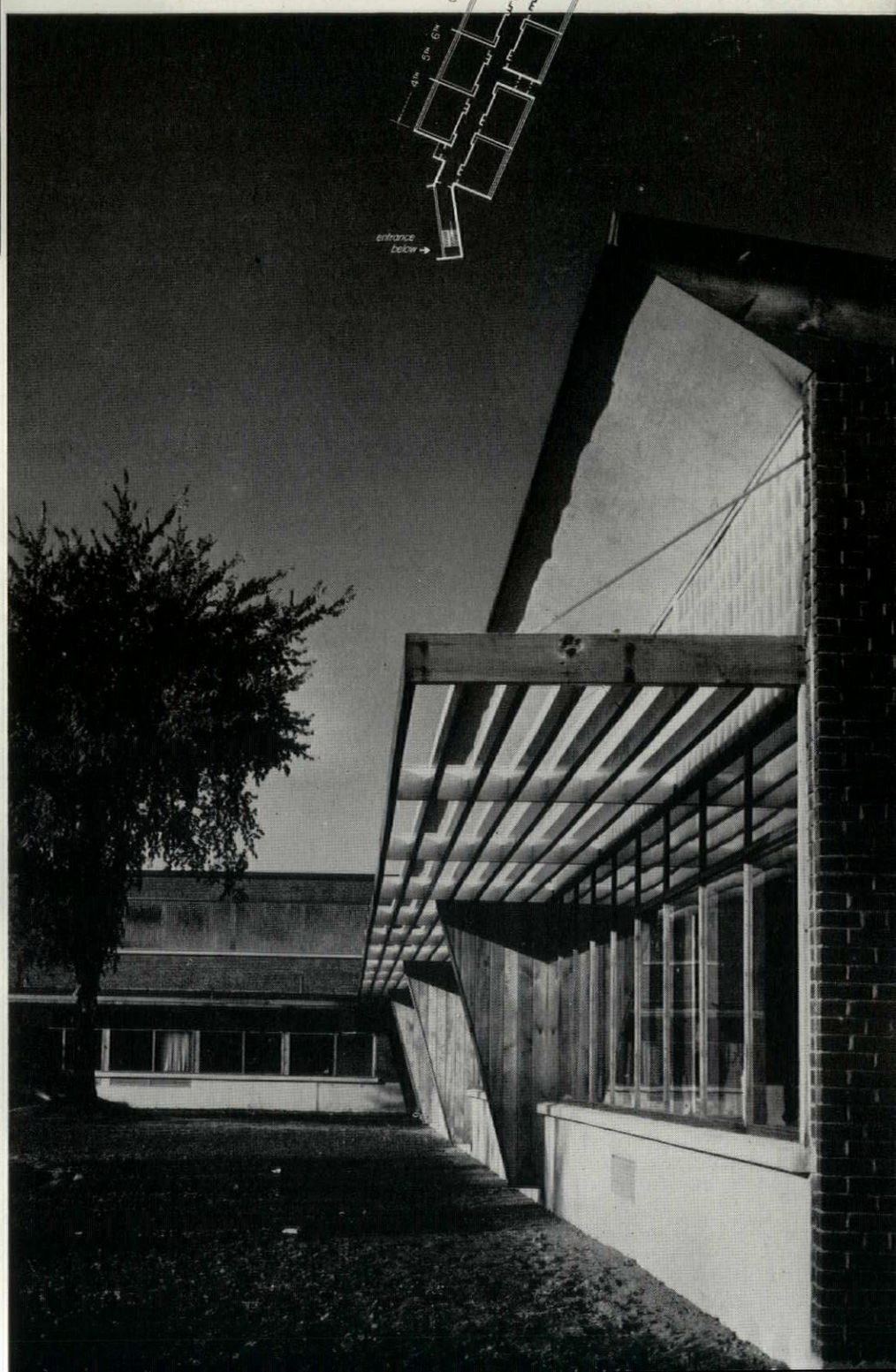




Glazed lobby (backed by two-way planting box) and administrative area divide building into distinct upper and lower schools. Porte cochere joins entrance to bus-loading dock.

South face of upper-classroom wing. Interior louvers are junior beams with wood fascia. Exterior louvers are wood joined by junior beams. Fins separate classroom windows, cut noise.





This is a building with the kind of good manners that come from the heart. Its warm and friendly character stems from the architect's sympathetic probing of students' and teachers' needs, from imaginative, organic use of color and pattern. It is an economy school rich in decorative values. It respects community custom; without hampering his fresh contemporary esthetic or limiting his function, Tarbell has retained the brick and white trim which local tradition deems fitting for public buildings.

Scale is domestic, belies the over-all size of the building. Each classroom has one large low-ceilinged area, usually between window wall and clerestory. Big checkerboard floor patterns bring down the apparent size of the rooms.

Color was planned in the early design stages to accent use and scale by demarcating the elements of the rooms. Bright hues are applied in small areas like cabinet doors, room doors, small walls. They stand against backgrounds of white or natural wood. In the lower school color spots are limited to the primaries and secondaries; in the upper classrooms the more complex tertiaries are introduced, as red-orange, orange-yellow etc. Classrooms are identified by their door colors and each room repeats its special color on the wall behind the sink, the teacher's closet door, certain cabinets. "Children themselves create color," says Tarbell. "We used bright colors direct from the palette to complement the gayness of their clothes, the spontaneity of their games and voices. They become in shape and size a part of those elements which belong to the children and their activities."

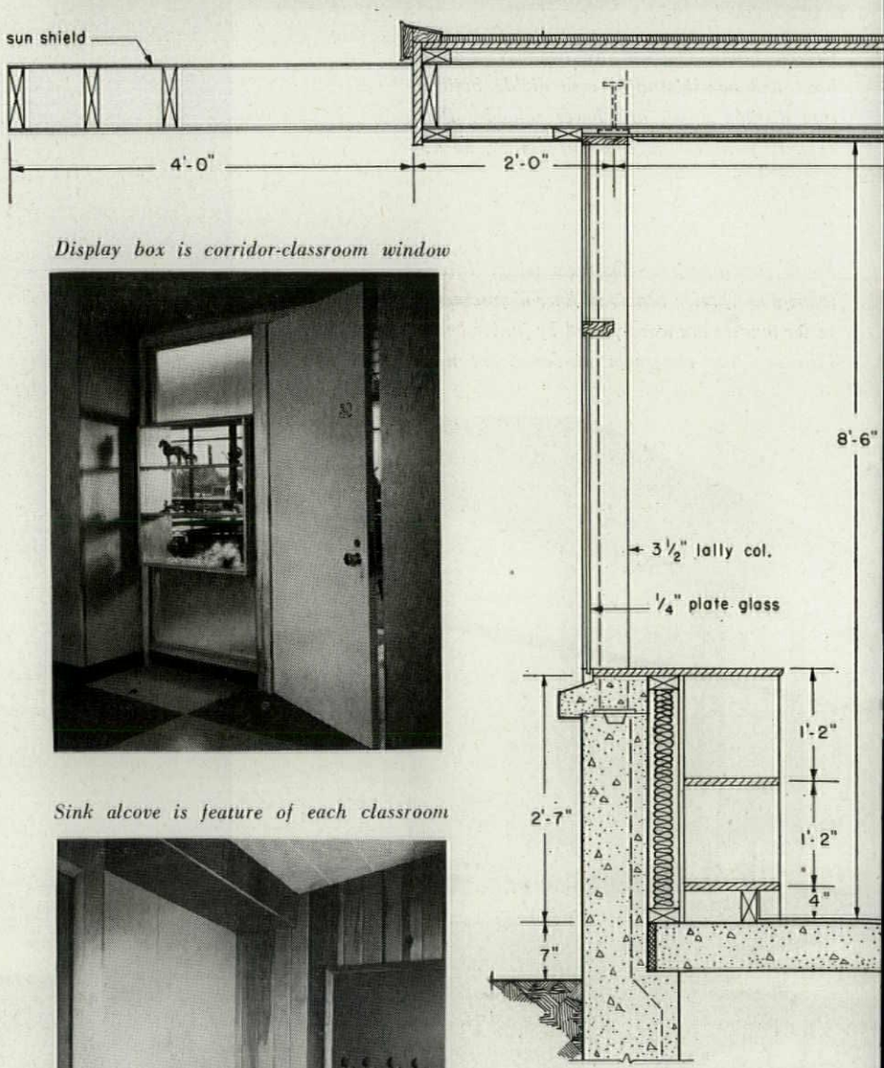
Built-in classroom furniture is ample and varied, includes a storage cubbyhole for each student, files for the teacher, cabinets for materials, shelves for books, displays, projects. Each room has its own sink (kindergarten and the first two grades also have separate classroom toilets). The two-way display case beside each classroom door permits the class and its public to enjoy three-dimensional exhibits, also provides an inconspicuous way of viewing the room from the corridor.

Separate entrances for each of the lower classes, related to gates in the site fence, accent the children's ownership feeling for their particular part of the school, break up the milling herds at arrival and departure. The kindergarten has the special intimacy of its own handsomely louvered play-court corner.

The special activities area is versatile. The stage of the combination auditorium-gymnasium has a sound-resisting folding wall both front and rear. The rear of the stage opens into the cafeteria so that by manipulation of curtains the stage can be used for small or large groups. Kitchen and serving counter are so placed that when need arises large groups can be served in the gymnasium.

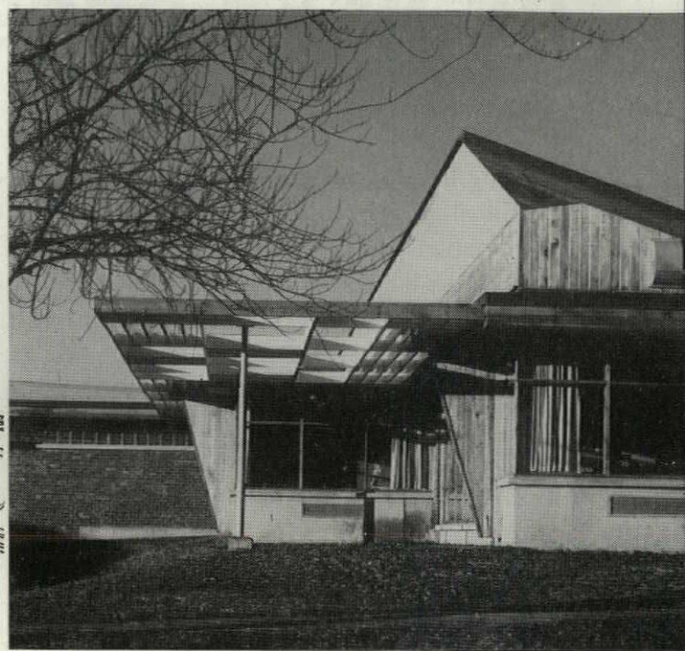
Cost data:

Total (excluding architect's fee of $26,676)	$444,599.00
Cost per room (gross)	21,980.00
Cost per room (excluding gymnasium, cafeteria, heater room)	16,466.00
Cost per student (excluding same)	576.00
Cost per sq. ft. (gross)	11.32
Cost per cu. ft. (gross)	.75



Display box is corridor-classroom window

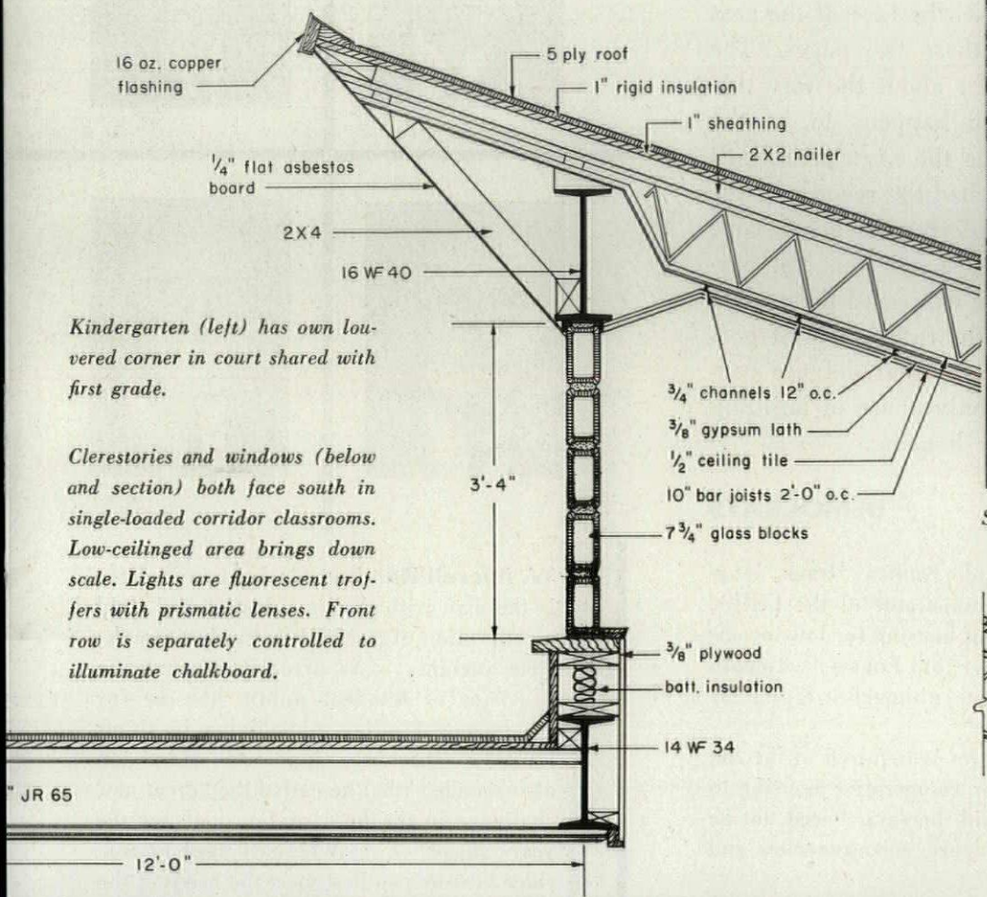
Sink alcove is feature of each classroom

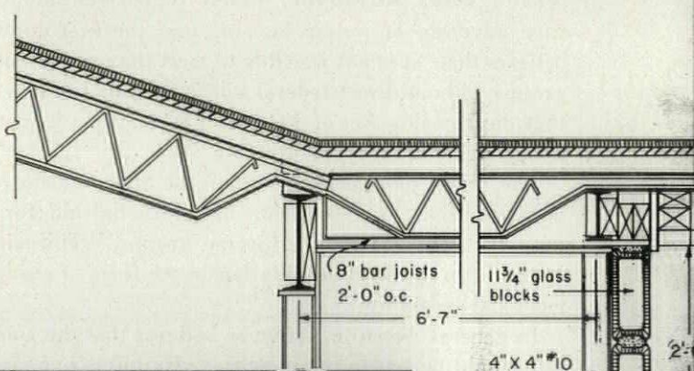


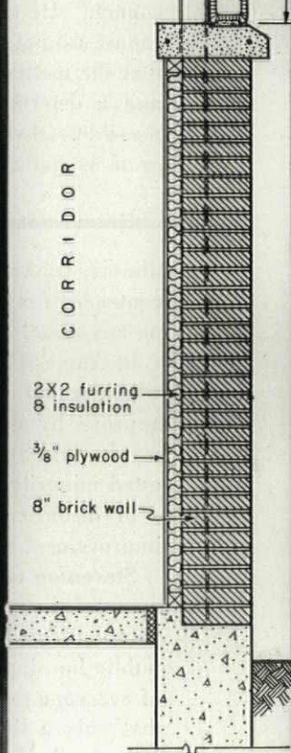
Staggered kindergarten rooms have both east and south lighting

Kindergarten (left) has own louvered corner in court shared with first grade.

Clerestories and windows (below and section) both face south in single-loaded corridor classrooms. Low-ceilinged area brings down scale. Lights are fluorescent troffers with prismatic lenses. Front row is separately controlled to illuminate chalkboard.







THE NEXT PRESIDENT

Where he stands on public housing

Barring the stalking possibility of a dark horse, the face of the next president of the US appears somewhere in these two pages. The construction industry is bound to feel concern about the way this man looks at its own business—which also happens to be the nation's No. 1 industry. To bring into focus the next president's attitude toward the industry, FORUM has searched the records of the would-be candidates from both parties. Considering the great scope and numerous problems of the industry, the search was not particularly fruitful. Few of the candidates have expressed themselves on the general economics of the industry, or the future role of government, or the growing importance of military and defense construction, or the relaxation of controls. The only phase of building which seems to be politically timely is public housing.

DEMOCRATS

Senator **Estes Kefauver,** whose supporters include Nathan Straus, longtime advocate of public housing and the first administrator of the USHA, believes that "it is not possible to meet the problem of housing for low-income groups without direct federal aid." Senator Kefauver told FORUM last month that the Housing Act of 1949 is "not wholly adequate, although it represents a long stride in the right direction."

The "chief modification" which the Senator believes is required of the Act is a provision for "extension of additional aid for co-operative housing to meet the needs of middle-income groups." This aid, he says, "need not be in the form of direct subsidy but in the form of guidance, encouragement and technical assistance."

In general, Senator Kefauver believes that the construction of public housing should be left to the localities. He offers one possible "exception" to this rule, however: "The construction of family-type housing for military personnel." He says: "Certainly the housing provided today for military personnel cannot be regarded, in many communities, as satisfactory. I believe that the matter is one which requires attention by the federal government—and a determination to raise standards of such housing as promptly as possible. Obviously, substantial modification of the Wherry Act housing program is indicated by its failure to achieve its avowed purpose."

W. Averell Harriman, who many believe is the man with the presidential nod, told a convention of public housers last month: "The attempts . . . to virtually eliminate the provision of low-rent public housing for low-income families now living in slums must be vigorously opposed." Harriman also sounded what he called the "great new challenge in the field of housing" for the years ahead: ". . . We shall need to consider how we can best meet the needs of the people of moderate means—the people who have no need for public housing, but cannot pay the high cost of so much of the private housing being built today. We must find ways and means of bringing the prices of good housing down to levels they can afford. That . . . is a challenge that will call for the best efforts of the whole industry—with the full co-operation of government.

Illinois' Governor **Adlai Stevenson** is a "draft" possibility, not an active contender for the nomination; consequently, he has taken no campaign stand on any issue. Such stands must be found in his gubernatorial record.

In Aug. '51 Stevenson vetoed a bill passed by the state's general assembly which would have required a majority of voters of any Chicago ward to approve by referendum any proposed public housing project within that ward. Said Stevenson in his veto message: the bill "would enable an interested minority to organize the opposition of those who might be fearful of —or inconvenienced by—a proposed housing project, thereby blocking an improvement which would be beneficial to the entire community."

Stevenson called the Housing Act of 1949 a "great opportunity to correct many of the worst conditions throughout the country . . ." Noting objections from builders to the act, he said: "You don't have to approve the principle of public housing or the idea of government subsidies for some at the expense of everyone to recognize that without public housing it is generally conceded that only a limited and unsatisfactory answer to the slum problem can be expected." However, he admitted, "the new federal Act, or any government subsidy, can never be the whole answer—the housing deficiency can only be met in the final analysis by full-scale private building."

Senator **Richard B. Russell,** the Southern Democrats' choice, is a deviationist from administration policies on civil rights, but has been a "regular" Democrat on many other matters—including public housing. Alabama Senator John J. Sparkman, who did much of the rear-guard committee fighting to get a public housing bill passed, backs Russell, noting that the Georgia Senator's "progressive" record includes support of public housing. Russell, however, bases part of his campaign on the need for "strict economy" in government, and has stated that "nonessential" federal spending must be curtailed in deference to the nation's heavy military and foreign aid commitments. He has not indicated whether he considers public housing to be one of the "nonessentials" to get the axe.

Republican politicos are absorbed in the neck-and-neck contest between General Dwight D. Eisenhower and Senator Robert A. Taft. Generally this is looked upon as a duel between the "liberal" and "conservative" elements of the party. When the spotlight is thrown on the issue of public housing, however, the contest takes on new proportions. Senator Taft's views on this issue are better known to the building industry than General Eisenhower's; hence, the general's attitude is examined at greater length here.

REPUBLICANS

Dwight D. Eisenhower has given no specific indications of his views on public housing. If he committed himself in 1949, while the debate was swirling through the halls of Congress (as president of Columbia University he was expressing himself at some length on more general issues), his opinion is not on record. In the absence of clearly expressed opinion, some speculation may be pertinent:

On the one hand General Eisenhower draws his most-publicized support from those "progressive" Republicans who have consistently championed public housing legislation. An observer might conclude that they reflect Eisenhower's views on domestic policy.

But none of these backers has attempted to represent the General's opinion on this issue. And there is a not-quite-firm but consistent conviction among interested observers—particularly professional public housers—that Eisenhower stands solidly against the concept of housing built with federal funds. Generally this belief is based on his many public condemnations, while he was president of Columbia, of "paternalistic" government and the growing emphasis on "personal security"—such as his 1949 speech in Galveston, Tex., in which he said: "If all Americans want is security, then they can go to prison. They'll have enough to eat, a bed and a roof over their heads. But . . . we owe it to ourselves to understand the nature of the times and not trade the principles that made this nation great for some panaceas dished out by a bureaucrat sitting in an easy chair in Washington."

Not all Eisenhower's support comes from the public-housing-minded members of his party. W. Walter Williams, who manages his New York headquarters, is a Seattle mortgage banker. He professes no detailed knowledge of the General's views, but he is convinced that Eisenhower's "attitude with respect to sound business principles would be very similar to that possessed by those of us who are actively engaged in the construction and related industries." Another industry member, who has had conversations with Eisenhower in the past, brings up the point that General Eisenhower has shown an opposition to subsidies of any kind.

Harold Stassen has made no pronouncement on public housing in his current campaign, presumably sticking to the views he expressed in the 1948 race. Then he declared himself in favor of public housing, but was opposed to any program in which the federal government would be the "landlord."

At that time he called also for governmental help in "modernizing the building industry," such as "backing for architectural and engineering advances in design and production, with results made available to all builders "without cost." He thought the government should take the lead in "lifting restrictive practices of some unions, and ending combinations of some material men and contractors, which together have prevented progress in housing comparable to that in mass production."

Robert A. Taft, regarded by many as the true champion of a conservative economic system, has made his reputation chiefly by his cautious approach to federal spending. Nevertheless, he has backed public housing. The Housing Act of 1949 bore his name and could not have passed without his support.

Some industry members, particularly mortgage bankers, explain that the Senator's support was a bit of political gambling, that he endorsed the bill only because he felt it politically expedient and counted heavily on its defeat in the House. (President Truman apparently shares this opinion. He told the National Housing Conference in Washington last month that Taft had turned against the legislation.) Senator Taft himself has defended his belief that federal aid for housing is justified. In a message to the same conference he wrote: "It is no reflection on private industry to say that it never has and probably never will meet the serious low-income problem in the housing field. The general theory of subsidizing low-income groups . . . does not involve any departure in principle from that which we have pursued (for) 150 years." But he has indicated a possible retreat from his previous stand by insisting that control of public housing be kept at state and local level. He has further advocated that all "nondefense" government programs (he didn't mention public housing specifically) be "held down."

Governor **Earl Warren** of California advocates public housing as a "last resort." He supported the present public housing bill "with minor modifications." More recently, he has urged the Republican party to hold to its 1948 platform, with its recommendation for federal housing aid "where necessary." Warren's own state, which enjoys a reputation of living under a balanced budget, has no state public housing authority, but under the governor's leadership it has established two postwar state-financed housing programs. One provides a revolving fund with which cities and counties can set up temporary housing facilities for veterans. The other permits the state to purchase surplus federal housing units from abandoned war centers and resell them to veterans and farmers.

BIG DOUBLE HOSPITAL: Skillful handling of traffic and service flow by US architects integrates maternity and general health facilities for 850 Peruvian inpatients

This big hospital is an international show piece, built in Lima, Peru from US designs.

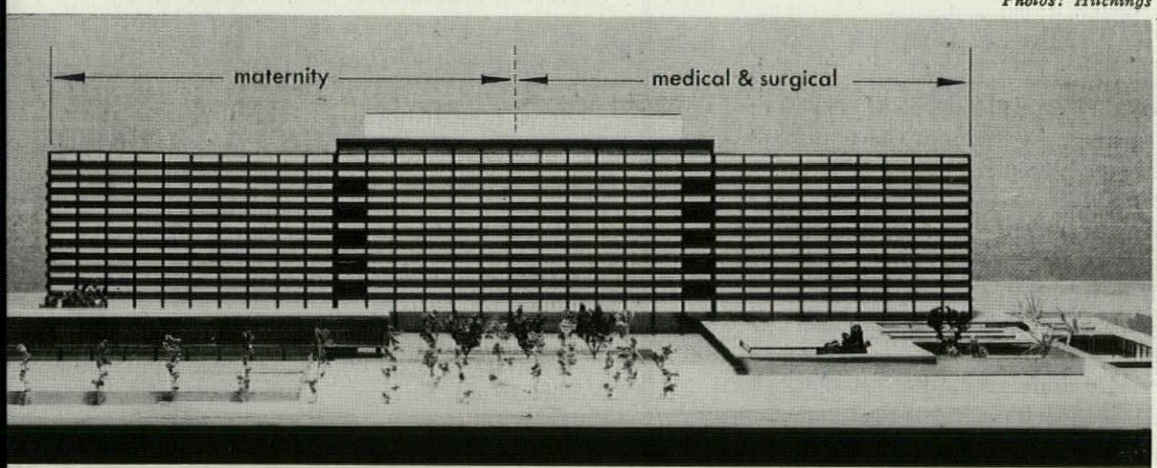
▸ *The USPHS Hospital Facilities Division, consultants for the Republic of Peru, wanted a show piece of US architectural talent adapted to the special social institutions of another people.*

▸ *The Peruvian authorities wanted not only the last word in hospital facilities and amenities for a large proportion of the working population of Lima but also a show piece, a standard setter, for all Latin America.*

▸ *US architects Ed Stone and A. L. Aydelott wanted a show piece which would reconcile the complex mechanics of a 500-bed general hospital and a 350-bed maternity hospital (each having a large outpatient clinic) with a humanized, opened-up and seemingly easy-going plan.*

LOCATION: Lima, Peru
EDWARD D. STONE and A. L. AYDELOTT, Associated Architects
(Robert W. Hegardt, Job Captain)
MERRILL & MANN, Structural Engineers
PETER W. BRUDER, Mechanical and Electrical Engineers

Photos: Hitchings



Penthouse	*Doctors' residence*	
13	*future expansion*	*gen. nursing; psych.*
12	*infected maternity*	*contagious deseases*
11	*maternity*	*future expansion*
10	"	*general nursing*
9	"	" "
8	"	" "
7	"	" "
6	"	" "
5	"	" "
4	"	" "
3	"	" "
2	*premature*	*surgery* "
1	*staff*	*main lobby* *adjunct fac.*
B	*staff*	*services*

Building is split down the middle with integrating services in first floor, basement. Rear portion of first floor outside dotted line on model (facing page) was eliminated.

Among them they have created a hospital noteworthy for: 1) its simple organization of tremendously complex functions; 2) its open, patio-dotted ground floor, certainly one of the world's pleasantest and easiest to navigate for patients and staff; 3) its careful regard for the customs of those who will use it; 4) its complete and decisive division of some facilities and its equally complete and convenient integration of others; and 5) its thoroughgoing traffic rationale, consistent in detail and in the whole.

The hospital will serve 75,000 Lima *empleados* (white collar workers) recently brought into Peru's social security scheme, will provide maternity care for their wives and clinical care for infants, will serve as a base for a network of smaller *empleado* hospitals throughout the country. A somewhat parallel system for manual workers has been operating for more than a decade around a Lima base designed by Stevens, Curtin and Mason.

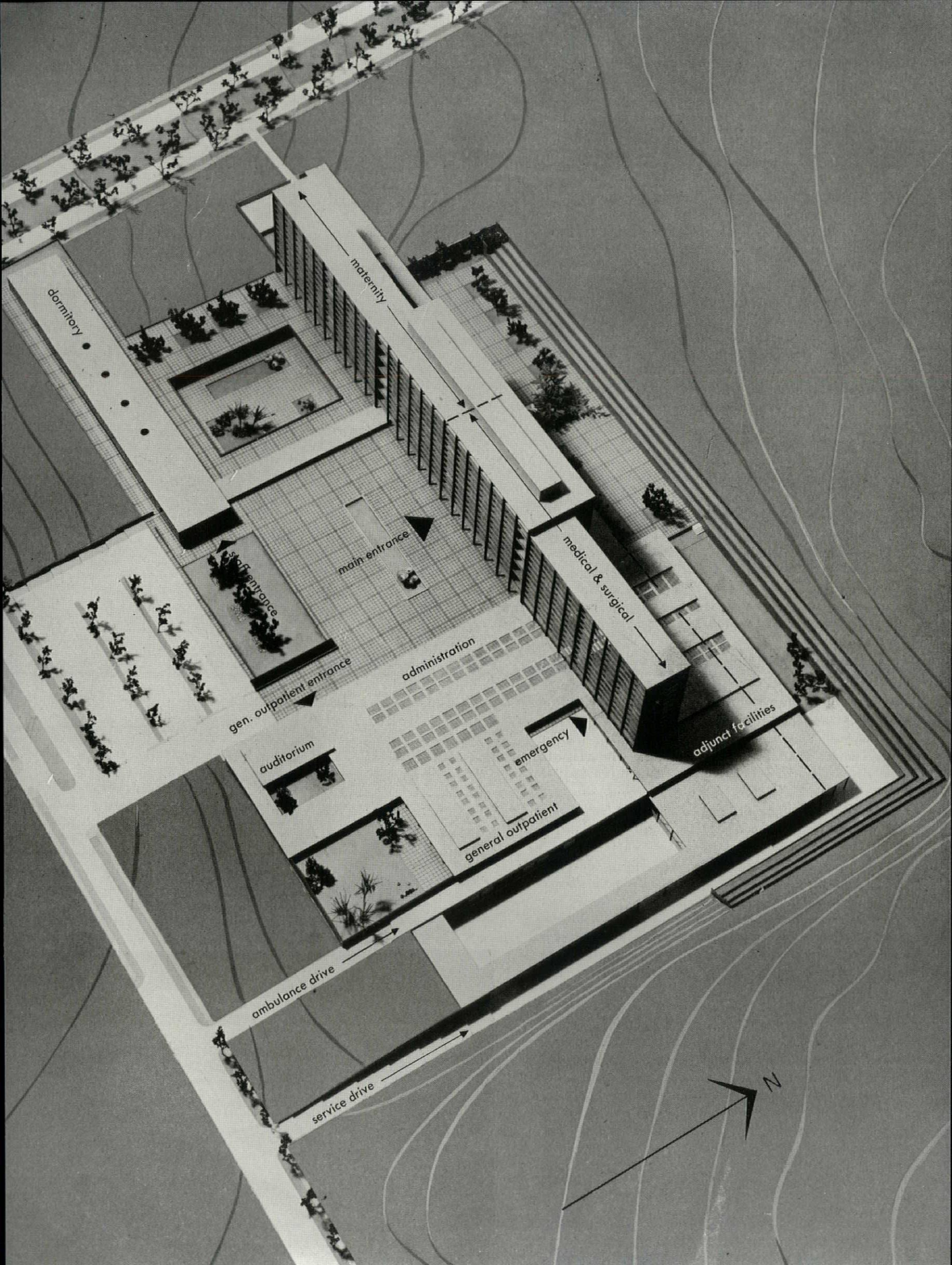
By any standard the *empleados'* hospital is big. Besides having 850 beds, it will treat 589 maternity outpatients and 630 general outpatients per six-hour day. It will have 400 nurses, 100 doctors, 1,500 employees.

Yet for all its size it is neither overwhelming nor confusing. That is because the architects rejected scheme after scheme until they found one in which the many complexities could be resolved into a single whole.

The hospital is located in a pleasant residential neighborhood, set at the corner of a 50-acre plot once intended as a campus for San Marco University. Its paved and planted entrance court and many patios are leisurely and welcoming. To the left, enclosed by the dormitory and its masonry-screened walk, are the separate garden, dining, and facilities area for staff and employees. To the right is the general out-

CENTRAL HOSPITAL OF SOCIAL SECURITY FOR EMPLOYEES (S.S.E.): General Manuel A. Odria, president of the Republic of Peru, founder of S.S.E.; Dr. Edgardo Rabagliati, minister of public health; Dr. Guillermo Kaelin, general director Social and Hospital Assistance; Mr. Ernesto Zapata Ballon, manager National Social Security Agency; Dr. Guillermo Almenara, General Superintendent of Hospitals, National Social Security Agency; Mr. Jorge Aubry, Manager S.S.E.; Mr. Richard Malachowski, Chief Architect, S.S.E.

Developed in co-operation with US PUBLIC HEALTH SERVICE, Divisions of Hospital Facilities and Medical & Hospital Resources: John W. Cronin and John W. McGibony, Medical Directors; Peter Pfisterer, Hospital Architect in Charge of Project.


dormitory
maternity
main entrance
staff entrance
medical & surgical
gen. outpatient entrance
administration
auditorium
emergency
adjunct facilities
general outpatient
ambulance drive
service drive
N

patient, administrative and public auditorium wing, flanked by the neatly arranged, parallel entrances for ambulances and service. Backing up the whole is the central nursing unit slab, its facade broken by two-story terraces (with inset balconies on alternate floors) which carry the motif of leisure and welcome into the elevator and waiting corridors of the upper floors.

No sun protection, solar orientation or drainage for sunken patios was necessary, because Lima lies in that paradox, a humid desert. It almost never rains, but for more than eight months of the year the sun hardly ever shines either. Except in operating and delivery rooms, there is no heating or cooling because the temperature rarely drops below 60° or rises above 80°. This is the nearest thing to a climatic vacuum an architect is apt to find.

But there were other problems. Hardest, and chief determining factor in the scheme was *how to make the maternity hospital and the general hospital completely distinct and yet completely integrated.* In Peru childbirth is regarded as an exciting, wholesome event which has nothing to do with illness and should be kept strictly apart from arrangements for sick people. This division had to be reconciled with the provision of a central lobby for ceremonial occasions and with use by both hospitals of all facilities not in direct contact with the patient.

Separation was achieved by:

- Splitting the hospital down the middle from the top to the third floor in one bold operation, each side served by its own passenger and service elevators;
- Confining maternity outpatient traffic to the central wing ground floor, and general outpatients to the large east wing (the closest the two ever impinge is at opposite sides of the joint laboratory);
- Duplicating a few facilities such as admitting, X-ray examination, medical records.

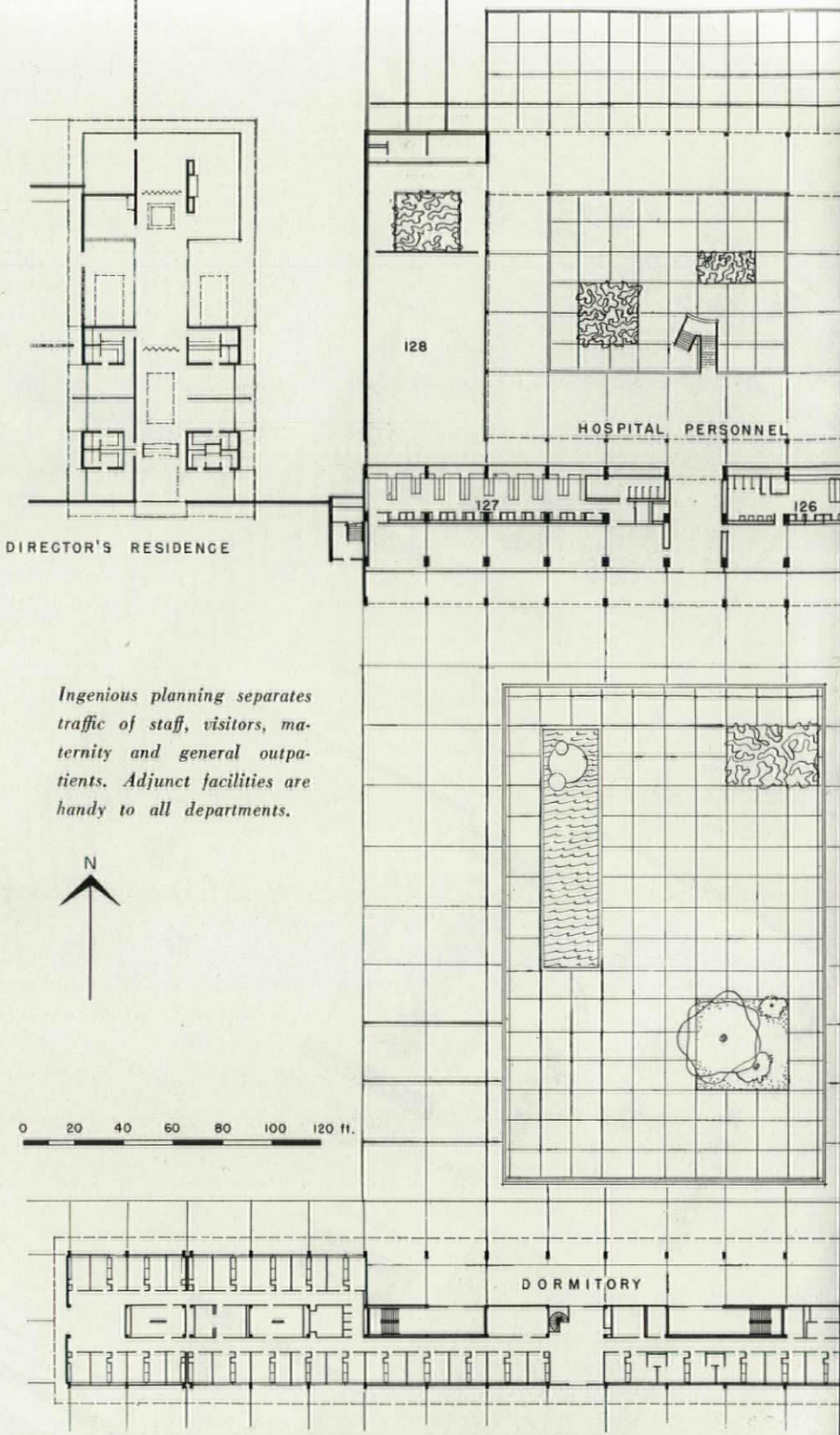
Integration (from outside, the invisible suture might be criticized as not expressive of the incision) was achieved by:

- A completely free basement, housing the central kitchen, stores, laundry, pharmacy and sterile supply, with adequate areas devoted to circulation feeding into the two vertical cores:
- A central lobby information and control point from which visitors and incoming patients are directed immediately toward either of the two cores.

Circulation is as pat and deceptively simple as a double-crostic, stems directly from the virtues of the basic scheme.

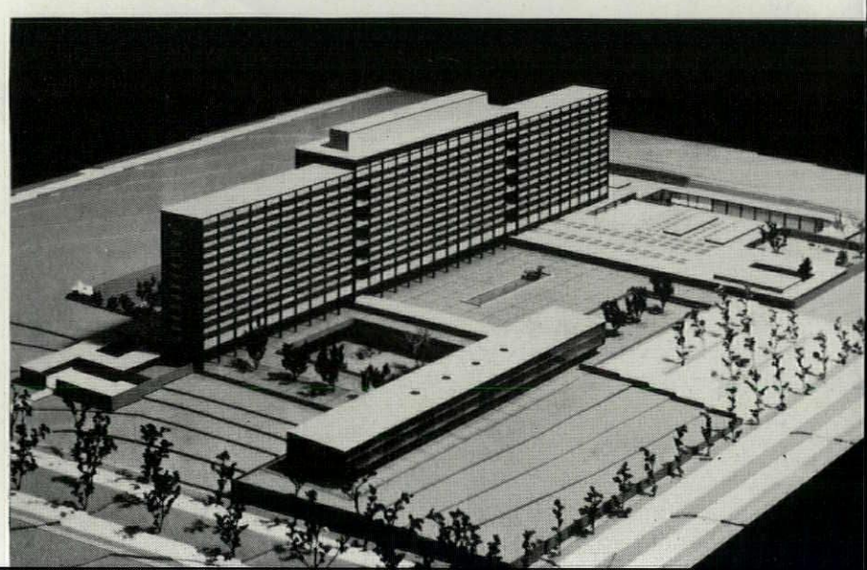
Administration is disposed along the edge of the big east wing where its callers, although they must first pass the central lobby control point, do not cross core or outpatient traffic. It is separated from the outpatient department by facilities which both use: medical records and library (just as maternity and general outpatients are separated by a joint facility). Adjunct diagnostic and treatment departments are in the northeast corner where paths from general outpatient, from the core, and from emergency converge.

