# architectural forum

June 1954

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## HAUSERMAN MOVABLE WALLS

# Save \$71,278 in Six Years

FOR PHARMACEUTICAL LABORATORY

Equip a fast-changing business with versatile, fast-changing walls and substantial cost savings are inevitable. Proof! The six-year record of Hauserman Movable Walls at Smith, Kline & French Laboratories, Philadelphia pharmaceutical producer.

With the constant development and introduction of new pharmaceuticals, floor space requirements in offices, laboratories and production areas have changed drastically in the past six years. Numerous wall rearrangements have been made quickly and easily, without costly work interruptions. Savings in rearrangement construction costs alone have amounted to \$63,343, using movable walls instead of the permanent masonry type.

Additional savings of \$7,935 are attributed directly to the elimination of redecorating expense, made possible by the durable, long-lasting surface finish of Hauserman *Movable* Walls.

Result: More proof that it pays to invest in versatile Hauserman Movable Walls when you build or remodel offices, laboratories, production areas, hospitals or schools.

### WRITE FOR FREE DATA MANUAL 53!

This 96-page comprehensive guide for architects contains complete technical details as well as stock sizes, general instructions and specifications on all types of Hauserman Movable Interiors. Write to The E. F. Hauserman Company, 7145 Grant Avenue, Cleveland 5, Ohio.





AUSERMAN Movable Interiors

OFFICES . SCHOOLS . LABORATORIES . HOSPITALS . INDUSTRIAL PLANTS

# KENTILE asphalt tile floors meet shopping center requirements for durability...beauty...economy

Every unit in a modern shopping center has its own special, flooring problems! But, all floors must be long lasting, attractive, economical, easy-to-clean. When you specify Kentile you answer all these needs.

KENTILE costs less to buy, install and maintain. And, it is one of the toughest, most durable floors made. Years of heaviest traffic can't harm it, discolor it or destroy the crisp, clear, tile-deep colors. The wide color selection offers limitless design opportunities ... makes "custom" flooring easy and economical to achieve. Find out for yourself why KENTILE is America's most-used commercial floor.

A.I.A. 23-G



KENTILE ASPHALT TILE easily withstands the constant daily wear and tear of heavily-loaded hand trucks, shoppers' carts and continuous foot traffic. Spilled foods, acids and alkalis can't harm it...mild soap and water cleans it quickly and thoroughly. An occasional self-polishing, no-rub waxing keeps Kentile bright, fresh and new-looking.

Samples and Technical Literature available to architects, builders and designers on request. Contact the Kentile Flooring Contractor listed under FLOORS in the Classified Phone Book. Or, write the nearest Kentile, Inc. office listed below stating the samples and information desired. Be sure to request samples of ThemeTile die-cut inserts, Feature Strip and KenBase.

### Specifications and Technical Data

INSTALLATION: Over any smooth, firm interior surface free from spring, oil, grease and foreign matter...over metal, wood, plywood, concrete, radiant heated concrete slab, concrete that is in direct contact with the earth; on or below grade.

THICKNESSES: KENTILE is available in two gauges: 1/8" for residential and most commercial uses—3/16" for industrial use and where extra-heavy duty flooring is needed.

SIZES: Standard tile is 9" x 9".

SPECIAL KENTILE: Greaseproof asphalt tile for use around meat counters, in bakeries, beauty shops, in a wide range of marbleized colors—extremely resistant to fats and oils, alcohols, alkalis and most acid solutions.

### Approximate Installed Prices (per sq. ft.)

1/8" Gauge	3/16" Gauge
20¢	25¢
25¢	30¢
30¢	40¢
35¢	40¢
40¢	50¢
	20¢ 25¢ 30¢ 35¢

These costs are based on a minimum area of 1,000 sq. ft. over concrete underfloor. Color groupings range from Group "A," the darkest solid colors...to Group "D," the lightest marbleized colors. Special Kentile is available in Regular and DeLuxe Colors.



Kentile is the floor your clients know and want...

## BACKED BY MORE FULL-COLOR ADVERTISING THAN ANY OTHER ASPHALT TILE FLOOR

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\*REG. U.S. PAT. OFF.

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SANSOM STREETS, PHILADELPHIA 3, PENNSYLVANIA \* 1211 NBC BUILDING, CLEVELAND 14, OHIO \* 900 PEACHTREE STREET N. E., ATLANTA 5, GEORGIA

2020 WALNUT STREET, KANSAS CITY 8, MISSOURI \* 4532 SO. KOLIN AVENUE, CHICAGO 32, ILLINOIS \* 4501 SANTA FE AVENUE, LOS ANGELES 58, CAL.



Blended into the rolling landscape of Bloomfield Hills, Michigan, the MacManus, John & Adams installation provides 33,000 sq. ft. of floor space. Architects: Swanson Associates, Bloomfield Hills; General Contractors: Schurrer Construction Company, Pontiac; Plumbing and Heating Contractors: Eames and Brown, Pontiac.

# For new trends in office buildings... Pacific Boilers with Jet-action Circulation

Advertising agencies have unique space needs: studios for artists, single offices for writers and executives, large offices for clerical help.

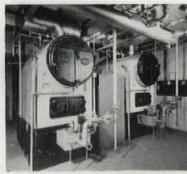
To meet these special requirements, Detroit's growing MacManus, John & Adams, Inc., decided to expand to the suburban hills . . . Bloomfield Hills, Michigan. Their functional office building shown above is a model of streamlined comfort and efficiency.

For top heating comfort and efficiency, MacManus, John & Adams use two Pacific Boilers with Jet-action Circulation. Here's why:

When hot water and steam leave the water leg of a Pacific Boiler, they first pass through Pacific Circulating Connections. The design of these connections creates a jet stream of hot water and steam aimed directly at the boiler's heating tubes.

This jet stream sweeps insulating steam bubbles from the tubes to bring maximum heat transfer between tubes and surrounding water. The result is continuous turbulence, more efficient use of fuel, instant response when changes in building temperature are desired.

Why not get the same results for your installations? Your local Pacific representative can give you complete details on Pacific Boilers with Jetaction Circulation for every use. Call him today!



Two gas-fired Pacific Boilers heat the MacManus, John & Adams installation. Operating Engineer Stephen Rasperth says, "This system practically runs itself . . . it's controlled by outside temperatures. It's fast, too. We can heat in 45 minutes from a cold start."



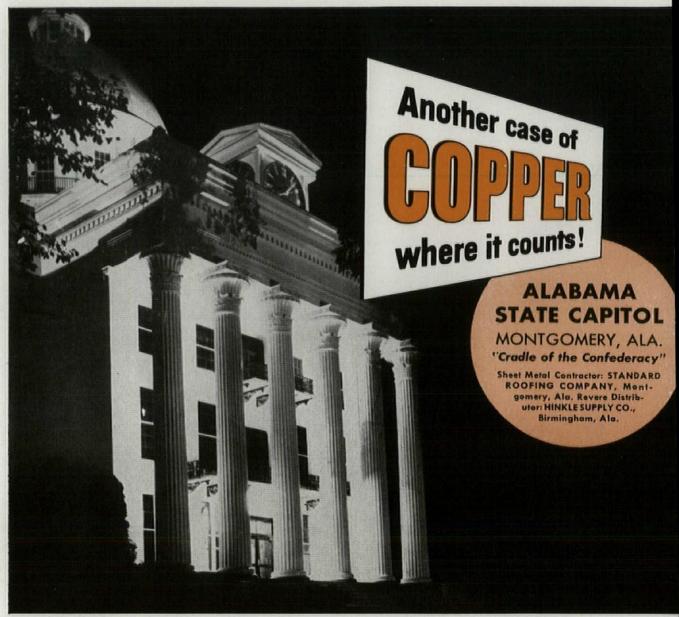
Designed
Constructed
and Stamped in
Accordance with
ASME Code



Pacific Steel Boiler

DIVISION · UNITED STATES RADIATOR CORPORATION

GENERAL OFFICES: DETROIT 31, MICHIGAN



Once again a roof of Revere Copper replaces one of rustable material. The State Architectural Department was finding that repairing the damage done due to recurring leaks was an expensive proposition. So when they re-roofed they selected enduring, non-rusting Revere Copper

Since the enduring qualities of copper have been proved for centuries you don't take chances when you use this "ageless" metal. Truly, "Trouble is more expensive than copper." A good way to avoid trouble is to write "COPPER" into your specs. It's the metal that makes itself at home in buildings of the most modern or the most formal design.

There's a Revere Distributor near you who stocks Revere Sheet, Strip or Roll Copper for flashing and roofing. Write us about Revere Keystone Thru-Wall Flashing\* and the new Revere-Keystone 2-Piece Cap Flashing.\*\* And, if you have technical problems, we will put you in touch with Revere's Technical Advisory Service.

\*\*Potented \*\*\*Patent Pending\*\*

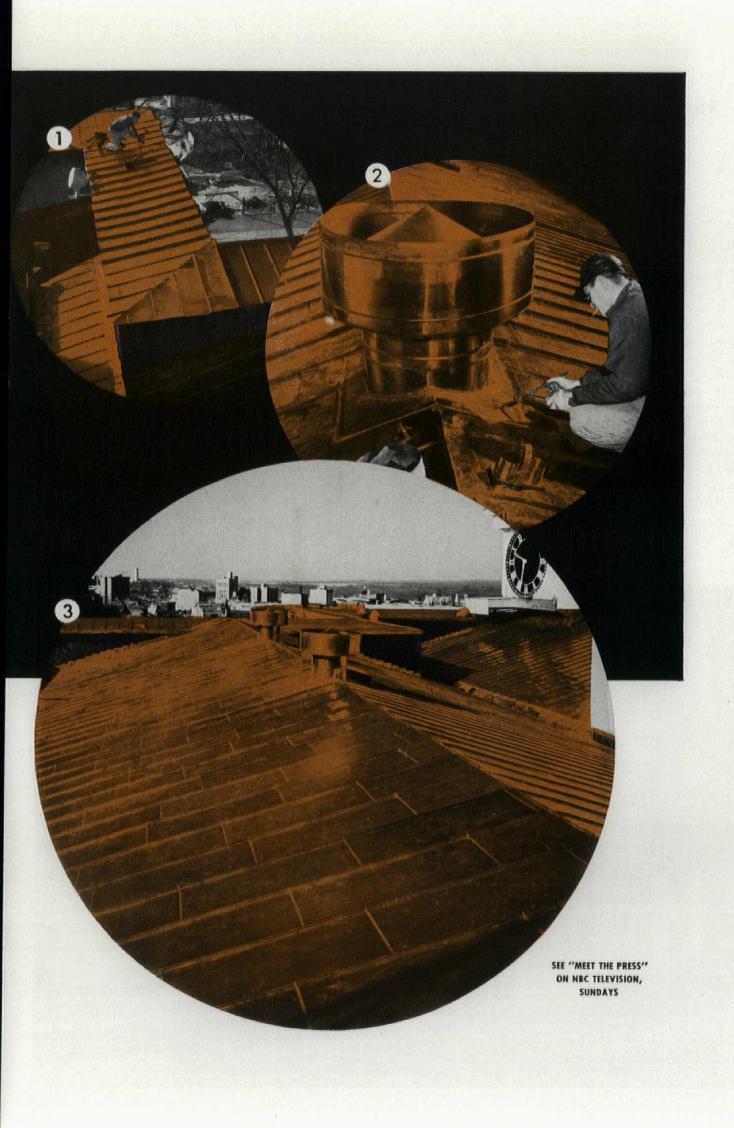
### COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801 230 Park Avenue, New York 17, N.Y. Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.— Sales Offices in Principal Cities, Distributors Everywhere.

PUTTING FINISHING TOUCHES of 6-ft. wide parapet. A total of 32,000 lbs. of Revere 16 oz. Cold Rolled Shee Copper was used. Installation wa made as recommended in Revere' Booklet, "COPPER AND COMMON SENSE." Do you have a copy?

SHEET METAL MEN prefer copper to any other metal with which to work One reason is because it is so readil cut, shaped and soldered. A regula iron at regular temperatures is used and there is no need to wipe off the flux after soldering. Working with metal they like also makes for qualit workmanship.

THIS REVERE COPPER standing seam roof will endure for years and year ... will not rust. Because the old rood deck was rough and uneven 3/4" plywood was used over the old surface with 15 lb. roofing paper laid on the plywood to form a sound base for the copper.



## How Honeywell Customized Temperature Control helps you

# Give your clients better working weather

Why Honeywell Customized Temperature Control is becoming a "must" in all types of buildings

The importance of good "working weather" inside a building is coming to be appreciated by a growing number of people concerned with promoting efficiency and satisfaction in all types of buildings.

A good case in point, which tells how to insure proper control of indoor weather, is the Emmie U. Ellis Junior High School in Elgin, Illinois.

Today—as demonstrated by the Ellis school—the best way to provide proper temperature control is through the use of Honeywell Customized Temperature Control.

The key word here is "customized." It means that whatever your clients' control requirements, a Honeywell Customized Temperature



Control installation designed to fit the needs of the building and its occupants is your answer. This applies not only to heating and cooling, ventilating and humidity control but to industrial control as well.

Only Honeywell can provide true "customized" control. Because only Honeywell manufactures all three types of controls—pneumatic, electric and electronic.

The story, in brief form, of the Honeywell Customized Temperature Control installation in the Ellis Junior High School is told here.

The techniques used, applied to your particular problems, can help you give your clients the indoor weather they've always wanted.

The Emmie U. Ellis Junior High School, Elgin, Illinois.

Architects and Engineers: Elmer Gylleck & Associates; Heating contractor: A. J. Ironside

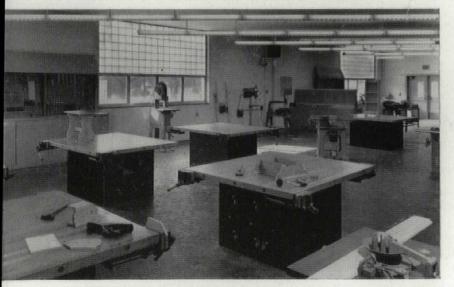




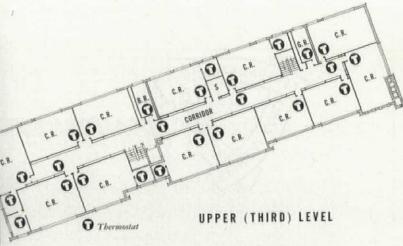
Exposure and occupancy factors are the big control problems in the library. The room has large glass areas facing east which admit a good deal of solar heat on sunny mornings. And one minute the library may contain five students, the next—fifty. These problems are easily solved, however, by several Honeywell thermostats placed strategically around the room.



The "use" comfort factor is the biggest problem in the home economics room. When the ranges go on they go on all at once—adding a great amount of extra heat to the room. Ordinarily this would mean real discomfort. But with Honeywell thermostats on the job controlling the heating and ventilating system, home economics students remain comfortable all the time.



Still another "use" problem must be met in the woodworking shop. Students here are physically quite active, need lower room temperatures for comfort. This condition is met handily by the Honeywell Customized Temperature Control installation. Individual thermostats here control space heaters—giving just the right indoor weather for work.



## For comfortable, even temperature in new or existing buildings – of any size – specify Honeywell Customized Temperature Control

Whether it's a school, shopping center, factory, office, motel, hospital—or any size building—new or existing, Honeywell Customized
Temperature Control can help meet your clients' heating, ventilating, air conditioning and industrial control problems.

Your clients will not only enjoy more comfort and efficiency, they'll save fuel, too.

For full facts on Honeywell Customized Temperature Control, call your local Honeywell office. Or mail the coupon today.

### Orrin Thompson, superintendent of schools, Elgin, Illinois, says:

"The Ellis School, like most of the schools in Elgin, is a better place to work and learn because it's a comfortable school. Honey-well Customized Temperature Control certainly deserves credit for helping to make it that way."

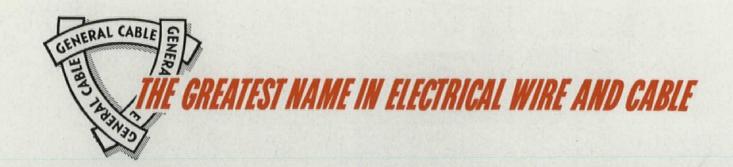
# Honeywell



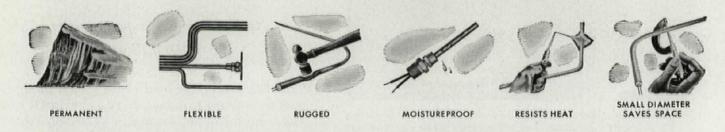
First in Controls

112 OFFICES ACROSS THE NATION

Minneapolis-Honeywell Regulator Co. Dept. MB-6-118, Minneapolis 8, Minnesota
Gentlemen: I'm interested in learning more about Honeywell Customized Temperature Control.
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applications where deterioration is a major problem.

By acting as its own conduit...by unique flexibility and small diameter...Safety m.i. Wiring has further proved its ability to provide lower installed costs. For information on this amazing product, check General Cable today.

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Be *ready* for growing power needs—wire bigger when building new, wire bigger when re-wiring, too! Remember, only General Cable makes and sells every type of electrical wire and cable.

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# J. L. Hudson Co. at New Northland Center Gets **Full Sound Conditioning Treatment**



As part of an all-inclusive plan to make interiors as inviting and comfortable for shoppers as possible, the J. L. Hudson Company has Acousti-Celotex sound conditioning throughout its new store at NORTHLAND CENTER in Detroit, Michigan.

#### **Functional Beauty**

Throughout 350,000 square feet of ceiling area; Acousti-Celotex Random Pattern\* Cane Fiber Tile in 25 different color combinations has been installed. All of the tile has a unique multi-colored paint finish which was applied before installation in order to make the ceilings an integral part of overall store design.

### Customers, Personnel Benefit

Application of this sound conditioning treatment within the entire store, in all sales areas, offices, beauty salon, stock rooms, employees' lounge, kitchens . . . as well as in the beautiful NORTHLAND Dining Room . . . is intended to benefit both patrons and store staff alike. Shopping and dining may be enjoyed in an atmosphere of quiet comfort. Personnel, too, will find increased ease and efficiency working in these noise-checked areas.

Here again is evidence of the important part Acousti-Celotex sound conditioning is playing in the design of today's new buildings.

Attractive interior views of J. L. Hudson Co., at NORTHLAND CENTER, showing Acousti-Celotex sound conditioned ceilings throughout Women's and Men's Apparel Depts.

Architect: Victor Gruen Associated Architects and Engineers, Inc. Gen. Contractor: Bryant and Detwiler Company







Acousti-Celotex

Sound Conditioning

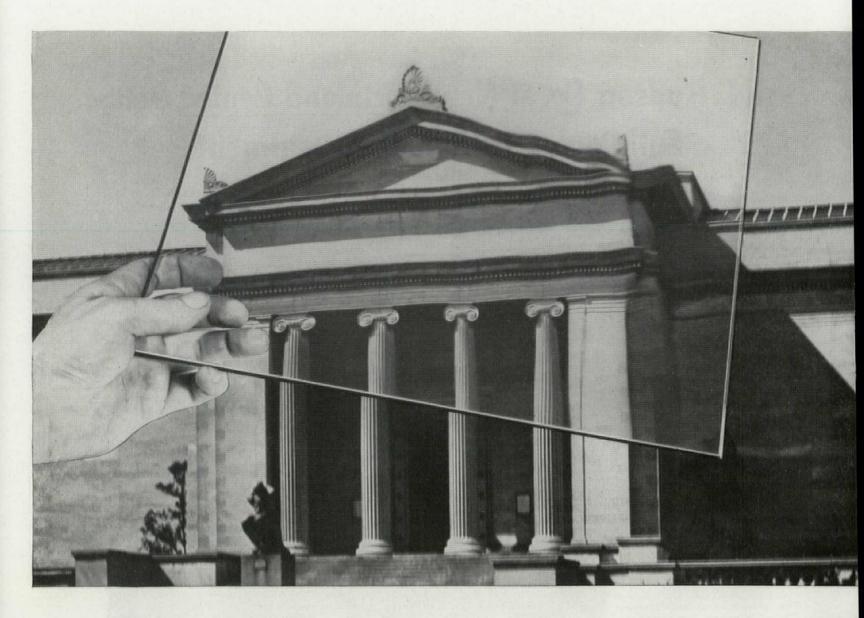
FOR FULL DETAILS on the complete line of Acousti-Celotex products, please write to The Celotex Corporation, Dept. A-64, 120 S. LaSalle Street, Chicago 3, III.

PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

THE CELOTEX CORPORATION, 120 S. LA SALLE ST., CHICAGO 3, ILL.

In Canada, Dominion Sound Equipments, Ltd., Montreal, Quebec

\*U. S. Pat. No. D-168,763



# This can't happen when you specify



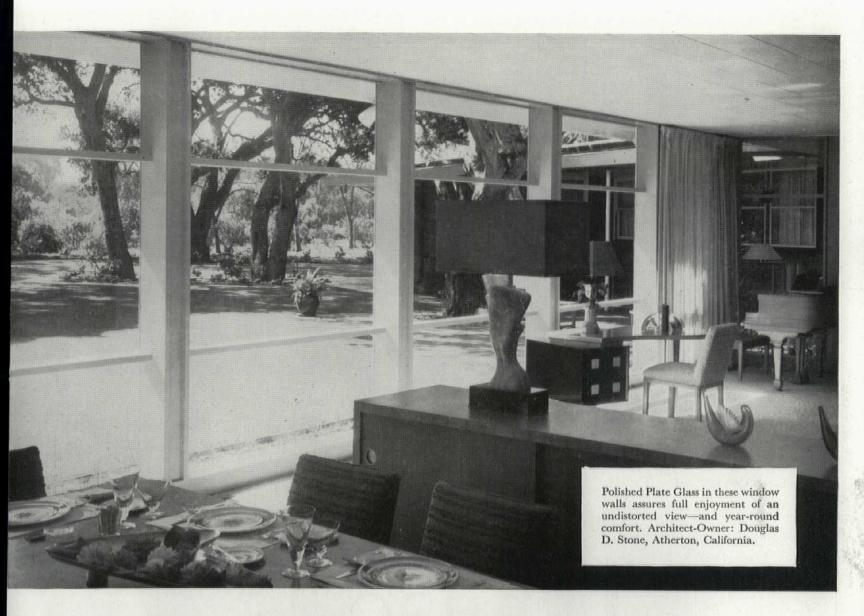
L'O F 1/2" Polished Plate Glass at the Top O' The Columbus, Miami, Fla., assures patrons of a clear, undistorted view—bears the brunt of hurricane winds that occur in the Fall, in this area. Architects: Pancoast, Ferendino, Skeels and Burnham, Miami Beach.

Any good architect, in love with his art, wants to see his creations come to life just as he plans them. And where else can creative architecture be spoiled more quickly than in glass areas? Waviness and distortion in the glass can ruin the appearance you planned so carefully!

For glass which "you'll hardly know is there", specify L·O·F Polished Plate Glass. It will bring in the outdoors sharp and clear, in all its true beauty! And the incomparable qualities of L·O·F Plate Glass—true vision, beauty and luster—are available to you in many types . . . in Thermopane\* insulating glass, Heat Absorbing Plate Glass, Tuf-flex\* tempered plate glass and others for special applications.

For details on any of the standard or special types of plate glass call your nearest L·O·F Glass Distributor or Dealer. Or write Libbey Owens Ford Glass Co., 608 Madison Avenue, Toledo 3, Ohio.

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# L·O·F POLISHED PLATE GLASS



Thermopane insulating glass in the Prescott (Arizona) Municipal Air Terminal Building helps insulate the building against both heat and cold... saves on heating costs.

# POLISHED PLATE GLASS





Your clients' eyes are on





# Chase

Your clients see Chase Copper
Tube Radiant Heating, Copper
Roofing, and Bronze Insect Wire Screening
advertised in the most popular national
magazines. So they know the name Chase...
know it means quality. Chase Copper flashing, gutters,
downspouts and bronze screening are corrosion-resistant, rust-free,
built for beauty and lasting dependability. Chase Copper Tube for
radiant heating has been the finest since Chase first pioneered the
use of copper for floor and ceiling installation. Cost? The cost is no

they know and have confidence in.

more when you consider the long life, better service, lower

maintenance costs, top resale value. Give your clients the brand

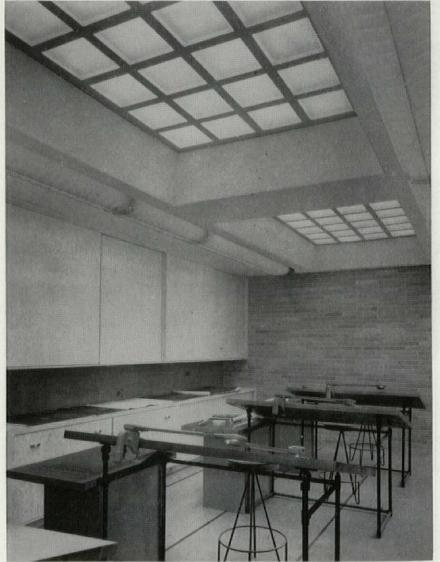


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The Nation's Headquarters for Brass & Copper

# Here at low cost is filtered, natural daylight from overhead



Skytrol panels installed in the offices of W. Harold Tanner & Associates, Architects, Villa Park, Ill.



\*T. M. Reg. Applied For.

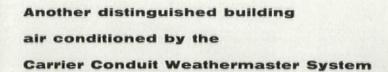
# with PC SKYTROL Blocks

Toplighting is the easiest way to bring daylight into low, one-story buildings where lighting of the inner areas is a problem. And of all the toplighting methods, Skytrol blocks stand alone in their ability to give the highest quality daylighting, good insulation value and a trouble-free, low maintenance installation.

Skytrol blocks are a *flexible* building unit, giving the architect freedom to design practical toplighting panels of virtually any size. The panels can be flat or curved and are not limited by special orientation requirements. The blocks are bonded into a weathertight, reinforced concrete panel — the same method that has been used with success for many years in northern Europe.

But one of the best things about Skytrol panels is their cost. Actual installed costs are running between \$4.50 and \$6.50 per square foot of panel area. If you're considering top-lighting, you'll do well to investigate the Skytrol method. Compared with methods giving comparable results, you'll find Skytrol out-performs, yet costs less.

Consult our section under "Skylights" in Sweet's, or write for more information. Pittsburgh Corning Corporation, Dept. E-64, One Gateway Center, Pittsburgh 22, Pa.



Occupants of these important New York City buildings enjoy Conduit Weathermaster air conditioning:

America Fore Insurance Group Mutual of New York United Nations Secretariat Lever House Sinclair Oil 1407 Broadway 100 Park Avenue Century Building 260 Madison Avenue



Irving Trust Company, New York City

Why are so many hundreds of thousands of feet of floor space in New York City air conditioned by Carrier? The Conduit Weathermaster\* System, perfected by years of unmatched experience, permits the occupants of each room to dial their own climate. Operation is quiet; there are no moving parts within the room. Maintenance is simplified; all operating equipment is centralized. And installation requires a minimum of space.

Carrier Corporation, Syracuse, New York. \*Reg. U. S. Pat. Off.

Voorhees, Walker, Foley & Smith, architects. Meyer, Strong & Jones, consulting engineers.

Turner Construction Company, general contractor. Alvord and Swift, heating and ventilating contractors.



first name in air conditioning



Contractor who built his own motel says:

# "I needed the best materials for my Trav-L-Lodge —that's why I chose Atlas Mortar"

Concrete block painted in pastel colors are featured on both exterior and interior walls at the Dallas (Pa.) Trav-L-Lodge. That's why mortar joints on this job were particularly important. For this special job, general contractor and owner, Donald Hughes, specified Atlas Mortar.

Says Hughes, "Atlas Mortar is excellent for any type of masonry unit. It's smooth under the trowel—lets us get the true, tight joints that we can count on every time. That's why I've used Atlas Mortar for the past four years."

Mr. Hughes' statement is typical

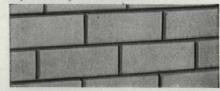
of many we receive from contractors, masons and architects . . . on-the-job reports . . . that praise Atlas Mortar for workability, strength and good appearance.

ATLAS MORTAR has proved itself on large jobs and small and in the laboratory as well. It complies with ASTM and Federal Specifications for masonry cement. For further information write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

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

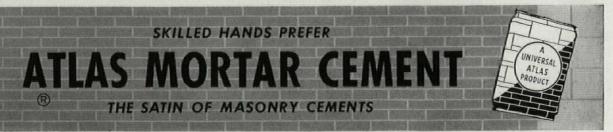


Smooth as butter—Masons go for the outstanding workability of Atlas Mortar... the way it responds easily to the trowel.

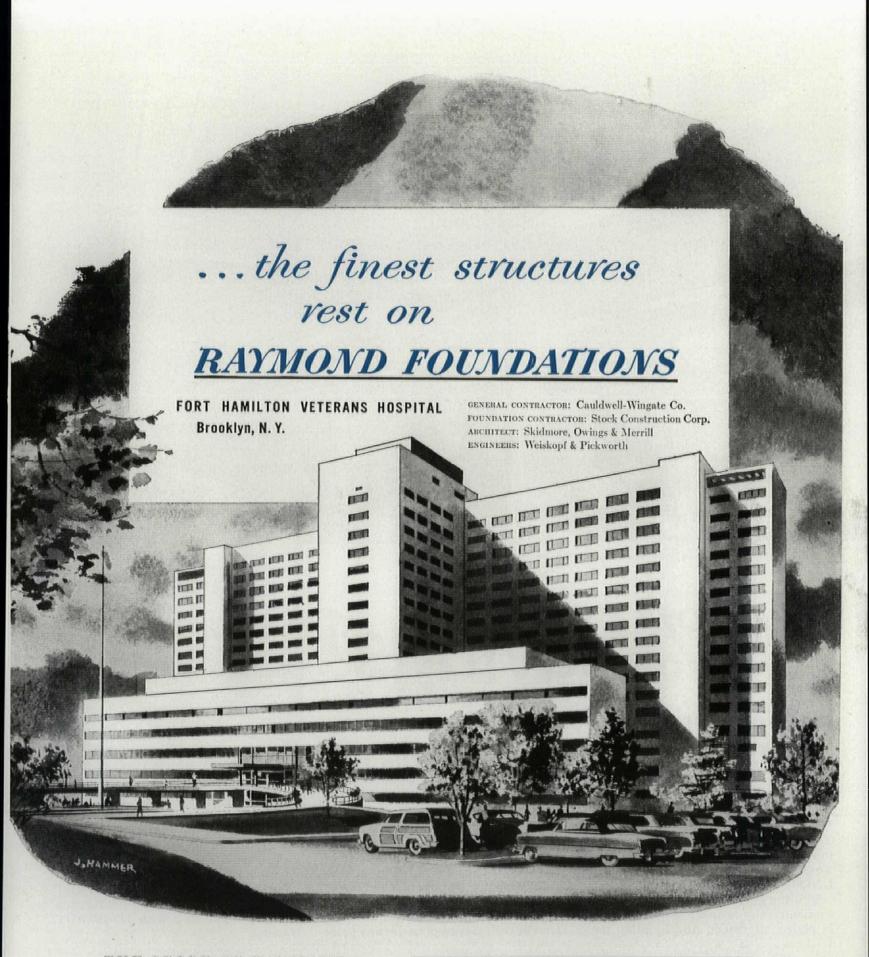


True, tight joints — Atlas Mortar helps assure a strong bond for masonry units . . . satisfactory hardening that produces tight joints.

AF-M-45



UNITED STATES STEEL HOUR—Televised alternate weeks—See your newspaper for time and station.



THE SCOPE OF RAYMOND'S ACTIVITIES—Soil Investigations...
Foundation Construction ... Harbor and Waterfront Improvements...Prestressed Concrete Construction ...
Cement-mortar In-place Lining of Water, Oil and Gas Pipelines.



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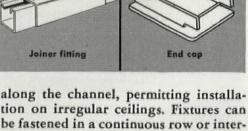
## Lighting installed at half the cost with UNISTRUT channel and fittings

New fluorescent fixtures were recently installed on two floors of the Butler Brothers Building, Chicago, Illinois. The savings on this UNISTRUT installation over conventional methods was estimated at fifty percent. How did UNISTRUT reduce installation costs?

By using UNISTRUT channel with its continuous slot to attach fixtures quickly in perfect alignment. And by using the

same channel as a wireway. This fast, easy method cut costly installation time in half!

UNISTRUT channel insures true alignment. It provides the utmost in safety because the entire row of fixtures forms a single integrated unit. Fewer hanger rods are needed and a neater, more attractive installation results. Stems or rods may be placed at any point



tion on irregular ceilings. Fixtures can be fastened in a continuous row or intermittently as shown here.

Get in touch with your UNISTRUT Distributor for the full, cost-cutting facts on light supporting with UNISTRUT framing.



**All-Purpose Metal Framing** 

Distributors and warehouse stocks in principal cities. In Canada, Northern Electric Company. Consult your telephone directories.

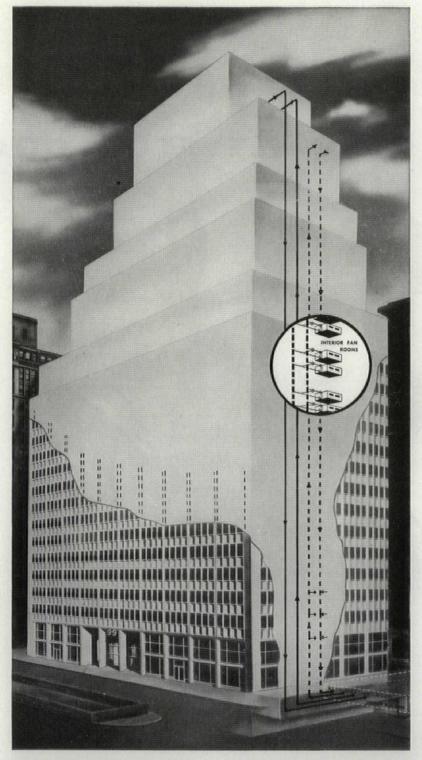
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Company	 	 	 	

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

F-18



WATER IS CHILLED by Worthington centrifugal refrigeration units in subcellar, then fed through riser (dotted line — "up" arrows) to interior fan rooms. Water returns to sub-cellar

(dotted line — "down" arrows) to complete circuit. Solid lines show condenser water circuit. Double lines show chilled water system (one in each face of building) for room units.