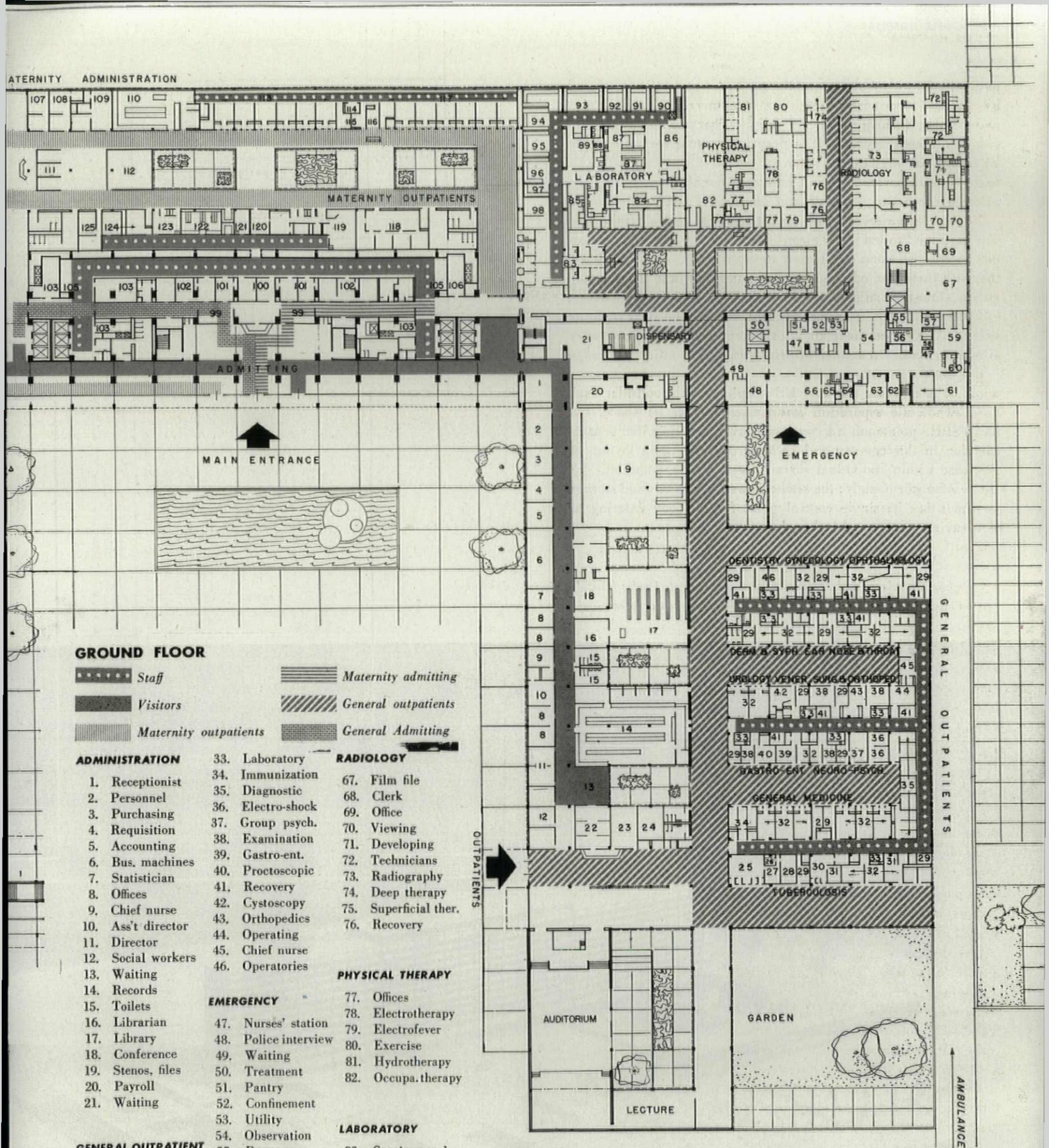
Worth noting is the consistent separation of staff and patient traffic in both outpatient departments, managed by staff corridors opening into back doors of examining and treatment rooms. In maternity outpatient, this works out as a rectangular route for patients, flanked by two parallel staff corridors; in general outpatient, it yields an interlocking finger system. Eventually, continuing the interlocking fingers, this department can expand southward into the area now garden.



Ingenious planning separates traffic of staff, visitors, maternity and general outpatients. Adjunct facilities are handy to all departments.

Peculiar climate prevents sunken patios from becoming heat or water traps





GROUND FLOOR

Staff
Visitors
Maternity outpatients
Maternity admitting
General outpatients
General Admitting

ADMINISTRATION

1. Receptionist
2. Personnel
3. Purchasing
4. Requisition
5. Accounting
6. Bus. machines
7. Statistician
8. Offices
9. Chief nurse
10. Ass't director
11. Director
12. Social workers
13. Waiting
14. Records
15. Toilets
16. Librarian
17. Library
18. Conference
19. Stenos, files
20. Payroll
21. Waiting

GENERAL OUTPATIENT

22. Admitting
23. Home call sched.
24. Medical sec'y
25. Chest X-rays
26. Darkroom
27. Viewing
28. Film file
29. Office
30. Pneumothorax
31. Fluoroscopy
32. Exam. & treat.
33. Laboratory
34. Immunization
35. Diagnostic
36. Electro-shock
37. Group psych.
38. Examination
39. Gastro-ent.
40. Proctoscopic
41. Recovery
42. Cystoscopy
43. Orthopedics
44. Operating
45. Chief nurse
46. Operatories

EMERGENCY

47. Nurses' station
48. Police interview
49. Waiting
50. Treatment
51. Pantry
52. Confinement
53. Utility
54. Observation
55. Doctors
56. Clean up
57. Laboratory
58. X-ray
59. Fractures
60. Scrub up
61. Operating
62. Anesthesia stor.
63. Exam. & Treat.
64. Nurses
65. Chauffers
66. Stretchers

RADIOLOGY

67. Film file
68. Clerk
69. Office
70. Viewing
71. Developing
72. Technicians
73. Radiography
74. Deep therapy
75. Superficial ther.
76. Recovery

PHYSICAL THERAPY

77. Offices
78. Electrotherapy
79. Electrofever
80. Exercise
81. Hydrotherapy
82. Occupa. therapy

LABORATORY

83. Specimen col.
84. Blood bank
85. Technicians
86. Museum
87. Media prep.
88. Sterilizing
89. Stores
90. Pathology
91. Parasitology
92. Bacteriology
93. Chemistry
94. Urinalysis
95. Blood cytology
96. Sereology
97. Centrifuge
98. Office

LOBBY

99. Admitting
100. Switchboard
101. Social workers
102. Examination
103. Pharmacy stor.
104. Gift shop
105. Stretchers
106. Chapel

MATERNITY ADMINISTRATION

107. Requisitions
108. Chief nurse
109. Director
110. Records

MATERNITY OUTPATIENT

111. Admitting
112. Classroom
113. Examination
114. Utility
115. BMR & EKG
116. Prep.
117. Examination
118. Pediatrics
119. Fluorscopy
120. Viewing
121. Developing
122. Film file
123. Chest X-ray
124. Technicians
125. Social workers

HOSPITAL PERSONNEL

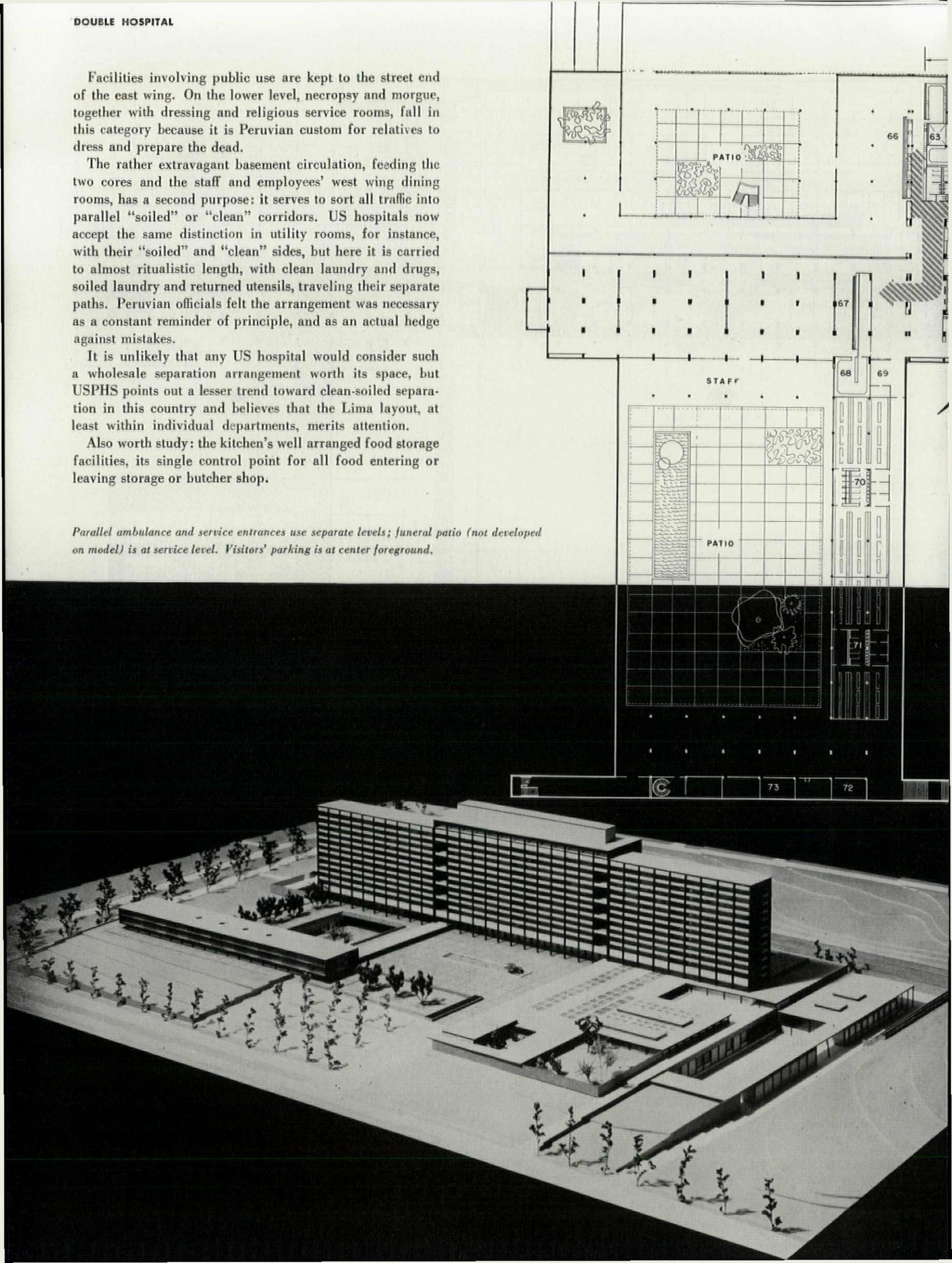
126. Doctors' lockers
127. Nurses' lockers
128. Chapel

Facilities involving public use are kept to the street end of the east wing. On the lower level, necropsy and morgue, together with dressing and religious service rooms, fall in this category because it is Peruvian custom for relatives to dress and prepare the dead.

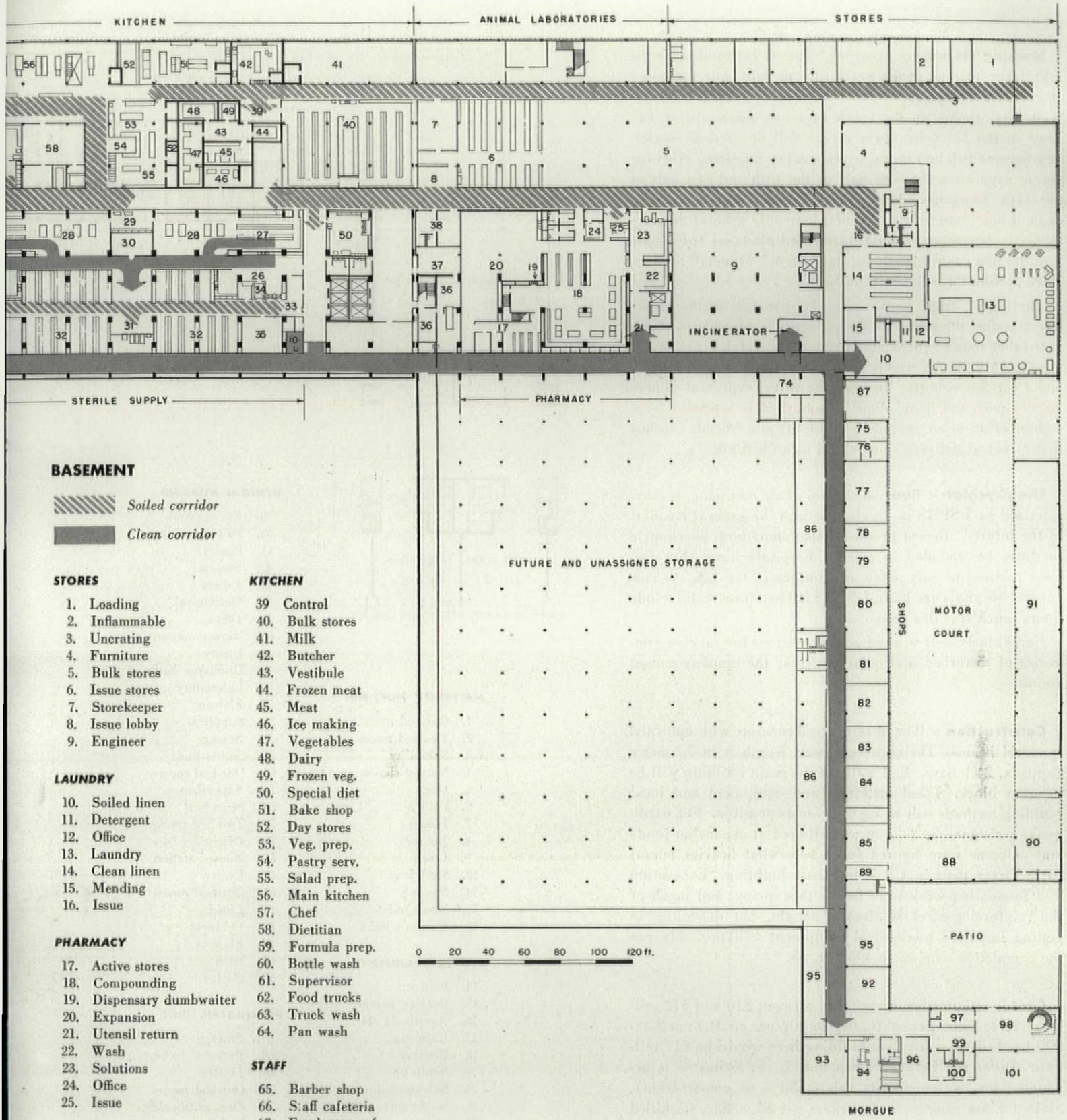
The rather extravagant basement circulation, feeding the two cores and the staff and employees' west wing dining rooms, has a second purpose: it serves to sort all traffic into parallel "soiled" or "clean" corridors. US hospitals now accept the same distinction in utility rooms, for instance, with their "soiled" and "clean" sides, but here it is carried to almost ritualistic length, with clean laundry and drugs, soiled laundry and returned utensils, traveling their separate paths. Peruvian officials felt the arrangement was necessary as a constant reminder of principle, and as an actual hedge against mistakes.

It is unlikely that any US hospital would consider such a wholesale separation arrangement worth its space, but USPHS points out a lesser trend toward clean-soiled separation in this country and believes that the Lima layout, at least within individual departments, merits attention.

Also worth study: the kitchen's well arranged food storage facilities, its single control point for all food entering or leaving storage or butcher shop.



Parallel ambulance and service entrances use separate levels; funeral patio (not developed on model) is at service level. Visitors' parking is at center foreground.



BASEMENT

Soiled corridor

Clean corridor

STORES

1. Loading
2. Inflammable
3. Uncrating
4. Furniture
5. Bulk stores
6. Issue stores
7. Storekeeper
8. Issue lobby
9. Engineer

LAUNDRY

10. Soiled linen
11. Detergent
12. Office
13. Laundry
14. Clean linen
15. Mending
16. Issue

PHARMACY

17. Active stores
18. Compounding
19. Dispensary dumbwaiter
20. Expansion
21. Utensil return
22. Wash
23. Solutions
24. Office
25. Issue

STERILE SUPPLY

26. Clean up
27. Raw stores
28. Work room
29. Gloves
30. Supervisor
31. Sterilizing
32. Sterile stores
33. Dispensing
34. Surgery elva.
35. Nonsterile
36. Mattress sterilizing
37. Mattress stor.
38. Housekeeper

KITCHEN

39 Control
40. Bulk stores
41. Milk
42. Butcher
43. Vestibule
44. Frozen meat
45. Meat
46. Ice making
47. Vegetables
48. Dairy
49. Frozen veg.
50. Special diet
51. Bake shop
52. Day stores
53. Veg. prep.
54. Pastry serv.
55. Salad prep.
56. Main kitchen
57. Chef
58. Dietitian
59. Formula prep.
60. Bottle wash
61. Supervisor
62. Food trucks
63. Truck wash
64. Pan wash

STAFF

65. Barber shop
66. Staff cafeteria
67. Employees caf.
68. Dishwashing
69. Timekeeper
70. Women's lockers
71. Men's lockers
72. Gardener
73. Dormitory stor.

SHOPS

74. Cans, bottles
75. Drafting
76. Bldg. sup't
77. Sheet making
78. Mattress repair
79. Refrigeration
80. Carpentry
81. Plumbing
82. Electrical
83. Heavy machine
84. Light machine
85. Paint
86. Storage

MOTOR COURT

87. Loading
88. Repair
89. Tools
90. Wash, gas.
91. Garage

MORGUE

92. Laboratory
93. Equipment
94. Autopsy
95. Unassigned
96. Morgue
97. Office
98. Foyer
99. Vestibule
100. Dressing
101. Funeral

Basement separates soiled and clean traffic. Major soiled corridor feeds from elevators and linen chutes into pharmacy, incinerator, laundry, morgue.

Nursing Floors are generous. This is believed to be the only large hospital in the world with private bath, including shower, for every room other than a few on the psychiatric floor. All rooms on the south face are single, 10′ x 12′. Most of the 12′ x 16′ north rooms will be used as singles, can become two-bed rooms as expansion requires. Also for future expansion, the west half of the 13th and east half of the 11th floors have been left unfinished, can be used to expand both maternity and general, or only general nursing, as needs determine. "Good, farsighted planning for a base hospital in a co-ordinated hospital system," Marshall Shaffer, chief architect for USPHS calls it.

The use of single rooms, plus the dispersal of the 18 delivery rooms through nine floors, made it possible to eliminate labor rooms. Incidentally, the dispersed delivery rooms are the only feature which USPHS would be loath to recommend for this country. In Peru, however, expectant fathers do not pace the floor alone. Each vigil is attended by a retinue of 15 or so, including children; and officials foresaw that a central delivery suite would mean bedlam.

The psychiatric floor, at the top of the east wing, is characterized by USPHS as "a glimpse into the general hospital of the future." Recent proposals that short term psychiatric facilities be included in general hospitals have, thus far, been realized in only a few institutions in the US. As new general hospitals are built, USPHS believes they will include floors much like this one.

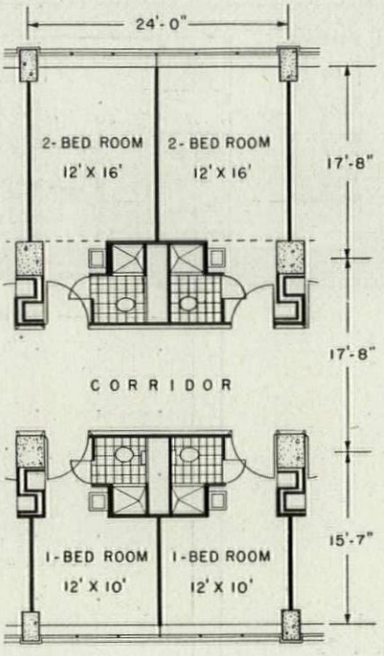
Particularly well worked out: provisions for varying categories of disturbed and quiet patients; the ample common rooms.

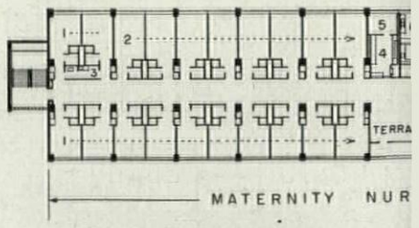
Construction will be of reinforced concrete with upturned spandrel beams. The entire east-west length is in 7.3-meter (approx. 24′) bays. End walls of the main building will be terrazzo block. Local materials and equipment and local building methods will be used as far as possible. For earthquake resistance, an 8″ gap was allowed at expansion joints and columns were figured for a somewhat heavier lateral force factor than in US West Coast building. Excavation and foundation work were begun this spring, and much of the reinforcing steel is already bought, but difficulties in getting imported mechanical equipment will probably put the completion date off to 1954 or '55.

Cost is estimated in Lima to be between $10 and $12 million ($8 to $9.60 per sq. ft., 67¢ to 80¢ per cu. ft.); at $20,000 per bed, an equivalent building here would be $17 million. Difference between Lima and U. S. estimates is accounted for by labor costs (about 50% of construction). Skilled Lima construction workers get $2 a day, unskilled 80¢. The building is being financed from the social insurance fund, to which *empleados* pay 1½% of wages, employers 3% and the Peruvian government ½%. About three-fifths of the fund currently goes to building, the rest for current medical care of *empleados* in private institutions. Bringing home the Peru-US difference in cost factors is the fact that accommodations in the best suite of the best private hospital in Lima come to $7 a day.

When the *empleados*' building program is completed, funds now used for construction will probably go into sickness and old age pensions, a program followed by the parallel manual workers' organization after its hospital network was finished.

Largest wards are two-bed for flexibility and because all patients contribute to care on same basis.





TYPICAL NURSING FLOOR

MATERNITY NURSING

1. One-bed rooms
2. Two-bed rooms
3. Subutility
4. Nurses' station
5. Office
6. Utility
7. Flowers
8. Janitor
9. Linen
10. Stretchers
11. Storage
12. Men's toilet
13. Women's toilet

DELIVERY, NURSERIES

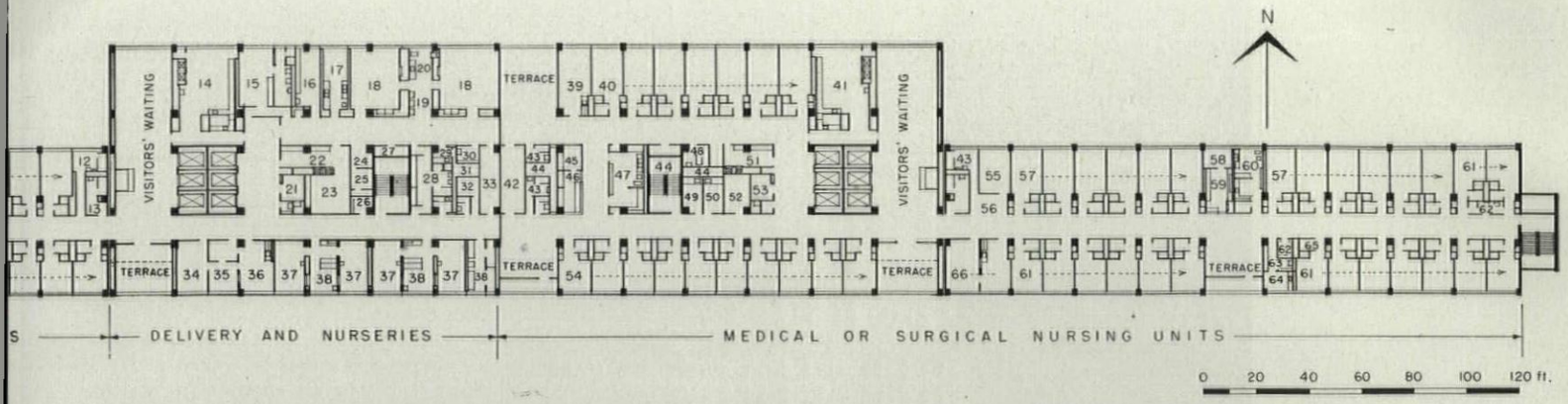
14. Pantry
15. Doctors' lounge
16. Anesthesia stor.
17. Clean up
18. Delivery
19. Scrub up
20. Sub sterilizing
21. Soiled linen
22. Supplies
23. Workroom
24. Recorder
25. Supervisor
26. Linen
27. Mechanical
28. Nurses' lockers
29. Laboratory
30. Janitor
31. Mechanical
32, 33. Storage
34. Supervisor
35. Doctor
36. Examination
37. Six bassinets
38. Exam. & treatment

GENERAL NURSING

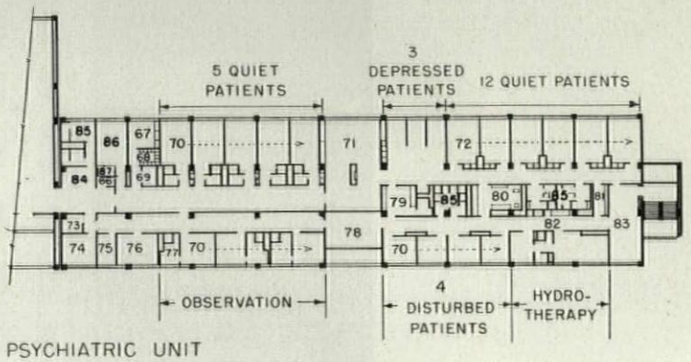
39. Examination
40. Two-bed rooms
41. Pantry
42. Storage
43. Toilets
44. Mechanical
45. Office
46. Nurses' station
47. Utility
48. Discharge bath
49. Laboratory
50. Flowers
51. Supplies
52. Storage
53. Soiled linen
54. One-bed rooms
55. Supervisor
56. Stretchers
57. Two-bed rooms
58. Office
59. Nurses' station
60. Utility
61. One-bed rooms
62. Linen
63. Cabinets
64. Flowers
65. Bath
66. Doctor

PSYCHIATRIC UNIT

67. Storage
68. Patients' lockers
69. Janitor
70. One-bed rooms
71. Occupa. therapy
72. Two-bed rooms
73. Secretary
74. Consultation
75. Doctor
76. Examination
77. Bath
78. Day room
79. Nurses' station
80. Utility
81. Linen
82. Utility
83. Day room
84. Waiting
85. Toilets
86. Dining room
87. Pantry



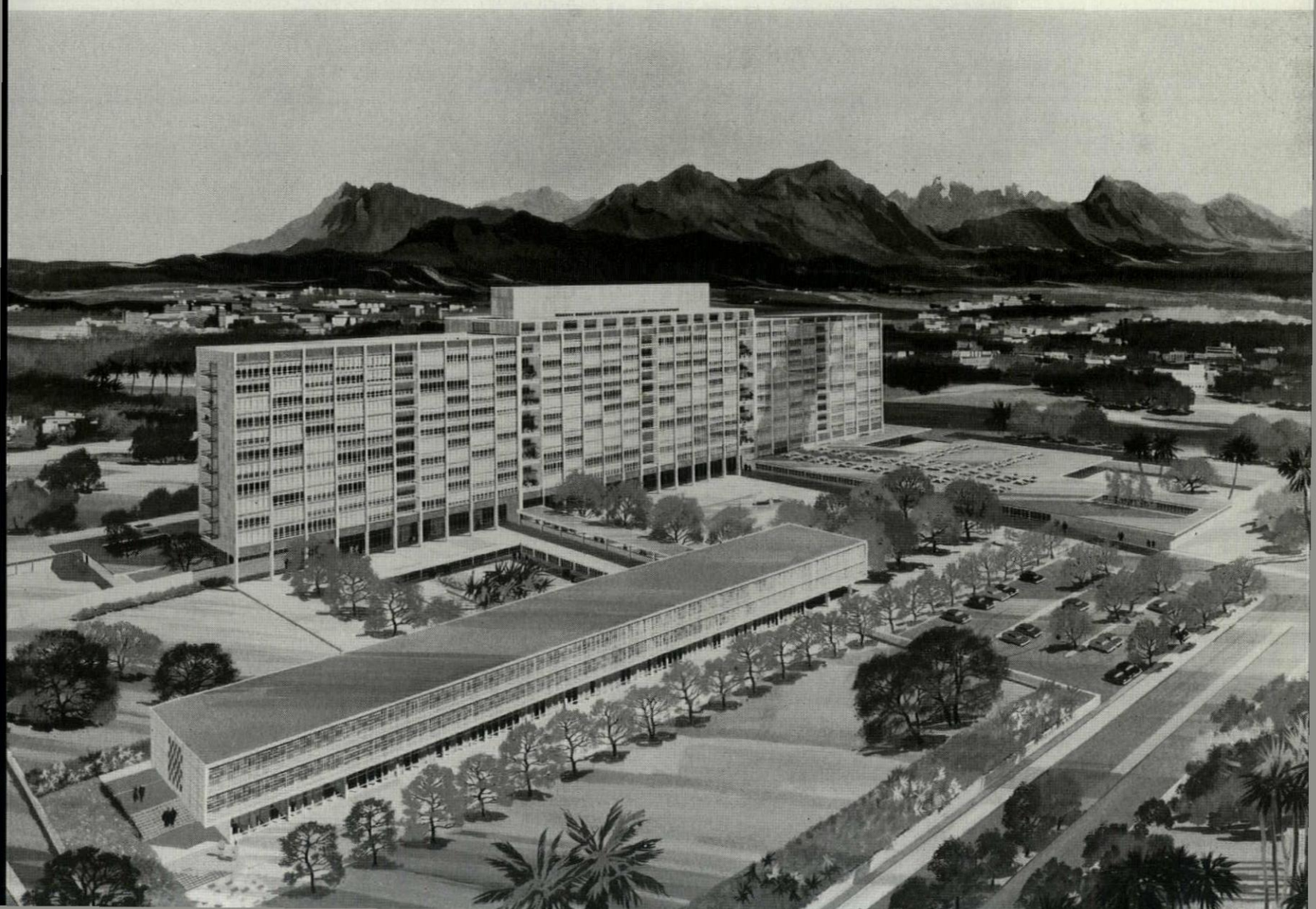
East and west halves of typical floor have only fire door connection. Nurseries may be over-designed if most mothers prefer "rooming-in" (keeping infants with them in bedrooms).

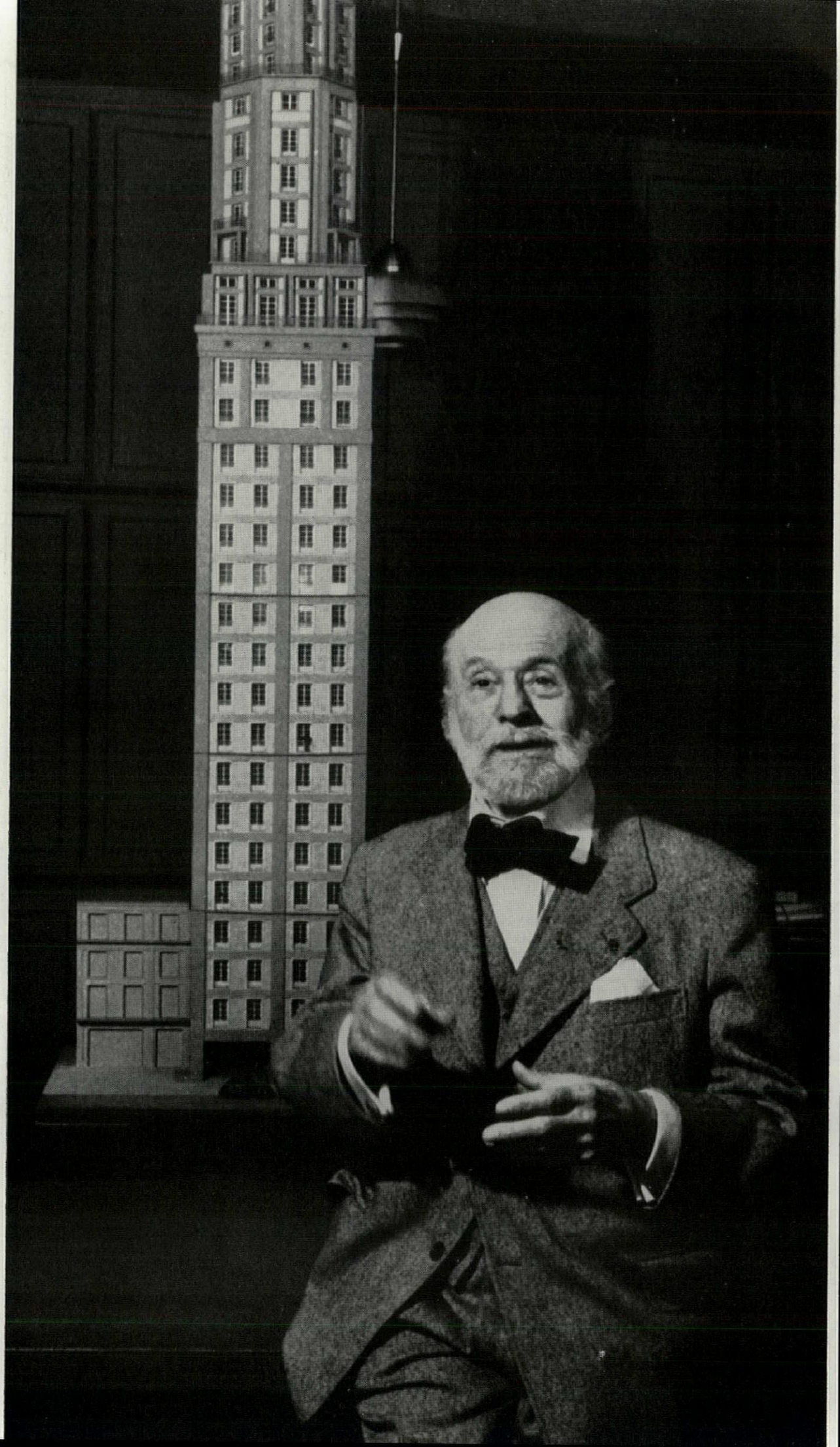


PSYCHIATRIC UNIT

General hospital psychiatric unit (right) has three common rooms for 24 patients, is on top floor because of atypical bedroom plumbing.

Masonry screens shield dormitory (foreground, below). Main window rendering is misleading; building does not have sun-screening louvers.





Auguste Perret

For glorifying concrete and rebuilding Le Havre, AIA's Gold Medal

This month AIA will bestow its highest accolade—the Gold Medal—on a man who staked his reputation on a bag of cement. He is Auguste Perret, dean of French architects and pioneer in concrete construction.

Since 1903, Perret has worked in reinforced concrete, bringing that material up out of the basement to its present high rank among architectural materials. Ignoring the criticism of colleagues who saw nothing but vulgar utility in reinforced concrete, then new, and sought to hide it behind brick or stone, Perret not only let his concrete show, but also worked out a characteristic "vocabulary" of forms suited to the nature of the new material.

Now 78, Perret has taken time out from his latest project, the rebuilding of Le Havre, and crossed the Atlantic for the second time in his life to receive AIA's award in New York City. The ceremony is not likely to make him nervous. He has captured every architectural honor so far devised by France and in 1948 he pocketed the Gold Medal of the Royal Institute of British Architects.

Perret was born in Brussels in 1874 and his first view of life included building stone, scaffolds and trowels. His father was a successful builder whose skill and integrity more than made up for his lack of academic training. Actually the elder Perret was an empiricist of the first water. Rather than spend hours at a drawing board rendering an idea, he would seize a potato, whip out a knife and deftly carve the shape he had in mind.

Small Auguste's first introduction to building held a hint of prophecy. One day at a construction site the foreman laughingly put a speck of cement and a drop of water on the child's forehead, dubbing him "honorary foreman."

By the time he was 12, Auguste Perret had read the entire ten volume set of Viollet-le-Duc, that original theoretician and architect. At 15 he had designed a tower which his father built for an international exposition. And at 29, with a classical schooling at the Beaux-Arts and the experience of many buildings already behind him, he designed and constructed the first completely reinforced concrete building—an apartment house at *25 bis rue Franklin.*

The year was 1903. Shocked Parisians looked up at what was, for that time, a revolutionary exterior, cried out against its "nudity." The concrete had been left exposed and undecorated except for panels of glazed green tiles. Glass block permitted light to enter the stair well without opening it to view. Instead of facing the apartments inward on the usual courtyard, Perret turned them out, opening the bay windows on a view of Paris and the Seine.

Controversy followed Perret. His 1913 *Théâtre des Champs Elysees* though admittedly well arranged was of such classic simplicity that few saw the beauty in it. As usual he made it of reinforced concrete with no structural element hidden. So great was the esthetic reaction against it that when the Minister of Education was asked to give Perret the Legion of Honor, he refused saying

France's master builder, Auguste Perret, poses with a model of his design for a tower in Amiens.

with unassailable French logic, "If he had built nothing at all, it would be easy to get him the Legion of Honor. But since he built that theatre it's impossible."

Undismayed, Perret went on to explore the versatility of reinforced concrete construction, using it to build the docks in Casablanca. In those buildings wide-span vaulted roof sections were held to a 3 cm. thickness at the apex.

Curiously where Perret embraced the new building material he retained a classical concept of architecture. While others adapted concrete to more fluid modern forms, Perret went on building and refining the classic post-and-lintel system taking great pleasure in exposing as much of the structure as possible. Essentially conservative, Perret scoffs at modern technical expedients such as prestressing, decries even the reinforcement of concrete in public highways. He has steadfastly refused to conceal either structure or material, feeling so strongly about the revelation of structure that when addressing the British Architectural Association he was moved to say: "The man who disguises a post commits a fault; the man who puts in a false one commits a crime."

His willingness to hurl such aphorisms at any audience, large or small, suggests a parallel with an American contemporary, Frank Lloyd Wright.

Both struggled for years against popular trends without recognition; both are egoists on such a scale as to be unperturbed by rebuff or attack; both developed highly individualistic styles; both received honors and applause late in life. Neither, of course, is overawed by the other. Said Perret of Wright's houses after a visit in 1949, "They seem to be half cellar, half garret."

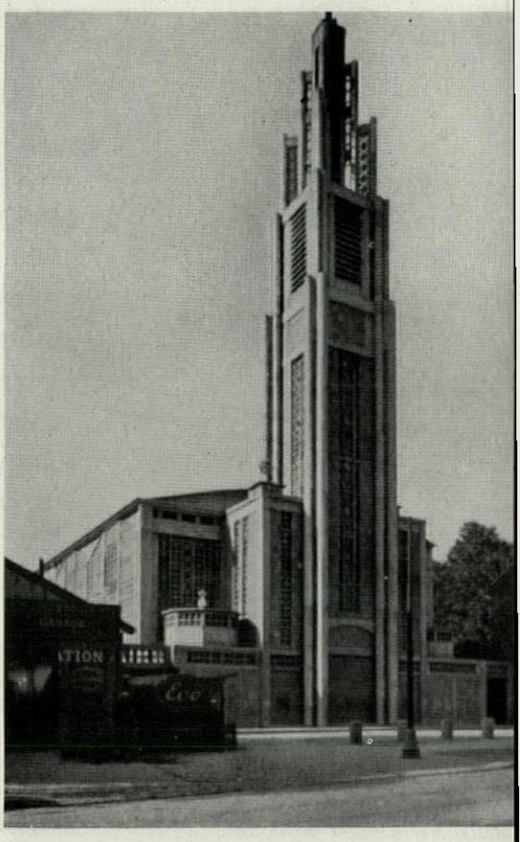
Architecturally two moderns could scarcely be further apart. Wright, the romantic of the New World, has loved nothing better than to multiply new vocabularies of "organic forms"—forms based on triangular, hexagonal, or other polygonal or circle grids; forms spiralling upward and outward; forms related to the cantilevers and other new structures of modern knowledge and materials, but always related also to the features of surrounding landscape. Perret on the contrary has stayed always within the classic framework, using the building not as an extension of but as a man-made foil to Nature, insisting that "the architect's goal should be to create from new materials buildings that would seem to have existed always."

While expressing his Gallic sentiments, Perret exercises his equally Gallic habit of gesturing with his hands, now violently, now delicately, his bright round eyes watching his audience from a totally disenchanted face fringed with a beard tended as carefully as a putting green. Inevitably his costume is highly individual. His shirts have soft rolled collars which he wears with equally soft bow ties. Suits, though of indeterminate style, are of the finest materials and he wears a pork pie hat with a generous rolled brim. A cane usually accompanies him on his strolls and the entire effect of the short 5′-4″ figure is to produce an air of dateless elegance.

His critics and those of his friends who disagree with his theories harp most on the cold asceticism of his spare architecture. Many feel that his love of concrete is a further expression of this coldness. And it is true that Perret's preoccupation with a disciplined, classic interpretation makes his buildings less dramatic than those who espouse a livelier, more acrobatic architecture. But although some of his work may be overlooked amid today's more swiftly eye-catching structures, time will tell whether Perret's architecture is so quiet as to be inaudible. If it is, it won't bespeak the man.

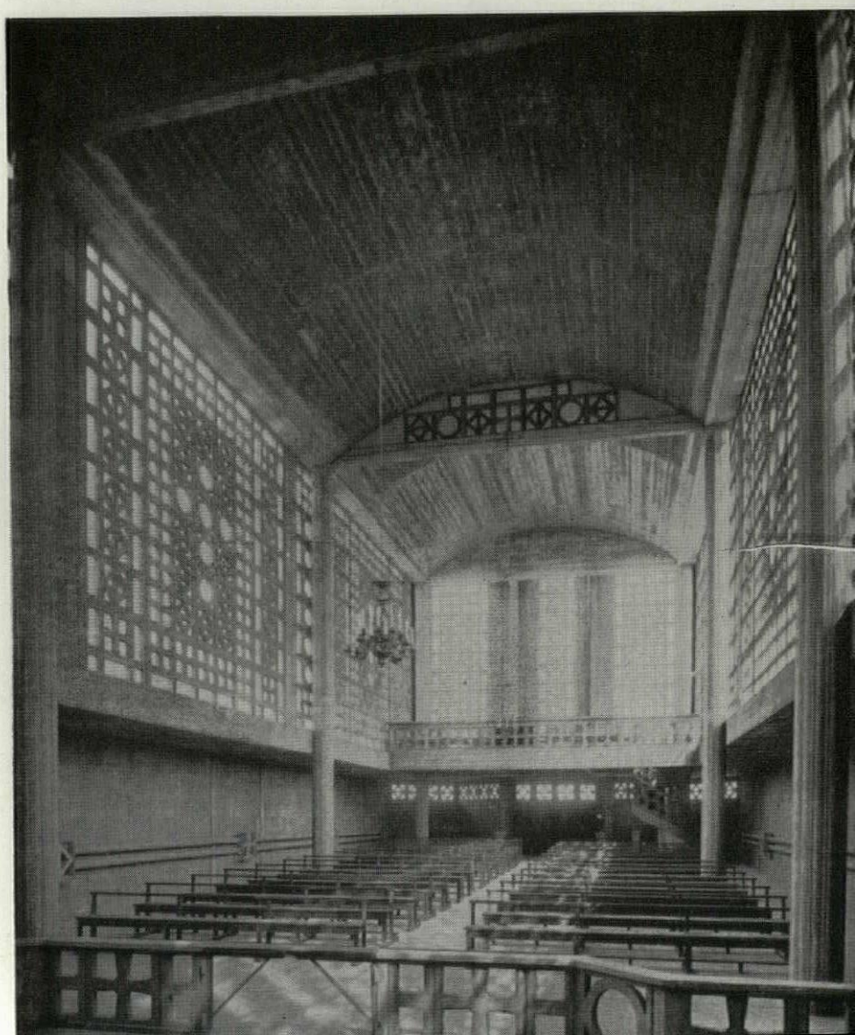
Auguste Perret: Champion of concrete

Filigree in concrete: Le Raincy church, Paris

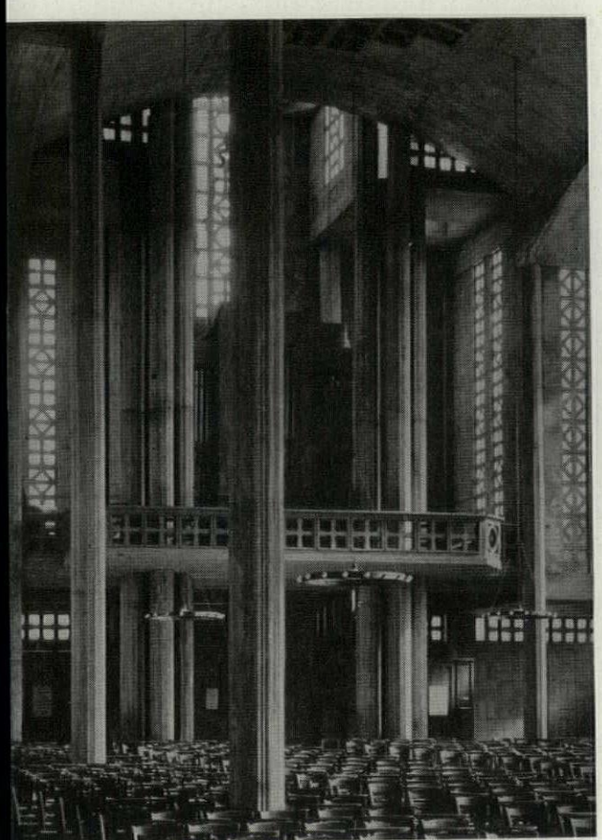


Perret factory in Paris shows light, wide-spanning reinforced concrete arches

Concrete geometry: Church of St. Denis, Paris



Interior of Le Raincy church



High-low alternation of apartment buildings gives rhythm to new skyline of Le Havre

Auguste Perret: Rebuilder of Le Havre

When World War II destroyed major parts of such French cities as Le Havre, it gave rise to the hope that the long held dream of esthetic, architectural city planning could be realized in the reconstruction period. Unhappily the dream is not being realized. Except for a handful of fine architects working in three dimensions: Dudok in Amsterdam, Aalto in some of the smaller Finnish towns, Schwartz in Cologne, replanning assignments were handed to the same old city-planning engineers who thought of cities as flat planes without elevation at all.

But when Le Havre's reconstruction went to France's most famous and most conservatively modern architect, Auguste Perret, two things were sure: The replanning would be done in three dimensions with an eye to the way actual shapes would look on the street, not merely with an eye to prewar appearance and lines on maps. It was also certain that Le Havre's replanning would contain a spirit of classic order.

Already nearly 5,000 apartments have been completed or are under construction. They have come from 100 architects—all under Perret's supervision. While some latitude has been permitted in design features among the various buildings all conform to the general classic principle of Perret and his disciples.

Broad avenues, parks fit modular plan of the new city

Le Havre's reconstruction involves two residential sections as well as the central waterfront district which was nearly 100% destroyed. The latter has received Perret's primary attention and it is here that his grand new composition will be most forcifully presented. It is in fact a fugue set on a modular pattern and executed in three dimensions. Stern logic is evident even in the structural details where Perret's characteristic deep reveal in windows and other openings produces strong shadow lines in strong contrast to the thinness of envelope which characterizes much modern design. The deep reveals also promise to give enough textural interest in the wall fabric to offset in considerable degree the inevitable effects of concrete weathering.

The majority of the buildings are reinforced concrete, unadorned except by the necessary offsets and articulations of Perret's classical language. Not only is this exposed structure economical but Perret of course would have it no other way.

Perret's logic extends even to the occupants themselves. The high (ten story) apartments have elevators and are for childless families while the low, four-story apartments are walkups. It is Perret's contention that children soon "wreck elevators." All apartments have space for shops, restaurants and other services on the ground floors, thus integrating the apartment community.

Most of the vast sums spent (16 billion francs alloted or spent to date) and those to come will be provided by the government in three ways: 1) War damages given citizens who lost property in the bombings, 2) prefinancing or building loans from the government and 3) outright government building.

Photo M.R.U.

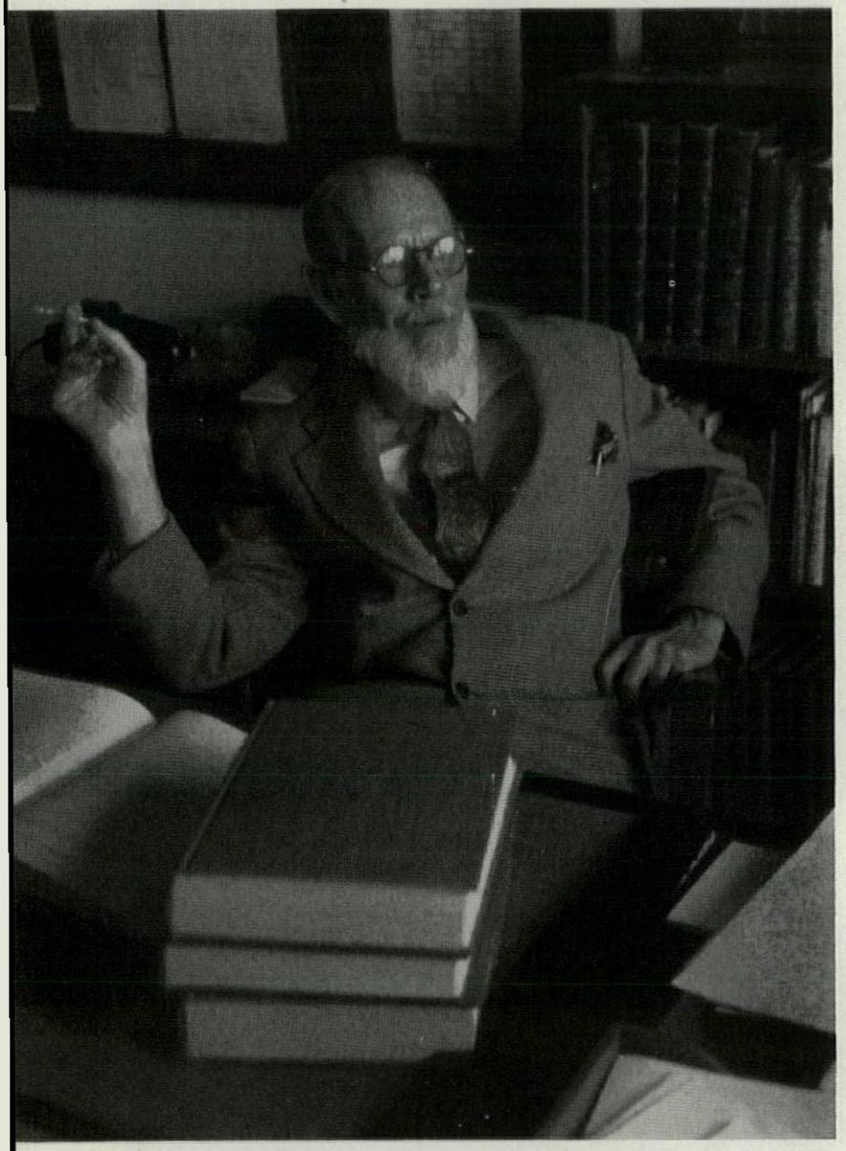
Downtown area of reconstruction shows Perret's principle of classic simplicity coming to life

A review by **FREDERICK GUTHEIM, Assistant to the Executive Director of AIA**

FORMS & FUNCTIONS OF 20TH CENTURY ARCHITECTURE

Edited by TALBOT HAMLIN

S. N. Kattelson



The creation of new architecture, sincere and absolute, is the theme of Talbot Hamlin's monumental work*, at once a contribution to architectural theory and an encyclopedia of architectural practice. His thesis of modified functionalism will not sit well with many experts, and it is not one to which this reviewer subscribes, but it is not necessary to agree with the author in order to acknowledge the greatness of his contribution or its value to many readers. Here is a scholarly accomplishment of the first magnitude, a compendium destined to find its way into most important architectural libraries, to be consulted and cited as a reference for many years to come.

Fifty years of architectural detail . . .

The supreme advantage of this book is its scope. Nor is that a virtue to be lightly prized, for accompanying its multitude of facts is an equivalent authenticity. Here are the indices and bibliographies that make it invaluable as a work of reference and the thousands of illustrations that reinforce its text—all prepared with sound scholarship.

Here are volumes which really go into the detail of architecture. Different structural systems are described, and so are the various human uses of a building that are reflected in its planning. Without attempting to cover the ground of architectural textbooks, much practical advice is given along the way, imparting architectural experience and the wisdom of what works and why. This wealth of practical detail will endear these volumes to the professional.

. . . but where do we stand today?

With the waning of architectural authority and the rise of the industrial revolution in the 19th Century and reaching its climax in the first quarter of this century, a new architecture was born. With this statement, few will disagree. A look about us is sufficient to establish the transformation of architecture from its traditional character to one distinct and new. What is the nature of that architecture? Can we now describe its characteristics? Does it represent something of permanent value, now established and stabilized for some time to come?

Where do we stand? Here is where the critical issue must be joined. With an eye to such diverse representatives as Wright, Mies, Le Corbusier and Gropius, it may be questioned whether modern architecture is one style or several. With an eye to the architecture of the postwar period in the US, we may appear to be in a period of stylistic stability and mannerism; that is the recent thesis of Philip C. Johnson and Henry-Russell Hitchcock†, whose argument may be stated in the following paraphrase of an earlier work on the mannerists: "Every single element in the art seemed to have been already pushed to its logical conclusion and formulated for all time. The endeavor must now lie in combining with the maximum of skill and knowledge the different merits of the great masters." But Hamlin is not writing an essay. His is a broader and more imaginative survey and it should lead to a more sympathetic interest in new developments. It is frankly a disappointment that it neither codifies the modern architecture of the period 1890-1950, nor does it state clearly where we stand today.

Many architectural styles . . .

Fortified by more than 50 specialists in building types, and still other technical consultants, the author addresses himself to the

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* *Forms & Functions of 20th Century Architecture.* Edited by Talbot Hamlin. Columbia University Press, New York, N. Y. Four volumes. 3,265 vp. 8 x 10¼". Illus. $80

† "The Buildings We See," an essay in the anthology *New World Writing*, New American Library, 1952.

task of describing what our architecture is. The architectural elephant, Hamlin reports, is neither wall, nor tree, nor rope, but partakes of all three. He will not take sides for or against Belluschi, Saarinen or Skidmore, but wishes to embrace all these and more. Indeed, the only architectural fish who escape the Hamlin dragnet are the real oddities—Bruce Goff, Buckminster Fuller, Paolo Soleri and the earlier Paul Nelson, to mention a few of the most vital.

Other representative figures of importance, such as Charles M. Goodman, are passed over but more from neglect than hostility. What emerges from this strenuous effort to embrace everything cast up by the architectural revolution of the past century and embalm it in a general doctrine of functionalism is a new eclecticism. Here is a book of analysis and appreciation. It will help those who are trying to understand modern architecture, especially those seeking examples, motivations or explanations or technique. But to those who are trying to create that architecture, and who must have something more explicit, it will often prove exasperating.

Twenty years ago Hitchcock and Johnson first tried to formulate a description of modern architecture in their pioneer study, "The International Style." Theirs was a fully doctrinaire approach, in terms of which Wright and other romanticists—Maybeck, Greene and Greene and the rest—were completely eliminated, the entire socio-economic base of modern design neglected, and a set of rules formulated that fit Mies, Gropius and Le Corbusier, but few others. The most creative group of Americans, in the '30s, in California, were totally ignored. Figures like Dudok, Mendelsohn, Perret or the elder Saarinen were dismissed. For all its weaknesses of omission and its avowed espousal of an architectural cause that was scarcely more than its contemporary political movement, technocracy, Hitchcock and Johnson took a stand; no one was in doubt where they stood, or what they considered good architecture or bad.

Hamlin's description of modern architecture errs in the opposite direction. Anything goes. On his analysis, nearly any set of architectural ideas can result in a masterpiece. Perhaps it can, in a generous historical perspective; but whether it can more narrowly in terms of an architecture of our own time is certainly a dubious contention, one more likely to be justified by the exigencies of appreciation than the rigors of critical consistency.

. . . or two architectural philosophies

The loosely defined functionalism which Hamlin describes is not a single architecture, nor is the mannerism of Hitchcock and Johnson. Nor is it necessary to construct an architectural history to show that some of the most fruitful criticism will raise itself once our architecture today is seen not as one thing or another, but as an interaction of two separate architectural philosophies, struggling against and complementing each other. On one side are the belivers in romantic individualism, led by Frank Lloyd Wright, true children of the romantic movement which came late to the US. Theirs are the buildings which always "go back to nature" and whose ultimate symbol is the ruin; theirs the belief in the individualism, in democracy, and even in anarchy. They are the ones who turn their backs upon the city, whose buildings are black, rough and full of holes, conceived in the organic materials of nature and responding to natural designs. I find this spirit expressed in the work of such architects as Harwell Harris, W. W. Wurster, Antonin Raymond, Gordon Drake, Henry Klumb, Vernon DeMars and dozens of others.

Opposed to it is another architecture, created by the believers in classicism, when man imposes his rule upon nature, a formal architecture whose symbol is the monument. Here, led by Mies and Le Corbusier, are the archiects of white buildings, with smooth skinlike walls and glittering, disciplined facades. Here is the architecture of autocracy and order, the buildings of those who believe in cities and collective systems, in the machine and in rationalism. These representatives of the will to form include such varied personalities as Niemeyer, Skidmore, Syrkus, Chermayeff, George Nelson, Gregory Ain, Stonorov, Harrison and Lauritzen. The interesting problems of criticism are figures like the younger Saarinen, a romanticist in steel and glass; or Belluschi, a classicist in wood. But enough! For the purpose of defining my own critical position it is sufficient to urge the usefulness of a concept of architectural dualism, by whose aid we can better understand the forces to which men—and architects!—respond. The two poles are different, as men are different; their force varies with historical periods and emphasis; and they change from youth to age. The important thing is that they are definite, and they are not static.

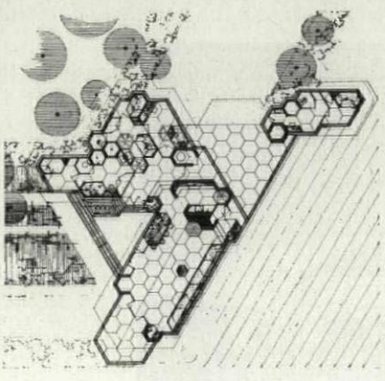
A weakness in ideas . . .

With so much scope, and such a wealth of descriptive apparatus, it may be remarkable that Talbot Hamlin's survey leaves out a great deal that is essential if present-day architecture is to be understood. Most of all, this is true of ideas: what is usually contemptuously dismissed as "theory." Hamlin's own part of the work—where one looks first and most logically—is particularly lacking in this respect; but the avoidance of judgments in nearly all of the building-type essays is so universal as to be almost generic.

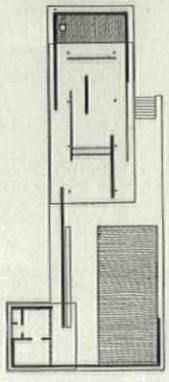
Regarded as an architectural "who's who" Hamlin's book is also disappointing. Where we look for summaries of careers and philosophies, there are none. Hardly a single representative of the critical issues which still face modern architecture (and, contrary to Hamlin's assumption, have not been settled, either in theory or

It may be questioned whether modern architecture is one style or several, with an eye to such diverse representatives as . . .

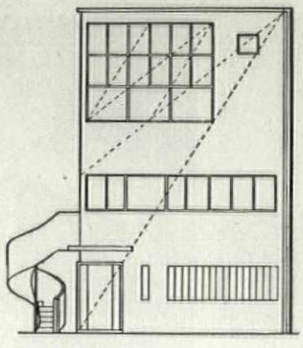
Wright . . .



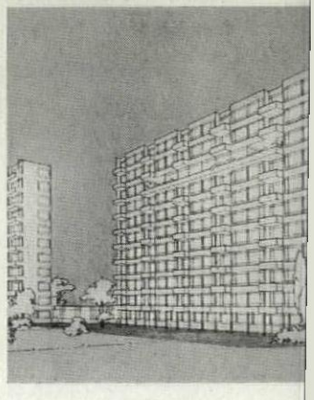
Mies . . .



Le Corbusier . . .



and Gropius.



practice) can be identified as such, as entries under Mies, Wright, Le Corbusier, or Gropius will show. As philosophy, the treatment is also unsatisfactory. The major issues themselves are frequently glossed over as imperatives, fundamental questions are treated as of quite secondary or ephemeral importance, and where choice is necessary the implication is left that the architect can have it both ways. This determination to avoid taking sides may admit much in the name of scholarship that a stricter and perhaps even bigoted view would exclude, but it does so only at the expense of indecision and even incoherence.

. . . but some strength in building types

Among the essays are some extraordinary contributions. Here are a few random comments. I should not have thought Henry Churchill, or anyone, capable of writing about much-discussed lowcost housing problems with such brilliance and compression. The three separate treatments of religious buildings attain a remarkably high level, each author managing to come out somewhere after an extremely comprehensive survey. A well written-over subject that retains its freshness here is Belluschi's treatment of shopping centers, while Kenneth C. Welch's survey of department stores is definitive, not to say exhaustive.

As might be expected, some of the essays on building types make a fast bow to the past, hit the high spots of current practice, and end with a paragraph on "trends." Even within these limits, the essays dealing with hospitals and related building types seem to me remarkably inadequate, considering the importance of such buildings. Those on schools, with the exception of Perkins' basic account, tend to be thin. On commercial buildings, Wallace Harrison has turned in a surprisingly keen and thoughtful presentation of the office building which, merely because it qualifies the clichés we see in Lever House and the United Nations, gives the impression of genuine profundity.

More than snap impressions of individual essays among some four dozen, the reviewer might do better to report a single generalization. For a work devoted to an avowed exposition of functionalism, the unparalleled opportunity to exhibit it in detail, building type by building type, according to the use of each building, has been largely unexploited. We are left largely in the dark when we try to find out how the form of the modern hospital derives from its mission to help heal the sick; how the form of the modern school comes from its being bent to serve the needs of modern education; how the form of the house reflects its aspiration to serve family livability; or the form of the shop and its requirement to facilitate the economic processes of distribution and merchandising. If there is anything to functionalism, it must be here; but whether it is or not, we are left in the dark as to precisely how it operates as a design principle or an effective philosophy.

The suspicion is aroused and never dispelled that functionalism is not a useful architectural term. On the evidence here, it describes no architectural form. As a revolutionary slogan, it may have accomplished the revolution but it has yielded no characteristic architecture.

A modernist . . . but also a romanticist

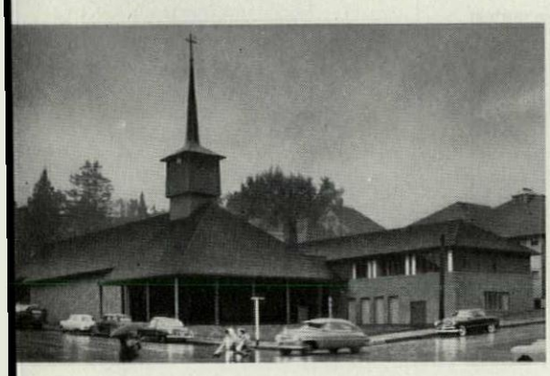
Perhaps the fairest view of Hamlin's own philosophy is one which recognizes his basic orientation in 19th Century liberal thought. He subscribes to the ideals of Ruskin and Morris. He is a democrat, one willing to carry democratic ideas all the way through into an industrial society. His ideas on land, labor, capital are liberal. All this equips him to understand and sympathize with those who were in revolt against the architecture of the traditional styles. But his personal taste is a romantic taste, his viewpoint gentle and catholic, and his historical interests and sympathies are so profound one frequently suspects him of disloyalty to his own generation. The scholar's approach to the bloody struggles of modern architecture is not apt to be a realistic one, and in this survey the smell of the lamp frequently overpowers the stench of the battle. At his strongest, Hamlin shows us the virtues of understanding; at his weakest those of indifference to human personality and its works and irresolution, contempt for theory, a belief in social process almost to the exclusion of man's control over his own environment.

Both strength and weakness are exhibited in the one essay the editor reserved for himself, that on the Theater (written in part by Lee Simonson). The richness and erudition of this essay's historical view is so manipulated that it leads the willing reader to the threshold of understanding the problems of the architect who would design a modern theater; and then, faced with the problem of the modern theater in all its complexity, the eager reader is left floundering between one course of design and another, equally desirable, with nothing to choose between them, and with no way of knowing which will lead to success or how to measure that success when it is attained.

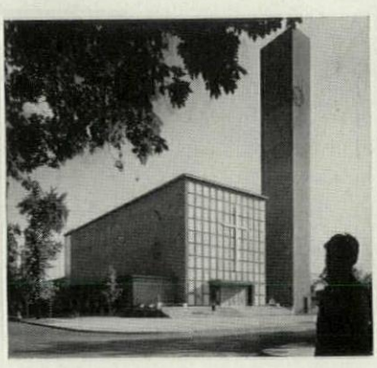
Faced with a work of this magnitude, one is filled with the conflicting emotions of technical and scholarly admiration, and critical and philosophical disagreement. It would be unfair to the author and the reader not to acknowledge fully the great value of this contribution to architectural knowledge; it would be unfair to the reviewer and the reader not to state what appear to be shortcomings. The pages of this magazine are not the ideal seminar room, perhaps, but they provide a better means of communicating with those in the profession whose critical esteem I am sure Professor Hamlin values. To them, once again, I should like to offer such assurance as I can of the pleasure and profit they will find in these four volumes. And should they find points of disagreement, as I have and as I am sure they will, they will find themselves on opposite sides of the net with a worthy and sportsmanlike opponent whose first thought is the game, not the prize.

Hamlin will not take sides for or against . . .

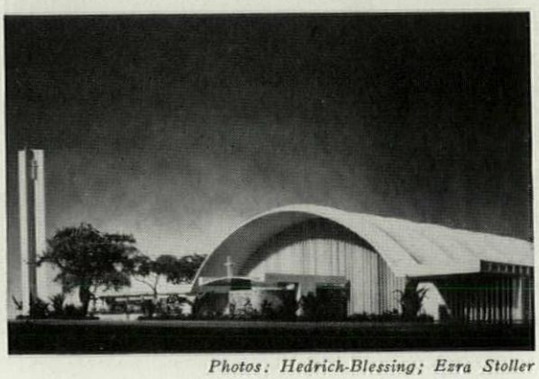
Belluschi . . .



Saarinen . . .



or Skidmore.

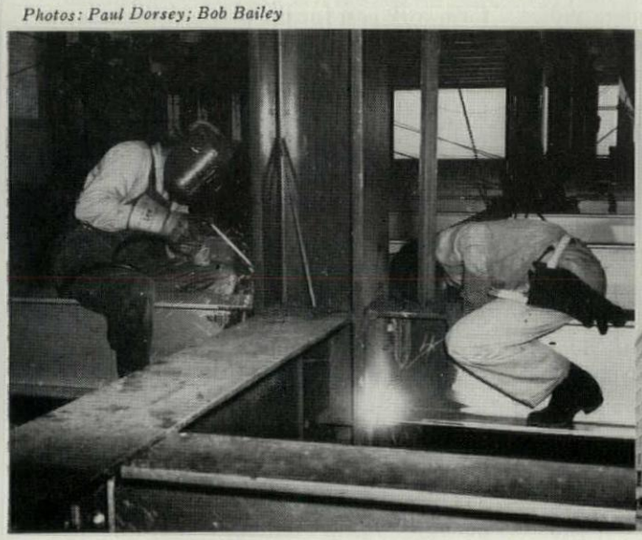


Photos: Hedrich-Blessing; Ezra Stoller

BUILDING ENGINEERING

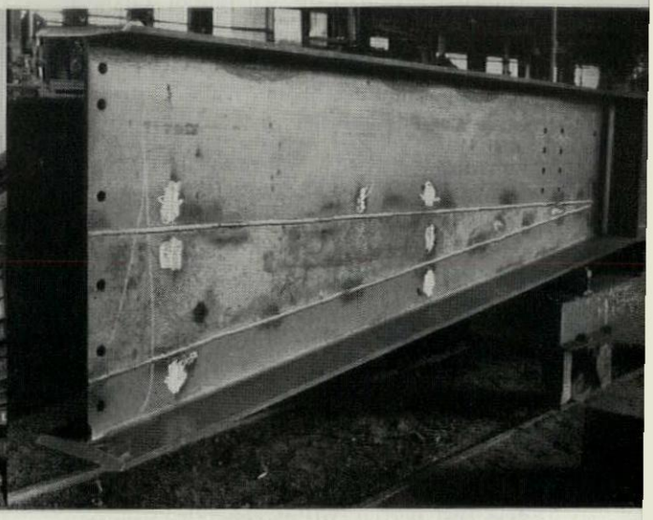
1. New techniques for better welding
2. Precast framing for lower concrete costs
3. Quick-acting doors for a new kind of hangar
4. Reinforcing pattern for indestructible walls
5. Fish on the roof for mosquito control

Photos: Paul Dorsey; Bob Bailey



Problem of keeping frame plumb during welding was solved by welders working in pairs on both flanges of interior columns at same time, Distortion from high heat was reduced by welding column connections in three separate operations, allowing time for joints to cool between each.

Thanks to the economies of welding and continuous framing, the 16-story frame of the National Bank of Commerce in Houston contains only 2,274 tons of steel, or 17.98 lbs per sq. ft. of floor.



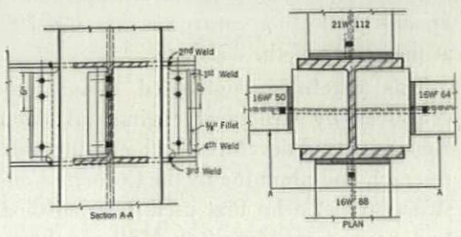
Welded frames above 25 stories high need special attention to wind loading. This haunched beam provides necessary depth of beam at wall columns. It is easily made by welding a long tapered plate into the web of a standard rolled section.

1. MULTISTORY WELDING

New technique reduces shrinkage, simplifies plumbing the steel frame

Here is a new technique of balanced welding to eliminate shrinkage and butt welding to permit higher stresses, which makes it much easier for multistory buildings to exploit the well-known advantages of continuity—a 15% lighter frame, quieter and cleaner construction—that goes with welded design.

Balanced symmetrical welding — by which the two opposing flanges of a column are welded simultaneously to cut down unbalanced residual stresses—was successfully employed in the 16-story National Bank of Commerce in Houston, and proved that a welded frame can be plumbed just as easily as a riveted one, no matter how high you go.



Typical butt welded joint shows welding sequence. Butt welds on beveled flanges and webs produce a more efficient joint with 70% less weld metal.

Electric arc welding is performed at temperatures around 2,700° F. In welding one flange of a column at a time, these high temperatures cause thermal expansion and subsequent residual shrinkage at that side of the column, which throws the floor out of plumb. The degree of such distortion is a function of both the heat involved and its duration. Therefore a weld that is carried out in three separate operations, with time for the joint to cool between each, is far less harmful than if the weld is made in a single operation. To overcome these difficulties structural engineer Boyd S. Myers devised this balanced, symmetrical welding procedure:

- Working in pairs, operators weld both flanges of interior columns simultaneously;
- They weld diammetrically opposed joints of exterior columns simultaneously; for example, joints in the north wall columns are welded at the same time as the opposite joints in the south wall columns;
- They weld each column joint in three separate operations, allowing a full day for heat to dissipate between welds. (Actually, an hour's cooling is enough but a 24-hour routine was more convenient).

This technique prevents the development of distorting lateral forces in the floors above. Residual shrinkage movement of the exterior wall columns in this 16-story 252′ long building was only ¼″ while in a 24-story welded structure also 252′ long built in Houston five years ago the distortion was 1½″.

Another major difference between these two buildings was in the actual welding joints used. Five years ago fillet welds could be designed for 13,600 psi and butt welds for only 16,000 psi. Therefore the former were used on the 24-story building, which required 14 lbs. of weld metal for every ton of steel erected. Even before the structure was completed welding codes were modified to permit design stresses of 20,000 psi in butt welds. Such welds were used in the new 16-story bank addition resulting in more efficient joints and reducing the amount of weld metal 70% to 4 lbs. per ton of steel.

The National Bank of Commerce was framed for $180 per ton. It was engineered by Boyd S. Myers of the office of Robert J. Cummins, Consulting Engineers; Architect, Alfred C. Finn.

2. PRECAST BOX FRAMING

Hollow columns and girders joined in rigid frame reduce concrete costs

This 265,000 sq. ft. Kraft Foods factory-warehouse in Atlanta demonstrates an ingenious new system of precast columns and girders that are assembled into rigid frames with less than half the concrete of standard cast-in-place work. Using rapid crane erection methods, spans as great as 47′ are obtained with unprestressed concrete girders only 2′ deep, at a cost of only $2.20 per sq. ft. including precast roof panels. And the 6″ thick insulated sandwich walls are precast in 22′ x 20′ tilt-up sections for about $2 per sq. ft. of wall.

There are many advantages to concrete precast in a factory or, as in this case, on the site:

1. A single mold reused 50 times eliminates all the formwork and falsework of cast-in-place concrete.
2. Molds can be more accurately designed for more efficient structural shapes—and at less cost per cu. yd. of concrete.
3. Reinforcing can be more easily handled and positioned.
4. Closer control of mixing, pouring, vibration and curing is possible in a casting yard resulting in higher quality concrete.
5. All these operations collected in one place produce the economies of assembly-line production.
6. Structural elements or assemblies can easily be prestressed should particularly wide spans be desired.

In this single-story warehouse 3,203 structural elements are precast in only nine different shapes at a rate of 67 units a day. Erection is at the rate of 5,000 sq. ft. a day. The framing consists of a series of bents 22′ apart with the columns of each bent spaced at 42′ intervals across the width of the building (47′ in the end bay).

Four types of precast framing members make up each bent; 1¼ ton interior columns, 3 ton hammer-headed wall columns, 2½ ton header sections mounted atop the interior columns and 3½ ton girder sections spanning between headers. In each bent the splices between headers and girders are at the points of inflection, with each bent computed on the basis of homogeneous hollow cross sections assuming a fixidity at bases mid way between full restraint and full rotation. They are designed for the dead load plus a 20 psf live load and a 70 mph wind load.

Fully rigid joints

Two types of joint are used in the structure, both developing full continuity by welded reinforcing and grouted splices. First, columns are erected and held vertical by tripod braces bolted to the concrete floor slab. Next, headers are mounted on the columns and the corresponding units of adjacent bents are aligned in pairs by a vertical cross-braced supporting framework. Then the struts are positioned between adjacent headers and the 24′ connecting girders are swung into place, temporarily supported on light falsework. At the column joints the columns, headers and struts are anchored into a common joint pocket by grouting through a hole at the top flange of the header. At the girder joints the reinforcing projecting from the flanges of both headers and girders is lap welded; then the joint pocket is grouted.

Also precast in a casting yard on the site, the roof is composed of 22′ x 5′-3″ of ribbed panels 1¼″ thick with 8″ deep edge ribs. Each is divided into four subpanels by three 6″ deep intermediate ribs. Roof panels are reinforced with 2″ square #12 wire mesh shaped and fabricated by a pneumatic machine on the site.

Tilt-up sandwich walls are precast in 22′ x 20′ sections 6″ thick and contain 2″ insulating core of fiberous glass between two 2″ layers of reinforced concrete. The reinforcing is so designed that the wall can be picked up at one end by a traveling crane and carried straight into position.

Casting operations

The 3,203 precast elements used in this building were cast in concrete molds on the site using 4,000 psi high early strength concrete. Each precast section was cured for 24 hours. Then the wooden hinged side forms were lowered and the section removed by vacuum hoist to harden seven days more before erection.

While the columns and girders were cast in one piece, the headers were cast as two separate channels and bolted together to form box sections, using ¾″ bolts placed at about 5′ intervals passing through 1″ pipe sleeves cast in the flanges of each channel. These flanges have beveled edges to provide partial load transfer from one channel to the other by direct bearing.

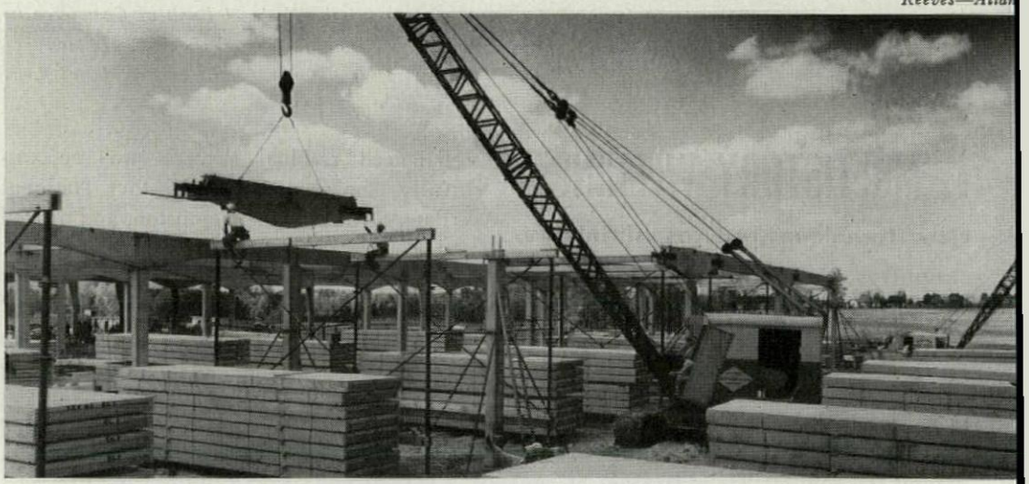
Structural sections were cast at the rate of 67 per day. Cost of the molds was $1.75 per sq. ft. Since they were reused 50 times, formwork cost for the precast members was only 35¢ per sq. ft. Total cost of the structure (less mechanical work) was $7.10 per sq. ft.; framing and roofing cost $2.20; wall panels, about $2.

In all, 5,100 tons of precast structural members were put into the building at a cost of about $76 per ton erected. The designers estimate that more than twice this weight of concrete would have been required if it had all been cast in place. Taking into account framing and roof panels, an average 4″ thickness of concrete was used per sq. ft. covered; of this 2¼″ went into roof panels and 1¾″ into framing and struts. Only 3 lbs. of reinforcing steel was used per sq. ft. covered; 2 lbs. in panels, 1 lb. in framing and struts.