# New building trend set by air-conditioned skyscraper

This 26-story structure at 99 Park Avenue is distinctly different from anything ever built in Manhattan.

It's completely sheathed in self-cleaning aluminum, with reversible windows set with heat-resistant glass.

99 Park is also going to set a new standard in comfort for its tenants. Dependable air conditioning is provided by a Worthington system made up of two 665-ton centrifugal refrigerating units, which supply chilled water to 38 Worthington-equipped interior fan rooms. These distribute cooled, dehumidified air to the interior offices on each floor. The centrifugal units also furnish chilled water for individually controllable room conditioners enabling tenants in the outer offices to select their own climate.

For more than fifty years, Worthingtonengineered air conditioning installations have been serving business and industry. Whether large or small, Worthington systems are all Worthington-made, not just Worthington-assembled. For the full story, contact your nearest Worthington district office, or write to Worthington Corporation, Air Conditioning and Refrigeration Division, Harrison, N.J.

Tishman Realty & Construction Co., Inc., Owners and Builders; Emery Roth & Sons, Architects; W. R. Cosentini & Associates, Consulting Engineers; Raisler Corporation, Mechanical Contractor; Cushman & Wakefield, Inc., Agent.

A.4.52

## WORTHINGTON



CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME

# "Electronic Politeness

OTIS ELECTRONIC ELEVATOR DOORS



# hat can't be matched

## RAMATIZE OTIS ELECTRONIC LEADERSHIP

The Otis Electronic Door is the crowning achievement in the field of the Operatorless Elevator. Its unmatched "electronic politeness" is available only with AUTOTRONIC elevators. The successful development of this door insured the ability of operatorless elevators to move great masses of people in busy buildings with the greatest degree of safety.



Only AUTOTRONIC elevators have car and hoistway doors with an *electronic zone of detection*. It is a proximity zone that extends in front of the leading edges of both the car and hoistway doors up to shoulder height. Naturally, it is invisible to the passengers. (See phantom drawing at the left.)

No time is lost. The doors close promptly after each stop. If the electronic zone detects a person's presence, the doors politely reverse —even before they can touch the passenger. But if there is no chance of passenger interference, the doors continue to close without unnecessary car delay.

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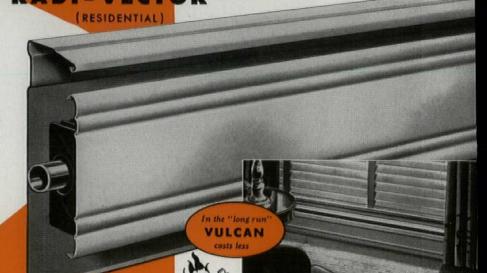
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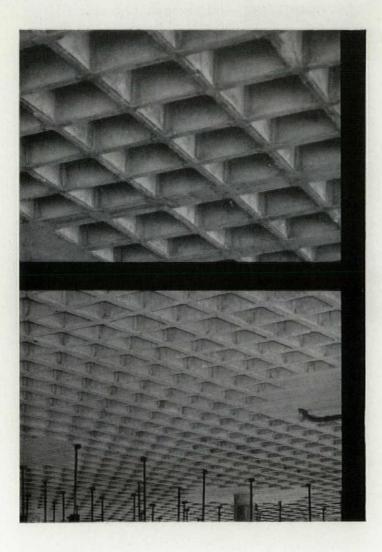
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Case history
of CECO on-the-job
performance

Architect: Victor Gruen Associated Architects & Engineers, Inc. General Contractor: Bryant & Detwiler Company



# waffle construction Ceco-Meyer Steelforms



### How Ceco methods saved materials

■ When architect Victor Gruen developed the original concept of Northland Center, world's largest shopping district in suburban Detroit, he had an eye for beauty and function. Beauty that would make the center a pleasant and even inspiring place to shop. Function that would make shopping as convenient and effortless as possible.

J. L. Hudson Company's branch department store is the core of the development—and here one of the major requirements was providing the greatest amount of usable space by keeping interior columns few in number and small in size. Typical spans were 29'-1" each way, and a waffle design using 14" deep Ceco-Meyer Steelforms provided a ceiling clear of beams, and kept steel, concrete and dead weight to the minimum. The saving in steel alone was 16% when compared with solid flat slab construction.

In other areas of the Hudson store and in the tenant and the service group buildings, one-way Ceco-Meyer Steelform floor





minus "lazy" concrete equals 16% steel savings

construction accounted for similar steel savings, eliminated "lazy, non-working" concrete, and kept dead load low.

Overall result in all buildings: wide areas of uninterrupted space -clear ceilings-a pleasing effect-highly functional. Ceco Engineering Service detailed placing plans for Ceco-Meyer Steelforms and reinforcing bars. This was a big project-5,000 tons of Ceco reinforcing steel delivered by truck to the job site-1,000,000 square feet of steelforms placed and removed by Ceco-a job requiring the service of a company skilled in its field and geared to deliver as the need dictated.

Here is another example of Ceco performing on the architectowner-contractor-supplier team. On your next project call Ceco Product Specialists. They will help you save through product engineering. Consult Sweet's File for address. (CECO)



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Two-way waffle design using Ceco-Meyer Steelforms permits longer spans, resulting in larger uninterrupted floor areas.



One-way Ceco-Meyer Steelforms also save steel and concrete, thus reducing dead load.



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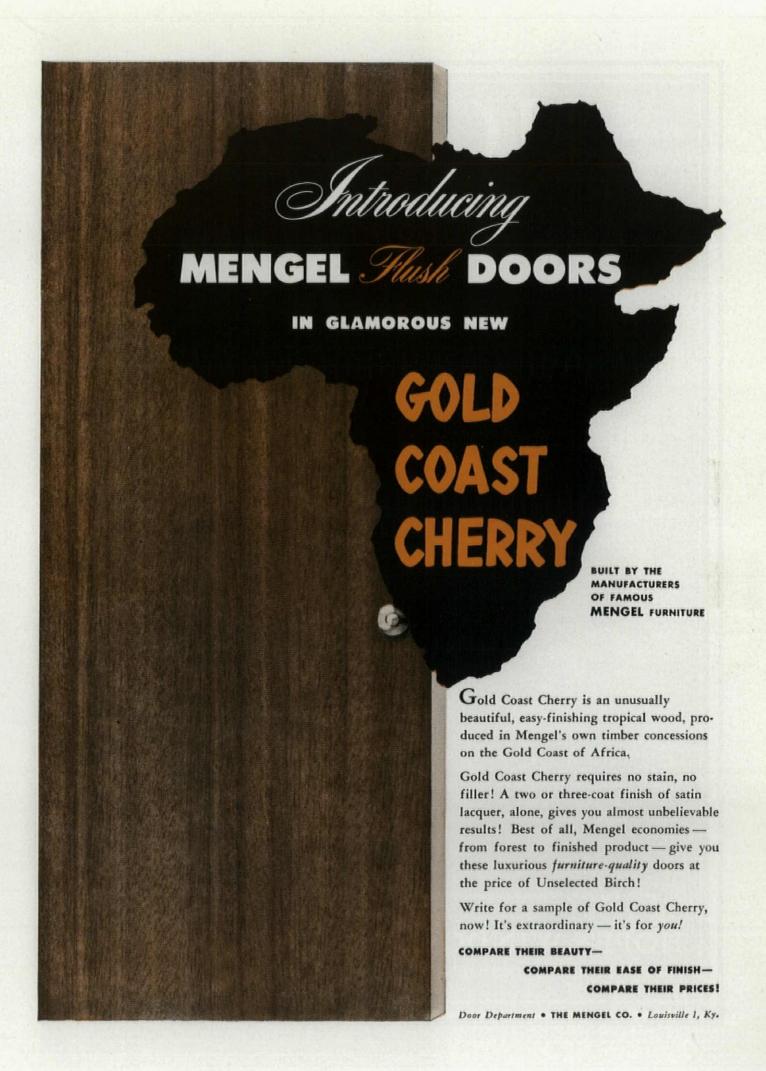
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# The Name HOSPITAL WINDOWS



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Six Associates, Inc., Architects & Engineers

Barger Construction Co., Inc., General Contractors

This view of the Memorial Mission Hospital above shows a portion of the large window wall areas made possible by the use of Hope's Pressed Metal Subframes. The abundance of controlled natural light . . . the spaciousness created by these large glass areas . . . are beneficial to the convalescing patients and provide a pleasant working atmosphere for the hospital staff.

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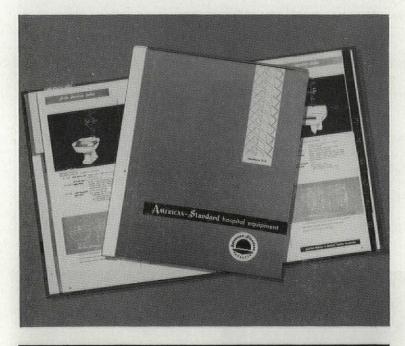
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A review of products in the news and important features worth remembering



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## ... WASCOLITE SKYDOMES

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engineering service is available to architects.





Bathroom-sun patio by Marcel Breuer, A.I.A.

# "CLAY TILE...AN INSPIRATION TO DESIGNERS ...A BOON TO THE MODERN HOMEMAKER"

Murcel Braner

Done in subtly blended clay tiles of black, gray and white, Marcel Breuer, architect of UNESCO building, has designed a bathroom-sun garden that may well stimulate salable ideas for your next project.

Roomy, convenient clay tile counter-tops like this will take suds, wear and water for a lifetime. And the tile tub and recessed shelf demonstrates the practical and dramatic effects you can achieve with clay tile.

For durability and beauty, be sure to specify clay tile

floors—walls and wainscoting, too. In the picture a scuffproof, waterproof, no-wax clay tile floor leads invitingly to a sun garden. There, colorful clay tile, crisply accenting the outdoor flagstones, will resist fading and weather extremes for years.

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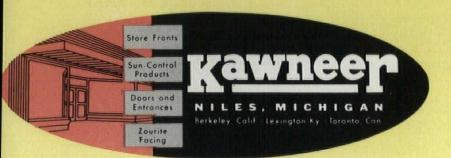
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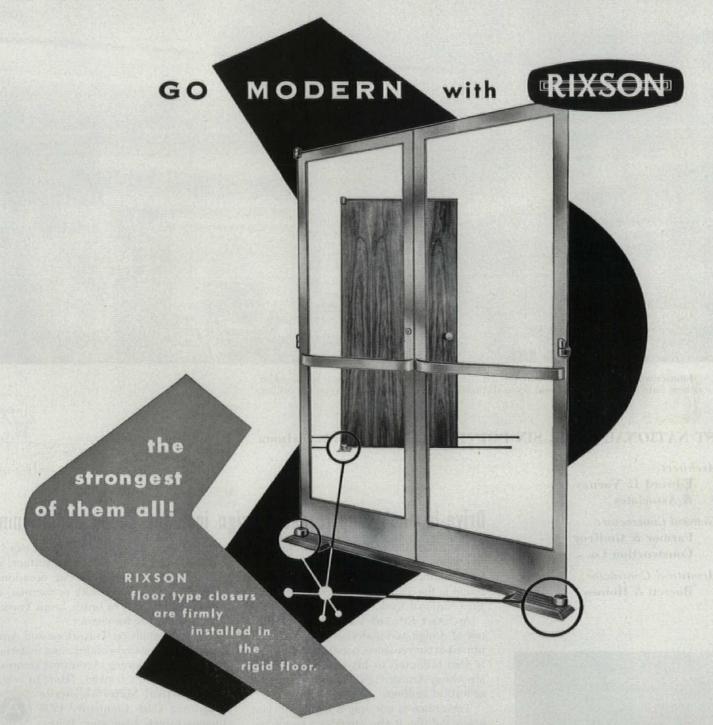
There's inspiration for new effects in wall decoration with flexible wall squares made of BAKELITE Vinyl Resins . . . and the cleanability, extra wear, and ease of installation bring the same low maintenance and in-service costs that always feature floor and wall coverings made of these resins

Leather-grained, mahogany-textured, solid color or bamboo-textured, this wall covering is flexible . . . in tile or continuous rolls. You can bend it, fold it, curve it around corners, It doesn't stretch or shrink . . . seams stay tight. Apply it over new or old walls—plaster, wallboard, plywood. A cushiony backing absorbs wall-surface roughness.

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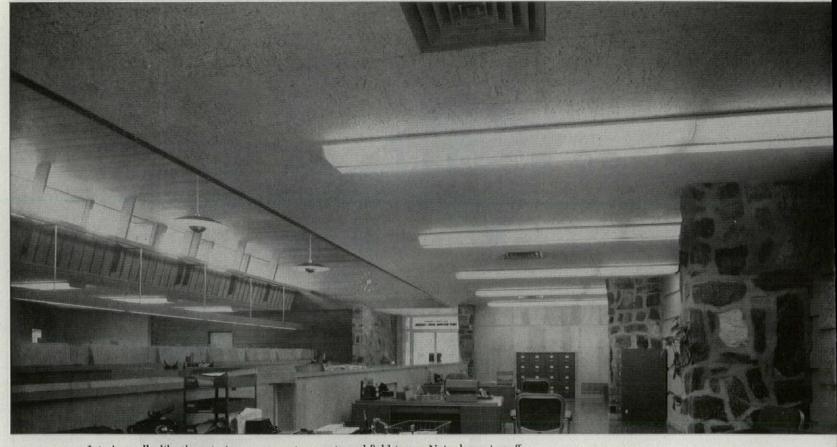
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Interior walls, like the exterior, are precast concrete and fieldstone. Noise bouncing off these hard surfaces could build up to disturbing levels but for the Travertone ceiling.

#### FIRST NATIONAL BANK, SIX POINTS BRANCH Phoenix, Arizona

Architect:

Edward L. Varney & Associates

General Contractor:

Farmer & Godfrey Construction Co.

Acoustical Contractor: Barrett & Homes



#### Drive-in bank's up-to-date design includes sound conditioning

Drive-in facilities and striking architectural treatment are two of the bold departures from traditionally conservative bank design found in the Six Points Branch of Phoenix's First National Bank,

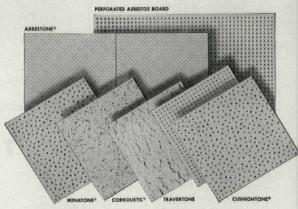
Architect Edward Varney's imaginative use of design and materials to provide the utmost in convenience, comfort, and beauty is also reflected in his choice of noise-absorbing Armstrong's Travertone for the acoustical ceilings.

Travertone is not only a highly efficient acoustical tile, it also provides a handsome finished ceiling. A mineral wool material, Travertone's attractive fissuring resembles that of travertine marble. A two-coat, white paint finish helps diffuse light evenly all over the room without glare.

The vault area, too, has been attractively sound conditioned with Armstrong's Travertone. An incombustible mineral wool material, Travertone meets the strictest fire regulations and building codes.

Installation is easy. Travertone can be cemented to any smooth, hard surface, or mechanically suspended. An occasional cleaning with a damp cloth or vacuum, or repainting by spray or brush, keeps Travertone new looking for years.

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ARMSTRONG'S ACOUSTICAL MATERIALS

### What the hydrogen bomb means to city and industrial planning

Some planners think urban dispersal is now hopeless but far more agree with government experts who say the big bomb only makes wide dispersal more urgent

When the hideous destructive power of the hydrogen bomb was first borne home to the public in April, one well-known planner remarked: "Well, that kills all this talk about urban dispersal. Now we can get back to the job of rebuilding our central cities."

Last month, even after reflection, a crew of fatalists had been bred by these awesome statistics of fusion: 1) one H-bomb (according to AEC Chairman Lewis Strauss) could incinerate a city of 12 million people; 2) 400 one-ton dueterium cobalt bombs (which Chicago Biophysicist Leo Szilard thinks the US could make if it wanted to) would wipe out all life on earth. Said Planner Harland Bartholomew of St. Louis: "Short of complete dispersal of our present cities, it appears impractical to establish any fixed planning standards in the fact of potential destruction of such vast and increasing scale. . . . We might as well continue to apply modern city planning techniques in the hope that the future will vouchsafe a universal peace in place of the annihilation of cities that another war inevitably will bring."

But many another expert held quite different views. In a poll of 25 among the nation's leading city planners and men who have studied problems of urban dispersal and civil defense, FORUM found preponderant support for the theory that the new bomb-instead of making reduction of population and industrial density futile-only makes it more important and more urgent.

It was, as one New York planner put it, more a matter of saving the nation and its civilization than of saving the life of anybody in particular. Individual chances of surviving a hydrogen bomb as big as the one of March 1-with its 4-5-mi. circle of complete destruction, its 10-mi, circle of "moderate dam-

age"-are probably raised only a little by dispersal around the hub of a great metropolis. But every bit of dispersion enhances the nation's chances of surviving. Moreover, the more dispersed the choice targets are, the less chance there is that an enemy would find them worth hydrogen attack. It is a military axiom

#### CONCENTRATION OF U.S. STRENGTH IN METROPOLITAN AREAS

METROPOLITAN AREAS	PINCENT OF TOTAL U.S. POPULATION 1950	PSECENT OF TOTAL U.S. POPULATION INCREASE 1940 - 1950	PERCENT OF PERSONS UNPLOTED IN MANUFACTURING 1950	PERCENC OF TOTAL VALUE ADDED BY MANUFACTURING 1942	
NEW YORK - N.E. NEW JERSEY	8.5	6.6	11.1	12.5	
FIRST 5	19.6	23.6	27.5	30.4	
FIRST 10	26.2	31.7	35.9	39.8	
FIRST 15	30.1	37.9	40.1	44.5	
FIRST 20	32.7	42.1	43.6	48.3	
FIRST 25	34.9	46.4	45.4	50.3	
FIRST 30	36.7	49.9	47.5	52.5	
FIRST 35	38.4	53.1	49.2	54.1	
FIRST 40	39.9	56.0	51.2	56.3	
FIRST 45	41.2	57.2	52.6	57.8	
FIRST 50	42.4	58.9	54.2	59.2	
ALL 168 STANDARD METRO AREAS	56.1	79.9	69.8	75.7	

that one shell from a Big Bertha gun is not as valuable in most situations as ten from a somewhat smaller cannon.

Bomb or no bomb. If the bombing threat were not enough, planners seemed in substantial agreement that city densities must be thinned down for better living. Los Angeles, with 4,370 people per sq. mi. (compared to New York's 25,046 and Manhattan Island's 88.000) already considers itself-in Planning Director Charles B. Bennett's words-"particularly fortunate" in that.

At figuring out how cities should alter their plans to fit the hydrogen age, many a planner and architect was looking to the federal government for guidance they felt was not forthcoming. Frederick Allen noted an "utter confusion" in planning circles over impact of the new weapons. From Gen. Otto L. Nelson, vice president of New York Life who directed the

#### What the experts think

Excerpts from the comments of some of the city planners, architects, civil defense experts whom FORUM asked: does the H-bomb make dispersal futile and open the way for further concentration of our cities?

... Increased destructive force can be met only by reduced target vulnerability-which means at this moment the removal of people, and, eventually, the thinning out of plant facilities from congested areas of danger. . . . The fact that the H-bomb is bigger than the A-bomb does not alter [the] basic reasoning . . . that only two types of protection are . . . shelters or distance. We do not have deep shelters. Their construction would seem to be economically unfeasible for a nation of 60 million people, and time is a premium. The mass alternative is to disperse-or die.

Dispersion of manufacturing facilities from crowded urban areas has been proceeding naturally in this country, for purely economic reasons. . . The present rate of such dispersal is estimated at about 5% a year. Theoretically, 20 years of systematic movement away from target areas could result in a highly satisfactory relocation of critical plants and facilities. But we cannot afford to wait. . . . Today we are urging states and cities to plan orderly, and frequently rehearsed, evacuation of people. . . . This is a modest program, but it offers important hopes of survival even in our major danger areas. . . . It does not offer complete safety to everyone and everything. . . . In any case, the further concentration of cities in this air-tomic age strikes me as a sure step toward mass

suicide. . . . In the face of atomic threats, the residents of our great cities must be prepared to dig deep, or get out.'

-Val Paterson Civil defense administrator

"The vulnerability of the larger US population centers stems from the fact that so much of the nation's strength is so heavily concentrated [see graph] in so few of them. It is not the importance of individual cities that counts so much as their importance as a group. Too many of our eggs are in too few baskets and the baskets are too big and easy to hit. . . . Effective dispersion can be accomplished without diminishing the present size and importance of individual big cities if a substantial part of the nation's new growth is diverted to the smaller zones and reasonable steps are taken to reduce excessive population densities and to increase blast and fire resistance of building."

> -Tracy B. Augur, director **ODM** urban targets division

" . . . We need to have greater faith in God as not to devote our energies to scattering our homes like scared rabbits."

Evert Kincaid, Chicago -City planning & zoning consultant

" . . . Bomb or no bomb, increased concentration in our already over-congested, traffic-choked, slumridden cities is unthinkable.'

> -Frederick P. Clark, Rye (N.Y.) -Community planning consultant

" . . . It is the duty of the federal government to assume the lead and produce a coordinated policy for the guidance of local authorities (on dispersal problems and methods) . . .

-Frederick H. Allen, New York -City planning consultant

". . . I do not think atomic warfare, as such, is worth bothering about as an urban planning factor. If our humanity has become so debased and degraded that it will allow an atomic war to happen, no physical measures can save us from the spiritual destruction that will be our just deserts."

-Henry S. Churchill, FAIA Philadelphia architect

"... Men will probably not act logically enough and fast enough to adjust properly to the new situation . . . regardless of whether the right answer is more concentration or dispersal. . .

> -Howard K. Menhinick Regent's professor of city planning, Georgia Institute of Technology

". . . It appears to be quite clear that the physical city of today and its human inhabitants will not survive the direct impact of the new weapons of today. It is also clear that the present-day metropolitan center, unmodified, is untenable. Urban targets must be made less attractive to the enemy by dispersion. How the cities are to be designed so that they and we may continue to live is not yet clear. It should be.'

> -Paul Opperman, San Francisco City planning director

celebrated "Project East River" study of what an A-bomb would do to New York (AF, Jan. '53, News) came reassurance that the principles it laid down were still valid, in part because the panel of experts who wrote it took the possibility of an H-bomb into account. Its suggestions: rebuild old parts of cities at lower densities, disperse new areas, build shelter areas into new buildings. Said Nelson: "I know of nothing so vastly different about the H-bomb that makes the principles of defense by space and structure less valid today. . . ."

Duty for defense? If the majority of experts are right, is the government then shirking part of its duty to provide for the national defense?

So far, many an industrialist has excused his lack of attention to dispersal on the ground that if the government is not excited about it, why should he be? The same goes for architects, city planners, engineers, contractors. The Civil Defense Administration and others in government concerned over the situation have been hamstrung by Congress' disinclination to vote much money—even for dispersal planning. That, in turn, only reflects the public apathy.

Worse still, the problem is a political hot potato. Some local communities are almost sure to cry "invasion of local rights" if the federal government puts force behind dispersion or other steps to change the course of city planning and growth.

Most men in government agree the US has no business extending its powers over local areas—even on such a life or death question as this. But there is a difference between dictation and leadership. Says Gen. Nelson: "In general, the government has no business interfering with the localities, but in this situation it must give assistance."

Needed at the minimum: more top-level steam behind the present ineffective efforts. Americans are not slow to respond to ideas well enough presented to convince them.

# FHA scandals lead Senate banking committee to ask crippling changes for rental housing

Would FHA's scandals wreck the Eisenhower administration's housing bill?

The House had passed its version of the 1954 legislation shortly before the ouster of Guy Hollyday as FHA commissioner started Congressional committees sniffing down the trail of mortgaging-out profits, gambling officials and repair loan gyps.

What the committeemen had found, in the two months since, did not amount to much, as the homebuilding industry saw it. Even government prosecutors themselves admitted, in the test tax court case involving Sec. 608 windfalls, that such profits were perfectly legal. Nobody had seriously contradicted the viewpoint that high profit was the only way to get a lot of apartments built during rent control, as 608 did. Title I repair loan racketeers had indeed defrauded hundreds, or even thousands, of gullible home owners (most of them too stupid to check prices before signing on the dotted line). Nobody condoned that. But the preponderance of expert opinion was that FHA last fall had eliminated most if not all of the loopholes through which racketeers operated.

Baffling changes. But when the 1954 housing bill came out of the Senate banking committee late last month, after loophole closing, the building industry rubbed its eyes in amazement. The committee, led by Sen. Homer Capehart (R, Ind.), proposed to tighten things up so much that the industry feared many an important FHA program could be wrecked. Some of the sharpest hatchetwork chopped at multi-family housing, redevelopment and rehabilitation. Items:

For Sec. 207 rental housing, the senators would require that builders certify their actual costs (plus 10% profit) and then reduce the mortgage by the amount the loan exceeds the 80% allowable loan to value ratio. They would require land to be listed as its actual cost,

not developed, value. This was far stiffer than the cost certifications proposed by Acting FHA Chief Norman Mason to prevent mortgaging out. He suggested the same provisions as now govern Title IX defense housing and Wherry Act (Title VIII) military housing. These require that any excess of the mortgage over cost be applied to reduce the loan. With the Senate's shackles, an FHA 207 loan would provide a builder with no more money than he could get conventionally, on a 66% of value basis. A conventional loan involves less red tape, no chance of Congressional investigation or being held up to public calumny. The suggestion for such tightening-up was given the Senate committee by witnesses representing big insurance companies. Whether by ignorance or intent, they planted an idea that would apparently cripple FHA in rental housing. Last year, FHA accounted for 35,460 of the nation's 93,900 new multifamily units, most of which are rental.

For FHA Title I repair loans, the committee proposed to shift from full insurance up to 10% of each lender's portfolio to a straight 80% insurance on each loan. That would drive many lenders out of the program, even though FHA eased the blow by cutting its insurance premium (it makes big profits on Title I repair loan insurance). In the GOP plan for urban renewal and slum rehabilitation, Title I loans were supposed to play a big part. Said one veteran Washington housing expert: "Apparently, the senators want to make Title I so safe for the poor sap who hasn't enough sense to check his prices that the whole public will have to pay a higher price for repair credit." Another change that will hurt antislum drives: the committee dropped the House-approved change making the same FHA terms available for existing houses as for new ones. By knocking out the Eisenhower-sponsored provision for revamping the Federal National Mortgage Assn., the senators probably doomed to failure efforts to find an FHA-backed answer to public housing. For the proposed FHA Sec. 221, the committee also cut the term from 40 to 30 years, and (fearful of mortgaging out) cut the maximum loan from 100 to 95%. This made the deal little better than Title I, Sec. 8, anyway.

Builders gloomily expected that the Senate would adopt the housing bill with most of the committee's restrictions. They pinned their hopes for a less restrictive law on what Rep. Jesse Wolcott (R, Mich.), chairman of the House banking committee, may be able to do in conference.

### \$875 million construction funds asked by military

Some important legislation affecting building made this progress in Congress last month:

Hill-Burton administration plans to expand Hill-Burton federal aid for hospital construction ran into a snag in the Senate labor committee. As passed by the House (AF, April '54, News), the GOP bill calls for adding a fresh \$60 million a year to the regular program of grants and loans (which is budgeted for \$75 million next fiscal year). The new funds would be split this way: \$20 million for chronic disease hospitals, \$20 million for diagnostic centers, \$10 million for rehabilitation centers, \$10 million for nursing homes. Some senators, while approving the idea of expanded aid, agree with the American Hospital Assn. that funds should not be earmarked according to building type. Reason: Hill-Burton funds are divvied up by states for obvious political reasons; some experts fear some states would not use their allotment for one kind of hospital, but would need more than their share of another.

Military construction—the Defense Dept. won approval from the House armed services committee for a new \$875-million building program. Involved were projects at nearly 200 installations in 43 states, the District of Columbia and overseas. In approving the measure (an authorization, not an appropriation), the committee cut out \$350 million the Pentagon sought for family housing (mostly multiunit) at military posts. Chairman Dewey Short (R, Mo.) said Congressmen wanted more time to study the military housing problem-which service brass insists is greatly to blame for dropping re-enlistment rates. The Defense Dept. wanted to spend \$334 million for 25,000 new government-built family housing units (about \$13,000 a unit), plus \$16 million to rehabilitate existing military housing.

Wunderlich—President Eisenhower signed into law the Wunderlich bill permitting judicial review of disputes over government contracts. The legislation ended a  $2\frac{1}{2}$ -year fight by general contractors. It is designed to offset the effect of a US Supreme Court decision in Nov. '51 that made the ruling of government contracting officers final except where fraud by the government was alleged,

#### States vote over \$1 billion more for construction

#### Hospital and school appropriations head the list, plus bigger-than-ever housing boosts from N.Y. and California

Only 14 state legislatures met this spring, yet the total construction expenditures they approved were a round \$400 million over what 17 legislatures had approved a year ago. There were factors that stole some of the thunder of the comparison. A couple of estimates in this year's crop were preliminary and had not been signed into law yet. And four states were prescribing for two-year programs this year as opposed to one last year. The message, however, was clearly that the states were out to give a mighty boost to building.

The big jump, broken down categorically, came under state buildings and housing (see table, right) and was attributable to action in two states: New York and California. The latter had voted that a whopping bond issue of \$175 million for veterans farm and home loans be placed on the November ballot and passed a budgetary allowance of \$48 million for state buildings. New York had earmarked \$200 million-also subject to referendum vote-as an increase in the state debt for slum clearance and low-rent housing.

Hospitals and schools. The 14 states between them had voted over \$400 million for hospital (and welfare and penal) buildings and again New York was way ahead of the pack. The state had spent \$200 million on construction of mental hospital facilities in the past 11 years. Now it had authorized a bond issue for \$350 million (to come up on referendum in November) for further construction. The program would be financed with 10% of the state's personal income tax receipts (hitherto reserved for the nowexpired veterans' bonus fund) and a 1¢ rise in the cigarette tax.

School and college plans lagged behind proposed hospital expenditures, for a total \$224.9 million. Outstanding was the California legislature's approval of a school building bond issue of \$100 million. California's program began in 1949 with a \$250million issue and it showed no sign of dying out. Another big issue was expected in two years. In other action, Gov. Goodwin Knight appointed a committee to study the state's over-all building needs. (California has spent almost \$500 million on state buildings since the end of World War II.)

Southern activity. The school legislation differed by locale. South Carolina, for example, had not passed new legislation, but was (until the Supreme Court segregation decision) engaged in \$175-million program to equalize white and Negro schools and had spent about \$52 million since 1951. The state's educational finance committee had authorized the school districts to spend \$99 million more-the ceiling at any one time is \$100 million. Mississippi's lawmakers, on the other hand, had come away from a special session last winter, at which they were to provide a school equalization program, with-

#### CONSTRUCTION FUNDS VOTED

(in millions of dollars)

	Hospital,		
Schools,	welfare	Housing	
colleges	& penal	& misc.	Total
Arizona 2	-	.18	2.18
California100*	_	223*	323*
Colorado —	.5	1.43	1.9
Kentucky 64a	-	-	64ab
Louisiana 17.3a	12.2a	8a	37.5ab
Maryland 3.5	2.4		5.9
Mass 7.2a	20.3a	19.6a	47.1a
Michigan 12.2	1.5	- 41	13.7
Mississippi 3.7	-	2.5	6.2b
New Jersey 2.1	-	1.4	3.5
New York	350*	200#	550*
Rhode Isl 8.3	3	2	13.3
S. Carolina —	.5	_	.5
Virginia 4.6	10.9	.38	15.9b
224.9	401.3	458.5	1,084.7

\* Subject to referendum vote in November, a Preliminary appropriation, still unvoted; or including, in totals, such estimated funds. b Two-year program.

out providing any such thing. They made a token appropriation of about \$875,000 for state aid to public school construction during the next two years.

Mississippi was kind to its institutions of higher learning. Some \$2.8 million was appropriated for the state's seven colleges-five white, two Negro.

Moves to exert control over various of the building professions cropped up strongest in Mississippi where three bills, including one for licensing real estate brokers, were coming. A board of five architects was created to pass

on applicants for architects' licenses. (A grandfather clause protects those now practicing.) Candidates will be charged \$20 when they are passed and \$5 for each annual renewal of the certificate. The law does not apply to persons or firms preparing plans for public buildings of less than 10,000 sq. ft. of floor space, nor to privately owned buildings provided the person drawing the plans does not use the word "architect" as part of his

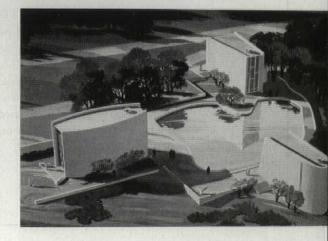
Engineers and brokers. Also in Mississippi: provision for a five-member board of engineers to be named by the governor (from a list of 15 to be submitted by the state's Society of Professional Engineers) to examine applicants in that field; and a three-member board, appointed by the governor, to quiz persons wishing to operate as real estate brokers and salesmen on real property laws, leases and ethics, among other subjects.

Three states passed right-to-work laws, raising the total of states with such legislation to 16. Mississippi modeled its statute after the Virginia law. Both contain the basic point that any person denied employment because he is or is not a union member shall be entitled to recover damages. The Virginia law (first written in 1947 and srengthened at the last session) provides, among other stipulations, that picketing is illegal if it brings about violations of the right-to-work act and that such violation or violations are misdemeanors. Offenders are subject to fines of \$500 a day. Organized labor, including the building trades, fought passage of the bill and union lawyers talked of challenging the bill's constitutionality in the courts. South Carolina also passed a right-to-work act.