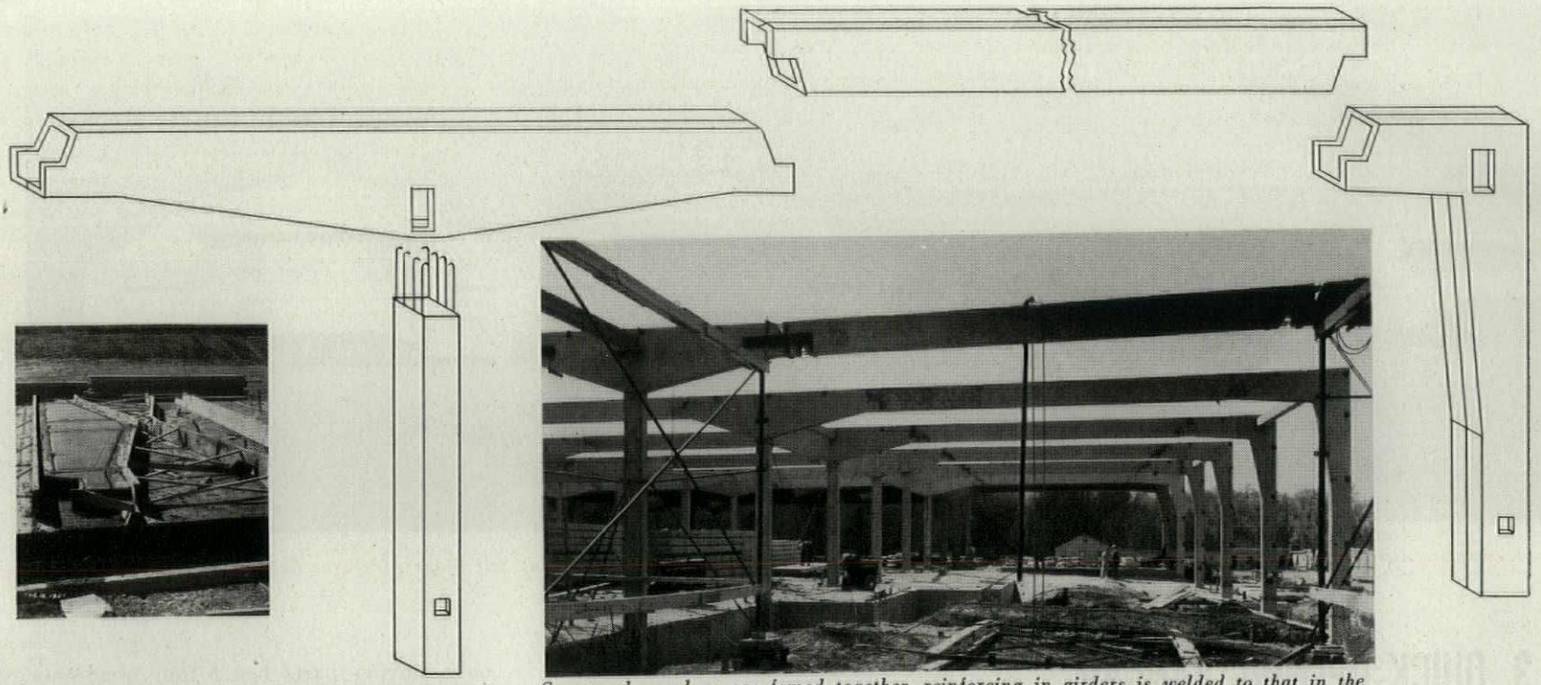
Upon completion the structure was rigorously tested by flooding the roofs of two complete bays with 12½″ of water, constituting a live load of 40 psf (design loading was originally 15 psf). The structure withstood the tests satisfactorily, the greatest deflection measured was 0.8520″ at the center of the 47′ span.

This carefully engineered design was conceived by structural engineer Arsham Amirikian and developed with considerable research and planning by the Corbetta Construction Co., who first used it in building two navy warehouses at Mechanicsburg, Pa. The Atlanta warehouse was built as a "lump sum" package deal by Corbetta; architect was Howard A. Tonsager of the Kraft Foods Co.

Reeves—Atlan

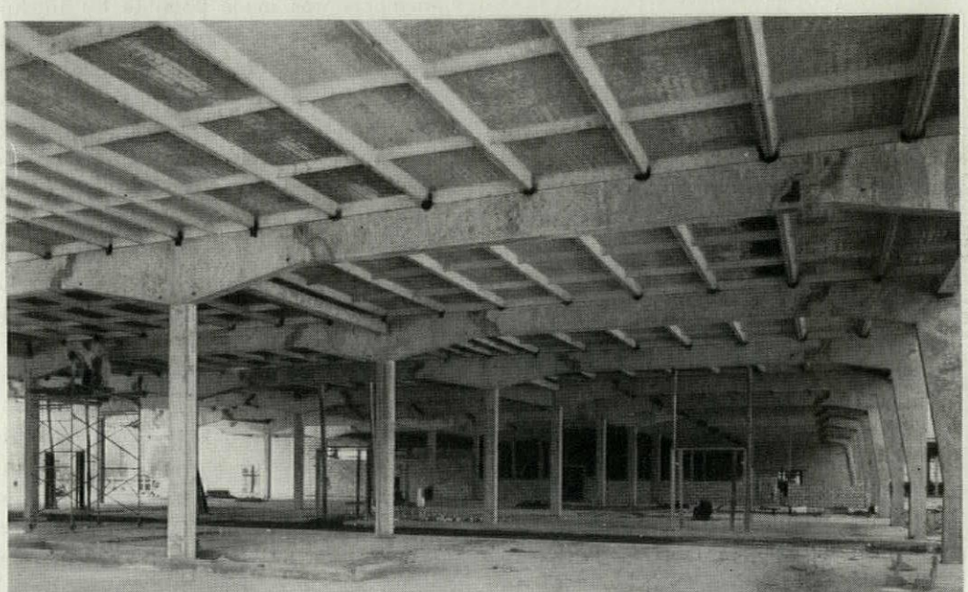


Precast hollow box-section header being hoisted into position atop a column supported by light falsework. Greatest depth of header is 3′-6″ at column; it is 18′ long and weighs three tons.



Structural members are famed together, reinforcing in girders is welded to that in the column headers, and each joint pocket is filled with grout to make a rigid connection.

Ribbed roof panels, 22′ x 5′-3″ and weighing 1½ tons, are also precast. Picture above shows prefabricated wire mesh reinforcing being positioned in the molds.



Completed frame with ribbed roof panels in position. These 47′ spans were achieved with a girder depth of only 2′ for a design load of 20 psf.

Precast warehouse frame before wall panels were erected.

Photos: Reeves Studio

A complete alert hangar unit, housing four jet interceptor fighters plus maintenance and crew rooms at Self Ridge Air Force Base, Self Ridge, Mich.

3. QUICK-OPENING HANGAR

Huge wind-balanced doors swing inside steel-saving type of frame

Jet interceptors must be airborne seconds after a "scramble" signal is received, but jet and pilot must also be well protected during long periods of waiting in rigorous climates. A solution now being produced in volume for the US Air Force consists of four small hangars large enough to hold a single jet fighter grouped around rest rooms for crew and maintenance men. Each hangar is designed with wind-balanced power-operated end doors that can be opened in 30 secs. by power or 48 secs. by hand, whatever the wind force outside. Even more significant, the 74½′ spans of each hangar are built of rigid tapered steel frames that use 28% less steel than an equivalent span consisting of standard rolled sections.

Greatest economy in rigid frame construction can be achieved by shaping the structural supports in accordance with bending moment patterns. Unfortunately, such design and shaping is expensive and the more efficient sections only prove economical when used in a large number of identical frames.

Each hangar contains three 18′ bays framed by four hinged arches spanning 74½′. These tapered steel arches are made of two symmetrical bents pin-connected at a ridge 34′-10″ high. Each bent is shop welded from steel plate in two sections which are bolted in the field using a circular pattern of bolts in overlapping web sections at the knee of the bent. This large 32″ diameter bolt circle uses the least number of bolts for the load to be carried and all bolts are equally stressed. Moreover, this splice avoids weakening flanges by bolt holes.

Overlapping webs of beam and column members was made possible by notching the inside flanges of column and roof beam, and strengthening the flange extending past the notch with a reinforcing plate. This permits a uniform flow of stresses from the flanges to the webs. Full-scale load tests of these joints proved the theory to be sound, failure always occurred at some point along the frame other than at the circular "sunburst" knee joint and the webs showed no sign of distortion from either buckling or web crippling.

Apart from the economy of the tapered steel framing, the wind-balanced end doors opening in 30 secs. were decisive in winning this air-force contract for the manufacturing engineers. The doors are 64′ wide with a center height of 23′ and a wing section height of 12′, each hangar door being also provided with a pilot walk-in door 3′-4″ x 6′-6″. Balanced upon four quadrants the door rotates about the approximate horizontal centroid of the wind load, thus the wind force above this line is balanced by the wind force below, permitting the door to be manually opened or closed in high winds in case of power failure.

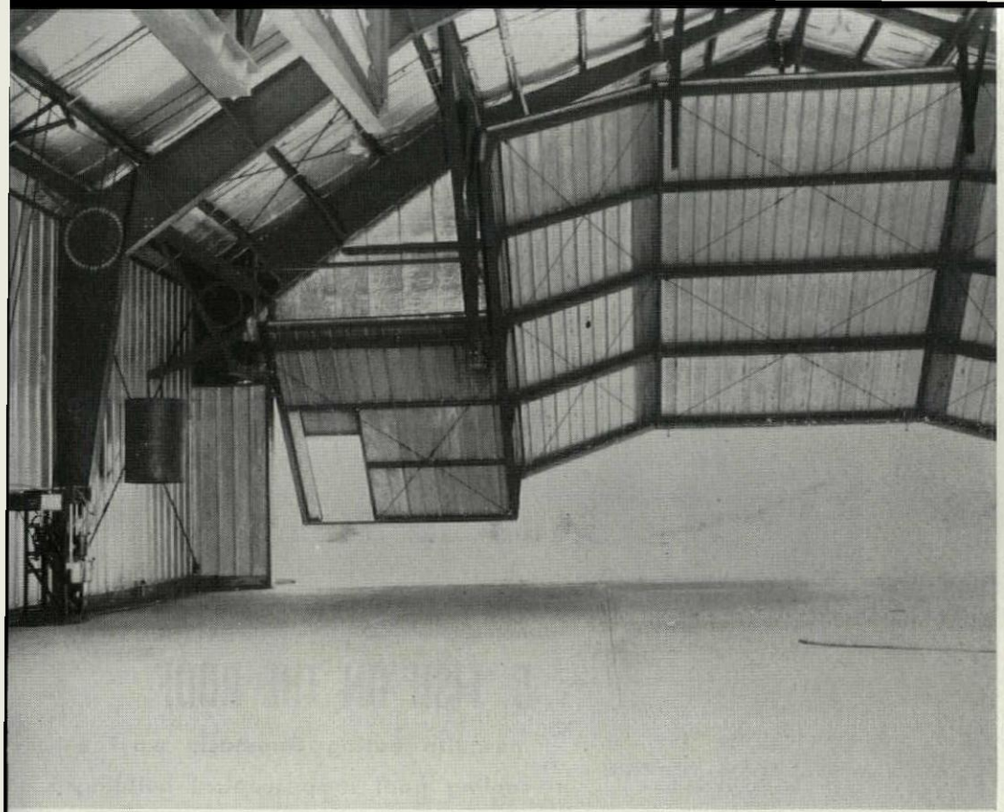
Doors are accurately balanced with pivoted counterweights supported from arms at the outside quadrant, the counterweights being offset to the sides of the hangar through the use of a torsion bar, which transmits part of the torsion induced by the counterweight and arm assembly to the inside quadrant.

Power operation is by a ¾ hp electric motor with a hydraulic drive that eliminates the use of expensive switches and stops. This assembly has a minimum of working parts for easy maintenance, the only moving parts being four quadrants on which the door rotates, the two pivoted counterweight boxes (one on each side of the hangar), the two cables on each of the wheel quadrants, which prevent inward or outward movement of the door, and the carriages and auxiliary mechanisms which actually move the door.

For ease of erection each column is supported in a base shoe requiring only a single erection bolt. Thus each 18′ bay section is assembled on the ground, purlins, girts, and sag rods are attached, then each half-bay section is raised, aligned and ridge pins connected. Meanwhile the doors are assembled alongside the hangars, complete with tie-rod bracing and siding, then are installed in complete door units. Bolted field connections are made and when tight the threads are upset to prevent back-off.

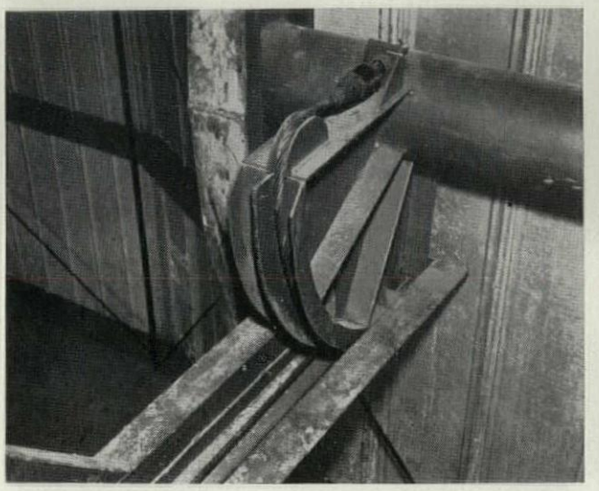
Hangar roof insulation consists of asbestos-backed glass-fiber with aluminum foil vapor barrier on the inside. Door assemblies are covered with two layers of 26-gauge galvanized sheet and 1″ of glass-fiber insulation with a similar vapor barrier. The roof is waterproofed with mastic; end laps of roof gutters are brazed.

Erected cost of the four-hangar unit, excluding mechanical and foundation work, varies from $140,000 to $170,000 depending upon location. Design and fabrication is by the Butler Mfg. Co. The wind-balanced quadrant door was developed by the McKee Door Co. along with Butler.

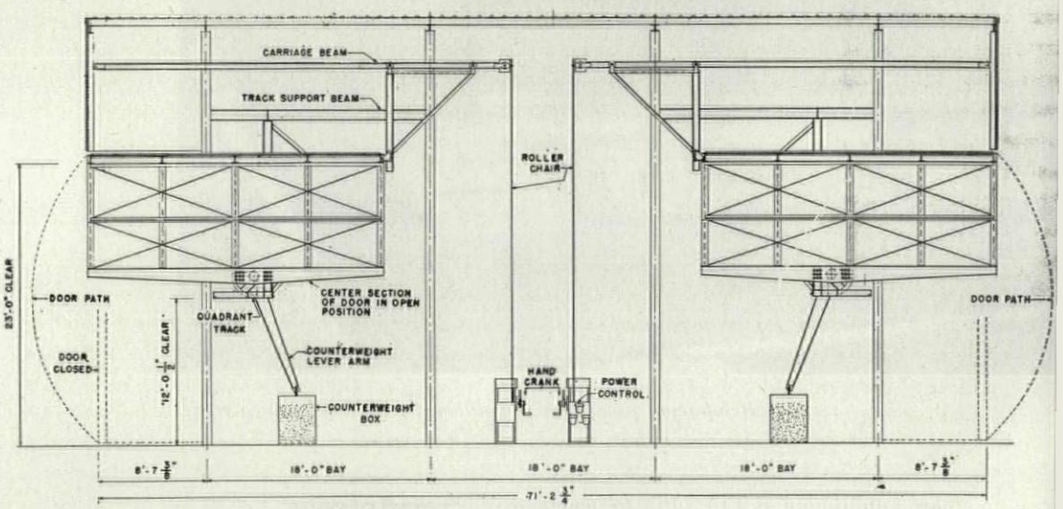


An end door in process of being opened; counterweight and door-operating mechanism can be seen on the left.

Closeup of one of the supporting quadrant wheels on which the door rotates.



"Sunburst" bolted splice being made at knee joint of structural frames. Made in the web to avoid weakening flange plates, the wide diameter circle of bolts produces the maximum strength for the smallest number of bolts with equal stress distribution between individual bolts.



Cross section through hangar shows door mechanisms at either end to permit jet planes to enter and leave in same direction.

Pin-connections being made at the ridge of the first structural bay section. Behind the first is a second section assembled on the ground ready to be hoisted into position.

4. INDESTRUCTIBLE VAULT

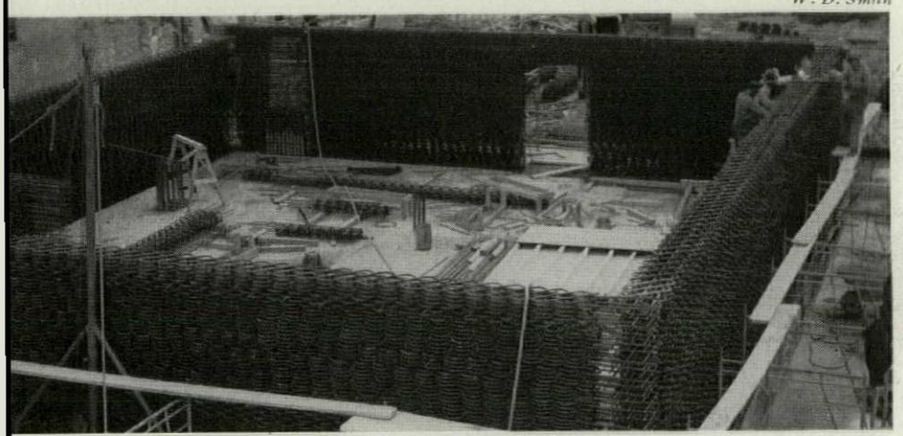
Bank security assured by dense network of reinforcing bars in 23″ walls

To all the old threats to bank vaults (robbery, riot, fire, explosion, earthquake), the postwar years have added another—atomic attack. Thus bank vaults, already strong, are becoming even stronger.

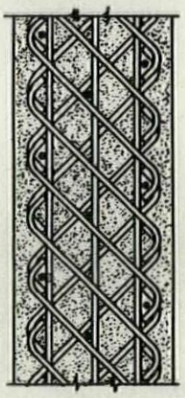
This new security vault in the 15-story Fort Worth National Bank shows how standard reinforcing bars are cleverly intertwined for the greatest possible strength. A dense truss framework of ¾″ reinforcing bars is made by spotwelding alternate layers of 3 long straight bars and short (30″) bars hooked at each end. Positioned in the walls, floors and roofs, each section of the framework is further tied by long vertical bars threaded through the truss frame and spotwelded into position. The 19″ thick steel frame is embedded in 23″ of vibrated concrete producing a wall that, when set, takes a minimum of 4 to 5 hrs. to penetrate using every conceivable combination of explosive, drilling and cutting equipment.

Having a floor area of 2,400 sq. ft. the structure took 520 cu. yds. of concrete and 326 tons of high bond reinforcing steel. Architects: Shreve, Lamb & Harmon of New York and Preston M. Geren of Fort Worth.

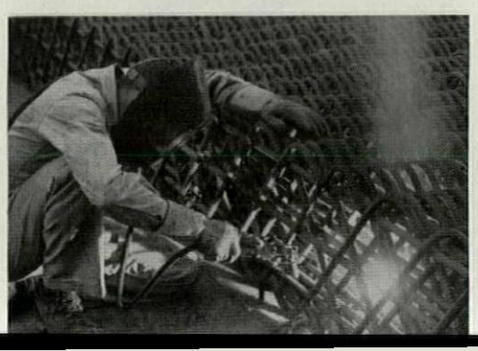
W. D. Smith

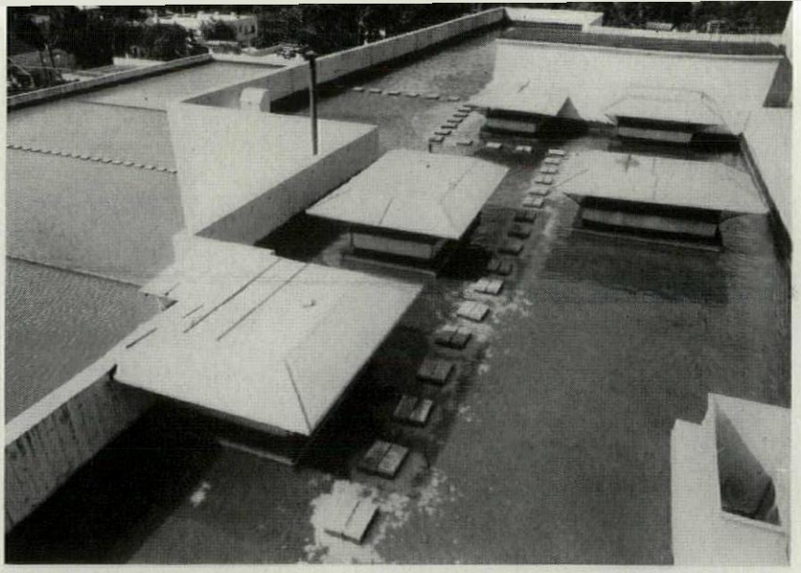


Reinforcing framework is positioned with the aid of a crane. 326 tons of high bond ¾″ bars were employed.



A frame truss is built by spotwelding alternate layers of bent short bars and long straight ones. Truss is tied into wall by threading vertical bars through reinforcing.





Danny Morse

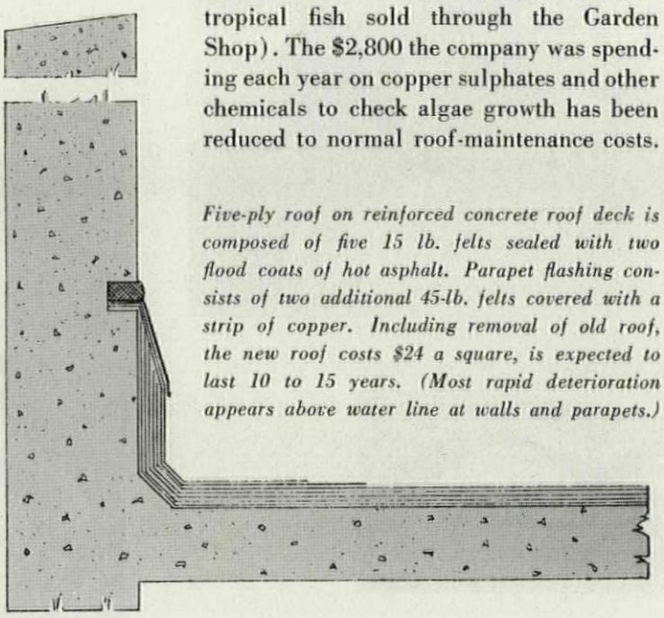
Roof is divided into ponds by 8″ x 4″ x 16″ breakwaters to reduce wave formation that might spill over parapets. Stainless-steel screens over drains keep fish from flopping into sewers. Stepping stones are provided for workmen.

5. FISH ON THE ROOF

Mosquito-eating Gambusia police cooling pool atop tropical building

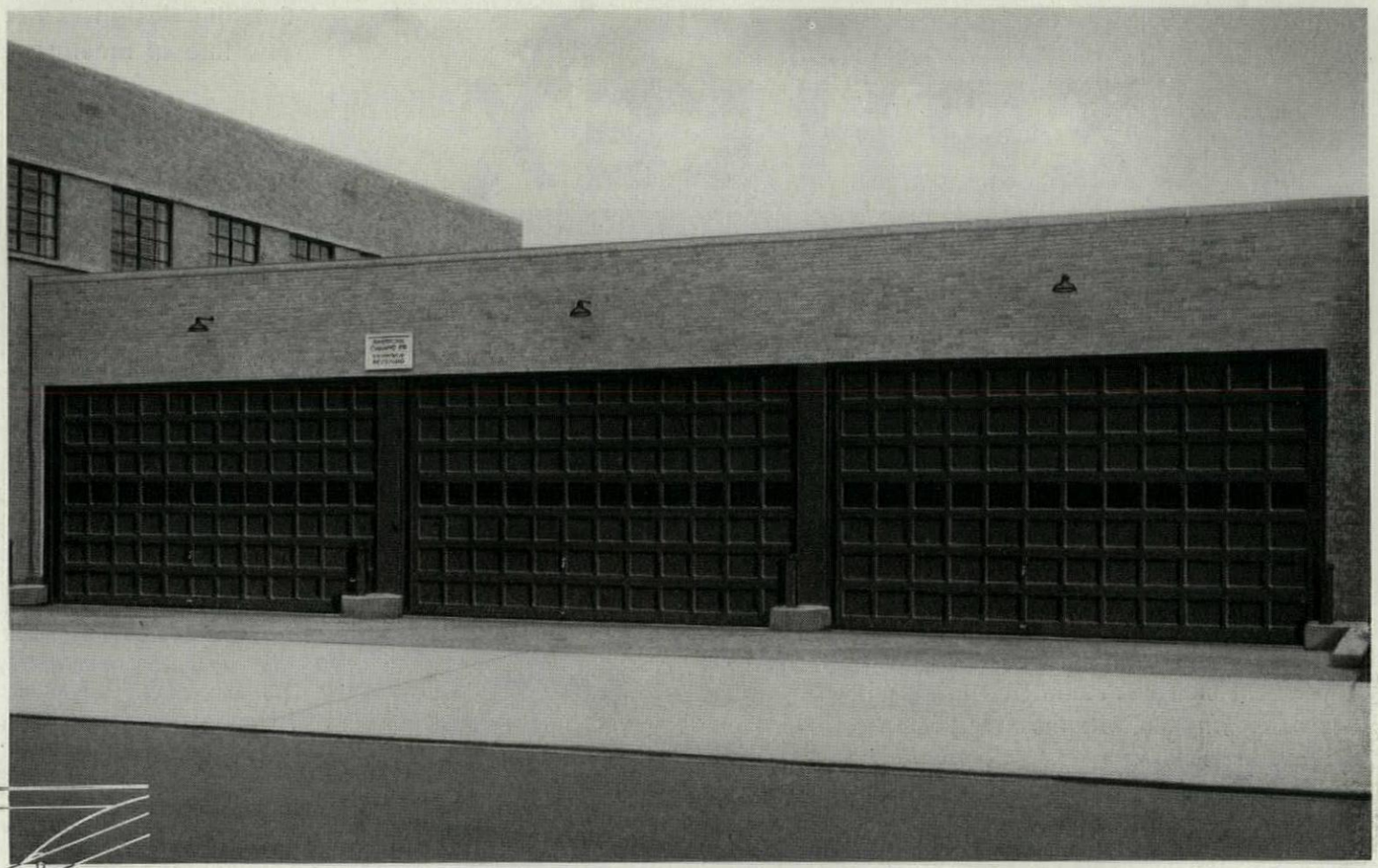
Evaporating pools on the roof of this Honolulu department store keep unshaded day temperatures down from 140° F. to 80° F. bringing the air-conditioning load within manageable proportions. Many tropical buildings have adopted this idea but have found it expensive in sulphate chemicals to keep the pools from becoming stagnant and breeding grounds for mosquitoes.

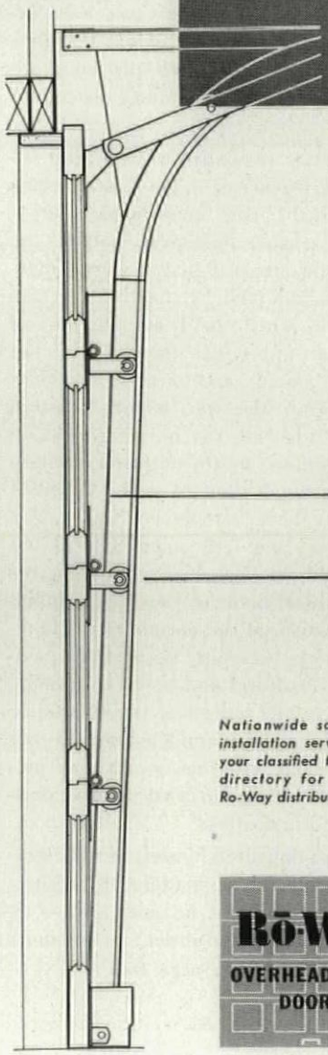
When engineer H. O. Wallace ran into the problem of cooling Sears Roebuck's 47,300 sq. ft. roof, the Territorial Mosquito Control Board offered to supply mosquito fish (Gambusia) free to keep down both algae and mosquitoes. In 1951 a new roof surface was laid to carry 6″ of water (allowing leeway for evaporation at the rate of 2″ a week) and the fish were brought to their new pond. They kept the water clean and multiplied so that Sears Roebuck's pond is now a fish hatchery (one section has even been isolated to breed tropical fish sold through the Garden Shop). The $2,800 the company was spending each year on copper sulphates and other chemicals to check algae growth has been reduced to normal roof-maintenance costs.



Five-ply roof on reinforced concrete roof deck is composed of five 15 lb. felts sealed with two flood coats of hot asphalt. Parapet flashing consists of two additional 45-lb. felts covered with a strip of copper. Including removal of old roof, the new roof costs $24 a square, is expected to last 10 to 15 years. (Most rapid deterioration appears above water line at walls and parapets.)

again Rō-Way pioneers garage door improvements





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ARCHITECTURE BEHIND THE IRON CURTAIN

Satellite designers are given Moscow line at meeting in East Berlin

—a report by Henry Colmar*

A recent Architects' Congress in the Soviet Sector of Berlin was attended by architects and town planners from all countries behind the Iron Curtain. Official reason for the gathering was the inauguration of the East German Academy of Architecture but the real purpose appears to have been to give "guidance" to architects in the Soviet sphere and to expound the current Moscow "line" on architecture. This was done by such prominent figures as Sergej Chernyshev, vice president of the Soviet Academy of Architecture, and Alexander Vlassov, chief municipal architect of Moscow.

Inevitably, the occasion was turned into a grand propaganda demonstration to proclaim the contrast said to exist between the happiness of life in the Stalinist Empire and the miserable living conditions of the "masses" in the capitalistic countries—particularly the US. Indeed, criticism of contemporary architectural styles in the US was a main subject of the various speeches made at the Congress. But even so, some interesting views were expressed, explaining to some extent the aims which architecture and town planning are expected to serve in the Kremlin's scheme of things.

Keynote speech was delivered by Walter Ulbricht, secretary-general of the East German Communist Party and considered one of Stalin's most trusted henchmen outside the USSR. Ulbricht stressed that the town planning principles adopted by the East German government—in which he holds the post of deputy premier—were calculated to counter the tendency among architects, conspicious immediately after the war under "Western influence," to advocate the building of small houses or bungalows on the outskirts of cities, without giving much thought to the layout of town centers. This "far-fetched" idea, Ulbricht said, was not only uneconomical but also constituted "a backward step from the social and cultural point of view." The building of small houses at the periphery would result in the people becoming isolated and hampered in their "cultural and political development." As for public buildings, they should be "monumental" in design and sited around central squares; such buildings would then provide "a worthy setting for great popular demonstrations and festivities."

Ulbricht also delivered himself of some general pronouncements on matters of architectural style. Architecture, he said, always reflected the existing social order; in antiquity

(Continued on page 166)

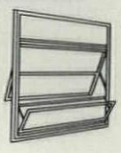
* Head of the British office of the Universal Trade Press Syndicate.

St. John's Hospital, Santa Monica, Calif. John W. Maloney, Seattle, Wash., Architect. Pozzo Construction Company, Contractors.

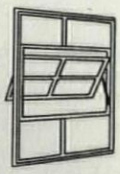
Architect John W. Maloney says:

"The Truscon line enabled us to fill every window need in the beautiful new St. John's Hospital"

Strikingly beautiful is this new St. John's Hospital in Santa Monica, California. Well-illuminated and well-ventilated with Nature's free sunlight and fresh air, because it is well-windowed with Truscon steel units. Truscon Series 46 Double-Hung Steel Windows complement the sweeping, modern architectural lines; admit ample daylight; operate easily; require an absolute minimum of maintenance. Truscon Intermediate



Projected Steel Windows with dual ventilators permit ample, controlled flow of air in inclement weather. Truscon Commercial Projected Steel Windows lend flowing lines and proper ventilating facilities to the service units. Truscon Steel Screens provide economical, long-life screening. See SWEET'S for complete details on the entire line of Truscon Windows for every purpose; and write for detailed literature on all other Truscon Steel Building Products.



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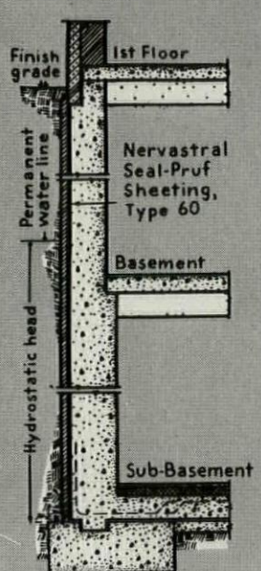
*better for MEMBRANE WATERPROOFING



For foundations, retaining walls, basements, subways, tunnels, etc., which must be made watertight. Nervastral SEAL-PRUF not only gives complete protection from water penetration but helps absorb shock and cuts vibration.

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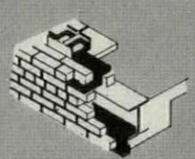

Since Nervastral SEAL-PRUF is completely unaffected by laitance of Portland cement and by acid in cinder concrete, it is ideal for spandrel beam waterproofing.

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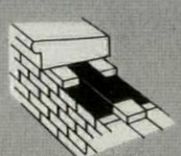

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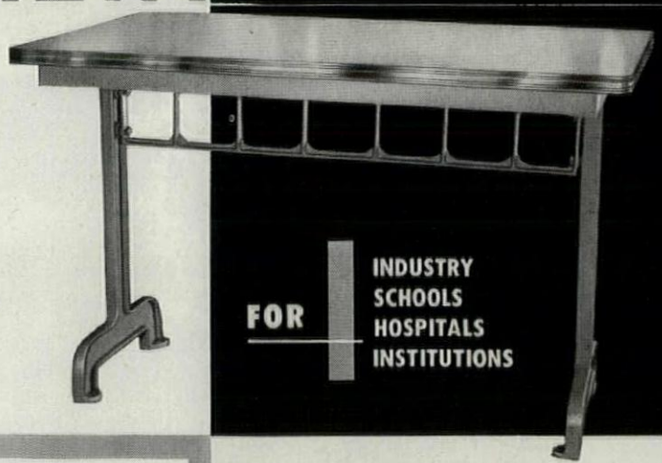

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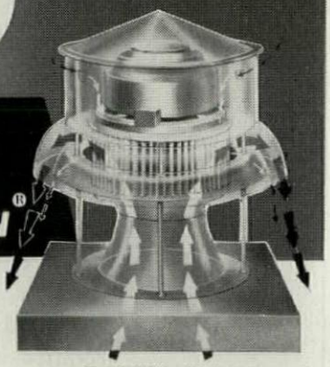

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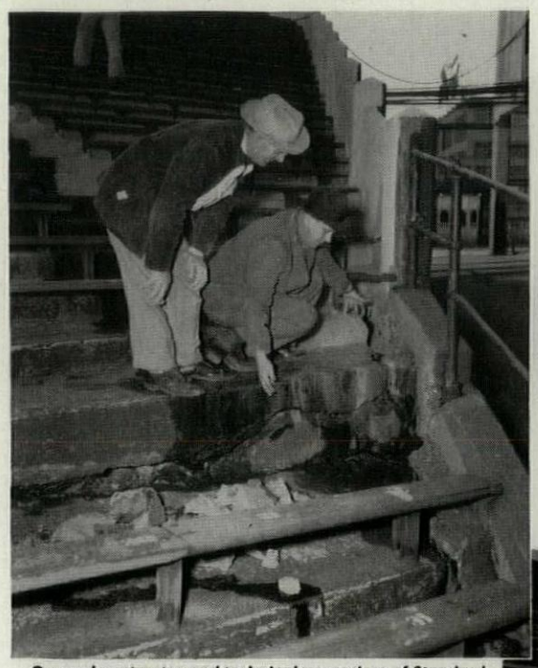
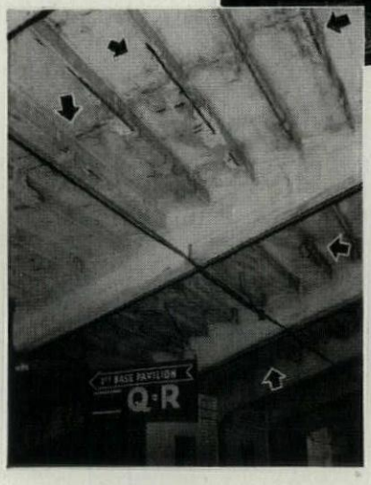
THOROSEAL SCORES ANOTHER HOME RUN at the Braves Field



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.

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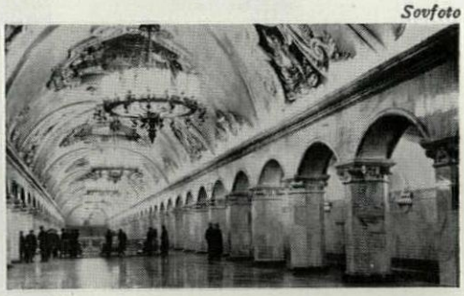
IRON CURTAIN

there had been splendid palaces for the rulers; in the Middle Ages castles and churches were built and under capitalism there had been magnificent edifices for industrial and commercial purposes. Today Western Germany was dominated by the new skyscrapers of the US and British occupation powers whose imperialistic policy had no regard for national traditions and styles. In contrast to the "monotonous and crude" structures now being built in the West, and rejecting every trace of Germany's pre-1933 "Bauhaus" style and of American "functionalism", East German architects, Ulbricht urged, must create a new style combining German traditions with the "progressive" architectural achievement of the Soviet people. Towns of the future should express the people's joy "at working for their country instead of being exploited by capitalism." Americans, he said, were spreading a disintegrating influence in Western Germany. They were building skyscrapers—reminiscent of medieval fortresses —"bang in the middle of the Rhineland landscape." By demolishing tradition in architectural style the US aim was thus to destroy the national dignity of the German people "and to render them subservient to General Eisenhower's dictatorship."

The Soviet Union on the other hand, Ulbricht went on, was respecting other people's architectural traditions. The new buildings of the Soviet Embassy in Berlin, for example, fitted well into the general layout of the *Unter den Linden* street (this street was all but razed to the ground during the fighting in the last days of the war). Another example was furnished by the stations of the Moscow underground which—in marked contrast to the "dreary" stations of London, Paris and Berlin—expressed the joyful spirit of the Soviet people and exercised "a progressive educational influence." It was symbolical that

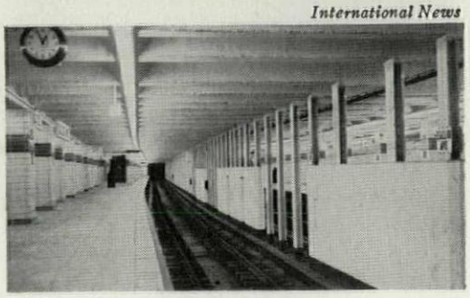
(Continued on page 170)

Sovfoto



Subway stations: Moscow and New York

International News



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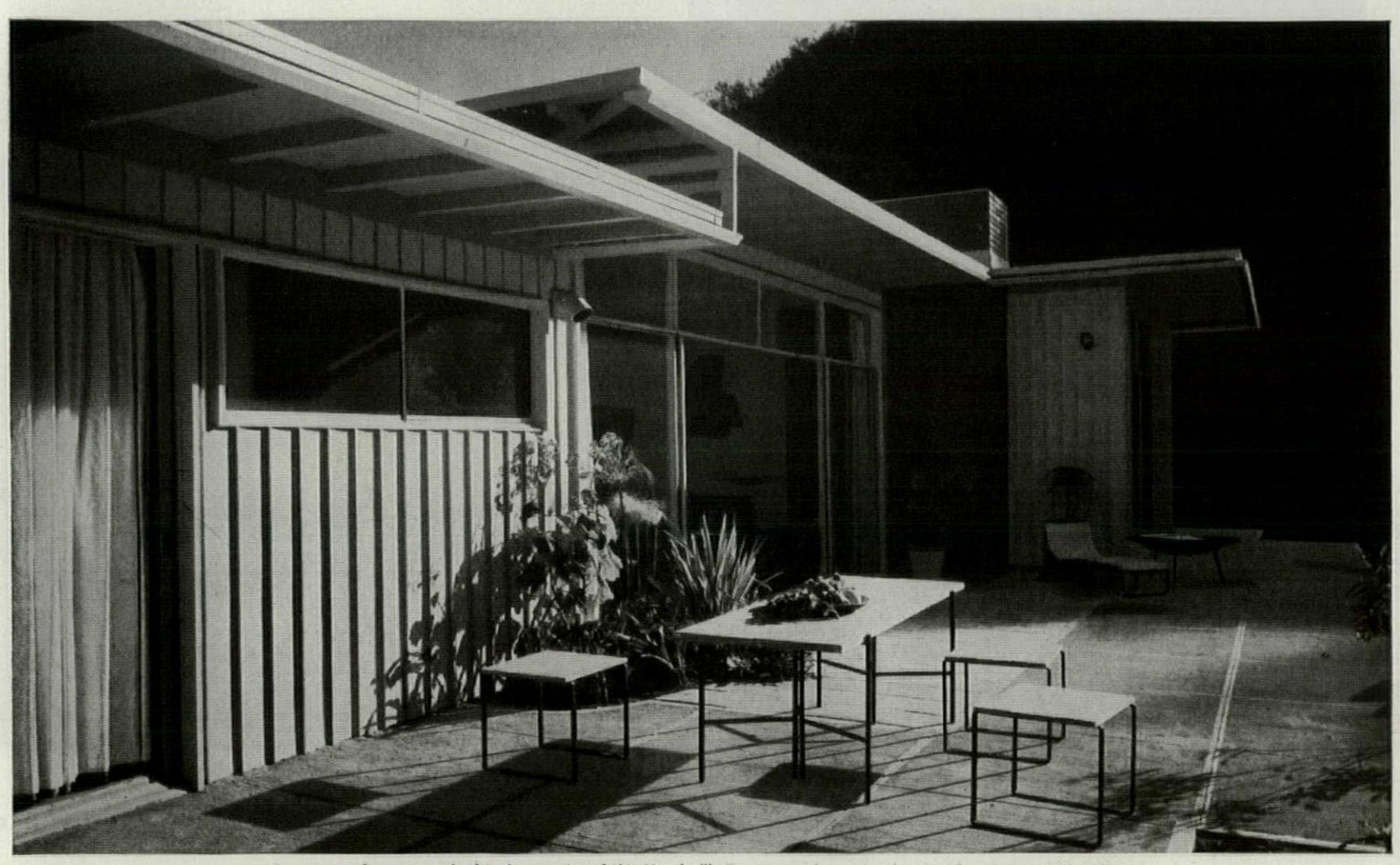
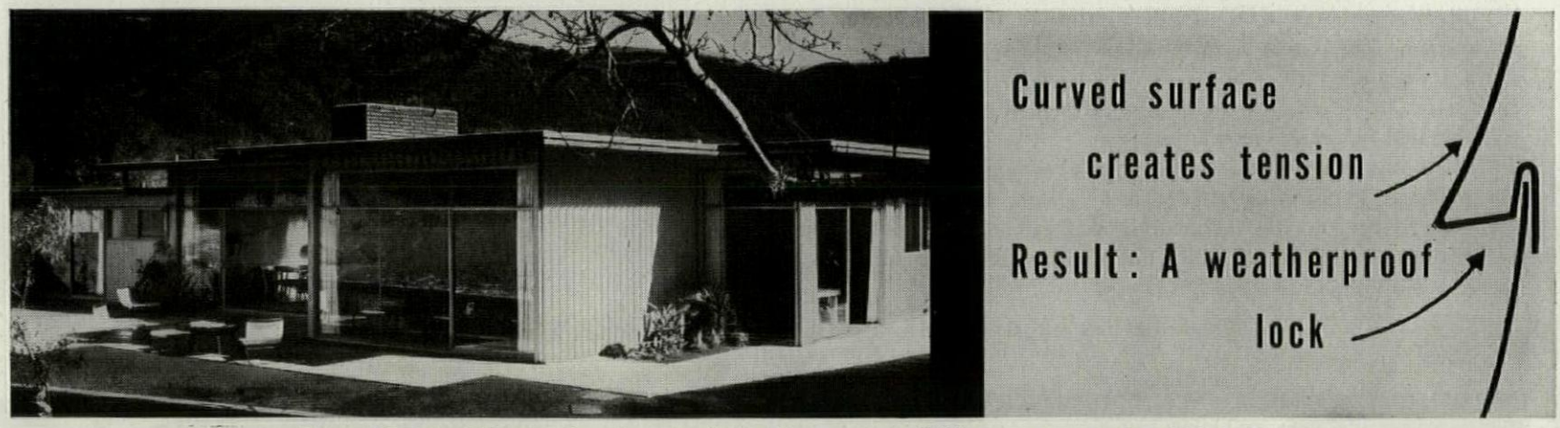


***Smart, modern, practical** is the exterior of this Mandeville Canyon residence near Los Angeles, designed by William Wilson Wurster, AIA. Effective vertical application of Kaiser Aluminum Siding is both striking in appearance and functional. Helps deaden sound and provides excellent insulation. Attractive baked-on enamel coat can't crack, peel or blister—is amazingly easy to clean.*



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However, it may pay you to check with your Kaiser Aluminum dealer before you specify less-satisfactory substitute materials. For he still may be able to meet certain requirements from his stocks.

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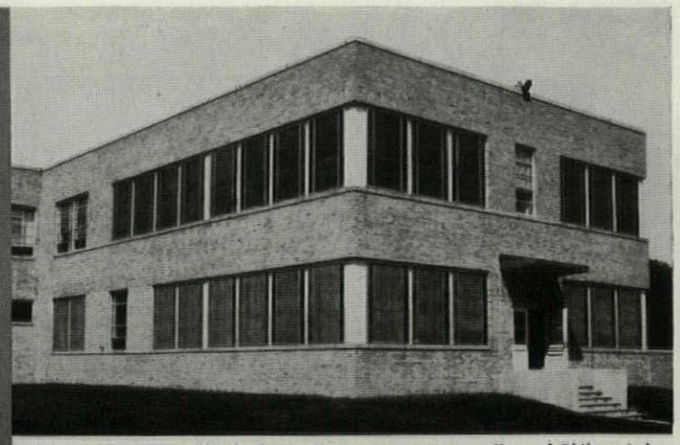
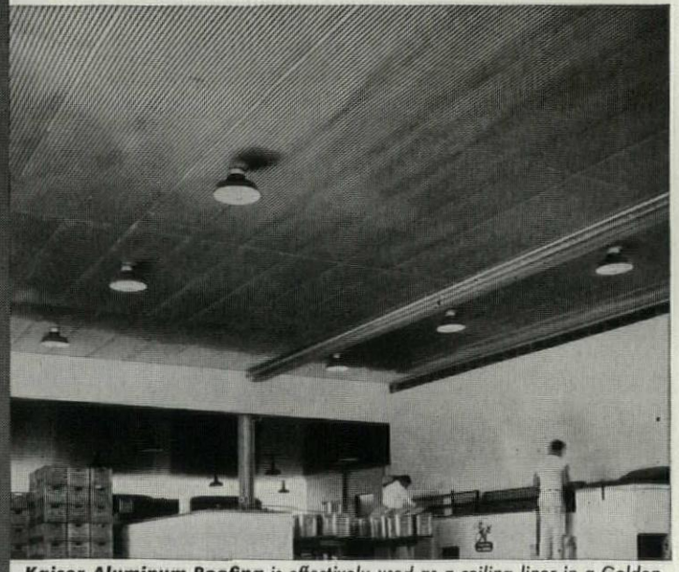


Kaiser Aluminum Shade Screening *on New Jersey offices of Chilcott Laboratories made air-conditioning feasible. Tiny louvers stop hot sun rays before they hit the glass, reducing heat to controllable levels. Glare effectively reduced. Soft, adequate illumination lessens eye-fatigue. Anodized finish requires no maintenance, no painting. Hinging makes windows easily accessible for cleaning.*

Kaiser Aluminum Ductwork *in Foley's Federated Department Store in Houston fabricated right on the jobsite. Highly workable, easily joinable by any standard method, aluminum ducts were installed with less worker fatigue, less wear on equipment. Pound for pound, aluminum ductwork has three times the working surface of steel. Uninsulated, it delivers as much heat as insulated galvanized material.*



Kaiser Aluminum Roofing *is effectively used as a ceiling liner in a Golden State Dairy building at Van Nuys, California. Because it is so easy to clean, aluminum contributes to maximum sanitation. Because it's solid aluminum—not clad or veneered—this ceiling is highly resistant to rust and corrosion. Never requires painting. Virtually maintenance-free. Strong—durable—lasts for years. And because aluminum is so light in weight, it is far easier to install.*

IRON CURTAIN

the Moscow skyline was dominated by the university building.

According to Comrade Ulbricht, the "minimum height for workers' houses in the US was 2.28 meters" whereas in Moscow it was 3.10 meters for all rooms. (Actually, living space in Moscow apartment houses averages 90 sq. ft. per person; the official British "Housing Manual" prescribes a minimum of 450 sq. ft. per person for new housing.) Architecture in the USSR had shown that "standardization need not result in formalistic edifices devoid of meaning." What was needed today in architecture, he said, was "creative realism" and this meant giving expression to the great ideas of social progress, and respecting national peculiarities in style.

Amerıean "lack of culture," Ulbricht emphasized, was particularly evident in "formalism" which was simply the negation of "true art." As examples he quoted the new building of the "Free University" in Western Berlin, the new railway station at Heidelberg and a new church in Stuttgart; the last named "looked so much like a cement factory that it had to be altered because of the many protests." The "formalist" architects were afraid of being regarded as incompetent successors to the classical architects whereas in fact "they are the incompetent successors to Hitler's air raid shelter architects and the designers of US skyscrapers.

Turning to building techniques and methods, Ulbricht said there must be strict rationalization and standardized production of components. Only by following the well timed methods of prefabrication developed by the Russian building industry could the German building workers achieve maximum perfection and efficiency. Ulbricht wound up by once more urging architects to reject all manifestations of "American formalism and constructivism" and to preserve "realist" buildings of the past while adopting new Soviet building methods. Comradely criticism and public discussion "with the workers" would help the architects overcome all remaining traces of US influence in style and design.

Later in the proceedings of the Congress a Polish representative again attacked "Western theories about the dispersal of towns and

(Continued on page 172)

Sovfoto

New office building in Moscow

HIGH QUALITY SCHOOLS

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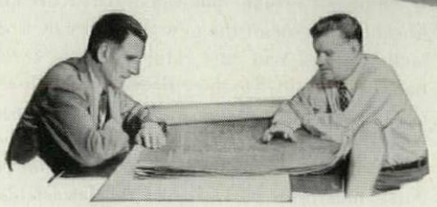

Gregson & Ellis schools do not skimp to achieve low cost. They have the de luxe features—finest lighting, ventilation, P. A. system and such equipment—that earmark today's best schools. The economy derives from the architects' ingenuity in organizing the job; in using materials functionally without disguise, and from their intelligent approach to design and budget problems. The other source of Gregson & Ellis' low cost is the economy inherent in Robertson materials. Contractor for this job was the Central Construction Co., of Atlanta, Georgia.

Complete figures, including costs, on these and similar schools are available for the asking

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showing how the materials can be used to reduce over-all weight and construction time.

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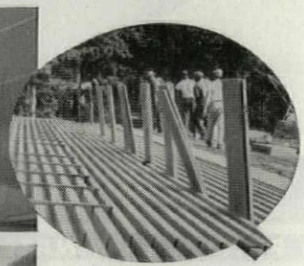

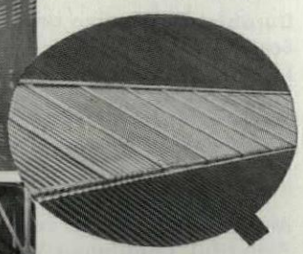

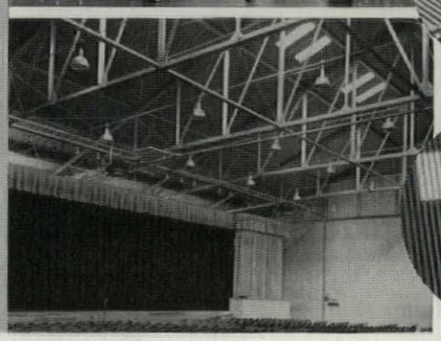

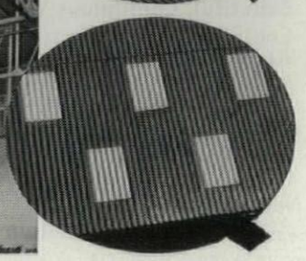

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forms a flat, attractive ceiling requiring only a paint finish. By sloping, the ceiling has good acoustical qualities. On the Roof Deck is 2″ of insulation and a twenty-year bonded built-up roofing. The insert shows one detail of efficient job organization—workmen placing insulation and waterproofing on roof. The long-span deck is welded to steel members imbedded in the masonry walls.

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used to daylight corridors, are a feature of all Gregson & Ellis schools. This scene is in the Jim Cherry School, Brookhaven, Ga., pictured above. This school with 16 classrooms, auditorium-dining hall, kitchen, offices, auxiliary rooms, public address system and other modern equipment was completed for $6.25 per sq. ft.

16 ROBERTSON SHEETLITES,

set in a GALBESTOS roof, light this clean-cut auditorium. The structure is made entirely from noncombustible materials. This school at Manchester, Ga., has 27 classrooms, 3 offices, storage, toilet rooms and the 116′ x 111′ gymnasium-auditorium. It was built for $4.60 per sq. ft. The $217,000 total was $3,000 less than the budget.

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about over-spill populations." He quoted Stalin's "classic maxim" that the town was the most economical form of settlement. The new agricultural towns in the Soviet Union called "Agro-Towns" had shown that the difference between town and country could be eliminated. ("Agro-Towns" are the latest development in Soviet agricultural policy. Formed—against considerable peasant resistance—by the merger of several collective farms, they have also been described as "agricultural factories.")

Another German spokesman, Dr. Kurt Liebknecht, director of the new Academy of Architecture—who had just returned from several months' stay in Russia—discussed the "political importance" of the architect's profession. There could be no impartiality for them. Those of their colleagues who had built for the Nazis had been partisans of the fascist ideology, and those who now designed buildings for the production of the atomic bomb in the US, or armament factories in Western Germany, could not escape responsibility for the "imperialist war policy." Liebknecht also urged standardization in building work "as practiced in the Soviet Union." This would lower production costs and simplify the technical functions of architects, leaving them more time for artistic creation.

A leading Czechoslovak architect, Professor Jiri Kroha, denied that in the "people's democratic" (i.e., satellite) countries they were merely imitating Russian styles. However, Soviet architecture could teach them the need for a revival of traditional styles. Local architects must solve the problem as to what extent the Soviet example could be followed in the creation of new national styles.

Finally, the Soviet representative Chernyshev declared that the title of "architect" implied the obligation to be a "master-builder." He demanded that no one should be allowed to use this title who betrayed his talents by helping "US war preparations." Chernyshev also announced that 50 architects from the "people's democratic" states, including Eastern Germany, had been invited to attend a nine-month course at the Soviet Academy of Architecture; during the course they would "extensively" travel throughout the Soviet Union to study Soviet building methods and town planning.

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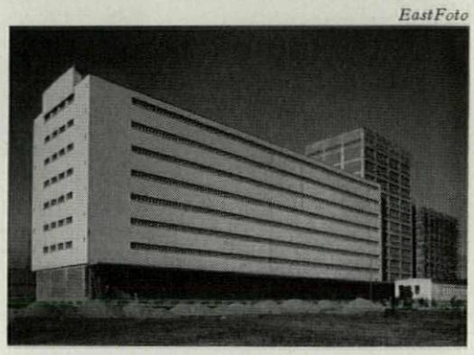

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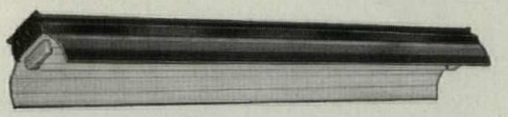

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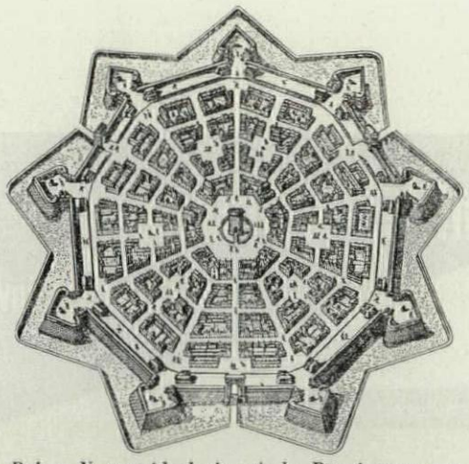
BOOK REVIEWS

City planning—yesterday and tomorrow:
By Steen E. Rasmussen (right)
By Wilbur C. Hallenbeck (p. 184)



Palma Nuova, ideal city of the Renaissance, was shaped for defense in the Po valley in 1593.

TOWNS AND BUILDINGS. By Steen Eiler Rasmussen. Harvard University Press, Cambridge, Mass. 203 pages. Illus. 6½ x 9¾". $4.25

Steen Eiler Rasmussen is a cultured, erudite Danish gentleman with a soft persuasive voice; a delightfully balanced intellect such as one rarely has the good fortune to encounter in the hurly-burly of 20th Century civilization. He has a happy knack of breathing life and vitality into the eroded stones of cities as far apart as ancient Peking and the fascinating jungle that is modern Paris. He takes the reader on informal visits to most of the characteristic towns and buildings that influenced the development of our own communities, considering each in relation to both the site and the purpose, delicately touching upon both the practical reality that has become so highly honored today and the underlying ideal without which practicality has no meaning.

Rasmussen regards the city as an entity which expresses certain ideals—each structure part of the whole, and that whole being an extraordinarily accurate indication of the culture achieved by a society. Throughout this series of carefully written essays on buildings and the towns in which they thrive our guide is striving to awaken our latent interest in the shape of urban society, the implication being that if our towns are visual and physical monstrosities, we have only ourselves to blame.

The opening chapters discuss the ancient cities that were primarily temples devoted to the glory of their absolute rulers. Peking was a city of one million inhabitants divided into neighborhood units by clear straight highways, broader than the Paris boulevards, leading to the colorful Forbidden City with its artificial lakes and mountains. The highways contained separate areas for traffic and for shops; only itinerant peddlers were allowed in the residential areas between the highways.

Colonization was the basis of most of the later Greek and the Roman cities, which thus began life as military camps. Naturally, these took simple geometric forms planned by the camp commandant with central squares for the town hall and, later, for the temple. They were also compact and surrounded by protective walls.

In medieval times the Germanic towns developed in a similar manner; as towns became too populated to be fed by the surrounding farms, some of the populace were forced to develop new lands, and in their new towns placed compact houses around a market and a church protected by an enclosing wall.

Rasmussen points out the tremendous revolution in pictorial art that occurred around 1400 with the development of the idea of per-

(Continued on page 176)

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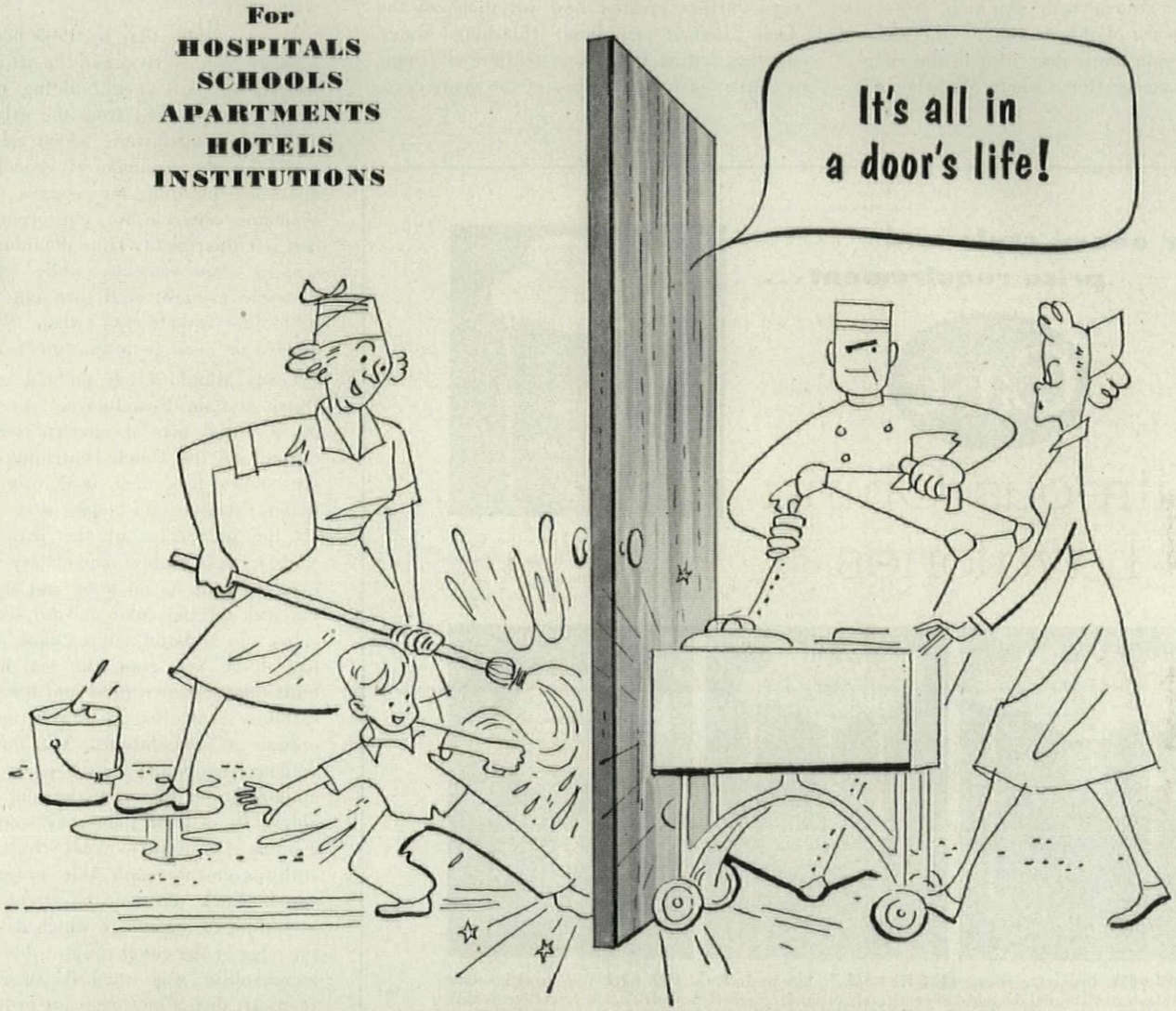

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spective. Before this, the Middle Ages saw and thought only in two dimensions; Chinese painting today still depicts such parallel projection, representing similar elements equally large whatever their distance from the observer. With the conception of perspective, Europeans saw depth effects and began to consider the vista in town planning.

The influence of this search for the pleasing vista is admirably described in the chapter on renaissance Rome where Michelangelo merged space and structure by contrasting scales, solids and voids. This was the great planning and building period of Rome when Pope Sixtus V repaired and improved the aqueduct system, using the fountains to initiate a new ideal of city life—"Every square received its fountain, and through the centuries artists created new variations of the same theme: rippling, splashing water, whether jetting forth from sculptured groups set up amidst the columns of the many decorative façades or from single fountains, embellished with tritons and river gods, standing in the centers of squares. The sound of hundreds of playing fountains became the melody of Rome, faintly audible behind the loud noise of the city by day, clearly heard at night when the great metropolis lay in hushed tranquility."

It was a pity that by 1900 both the consciously planned vista and the art of sculpture treated as part of a building project had largely disappeared from the urban pattern. This was a misfortune which cannot be excused on the grounds of economy. In an apartment building, for instance, the relevant economic criterion for improvements is the cost per apartment. Thus planning and landscaping improvements, while expensive in themselves, might well turn out to be most profitable investments when the cost is divided between each apartment.

Lewis Mumford has pointed out that the Dutch and the Scandinavians are leaders in the essential arts of modern living. In his chapter on the Dutch contribution, Rasmussen shows how this lead originated. He writes, "Amsterdam houses were, contrary to all the tendencies of the period [Renaissance], light below and heavy above, not made of stone but of wood and brick, glistening with oil and color and tar like well-kept ships." In Holland nothing came easily. Land had to be won from the sea, houses were built upon massive piles and the water table carefully controlled to prevent undue deterioration of foundations. Yet the burghers, without the rigid control of a dominating authority, created impressive and harmonious cities. In general plan they were based on a series of concentric canal streets, 150′ wide, with pavements each side of an 80′ wide canal. Each part of the street was paved according to the use to which it was put—at the edge of the canal rough cobbles on which merchandise was stacked, then a smooth roadway, then a pavement for pedestrians and finally a highly scrubbed threshold or "stoep" in front of each house. Adjacent houses shared the same piling to reduce construction costs. End walls were kept remarkably light, consisting mainly of windows which permitted the maximum amount of light penetration into the comparatively long and narrow interiors and which made it possible to regulate not only the *quantity* of light but also the *quality*.

It is noteworthy that complete development plans were made for Dutch cities as far back as 1612. The Dutch people, who were all rugged individualists with a high appreciation of the value and fragility of freedom, regarded their towns like "great and flourishing corporations in which each citizen held shares." Quoting the Dutch historian A. J. Barnouw, Rasmussen says: "They learned by

(Continued on page 180)

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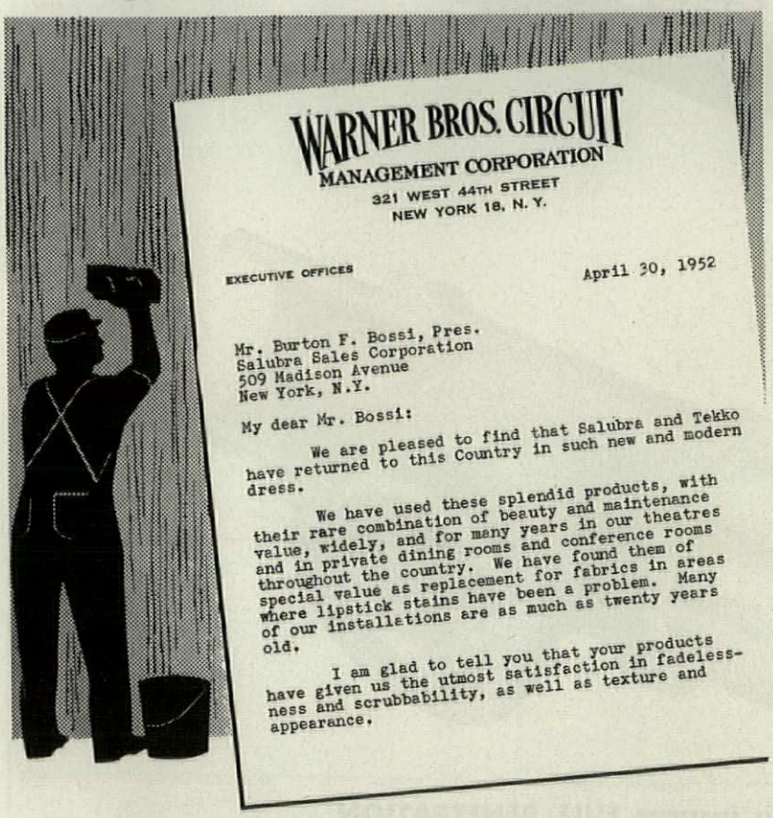

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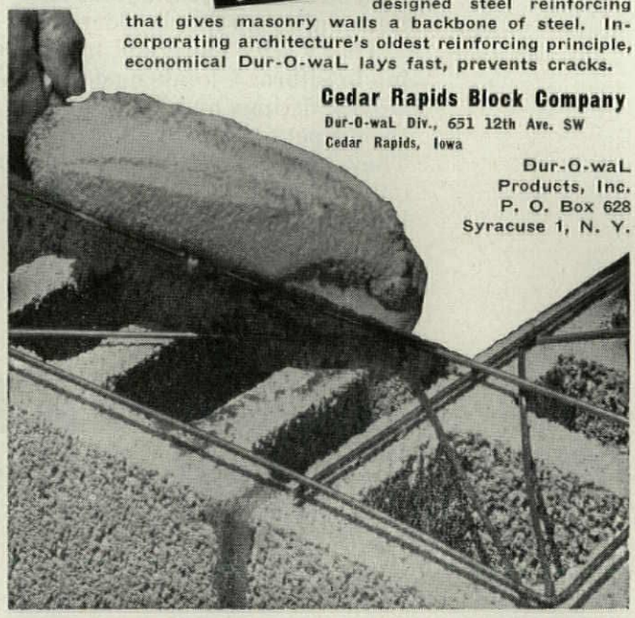

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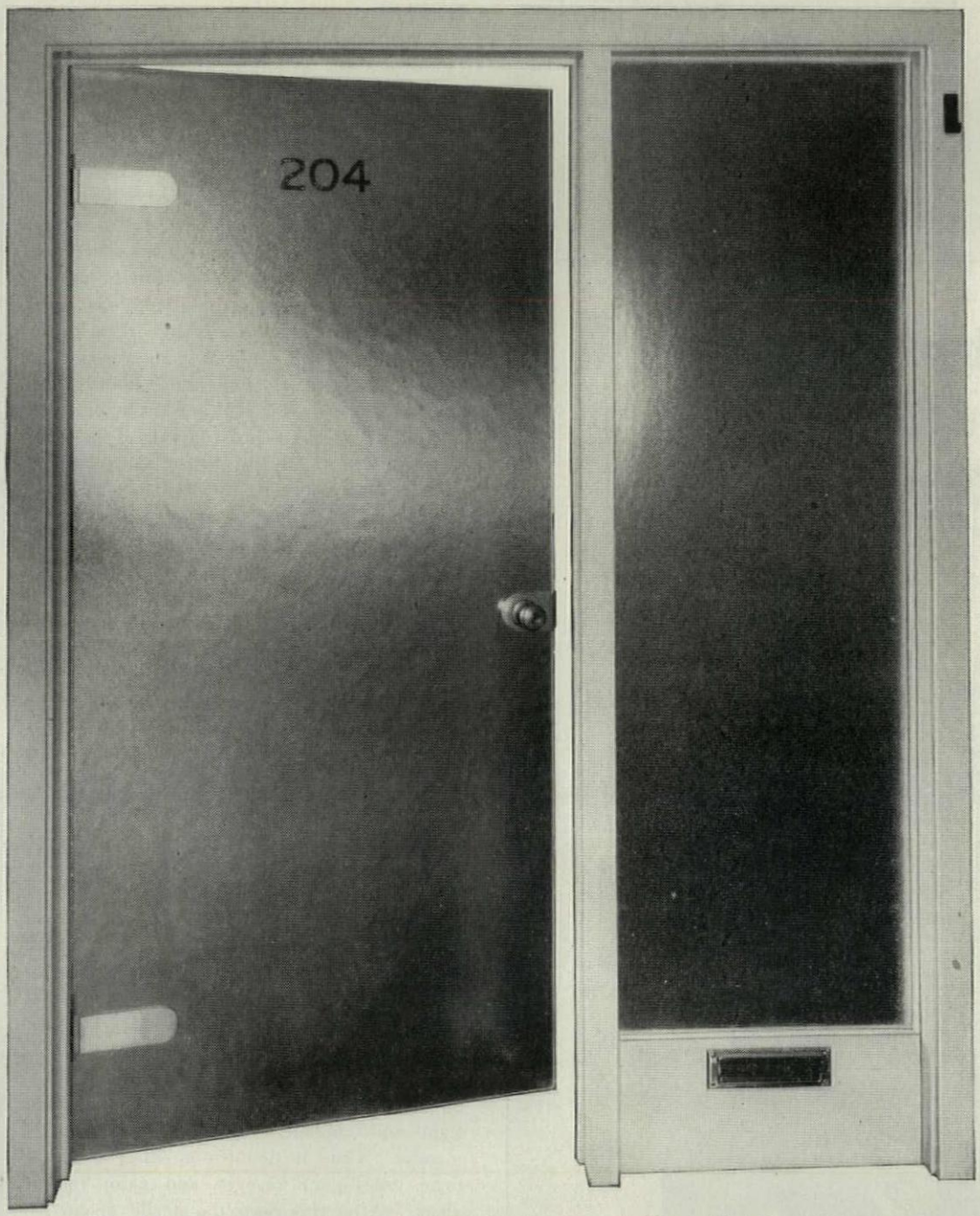

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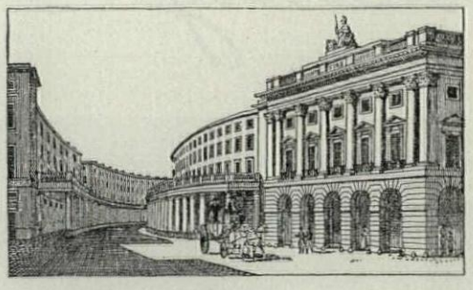


"The Quadrant," Regent Street, London, laid out in 1812 when the vista was still an important element in architecture and town planning. Its sidewalks are designed as curved arcades.

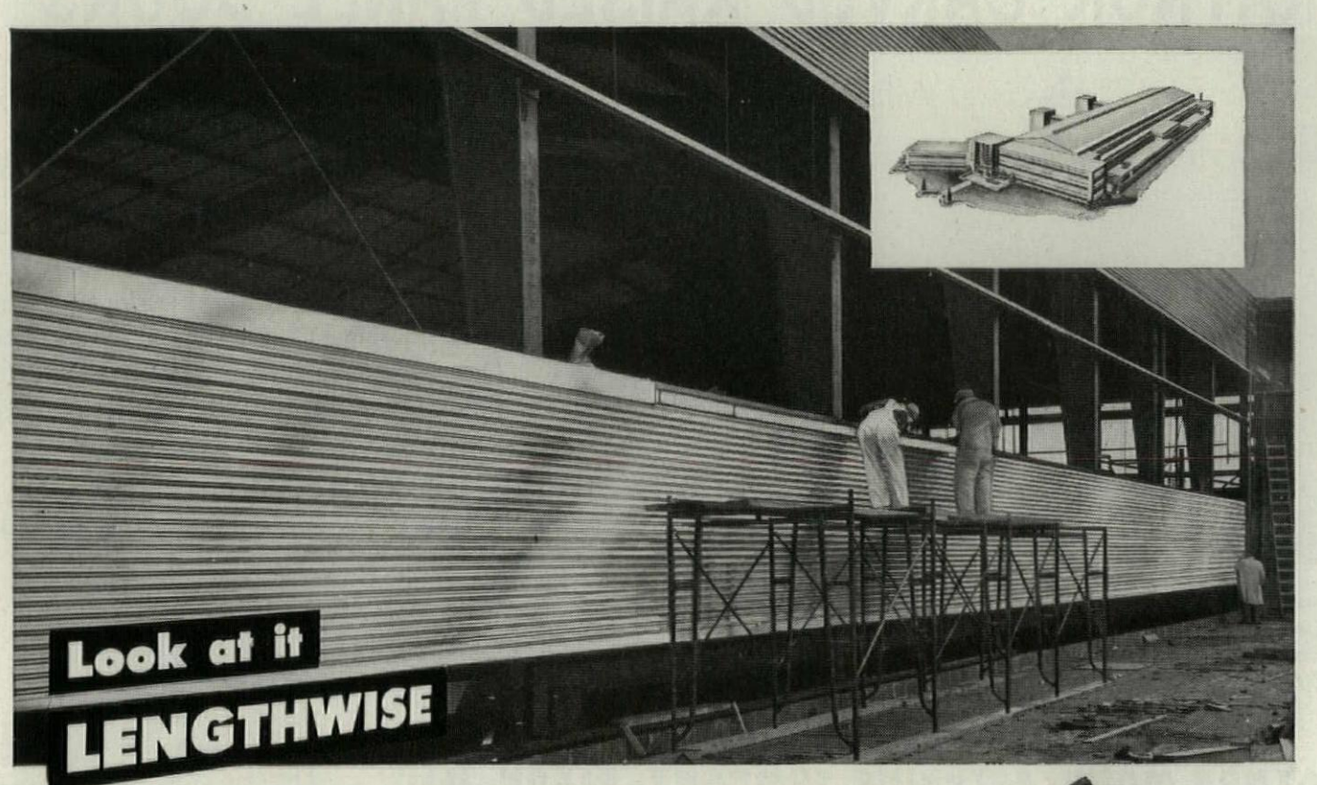
bitter experience that their strength lay in co-operation, and that co-operation was feasible only if all agreed to limit their personal liberties by personal obedience to self-made laws."

In contrasting Paris and London the author establishes the essential differences between the European towns and those of England, and perhaps of America. Whereas the continental towns had to be cramped behind protective walls, the English, being more secure from attack by their island position, have been able to neglect enclosing walls. The result is that Paris became a city of cramped tenements while London developed single-family houses. Another difference was that Paris was ruled by an absolute monarch whose court took over open spaces, while London had already evolved some principles of individual liberty and squares were used by either trade or local inhabitants. Haussmann's carving of the Parisian boulevards in the 19th Century shows exactly what might be expected when "planning is done by laying a ruler on a city map and, with no regard for the cost, cutting great swaths straight through blocks of houses"—the city remained a jungle and the people were forced into smaller and darker apartments at higher rents. In London, where laws were derived by a recording of rights and privileges, there was armed resistance when building speculators tried to exploit the old village playing fields. There were pitched battles and some dead, but in every case the defenders held the field and subsequently won government support.

Without getting involved in academic discussions upon architectural styles, Rasmussen emphasizes the fundamental idea behind each. Gothic architects had aspired heavenwards; their buildings seemed to defy the law of gravity. Baroque *added* more and more material to the surface of an already massive form, while rococo relieved facades by recessing, in fact by *subtraction*, signifying a new conception by which buildings were made light and elegant instead of unnecessarily massive. Thus it denotes a "discriminating taste, intelligent reserve and calm rationalism." After this came the sterile, geometric cities of the neoclassic period, a style of which Goethe so pungently recorded that "to combine columns and walls will always be a contradiction."

Nowadays we appreciate unadorned beauty, to which we have given the rather uninspiring term functionalism. Rasmussen shows how this is an entirely new idea of style and indicates the cultural discord of "a period in which houses and furniture were made exactly like those of earlier periods, while other accessories of daily life were given entirely new forms." He highlights this chapter with a useful contrast between the two extremes of Ebenezer Howard's garden satellites and Le Corbusier's multistory apartment villages.