Homes for aged. A bill was passed in Massachusetts last year making \$5 million available for guaranteeing bonds or notes for municipalities desiring to put up old-age housing. This year a bill was in the works to up the figure to \$15 million. Observers were confident that the state Supreme Court would overrule technical objections, and that the legislature then would pass it. In Colorado, a bill was passed authorizing \$1 million of anticipation warrants for construction of homes for the

#### University to group chapels of three faiths by a pool

Three chapels and a pool are basic components of this first-of-its-kind interfaith project on Brandeis University's 200-acre campus in Waltham, Mass., near Boston. Brandeis is a Jewish-founded, nonsectarian institution. It will be the first university to build clustered on-campus chapels for three faiths-Jewish, Protestant and Catholic. The buildings, linked by a pool, were designed by Harrison & Abramovitz, New York, are about equal in height and area. All will have brick exteriors and a roof lens slanting sunlight on the altar.







#### FASTER RECEIVING TO STORAGE AREAS

Cartons are routed directly to storage areas, where they are immediately available for marking, or delivery to the sales floor. Rapistan's broad line provides a solution to many problems, resulting in lower costs and greater efficiency. The Rapistan conveyor line includes power or gravity, roller or wheel, portable or permanent as well as hinged and spur sections and other accessories.

#### LESS TIME FROM MARKING TO SHELVES

Effortless movement of goods from basement storage to the center aisle is a feature of a Canton, Ohio installation. Shelf-stocking costs less when a Rapistan inter-floor conveyor assists stock men. Rapistan's trained field engineers survey conditions and requirements without charge. They make recommendations for more economical and efficient operation, based on their wide experience.

# Rapistan IDEAS FOR SHOPPING CENTERS

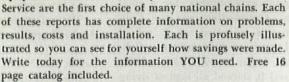


#### LOW COST DELIVERY TO PARKING LOT

A saving of \$225 per week on 25 part-time carry-out boys resulted from this installation in Des Moines. A belt conveyor, five feet below ground level, flows packages to delivery platform located in parking lot, thus cutting costs, and clearing up check-out areas. Promotional value of this systematic handling increased store traffic and sales. Rapistan engineering in the field can help you lower your delivery costs.

# Profit from others' experience

Fast-reading, fact-filled Field Reports show why Rapistan equipment and Free Advisory



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Check stand op	erations	H
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	BETTER CONVEY	

aged. Preliminary studies of the first of the projects, to cost at least \$600,000, were under way.

Other legislative action:

- ▶ President Eisenhower signed into law a \$305-million public works program for the District of Columbia. The authorization is for a tenyear building program to improve the district's physical layout. It necessitates a \$14.3-million local tax increase. Water rates, liquor and real estate are among items that will be affected.
- ▶ Kentucky passed a law, affecting Jefferson County, outlawing "wildcat" subdivisions—those hitherto beyond the control of local zoning authorities. Builders feared it would raise the cost of all subdivisions. Another controversial bill: granting the state's department of aeronautics power to regulate the height of buildings around airports. Mayor Andrew Broaddus of Louisville objected that it was an invasion of home rule.
- Michigan's Gov. Williams vetoed a bill passed by the legislature which would have required a referendum vote on public housing projects where the question of tax exemption was involved. He signed a bill removing a ruling that property sold in a slum clearance area must be sold at public auction.
- ▶ Louisiana was considering approval of \$5.6 million for the state university, including \$4 million for a new library on the main campus. (The issue had aroused much controversy a year ago when the university's board of supervisors approved nearly \$2 million for enlargement of the football stadium instead of library construction.)
- New Jersey moved slowly—legislation had to be passed through a Republican-run legislature and signed by a Democratic governor—and few big issues had yet been tackled. Among prospects under discussion: increasing from \$1,000 to \$2,500 the ceiling on loans that savings and loan associations may make for repair and improvement of mortgaged property; a state minimum wage law; extension of the state rent control law, which expires Dec. 31 (applicable only to municipalities where governing bodies have adopted a resolution certifying that there is a housing shortage).

### Spring wage deals show average 71/2¢ hour boost

With most major spring wage negotiations in the building trades wrapped up, preliminary figures compiled by AGC put the average increase across the nation at 7½¢ an hour over last year. AGC also noted that unions seemed to be dropping demands for fringe benefits and concentrating on more money.

Meanwhile, AFL steam fitters in Philadelphia were on strike despite a temporary injunction from NLRB and despite a two-day strike the AFL Building and Construction Trades Council called for 25,000 workers to urge the steam fitters to go back to work and settle their jurisdictional differences through channels. The strike-against-strike delayed millions of dollars worth of building.

#### SIDELIGHTS

#### Savannah squares

Architect Richard Neutra joined a number of citizens of Savannah last month in protesting a civic proposal to round off the corners of the city's venerable squares-perhaps even lay concrete across them!-to improve the sticky traffic situation. "Savannah," Neutra told authorities, "is better than Williamsburg or Philadelphia . . . one of the most glorious cities of the United States." He felt, as did others, that a good part of the city's glory derived from its 23 historic squares, the first of which were laid out by Gen. James Oglethorpe in 1733. They are heavy with live oaks, azaleas and monuments; some contain playgrounds. Neutra said he thought the traffic problem could be worked out so that the "wonderful scheme" of the city was preserved, added for the record that not enough was being done with the scheme and that Savannah needed a planning commission to really capitalize on what Oglethorpe had started.

#### Can transit come back?

Some US mass transit systems have already died, many are moribund, nearly all are alling financially. Many a thinker on the dynamics of cities fears that if mass transit perishes, cities will wither, too. It is clearly the most efficient means of moving mobs of people in and out of congested areas. But it is steadily losing patronage to the less efficient auto, which is jamming horse and buggy streets so full that buses and trolleys can hardly move, either.

The Urban Land Institute, as much aware of the problem as any US group, is moving to do something about it. First step: a contest (deadline Oct. 1) to think up ways to make riding public transportation more popular. ULI's aim: to relieve downtown traffic congestion "without spending large sums for construction of new freeways, widening of streets, or for building costly off-street parking facilities," thus freeing public funds for urban conservation and redevelopment.

#### Should engineers bid?

Last October, South Carolina's state highway department, confronted with more hurry-up bridge designing than its staff could handle, let engineering contracts for \$500,000 worth of projects to the low bidder among 15 engineering firms. Winner: Smith & Reynolds of Jacksonville, Fla. who bid 2.8% of construction cost. The American Society of Civil Engineers, which considers competitive bidding as unethical for engineers as AIA regards it for architects, promptly protested. Chief Highway Engineer Claude R. McMillan replied he intended to continue the practice. Retaliating, ASCE began studying charges of unethical conduct against all member-engineers involved.

Last month, the controversy erupted again. Defying still louder ASCE protests, McMillan took competitive bids from seven engineer firms on six South Carolina bridge projects expected to cost \$3.5 million. This time, ASCE issued a public warning: not only the bidders, but McMillan himself faced possible expulsion from ASCE. President Daniel V. Terrell, dean of the college of engineering at the University of Kentucky, wired Gov. James Byrnes: "South Carolina will obtain same quality engineering services through competitive bidding as it would legal services obtained in the same manner. High construction costs always follow cheap design." Executive Secretary William N. Carey of ASCE explained why: "The engineer who takes a design job on a price-competition basis is forced to cut corners in developing the design, while still producing a bridge which probably will carry the loadings required by the highway department. But to expect such a bridge . . . to carry the loads with the most economical use of steel and concrete is wishful thinking. . . . Cheap design almost always results in . . . overdesign. A cheap-design engineering firm cannot afford to take the time to design a steel bridge with just the right amounts of steel in exactly the right places to take a specified loading and finish with a safe structure which can be built at the least construction cost. The same is true with a reinforced concrete bridge. . . . What the taxpayer saves on a cheap design he pays out many times over to the contractor in the cost of construction."

In Nebraska, ASCE won a round of the same battle: a group of professional engineers persuaded the Douglas county board to return unopened two bids for engineering services for a bypass project.

#### New York 50 years hence

Manhattan was growing so fast as the nation's office center that President Saul Fromkes of City Title Insurance Co. predicted: "By the year 2000 we can expect Manhattan's 22 sq. mi. to be entirely occupied by skyscraper offices, other commercial enterprises and hotels." Residents? Fromkes thought there might be a few, but these would be only "the very low-income group." Already, "middle class and swank Park Ave. residents are leaving to find homes in the suburbs and in Brooklyn, Bronx, Queens and Staten Island," he expanded. "Before long as business swallows up more and more building sites, even the low-income wage earners will have to follow." The next-century Manhattan, by Fromkes' theory, thus will have enough commuters to tax the ingenuity of engineers. Even with helicopters taking part of the load, he said, "We are going to need a lot more subway lines, additional rail terminals, and sooner than you think our superhighways and main boulevards will have two, three and even four levels of traffic." Business taking over residential neighborhoods is nothing new, Fromkes noted. "What is strange is that opposition to [it] has all but ceased."

#### **BUILDING STATISTICS:**

#### April sets record for dollar outlays; materials prices continue level

Steady materials prices, dependable flow of materials, cheap money, an encouraging tax picture and an unmeasured but recognized increase in labor productivity led the US Chamber of Commerce to recommend this to its members as "the year to buy construction . . . the best since before World War II." Lots of people were already acting on that advice.

New construction had the biggest April in recorded building history—in terms of dollar outlays. In setting the new mark, April topped the same month last year by 1.3%. For 1954 so far, expenditures ran 1.6% ahead of 1953.

Though private activity hit an impressive high of \$1.9 billion this April, many an observer felt that 1954 would still wind up below 1953. As evidence, they pointed to the "continued narrowing margin of increase between this year and last." Expenditures for private housing rose from March to April of this year, but were 1% below 1953 for the first third of the year. For the first time in 1954, public activity inched ahead of the corresponding month of last year, though for the year to date, 1953 had a 2% edge. April increases in school and highway building more than offset declines in public residential, public industrial and military construction.

On the price front, BLS' wholesale building materials index remained calm in April, dropping back one tenth of a point to 119.2. Market conditions in fir lumber, plywood and pine were artificial due to threats, then postponements, of strikes. Mill price for index grade Douglas fir plywood regained its March loss, stabilized at \$80 MSF for early June shipment. Average lumber price was \$64 MSF, and as high as \$67 in some instances. BLS' statisticians also measured an April decline in the cost of living. The 0.2% drop in the consumer price index was the third monthly dip in a row. Sliding prices should cool union wage demands in the steel and electrical manufacturing industries.

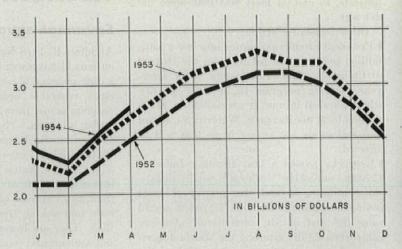
#### **NEW CONSTRUCTION ACTIVITY**

(expenditures in millions of dollars)

Tele jeddarfi nine after		April		1st four months		
Туре	153	'54	% change	'53	'54 %	6 change
PRIVATE						
Residential (nonfarm)	964	956	8	3,401	3,422	+.6
New dwelling units	850	840	-1.2	3,030	3,035	+.2
Additions & alterations	94	92	-2.1	295	296	+.3
Nonhousekeeping	20	24	+20.0	76	91	+19.7
Industrial	192	169	-12.0	795	698	-12.2
Commercial	114	152	+33.3	447	628	+40.5
Other nonresidential	121	144	+19.0	479	570	+19.0
Religious	33	40	+21.2	135	164	+21.5
Educational	31	39	+25.8	124	154	+24.2
Hospital	26	27	+3.8	105	106	+1.0
Public utilities	352	362	+2.8	1,222	1,307	+7.0
*TOTAL	1,872	1,897	+1.3	6,802	7,032	+3.4
PUBLIC						
Residential	49	32	-34.7	191	135	-29.3
Industrial	159	145	-8.8	583	544	-6.7
Educational	139	166	+19.4	535	638	+19.3
Hospital	34	29	-14.7	134	99	-26.1
Military	113	71	-37.2	436	273	-37.4
*TOTAL	886	898	+1.4	3,131	3,063	-2.2
GRAND TOTAL	2,758	2,795	+1.3	9,933	10,095	+1.6

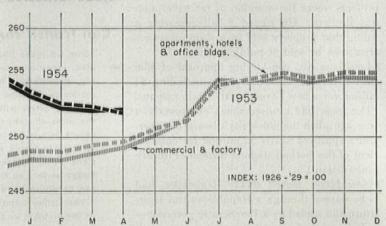
<sup>\*</sup> Minor components not shown, so total exceeds sum of parts. Data from Depts. of Commerce and Labor.

#### TOTAL CONSTRUCTION EXPENDITURES



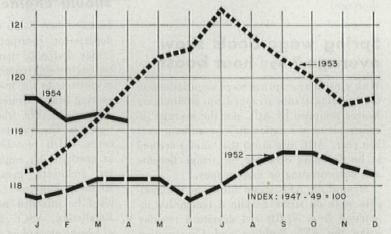
Dollar outlay for new construction in April set an all-time record for the month, as did construction employment, according to estimates by BLS and the Commerce Dept. Expenditures reached a staggering \$2.80 billion, in contrast with \$2.76 for the same month last year, and \$2.47 in April '52.

#### **BUILDING COSTS**



E. H. Boeckh & Associates calculated its index for apartments, hotels and office buildings for April '54 at 252.4, and for commercial and factory structures at 252.6, down fractions of a point from March, but several points above April '54 of last year. Other construction cost indices for April, with 1947-49 as a base, were: American Appraisal Co. set its index at 124.5, or 2.3% over April '53. AGC placed April at 130.5, or 5.2% over the same month last year.

#### MATERIALS PRICES



BLS' index of wholesale building materials prices for April was a whisper (a tenth of a point) below March, and 0.6% below April '53. All of the lumber and wood components dropped from the March level, with the biggest decline (2.1%) ascribed to plywood. Concrete ingredients dipped 0.1% below March. Plumbing and heating equipment and flat glass were almost unchanged.

# Redevelopment rider dies; HHFA tells cities how to qualify for urban renewal funds

On the recommendation of its appropriations committee, the Senate deleted the much criticized Phillips rider from the \$5.7-billion independent offices appropriation bill it passed last month. Urban redevelopment men breathed easier. HHFAdministrator Cole had himself spoken against the rider: "The proviso . . . would put the local community on notice that, in preparing a redevelopment plan for predominantly residential uses, it may contemplate only such nonhousing uses as are 'normally essenial,' whatever that may be held to mean, to the residential uses. . . . This language would inject the administrator . . . into local planning determinations in a role or to a degree which the Congress, on reflection, might not deem wise."

Rep. John Phillips (R. Calif.) had attached the proviso to the bill when news of the curious reasoning which qualified Manhattan's Columbus Circle project for \$6 million of federal aid reached Washington. (New York Construction Coordinator Robert Moses had persuaded HHFA that 18,000 sq. ft, of garage space under the proposed Coliseum, for use by tenants of the residential part of the project, gave him the necessary more-than-50% of residential space to make the development eligible for federal subsidy under Title I.) Rep. Phillips decided that in the future it would be better if no federal funds were granted for such a "residential" slum clearance project unless incidental uses of the development were restricted "to those normally essential for residential uses." There was a wave of protest. Although he was not overjoyed with the Coliseum contract he inherited from Trumanadministration HHFA officials, Cole warned that passage of the rider would affect 85 other projects for which capital grants totaling close to \$146 million had been requested. Incidentally, although originally inspired to righteous action by the Coliseum case, Phillips knew as well as anybody (except, seemingly, the New York newspapers) that his rider would not affect the already-scheduled Coliseum and he said as much. In reporting the Senate action, New York's Times and Herald Tribune were still plugging away at the dead horse with such headlines as "Senators Attack Peril to Coliseum" and "Senate Removes Rider Barring Coliseum Aid."

The Senate bill will go to conference, where the probability is that removal of Phillips' rider will be sustained.

The city's job. Meantime, the straight word on what a municipality should do if it wants to participate in the urban renewal program embodied in the 1954 housing bill was laid down by James Follin, HHFA's slum clearance and urban redevelopment director. Under urban renewal, cities would be barred from federal financial aid for redevelopment until they satisfy Follin they have a broad "workable program" for fighting blight with such

tools as rehabilitation, housing code enforcement, city planning and zoning. "It should be clearly understood," said Follin in a New York talk, "that the federal government will not expect any community to have an accomplished workable program in full effect in the beginning. . . . It is the present intention to have each city face squarely the total implications of the workable program and outline in detail the steps which will be necessary in order to develop a completely effective program." Once the city's schedule has been developed, he said, the government will consider requirements for an initial project fulfilled; but before it is given a green light for any further new projects, the schedule and the city's progress in meeting it will be re-evaluated.

Using a redevelopment plan in Somerville, Mass., as a springboard, Follin listed the following ten points for a "workable program":

- 1. General planning—including preparation of a revised zoning ordinance, a recreation plan, traffic studies, a public improvements program and a land use plan.
- 2. Detailed surveys—a selection of areas for clearance, rehabilitation and conservation; studies of housing needs, including housing for minority families.
- 3. Enabling legislation—action from the state capital "to extend the power of cities . . . with respect to urban renewal."
- 4. Local codes and ordinances—enforcement of same to gain compliance with minimum standards of health, sanitation and safety in dwelling.
- 5. Code enforcement machinery—development of a coordinated inspection program to carry out the above.
- 6. Renewal administrative machinery—further apportionment of the task of urban renewal, with proper budget allowances, among city departments.
- 7. Financing ability—establishment of a careful financial plan indicating the costs of the program and how the city will meet its share of these costs.
- Relocation program—recognition of the responsibility involved in relocating families and a plan to meet the responsibility.
- Citizen participation—efforts from key citizens to back the over-all plan, plus neighborhood committees working "at the sidewalk level."
- 10. A follow-up program—an integrated effort to sustain the upgrading of the area.

Big enabling act. The Arizona legislature came through with an enabling act of the sort Follin had in mind, a 20-page "slum clearance and redevelopment law" empowering cities to wage a full-fledged attack on their blighted areas. The permissive powers were broad: a municipality may exercise the powers granted in the act if 1) one or more slum or blighted

areas exist in the municipality, and 2) the redevelopment of such area or areas is necessary in the interest of the public health, safety, morals or welfare of the residents of the municipality.

The city may then, within its area of operation, "purchase, lease, obtain options upon, acquire by gift, grant, bequest, devise, eminent domain or otherwise, any real or personal property. . . necessary or incidental to a redevelopment project." Other powers: to invest redevelopment funds; to borrow money; to make surveys; to create a slum clearance and redevelopment commission; to issue bonds and to enter into agreements to secure federal aid or contributions and comply with conditions imposed in connection therewith.

#### Taft-Hartley revision killed by mixture of split interests

Administration hopes for revision of the Taft-Hartley Act this year were killed April 7 as a solid bloc of Democratic votes in the Senate swept the measure back to committee for more study. Back of the recommittal vote (50 to 42) was an odd mixture of partisan politics, labor apprehensions and reluctance on both sides of the political aisle to risk a showdown on attempts to tack on a civil rights rider. Spokesmen for organized labor preferred to see no bill at all. They felt the odds were Congress would adopt amendments not asked by President Eisenhower to tighten instead of loosen the law. General contractors had supported Taft-Hartley revision, but homebuilders opposed it, fearing the outcome would make it easier for AFL building unions to organize the nonunion half of housing. One provision in the Senate bill would have ended the ban on secondary boycotts on a construction job. Another would let employers and unions in construction (and others with intermittent or casual or temporary employment) to enter into prehire agreements requiring union membership within seven instead of 30 days.

## St. Louis juries indict 37 building labor men in year

"The federal grand jury's new report is not only a blistering indictment of corrupt labor practices here, but a severe shock to civic pride. . . . St. Louis has become the capital of labor rackets in the construction industry."

The editors of the Post-Dispatch, who included the above in an editorial a year ago, were in a position to know. One of their veteran reporters, Carl R. Baldwin, 45, had two years before begun a painstaking research job on what made local labor unions tick. Some of the answers: assault and battery, threats, bombings and payoffs from contractors. Baldwin tried every way he knew (he has been on the staff 23 years) to persuade a contractor to testify for the record on the tactics of the local AFL. None would. It was almost as difficult to get a concerted effort for a grand jury inquiry under way. Finally, in the spring of last year, the crusading stories, backed by Post-Dispatch editorials and car-

# Monsanto PENTA specified to protect wood against decay and insect attack

Gymnasium, State Teachers College New Haven, Connecticut

#### Architect:

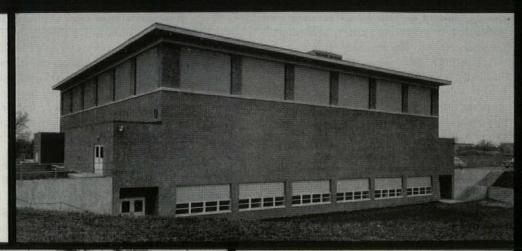
Douglas Orr, New Haven

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Fusco-Amatruda Co., New Haven

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Sleepers and subflooring of this gymnasium floor were pressure-treated before construction with Monsanto Penta, a clean preservative that stops decay and insect attack. Penta does not stain hands or clothing, leaves wood dry, easy to handle, virtually odorless, paintable if desired.

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toons, hit pay dirt: a grand jury went to work on what Judge George H. Moore said would be an "exhaustive investigation." By last month, 37 labor leaders and members of AFL unions in St. Louis, East St. Louis and Springfield, Ill. and one contractor had been indicted. Assistant US Attorney Ted A. Bollinger later said that Baldwin's material represented 90% of the leads in the hands of the government when it started pushing the investigation.

The web spreads. Among the first 16 indicted by the jury on charges of violations of the federal antiracketeering act were Leo Havey, business agent for the bricklayers union and former member of the city's housing authority, Lawrence Callanan, ex-convict and boss of the steamfitters local, and Paul H. Hulahan, business agent of the building laborers. Hulahan was the first to come to trial and got 12 years (AF, Feb., '54, News). Later, Carl J. (Dutch) Bianchi, William Poster and Lawrence A. Thompson were found guilty on extortion charges and sentenced to ten years in prison. (The contractor, who was indicted for perjury, was Owen L. Femmer of St. Charles, Mo., a former AFL leader.)

Last month, a new grand jury in East St. Louis indicted six more: Evan Dale, 38, of Carbondale, Ill., president of the Southern Illinois District Council of laborers and hodearriers: James Bateman of Murphysboro, business agent of Local 161 of the pipefitters union; Orell Soucie and Orville Rhodes of the operating engineers; Lloyd (Cockleburr) Watson, business agent of the Murphysboro laborers, and John J. (Tinv) Kristics, a former nightelub owner, of Paducah, Ky.

Repeat performance. It was the sixth indictment against Dale charging violation of the antiracketeering statute. He and Bateman were charged with conspiracy to extort over \$1 million from Ebasco Services, Inc., New York engineering and construction firm, and Electric Energy, Inc., for insuring labor peace during construction of the latter's power plant in Joppa, III. Soucie and Rhodes faced similar charges of shakedown and interference with interstate commerce on a railroad construction job. Watson and Kristics-and again, Dalewere charged with conspiring to delay interstate commerce by extorting money from Midwestern Constructors, Inc. on a natural gas line job in 1950 and 1951.

### PEOPLE: P. A. Strobel new commissioner of public buildings;

#### AIA's Ditchy and Root in contest for presidency this month

Peter A. Strobel, Danish-born engineer who has worked on a number of projects for the AEC and armed services, was named commissioner of the public buildings service of the General Services Administration, effective July 1. He will take over from W. E. Reynolds, 66, who is retiring June 30 after 21 years with the government (AF, April '54, News). Strobel. 55, who is married and lives in New Rochelle, N.Y., came to this country shortly after he received his MS in civil engineering at the University of Copenhagen in 1925. (He is now a citizen.) He was a partner in Strobel & Salzman, New York consulting engineering firm, was chief structural engineer for the New York World's Fair and for many years chief engineer for James Steward & Co., supervising construction of heavy industrial plants. During the war he invented, designed and supervised construction of portable airplane hangars and designed insulated prefab Army barracks for use in field operations. He was a member of the committee reporting to the AEC on planning and construction of atomic energy plants and worked on the labs at Cornell and Brookhaven. Among his other projects: the 15-story print shop and office building of the NY Times; the Albert Einstein College of Medicine in the Bronx, N.Y. and Westgate Shopping Center in Fairview, Ohio.

Often, AIA presidents have been re-elected without opposition to a second one-year term. Last month, AIA President Clair W. Ditchy, FAIA, of Detroit found his re-election would be contested. His opponent: John W. Root, FAIA, of Chicago, senior partner of the big architectural firm of Holabird & Root & Burgee and chairman since 1951 of AIA's public relations committee, which has been trying to help architects cope better with one of their peskiest problems. Root was nominated by members of the Chicago, Cleveland, Dallas,





ROOT



Memphis, southern California and Utah AIA chapters. The election will be at AIA's convention this month in Boston. Another contested office: treasurer, Leon Chatelain Jr. of Washington, D.C. vs. Edward L. Wilson of Ft. Worth, Howard Eichenbaum of Little Rock had at first been pitted against Earl T. Heitschmidt of Los Angeles for first vice president, but withdrew. He remained the lone nominee for second vice president.

Many experts on slum rehabilitation and redevelopment believe few cities can hope to mount successful fights against blight until their top businessmen and industrial leaders join the movement actively. As evidence, they point to the record in such cities as Chicago and New Orleans, where backing from top civic figures has given antislum drives an importance they rate in few US metropoli.

Last month, in Washington, D.C., there was important progress in the same direction. A group of 15 citizen leaders announced formation of an interim committee (prelude to a permanent committee) to make a broad attack on urban ills. Their first step was to hire as staff director G. Yates Cook, 44-year-old



соок

rehabilitation chief for the Natl. Assn. of Home Builders, and former sparkplug of Baltimore's widely known slum fixup plan. Cook will leave NAHB on June 30. The new organization will set its sights on far more than rehabilitation; it will work with both official and existing volun-

teer groups to cope with the entire web of problems confronting the city. Said the announcement: "Our central purpose is to try to support intelligent efforts to improve traffic, parking, housing and . . . other problems which impede the city's progress."

Most impressive of all was the roster of committeemen-a who's who of Washington business life:

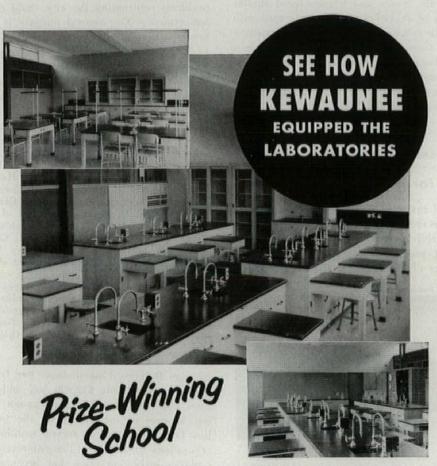
Francis G. Addison Jr., president of Security Bank; Daniel W. Bell, president of American Security & Trust Co.; Herbert Blunck, general manager of Hotel Statler; George D. Burrus, president of Peoples Drug Stores; Harry M. Davidow, executive vice president of Hecht Co.; Richard P. Dunn, president of Julius Garfinckel Fleming, president of Riggs & Co.; Robert V. National Bank; Philip L. Graham, publisher of the Washington Post & Times-Herald; Cecil D. Kaufmann, president of Kay Jewelry Stores; Frank J. Luchs, executive vice president of Shannon & Luchs (realty); Lothrop Luttrell, executive vice president of Woodward & Lothrop (dept. store); Benjamin M. McKelway, editor, the Washington Star; John A. Reilly, president of Second National Bank; Charles H. Tompkins, president of Charles H. Tompkins Co. (builders).

Chicago Building Commissioner Roy T. Christiansen resigned his \$12,996 job under fire after 61/2 years in office. He was not forced out because of inefficiency on the job-he has been peppered in recent months with accusations of laxity in the enforcement of building inspection laws-but because of a sleeper in the municipal code. Four days before the resignation, the Chicago Daily News came up with a story that Christiansen was a partner in one of nine architectural firms drawing plans for the city's parkinggarage program and was sharing in the firm's profit. A city ordinance forbids any department employee from having outside employment. Christiansen at first stated he would not resign, changed his mind under increasing demands from aldermen. Richard Smykal, deputy building commissioner, was scheduled to take over as acting department head.

NAMED: James Lash, who was fired in March as director of the San Francisco Redevelopment Agency (amidst a storm of civic protest that the ouster was political wrecking of redevelopment), as resident manager of the new

San Francisco office of Harland Batholomew & Associates, St. Louis city planners and civil engineers; Gordon P. Larson, air pollution control director for Los Angeles County, as president of the national Air Pollution Control Assn.; Dean William W. Wurster of the University of California's school of architecture, as a fellow of the Royal Academy of Fine Arts in Copenhagen for his "great contributions to architecture."

DIED: Harold W. Richardson, 53, editor of Construction Methods and Equipment and former editor of Engineering News-Record, after a heart attack May 12, at his home in New Providence, N. J.; William Van Alen, 71, New York architect who warred against skyscrapers "encrusted from top to bottom with heavy masonry" and designed the Chrysler building in a race for height with his ex-partner, May 24 in New York. After graduation from the Ecole des Beaux-Arts, he joined in partnership with H. Craig Severance, who was working on the Bank of Manhattan building on lower Broadway. When the partnership was dissolved, Van Alen sought to top the bank building's 925' and built the Chrysler building which, with its 185' lattice work vertex, reached 1,046' and until 1931 was the tallest in the world.



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#### **NEW BUILDINGS**

#### High rise offices

Construction of what will be the tallest building in the southeast is expected to start in Nashville before the end of the year. The Life & Casualty Insurance Co. there will erect a 30-story building which will top the Sterick building in Memphis by one story. The Life & Casualty building will also win by a nose on square footage, 212,050 vs. 211,000. . . . A Canada House in New York, to cost between \$8 and \$10 million, is "assured," Consul General Ray Lawson announced. The project will be privately financed by a small group of Canadians, he said. A location had not yet been picked. . . . Travelers Insurance Co. in Hartford will increase its home office space by about 30% with construction of a new 11-story building for \$6 million. It will be faced on two sides with Alabama limestone; the first floor with pink granite. Architects: Voorhees, Walker, Foley & Smith. George A. Fuller Co. is contractor. . . . Baton Rouge will get its first large office building in 25 years with completion of an eight-story, air-conditioned building expected by the summer of 1955. Wilbur Marvin, New York real estate man who has developed a number of properties in the South, handled negotiations. Cost will be a little over \$2 million. Square footage: 165,000. Bodman & Murrell & Smith are architects; R. P. Farnsworth & Co., contractors.

#### Air-conditioned inn-motel

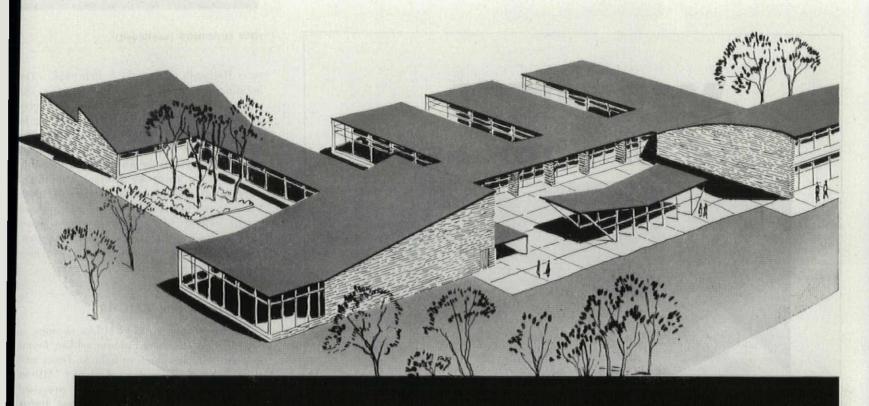
Oberlin College will replace its 120-year-old inn with a new 48-bedroom, two-story structure combining motel-type accommodations (guests can park cars directly outside first-floor bedrooms and walk to dining and meeting rooms through indoor or outdoor passages) with traditional double bedrooms and baths upstairs. Eldredge Snyder of New York is the architect; Knowlton Construction Co. of Bellefontaine, Ohio, is the contractor.

#### Split-level church school

St. Catherine Laboure Parish in St. Louis plans an L-shaped church and school with a main building barrel vault roof of thin shell concrete spanning 60' (see cut, below). The church will hold 500 people; the split-level school 450 students. Cost has been put at \$280,000. Designer: Gyo Obata of Archi-



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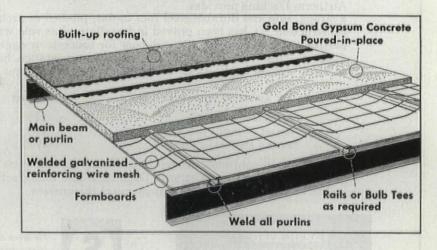
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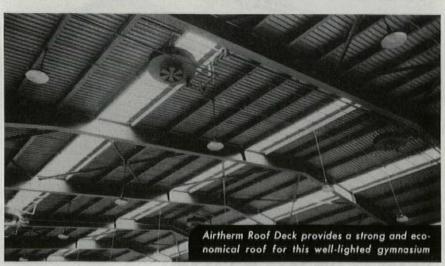


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NEW BUILDINGS (continued)

tects Hellmuth, Yamasaki & Leinweber. The building will go on an 11-acre sloping site and will make use of the terrain with access to outdoor play courts and terraces. . . . Ir San Francisco, Architect Albert E. Roller drew plans for a massive California Masonic Memorial Temple, to be built atop fashionable Nob Hill for about \$5 million. The threestory building will have an exterior of white Vermont marble and a foyer of marble and mosaic. Other features: a picture window 40' x 48' facing southwestern San Francisco, a dining area for 1,200 persons and a fivefloor underground garage for 400 cars.

#### New look for YMCAs

Plans for contemporary YMCAs showing a comfort and efficiency hitherto seldom found in such buildings came to light in Texas and Wisconsin. In Houston, Architect Milton McGinty produced a layout for a proposed Negro branch to serve Houston and Harris Counties that included a double gym (with wood laminated arches), lounges, crafts room, snack bar and dormitory space for 34. The project will cost \$800,000, exclusive of site but including \$85,000 for furnishings. An open court will divide clubrooms on the south from a closed-in swimming pool to the north. The south wall of the pool building will be sliding aluminum doors with translucent plastic glazing. These can be opened to allow swimmers the use of the courtyard. Fisher Construction Co. will do the job.