(Continued on page 184)



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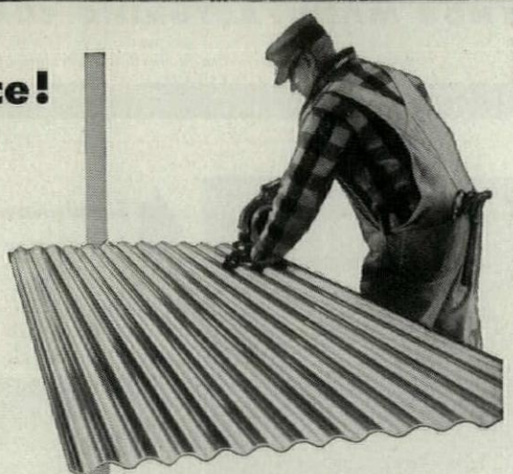

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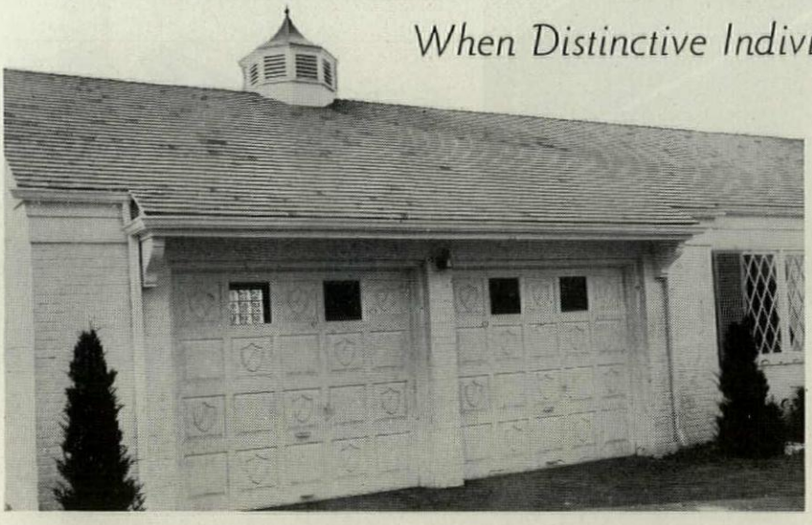

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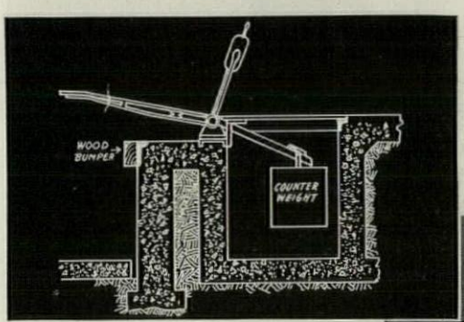

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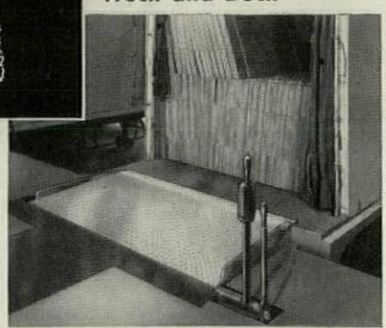

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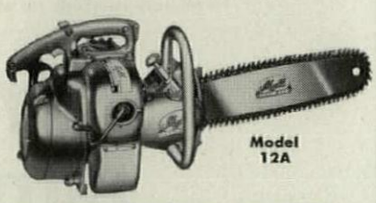

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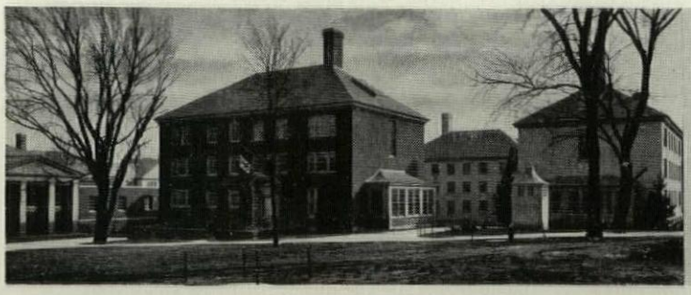

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Atlas Panels and Atlas Doors were used

The wall panels were ¾" hardwood plywood—of several different woods, principally Gum and Birch, according to the design of each room and each particular application.

Interesting features of the dormitory rooms (right) are the cabinets, bureaus, closets, shelving, shoe racks, etc.—all built in after the wall panels were finished. The sections were precut, tongue-and-grooved, edge-stripped.

The Atlas Doors are solid core hardwood flush doors—some 1⅜" thick, some 1¾" thick. The core material of these solid core doors is Balsa Wood—inert, proof against stress and warpage. Balsa also has important sound-deadening qualities and provides efficient insulation.

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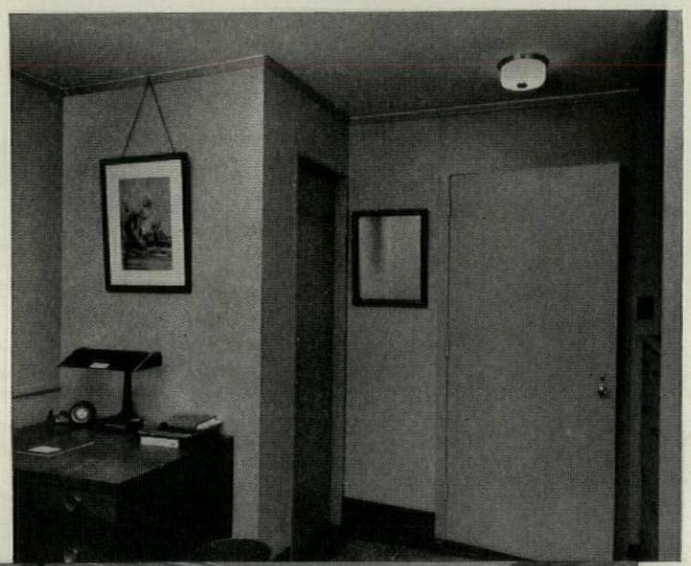
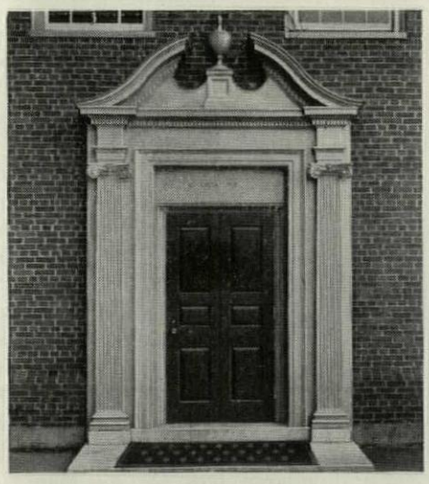
We'd like you to know more about Atlas Panels and Atlas Flush Doors. For illustrated literature, kindly address your request to Department 78.





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There is a realistic chapter on the problems of land and speculation. With commendable modesty Mr. Rasmussen illustrates some of the most unfortunate aspects of careless speculation in land by examples from his native Denmark, and indicates some of the solutions they have found to this world-wide problem. In medieval towns the term "land values" did not exist; only buildings, not land, represented tangible values. But in the 19th Century "the main object of the enormous housing schemes of this period was not to provide security or to embellish the city, nor was it to provide decent living accommodation for the tenants; its sole object was to provide large and safe incomes for the promoters. In our century we have been trying in various ways to extricate ourselves from the web of speculation so that we can make cities pleasant and healthy to live in."

In Copenhagen, as the city grew the State became interested in filling its coffers by selling hitherto unbuilt land; thus both State and landlord became interested in the exploitation of the area. As early as the 16th Century fixed tenancies were brought to an end and property passed in broken lots to private individuals. With growing cities and populations, house owning became a most lucrative business and the value of property was in proportion to the number of dwellings that could be squeezed upon it. The free play of economic forces was unable to provide cheap land for low rent dwellings. Though there was no lack of demand, supply simply did not keep up with it. The solutions being achieved in Denmark lie in the direction of co-operative housing and long-term leasing of land rather than in outright ownership. In short, towards Rasmussen's praiseworthy philosophy that "the human estate is more important than real estate."

It is a pleasure to find all these stimulating ideas presented in a well bound volume in which text, typography and the profuse line sketches are by the same hand. The author's cutaway drawings show particularly well the relation that exists between the interior and exterior of each building, all this resulting in a most attractive and worthy addition to the bookshelves of architects, planners and all others who are the least bit appreciative of their surroundings.

AMERICAN URBAN COMMUNITIES. By Wilbur C. Hallenbeck. Harper & Brothers, New York, N. Y. 8¼ x 5½". Illus. 617 pp. $6

"Like Alice and the Red Queen," says Professor Hallenbeck, "cities have to run as fast as they can to keep up with the changing world, and twice as fast to get anywhere." This has been very true for most of the great American cities, which have no sooner been able to react to one given set of circumstances than they find that everything has been changed and they are confronted with another set of entirely new and even more complex problems. Yet this may not always be so. The law of diminishing returns appears to have been passed in the accumulation of population in the big cities. Latest reports show that the larger the city the more it costs a person to live in it; and that industrial decentralization is now possible thanks to cheap electric power, economical highway freight costs, extensive use of private automobiles and the development of efficient telephone service.

Whether our city fathers can counteract the spread of urban blight, as manufacturing establishments move out to the fringe areas in search of more space, less congestion and less taxes, will depend upon their understanding of the interrelations between politics, sociology and physical planning. To date these aspects of municipal governments have been considered in the main independently; this book tries to bring them within a common understanding.

(Continued on page 188)

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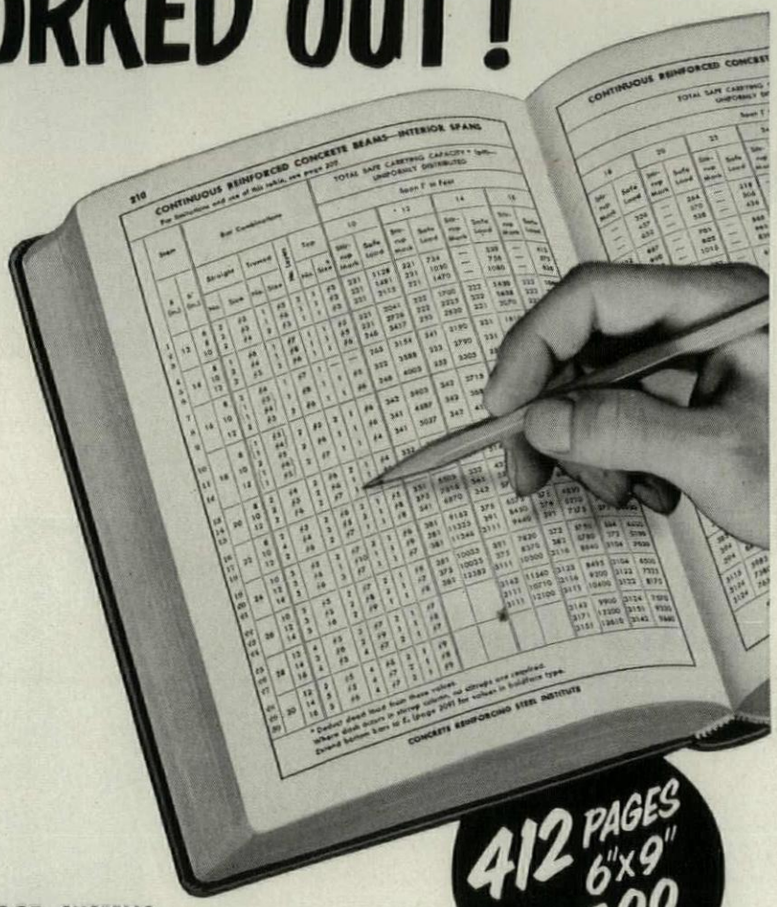

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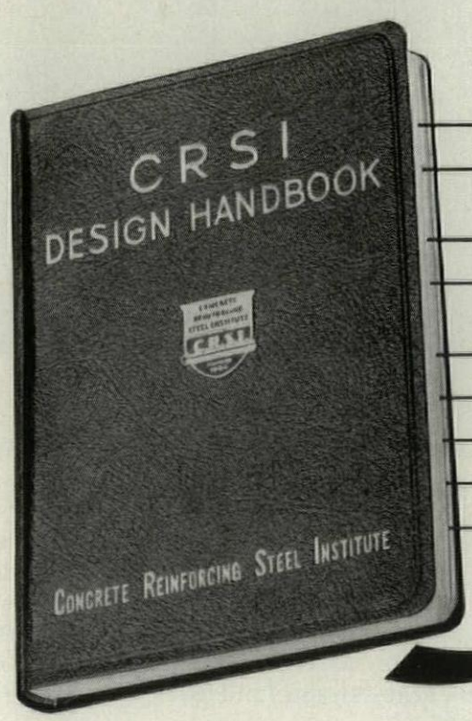

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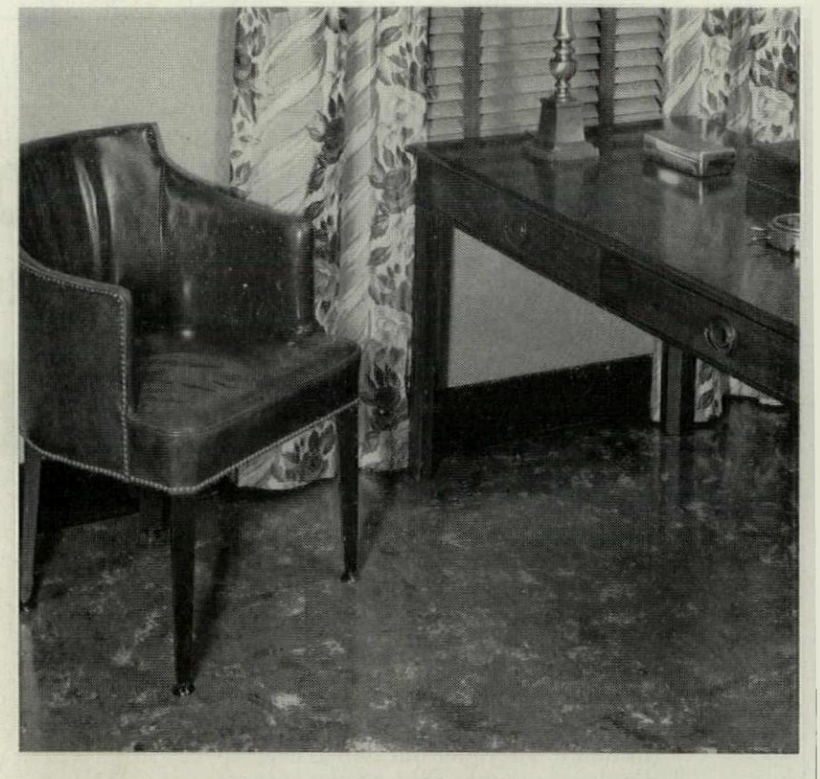

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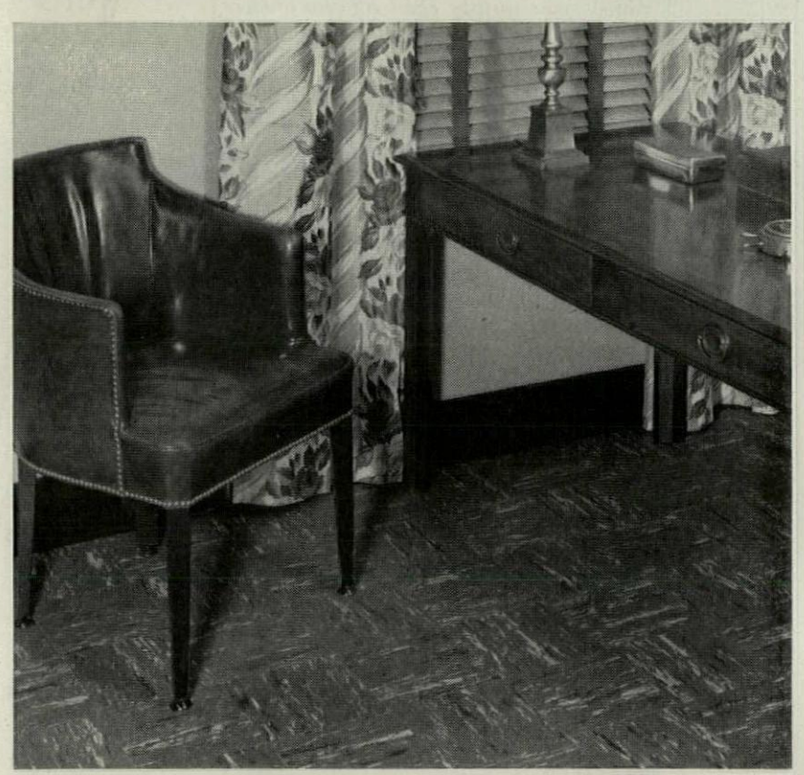

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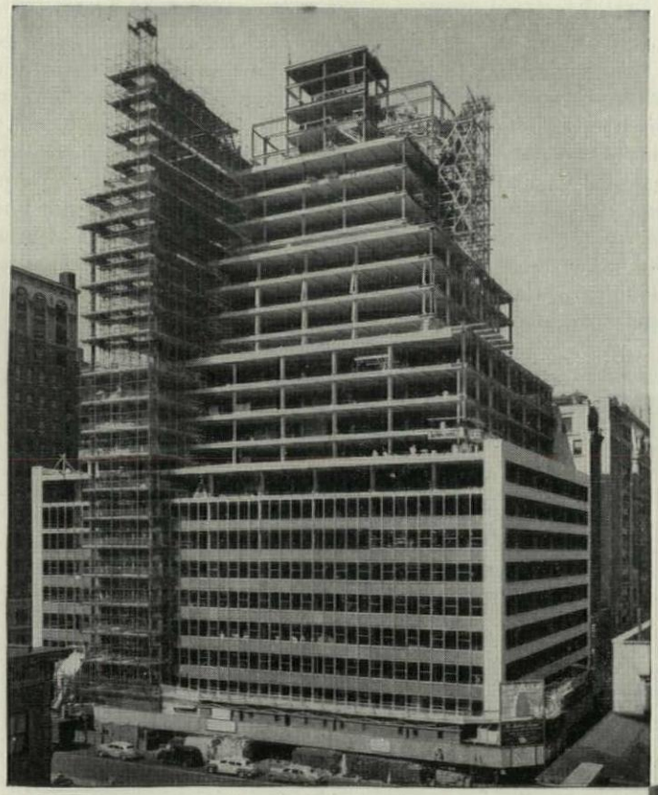

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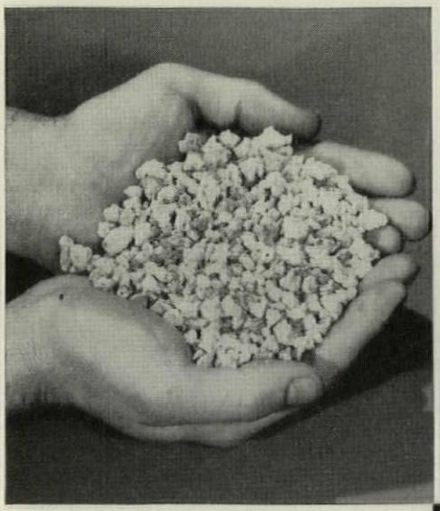

The use of Waylite aggregate for the 500,000 square feet of floors and another 350,000 square feet of floor fill in 260 Madison Avenue Building, New York saved much dead weight. This in turn permitted economies in steel design.

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WAYLITE
LIGHTWEIGHT AGGREGATE

The author, a professor of education at Teachers College, Columbia University, has for the past 15 years been engaged with a group of graduate students on research into the manifold aspects of urban life. The essence of their work, analyzed, commented on and well documented by Professor Hallenbeck, constitutes an essential textbook and reference work for anybody concerned with urban development and is an important addition to Harper's social science series. Though some might find his style somewhat laborious, Hallenbeck has co-ordinated a great deal of statistics on urban trends and gives a clear idea as to current research and ideas on each problem.

The book is divided into seven main parts: the rise of American cities; their external interrelationships; their form and structure; their organized life; some patterns of urban structure (social services, health, education, recreation and religion); people in cities; and city planning, democracy and culture. It is limited to a practical study of existing American cities based on the theory that cities are here to stay; "Cities represent a type of organization and a way of life created and sustained by the continual operation of industry and commerce." The inference being that we should overcome urban blight not by escape to the ever-widening suburbs but by seeking to control the underlying causes of blight. A second limitation of this work is that it attemps to integrate the many different aspects of urban living rather than exhaustively analyze each one. However, a detailed bibliography is provided at the end of each chapter for the interested specialist.

Urban government is one of the nation's major industries. It employs several million people and its annual expenditure is over $8 billion. In 1950 the proportion of American population living in cities had risen to 56%. Yet for all their great size and their apparent wealth, our cities have not proved adaptable to the demands of modern living. We know them to be dirty, sprawling, congested. They take too much of our lives in terms of wasted time, nerves and energy to get from one part of the city to another. They cost too much through accidents and disease. There's too little privacy; too much noise; too much jagged agitation; too little peace, dignity and human warmth. Yet in spite of all this and more, our cities are indispensable.

Hallenbeck regards the desire for a return to rural life as an unrealistic, backward-looking philosophy—a reaction against the complex municipal problems that have become too complicated. This attitude is based on four fears. First is the common fear of the unknown. When things get too complicated, the little man tends to revert to primitive and infantile modes of thought and seeks to escape to "the good old days" or a return "to simple farm life." Second is the fear of facing and accepting responsibility beyond what one considers the call of duty. This trend is dangerous since it undermines the very basis of our democratic system. Third is the fear that social organization involves an increase in controls. This is based on an outmoded concept of freedom that the American way was the way of the solitary, the complete individual, which no longer applies when people move back from frontier farms into urban conglomerations. As Heraclitus put it, "The problem of human society is to combine that degree of liberty without which law is tyranny with that degree of law without which liberty becomes license." The fourth fear is the feeling on the part of the authoritarian-minded that their power and prestige are being destroyed as people massed in cities organize their own affairs and so break away from traditional authority. The solution recommended is the planning of constellations of self-sufficient cities within metropolitan communities that

(Continued on page 192)

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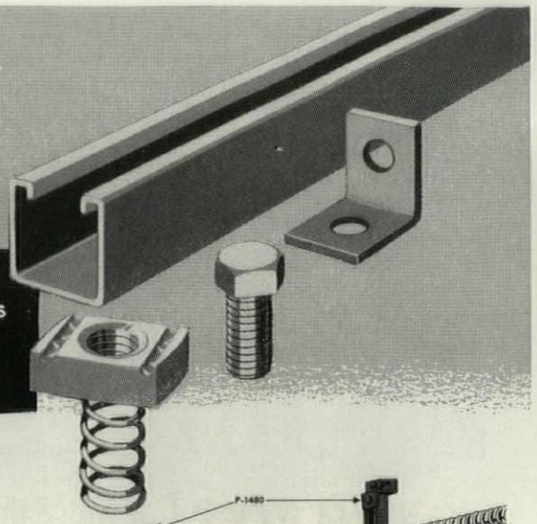

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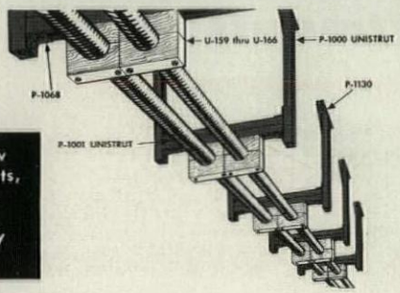
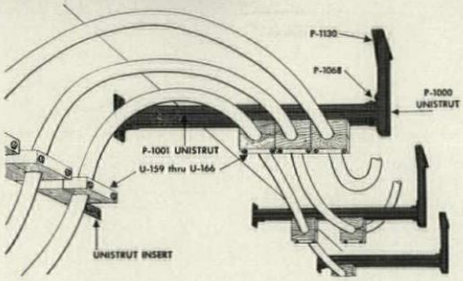
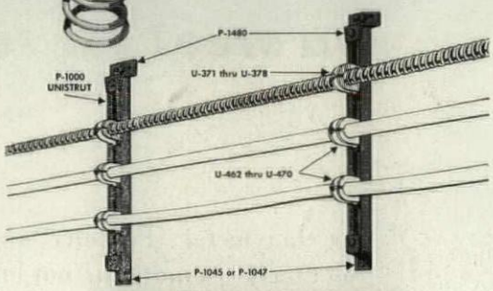
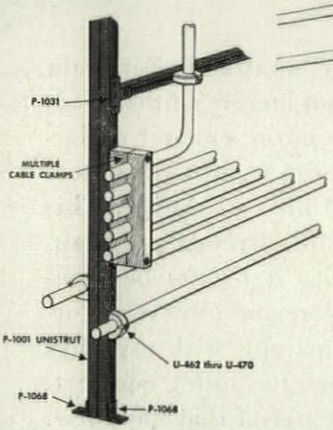


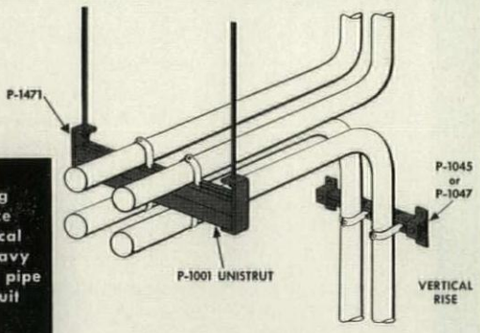
Two examples of how UNISTRUT concrete inserts, channel, fittings and maple insulating clamps support heavy overhead cable.



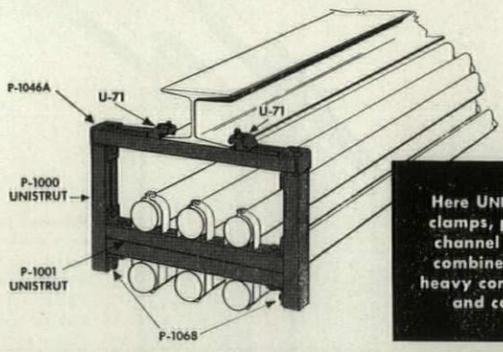




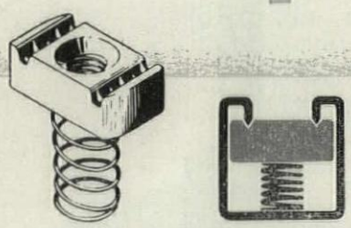
Here maple and porcelain cable clamps insulate conduit in UNISTRUT column-mounted assembly *(at left)* and cable in horizontal wall mounting *(above).*



UNISTRUT framing assembly (trapeze hanging and vertical rise) supporting heavy conduit. Note how pipe clamps hold conduit firmly.



Here UNISTRUT beam clamps, pipe clamps, channel and fittings combine to suspend heavy conduit securely and compactly.



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on steel for toilet compartments

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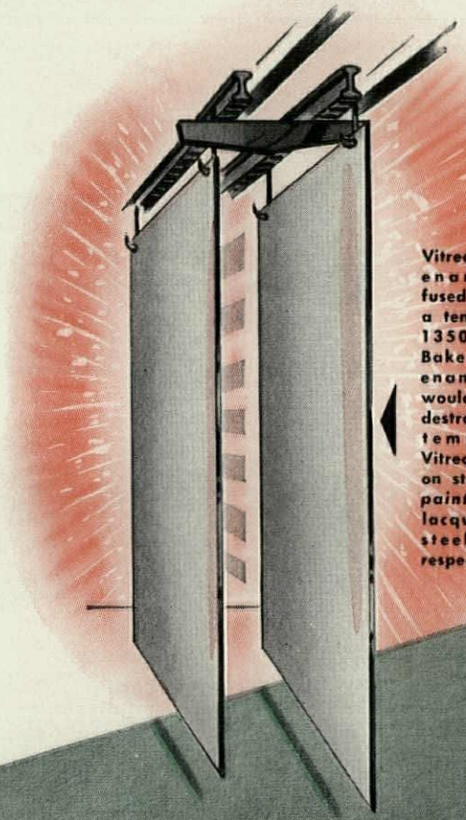
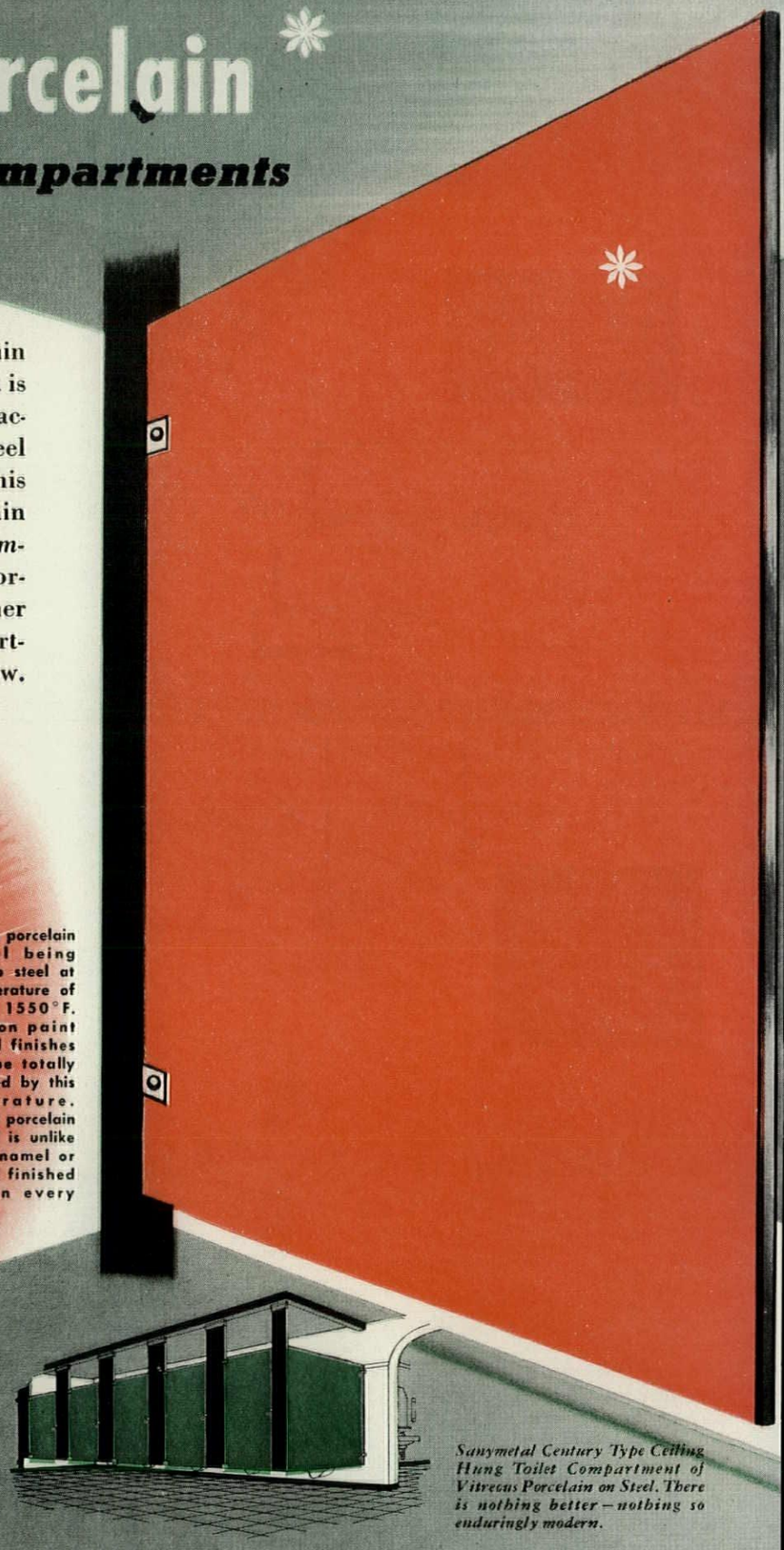
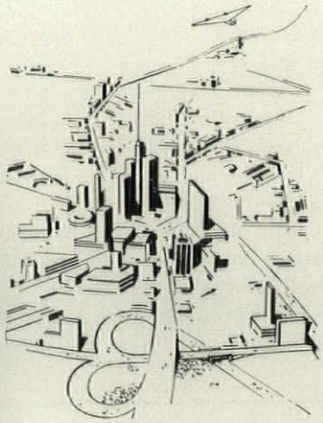


Vitreous porcelain enamel being fused to steel at a temperature of 1350°- 1550°F. Baked-on paint enamel finishes would be totally destroyed by this temperature. Vitreous porcelain on steel is unlike *paint* enamel or lacquer finished steel in every respect.



Sanymetal Century Type Ceiling Hung Toilet Compartment of Vitreous Porcelain on Steel. There is nothing better—nothing so enduringly modern.

a material that provides a degree of protection against obsolescence, otherwise unobtainable



The future of a building can be determined by the modernity of its rest rooms. Toilet compartments usually dominate a toilet room environment. Sanymetal uses *Vitreous Porcelain on Steel* for toilet compartments because it offers a greater degree of protection against premature obsolescence than any other material suitable for this purpose. Sanymetal *Vitreous Porcelain on Steel* Toilet Compartments possess enduring beauty, fadeless colors, structural durability, resistance to acids, defacement and abuse. An installation of these toilet compartments results in low cost maintenance and immaculate cleanliness. Vitreous porcelain on steel retains its original newness because this newness is the result of *a correct combination of the desirable qualities of the hardness of glass and the natural structural strength of steel.* Vitreous porcelain on steel is a product of the white heat of the enameling furnace—a material that is as new as tomorrow and as old as time! Sanymetal Engineers were the first to adapt vitreous porcelain on steel for toilet and shower compartments.

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It is a non-porous material that greatly exceeds the structural strength and durability of other materials now available for toilet compartments. It is often acclaimed as a lifetime material because it consists of no elements that are vulnerable to gradual depreciation.

It is impervious to moisture, odors, uric and other ordinary acids, oils and grease, and is scratch resistant.

Its flint-hard, glass smooth surface can be kept as immaculately clean as a china plate. There are no pores to collect dirt, harbor germs or absorb odors or moisture.

It reduces the cost of maintenance to an all-time low.

The glass-hard, lustrous finish of vitreous porcelain on steel does not fade, tarnish, peel or discolor. This surface is obstinately resistant to scratching, scrubbing, scribbling or defacement.

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Sanymetal "Porcena" (Vitreous Porcelain on Steel) Toilet Compartments are available in several different styles and a wide range of fadeless colors (refer to Sanymetal Catalog 89 for complete range of exact colors). Only Sanymetal offers "Porcena" (Vitreous Porcelain on Steel) Toilet Compartments. Ask the Sanymetal Representative in your vicinity to demonstrate the unusual and exclusive features of Sanymetal Vitreous Porcelain on Steel Toilet Compartments.

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"would do away with the whole pattern of suburbs or parasite communities."

Urban problems are largely financial and stem from the fact that taxes, the essential overheads of municipal operations, are related to property values rather than productive capacity. Thus the probability of higher tax assessment values tends to discourage owners to make improvements on their property. Tax reform is essential. One solution recommended is Gilbert Tucker's proposal that all taxes on buildings and private improvements be discarded and the income of the city be obtained from service charges on ground rentals based on a use value derived from income received from rent or its equivalent. Not mentioned is Arthur Gallion's even more radical proposal that as buildings deterioriate with age, contribute to the spread of blight, and retard the production of new building, taxes should increase rather than decrease.

Urban problems are aggravated by the development of fragmentary and dependent suburbs which "consuming much, producing little and creating less are a liability to cities. . . . Each family or factory that moves from a city to a suburb decreases the tax base of the city. They still depend on the city but do not help maintain it." So cities have to provide increasing services on a decreasing income. For instance, the suburban communities around New York City have a large proportion of the best public schools in America, while the city itself needs 9,000 additional teachers to bring the teacher-pupil ratio up to the average in other communities, and has to continue to plead with the state legislature for funds to keep its school system going. On the other hand Hallenbeck does not ignore the great assets of suburban life in terms of health, freedom, natural surroundings for living and above all, a decent chance for children. These advantages need to be brought back to the city through redeveloped urban villages.

The chapters on urban politics show that "the ethics and the morals of politics are higher than those of business. . . . One of the most encouraging things that has happened since the war is the increase in the number of city mayors and municipal administrations which are doing good, honest and clean jobs." We find again the inevitable conclusion that the amount of corruption is proportionate to the tolerance of the community, and that the acceptance of responsibility on the part of citizens is essential to good city government.

Traffic engineering receives scant mention in this work. This is probably a valid omission since the research deals rather with the fundamentals underlying partial solutions such as improved transportation systems. We already know that the solution to traffic congestion lies in limited access expressways and have used them effectively between one city and the next. However, we have yet to drive these expressways through the heart of the urban metropolis where they are most needed.

The dependence of the city on its rural base brings out the importance of regional planning and the lack of understanding that exists between rural and urban peoples. In municipal government Hallenbeck outlines the advantages of electing councilmen from the city at large and the use of the technical manager-administrator in lessening the pressure for political patronage. In housing he points out the need for legal controls with regard to obsolescence in order to eliminate slums and to develop the good stable neighborhood that is an essential part of good housing. Further, "accidents take a terrific toll in America and household accidents head the list. In 1945 there were 33,500 deaths from accidents in homes and 5 million nonfatal injuries."

There has long been a need for such an integration of the related political and economic, planning and architectural aspects of municipal growth as this book suggests.

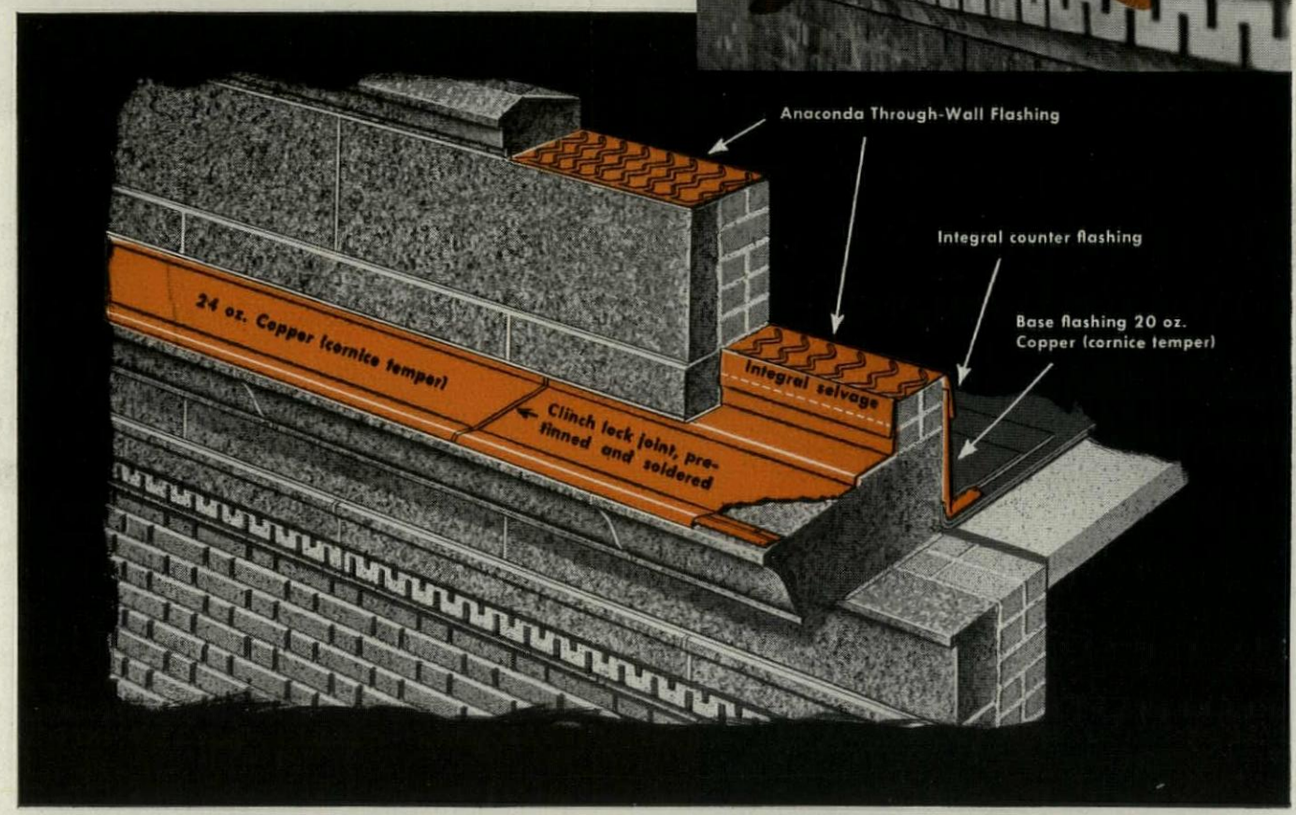
use **copper** wisely

correct flashing could have prevented this

This photograph illustrates what can happen when water penetrates a masonry cornice and parapet. Here frost has damaged the cornice beyond repair.