There is a reason for the rash of new branch YMCAs - each trying to outdo the other in up-to-date design - in Milwaukee. There have been no capital additions to YMCAs there since 1908. Now, a major fund campaign, under way for some time, has produced nearly \$5 million in cash or pledges. The goal is \$6.3 million (not counting a possible extra seven stories for the alreadyexcavated new main building-AF, Jan. '54, News). With the funds YMCA officials will run a two-year building program also including four suburban branches, a winterized lodge 22 mi. from the city, an in-town building and a gymnasium addition.

Each branch of the central YMCA had its own building committee, was free to pick its own architect and style. Among the scheduled new projects is a two-story building for juniors and seniors on a sloping site in South Milwaukee (see cut, below) to cost



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Top Illustration: Exterior of the Corona Branch of the Manufacturers Trust Company of New York
Bottom Illustration: Inside of the bank, showing officers platform.





Architect: Arthur H. Petrucelli, New York

Designer: Eleanor Le Maire, New York

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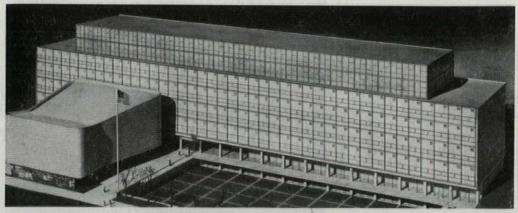
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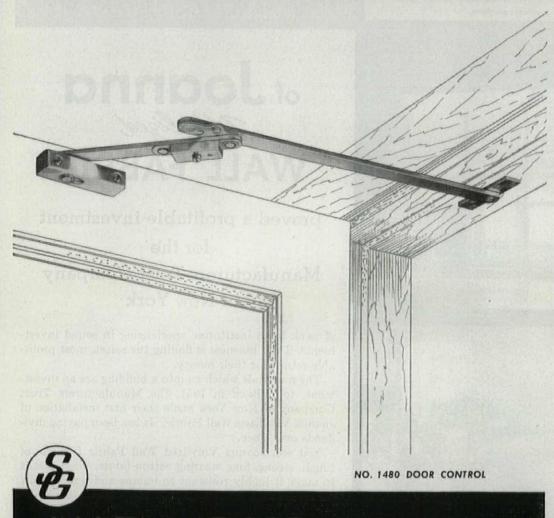
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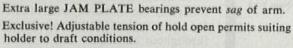


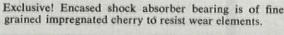
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NEW BUILDINGS (continued)

\$135,000. Architect: Maynard W. Meyer & Associates. The average cost of the suburban branches and the lodge is about \$200,000. Most expensive job scheduled is the first unit of the West Allis YMCA for \$300,000, also designed by Meyer. This is to become a "comprehensive building," at a cost of \$1.5 to \$2 million. Other architects engaged in the YMCA boom in Milwaukee include Walter A. Domann and Fritz von Grossman.

#### Trade school in New York

New York's Board of Education approved preliminary plans for a \$5.1 million building on the city's west side to house classrooms and equipment for printing trades students (see cut, above). The steel frame and concrete floor slab plant will occupy about half of a two-acre site, will include a 26,000 sq. ft. sunken play area and an auditorium and gymnasium. A two-story classroom will go on top of the five-story shop section. The latter's facade will be sheathed with directional glass block (12 sq. in. size) except for a clear vision strip running horizontally at eye level. Architects Kelly & Gruzen put in two escalators in crisscrossed banks, after officials decided they would be less expensive to install and operate than elevators.

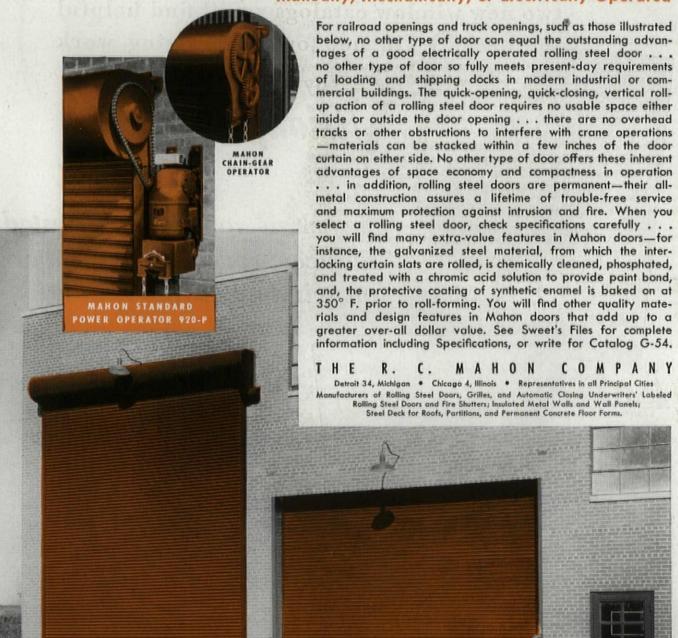
#### Municipal expansion plans

Plans for public buildings and corporate expansion were cropping up from Miami to Portland. In Miami, the city commission last month approved a huge program of public works (\$6.7 million) to be financed through bond issues and sale of city property including three \$1-million projects-an inter-American trade center, a police headquarters and property for off-street parking-and a \$500,000 project for enlargement of the Orange Bowl. . . . The Toronto (Canada) Board of Control heard for the first time of a scheme hatched by a US syndicate to invest \$75 million in construction of a 50-story skyscraper there to house municipal and court offices. Norman Barnes of the Norman Barnes Co. of Chicago was spokesman for the group. . . . Voters at a primary in Portland, Ore. approved \$31.8 million for capital improvements. In addition, Horwath & Horwath, hotel accounting experts, gave a green light to a proposed 20-story downtown hotel sponsored by Leo Corrigan; two insurance companies were reported ready to negotiate for financing. . . . Pacific Telephone & Telegraph Co. announced plans to spend \$175 million for construction and expansion in southern California this year and next. . . . Johns-Manville Corp., building materials and industrial products manufacturers, announced intended expenditures of about \$18.5 million for expansion and improvement projects during this year.

(NEWS continued on p. 56)

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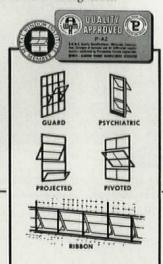
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Springfield

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### No costly maintenance problem here



Corrugated Transite has been featured in this contemporary plant design. The shadow lines of the cor-rugations provides decorative inter-est for the large wall areas.

# Corrugated Asbestos Sheets

#### For maintenance-free exterior walls and roofs, plus protection from fire, rot and weather

You save money on construction and maintenance when you build with Johns-Manville Corrugated Transite®. Corrugated Transite comes in large sheets that require a minimum of framing . . . permits fast economical construction of maintenance-free industrial, commercial, institutional and agricultural buildings.

Made of asbestos and cement, Corrugated Transite is practically indestructible. It never needs paint or special treatment to preserve it . . . it's fireproof, rotproof and weatherproof. Corrugated Transite is also used increasingly

for smart interiors . . . the streamlined corrugations and attractive shadow lines that give it such unusual architectural appeal for exteriors offer unlimited interior design possibilities.

Investigate Johns-Manville Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, longlasting, trouble-free structure regardless of size or purpose. For complete details write Johns-Manville, Box 158, Dept. AF, New York 16, New York. In Canada write 199 Bay St., Toronto, Ontario.

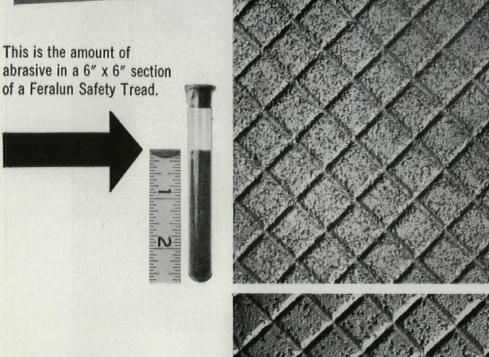


- Large sheets go up quickly
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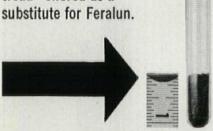


Johns-Manville

# The "Test-Tube" Test\* Shows Why FERALUN TREADS DO NOT WEAR SMOOTH



This is the amount of abrasive in a 6" x 6" section of an "abrasive tread" offered as a substitute for Feralun.





The life and non-slip effectiveness of an abrasive tread depend on the amount of abrasive it contains and on the even distribution of the abrasive over the wearing surface. To many, the two treads above may look alike, but when the abrasive is removed and compared the difference between them becomes apparent.

For maximum safety and longest life, insist on Feralun for treads, nosings, thresholds, floor plates and elevator sills.

\*After the pieces were photographed, sulphuric acid was used to dissolve the iron. The residue (abrasive) from each piece is shown in the test tubes.

See SWEET'S Catalog 1954 12b/Am

AMERICAN ABRASIVE METALS COMPANY . IRVINGTON 11, N. J.

#### NEWS

#### Code officials told they fac big role in urban renewa

The new broad concept of urban renewal making the work of building code officia across the nation heavier and more importa than ever before.

In Philadelphia last month, at the 39th a nual convention of the Building Officials Co ference of America, James W. Follin, head HHFA's slum clearance and urban redevelo ment division, took note of this trend ar some beneficial results. These were beginning to appear in 200-odd cities now starting conform with requirements for "workable rehabilitation and code enforcement program which the pending housing bill would mal prerequisite to federal redevelopment or r habilitation help. Reported Follin: "Some these cities are adopting building, plumbin and electrical codes for the first time and a creating building departments. Many other are revising and modernizing old building regulations."

Shuns US meddling. If Congress adop the urban renewal features of the housin bill, HHFA could not avoid exerting morand more code enforcement influence in man large cities. But Follin assured BOCA h division shuns any role as the "super codenforcement agency" some people have ac vocated as the most effective tool for fightin urban housing blight. Code enforcement an other rehabilitation problems are "strictly matter for local government and local determination," he said.

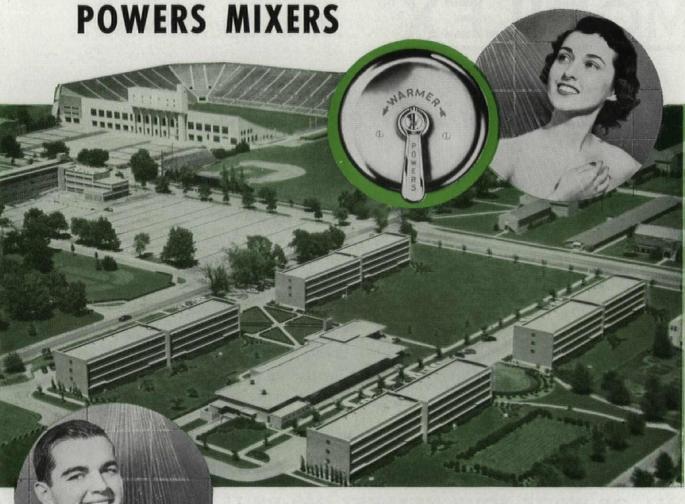
Follin did offer advice on one vital item "It simply does not make sense to enforce elaborate codes on the physical component of buildings and then permit their use a dwellings without regard to the adequacy of space in relation to number of occupants, sand tary facilities, equipment and other feature that distinguish good housing from bad. . . .

Code changes. Only one of 95 proposes changes in the basic and abridged BOCA codes caused much debate before its adoption This authorized the use of "reinforced ther mosetting plastics" in some kinds of glazing siding and roofing without being subject to the basic code's requirements covering struc tural characteristics, protection of wall open ings and fire resistance. (Approval for the use of other plastics, subject to these require ments, was voted a year ago.) The code officially defined the newly approved specific use product as follows: "a thermosetting plastic reinforced with a glass-fiber mat hav ing not less than one and one half ounces o glass fiber per square foot."

A. J. Steiner, protection department engineer of the Underwriters' Laboratories, Inc of Chicago opposed approval, argued that thi material should be required to meet all regular structural and fire resistance standards of the code in any particular use. The code changes committee recommended approval The affirmative vote, after more than an hou of floor debate; 18 to 6.

226 SAFE SHOWERS in The University of Oklahoma

Boys and Girls New Dormitories Are Regulated by



Above: 4 of the 8 Modern Dormitories All Equipped with-

# POWERS Double Safe Thermostatic WATER MIXERS

They make showers SAFE against scalding and sudden shots of cold or hot water caused by

#### PRESSURE and TEMPERATURE

fluctuations in water supply lines.

No Shower is Safe Without this Double Protection—Powers thermostatic water mixers *always* hold the shower temperature constant wherever the bather wants it. They are completely automatic. Failure of cold water instantly shuts off shower. Delivery temperature is *thermostatically* limited to 115° F.

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All in Oklahoma City

Just ONE Shower ACCIDENT may cost many times more than POWERS mixers.

10 to 20% Water Saving. No need to get out of shower to readjust it because of fluctuating water temperatures . . . when controlled by a Powers Thermostatic Mixer.

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### You can solve more problems with

# MOBILEX<sup>®</sup>...less expensively...

### than with any other recessed lighting fixture

How many times in your experience have you wanted to use the good design advantages of recessed lighting—only to see your plans go by the boards because over-all ceiling costs got out of line?

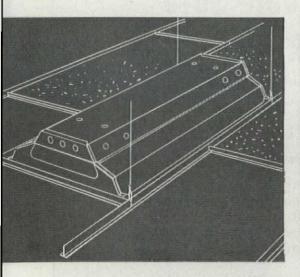
You have an answer to that bottleneck now. MOBILEX. It fits more types of ceilings—without the need of expensive custom made adapters than any other recessed lighting fixture on the market.

That means MOBILEX gives you a broader range

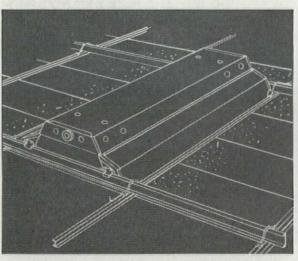
of price, ceiling, and recessed lighting combinations than you've ever had to work with before. And that means a far greater opportunity for you to deliver good design and de luxe lighting even to clients who must limit you to a modest budget.

Because we know you are always interested in new products that *really help you do a better job*, we think you'll want to see and hear more about MOBILEX. We'll be happy to arrange a MOBILEX demonstration any time you say. We promise you this: you'll find it well worth-while.

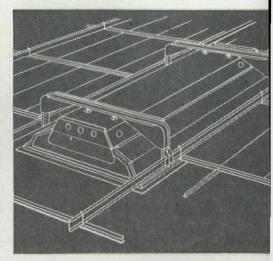
#### CALL OR WRITE YOUR NEAREST DAY-BRITE REPRESENTATIVE



MOBILEX FITS GRID-TYPE SUSPEND-ED CEILINGS. Fixture is inserted into grid opening, rests on "tee" rails, locks into place. Reduces installation costs up to 50%. Acoustical ceiling boards, MOBILEX units are interchangeable, permitting quick, lowcost revisions of lighting pattern whenever desirable. WRITE FOR BULLETIN OD-567.



MOBILEX FITS EXPOSED SPLINE SUSPENDED CEILINGS. Fixture hooks onto universal 1 ½" ceiling carrying channels. Multiple use of same supporting members saves material and labor costs. Acoustical tiles, MOBILEX units may be rearranged any time after initial installation. WRITE FOR BULLETIN OD-606.



MOBILEX FITS CONCEALED ME-CHANICAL SUSPENDED CEILINGS. Flange type MOBILEX for acoustical ceilings using concealed metal spline, screw or adhesive methods of supporting mineral tile. This MOBILEX unit is listed with simple-toinstall Day-Brite suspension straps which clamp to ceiling carrying channels.

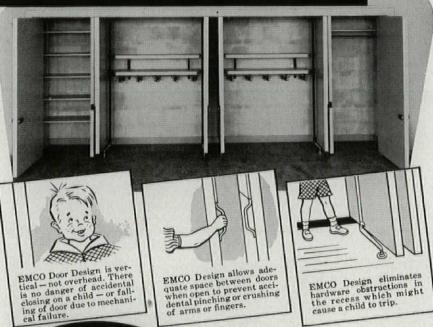


MOBILEX FITS SNAP-IN TYPE ACOUSTICAL CEILINGS. Fixture snaps into the same "Tee-bar" rails that receive metal pan ceiling tiles. Day-Brite designed spring retaining clips snap "home" above the Tee-bars for added security.

MOBILEX FITS PLASTER CEILINGS. Simple, rugged Day-Brite plaster frames and suspension straps frame the opening and support the MOBILEX for plaster and acoustical tile-on-plaster installations. Extra long studs in suspension straps allow maximum adjustment for positioning fixture.

DAY-BRITE LIGHTING, INC. 5471 Bulwer Avenue, St. Louis 7, Missouri. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

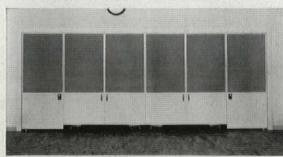




# EMCO classroom wardrobes

Yes, safety is of vital importance when you are planning a schoolroom wardrobe. The first advantage of any classroom wardrobe, of course, is that it eliminates the disorderly cloakroom—where children's playful instincts often result in accidents. Instead the classroom wardrobe allows the teacher to supervise the orderly storage of wraps right in the classroom.

There's a difference in wardrobe safety, however, even in the classroom. Safety in design in every possible detail of door operation has always been first with EMCO. Safety is only one of the practical reasons why experienced school architects specify EMCO—both for new buildings and remodeling.



EMCO offers a complete line of classroom ward-robes, both in receding and pivoted types — multiple operated or individually operated.

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#### **LETTERS**

#### DESIGN CRITICISM

Forum:

I congratulate you on the excellent art by Paul Rudolph on the Raleigh Livest Pavilion design (AF, April '54).

I have long held that the architectupress is not too critical of the works by profession, and therefore we have not be able to establish any standards by which only practitioners but the youth of the cotry can be guided.

RALPH WALKER

Voorhees, Walker, Foley & Smith, archit New York, N. Y.

#### Forum:

Everything that Mr. Rudolph says carriconviction. It is most appropriate that building so brilliant in basic concept with so many crudities in detail should subjected to serious and responsible critici such as Mr. Rudolph so admirably provided.

It is not just that every building that not be worth publishing should be examined we so sharp an eye, but in the case of a structure of such special significance—alas, I lieve the only executed work from the building the liant designs of Nowicki—it is most appropriate; one can almost say that only structures of potential greatness deserve so has a study of their minor defects.

For the general public, such an arti might perhaps be confusing; but in a p fessional journal I feel it is highly appropate and significant of an increasing matur of approach on the part of the Americarchitectural press. Let us have more in vidual buildings of comparable significar and let us have them similarly studied severe but just and sensitive architects a critics.

H.-R. HITCHCOCK, direct Smith College Museum of Northampton, Mass,

#### IMPACT

Forum:

I have recently received a communicati from Mr. D. C. Spillman, supervisor of t Commercial Service Division of the Bee Aircraft Corp., regarding his company's d tributorship improvement program.

The article called "Roadside USA" in t April Forum on the program of one of a clients, Republic Supply Co., seems to ha had considerable impact on Mr. Spillman.

George Vernon Russell, archit Los Angeles, Calif.

#### BETTER PUBLIC RELATIONS

Forum:

Your "Pocket Guide for Better Pub Relations" (AF, April '54) is one of the mainformative pieces yet written on the subjecontinued on p.



# TREMENDOUS ADVANTAGES:

- 1 FACTORY ASSEMBLED
- 2 INSTALLS WITH 2 SCREWS
- 3 Double Duty Extractor & Vol. Controller
- 4 Replaces Extra Vol. Controller
- 5 Equalizes Air Distribution & Air Flow
- 6 Turns Air from Main Duct
- 7 Reduces Pressure Losses
- 8 Stops Excess Turbulence
- 9 Low Cost
- 10 Rattle Free
- 11 14 & 20 Gauge Steel

See adjustability of AG-45 from full open to full closed positions. Note how curved blades turn, to control air volume, bringing even distribution to entire grille face at all times.

# Airgoil

AIR CONDITIONING OUTLETS

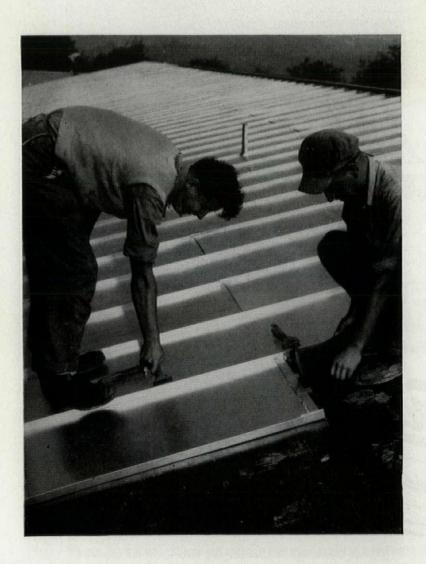
Slash unit costs with this amazing new Titus AG-45. Make it easy for yourself to keep bids low. Use this cost saver to beat competition. Eliminate the extra work of putting in volume controllers. Save time, labor. IMPROVE THE AIR CONTROL EFFICIENCY OF EVERY INSTALLATION. Get complete free information now. Order a sample AG-45 today. Remember, not until you have one of these AG-45s in your hand, can you see its amazing cost-saving value. IMMEDIATE DELIVERY.

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The Roof of the new Walnut Grove School, West Mifflin Borough, Allegheny County, Pa., is USS Stainless Steel. Architects: Button and McLean, Pittsburgh, Pa. Contractor: Nicholas Le Donne, Clairton, Pa. Roofing contractor: Limbach Company, Pittsburgh.

# New Walnut Grove School has a maintenance-free roof of



● The school board of West Mifflin Borough, Allegheny County, Pennsylvania, took care of roof maintenance almost permanently when the new Walnut Grove School was built. They did it by specifying a roof of long-lasting USS Stainless Steel.

The roof is approximately 385 feet long and 75 feet wide. The Stainless Steel roofing panels have a satin-type architectural finish. They are of 26-gage material fabricated into a standing seam panel  $27\frac{3}{8}$  wide by 12 feet long.

Stainless Steel's superior corrosion resistance, combined with its almost complete freedom from maintenance, fits it for years and years of satisfactory service. It has excellent reflective properties, and features needed strength with light weight.

The Stainless Steel roofing sheets are laid on double-coated, 35 pound asbestos felt. Each cross seam is caulked and the roofing is locked into the Stainless Steel gutter. Gutters and downspouts are of 22-gage Stainless Steel, architectural finish.

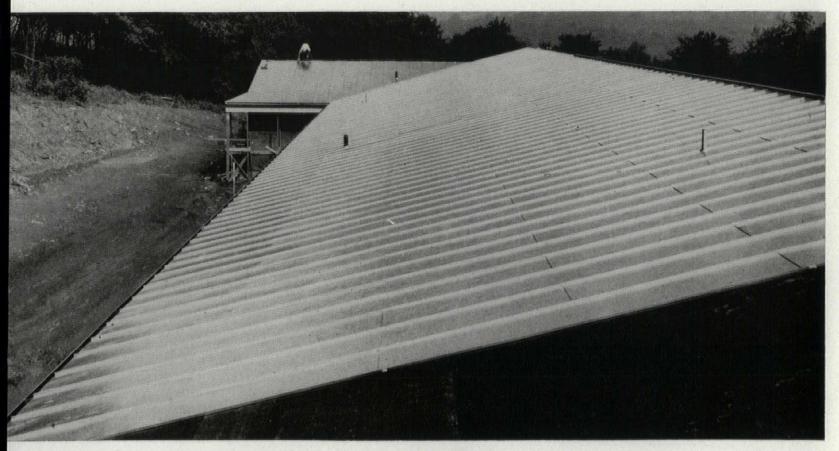
In addition, all attachments, supports, hanger bars, bolts and screws are Stainless Steel.

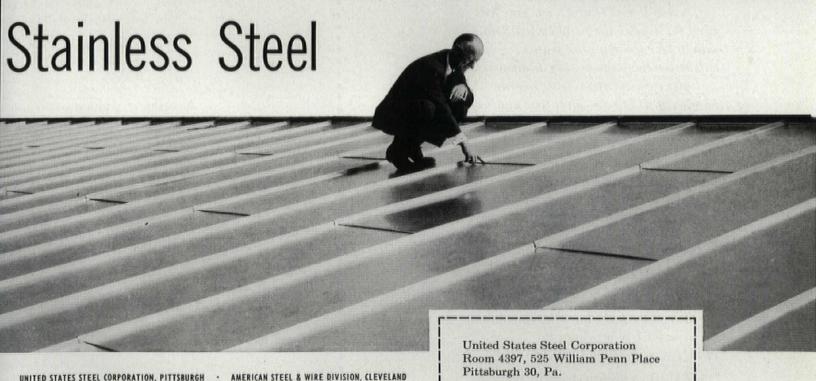
Stainless Steel is finding wide favor with school architects, not only for roofing, but for exterior walls as well when used in the form of insulated panels. Of course, its wonderful possibilities for interior trim are also being used to advantage.

If you have a new school in the planning stage, now is the time to think in terms of Stainless Steel and its many benefits. And think in terms of perfected, service-tested USS Stainless Steel. For more information, mail the coupon below. If you like, we will be pleased to have one of our representatives call.

Installing the standing-seam USS Stainless Steel roof on the new Walnut Grove School.

The roof was laid on double-coated asbestos felt with each cross seam carefully calked before the upper sheet was installed.





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### **USS STAINLESS STEEL**

SHEETS . STRIP . PLATES . BARS . BILLETS



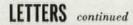
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City.....State.....

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It provides a vast store of information clear concise form and its "ready referen format is in itself an appeal to its use.

Certainly the question of difference tween "public relations," "publicity" a "advertising" by the architect is completedefined, and those accepting this guide a following its direction should receive grabenefit to himself, his profession and community.

The fine work that FORUM is doing in p licizing the work of the AIA Committee Public Relations is sincerely appreciated.

FRANK N. MCNETT

Frank N. McNett & Co., architects & engine Grand Island, Neb.

#### Forum:

I think I reflect the general attitude of a National AIA Public Relations Commit when I say that the sense of the artipleased all of us very much and that it in line with our long-range policy.

I am impressed with the way FORUM I outlined the public relations idea to whe at a reasonably quick glance, an archite can use this particular guide to a go advantage.

KARL KAMRATH

MacKie & Kamrath, archite

Houston, Tex.

#### Forum:

. . . A wealth of practical points that of serve reading and rereading—even memoring.

My worry is that if the guide is swallow whole, the architect will finally burst wi PR and indelibly bloodstain his architecture

VICTOR C. GILBERTSON
Hills, Gilbertson & Hayes, architect
Minneapolis, Minn.

#### Forum:

May I add two items which I considmandatory.

No. 1. Marry well.

No. 2. Hire a good public relations ma —pay him handsomely—and devote you time to design.

R. B. Cutler Cutler Design Boston, Mass

#### Forum:

For our own pockets could we have few, say four, tearsheets of "A Pocket Guid for Better Public Relations"?

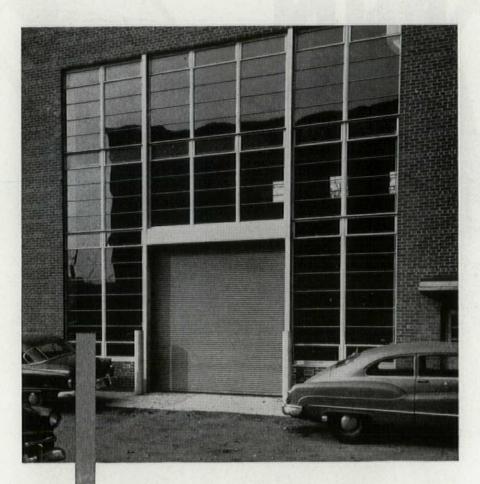
I think we architects are beginning trealize that public relations is a greater influence on architecture than regionalism Frank Lloyd Wright or the eighteenth century.

L. MORGAN YOST, architect Kenilworth, Ill.

 Pocket-size reprints are available—up to fix copies without charge; more, in multiples of ter at cost—10 cents each.—ED.

continued on p. 6





# "Glass Wall" Installation Dramatizes Advantages of Kinnear Rolling Doors



#### Heavily Galvanized Doubly Protected

Kinnear Steel Rolling Doors are heavily galvanized (1.25 oz. of zinc per sq. foot, as per ASTM standards) to provide a lasting weather resistance. In addition Kinnear Paint Bond, a special phosphate application, provides for easy, thorough paint coverage and lasting paint adhesion. Light from a huge "glass wall" floods into the new engineering building at Howard University, Washington, D.C., shown above.

the Kinnear Rolling Door centered in this glass wall can be operated or left open without blocking off a single inch of glass area.

The rugged curtain of interlocking steel slats—originated by Kinnear—coils compactly above the opening. All surrounding floor, wall and ceiling space remains clear and usable all the time.

Notice also how the straight lines of the Kinnear curtain add to the modern appeal of this building.

In addition to this space-saving "selfcontained action", Kinnear Steel Rolling Doors offer durable, low cost, all-metal protection against intruders, vandals, wind, weather, and fire.

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# SAVINCWAYS KINNEAR POOR PROFESSION FOR THE PROPERTY OF THE PRO

#### NEW BUILDINGS

Forum:

We commend FORUM on the inclusion is the News department of the new section or new buildings. It is of interest to know, is capsule form, just what the monthly building picture is throughout the country.

WILLIAM K. DURYEA

Duryea & Elkins, architect

Houston, Tex.

#### DESIGN STANDARDS

Forum:

Your Design Standards and Data has just settled an important question between architect and client during a recent conference held at our office. Both you and Harold Sleeper are to be congratulated.

SAMUEL Z. MOSKOWITZ, architect Wilkes Barre, Pa.

#### ROTH'S MODERN

Forum

"Modern Construction Trends" by Richard Roth (AF, March '54, Excerpts) is very commendable. In strong, straight-to-the-point language, a highly experienced man evaluates "modern design" and the prefabrication of skin units as dominating factors in the future planning and erection of multistory office and apartment building. . . .

VICTOR FURTH, MIRBA—MAA Professor of Architecture Miami University Oxford, Ohio

#### ART AND ARCHITECTURE

Forum:

April FORUM contains an article on our new Temple Beth El. We are naturally thrilled with the art and architecture that Mr. Goodman has given us.

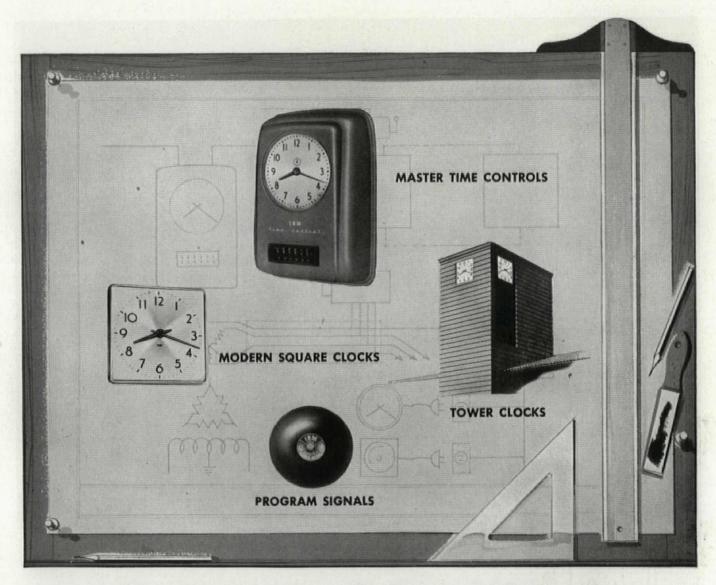
I would like to point out one further ingredient necessary, in addition to the cooperation between architect and artist, and that is the complete harmonious concurrence of the owners and the contractor. The absolute integration evidenced in the new Temple Beth El has been carried to the extreme wherein even the furnishings were selected by Mr. Goodman. Within limits, our Congregation had the courage to give him complete carte blanche, We boast that from the inception of this project to its completion, there has been scarcely a harsh word spoken between our building committee, architect and contractor.

E. A. Levi, rabbi Congregation Beth El Springfield, Mass.

Forum:

From p. 141 of the April Forum I lift the following out of text—"Architect Percival Goodman (himself an artist)...." Shades

continued on p. 70



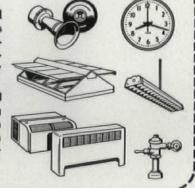
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- Can be altered with little cost or effort...
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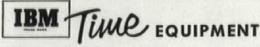
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IBM Electronic Time and Program Signaling Systems can save costs, conserve natural resources by automatically scheduling utility functions...

sound audible signals - open and close ventilators - turn heating and air conditioning systems on and off - switch light circuits on and off - open and close water flow valves.