Had the parapet and cornice been flashed as shown on the drawing, water absorbed by the coping would have been diverted toward the roof. Flashing above the cornice would have prevented the spalling which was caused by water entering the vertical joints and freezing.

Because all masonry is porous and absorptive—proper flashing design is essential to sound and lasting construction. The American Brass Company is always glad to discuss and offer suggestions on any problem involving sheet copper in building construction. 6239



WRITE FOR DETAIL DRAWINGS

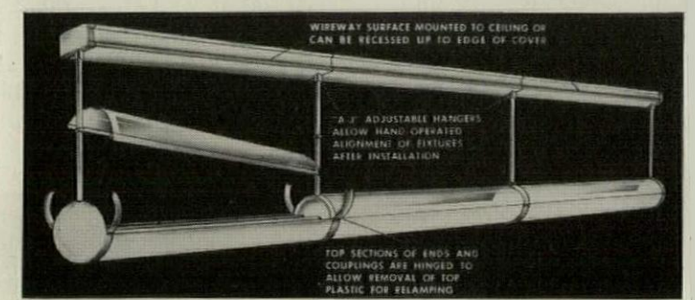
The purpose of recent research and investigation by Anaconda building specialists has been to develop methods of using a minimum of sheet copper for maximum results in the protection of buildings from weather. This work has resulted in a series of drawings which show suggested detail of new applications and improved methods for sheet metal work. These drawings, including the one shown here, are available in a complete portfolio on 8½" x 11" sheets convenient for filing. Send for your set now. Ask for Portfolio S. Just write to The American Brass Company, Waterbury 20, Conn.

for better sheet metal work—use **ANACONDA®** copper

PRODUCT NEWS

PLASTIC PIPE OF LIGHT suspended from ceiling

Three M.I.T. engineers left their mark and their initials on the PBM lighting system for schools, drafting rooms, and offices. Two 40 w. slimline lamps, and two 40 w. fluorescents encased in a plastic cylinder comprise the basic part of the fixture. This simple 4′-4¼″ long luminaire can be installed as a single unit or in continuous runs. Because it presents so little surface for grime to cling to, the light stays bright and maintenance is cut to a minimum. The bottom half of the tube is translucent white plastic which diffuses the light evenly. The top half is clear plastic so that the light can be directed toward the ceiling. (The top's primary function is that of a bug frustrater.) Ballasts and the lamp hangers are supported by the wireway fastened to the ceiling. The hangers can be



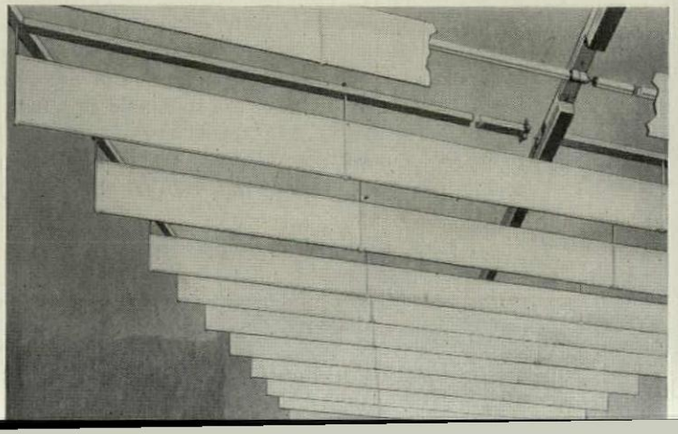
adjusted by hand to line up the units after installation. (Swivel fittings level the equipment.) The standard hangers measure 21″ from ceiling to top of the plastic cylinder but shorter stems will be supplied on order. Approximate cost of PBM including wireways, hangers, fixtures, ends, couplings, and lamps is about $10.75 per lin. ft., not installed.

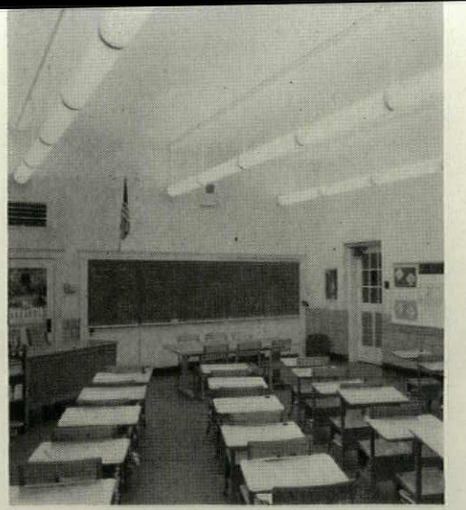
Manufacturer: DayBrite Lighting Inc., 5411 Bulwer Ave., St. Louis 7, Mo.

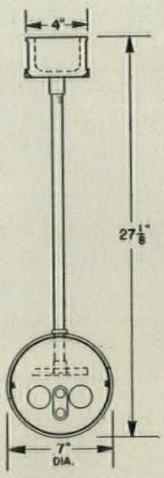
PLASTIC PANELS, LAMPS, AND WIRED CHANNELS: simple light

A crosshatch of prewired channels, slimline lamps, and translucent ribbed plastic shields, Benjamin's *Grid-Lite* is an effective lighting system for classrooms and commercial applications. The system is engineered for rapid surface mounting against any type of flat ceiling—plaster, wood, or concrete. *Grid-Lite* may be ordered in several kinds of subassemblies which can be combined to fit almost any shape or size room. There are three types of channels in the system: a center or ballast section with lamp holders for one end of the lamps; an outer channel with holders for the other ends; and spacers. These sections are coupled together as easily as joining toy railroad tracks. The only electrical work the contractor has to do on the job is to bring circuit wiring into one of the knockouts in the side of the outer channel. After the channels are connected, and caps and covers are fitted wherever needed, suspension rods for the shield sections are attached and the shields snapped into place. *Grid-Lite* will accommodate 4′, 6′, or 8′ T12 slimlines. A completely installed system for an area 22′ x 30′ costs about $650 to $750.

Manufacturer: Benjamin Electric Mfg. Co., Des Plaines, Ill.



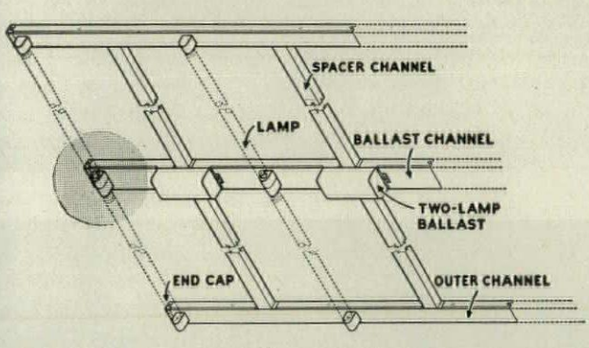




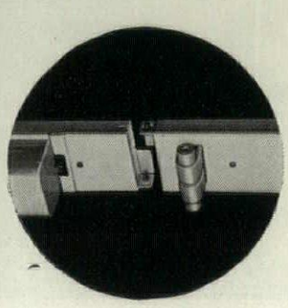
Mounted directly on the ceiling, the wireway for the PBM lighting system supports the cylinder which nests fluorescent lamps. Very little dust can collect on the narrow tube.

Providing an over-all luminous effect, the white fixtures may be installed running either vertical or horizontal to viewing position.

package for commercial interiors and classrooms



The Grid-Lite system consists of a network of steel channels which carry the necessary wiring, and support translucent diffuser shields and lamps. Packaged in "unit sizes" the pre-engineered system is adaptable to almost any size room.

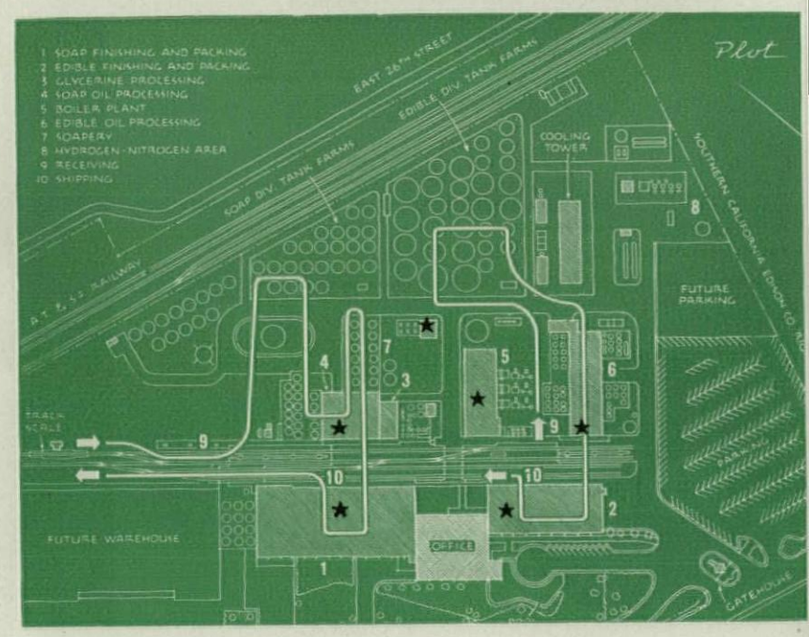


Interlocking fittings make it easy to connect the channels. No couplings are needed, and all wiring is done at the factory except for a lead which can be brought in through one of the knockout plates.

(Continued on page 200)

Office building of the new Lever Brothers plant, Los Angeles, California, reflects the trend of today's industrial design.

★ Six Westinghouse Power Centers, spotted in black, are the heart of the plant's electrical distribution system which provides reliable service under all conditions.



PLANNED POWER PAYS

They matched modern plant design with modern power distribution

This 25-million-dollar Lever Brothers plant incorporates the most modern advances in design, layout and construction methods. And its system for distributing electrical power is as modern as the plant—assuring uninterrupted service under all conditions.

The secondary network system was specified in the early planning days by Bechtel Corporation—the engineers and constructors—with Westinghouse assistance. It contains six interconnected power centers that maintain service even though an electrical disturbance may fault a primary line. Secondary faults are isolated quickly. The ultimate in reliable power is assured.

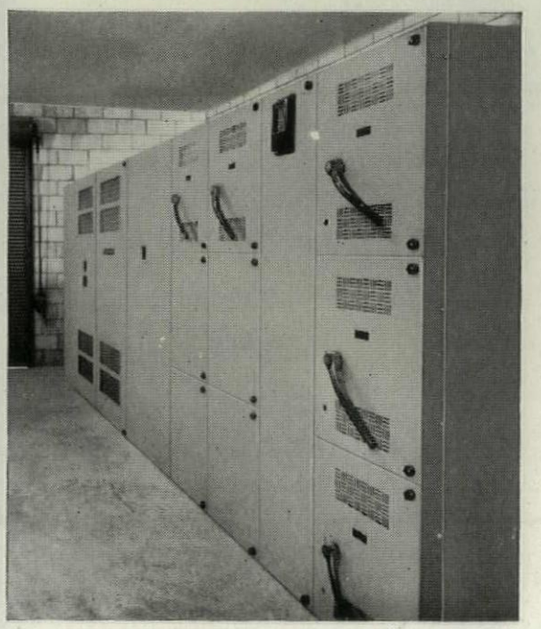
Early planning has also taken full advantage of the flexibility of factory-assembled Westinghouse Power Centers. These compact, standardized units save valuable space . . . minimize layout problems. Their dry-type transformers permit them to be located safely anywhere in the plant. Additional units can be added easily, as loads and capacity increase.

CONSIDER THIS: A plant's distribution system is a vital design consideration. It must be planned at the blueprint stage . . . treated as an integral part of the building or expansion program. Today, the power needs of a modern plant require this kind of planning—coupled with completely co-ordinated equipment.

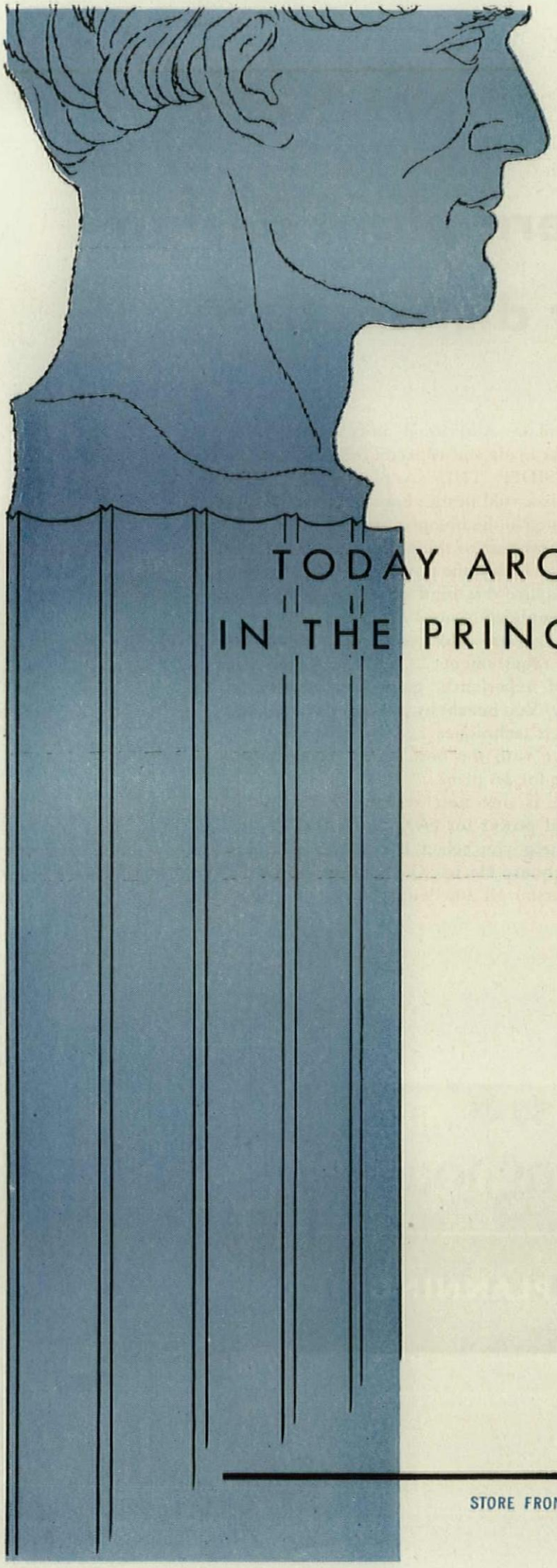
Westinghouse offers you assistance on *both* of these requirements . . . and backs them with years of experience, gained throughout all industry. You benefit by getting more freedom in design techniques . . . by providing your customer with the best system economically possible for *his* plant.

There is one best system of distributing electrical power for *every* plant. Let Westinghouse help you select it on your next job. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94955

Space problems were minimized with six of these compact Westinghouse ASL Dry-Type Network Power Centers. They are standardized, factory-assembled units . . . can be expanded easily as power needs grow.

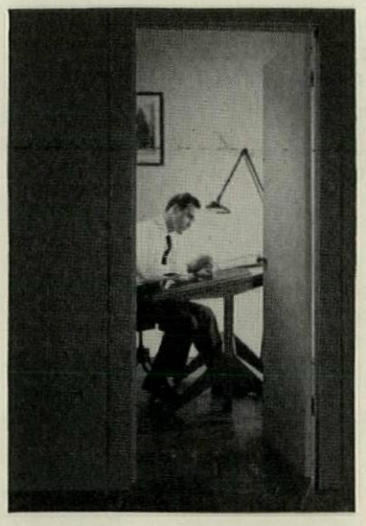


YOU CAN BE SURE... IF IT'S
Westinghouse
SYSTEM PLANNING



Two thousand years ago the great Roman architect, Vitruvius, wrote: Architecture should meet three requirements: unity, strength, beauty.

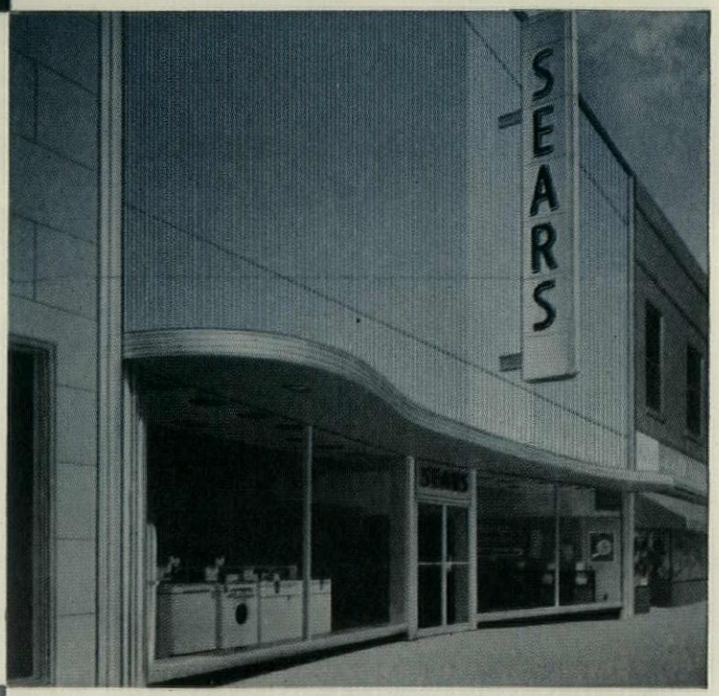
TODAY ARCHITECTS STILL BELIEVE IN THE PRINCIPLES OF VITRUVIUS.....



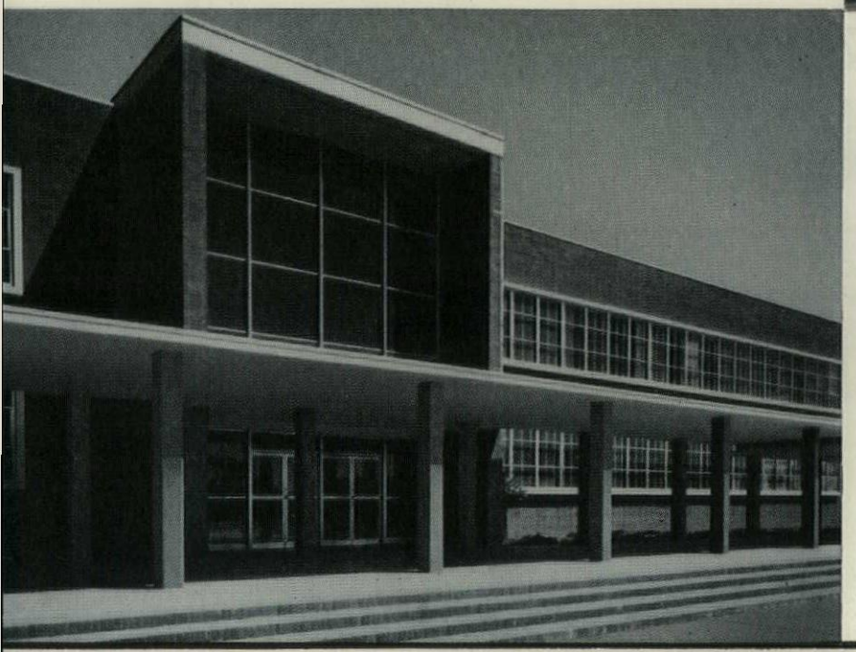
STORE FRONT METALS • ALUMINUM FACING MATERIALS • AWNING BOXES AND HOODS •

Kawneer Glazing Sash and Entrances:
Whitaker Guernsey Studio, Chicago, Ill.
Harper Richards, Architect.

. . . **THE FUNDAMENTAL TRUTHS OF ARCHITECTURE** are as eternal as the profession itself. Modern architects, whether designing a commercial building, store, or civic building —still honor the principles of unity, strength, and beauty. And they find that Kawneer architectural metal products have been painstakingly engineered and styled to help them achieve these goals.



Kawneer Porcelain Enameled Zourite
used in two colors as a facade covering,
Kawneer entrances, glazing sash, trim:
Sears, Roebuck Store, Port Huron, Mich.
Wyeth & Harmon Architects.



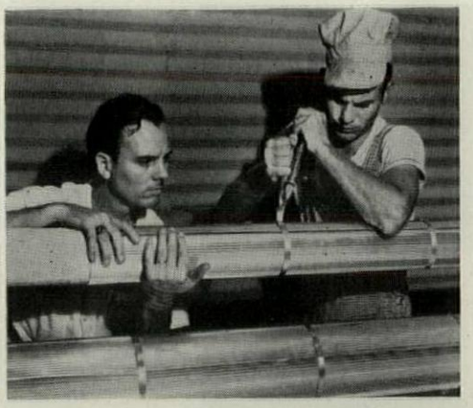
Kawneer mullion construction, entrances, trim:
Hall of Justice, Richmond Civic Center, Richmond, Cal.
Designers of Center: Milton H. Pflueger
and Timothy L. Pflueger, Architects.

SHOWCASE DOORS • ALL-ALUMINUM FLUSH DOORS • ENTRANCES

THE Kawneer COMPANY

ARCHITECTURAL METAL PRODUCTS

CONSULT KAWNEER DETAIL PORTFOLIO, SWEET'S CATALOGS OR WRITE DEPT. AF-100,
1105 NORTH FRONT STREET, NILES, MICH., OR 930 DWIGHT WAY, BERKELEY, CAL.



A two-man crew applies the jacketing quickly. No shop work or roll forming is necessary. The only tools they need are a pair of pliers and a wedge or screwdriver.

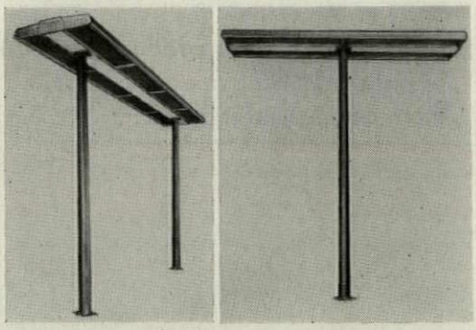
ALUMINUM PIPE JACKET easy to handle, cut and attach

Moistureproof and weather resistant, Childers corrugated aluminum jacketing for pipe lines will fit over any kind of molded insulation. It can be applied three ways: banded with aluminum strapping and seals, attached with sheet metal screws, or secured with plastic film tape. The new jacketing comes in rolls 4′ wide and sells for about 6⅜¢ to 7¾¢ per sq. ft. With a glued-on asphaltic moisture barrier, it costs from 8½¢ to 10¢ per sq. ft. Aluminum strapping ⅜″ wide is about 1¢ per lin. ft. and the plastic tape is $2.10 to $3 per roll (five rolls are needed for 100 lin. ft. of jacketing).

Manufacturer: Childers Manufacturing Co., 3620 W. Eleventh St., Houston 8, Tex.

PREWIRED "T" LIGHTS made for service stations

Horizontal fluorescents soon will hover over many a gas pump. Guardian's new service station fixtures Series 6,000 bring out in the open the efficient illumination and sleek appearance of strip lighting. Two basic units each 30″ wide make up the line: one is 4′ long, the other 8′. They may be installed separately or, with coupling devices, in tandem to stretch along any size service island. Avail-



able with 9′ and 12′ tapered octagon standards, the "T" lights also may be fitted to ordinary 2″ pipe by means of cast iron adapters. The fixtures, furnished with slimline fluorescent lamps wired ready for installation, are listed by Underwriters Laboratories for outdoor use. The extruded aluminum and ribbed glass frame is hinged for easy access to the lamps. Knockouts in the bottom plate permit a variety of mounting centers, and spot or flood light lampholders can be wired through the cover

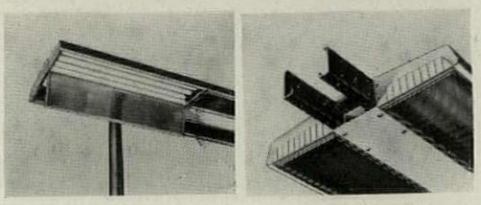


plate. Price of the 4′ fixture with four lamps is $292. The 9′ tapered pole costs $61 and the 12′ is $90.

Manufacturer: Guardian Light Co., Inc., 301 Lake St., Oak Park, Ill.

(Continued on page 204)

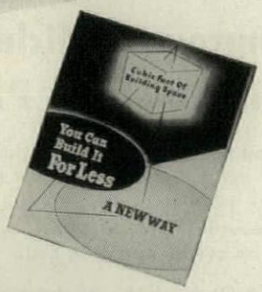
ZURN TYPE REST ROOMS HAVE FIXTURE-BARE FLOORS

ZURN

A FIXTURE-BARE FLOOR IS, AS IT IS, ALWAYS!

Immaculately clean! Cleanliness is no problem in toilet rooms where plumbing fixtures are off the floor, because there is nothing to interrupt the sweep of the broom and the swish of the mop. Fixture-bare floors reduce the day by day dollar cost of maintenance to an all-time low while lifting sanitation to a new high. A New Way of building utilizes wall type plumbing fixtures throughout, installed the Zurn Way—the simple, fast, safe way of installing wall type closets, lavatories, sinks and other fixtures. This New Way reduces the use of building material; eliminates need of suspended ceiling constructions; requires less space for walls; saves time and labor and protects rest rooms from premature obsolescence. Specify wall type plumbing fixtures installed with Zurn Wall Closet Fittings and Carriers. Write for booklet entitled, "You Can Build It (Cubic Foot of Building Space) For Less The New Way".

Write for this booklet. It tells how "You Can Build It (Cubic Foot of Building Space) For Less A New Way".



J. A. ZURN MFG. CO. ERIE, PA. U.S.A.
PLUMBING DIVISION
Sales Offices in All Principal Cities
Pre-eminent Manufacturer of Sanitary Products for the Protection of Human Health and Modern Structures

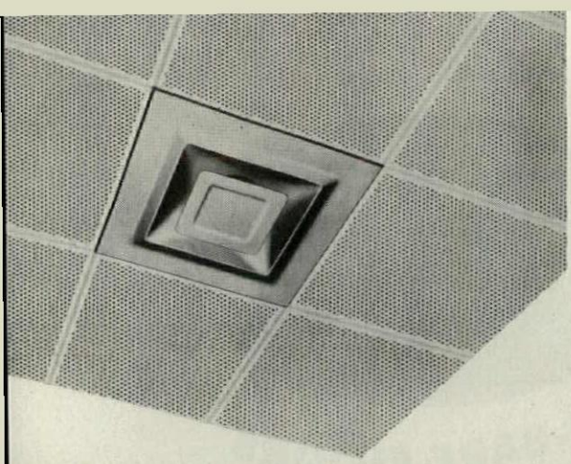
ZURN

J. A. ZURN MANUFACTURING CO. • PLUMBING DIVISION • ERIE, PA., U.S.A.
Please send me the new Zurn Booklet, "You Can Build It (Cubic Foot of Building Space) For Less A New Way."
Name and Title .....
Company .....
Street .....
City and State .....
Please attach coupon to your business letterhead. Dept. AF

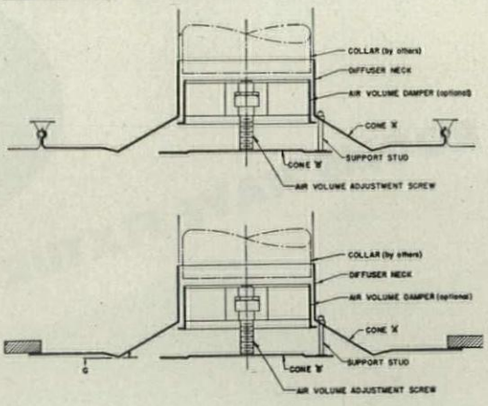
Rest Rooms with Fixture-Bare Floors in These Buildings and Hundreds of Others:

OFFICE BUILDINGS: Farmers Mutual Insurance Company, *Madison*, Wis. • New Hampshire Fire Insurance Building, *Manchester*, New Hampshire • Southwestern Bell Telephone Co., Toll Building, *Houston*, Texas • International Business Machines, *Endicott*, N. Y. • General Food Building, *Newark*, N. J. • The Texas Company, *Minneapolis*, Minn. • Humble Oil Company, *New Orleans*, La. • **EDUCATIONAL BUILDINGS:** Fisher Memorial Dormitory, University of Notre Dame, *Notre Dame*, Ind. • Maple Heights High School, *Maple Heights*, O. • Dilworth School, *Salt Lake City*, Utah • New Engineering Laboratory, Virginia Polytechnic Institute, *Blacksburg*, Va. • Medical Research Building, University of Michigan, *Ann Arbor*, Mich. • **INDUSTRIAL BUILDINGS:** DeLaval Separator Company, *Poughkeepsie*, N. Y. • Houston Lighting and Power Company, *Houston*, Texas • Berkshire Knitting Mill, *Andrews*, N. C. • Minneapolis Honeywell Regulator Co., *Minneapolis*, Minn. • Chrysler Corporation, *Trenton*, Mich. • Dan River Mills, *Philadelphia*, Pa. • Court House and City Hall Building, *Minneapolis*, Minn. • Oregon State Penitentiary, *Salem*, Oregon • **HOSPITAL BUILDINGS:** Cuyahoga County Chronic Hospital, *Warrensville*, O. • National Jewish Hospital, *Denver*, Colo. • Terrell State Hospital, *Terrell*, Texas • Memorial Hospital, *Algoma*, Wis. • Central State Hospital, *Petersburg*, Va. • Oakwood Hospital, *Dearborn*, Mich. • **TERMINAL BUILDINGS:** New Norfolk and Western R. R. Warehouse, *Roanoke*, Va. • Holland American Line Terminal, *Hoboken*, N. Y. • New Greyhound Terminal, *Phoenix*, Ariz. • **MERCANTILE BUILDINGS:** Emporium, *Oakland*, Cal. • Sugarland Shopping Center, *Sugarland*, Texas • Federal Stores, *Cleveland*, O. • Macy's Kansas City Store, *Kansas City*, Kan. • Rexall Drug Company, National Headquarters Building, *Los Angeles*, Cal. •

Patented and Pat. Pending. *Copyright 1952*



PRODUCT NEWS



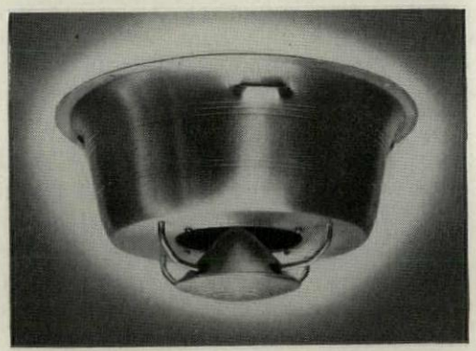
SQUARE AIR DIFFUSER fits neatly into acoustical tile ceiling

Rectangular in shape, the type KP diffuser discharges air in an annular pattern. Designed for simple installation in standard metal pan hung ceilings, the new model is said to provide uniform air distribution in all its nine sizes. The velocity of the air, discharged in a single stream almost horizontally, causes it to mix thoroughly with ambient air before it reaches people in the room. The KP is available with neck diameters ranging from 4″ to 14″, and sells for approximately $15 to $36. It is made in two styles: one, planned for use in a T-bar suspension system, snaps snugly into the space for an acoustical tile; the other has an overlapping rim. Models with 4″, 5″ and 6″ neck sizes fit into 1′ square ceiling openings; other units up to 12″ neck diameters require 2′ openings, and the 14″ diffuser takes a space 26″ square.

Manufacturer: W. B. Connor Engineering Corp., Shelter Rock Lane, Danbury, Conn.

SOUND BAFFLES engineered to be surface mounted on ceilings

Distributing low level sound at a wide angle, RCA's new ceiling baffle is especially suitable for cocktail lounges, restaurants and other public places with low headroom. Its floating cone speaker reproduces a wide range of sound faithfully and so the unit also is practical for sound distribution systems in department stores and exposition halls. Fabricated of heavy gauge spun aluminum the baffle has a brushed satin finish protected by a coat of clear lacquer. Four mounting holes are provided on the ¾″ flange and the cone diffuser is suspended by rubber mounted aluminum rods. The inside of the baffle is insulated with a ¾″ lining of jute fiber, and four louver



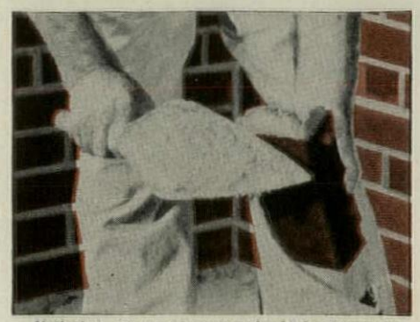
openings provide acoustic damping and pressure relief. The 6″ speaker model *M-13258* and the 8″ *MI-13259* each measure 14¾″ in diameter and 8¼″ deep. They are priced at $22 apiece. The *MI-13260* (10″ speaker) and the *MI-13261* (12″) are 18⅜″ across and 9¼″ deep. They each sell for $27.

Manufacturer: Sound Products Section, Radio Corp. of America, Engineering Products Dept., Camden, N. J.

(Continued on page 208)

GET BETTER BRICKWORK WITH BRIXMENT!

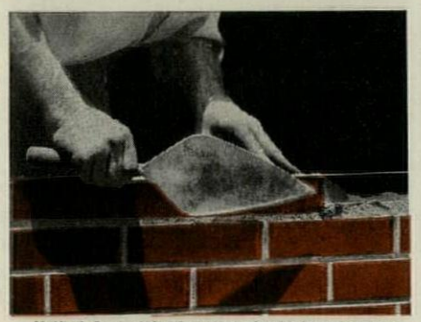
Good workmanship requires that all head joints in both face brick and back-up work be *completely* filled with mortar, by any of the three methods pictured below.



Method 1. Plenty of mortar should be thrown on the end of the brick to be placed.

The brick should then be pushed into place.

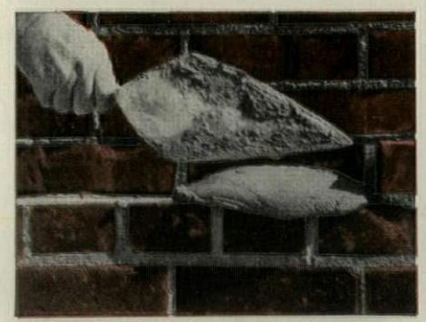
So that the mortar oozes out at the top of the head joint.



Method 2. A dab of mortar should be spotted on the corner of the brick already in place.

Then plenty of mortar should be thrown on the end of the brick already in place.

So there will be more than enough mortar to fill the joint completely when the next brick is pushed into place.



Method 3. A full trowel of mortar should be thrown on the wall.

Then the brick should be shoved into this deep bed of mortar.

So that the mortar oozes out at the top of the joint.

BRIXMENT permits the bricklayer to do the kind of work pictured above. It does not stiffen up too fast, when it hits the brick. It remains rich and plastic long enough to allow the bricklayer to place the brick, easily and accurately.

In addition to its greater plasticity, Brixment mortar has higher water-retaining capacity and bonding quality, and greater resistance to freezing and thawing. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE 2, KENTUCKY

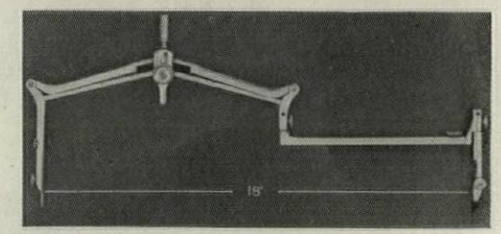
CARRY-ALL CASE comes with drawing instruments and supplies

Here is a handsome field portfolio completely outfitted with drawing supplies. Measuring 16″ x 2′, the simulated leather case contains a protractor, architect's scale, engineer's scale, 8″ and 10″ triangles, French curve, drafting tape, pencil pointer, two drawing pencils, and two erasers plus any of eight different types of drawing sets. It also has two large inner compartments for paper, notes, and blueprints. The case is scuff resistant and waterproof, and has slide-in carrying handles. Prices run according to the number and quality of the drafting instruments in the set. Two professional kits, the *P-1206* and *P-2300*, sell for $42 and $59.50. Others are as low as $17.50.

Manufacturer: Berger Scientific Supplies, Inc., 342 Madison Ave., New York 17, N. Y.

ALL-IN-ONE DRAFTING INSTRUMENT forms circles up to 26″ wide

Combining features of a ruling pen, large bow, beam compass, and dividers, the German-made *Lotter* parallel compass is capable of forming precision circles up to 26″ in diameter. Its unique shank construction makes it possible to keep pen and pencil parts perpendicular to the paper—even while drawing large arcs. The device may be used with or

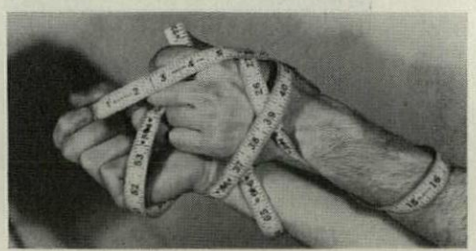


without its telescopic extension bar, and a separate handle is provided for straight line work. A set screw on the head locks the instrument in position so that circles of the same diameter may be drawn repeatedly without deviation and a micrometer screw permits fine adjustments down to 1/2000″. Packaged in a plush-lined pocket case, the *Lotter* compass sells for about $16.

Manufacturer: Nobema Mfg. Corp., Germany.
Distributor: A. Partrick Co., 9 Grove St., Westwood, N. J.

ZIG-ZAG FOLDING RULE can be bent like pretzel

Weighing less than the average wood rule, the *Durall* 6′ zig-zag folding rule of tempered alloy



steel can be bent, twisted—even stepped on—without damage. Its flexibility makes the rule usable for several jobs: taking inside measurements; determining pipe diameters; and gauging rounds and pulleys. It will also serve as a straightedge for drawing lines on paper or lumber. For out-of-reach measurements, the *Durall* rule extends rigidly. It has a baked white enamel finish and sells for $1.

Manufacturer: Durall Tool Corp., 117 Woodworth Ave., Yonkers, N. Y.

(Technical Publications, page 212)

HOW J & L JUNIOR BEAMS SAVE TIME, SOLVE DESIGN PROBLEM AT LOW COST IN ST. CHARLES SCHOOL

YOUNGSTOWN, OHIO

Architect P. Arthur D'Orazio and George J. Murphy Company, contractors-engineers, of Youngstown, Ohio, have employed lightweight J&L Junior Beams as cantilevered roof purlins at the Boardman Center's ultra-modern St. Charles School near Youngstown. J. A. McMahon, Ltd., Niles, Ohio, fabricated the 85 tons of structural steel and 35 tons of Junior Beam joists going into the framework.

Notched over lintel beams and cantilevered four feet beyond the outside walls, J&L Junior Beams support not only the roof but also an attractive permanent sun shield over classroom window walls.

Because of their versatility and adaptability, J&L Junior Beams go far towards meeting the demands of today's builders. They cost less to buy and less to erect. Lightweight, 12″ Junior Beams, 11.8 lbs. per foot, 30 ft. long, may be easily raised, placed and bolted directly into position by three men with the aid of only a hand-operated winch.

The lightweight and consequent ease with which Junior Beams can be handled led to fast, economical construction that helped hold building costs to a minimum. ALL STRUCTURAL STEEL INCLUDING THE JUNIOR BEAM ROOF PURLINS WAS ERECTED BY 6 MEN IN 2 DAYS.