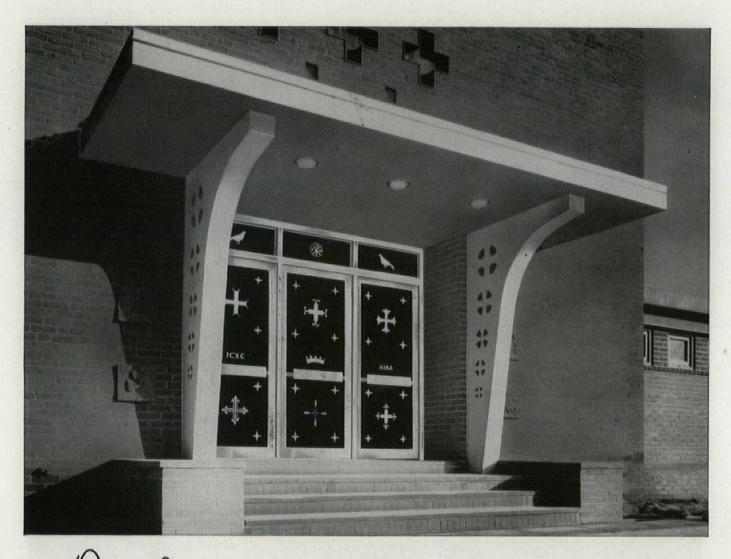


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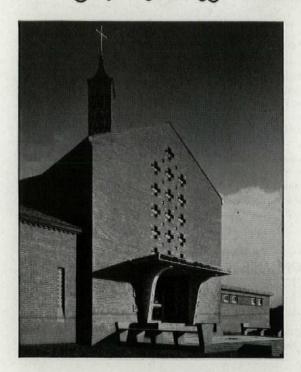


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# GULLINO STAINLESS STEEL ENTRANCE



Truly modern, dignified, imperishable entrances are created by Overline design crafted in stainless steel. Note this superbly beautiful entrance of the Grace Evangelical Lutheran Church, Pottstown, Pennsylvania. The architect: T. Normal Mansell, Philadelphia. • Shown is one of the two identical three-door units. Each consists of stainless steel doors and pushbars, stainless steel entrance frames with transoms and mullions . . . all fabricated by Overly in Type 302 stainless with 4B finish. Glass, 1" thick, was sandblasted with ecclesiastical designs. • Overline hollow metal entrance doors feature narrow stiles. Stainless adds to their fine appearance, inherent strength, built-in durability, long life, and top performance. • Write us today for our Folder "O.D."



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ATTENTION! You are cordially invited to visit the Overline Door Display June 15-18 at the A.I.A. Convention in Boston, Massachusetts. Come to Booth Number 6.



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• This NEW CB boiler has EVERYTHING needed to bring big boiler standards to commercial, industrial and institutional users with small capacity requirements. Despite its unusual, compact size you get big boiler performance — from matched-quality components, proved the world over on thousands of Cleaver-Brooks self-contained units.

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### gives you all the quality features of time-tested self-contained design

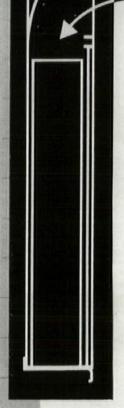
- FOUR-PASS FIRETUBE CONSTRUCTION longer gas travel scrubs heat from flame means lower fuel costs guaranteed efficiency of 80% when firing with oil.
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- FAST, EASY MAINTENANCE front and rear doors hinged for fast inspection, cleaning or servicing boiler.
- AUTOMATIC SAFE OPERATION all controls centralized and conveniently located modern electronic combustion control is standard equipment.
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#### LETTERS continued

of Architecture! What in Heaven's name should an architect be other than an artist? Fundamentally, I mean.

Seriously, though, I know what you mean. There is plenty of evidence that plenty of architects aren't artists. And seriously (also) I enjoyed the article which covers the present state of the integration of art and architecture. We need more artists who are architects and more architects who are artists.

CORMAC C. THOMPSON Prosser, Wash.

#### FORUM AND REVIEW

Forum:

As one of the few in this country who once visited the Architectural Review's office at Oueen Anne's Gate, I enjoyed tremendously your recent article "For Architects Only" (AF, March '54). Nobody can appreciate more the Forum's vigorous, practical way of thinking than those who know also the European side of the story.

> EUGENE PADANYI-GULYAS Billings, Mont.

#### SUCCESSFUL SHOPPING CENTERS

Forum:

FORUM, Real Estate Consultant Larry Smith and Architect Victor Gruen are to be commended on your most excellent article, "How to Plan Successful Shopping Centers" (AF, March '54). I look forward to additional articles on the results of the continued research by Smith and Gruen.

> WALTER L. NORRIS, architect Midland, Tex.

Forum:

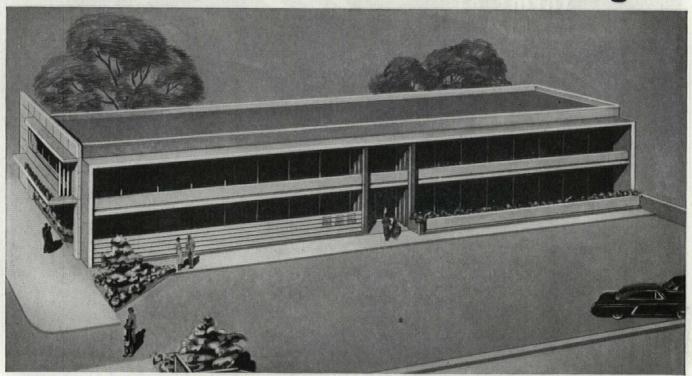
Messrs. Smith and Gruen's thorough analysis is truly a recipe for a shopping center success (AF, March '54). While I agree with most all they say, it occurs to me that when the menu of such a complicated diet is set forth so simply, many cooks, amateur and otherwise, may become intrigued with the apparent possibilities and plunge in. With this in mind, I would like to sound a warning.

As pointed out by Smith and Gruen, it takes about five years for a regional center to mature. During this time large sums of money are required to finance the project, not only during its construction phase but during the early years of its life. To bring this into focus, my experience indicates that somewhere between \$1 and \$3 millon (depending on size and luck) are required in cold equity cash to provide adequate financial stability.

Sponsors who proceed with the development of a regional center with the understanding that the project will be leased so as to substantially finance out, as previously experienced with smaller neighborhood

continued on p. 74

# Plan for future electrical requirements with General Electric Q-Floor Wiring



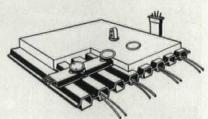
Edmond J. Jura A.I.A., Architect—Amarillo Doyle Construction Co., General Contractor—Amarillo Blum and Guerrero, Engineers—Dallas Franks Electric Co., Electrical Contractor—Amarillo

Architect's rendering of the front elevation of the Amarillo Medical Center Building, now under construction. General Electric Q-Floor wiring is used throughout the building to permit easy expansion of circuits.

Constantly changing electrical needs for X-ray machines, sterilizing equipment, operating room lighting, physician call systems, and telephone service can be taken in stride by the new Medical Center Building in Amarillo, Texas. The General Electric Q-Floor wiring system makes every square foot of floor space available for outlets. No costly alterations, no litter, no tie-up of space.

Q-Floor, a cellular steel subflooring, saves construction time, materials, and weight. Each cell is a raceway or conduit for present and future circuit requirements. New outlets can be installed any time, any place. A Q-Floorequipped building is *always* ready for changes in service needs.

The General Electric Q-Floor wiring system can be used in industrial, institutional, or commercial buildings. For more information, call your G-E Construction Materials district office or write to Section C42-64, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.



cross section drawing showing Q-Floor cells, header ducts, floor plugs, and wiring.



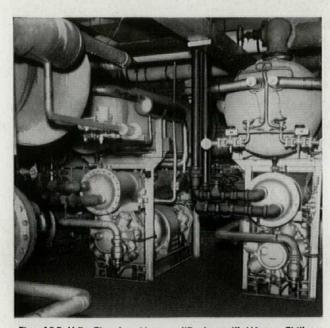
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### CHRYSLER AIRTEMP

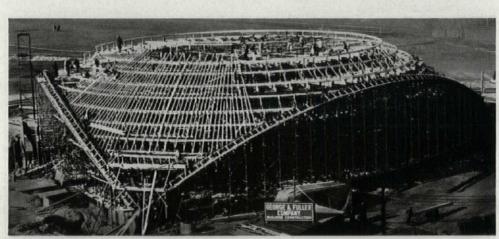
HEATING . AIR CONDITIONING for HOMES, BUSINESS, INDUSTRY

Airtemp Division, Chrysler Corporation, Dayton 1, Ohio

### Buildings that make news . . . (Third of a series)

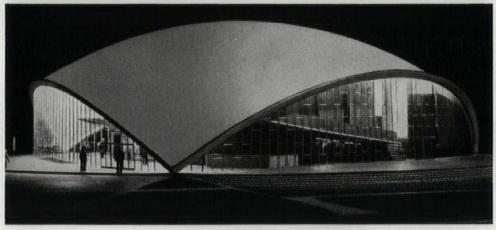
Auditorium, Massachusetts Institute of Technology, Cambridge, Mass.

Eero Saarinen and Associates, Architects Anderson and Beckwith, Associate Architects



Above: Erecting form work for concrete roof structure.

Below: Architect's model of completed building.





Sign of Leadership in Building Construction

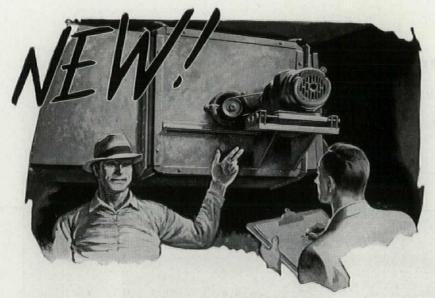
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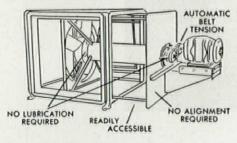
ARENAS • HOUSING • THEATERS • TERMINALS • STORES AND SHOPPING CENTERS • BROADCASTING STUDIOS • MONUMENTAL BUILDINGS



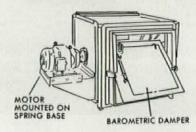
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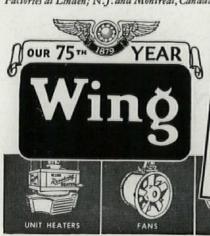


Write for a copy of Bulletin 1-52

### L.J. Wing Mfg.Co.

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centers, are courting disaster. To a large extent the ills of the existing projects stem from a shortage of equity financing during the planning and construction period.

. . . And in my opinion, Messrs. Smith and Gruen's recipe overlooks the No. 1 criterion: "The pedestrian is still King."

JOHN GRAHAM JR.

John Graham & Co., architects & engineers
Seattle, Wash.

#### Forum:

The article on "How to Plan Successful Shopping Centers" is most informative and generous on the part of Larry Smith and Victor Gruen.

Analysis of the regional shopping centers thus far completed confirms the importance of the factors so ably set forth as requirements for a successful undertaking. The two extremes of high capital cost, the monumental type of development, in my opinion, are not justified on the basis of low maintenance cost. On the other extreme, the shoddy skinned-down job certainly is not a good investment. To achieve the near-ideal of minimum maintenance cost, attractive appearance, top quality public conveniences and parking facilities, underground truck service, total air conditioning, and tenant services at a cost in balance with reasonable minimum rent is, of course, the objective of all developers.

Today's high costs are such that to achieve this result requires highly inventive design.

I am convinced that in many instances regional shopping centers will become competitive with each other. Location is of first importance. Not only must there be ample purchasing power, but the location must be so accessible that it will always be preferred over any possible competitive location. It should be visible from the main arterial of traffic and ingress and egress, of course, must be adequate. For the same reason that merchandising requires good display, the shopping center itself should be visible to all traffic and, of course, attractive. I make this comment because of remarks I have heard that a location off of the main highway would be entirely satisfactory. I believe it has been demonstrated that such locations require tremendous promotion to attract traffic.

Another conclusion I have reached is that the center should not be so large that the parking, though unlimited, radiates beyond a comfortable walking distance to the main mall or cluster. This, of necessity, will limit the number of cars on one-level parking. There is, of course, no substitute for adequate parking.

DAVID D. BOHANNON
David D. Bohannon Organization
San Mateo, Calif.

continued on p. 78





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Prudential Insurance Compa of America, Houston



United Nations,



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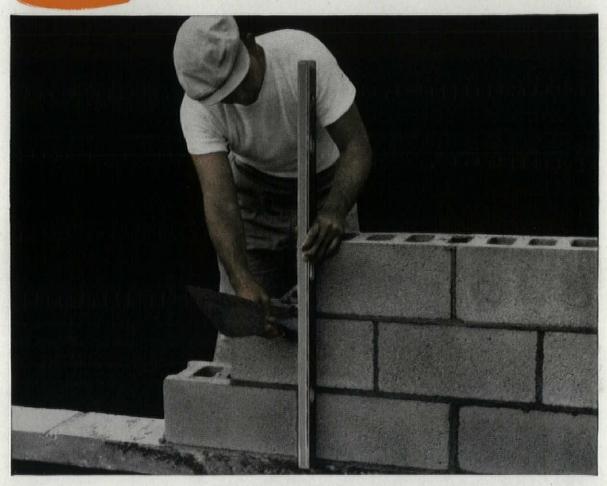


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For detailed, idea-packed literature, write to: Wright Manufacturing Co., 5200 Post Oak Road, Houston, Texas.



### LETTERS continued

#### FIRST AID

Forum:

In the February FORUM is a most excellen article on the Mayo Diagnostic Center. Since the University of California Medical Center is enlarging both its hospital and clinic facilities, we studied this article with much interest

I compliment you on a most excellent maga zine,

> P. J. Gillette, clinic administrator University of California San Francisco, Calif.



ARCH RIB VS. LAMELLA

Forum:

The description of the lamella roof in the March issue was of interest to me because we designed a comparable structure for the University of Wyoming field house (Goodrich & Vilking, architects) using the opposite approach to economy, i.e., large arch ribs spaced far apart. It is difficult to make an exact comparison because it is not indicated in the FORUM article if the 8½ psf includes the end-wall framing. Also, the field house quantities do not include a subpurlin to reduce the roof spacing to 6′.

Neglecting the above factors, but including the subpurlins and end-wall framing, the cost per square foot of the field house is \$1.86 or about the same as the lamella design. The cost of the heavier steel members is offset by the lower cost of fabrication.

The field house appears to be designed for a heavier load than the other structure, but this may not have controlled the design. The depth of 24" for the arch ribs is rather small if it is necessary to consider buckling stresses.

It appears to me that the full advantages of lamella construction will be used only if advantage is taken of space-frame construction curved in three dimensions.

MILO S. KETCHUM

Ketchum & Konkel, consulting engineers Denver, Col.

continued on p. 80



## Cut fastening costs up to 80% on heating and air conditioning installations...with the REMINGTON STUD DRIVER

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Byrne vertical lift doors can be furnished without limitation in width or height. Depending on the head room available, they are built in one, two, three or four sections.



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### LETTERS continued

#### PLANS AND CITY PLANS

Forum:

Your magazine is a readable and ab presented record of current work. However I feel that pretty pictures, while importation and extremely useful as reference material should not overbalance well-presented plan. The taste and ability of the architect determine in the final analysis what the building may develop as a work of art, but the play brings out clearly the virtue of a solution good or bad, and without a thoroughly wor able plan, a clever exterior is just so much decoration.

One other point is the urgent need of ciplanning in its broadest sense. There is to much evidence of buildings being erected where the owner and architect restrict the vision to a specific piece of property and, a New York knows only too well, there is verilittle thought as to what damage is wrough by overproduction in one area and absoluted no consideration of the effect on the chatacter of a district, when buildings are thruindiscriminately into already overcrowderspaces. . . .

If the FORUM can put additional spotlight on the problem, more attention may be give to the broader conception of building as refers to the over-all aspect of our cities.

ELY JACQUES KAHN
Kahn & Jacobs, architect
New York, N. Y.

#### BUILDING ON SAND

Forum:

In introducing your article on "Consolidated Sand Foundations" (AF, March '54) you say "nobody recommends building or sand."

I am surprised to find FORUM—always pro gressive in its attitude toward architecture expressing so glibly a completely mistaken notion relative to foundation engineering.

DAVID M. GREER
Greer & McClelland
Consulting foundation engineer
Montclair, N. J.

 After the introduction referred to by Reade Greer, FORUM's article reported a developmen which has taken the significance out of an oft quoted Biblical story (Matthew 7:26) by making it feasible and economical to build on sand.—ED

#### MOTELS

Forum

Your informative analysis of motel buildings in the February issue was quite thorough and provided me with an excellent picture of what the trends in this building type might be in the near future. . . .

FOREST A. PHILLIPS, architect Peoria, Ill.

Forum:

Your article on motel operation and financing was excellent.

DAVID H. MURDOCK, building contractor Phoenix, Ariz.

continued on p. 86



# Reinforced Concrete Construction Withstands Destructive Waco, Texas Tornado



Above: Two-story building at right with reinforced concrete floors, walls and roof came through the tornado without structural damage but the adjacent structure suffered extensively. Below: This one-story warehouse was built in two sections. The section with reinforced concrete frame, floors and roof was undamaged; the other part was demolished.



The tornado that struck Waco, Tex. on May 11, 1953 killed 115 persons and wrecked property worth millions of dollars. It ripped a path of destruction one mile wide and four miles long.

Nevertheless some buildings within this area of devastation withstood the full fury of the tornado. An engineering report made following a thorough examination of the damage said, "Without exception structures with reinforced concrete frames suffered little damage."

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In addition reinforced concrete construction offers the durability, strength, firesafety, attractive appearance and low annual cost that are desirable in any structure. For more information write for a copy of free, illustrated literature, distributed only in the United States and Canada.

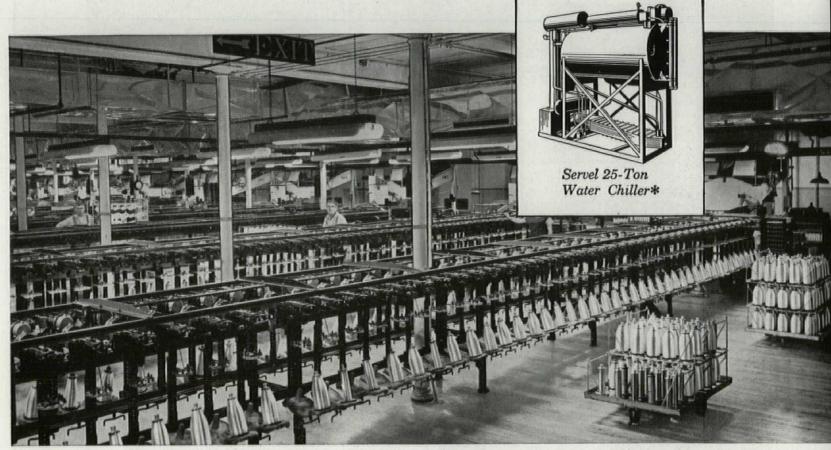
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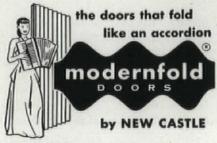
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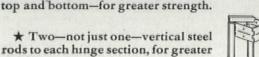




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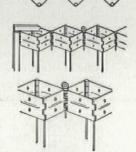
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### SPIRES: Copper solves the costly maintenance problem

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is built into the wood construction of the ventilating dormers at the base. Several alternate types of battens or methods of joining at the corners are also shown. For small spires, 16 oz. copper of cornice temper does very well. For large spires, 20 oz. copper is preferred.



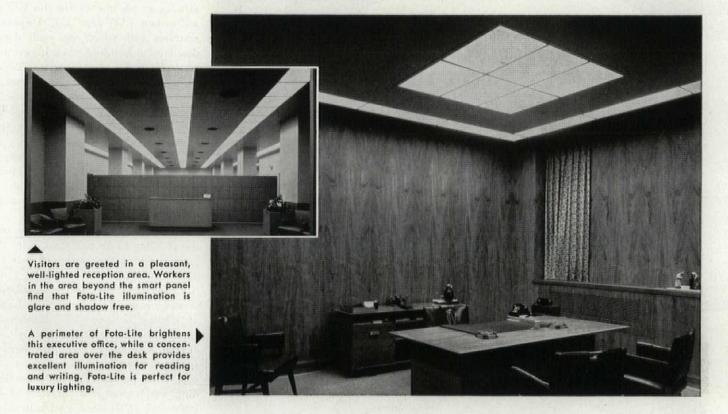
Do you have the FREE Anaconda file of drawings? Each drawing shows a new or improved way to apply sheet copper. Each is printed on a separate 8½ x 11 page, handy for quick-reference filing. This series may be obtained absolutely FREE by writing for Portfolio S to The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

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### How modern offices can use Corning Fota-Lite to advantage

The rich setting of these new offices of a large oil company show how CORNING Fota-Lite is used best. Notice how evenly it distributes light.

Fota-Lite is richly rewarding to work with. It gives you all of the lighting advantages of louvered lighting plus the advantages of flat glass—easy cleaning.

Fota-Lite provides high levels of illumination with low brightness. The soft opal louvers afford diffusion at normal viewing angles. Vertical light, however, is unrestricted.

Fota-Lite is not color selective. You can use it freely for wonderful effects where colors form a mood or where color encourages a buying decision.

### What is Fota-Lite?

It's fine crystal glass in which tiny opal louvers are created by a photographic process. Strong, lightweight, free of warpage, Fota-Lite encloses light sources with a minimum of bulk. You can use it for an entire luminous ceiling or for keying interest to relatively small areas. Fota-Lite offers rare value when it comes to beautiful lighting and lighting that is efficient. And the smooth glass surface permits easier cleaning.

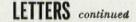
You can get complete information about Fota-Lite and other Corning products just by signing and mailing the request slip below. We'll send you a free copy of Architects and Engineering Handbook of Lighting Glassware.

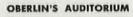


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Glassware."	DESCRIPTION OF THE PROPERTY OF
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City	Zone State





Forum:

It is an enlightening pleasure to read such articles as the one on Oberlin College's ne auditorium (AF, Jan. '53). I appreciate the restraint with which you omit data on the details of a building when its greatest interest is in its broad conception. Your tracin its history and pulling in the comments of the owner and the press serve effectively the remind us that architecture cannot live with out its consumers and without its fourt dimension.

I suppose, however, that a dynamic maga zine like FORUM would be more interested it what its readers don't like about the building and the article. Here are my contributions in this category:

1. I would have liked to see the relation of the building to its site—that is, to the entire campus and to the portion of it in its immediate vicinity. . . .

 Your reference to the expression of the massive forms of the building as being devoid of clichés is inexcusably inaccurate. Fat from expressing its function the plastic forms of the stagehouse belie the forms of the spaces they enclose.

3. What accounts for the generally forbid ding, austere and cold character of the build ing's design? It doesn't seem to be designed for human beings. Do the photographs belied the building's attractiveness and charm? Is the interior as undistinguished as it looks in the photograph? Can the lighting of the interior be as bad and spotty as the photographs indicate?

 The sensational and exaggerated superlatives you use freely make me a little skeptical of the validity of your opinions.

SUREN PILAFIAN, architect

• FORUM is caught red-handed on point 1; is ready to debate point 2; will let the pictures speak for themselves on point 3; contends that the use of two superlatives ("most controversial building" and "optimum acoustics") was justified and not very sensational.—ED.

#### KUDOS

Forum:

As a subscriber to the FORUM for less than a year, I feel I should let you know how pleased I am with the excellent job you do in every phase of your publication.

HENRY J. EVERETT Abraham & Straus Brooklyn, N. Y.

### ERRATA

 On p. 129 of the May Forum Dan Kilev should have been credited as landscape architect for Detroit's Federal Reserve Bank Building and Gilmore Clarke, for New York City's Bryant Park.

 On p. 155 of the same issue FORUM failed to credit Edward E. Ashley as the mechanical and electrical engineer for the Metropolitan Museum remodeling.—ED.

EDWARD E. ASHLEY



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PreCast Receptors. When you plan showers with plastic or metal tile
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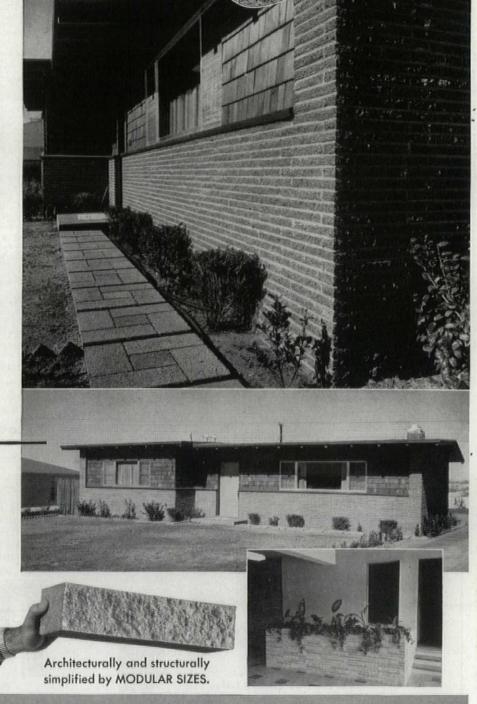
# 3月10日18-83图

...the Split Block with Character!

# Its "QUARRIED STONE" CHARACTER Combines BEAUTY and PERMANENCE at Low Cost!

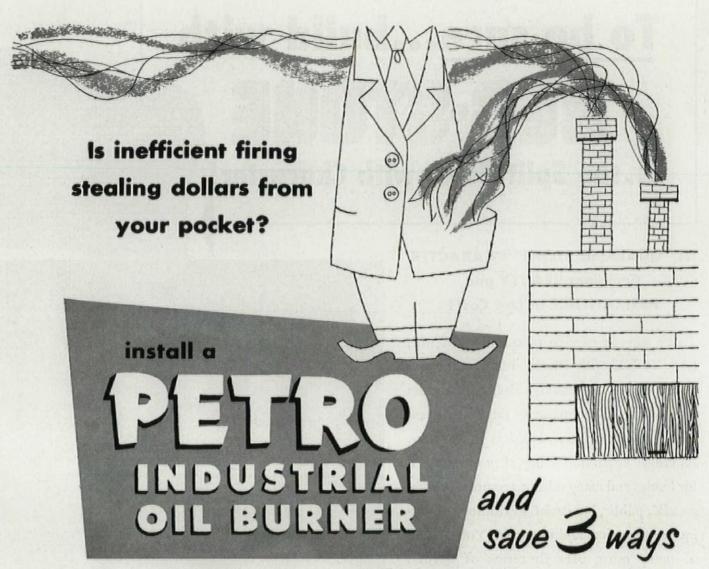
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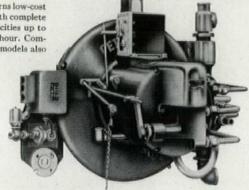


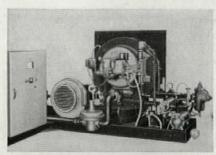
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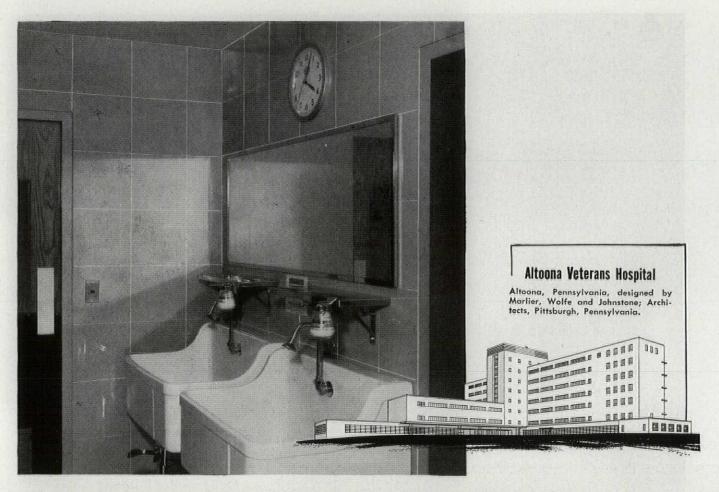
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# finished in Carrara Glass

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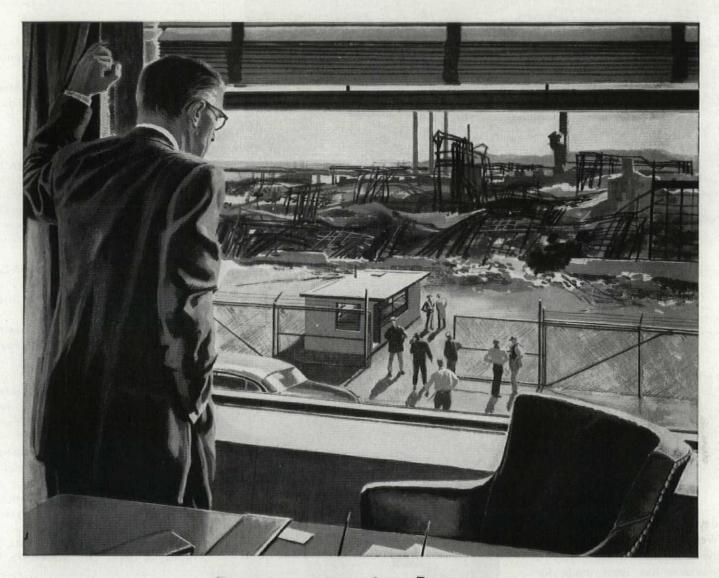
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Any qualified architect or consulting engineer working on industrial construction is welcome to utilize the benefits of our extensive fire protection engineering experience, as well as obtain a free copy of our comprehensive brochure entitled, "C-O-TWO Fire Protection Equipment (Code A/CE)" by writing on his letterhead. Get the facts today!



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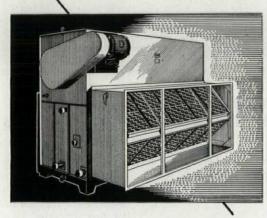
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CONTRACTOR: THE EDWARD PACKTOR CO

# 600 TONS OF AIR CONDITIONING BY BUSH... for West Hartford Shopping Center

At the new Bishop's Corner shopping center, West Hartford, Conn... modern in the best sense of the word... every provision has been made for customer and employee comfort.

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Air handling units, finned radiation for perimeter heating, cooling towers, direct expansion cooling coils . . . these are some of the BUSH products that are helping make Bishop's Corner such a popular spot with smart shoppers.



Bush Air Handling Units . . . in vertical and horizontal models . . . provide Architect, Engineer and Contractor with a widely diversified line of central station units where direct expansion, water or steam coils are required.

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### **EVENTS**

American Institute of Architects, annual convertion, June 15-19, Statler Hotel, Boston.

Museum of Modern Art and the Merchandise Mar fifth annual "Good Design" exhibition, open ing June 20 at the Mart in Chicago, later to be held in New York.

Massachusetts Institute of Technology, three-day conference on Thin Concrete Shells, including sessions on architectural design, structural design and construction techniques. June 21-20 at MIT. For details address Summer Session Office, Room 7-103, MIT, Cambridge, Mass

Aspen Design Conference, June 23-29, Aspen Col. For details address Aspen Institute of Humanities Studios, Ann Arbor, Mich.

National Ass'n. of Building Owners and Managers 47th annual convention, June 27-July 1, Shirley-Savoy Hotel, Denver.

American Society of Heating and Ventilating Engineers, 60th semiannual meeting, June 28-30 New Ocean House, Swampscott, Mass.

American Society of Landscape Architects, annual meeting, June 28-30, Hotel Somerset, Boston

New Developments in Industrial Design, conference sponsored by Virginia Polytechnic Institute, August 4-6, at the Institute. For details address Prof. D. H. Pletta, Applied Mechanics Dept., VPI, Blacksburg, Va.

Northwest District, American Institute of Architects, regional conference, Aug. 19-21, Eugene, Ore.

Fall Trek to Spain, Italy, Greece, Egypt and France, Sept. 4-Oct. 7, under the leadership of Edmund Purves, FAIA, from whom details can be obtained at AIA headquarters: 1735 New York Ave. N.W., Washington, D.C.

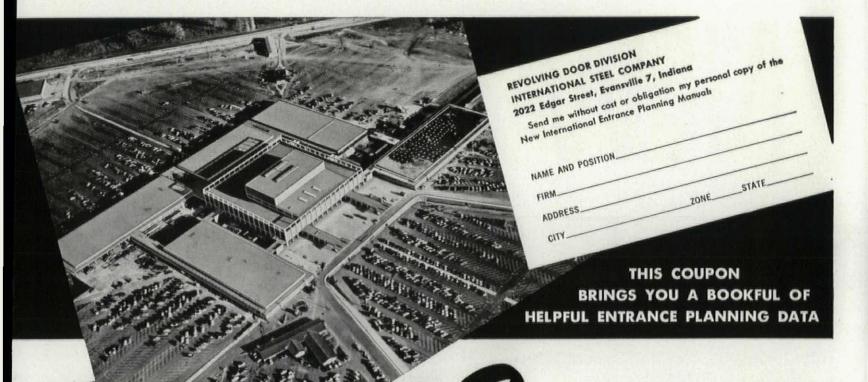
Illuminating Engineering Society, annual meeting, Sept. 13-16, Chalfonte-Haddon Hall Hotel, Atlantic City, N.J.

Pennsylvania Society of Architects, annual meeting, Sept. 16-19, Great Lakes cruise on the South American, leaving from Erie, Pa.

Midwest Conference of Building Officials and Inspectors, annual conference, Sept. 20-22, Hotel Commodore Perry, Toledo.

Gulf States District, American Institute of Architects, regional conference, Sept. 26-28, Marion Hotel, Little Rock, Ark.

Porcelain Enamel Institute, annual meeting, Sept. 29-Oct. 1, The Greenbrier, White Sulphur Springs, W. Va.



REVOLVING DOOR ENTRANCES

TWO-WAY TRAFFIC AT NORTHLAND

NORTHLAND'S NOTABLE ARRAY OF REVOLVING DOORS, totaling 22 installations — all for principal entrances - is even more significant when you consider these facts:

Its choice of 21 revolving doors for this newest branch store marks the 14th such installation by The I. L. Hudson Company - and brings to 79 the total number purchased - since the first 3 went into service back in 1905. Similarly, the revolving door entrance to Northland's new Stouffer's Restaurant is one of many installed at these famous dining places throughout the country.

For the J. L. Hudson Company and Stouffer's . . . as for countless other firms in every field of business . . . experience has profitably proved that only revolving doors measure up 100% to these three major entrance requirements:

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All the basic data on "always open -always closed" revolving doors is included in the new International Entrance Planning Manual. All it takes to bring you this invaluable handbook is the above coupon. Just mark it and mail it now.

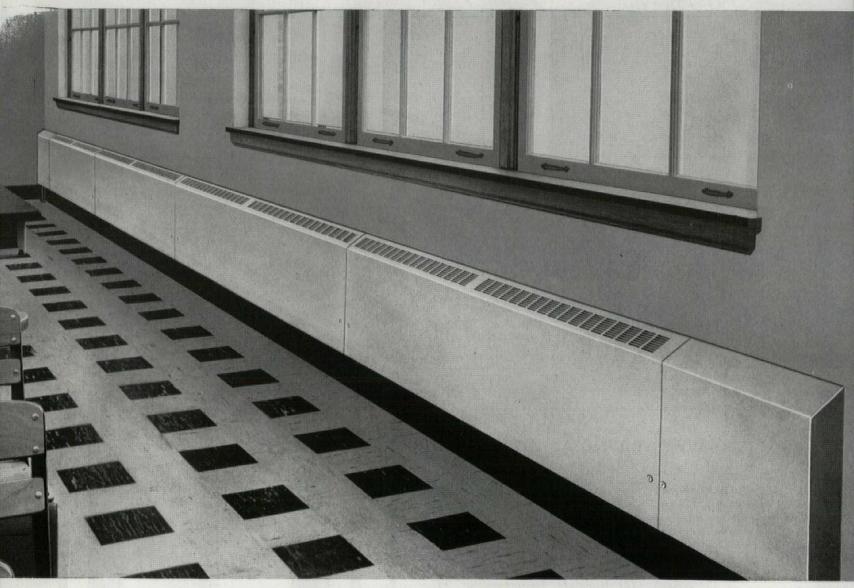


International Standard Model Revolving Door — as installed at Northland for The J. L. Hudson Company and Stouffer's furnished through Saunders & Company, Detroit Representative for International Steel Company. Production-built of stainless steel, available with or without matching swing doors . . . offers most custom features at quantity-production price.



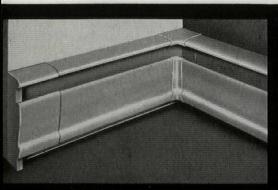
REVOLVING DOOR DIVISION 2022 EDGAR STREET, EVANSVILLE 7, INDIANA TERNATIONAL STEEL COMPANY

# Trane Wall Line low-cost

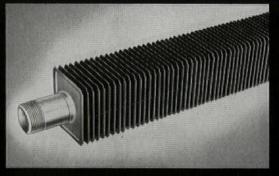


At last . . . low-cost wall-to-wall radiation with an attractive, streamlined cabinet that blends with the beauty of modern architecture . . . yet meets tight budget limitations. New Trane Wall Line Con-

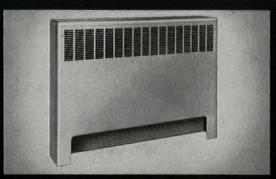
vectors are ideal for schools, institutions, office buildings... available in a wide range of sizes. Cabinet heights 14", 20" and 26"... depths of 4" and 6"... high heat capacity for wall-to-wall installations.



BASEBOARD CONVECTORS—Clean, trim design. Nonferrous heating element, free-hanging for quiet operation. Preassembled . . . easy to install. 81/4" and 12" heights. Dampers optional.



WALL-FIN—Ideal for long runs with low capacity requirements. Steel or nonferrous,  $1\frac{1}{4}$ " or 2" dia. tube. Either expanded metal or heavy gauge cabinets are available.



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# Convector...for rugged, wall-to-wall radiation

Meets tight heating budgets...blends with beauty of modern buildings...costs less to install.

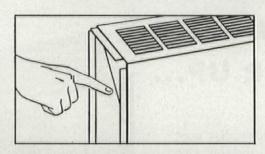
Ideal for wall-to-wall applications...under windows.

Here's the lowest-cost type of wall-to-wall radiation you can specify . . . yet secure all the streamlined beauty of modern, clean-cut cabinet design. New Trane Wall Line Convectors are available in a wide variety of sizes to meet your requirements . . . have rugged strength to withstand roughest treatment.

Greater comfort—more efficient "stack action" of convector cabinet creates gentle air flow that distributes warmed air evenly throughout room.

"Decorator" beauty — slim, streamlined cabinet matches design of modern buildings . . . overlapping front panels form smooth wall-to-wall cabinet. Sloping top has attractive, integral outlet grille.

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16 gauge steel gussets (above)...eliminates flattening out from rough treatment. Cabinet front available in 18, 16 or 14 gauge steel...back piece in 20, 18 or 16 gauge.

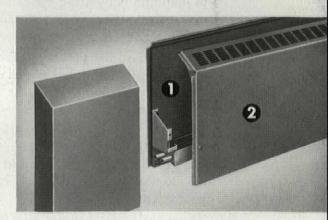
Child-proof safety—heating element enclosed in cabinet. Top grille has turned edges to protect probing fingers.

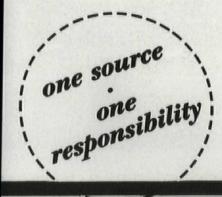
For full information on the new Trane Wall Line Convector or on the complete line of Trane radiation products, call your nearby Trane Sales Office or write Trane, La Crosse, Wis.

Designed for fast installation — only two major components to install —

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- (2) Front panels.

No cover strips except on one end piece. No complicated pitching... back piece and element come assembled... adjusting screw on element support bracket controls pitch.





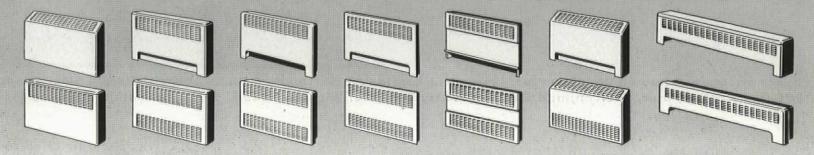
# TRANE Wall Line Convectors

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Add to these advantages the freedom of design ENDURO gives you, and you'll see why so many architects use this wonder metal for everything from curtain walls to store fronts to interior trim. Republic metallurgists are ready to help you produce the architectural effects you want, whether your ideas are already on paper or in the idea stage. See Sweet's File  $\frac{5c}{Rc}$ . Then write to:

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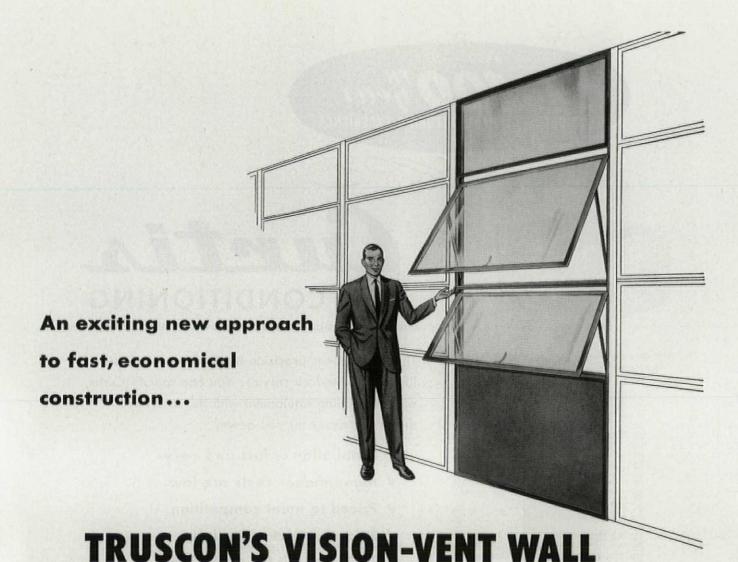


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Illustrated is a recent Vision-Vent application at Clemson Barracks, Clemson College, S. C. Lyles, Bissett, Carlisle & Wolff, architects; Daniel Construction Co., contractors. Vision-Vent also is being used for a chain of bospitals.

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Vision-Vent is a new building unit with all the mass-production and installation economies of standard steel windows. It is designed to enclose entire walls,

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This exciting new Truscon development is recommended for use in the design of all types of single and multi-story buildings. Truscon window engineers will be glad to study your requirements, and develop design details and costs. More details in Sweet's, or write:

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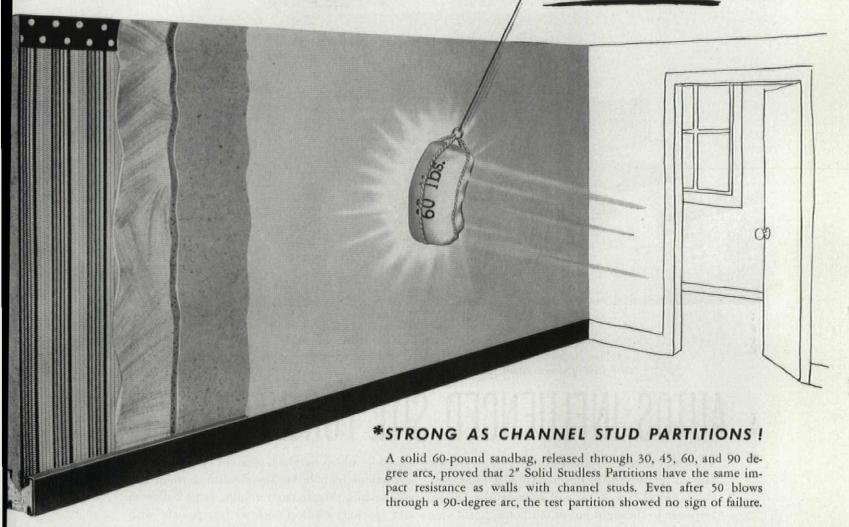
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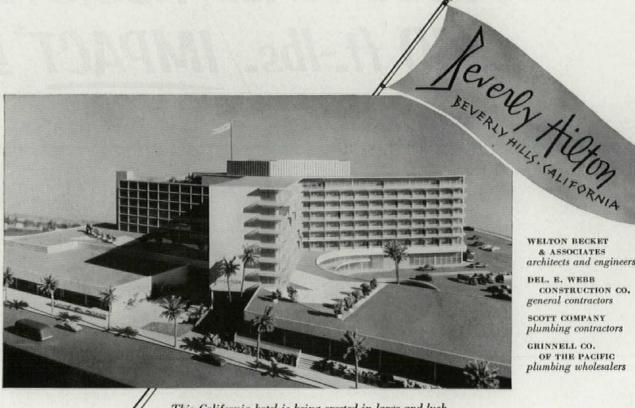


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This California hotel is being erected in large and lush Beverly Hills, the suburban area that is completely surrounded by Los Angeles and is world-famed for its luxurious homes of celebrities of screen, radio, television and stage.

# ED SITE FOR NEW HOTEL

 On an extensive triangle at the junction of two famous boulevards in Beverly Hills, a 13-million dollar resort-type hotel will soon be the Hilton response to the eight out of ten hotel guests who prefer auto travel. By reason of its choice suburban site and double deck parking space for 1000 cars, the new Beverly Hilton will combine luxury hotel, entertainment rendezvous and shopping center, all within a few minutes from busy downtown Los Angeles. Nearly all of the 450 guest rooms have floor to ceiling windows and private balconies which overlook pleasant vistas. Indoor attractions include fan-shaped dining room and supperclub, private party rooms, large ballroom and spacious rooftop cocktail lounge-cafe with view of mountains. Outside is a cabana-ringed swimming pool, screened from traffic. As in many thousands of other hotels and high ranking buildings of every kind, efficient, economical and enduring SLOAN Flush VALVES were specified for installation throughout this newest Hilton Hotel -more proof of preference that explains why . . .

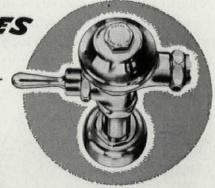
more SLOAN Tush VALVES

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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. Architects specify, and Wholesalers and Master Plumbers recommend the Act-O-Matic-the better shower head for better bathing.

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### architectural forum

JUNE 1954

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#### THE MAGAZINE OF BUILDING

#### ARCHITECTURAL FORUM

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York Photographic Studio's

NORTHLAND REGIONAL SHOPPING CENTER, Detroit
NORTHLAND CENTER, INC., subsidiary of J. L. HUDSON CO., owner
VICTOR GRUEN ASSOCIATES, INC., architects and engineers
(KARL VAN LEUVEN JR., associate-in-charge)
LARRY SMITH & CO., economic consultants
LLOYD REID, traffic consultant

H. E. BEYSTER & ASSOCIATES, associated mechanical and electrical engineers EDWARD EICHSTEDT, landscape architect

ALVIN LUSTIG, graphic consultant

MARSHALL FREDERICS, RICHARD H. JENNINGS, ARTHUR KRAFT, GWEN LUX, MALCOLM MORAN, LILY SAARINEN, sculptors BRYANT & DETWILER CO., general contractor

### **NORTHLAND:**

### a new yardstick for shopping center planning

This is a classic in shopping center planning, in the sense that Rockefeller Center is a classic in urban skyscraper-group planning, or Radburn, N.J. in suburban residential planning.

Northland is a planning classic because it is the first modern pedestrian commercial center to use an urban "market town" plan, a compact form physically and psychologically suited to pedestrian shopping.

Up to now, pedestrian shopping centers have been based either on a vehicular tradition (the strip street) or on an unsuitably diffuse rural village tradition (the common).

Northland's plan will repay study by city planners too: its flexible market-town use of open spaces looks like a natural for coping with rehabilitation of blight-spotted decaying shopping districts. And although in the aggregate this is an enormous project, it is full of ideas for individual small-store owners and architects who have had great freedom here.

Other points about Northland will become yardsticks. For instance, its high standards in public signs; its uninhibited, generous and lighthearted use of art. Best guarantee that the force of Northland's example will be heeded: it is proving enormously successful for both its department store and other tenants, already exceeds sales estimates for five years hence.

The most frequent comment by Northland shoppers: "You wouldn't know you were in Detroit." Were Northland set in any other American city, the response would be the same simply because this shopping center adds up to a new thing in modern town planning. But the Northland scheme has old roots. It is a rediscovery rather than an invention.

Garden view shows department store (on right), portions of two tenant blocks (on left), View is of South Mall, one of ten courts and terraces.

Hudson's department store has direct access from lower level parking field and ramped bus road. Surprisingly, more than one in ten customers comes by bus.

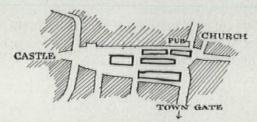


Photos (opp., bot. & below): Ben Schnall

### NORTHLAND'S SCHEME: a compact market town for pedestrian

Shopping traffic has come full circle. It is right back where it started—with the pedestrian.

Two hundred (and more) years ago all shopping was based on the assumption that the shopper would be afoot; shopping centers —then called market towns—were compact and convoluted, like the market center in old Ludlow in Shropshire (see sketch).



Then, along came the carriage trade. (At least one New York merchant's success dated from his persuading a famed society leader to lend her coach and coachman to stand outside his store an hour a day.)

But now that the carriage trade includes most of the population and it is impossible to park in front of stores, the shopper is back on foot. So with Northland, we are back to the market town—an impossible layout for heavy vehicular traffic but the only shopping layout ever completely predicated on pedestrian shopping.

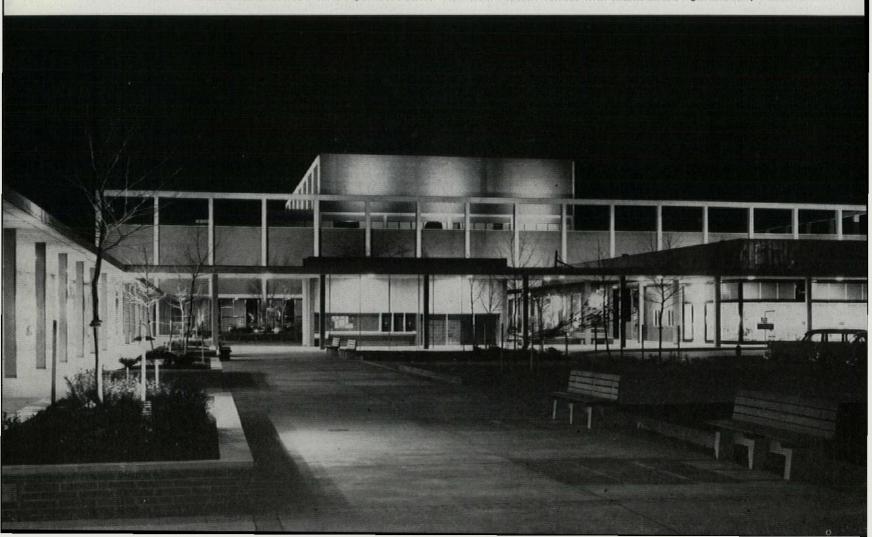
To understand roughly what a market-town layout means to walkers, here are a few comparisons: Northland's 11/4 mi. of store fronts equal all the building frontage of both sides of New York's Fifth Ave. from 34th to 51st St., plus one side of the Avenue to

52nd. If all four sides of Altman's block-filling department store at 34th are included, the remaining frontage encompassed by Northland would be equivalent to both sides of Fifth Ave. up to 49th St. In terms of Chicago, Northland's store frontage equals all the building frontage on both sides of State St. from Randolph (Marshall Field), past Sears Roebuck and beyond to 9th St. Northland's plan (opp. p.) shows vividly how compact a long frontage like this can be made.

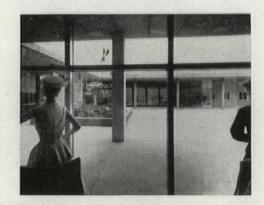
Why has the *urban-character* market-town scheme not been obvious? Possibly because the use of irregular but connected open or pedestrian spaces has disappeared from living American tradition. With the exception of a few grand baroque plans, every time an American town or city drops an open space among its buildings, it harks back to the *rural-character* common. Many shopping center designers have been doing the same. Let them now pause and consider whether the commercial district of a New England village ever runs all around the common. Does anyone know of a courthouse square with prime shopping around its four sides?

A tincture of the village common idea is present in Northland, evident in the general scale of its open spaces—although it does have its lanes and a short arcade. Perhaps as this idea is carried further, still more intimacy of scale will be introduced, not throughout but as variety and contrast to make still more out of the townscape possibilities the market-town idea invites. Indeed, Gruen Associates have already moved in this direction with the "air-conditioned outdoors" plan for Southdale in Minneapolis (AF, March '53).

Market-town scheme clusters smaller stores around department store. View from Peacock Terrace with tenant blocks right and left; Hudson's in center



### . . . and a central magnet for tenant stores



The J. L. Hudson department store, which developed Northland and is its big magnet, is unusually intelligent in its use of a big store's pull for the health of a whole center.

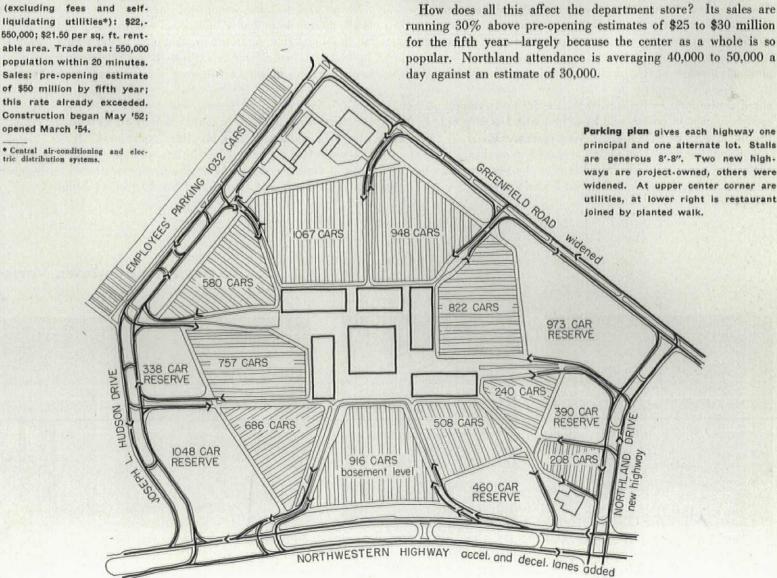
The schematic diagram shows how Hudson's is embedded so customers must walk past competing stores. The site plan shows that only 916 cars out of 7,500 have direct parking access to Hudson's-and even then not on main-floor level. (An alternate pedestrian route from this parking, by-passing Hudson's, is also provided!) The photograph shows how open-

PARKING

front areas of Hudson's direct customers' attention to the competition even from inside the department store. Signs and promotion reinforce this approach. Northland is played up; Hudson's has only the most unobtrusive of signs next to its entrances.

Asked whether he was satisfied with his location, the proprietor of a women's apparel shop replied: "Today a lady came in and asked 'Where is Hudson's?' Why shouldn't I be satisfied with my location?"

How does all this affect the department store? Its sales are running 30% above pre-opening estimates of \$25 to \$30 million for the fifth year-largely because the center as a whole is so popular. Northland attendance is averaging 40,000 to 50,000 a



STATISTICAL PROFILE

163 acres (15 in buildings and

malls, 68 in parking, remain-

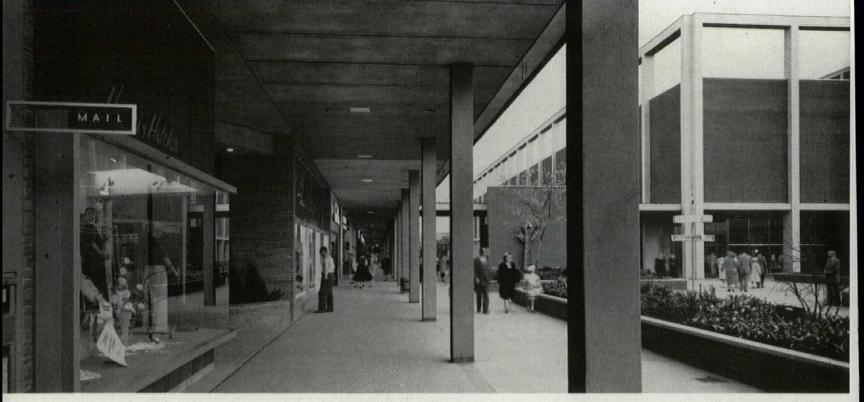
der in utilities, highway resturant, reserve); 7,500-car

parking, space for 4,500 ad-

ditional cars; 80 stores and

department store: 1.045.000

sq. ft. rentable area, expandable to 1,500,000 sq. ft.; cost



Colonnades are generous 14' wide, 14' high. View is down Fountain Court with East Mall beyond

### NORTHLAND'S TENANT BUILDINGS: strong, clear, over-all architecture

Tenant colonnades have downtown atmosphere because the store fronts and signs have the visual vigor of downtown variety.

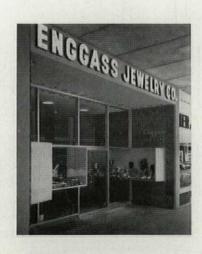
There is not a sequence of "standard store fronts" in the center. Architect Gruen did not need to regiment to prevent "visual explosion" because he purposely made the common architecture strong enough to contain the whole range of merchants' individualized expression. In the same way, the frame is visually strong enough to contain crowds and looks best with lots of people in it. People do not upset the design. They complete it.

Although the store-front design average is remarkably high, not all the fronts are good looking. But even the few ugly ones have their own character and the total effect is vital and free. Rules were few and simple: all signs limited to the store front itself, no sign more than 4' high, good workmanship and materials, no flashing lights, approval by shopping center owner. To give merchants a real chance to express themselves, store fronts were given generous height—14' beneath the colonnade roof. There is a 1' neutral concrete strip between stores. Northland's owners paid the full cost of tenant fronts, thus tenants were not financially penalized for individualism as they usually are in shopping centers. Chains in most cases used familiar "trade-mark" fronts.

Besides Gruen's firm, 26 architects, designers or chains' architectural departments and 14 fixture firms contributed to the store designs, their efforts coordinated by the project architects.

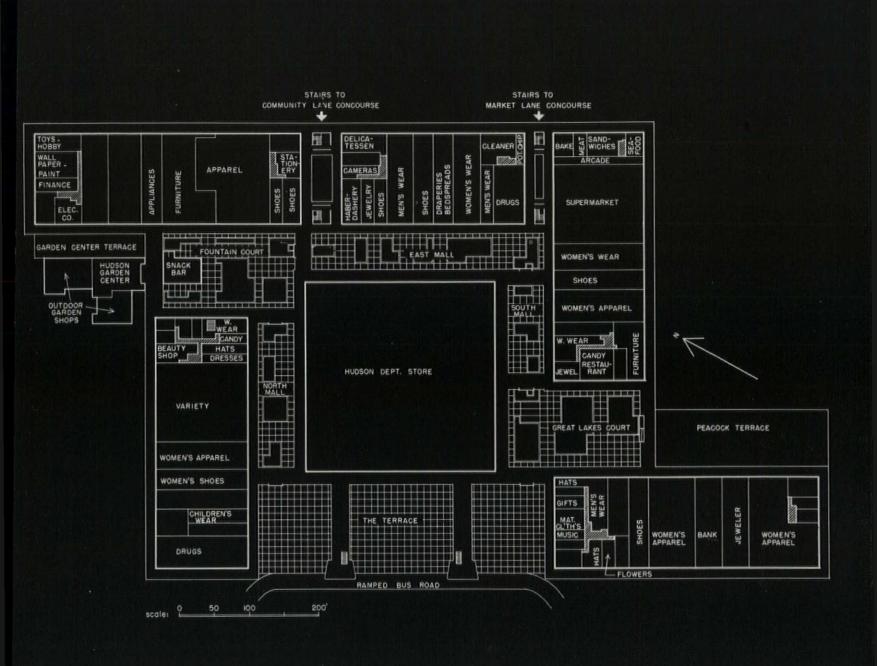
Photos (above and 3 center): Ben Schnall





Galacian Control of the Control of t

... to permit downtown variety



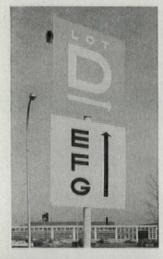
#### and freedom in store fronts

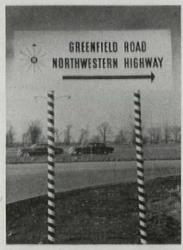


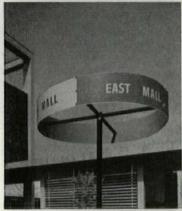
Tenant layout was carefully predetermined by store type; then leases were negotiated. As in good department-store plan, impulse goods are on routes to demand goods. Competing stores in same price range are close together. Building (at right foreground), appropriately on Peacock Terrace, has high-style grouping. Criteria for tenant selection: 1) effect on reputation of center as whole; 2) aggressiveness; 3) financial stability.



## NORTHLAND'S OPEN SPACES: an outdoors planned as







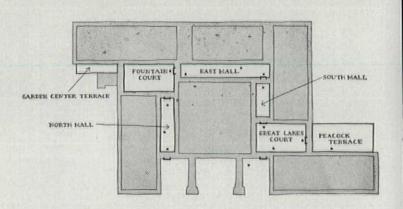




### . . . handsome signs

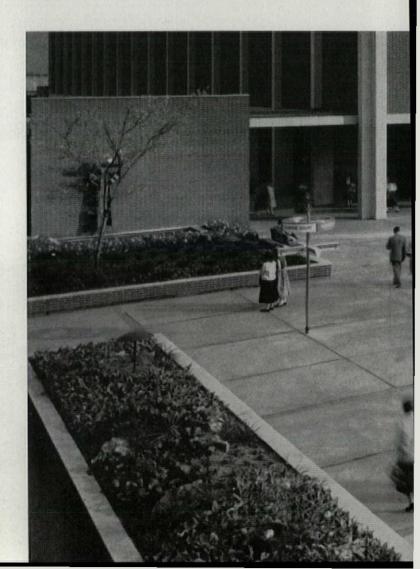
Signs make three important design points:

- Designer Alvin Lustig uses clarendon type face in Mondrianlike frame to give texture and tension, rather than "modern" sans-serif face that merely echoes structure (see p. 116).
- He uses many different but harmonious type faces for different purposes.
- His good esthetic judgment is reflected in size of lettering background, juxtaposition of signs, sign supports.

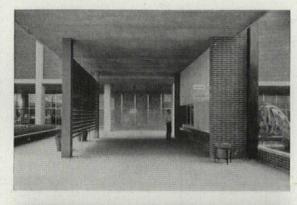


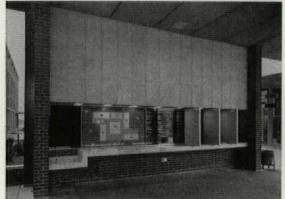
## ... with gardens

Plan (above) shows location of sculptures ( ) and directory stations ( ). Landscape Architect Edward Eichstedt has given each open area own planting character. Fountain Court (see photo below) features redbud, rhododendron, azalea. North Mall (totem pole photo) features flowering cherry and tulips; East Mall, crab apple and tulips; South Mall, magnolias; Peacock Terrace, plane trees; Great Lakes Court, wildflowers and birches; garden terrace, evergreens; lanes, hanging vines. Great variety of additional planting is all labeled for garden-lovers.



## thoroughly as the buildings . . .







Photos: Geo. E. Kawamoto Studios; Photograph House; Ben Schnall

## . . . directories

Center has seven information points (see plan, opp. p.) with directories, phones, adult and child fountains, protected by canopy and louvers. Walls are sculpture backgrounds on reverse sides.

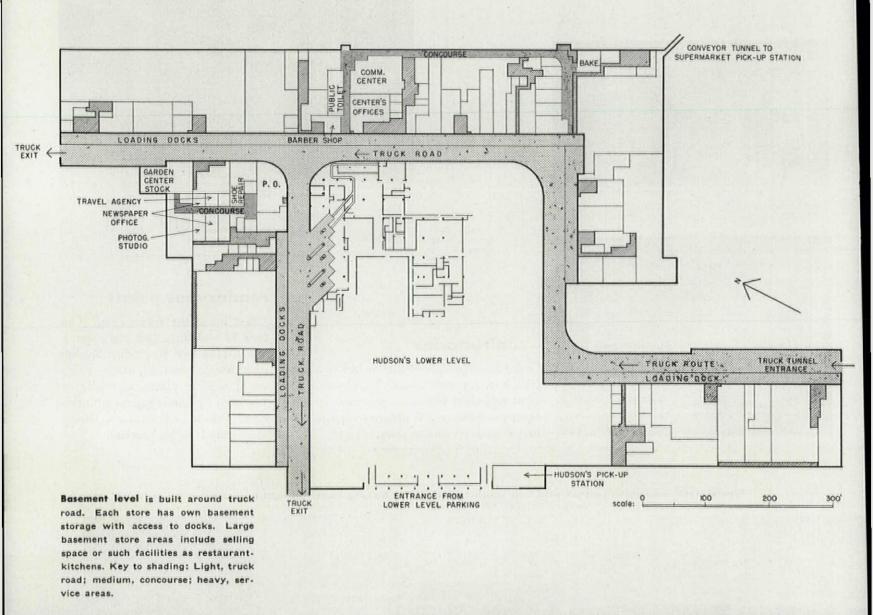
#### . . . rendezvous points

"Meet me at the Totem Pole." Center's 13 sculptures (see plan, opp. p. and p. 118) have by-product function of providing plentiful, easily remembered meeting places, especially appreciated by family groups with children. Pole is by Gwen Lux. Department store is in background.

Fountain court view shows juncture with north mall (at upper right). Building corner (in right foreground) is "glass island" snack bar



## NORTHLAND'S BASEMENT: "side-street" activities are underground so the



Lower-level elevation shows truck exit (left); stairs to terrace, department-store entrance, pick-up

Photos: Ben Schnall



## entire ground level can be "main street"

"Basements are to the large, regional shopping center what side streets are to the downtown area," says Gruen. Northland's basement has a great deal to do with its consistently lively, consistently highrent, consistently front-door ground level.

These are the side-street functions of Northland's basement:

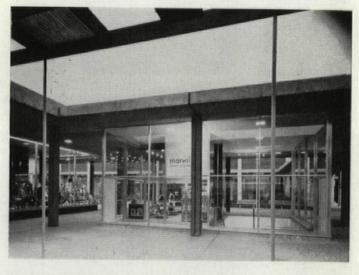
- ▶ It provides concourse space for enterprises such as shoe repair, photo studio, travel agency and post office—enterprises that cannot pay Main Street rents and would dilute Main Street atmosphere, although they are a distinct advantage in filling out the center's services.
- It provides indispensable sales space for store types having comparatively low sales results per square foot. Furniture stores are a prime example. Northland's two big furniture stores have a total of 54,951 sq. ft. but only 12,265 of this is at ground level. Without ample and flexible basement space, one of two things would have to happen: these stores would occupy show-window expanse of deadening and ridiculous proportions; or—more likely—the department store would be the only big furniture purveyor and the center would have to forego major, downtown-type furniture competition. Altogether, about 30% of total basement rentable area (in addition to department store) is used for sales. Most of the rest is individual tenant storage with some leeway for basement sales expansion.
- It yields space for traffic-pulling community facilities. Northland's are wisely chosen: meeting rooms (convertible to dining) for regular and special club events, a kitchen where any organization or ladies' auxiliary can do its own cooking. Only fee for these facilities is porter costs. Requests for use are pouring in.
- ▶ It houses centrally located public toilets. Note how well these are related to the community center, barber shop and the long corridor that will eventually be an art gallery. Attached to this same complex are offices for management.
- It is built around the vital supply ganglia: truck tunnel, tributary supply corridors, individual storage.

Entrance to Hudson's lower level: store has 189,000 sq. ft. on this level, including 45,000 sq. ft. in separately merchandised "basement store."





Stair in furniture store leads to big basement and basement-mezzanine selling levels. It is large, easy and impressive, successfully conveying impression main level is below.



Even stair enclosures are rented. Bookstore has kiosk at stair to concourse. Another stair has magazines, key maker.



Pickup station at Hudson's receives packages on underground conveyor, has them ready for customer car pickup 15 minutes after purchase. Ramped bus road is above. Supermarket has pickup at ground level, also serviced by an underground conveyor (see plan).

## **NORTHLAND'S DEPARTMENT STORE:**

a central core with little shops around it, bigger shops at perimeter



Mural cloaks mezzanine, stylishly pictures goods below, It is painted on linen by Hudson Display Artists Harold Gluckman and Alfonse Ratajczak.

This branch of Hudson's is not only the biggest branch department store ever built—with its 470,000 sq. ft., 370,000 in sales area—it is the biggest department store of any kind since the twenties. It was designed by the Gruen office. Its outstanding features:

▶ A "concentric square" floor plan with mechanical core at the center. On the ground floor, the core is surrounded by little departmental shops under a work-and-locker mezzanine, then, by an open circulatory area with sales islands, and finally by bigger departmentalized shops at the perimeter. Richard Beaudet, head of Gruen's merchandise design, says that besides having great mechanical efficiency, the central core scheme eliminates the feeling of confused vastness and establishes an easy circulation pattern.