ARCHITECTS — CONTRACTORS

If you're engaged in the design, or construction of light occupancy buildings, you'll be interested in these features offered by J&L Junior Beams. EASY TO INSTALL, RIGID, VIBRATION RESISTANT, SHRINK PROOF, LOWEST DEFLECTION FACTOR OF ANY STRUCTURAL SECTION OF EQUIVALENT WEIGHT.

Why not write today for our new booklet: "Skyscraper Construction for Every Building"? It shows how Junior Beams are used as floor joists, and roof purlins with loading and spacing tables for various spans.

JONES & LAUGHLIN STEEL CORPORATION
PITTSBURGH 30, PA.

Jones & Laughlin Steel Corporation
401 Gateway Center Building No. 3
Pittsburgh 30, Pa.

Please send me a copy of the booklet entitled, "Skyscraper Construction for Every Building."

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Company_____

Address_____

only

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aluminum windows

offer these two weather-protection features:

1. woven pile weather stripping and
2. exclusive serrated guides

QUALITY APPROVED

When you install ADLAKE Aluminum Windows, you can count on a perfect weather seal. Wind, rain and cold drafts are baffled by ADLAKE's exclusive combination of snug woven-pile weather stripping and patented serrated guides —and this protection, together with ADLAKE's famous finger-tip control, will last through the entire life of the building!

Because they eliminate all maintenance costs, and keep their beauty and efficient operation with only routine washing, ADLAKE Aluminum Windows ultimately *pay for themselves!* Yes, for economy . . . for performance . . . for lasting good looks . . . ADLAKE Windows set the standards, in both replacement and original installations.

Get the whole story on ADLAKE's advantages today! ADLAKE Representatives are in most large cities.

ADLAKE ALUMINUM WINDOWS GIVE YOU ALL THESE "PLUS" FEATURES, TOO:

Minimum Air Infiltration • Finger-tip Control • No Warp, Rot, Rattle or Stick • Ease of Installation No Painting or Maintenance

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago

EASIER SERVICING

Another reason why most control center buyers specify WESTINGHOUSE

Give a man a screw driver and he's all set to go to work on a Westinghouse Control Center. With this simple tool he can open unit doors, remove and replace units, disassemble units, wire units and wire complete vertical structures. And all he needs is ONE screw driver because all screws and parts are accessible from the front.

All men go for the fact that removing and replacing starter units is positive and not a matter of "feel and twist". Guide rails, located on either side of each starter unit, make this a positive operation ... as simple as opening and closing a filing cabinet drawer.

Then there are those operations that can be performed right on the structure. Each unit can be pivoted forward to the tilt-out disconnect position where it is completely disconnected from the power buses and is "dead".

What about your control center problem? Call in your local Westinghouse application engineer. He will help you work out the details to meet your specific needs. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-27022

YOU CAN BE SURE... IF IT'S
Westinghouse
CONTROL CENTERS

PRECAST CONCRETE. Long Span Flexicore Precast, Prestressed Concrete Slabs. 1952 Issue. The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio.

The latest catalogue on *Flexicore* concrete floor and roof slabs features diagrams which show how these precast units may be used with various types of construction, and explains how the prestressing permits heavy loads on long spans. The publication also describes methods for utilizing *Flexicore* in several kinds of heating systems, including a hot water radiant system and a warm-air split system with circulating air and a radiant floor.

DOORS. Fenestra Hollow Metal Doors Swing and Slide. Detroit Steel Products Co., 2250 East Grand Blvd., Detroit 11, Mich. 16 pp. 8½ x 11".

This new catalogue gives information on *Fenestra* doors, frames and hardware. Illustrated with pictures of the types and sizes of the packaged door units, the booklet emphasizes the economies afforded through standardized manufacture and factory fitted frame and hardware. The doors also are described as being low on upkeep. Installation instructions, descriptions and complete specifications are detailed for four types of units: entrance, flush type, panel swing, panel slide, including Underwriters' Approved models which pass 1 and 1½ hr. fire tests.

EARTHQUAKE RESISTANT CONSTRUCTION. Seismic Building Design—Wind and Earthquake Resistant Diaphragms. Detroit Steel Products Co., 3111 Griffin St., Detroit 11, Mich. 10 pp. 8½ x 11".

Design techniques for using steel building panels in earthquake resistant buildings are presented in this new brochure giving data on the findings of a testing program supervised by the California Institute of Technology, and furnishing formulas and details of the *Fenestra* building panels diaphragm designs. Although prepared particularly for architects and engineers who plan buildings for earthquake zones, the publication contains information of interest to all designers concerned with lateral stability and the economy of prefab panels.

HEATING AND AIR CONDITIONING. Heating, Ventilating and Air Conditioning Guide, 1952 Ed. The American Society of Heating and Ventilating Engineers, 51 Madison Ave., New York 10, N. Y. 496 pp. 6 x 8", $7.50

ASHVE's guide for 1952 shows an increase over the 1951 edition in both usefulness and size. The entire book has been carefully revised by the Guide Committee (Chairman P. G. Gordon) and additions have been made, the most important of which are:

1. Particular attention has been given to visible and concealed condensation and to preventing moisture damage in buildings.
2. Average winter temperatures for October to May have been listed for 316 United States cities and 16 Canadian cities.
3. A new abridged table showing current I-B-R boiler rating and sizing practice has been added.
4. The section on residential chimneys has been rewritten with emphasis on performance and selection of low-height chimneys.
5. A section has been added on the application of fans for high temperature work.
6. A diagram and description of the lithium bromide-water absorption system of refrigeration has been included.

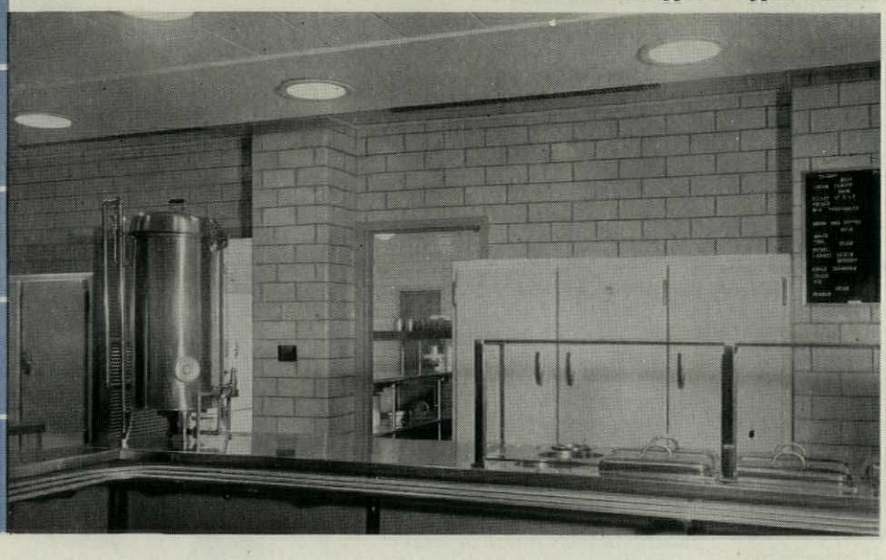
The comprehensive technical information given throughout the book has been brought into agreement with latest research results making it a valuable reference work for building engineers. About one-quarter of the guide is devoted to details on the heating, ventilat-

(Continued on page 216)

Passing the hardest tests in school interiors

STARK GLAZED FACING TILE

Archbishop Stepinac High School, White Plains, N. Y.
Geo. A. Fuller Co., Gen. Contractor; Eggers & Higgins, Architects



Test for construction costs. Stark Glazed Facing Tile is a modular-sized unit that saves planning, cutting and fitting costs. You build the wall and finish with one material.

Test for maintenance. You never need to paint or refinish walls of Stark Glazed Facing Tile. Cleaning is easy and inexpensive with soap and water.

Test for service. Interiors of Stark will last for the life of the school. They virtually won't scratch, mar or break down under the heaviest traffic. They're permanent as well as fireproof.

Test for color to aid scholarship. Stark Glazed Facing Tile is "color-engineered." You can select colors that aid lighting, that raise morale and create a pleasant atmosphere for study and concentration.

We welcome your inquiries. If you wish a copy of our New Brochure or other information just address your request to Dept. AF-6. See Sweet's Catalog 4f-St.

STARK CERAMICS, INC.
(formerly the Stark Brick Co.)
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QUALITY FACING TILE — FTI — Member of FACING TILE INSTITUTE

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Air Foil

AG-35 VOLUME CONTROLLER

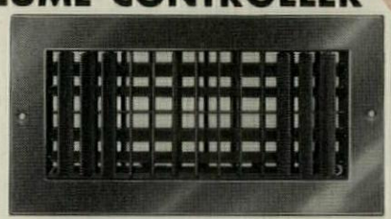
NEW... REDUCES ADJUSTMENT TIME and LABOR 90%

BALANCE SYSTEM WITHOUT REMOVING GRILLE

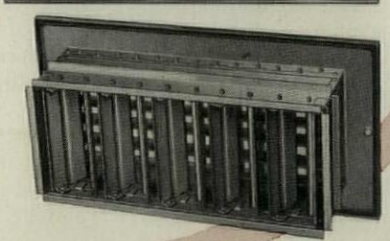
This means that plaster or paint is never damaged or smudged during balancing. Key-operator regulates air volume to hairline adjustment.

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.

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ing and air conditioning products of prominent manufacturers and to information on their application in building construction.

BULLETIN BOARDS. Keep Posted on Cork-Tex. Bond, Crown and Cork Co., Subsidiary of Continental Can Co., Wilmington 99, Del. 4 pp. 9 x 11".

Actual samples of two types of cork board are contained in this file folder. One, a large grained wall material, has the appearance of natural cork. Its irregular pattern is said to help camouflage thumbtack holes. The other swatch is a smooth surfaced, fine grain board.

HEATING. Steam and Hot Water Unit Heaters. Industrial Unit Heater Assn., 2159 Guardian Bldg., Detroit 26, Mich. 4 pp. 8½ x 11".

Concise and well illustrated, this brochure tells how to get the most out of heating units through proper care. Regular maintenance is not expensive, it states, yet assures trouble-free operation.

AIR CONDITIONING. A Picture of the IQR Motorpump Line for Improved Air Conditioning Results, Form 7177. Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y. 12 pp. 8½ x 11".

Electrically driven centrifugal pumps are shown in such air conditioning applications as cooling tower, evaporative cooler and in the handling of condenser water. The hp ratings of various pump models are listed, and cutaway views illustrate the mechanical features of two kinds of *Motorpumps*.

INFLUENCE LINE TABLES. Calculated and arranged by Gustav Griot, translated from the German and revised by Harold G. Lorsch. Frederick Gungar Publishing Co., New York, N. Y. First American Edition. 87 pp. $3.75.

The influence line tables contained in this volume are expected to reduce the calculating work in analyzing for moments, shears and reactions of continuous beams under dead and live loads. They may also be used to great advantage in combination with Kleinlogel's rigid frame formulas. The tables have been adapted to American design practice and the method by which they were computed and their use is described in an introduction.

GLASS BLOCK. For Design Flexibility. Pittsburgh Corning Corp., 307 Fourth Ave., Pittsburgh 22, Pa. 4 pp. 8½ x 11".

Simple diagrams in this folder explain the lighting function of each of the three new PC 12" light-directing glass block and their 8" counterparts. The text tells which block should be used on a particular elevation to provide efficient daylighting.

TOOLS. Manco Guillotine, Catalogue No. 152. Manco Mfg. Co., Bradley, Ill. 8 pp. 8½ x 11".

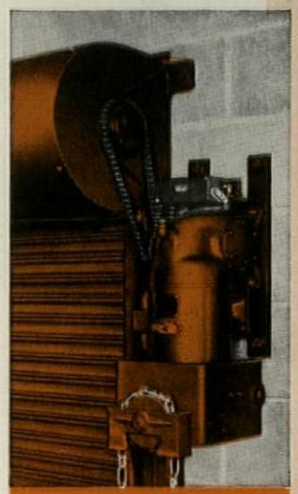
Portable hydraulic cutting tools are catalogued in this new publication. Illustrated with photos and line drawings, the booklet gives helpful capacity and specification data on the high pressure tools, and lists accessory equipment such as gauges, control valves, hot cutting units, and hydraulic pump assemblies. Used for numerous industrial applications, the Manco *Guillotines* are said to exert up to a 50-ton thrust, and cut materials ranging from ½" steel rod to 3½" armored cable.

FLOOR MAINTENANCE. Floors without Flaws. A. C. Horn Co., Inc., 10th St. & 44th Ave., Long Island City 1, N. Y. 12 pp. 8½ x 11".

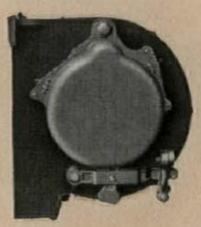
A practical guide for care of floors in office buildings, institutions and schools, the brochure covers conditioning and repairing methods for a wide variety of flooring materials.

Rolling Steel DOORS

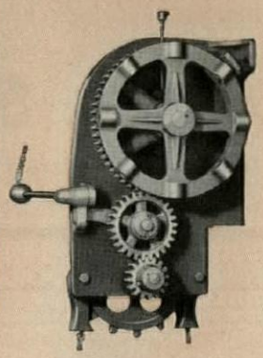
Manually, Mechanically, or Power Operated



MAHON STANDARD POWER OPERATOR 920-P



Mahon Release Device and Governor on the Automatic Closing Mechanism of a Mahon Rolling Steel Fire Door. Fusible links release the mechanism in case of fire and the door closes automatically.



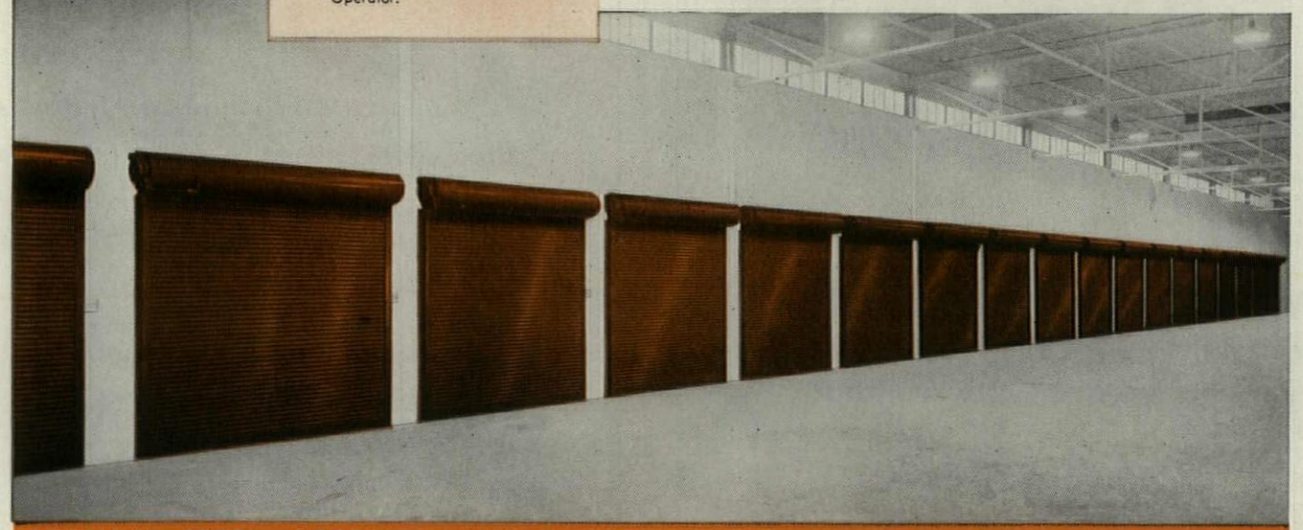
Mahon Release Device for Chain-Gear Operator on Mahon Mechanically Operated Rolling Steel Fire Doors. Fusing of the Fusible Link, which releases the Automatic Closing Mechanism, simultaneously disengages the Chain-Gear Operator.

In warehouses and other buildings with high ceiling clearance where maximum usable floor area is the prime consideration, Rolling Steel Doors occupy a minimum of space . . . their vertical roll-up action occupies no usable space inside or outside the opening, or above the lintel level. No other type of door offers such space economy. In the particular installation below, Mahon Underwriters' Labeled, Automatic Closing Rolling Steel Doors were employed in openings in a dividing wall between an inclosed loading dock and the warehouse proper. In case of fire, any doors in the open position will close automatically. Rolling Steel Doors are permanent—their all-metal construction assures you maximum protection and a lifetime of trouble-free service. Whether you buy standard doors or Underwriters' Labeled type for fire protection, you will find that you get a greater dollar value in Mahon Rolling Steel Doors . . . a study of Mahon Specifications covering materials, application of protective coating, operating mechanisms, and other extra-value items, will convince you. See Sweet's Files for complete information —including Specifications, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.

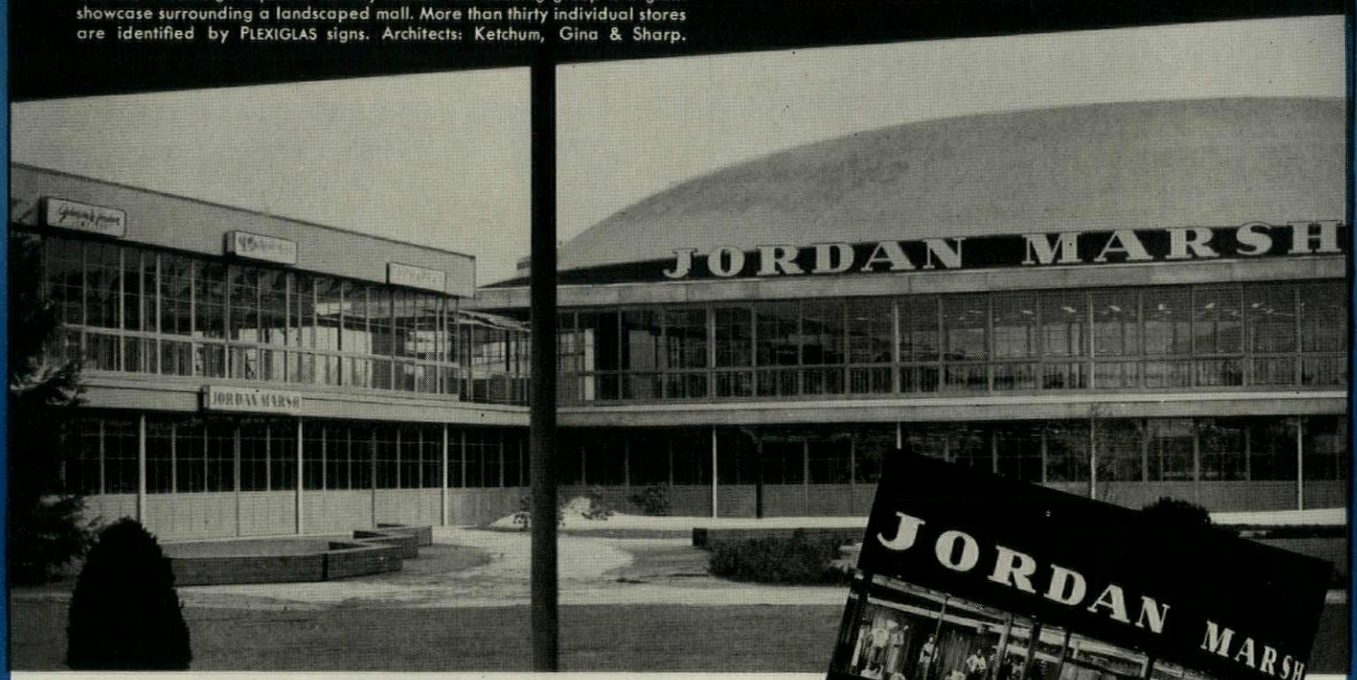


ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Twenty-Four Mahon Automatic Underwriters' Labeled Doors installed in a new Warehouse for Food Warehouses, Inc., Detroit, Mich. Two Mahon Power Operated Rolling Steel Doors 17'-0" x 22'-0" are installed in railroad openings in this same building. Louis G. Redstone, Architect, Campbell Construction Company, General Contractors.

MAHON

"Shoppers' World", Framingham, Mass., is a double-decked Main Street, with store frontage equal to ten city blocks. The building group is a giant showcase surrounding a landscaped mall. More than thirty individual stores are identified by PLEXIGLAS signs. Architects: Ketchum, Gina & Sharp.



Three-fourths of the Stores at "Shoppers' World" Use PLEXIGLAS Signs

Signs made of PLEXIGLAS identify thirty-three of forty-four stores at this noted shopping center. Customers are attracted by the glare-free, legible, acrylic plastic faces and letters. The pleasing appearance and selling effectiveness of the signs are in keeping with the efficient merchandising design of "Shoppers' World".

Used as a sign material, PLEXIGLAS provides unlimited design possibilities. Broad-stroked letters, large-area backgrounds, three-dimensional trademark reproductions, colorful store facades—PLEXIGLAS makes them distinct and distinctive, day and night. Evenly diffused backlighting, from sources concealed and *protected* by the translucent plastic, makes a sign completely luminous at night, as attractive and easy to read as in daytime. Signs made of this *outdoor* plastic give long service with low maintenance costs.

You should have full information on PLEXIGLAS signs. We'll be glad to send it to you.

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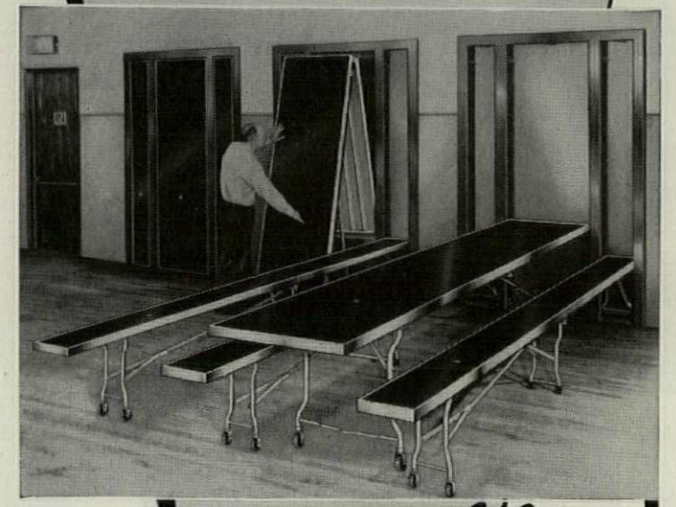
Approved* Method of Cutting Costs in School Design



In-wall

FOLDING
TABLES AND BENCHES

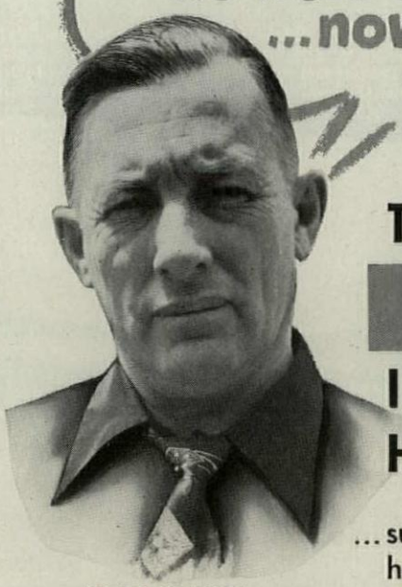
COMBINE LUNCHROOM AND ACTIVITIES AREAS . . . ELIMINATE A SINGLE-PURPOSE ROOM!

• See Sweets Architectural File for details on this multiple-use-of-space equipment. Proven and accepted as practical by school officials and installed in hundreds of schools from coast to coast.

***ALREADY SPECIFIED BY HUNDREDS OF SCHOOL ARCHITECTS. WRITE FOR THE LIST**

SCHIEBER SALES COMPANY
12738 Burt Road • Detroit 23, Michigan

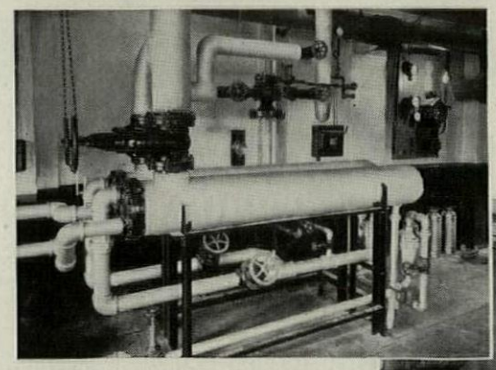
"We were skeptical ...now we're convinced"

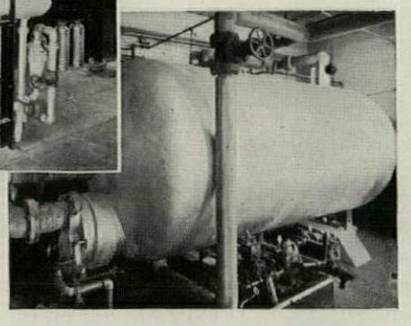


MR. J. R. HINCKLEY,
Chief Power Plant Eng.,
State Institutions, Howard, R. I.

Two Low-Cost GENERAL INSTANTANEOUS HEATERS

...supply continuous hot water for 4700 people at Howard



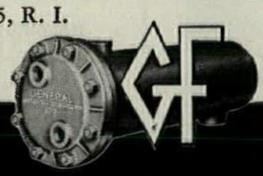


Compact General water heater installation (above) completely replaced 14 foot storage tank at right.

"Frankly, we were skeptical," says Mr. Hinckley. "GENERAL told us we could supply our 4700 people with continuous hot water by just installing two — #630 Instantaneous Heaters. The price quoted was only a fraction of the cost of our old storage tank, and each new heater measured only 14½" diameter by less than 8 feet long. Also, they promised freedom from corrosion worries and maintenance . . . more uniform performance."

"Recently, we opened the valves on *one* of the heaters. The results amazed us. This one compact heater, rated at 100 g.p.m., is supplying high temperature water for sterilizers, dishwashers, showers, etc. in addition to permitting our laundries to wash 18 tons of clothes on Mondays, and 8 tons every other day. Our *two* General Instantaneous Heaters will take care of all our needs — present and future."

Why not investigate GENERAL Instantaneous Heaters for *your* hot water supply? Available in 21 sizes, capacities to 300 gals. per min. All-bronze and copper waterways . . . no corrosion, no maintenance. No complicated piping or storage tank. Use live or exhaust steam as heat source. Write for Catalog 60. General Fittings Co. Dept. H, 123 Georgia Ave., Providence 5, R. I.



GENERAL
INSTANTANEOUS WATER HEATERS

COLORUNDUM

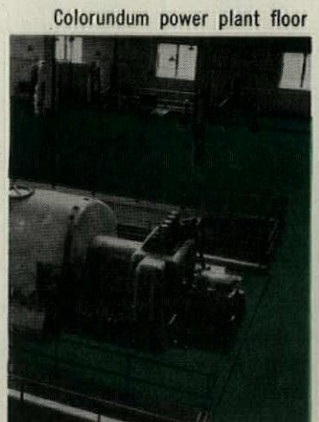
for colored concrete floors and sidewalks

use COLORUNDUM trowelled into the fresh concrete topping

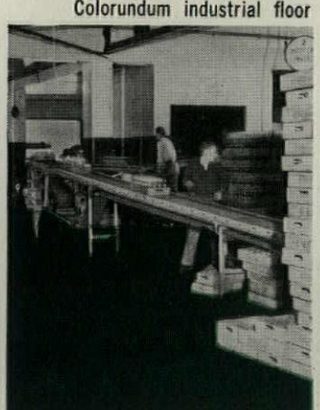
All over the nation modern building design now includes the use of Colorundum in colored concrete floors, sidewalks, roof decks, industrial and other walkways and driveways. Colorundum is used widely in exteriors or interiors . . . as a wear-resistant and colorful concrete topping of long life . . . at practically the average cost of ordinary concrete. Decorative color combinations are often employed of red, maroon, brown, green, dark green, french grey, black. Colorundum is a dry powder ready for use, composed of coloring mediums, fused aggregates, water-repellent and hardening elements. Colorundum is dusted on and floated and trowelled into the fresh concrete topping. The non-slip, non-metallic surface makes it an ideal flooring on new concrete or when replacing old concrete floors or sidewalks.

Colorundum
central fire station floor

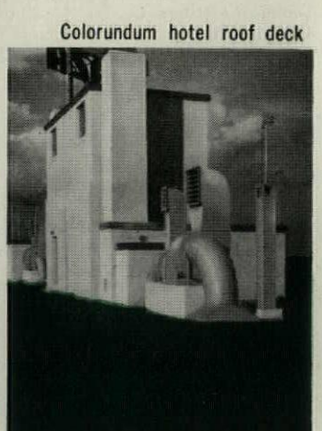
Colorundum power plant floor



Colorundum industrial floor



Colorundum hotel roof deck



HORN

A. C. HORN COMPANY, Inc. est. 1897

Manufacturers of materials for building maintenance and construction
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Chicago • Toronto SUBSIDIARY OF SUN CHEMICAL CORP.

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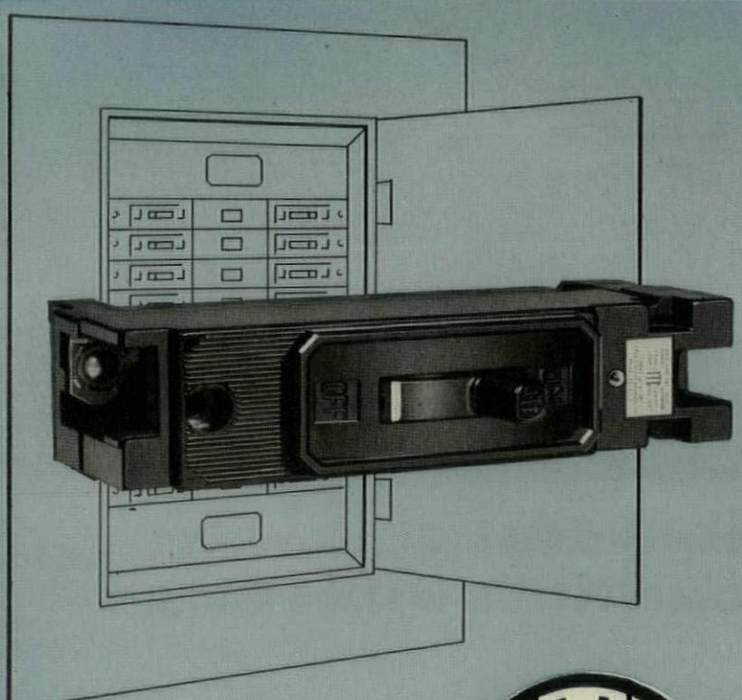
ADVERTISERS INDEX

DON'T LET THE

SPEC-LESS SPECTRE

HAUNT YOUR REPUTATION



Your reputation will never be haunted by the ghost of antiquated electrical specifications if you specify modern panelboards in all your designs.

And even the panelboards themselves can be antiquated, unless they use modern *circuit breakers* to protect lighting, power and distribution circuits. As you know, circuit breakers give maximum protection and flexibility. They're safe because operators and maintenance men can't come in contact with live parts. They indicate at a glance when breaker has tripped on overload and can be readily reset.

I-T-E Molded Case Circuit Breakers are the last word in breakers. They are designed and built by circuit breaker specialists to meet the exacting requirements of everyday commercial and industrial use. They have all these outstanding circuit breaker features:

- **Pre-tested for accuracy**
- **Visual indication when tripped**
- **Will carry full rated load indefinitely**
- **Reserve thermal and mechanical capacity**
- **Sealed cases to prevent tampering**
- **Heavy duty, sturdy molded cases**

Protect your designs with modern panelboard specifications. It's easy! Just make sure they include I-T-E Molded Case Circuit Breakers. And remember, you can specify I-T-E all the way—from 10 to 600 amperes.

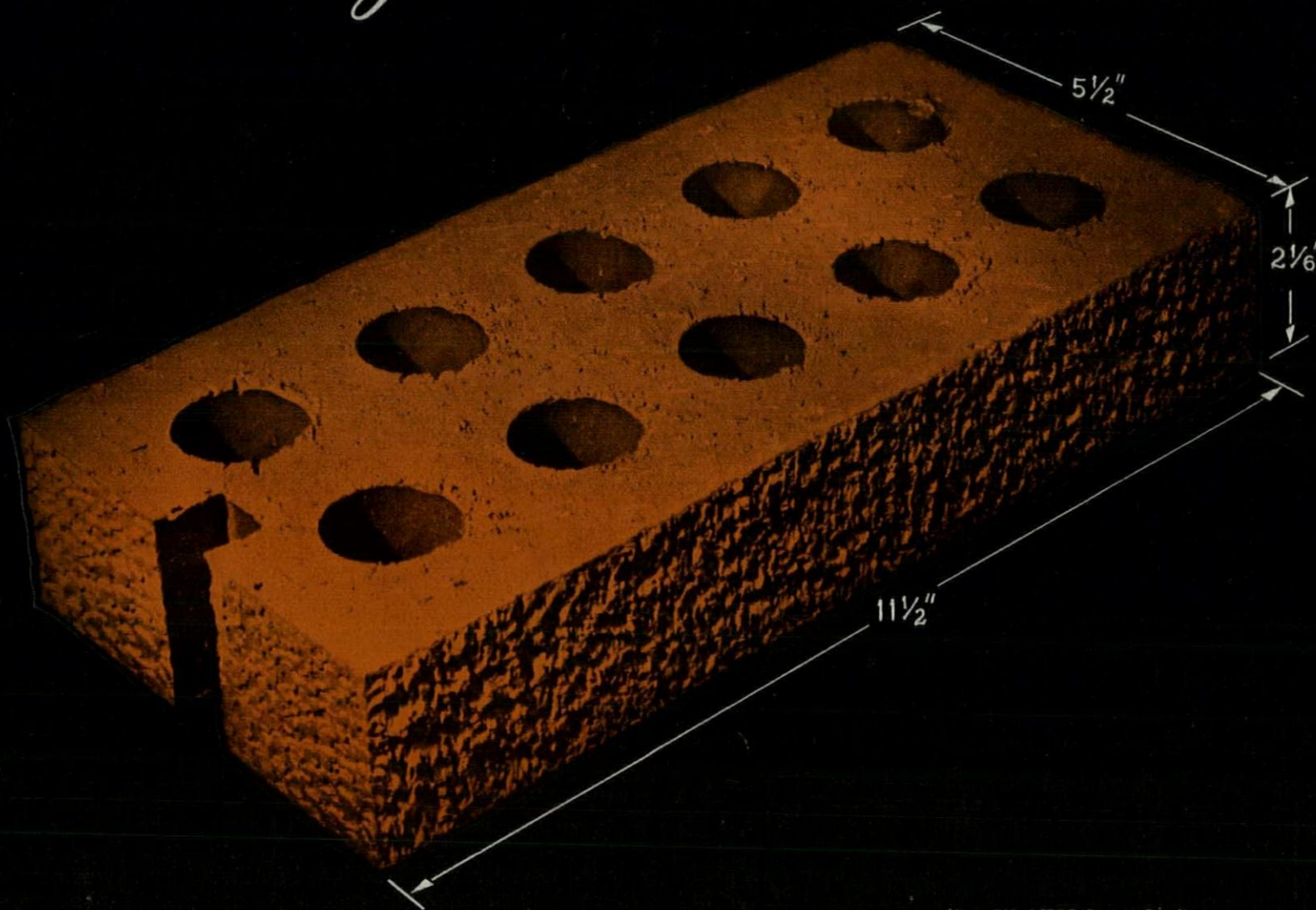
For further information, including specifications and dimensions, write I-T-E Circuit Breaker Company, 19th and Hamilton Sts., Philadelphia 30, Pa.

Specify I-T-E **MOLDED CASE CIRCUIT BREAKERS**

I-T-E CIRCUIT BREAKER CO. • 19th and HAMILTON STS. • PHILA. 30, PA.

NEW . . . BEAUTIFUL . . . CUTS COSTS

Introducing SCR brick*



*Reg. TM, SCPRF, Patents Pending

Now . . . BUILD SOLID BRICK HOMES OF PREMIUM APPEARANCE AT A COST COMPETITIVE WITH FRAME

the "SCR brick" is a THRU-THE-WALL UNIT

The "SCR brick" is a new product developed by the Structural Clay Products Research Foundation.

CUTS COSTS: eliminates materials and builds the wall with a single unit.

SAVES TIME: normally a mason can build 100 sq. ft. of "SCR brick" wall per day . . . an increase of 60%—100%.

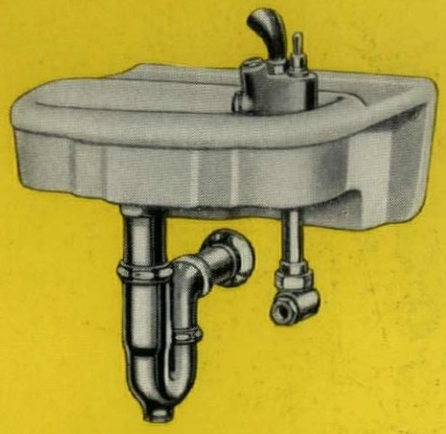
Meets construction requirements of FHA and all national building codes for single story residences.

Your inquiry for complete, detailed information is invited.

STRUCTURAL CLAY PRODUCTS INSTITUTE
1520 18th Street, N. W., Washington 6, D. C.

Before you specify Plumbing Fixtures

✓ check ELJER



✓ check FEATURES

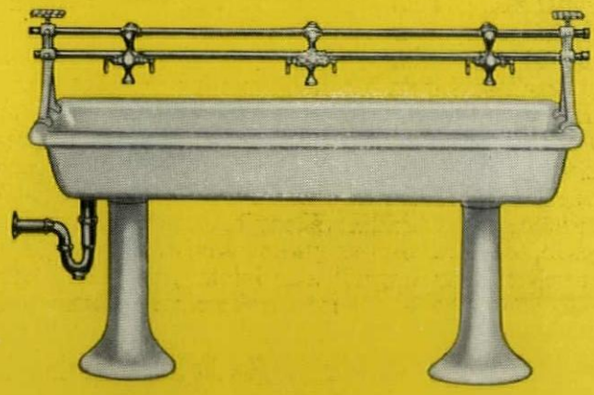
Many Eljer Fixtures have an *extra* feature that makes them an *extra* value . . . in lower maintenance costs, longer life, more beauty or greater convenience.

ILLUSTRATED: E-5910-V Sanus, vitreous china, syphon-jet closet, with elongated rim. 1½" top inlet for flush valve, as specified. (Also available with round front.)

✓ check QUALITY

The *finest quality* is Eljer's first consideration . . . in vitreous china, enameled cast iron and brass goods. User satisfaction is our prime objective.

ILLUSTRATED: E-4995-C Crystal Fountain, vitreous china, with chrome-plated fittings. Size: 11" x 11½". Non-squirting bubbler, automatic volume control, self-closing handle.



✓ check SERVICEABILITY

In almost half a century, Eljer has manufactured more than fifteen million plumbing fixtures, to meet virtually every requirement. Eljer users are Eljer's best boosters.

ILLUSTRATED: E-8200-V Pedestal-type vitreous china urinal with flush valve, as specified. Width: 14". Projection: 23½". Height, floor to top of lip: 19½".

✓ check ADAPTABILITY

The engineering features of Eljer Fixtures provide maximum adaptability. Engineering and design service is geared to meet special fixture requirements.

ILLUSTRATED: E-1810-E Double Wash Sink, enameled cast iron, with painted pedestals and double pipe supports. Fittings shown. Length: 4', 5', 6', 8'. Width: 30"

ELJER CO. FACTORIES AT FORD CITY, PA., SALEM AND MARYSVILLE, OHIO

OVERHEAD DOOR CORPORATION

HARTFORD CITY, INDIANA, U. S. A.

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