A charming 500' x 7' mural-directory enclosing the first-floor mezzanine and depicting the wares to be found beneath.

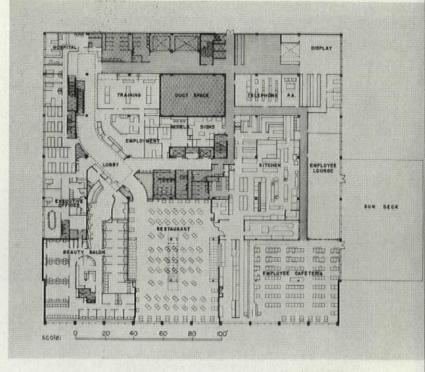
Millinery department uses wood pylons with brass bolts for flexible cabinet-shelf-mirror display. Windows look out to competing tenant hat store.

Photos: Ben Schnall

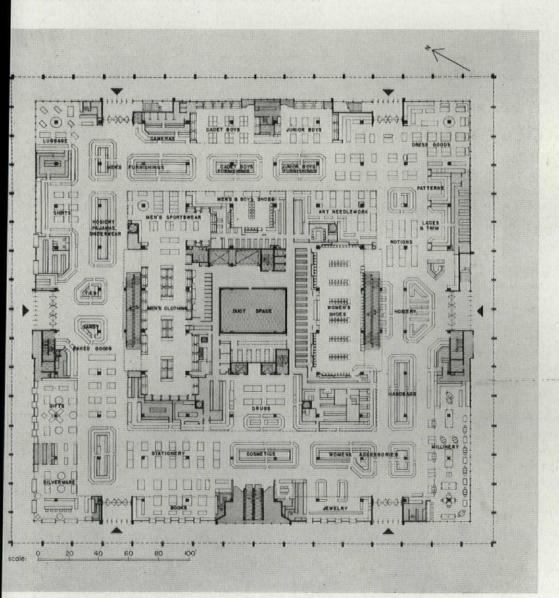


#### a promenade between

- ▶ Flexible main-floor show-window treatment. Some areas are almost entirely closed, with small display cases. Others are entirely open; sales and customer areas immediately inside are designed to make lively window shopping. The scheme gives a pleasant promenade variety to the enormous store frontage, keeps it in scale with the rest of the center.
- Underground truck supply, with production-line merchandisehandling immediately off the loading docks.
- ▶ Package pickup for customers with cars. Purchases go by five spiral chutes to basement central wrapping department, then by underground conveyor to the loading station, or by two chutes directly to the conveyor. This system gets packages to the station within 15 minutes of purchase.



Top floor (fourth, counting basement) has public and employee space, employee terrace.



Main floor at ground level shows mechanical core with mezzanine-roofed (lockers, workships) sales space around it. Floor above is similar, with stock and fitting rooms at periphery. (Lower level scheme, p. 110.)



Public restaurant uses skylight louvers as vine trellises; planting boxes are beneath.



Curved lobby on top floor leads to restaurant, beauty shop, offices. Employee infirmary, also off lobby, gives customer first aid.



Photos: Ben Schnall

1. Fixtureless gift shop uses merchandise elegantly for own furnishings: light fixtures, display and storage cabinets, chairs, tables and handsome fabricswatch curtain are all merchandise or samples. Tenant's only nonreturnable interior expenses were \$760 for glass shelving and frames, entry, wood screen, pegboard and grass cloth; \$500 for lighting installation and few supplementary fixtures; \$700 design fee; a total of \$1,960. Del Gaudio gift shop: Architect Joseph Dworski and Designer Edward Elliott.

## **NORTHLAND'S STORES:**

five good merchandising interiors



2. Indoor-outdoor garden shop belongs to department store but occupies separate location of its own. Indoor portion has airy, greenhouse atmosphere although ceiling is sprayed green acoustical material. Frames are Y-shaped rigid steel bents, 7'-8" at columns, 11' at tips of Y, designed as modified three-hinged arches. Secondary framing is I beams and channels supporting insulation-sprayed corrugated steel roofing. For easy erection and demounting, entire frame is bolted. Open outdoor portion has rolling canvas screens. A second outdoor portion, the "lath house," is permanently open, roofed with light aluminum slats. Hudson's Garden Center: Victor Gruen Associates, architects.



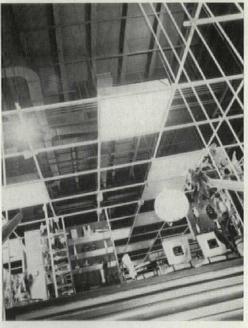
#### from a lively tenant group



3. "Underwater" fish store has corrugated plastic ceiling and rear wall, illuminated by sea-green light. Effect is fresh, cool and appetizing. Wire fish figures decorate lighted wall; window displays are aquaria. Great Lakes Fish and Poultry Co.: Sundberg-Ferar, designer.



4. Departmentalized shoe store gets three distinct departments into 2,000 sq. ft. Open stairway of oak inlaid with safety strips leads to men's section in mezzanine. Women's department occupies most of first floor, has decorative walnut display wall with concealed glass-shelf standards. Children's area at rear is set off by stylized animal mobile. The same modular lighting fixtures are used as strips or as squares in louvered ceiling. Exterior walls are entirely glazed with entrance recessed in corner. Movable window display units are glazed front and back. Phillip's Florsheim shop: Theodore Rogvay, architect; Jack Green, interior designer, assisted by William Heinl of Florsheim Shoe Co.



5. Illusory hung ceiling in furniture store is light steel gridwork on a 4' module, holding movable colored panels, inserted in geometrical patterns or dropped in where dramatic spot is wanted. Grid is painted stark white, camouflages almost to point of no-visibility the dark ductwork and ceiling 4' above. Scheme gives great lighting flexibility. Wall partitions are portable 4' panels fastening to ceiling grid and vertical light steel frame. Dramatic stairway to basement sales area has 8' terrazzo treads (no stringers or risers) supported from 5%" steel rods, 20' to 30' long. Englander's furniture store: Victor Gruen Associates, architects.

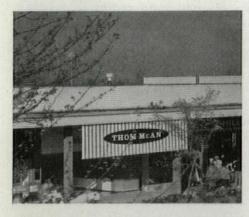
## NORTHLAND'S TECHNIQUES: innovations range from

## centralized air-conditioning refrigeration to asphalt traps for grass seed



Central utilities and service buildings are at corner of site, 1,000' from shopping center proper (see photo). Boilerhouse has central 900 hp steam plant and central 3,600ton refrigeration plant, supplies metered steam and chilled water to department store and to 40 tenant air-handling units in basement. (Small tenants have group units.) Big landmark water tower has reserve water supply. Decision for central refrigeration instead of separate tenant or block units was based on operating cost advantages, architectural appearances, savings in merchandising space. Decision against central air handling was based on tenant preference for individual control and on difficulty of metering air. Chilled water rates are based on costs at sliding scale (bigger the space, smaller the charge per square foot) plus percentage for administrative costs and charge for amortization of central plant. Center makes no profit. Steam charges are on same basis except no amortization charge for central plant. Electric power is sold to center wholesale from electric company substation on site and metered to tenants.

Elevators in tenant buildings include "underslung" type with machine room in basement, no penthouse required.



West sun control is provided by vertical awnings of uniform design, with store name in medallion (see photo).

Construction is reinforced concrete. Tenant buildings are framed one way (girders span three 40' bays and cantilever 10' from exterior columns) for ease of revision during construction and in future. Floor and roof joists are cast in place concrete with a thin 2½" topping slab which also facilitates future changes. Two tenant buildings are designed for addition of second floor; three others have structural provision for steel frame mezzanines which can be added when required. Department store's principal framing is two-way ribbed slab on column spacing of approximately 30' both ways. Boiler-plant framing has concrete bents spanning 58' to



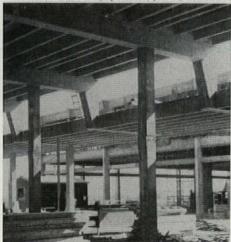
columns, then cantilevering additional 27'-71/2" beyond (see photo). Haunched beams of bents vary in depth. Slotted angle connections with compression springs allow for deflection of outer end of bents without damaging sash below, yet provide resistance to transverse wind loads.

Bus road in front of Hudson's (see p. 103) cantilevers 10'-5" from interior columns, is framed with 5" slabs supported on reinforced concrete cantilever beams which in turn are supported by flat girders, shallowest of which is 23" deep, 4' wide.

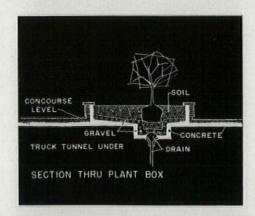
Exterior lighting poles are architect-designed. Ring at top supports ten floodlights on five yokes which may be dropped by cable to ground, 60' below, for servicing. (See top photo, left column.)

Grass seed on banks was held in place by spraying asphalt over the seeded slope. Says Landscape Architect Eichstedt: "The asphalt skin holds the seed until it germinates and breaks through, which it does, to the surprise of everyone."

Photos (below) Photograph House; (others) Ben Schnall



Canopies on tenant buildings are carried by reinforced concrete hangers supported on cantilevered ends of main roof girders (see photo). Bus canopies cantilever 14' in two directions at bus station; framing is haunched girders, inverted to give level soffit. Canopies between buildings are also framed with flush soffit, have inserts for welding seat angles into faces where future extensions are planned.



Truck tunnel roof, with spans up to 52', has 5" solid slab roof on girders up to 5'-5" in depth. Tree wells in planting boxes above are depressed below tops of girders (see sketch).

Basement has removable walls and slabs for below-grade expansion into future buildings. Angles were bolted into cast inserts to restrain wall against earth pressure. Removable portions are separated from permanent portions by coating contact surfaces of columns and of wall tops (where beams touch) with melted paraffin. Similar method is used for most removable floor slabs throughout Northland project.

## NORTHLAND'S CLIENT:

#### **Hudson's department store and**

#### the five Webbers who run it

Northland's thorough-going concern for the visual pleasure and physical comfort of the customer is simply an extension of the parent department store's big stock-in-trade.

Hudson's in downtown Detroit is famous for its interpretations of "the customer is always right." For instance, it has one of the most liberal refund policies in the world; in 1953, \$21,382,600 was accepted in return merchandise from its customers.

Hudson's is also used to doing things in a big way. Its 25-story downtown store runs neck and neck with Macy's in size, in a metropolitan area only a fourth as big as New York.

Hudson's is also conservative, no believer in leaning on promotions and gimmicks. Thus Northland's public opening was attended by no hoop-la, no advertisements, was discreetly heralded by polite mailed invitations to charge customers and neighborhood residents. The press preview was purposely held a week early to let the news fanfare die down. The really important pre-opening event was a preview for the downtown store's 12,000 staff members.

This extraordinarily successful store is headed by four extraordinarily retiring brothers and the son of one of them. The four elder Webbers are nephews of Joseph Lothian Hudson, who founded the store in 1881 and died a bachelor in 1912.

For years the Webbers were adamant against building branch stores, but changed their minds when the 1950 census showed Detroit's population growth was all on the edges. Once their minds were made up, they characteristically decided to do the thing boldly. They were not afraid to spend money for solid results, and so far as the first 21/2 months' operations indicate, this costliest of shopping centers promises also to be the most profitable.

For cynics who believe that "connections" count more than ability, the story of how Architect Victor Gruen got this job is instructive. In Detroit on a small architectural job in 1949, he took a look at Hudson's, studied the city and its growth pattern, went home and wrote a ten-page letter to a Hudson executive (who had never heard of him), outlining the reasons why Hudson's ought to build a branch store and shopping center. He received a reply by return mail, inviting him to drop in for a talk next time he was in the city. From exploration of the idea came exploration of sites and finally-with the census figures clinching it-the decision to do three centers, of which Northland is first and largest.

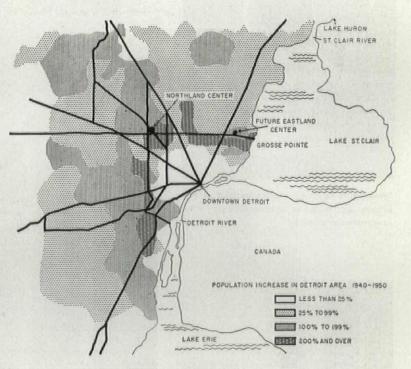
Preliminaries for Eastland, the second, are now being completed in the Gruen Detroit office and studies are under way for developing the 235 unused acres in the 400-acre Northland tract. The third center will be almost due south of Northland; thus the three centers will form the points of a wide, regular fan. As far as effect on the downtown store is concerned, the Webbers figure that the three new centers will simply give them their share of new business from the city's growth.

R. Steiner





The Webbers: left, James B. Webber Jr., vice president of both Hudson's and Northland and general manager of Hudson's; above, left to right: Oscar Webber, Hudson's president; Richard H. Webber, board chairman; Joseph L. Webber and James B. Webber Sr., vice presidents. All hold same posts at Northland.



Map of Detroit shows location of Northland and future Eastland in belt of heaviest population growth. Third center will be in this belt, south of Northland. Big 400-acre Northland tract was unbuilt because owned by college which at one time planned campus there. Eastland tract was farms.

Architect Victor Gruen was master planner and over-all coordinator from site selection to department-store color selection.

"Mobile Pool" by Richard Hall Jennings is "water sculpture." Fountain jets move objects, then dissolve into mists and sprays.





"Noah," heroic-size terra-cotta fountain by Lily Saarinen, has ark and animals at waist.

Much of the best popular art in the US today is done for children's books. Northland's sculpture has the verve, the inventiveness and the simple joy in life of fine children's book illustration.

Part of the delight is the true-to-character way the pieces reveal themselves. Noah, the patriarch, benignly dominates a court. But the sly wire cat almost hides in the bushes; he must be discovered and then there is the fillip of discovering the swallowed bird. And there is no way to get as close as you wish to the birds in flight; they are tantalizing and unattainable.

## NORTHLAND'S SCULPTURE: fun, fanciful and a little challenging

Photos: Photograph House; Ben Schnall

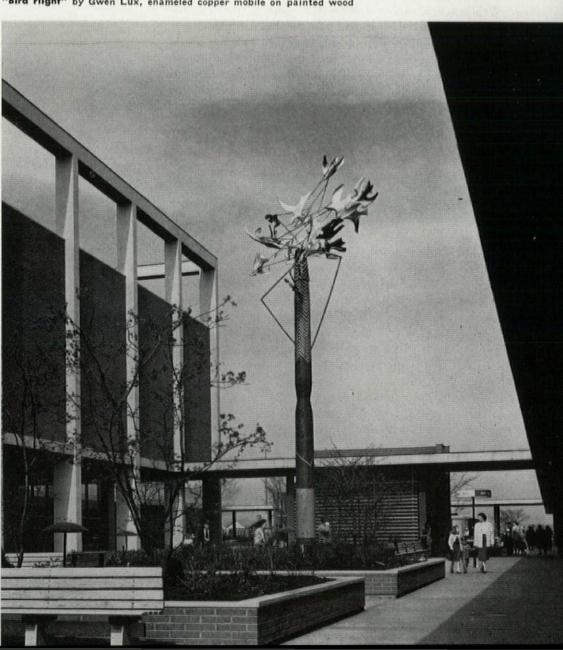


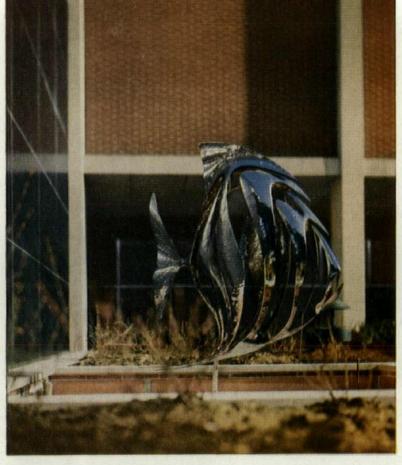
"Bear and Boy" of sandstone and gilded bronze by Marshall Fredericks is play sculpture for children.

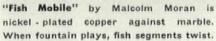


"Turtle" by Arthur Kraft is beaten copper

"Bird Flight" by Gwen Lux, enameled copper mobile on painted wood

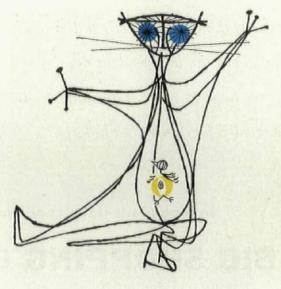




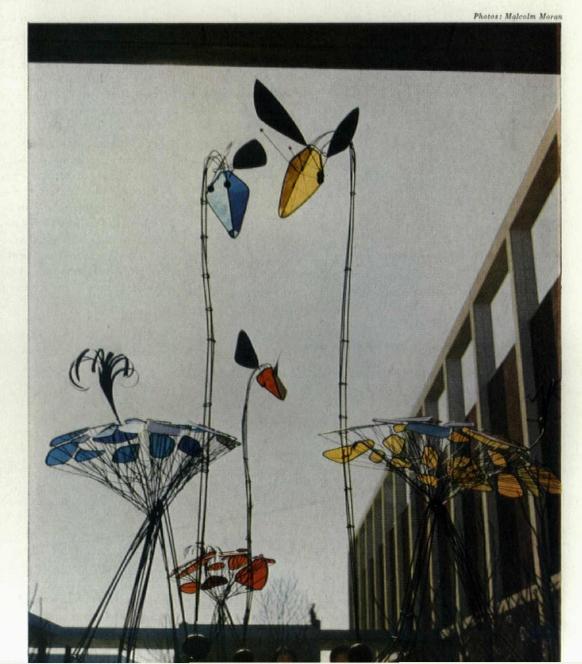


"Giraffe Family," also by Moran, is pure fantasy in glass and steel. Their long necks hook into bodies, are counterbalanced so creatures' lofty heads sway continually with gentle, gawky dignity. At night, lighting from below gives magical effect to moving, colored glass.

Additional sculptures not photographed here are: "Great Lakes Water Hole," ceramic map and animal group by Lily Saarinen; wood and painted steel "Totem Pole" by Gwen Lux (p. 109); copper and bronze "Fish Group" by Richard Hall Jennings; cast stone "Baby Elephant," and brass rod and enameled copper "Peacock" by Arthur Kraft.



"Cut that Swallowed the Canary" by Arthur Kraft is brass rod with glass eyes. Gwen Lux contributed brass canary mobile. In best folklore tradition of such mishaps, bird's heart, a prism, is still fluttering.



The big Northland Center on the preceding pages is owned by its big department store which therefore has the entire center's welfare at heart.

But what about the independent developer who cannot hope to make a dominating store pull wholeheartedly for the center-at-large?



Columbus Dispatch Photo

Independent Developer-Builder-Owner Don Casto is making a great success of the

## **BIG SHOPPING CENTER WITH NO "MR. BIG"**

"This is the time to get into shopping centers—just as there was a strategic time to get into railroad building or automobile manufacturing," says Builder Don M. Casto of Columbus.

So Casto has gone in for "mass production" of district-size centers—four ringing Columbus and another starting construction; two in Dayton; one starting construction in Toledo and another planned; one building in the Pittsburgh area, another located; and enough site explorations and negotiations under way (20 at present) so the law of averages will permit him to maintain his current rate of three centers completed a year. He expects a sales volume in his centers of a whopping \$200 million this year.

Like any mass producer, Casto has a formula. Aside from minor differences in layout and variation in size, Casto's centers all look alike and are alike.

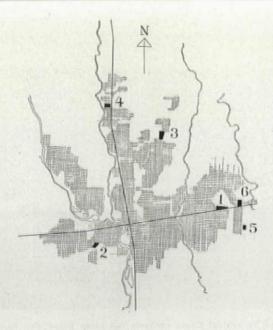
The formula is no lucky accident. Casto, who began building neighborhood shopping blocks in 1923, worked at his formula for more than a decade before trying it. His test effort, opened in 1948 on the outskirts of Columbus, is officially named Town & Country but with good reason is better known as "Miracle Mile." It has been so phenomenally successful that it has more than doubled its original size, soon will triple it. Casto says it does better than \$35 million a year, in 265,000 sq. ft. And the formula—in Casto's hands—has continued to click. His imitators have not done so well, possibly because they lack the advantage of having thought out exactly what they are doing and why.

Consistency is the secret of the Casto formula. The appeal of a Casto center as a whole is absolutely consistent with the appeal of the supermarkets and the mass-market national chains that are its base.

Most important—the Casto formula is also absolutely consistent with Casto's own role as an independent developer and builder. He does not stack the cards against himself by depending on one or a pair of dominating stores. Perhaps this is his biggest lesson for other developers who do not own and operate stores.

#### Casto's formula:

- A site between suburbs and farms
- A half-dozen middle-sized majors; no dominating store
- High proportion of national chains
- Duplication of store types
- Strip layout with store strength spread evenly
- All front parking; vehicular window shopping
- Fivening shopping six nights a week
- Carnival spirit
- Design for easy maintenance
- ▶ 100% rentable area—no center-operated services
- > Self-running developer-tenant management
- ▶ Guaranteed rents covering all financing and operating costs
- Purchased land, no leasehold
- Amortization in 25 years



Here is why this point is so important:

To work properly as a magnet—to pull for the whole center a big department store must make many short-range concessions. For instance, it must be less handy to parking than smaller stores; it must gear its everyday merchandising—sales, policy on exclusives, promotions—so they do not produce anemia in the rest of the center.

This kind of "altruistic" cooperation is possible when the dominating store has an urgent financial interest in the success of the whole center—when it owns the center wholly or in part.

But what happens when the dominating store is just another tenant—or rather a tenant that knows full well it is the vital tenant? The developer is a lucky man if the department store does not demand concessions—instead of making them. It is apt to insist on the lion's share of choice parking, it will bargain to bear less than its fair share of rent. (A healthy center greatly benefits its biggest tenant, so theoretically the "Mr. Big" should not behave like this; but in real life he usually does.) The developer is in a box: without "Mr. Big" he has no center. With it, he risks having a giant flourishing tenant paying scant return and a group of theoretically remunerative starvelings.

Casto has side-stepped this trap by concentrating on another kind of pull entirely. His base is the cumulative attraction of half a dozen good-sized stores, fairly evenly matched in size and power, mostly chains, with a strong representation of powerful national chains among the smaller stores, too. Of Miracle Mile's 70 stores, national chains occupy 60.6% of space, local chains and independents 39.4%, a typical ratio. The major stores are three supermarkets (44,130 sq. ft.), three junior (soft-goods) department stores (77,350 sq. ft.) and two variety stores (43,300 sq. ft.).

This is the pull not of giants but of a crowd. Incredibly enough, it also seems to be partially a pull of sheer duplication. When Miracle Mile doubled itself, both Kresge and the drugstore put in second stores, almost identical with their existing places several hundred feet away. In the tripling process, Woolworth and another drug firm will get in. Does it work? The chains in Casto's centers are among the national record-breakers.

The "granddaddy" of this scheme, as Casto likes to call it, was a neighborhood center he built in 1929, containing four grocery stores, a drugstore and not much else. It pulled beautifully through the depression; never a vacancy when stores elsewhere were going begging. Casto was convinced the *four* grocery stores did it. He drew two conclusions: 1) concentrate on necessities; 2) concentrate on multiples to get a "cumulative magnet." He saw no reason why these principles would not work on a big scale if all the other factors—location, layout, promotion, financing, management, were worked out properly.

#### Columbus centers:

- Miracle Mile (started '46, opened '48); 23 acres; 265,050 sq. ft.; 2,000 cars, 3-to-1 parking ratio.
- Central Point (started '51, opened '52); 131/2 acres; 130,260 sq. ft.; 1,000 cars, 3.5-to-1 parking ratio.
- Northern Lights (started '53, opened '54); 50 acres;
   301,150 sq. ft.; 3,000 cars, 5-to-1 parking ratio.
- Graceland (started '53, first blocks opened May '54); 33 acres; 270,036 sq. ft.; 2,600 cars, 4-to-1 parking ratio.
- 5. Great Eastern (in construction); 141/2 acres; 146,325 sq. ft.; 1,000 cars, 3-to-1 parking ratio.
- Office City (ground being cleared); 60 acres.
   This is a new kind of project, a suburban office, light storage and light industry center between downtown and airport, to include tenant parking, shopping, motel, recreation facilities (See AF, Apr. '54, News).

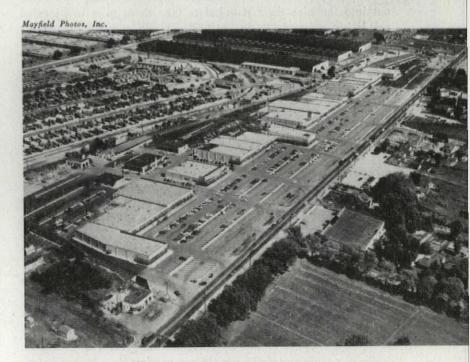
#### This is where Casto's own temperament enters in

He is a "sure thing" gambler, a man with that fortunate paradox of instincts—love of taking a chance, plus the will and patience to discipline all the elements in his gamble. He also genuinely likes people at large and is fascinated with all the details of their behavior. (Gruen, designer of Northland, is also conspicuous for this attribute; it may well be a vital quality for shopping center creators!)

Combining his drive for a sure thing with his outlook as an informal and affectionate sciologist, Casto worked out the dove-tailing ingredients of his formula.

#### Location: in between town and county

Casto picks his sites on "the outskirts of town" just beyond the new suburban housing projects—as he calls it, "the place where town and county meet." He pulls his customers outward from the city, inward from the farms and retired-farmer towns. This, he figures, gives him two immediate good markets plus about 25



"Miracle Mile" in Columbus was Casto's prototype center. Original part is in foreground, bracketed by stores set forward. Expansion along straight line more than doubled size. Second expansion is now starting at far end, across highway, will stretch beyond upper right corner of photo.



Walter Neuron

Carnival atmosphere is abetted by typical Casto center's tall lamp poles and flamboyance of store signs

years of location in an expanding population area and another 25 years on the plateau of a mature residential district.

He pinpoints a location on the ring around the city by choosing a road local people like to travel. This is not necessarily the same as the road with the biggest traffic count. For instance, Miracle Mile is on East Broad St. although parallel to East Broad is the more highly traveled Main St. "People in Columbus love East Broad," says Casto. "Coming in or going out, they get on East Broad as soon as they can. Main St. has more traffic but those are the people who don't know Columbus—the hooked-rug, motel, pottery crowd, not our customers. You find just this same situation in most towns on gentle land where there are plenty of roads in and out. People have path-habits, like ants, and the important thing is to understand the local path-habits."

Casto conceives of his centers as "terminals," analogous to the amusement-park terminals of the old open-air trolleys. "Families like to go for a short drive in the evenings," he says, "but they want the drive to arrive at some place. What kind of a terminal does the great 80% have now? The movies or a saloon. My centers fill that need in a way suitable for the whole family. The country people drive in to the bright lights; the townspeople drive out into the air; their path-habits take them to a well-located center just as surely as the old trolley tracks ended at the park."

So far, none of Casto's centers has been in competition with a department-store branch center, and probably will not be for a long time because he prefers cities too small to support suburban department-store branches. When he does sally into a big metropolitan area like Pittsburgh, he keeps to the countrified edge.

"The final big thing is to get there first. The first center in a district has a big competitive advantage."

#### Layout: a strip of stores beyond a parking lot

All Casto's centers are essentially plain, one-side-of-the-street strips—sometimes straight, sometimes in an L or wide arc, depending on site. Store strength is spread as evenly as possible along the whole strip. Almost all parking is between the strip and the road. The rear is a service alley with a modicum of overflow parking. (Miracle Mile—the test center—has generous rear parking but this does not pull its weight.)

Instead of pioneering a new era of pedestrian shopping, as Northland does, Casto's centers are the culmination of vehicular shopping. Parallel to the store fronts, alongside the pedestrian walk, is a cruising lane so people can window-shop by car before parking. This device requires a parking-lot layout that on the surface appears awkward but in context is sensible. Parking is at right angles to stores, which automatically reduces cross-traffic

into the cruising lane (see plan). The layout also "clogs up" the lot so there is no clear stretch on which a car is apt to attain more than 10 mph. This inability to make any speed is a calculated safety device which Casto believes is worth any number of supplementary controls. So far, with more than five years of operation behind the oldest, none of the centers has had an accident more serious than a scraped fender.

#### Appeal: night selling in a carnival atmosphere

The visual come-on of these centers is simple, corny and all but universal. Anybody who has ever gone into a small town on Saturday night has felt a version of it. The long, bright, busy-looking strip, glittering behind the well-lighted parking lot, has a pull that must go back to the first campfire.

Casto has exploited this pull by insisting that every tenant must keep selling hours of noon to 9 p.m. six days a week and must have a lighted sign. Both these requirements were radical innovations for some of the chains and were accepted very reluctantly. But the open-every-evening policy, with its attraction for family shopping expeditions, has been so successful that some of the initially skeptical chains have adopted it nationally for their suburban stores. Three nights a week should statistically be at least half as good as six nights, but Casto thinks it is not because people just cannot remember which are the three nights. As for no morning hours—stores used to open early, he says, primarily to get the stock dusted off and arranged by noon; no need for that with air-conditioning.

The centers' civic appeal is folksy. Casto provides free selling space for church bake sales, firemen's rosebush sales—for any civic organization that wants to cut in on his crowds, and a gratifying number do. He uses promotion stunts during the time a center is becoming established and occasionally thereafter when he thinks some ginger is called for—square dances on the parking lot, wrestling matches, circus stunts, car raffles, but always after shopping hours. These affairs do not have the rather desperate, hang-dog quality of such doings in more "high-toned" establishments; they are in harmony with the general gusto and informality of the strips.

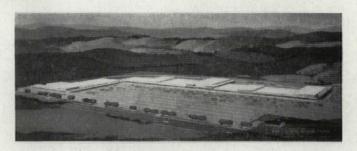
#### Design and construction: no extras, all rentable space

Casto's architect, C. Melvin Frank of Columbus, began his own shopping center pondering after observing Southern California drive-ins during a vacation trip. He threshed over his ideas with Casto, an old acquaintance; the two were in basic agreement and Frank has designed every Casto center.



R. C. Uvale Associates

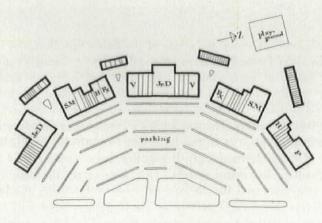
Two centers now in construction: Great Eastern, fifth Casto center for Columbus; first Casto center in Pittsburgh area, at Monroeville about 12 mi, from city (below). Graceland now being completed in Columbus uses same L plan with blocks on long leg stepped gently down slope. C. Melvin Frank is Casto's architect.



The chief building economy is elimination of extras (Casto calls them "complications"). There are no service tunnels, no pickup stations, no central utilities, no center-run public amenities such as toilets or gardens. Aside from the parking lot and sidewalk canopy, virtually 100% of construction is rentable area. Costs run from \$9.45 to \$16.85 per sq. ft. of rental area, with the larger stores costing the higher figure, mainly because of differences in mechanical equipment.

What is built, is built well. Walls are masonry, faced with buff brick on sides and rear, with matte-finished glazed tile in light buff and green on the front. Roofs are framed with steel joists, interior partitions are block. Most expensively built portion is the 8'-wide continuous sidewalk canopy of cantilevered steel. Store fronts are mostly full glass with aluminum frame. Casto is adamant on no imitation materials. He calls the architecture "plainmodern" (others might call it "corny" or "restrained supermarket"). He thinks this style is most acceptable to the most people. ("If you Williamsburg it up, you scare off a lot of plain folk.") It is not stylish, but there is nothing drab or shoddy about it and the materials maintain easily and wear well. The older portion of Miracle Mile, finished in 1948, looks as clean and new as the first blocks of Graceland, opened last month.

Liveliest design element is the store signs—mostly big, bold, brilliantly colored three-dimensional block letters set at the canopy edge. Casto keeps close control of signs, insists they be well-done, and recognizes the value of variety. While this treatment is not architecturally handsome, it does convey exuberance and punch, more so from the road and parking lot than from close by.



Store layout of curved Northern Lights center in Columbus is typical of all Casto centers, whatever the strip shape. (Store symbols, reading clockwise, refer to junior department store, supermarket, hardware, drug, variety and finally, furniture.)

#### Financing: a depressionproof rent-cost ratio

Casto buys his sites outright ("We believe in those sites and want to own them"), thus finances on fee ownership instead of lease-hold. He gets his building money from insurance companies on first mortgages, amortized over 20 or 25 years, preferably 25. His own contracting division does the building. Because of his layout, with at least one important, top-credit store in each building block and no over-all services, he is able to finance his centers a block at a time or in a blanket deal, whichever is more advantageous at the moment. His guaranteed rents fully cover his financing and operating costs. Having been a store owner during the last depression, Casto is determined on a "depressionproof" setup. This is one reason for his heavy dependence on the massmarket chains; he thinks they are most flexible in their pricing policies.

#### Management: promotion without promises

Casto has worked out a management device calculated to keep him and the tenants out of each other's hair. It is a model of simplicity. Tenants in each center form a Merchants' Assn. with an executive secretary whose salary is paid half by Casto, half by the association, which levies dues of  $10\phi$  per sq. ft. of selling area. Committees supervising publicity, decorations, promotions, etc., are elected among the tenants. All suggestions for action, whether from Casto or tenants, go to the secretary who refers them for approval to the proper committee. Then the secretary undertakes the job of getting an O.K. from all the chains' home offices, which has proved far more expeditious than leaving this responsibility with tenants. Casto commits himself to nothing but exterior building maintenance, but in practice he also cleans up the parking lot and takes care of most snow removal, using one maintenance crew for each city where he operates.

"People just naturally don't want to give any extra credit to the man who gets their rent check," says Casto. "If you promise anything, then they look at it as just part of what they are entitled to." Casto promises nothing, actually pays for a good deal of promotion. He always has the bill sent to the Merchants' Assn., followed by his own check. "If they don't see the transaction on their own books, they forget you did it."

Casto now has negotiations under way in a dozen cities from West Virginia to Missouri. When he considers an area, he first sends out two field men—separately. Each of them studies the city two weeks, prepares a report including site suggestions. Then Casto and his son Don Jr.—his chief assistant—visit the

continued on p. 220



Photos: Richard Garrison

## MEDICAL CENTER TAKES TO AIR TO MAKE SPACE

Best site for a professional building is often in a congested apartment-house area where parking is almost impossible. This building is on such a site, but it has no parking problem. The ground floor is primarily a parking lot for the clients of the architectowner and the patients of his seven doctor-tenants. It parks 41 cars.

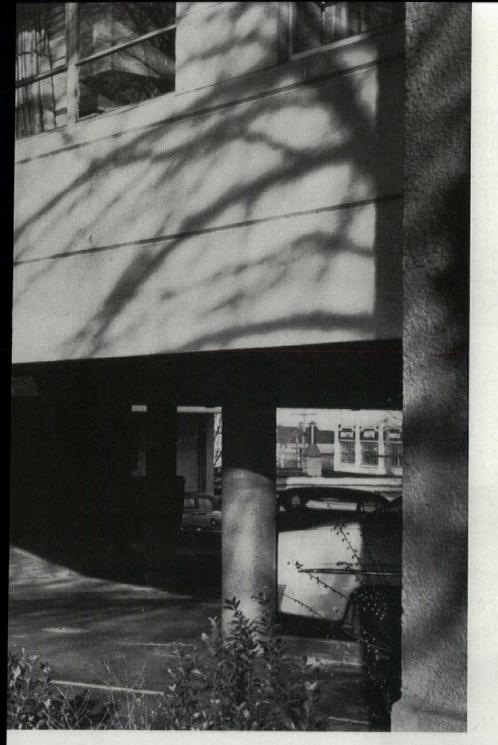
High cost of the land suggested the second-story scheme. This design upped the cost of the office space (to \$20 per sq. ft.) but not so much as the cost of an additional lot for parking, if one had been available. The F-shaped portion of the building which is in the air (the medical center) is cantilevered out 7'-6" from supporting 16' round, reinforced concrete columns spaced about 17' o.c. The concrete floor slab is insulated by 1½" of cork, and all waste lines are concealed and weather-protected within the big round columns.

Other mechanical and electrical services are housed in utility

channels beneath and at the edges of the slab where they also conceal the slabs' framework from passers-by. These channels run the entire length of each wing on both sides and carry all heating and water pipes. Covered with cement asbestos board, the utility channels are easily accessible for maintenance and to accommodate future tenant changes. The water pipe is insulated against freezing.

The heating plant is in the basement beneath the ground-floor offices of the architect-owner. It supplies the two-zone forced hotwater radiant baseboard system. One zone serves the architect's office, pharmacy and the doctors' offices directly above; the other zone covers the elevated portion of the building. Baseboard radiators are restricted to exterior walls to simplify future partition changes.

Windows are big but are protected on the south and west by continuous rows of wood louvers set in metal T bars projecting



LOCATION: Seattle, Wash.

GEORGE W. STODDARD & ASSOCIATES, architects

NELS HEDIN, general contractor



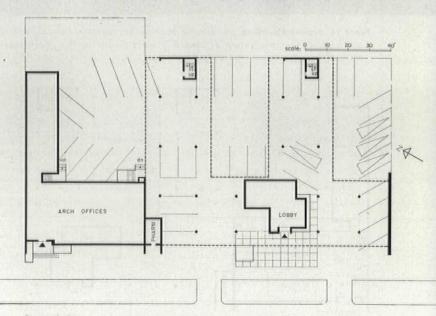
Open first floor makes room for "in" and "out" driveways and parking space for 41 cars, half covered by wings of second-story medical building

## OR PARKING

3'-6" out from the building. These eyebrows are the building's chief design feature.

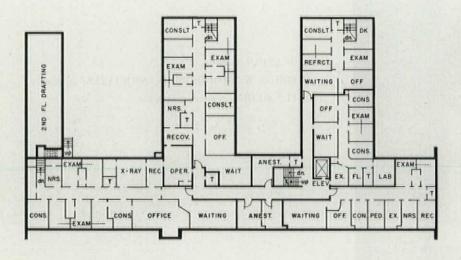
When Architect Stoddard decided to build his own offices, he chose this site for its ideal location: within 10 to 15 minutes of the smart residential area and within five minutes of Seattle's central business district. Convinced that a one-purpose building in such a highly specialized field as architecture is not a good investment, he was happy to find a big 120' x 180' lot which would make room for a "recessionproof" two-purpose professional building (most of the city's hospitals are nearby). With business recession, he can rent portions of his office space to more doctors or dentists, and if he wants to expand, he can extend his drafting-room wing into the parking area without interfering with the rest of the building.

Cost: \$297,600 excluding land, landscaping and furnishings.



Ground floor of building consists only of architect-owner's office and small pharmacy (left), lobby for upstairs medical clinic and, at rear of lot, two small fire-stair enclosures.

SECOND FLOOR

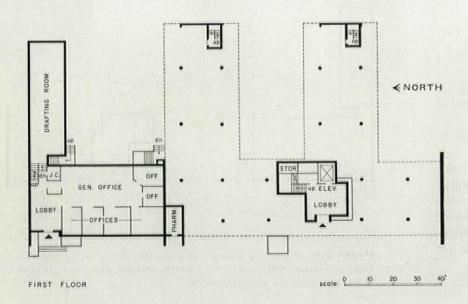


Doctor's corridor has painted plaster walls, naturalfinished birch trim and doors, cork floors. Five suites open off corridor.

## UPSTAIRS: a variety of small rooms to



Entry to architect's office, on ground floor is at opposite (north) end of building from parking lot. Projection at center of west facade marks pharmacy.



## **DOWNSTAIRS:**

## a plush, spacious office for



Reception room features brick wall carried into building through glass front. Doors of painted fir are hung on heavy freestanding casing.



**Examining-room** partitions are painted plaster on studs with mineral wool blanket between suites for sound protection.



Recovery room has radiant baseboard which extends around entire building to make future partition changes easy.



Laboratory has built-in counters finished in vinyl plastic. Floors are asphalt tile; lighting, incandescent.

#### meet the needs of seven doctors

Upstairs rooms are many and small, tailored to the peculiar needs of doctor-tenants. In addition to five suites, the central hall serves a joint operating room for minor surgery and offices for several anesthetists.

Downstairs are the spacious and handsome offices of the architect-landlord: private and general offices to either side of an airy corridor (right), a drafting room for the designer and his mechanical and electrical assistants (photo below) and above that a duplicate room for architectural draftsmen. In the basement: a concrete vault for the "job morgue," blueprint equipment room, rest rooms and recreation room.

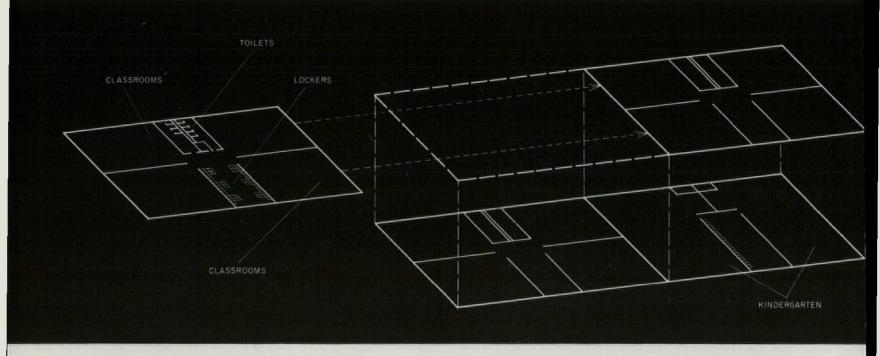
#### architect-owner of building



Drafting room, 17'-8" wide, 53' long, is daylighted from the south and has combination of incandescent and fluorescent electric light. Walls are painted concrete block. This room is on first floor.

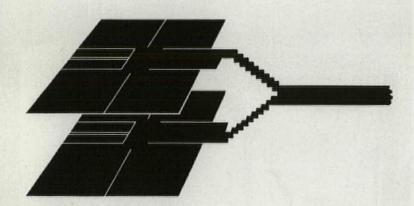


**Private offices** are screened from corridor by panels of translucent corrugated glass; general office space is to left of cedar chipboard space dividers, which double as tack boards.



Four-room clusters, each with its own entry, locker room and toilet facilities, are arranged side by side and atop each other like garden apartments to form a new kind of two-story school.

## Four-room units are grouped like two-story apartments



Split-level entry: each four-room cluster is half-flight of stairs up or down from corridor link with assembly-play building. Entry is at far end of link.

THE ARCHITECTS COLLABORATIVE, architects
STEED BARBER CORP.

STEED BARBER CORP.

#### NORTHEAST ELEMENTARY SCHOOL

▲ Waltham, Mass. ▲ 12 classrooms plus 2 kindergarten rooms (equal to 4 classrooms). ▲ 420 pupils.

Features: Classrooms arranged in four-unit clusters in two-story building with split-level entries A Lockers in vestibules to keep odor out of classrooms and increase classroom working surface. A Assembly room, con-

Classrooms grouped in detached clusters have the small, child-scale advantage of the little red schoolhouse. Classrooms in a row have the advantages of economy and easy administration. Combining some of the advantages of both schemes, the unusual classroom block of this new school consists of four clusters of classrooms grouped like apartments in a two-story building with two split-level entries. The design won a top award in the recent competition sponsored by the American Association of School Administrators.

Because the local code requires fireproof construction for classrooms, it was economical to stack the clusters. Because the corridorless clusters can be framed in almost square (24'-6" x 26'-3") bays, the classroom block (like the administrative block) was easily engineered for lift-slab construction.

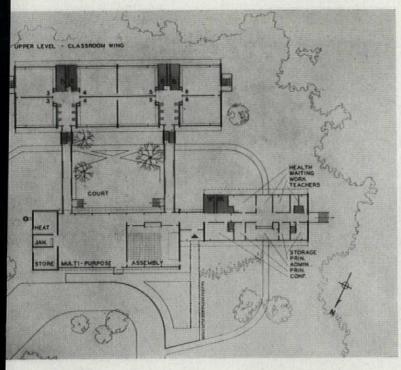
The other block is of mill construction; its laminated arches and pitched roof easily span the 45' width (not feasible with lift-slab construction) and give added height to the multipurpose room and to the 200-seat assembly room.

ceived as "little theater," is separate from multipurpose space, has movable seating and stage.

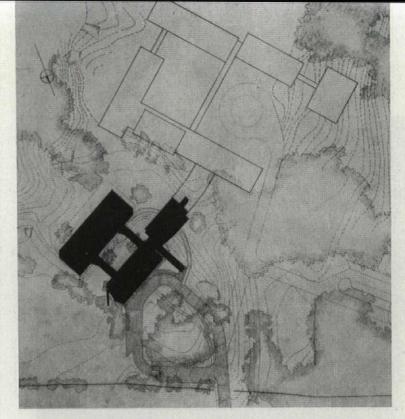
Construction: classroom and administrative blocks have concrete lift-slabs on concrete-filled steel columns A Play and assembly block of mill construction with laminated wood arches A Wall panels finished with porcelain-enamel steel on exterior, tack board surface or painted

steel on inside ▲ Circulating hot water heat.

Costs: \$424,011 contract, including landscaping (about \$12,000), but excluding architect's fee of \$33,920 ▲ \$12.75 per sq. ft. ▲ Significant items in cost breakdown: concrete foundations and floor slab, \$29,037; concrete for lift-slab, \$27,078; labor for lift slab, \$10,013; wood arches, \$4,609; porcelain panels, \$5,420; heating, \$57,130.



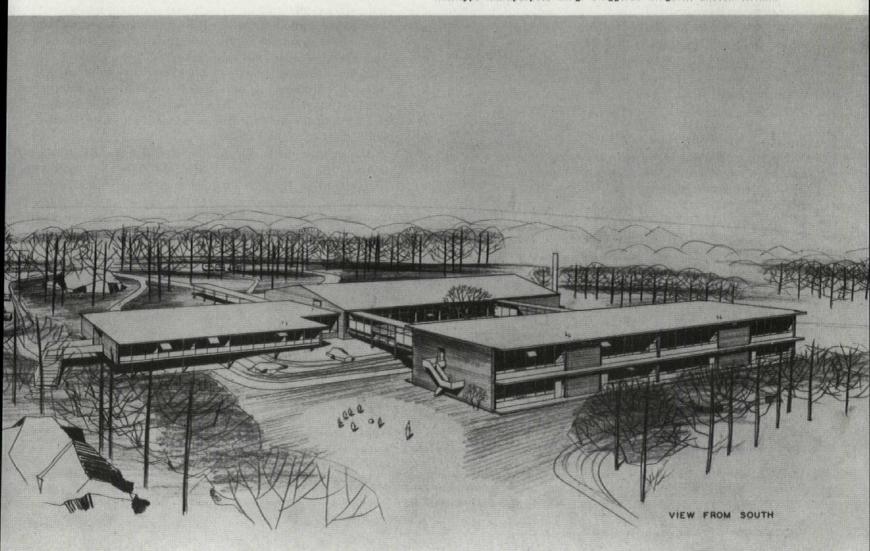
Three-part plan consists of 1) classroom block with its two 70' long corridor links, 2) wood-framed play and assembly block and 3) administrative block on other side of main entry vestibule.

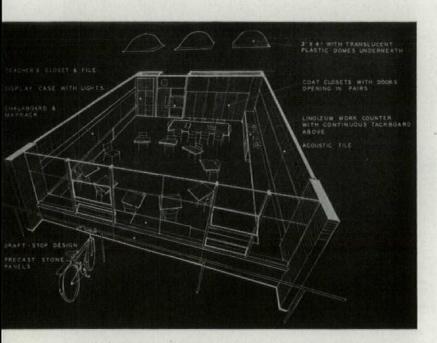


Provision for expansion: future junior high school will connect with extended administrative block of present school, explaining off-center location of this block. Site contains about 40 acres.

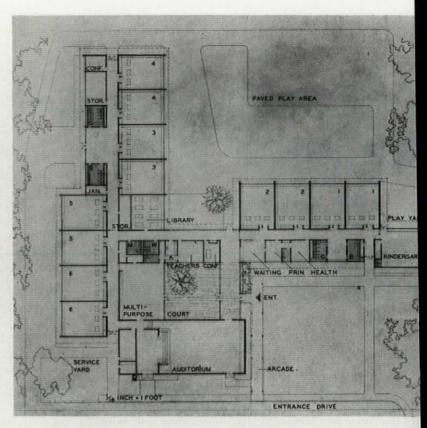
## in a prize-winning school designed for easy expansion

View from south shows flat roofs of lift-slab wings, low-pitched roof of mill-type multipurpose wing. Staggered wings fit uneven terrain.



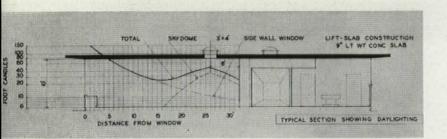


Typical classroom is 32' deep, lighted by 26' wide window wall and three  $3' \times 4'$  plastic roof domes. Corridor partition consists of coat and storage closets and display case.



Compact plan has three classroom wings facing in three directions and radiating from central core of nonclassroom facilities. Multipurpose room serves as dressing room for auditorium.

## Deep classrooms are arranged in pinwheel wings to produce



Daylighting curves show how level of light in rear half of classroom is raised from average of about 13 foot-candles (from side wall window) to average of about 37 foot-candles (from skylight). Roof projection of 4' shields classroom from direct sun, and top lighting is diffused by transluscent plastic panels beneath skylight domes. Corridors are also top-lighted.

Because the town of Warwick, R. I., is committed to neighborhood-type schools with identical programs, it can profit by a high degree of design standardization.

Its two newest schools are identical and are a little less than twice as costly as one school—mainly because the two-site job was big enough to interest larger, better equipped contractors and because the architects were satisfied with less than two full fees.

Although one site is hilly and the other flat, the school works equally well on both. Reason: the plan is compact with 32' deep classrooms lined up in three rows radiating out from a central core of nonclassroom facilities. Thanks to diffused top-lighting and 4' overhangs, the classrooms can face in three directions without worrying about sunshading and daylighting. Because the deep classrooms are relatively narrow, they fit handily within the 26'-6" bays of the lift-slab construction.

ALBERT HARKNESS & PETER GEDDES, architects

THE ARCHITECTS COLLABORATIVE, associated

DIMEO CONSTRUCTION CO., general contractor

SEVERUD, ELSTAD, KRUEGER, structural engineers

BOLT, BERANEK & NEWMAN. acoustical consultants

WARREN A. SHERMAN and
CHRISTOPHER RHODES SCHOOLS

A Warwick, R. I. & 12 classrooms
plus kindergarten & 390 pupils.

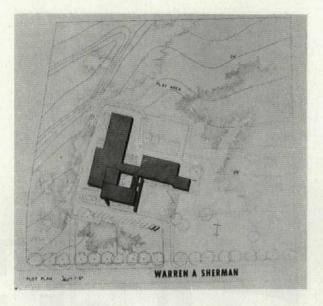
Features: One plan for two schools on widely different sites, built under one contract ▲ Deep top-lighted classrooms to minimize perimeter and corridor length ▲ Community-use rooms grouped for separate op-

eration and maintenance & Classroom wings grouped around central nonclassroom facilities to create economical, compact building.

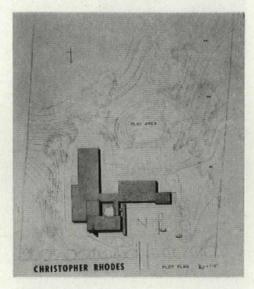
Construction: 9" lightweight concrete lift-slabs on concrete-filled columns A Precast concrete panels with integral color under classroom windows A Twopipe, high-vacuum heating sys-

tem with unit ventilators under windows A Air exhausted from classrooms through coat closet into corridor ceiling plenum A Under-window bookcases and cabinets carry piping to make trenches unnecessary and facilitate lift-slab construction.

Costs: \$815,200 contract for two schools including landscaping but excluding furniture and fees \$ \$14 per sq. ft.



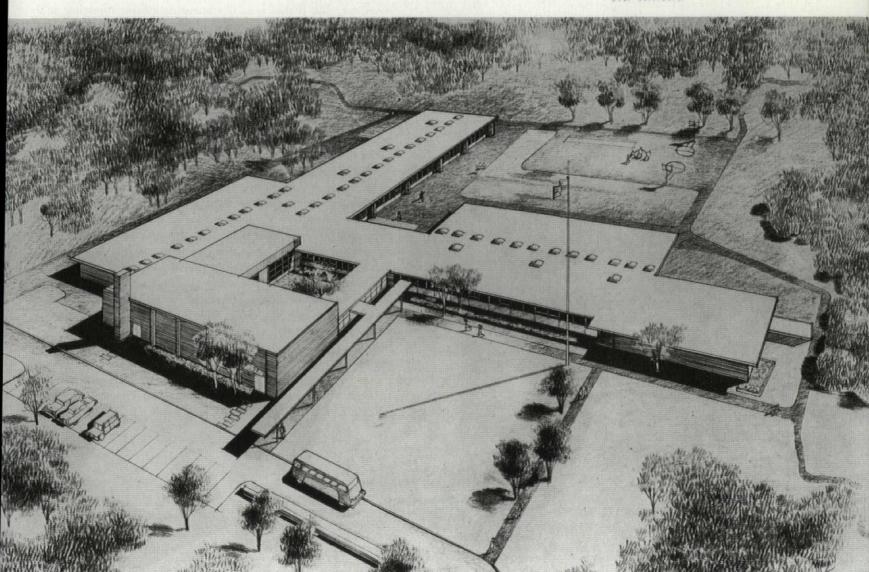
On flat site, Sherman School faces directly north, requires very little grading. Note U-shaped driveway.



On hilly site, identical school faces same direction but sits on graded platform.

## compact school for two different sites

Bird's-eye of school on level site shows how north facade is dominated by relatively high auditorium block. Rows of closely spaced skylights are over classrooms; widely spaced lights are over corridors.





ALINE B. SAARINEN, bride of Architect Eero Saarinen and associate art critic of the New York Times, delivered the following address before the 1954 Gold Medal Dinner of the Architectural League of New York.



## AS ARCHITECTURAL DECORATION

Modern buildings
need more than
Jane-Russell-type
murals and blown-up
ash-tray sculpture.
How to get it:
a new working
arrangement
between architects
and artists

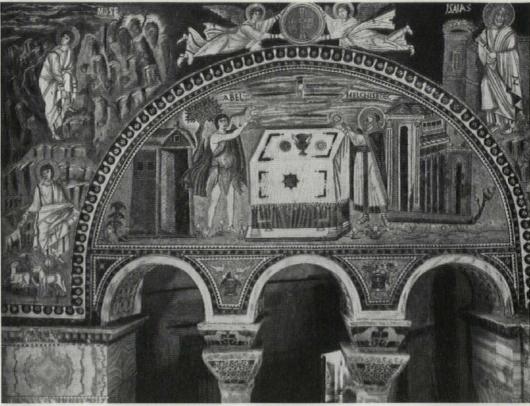
The flirtation between modern architecture and modern art—and I use the word "modern" to mean the progressive, alive, advancing work in both fields—seems to be ripening into a marriage. But if this is an obvious occasion for rejoicing, it is perhaps equally a moment for caution. For, although there are an increasing number of examples where art has been used with architecture, there have been very, very few good ones.

True, we have gotten away from the Neoclassical, rosyclouded, nightgown-clad, figured allegorical murals; from the antiarchitectural overscale, overstated Mexican murals with Jane Russell-type Mother Earth figures; and from the socially conscious documentary and the Happy Farmer-type inflated calendar art (though the latter seems still to be running herd in Texas).

But we have not gotten away, or at least far enough, from art which substitutes stylization for style, from what we might call (and we meet it in architecture, too) the streamlined or slip-cover stuff. These are the painted murals which flatten the figure to pancake thinness and put a Cubist gauze over a scene, refurbishing without revitalizing traditional forms. These are sculptures which sheer and shave that inevitable eagle to be as sleek as an automobile radiator cap or stylize the Macfadden musculature of a figure so that it looks like a streamlined version of those embarrassing photos of male models. These are sculptures that simply enlarge what would be unpretentiously acceptable at ash-tray scale.

Nor have we gotten away from—in fact, we seem unfortunately perhaps just to be getting into—whimsical wire sculpture less organic and organized than the landscaping in which it is set.

Sixteenth-century mosaic in Basilica of di S. Vitale in Ravenna, Italy, is an example of "perfect architectural adornment."



by Aline B. Saarinen

Alinari; courtesy The Metropolitan Museum of Art

Nor, again with a few strategic exceptions, do we seem to have found a relationship of art to architecture which, in terms of space and architectural form, has particular vitality and meaning for our time and our architecture.

An architect who uses art is presumably motivated by two considerations:

▶ One is the *esthetic* or *formal* reason, in which the art is asked to enhance; to embellish; to establish or emphasize or set up new relationships of scale, proportion, form and space; to furnish color, texture, pattern, contrasts of light and shade.

▶ The other is the *expressive motivation*, in which the art is called upon to communicate.

#### **Decoration for architecture**

Ours is an architecture (as the Gothic was, and the Renaissance was not) in which, as Geoffrey Scott puts it, the requirements of constructive integrity in fact and constructive vividness in appearance are satisfied simultaneously and by the same means. Ours is an architecture which seeks its beauty and its meaning, as well as the satisfaction of its practical demands, through the honest, logical and revealed use of its architectural vocabulary. As it matures, modern architecture seems increasingly aware of the effect of structure on the human spirit: and by emphasis, by dramatization, by making vivid certain elements in its language, it is using the architectural vocabulary itself for expressive communication.

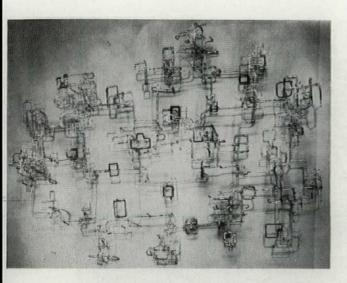
Now, since this expression derives from the honest use of the architectural vocabulary, rather than applique, or extraneous devices, or falsification, or allusions and associations, it seems obvious that modern architecture should want art to serve it as architectural decoration.

By that I mean that—whether it is a freestanding piece of sculpture which defines space by punctuating it or whether it is a mosaic mural incorporated into a facade—it must be accessory to and subordinate to the architecture in both form and expression.

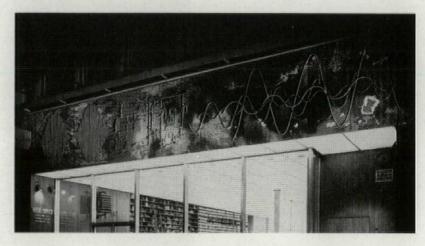
There is much great art-such as Masaccio's frescoes in the Brancacci Chapel or Tamayo's recent painting for the Dallas Museum-which fails completely in its relationship to architecture. There is some esthetically questionable sculpture, such as that by Carl Milles, which is still admirably related to architecture. And, finally, there are such examples of perfect architectural adornment as the mosaics in the Basilica di S. Vitale or the carved figures on the west portal of Chartres, which are also great art. But in terms of their relation to architecture, that is not the primary requirement. I have purposely avoided the word "integration," for that implies an equality between art and architecture which may happily arrive as a result but in which I do not believe as a goal. I repeat that I believe we should think about and look for art which is no sense upper-case, exalted, self-sufficient expression, but art which is willing to be architectural decoration, something which will make the emphasis, the dramatization, the "vividization" of the architecture.

If we admit and accept the fact that art must be subordinate to architecture, I think we not only clarify the whole situation, but it follows logically that the responsibility is the architect's.

How can he best discharge it? I believe, by accepting the two basic responsibilities discussed on the next page.



Linear sculpture, "The Clouds of Magellan," is a 52" x 70" x 181/2" composition of bronze, steel and copper by Ibram Lassaw for Architect Philip Johnson's guest house in New Canaan, Conn.



Symbolic mural of neon on colorful porcelain-enamel steel is an interpretation of electronics for exterior of Radio Shack in Boston by Georgy Kepes for Architect Carl Koch.



continue

#### Setting the artist's ground rules

The first is being willing to set the ground rules on both formal and expressive levels. This does not mean just nonchalantly leaving a wall or patronizingly providing an area or courtyard of space. It means thoughtfully deciding as part of his basic concept why and where he wants art. How is it to articulate his structure? Is it to emphasize the nonload-bearing character of a wall? Is it to emphasize the expression of an upward thrust? Is it to furnish color or texture, and is this to be counterpart or contrast? And so on and so forth.

I think he must have confident convictions about the scale, the general form—the so-called formal aspects of the art—completely worked out before the artist is summoned. He should go so far, I believe, as to make these concrete and visual on a model. He must, if you will, be himself a little more of an artist. To sum up, he must be totally responsible for the syntax, the formation and pattern of the sentence—though he needs the artist, because the artist is skilled and imaginative in the choice and use of words and phrases that will compose the sentence, that will, indeed, breathe life into it.

And having established the formal ground rules, the architect must also be convinced of how he wants the art to reinforce the emotional expression. He must, I believe, explain to the artist what effect he wants his building to have, what structural means he has employed to that end and where and in what spirit the art should reinforce and articulate that expression. Where is the mystery of a closed area to be enhanced? Where is the playfulness of a curved wall to be emphasized? And so on. It would obviously be ridiculous if he designed a building which in all its structural and architectural effects bespoke itself as a garage

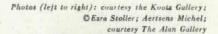
and then asked the artist, by supplying a statue of a Muse, to make it look like an art museum. But, if by his materials, his plan, his structure, his proportions he has achieved the expression of an art gallery as an harmonious, inviting, pleasurable, informal place, it would be equally ridiculous to allow a sculptor to make a grandiose, pompous expression at variance in means and manner with his own.

By asserting that the artist should be called in only after the architect is firmly convinced about how the art should articulate and reinforce his total architectural expression, I do not feel the artist's own talent will be stifled. The limitations of the sonnet form do not preclude great poetry or moving expression; the spirit and restrictions of the minuet do not prevent personal and imaginative creation. In fact, the disciplines and challenges of boundaries and limitations may even inspire the artist to great intensity and personal expression. Perhaps he will learn much from being a little more of an architect himself.

#### Selecting the qualified architect

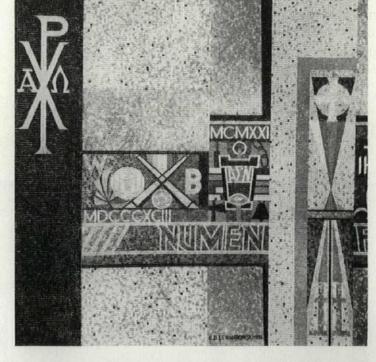
The architect's second responsibility is, I believe, in the selection of the artist. Here, if I may be rude to a profession I respect, is where I think inertia, ignorance, prejudice and lack of imagination, with very, very few exceptions, are far too frequently the rule. Too often the architect takes one of the two ways that seem to offer the easy solution. Either he says, "Hell, I don't want my building loused up and I can't find anyone to do what should be done," or he succumbs to the pressures of leagues and localities, of societies and society.

The nicest guy, the most famous name, the most secure financial record of commissions are not guaranteed to lead him to the





Porcelain tile mural by Roberto Burle Marx emphasizes nonload-bearing character of wall of Cepas Apartment in Rio. Architect: Jorge M. Moreira.



Mosaic mural for Student Union building at Marquette University is an ingenious use of symbols to tell story of Father Brook's life —a timeless and dignified architectural decoration by Edward Lewandowski.

best man for the job. I think he must open his eyes wider and look farther. Many architects have grown and advanced in their own profession, but their awareness and taste in painting and sculpture have lagged years behind. They have learned to educate their clients to accept the modern idiom in architecture—but have not educated themselves to accept modern art.

I don't know why they should be so fearful of it. Stylistically modern art—and I mean avant-garde art from the cubists to the abstract expressionists—has a real compatibility with modern architecture. Concepts of organic space, of multiple views, of "truth to materials," of modern technology (the welder's torch is as sensitive as the painter's brush), of expression deriving from the visual elements (and structural elements) of form, color, line, space and their relationships, are common to both. Modern art has as true a potential stylistic compatability with modern architecture as Gothic sculpture with Gothic architecture.

True, modern art frequently substitutes abstract or symbolic images for representational—but why not? Why does the architect fear them? Realistic, representational story telling is not only better taken care of by the comics, the camera, the movies and TV, but we live in an age that understands abstractions and signs and symbols. We accept them in their easiest forms in our daily life: we understand the Red Cross, X for US Steel, the twisting S-sign on the highway. On a higher level, we realize that abstract relations of colors and lines and forms and space—ordered and disciplined—can appeal to and lift the spirit.

But beyond opening his eyes to the modern idiom in art, the architect must have the courage to explore and insist on quality. He must distinguish between the sincere and the specious, the firm and the flashy. It is, in a sense, a case of "Buyer Beware."

He may feel noble with good intentions, but if the art is a failure, is it not his failure for were not the responsibilities for the ground rules, for the selection and for the working out of the project, his?

#### The practical difficulties are not insuperable

I realize that by charging the architect with these responsibilities I have disregarded practical difficulties. I am aware of the serious limitations on his time and understand he cannot browse on 57th St.; I know well the pressures that are exerted upon him to use the local favored son or daughter; I know that these commissions are expensive and that he legitimately hesitates to ask the client to gamble on someone who has never before used stained glass or aluminum or mosaic or whatever material seems right for that particular job; I know it is hard enough to get any budget allocation for art, much less one which allows a few trial sketches from various potential artists. And I know the slipshod, unbusinesslike, unarchitectural-like working methods of some artists—but not all by any means.

But, if there is a will, there is a way. I think the stakes are high enough. Architectural magazines could help by publishing work of artists potentially interesting to architects; museum people could be employed by architects as advisers; galleries could arrange exhibitions; manufacturers might sponsor competitions; and architectural schools could train architects for this awareness in the future.

If the architect will accept his basic responsibility and if the artist will concede that his art will function best as architectural decoration, I believe modern art and modern architecture can join in a happy and fruitful union.

LOCATION: Dallas Tex.

HOTELS STATLER CO., INC., owner

WILLIAM B. TABLER, architect

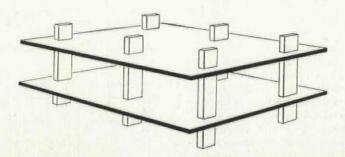
SEELYE, STEVENSON, VALUE & KNECHT
structural engineers

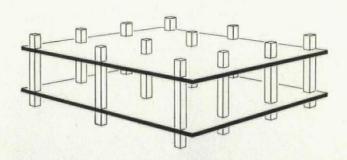
JAROS, BAUM & BOLLES,
mechanical engineers

ROBERT E. McKEE GENERAL CONTRACTOR, INC., contractor

# NEW SHAPE AND STRUCTURE







help Statler reduce hotel costs to \$9,350 per room.

## Two-column bay and cantilever floors add simplicity to frame, flexibility to plan

There are some companies and some people who are never content with beating a record once. Statler hotels are like that. The Washington Statler, built back in 1940-42, was the "last word" in modern design, in structural efficiency, in compact use of space, as were the Los Angeles and Hartford Statlers. But today Washington, Los Angeles and Hartford must make a bow to the new Statler for Dallas. The bids are in.

In total cost Dallas will come to 40% less than the Washington figure adjusted to today's cost index—\$9,350 per room instead of \$14,770—due largely to its unusual structural design.

In plan Dallas will have 200 more rooms and 15,000 sq. ft. more shop area (with roughly the same banquet facilities) in 700,000 cu. ft. less volume, due mostly to more efficient use of space.

So unexpected was the cumulative saving that an experienced building executive, H. B. Callis, Statler's senior vice president for construction, lost a hat to Architect Tabler, betting the Dallas hotel would come in at over \$11½ million; the bids were under \$9½ million. Callis based his estimate on the \$14,770 per room it would cost to reproduce the Washington Statler.

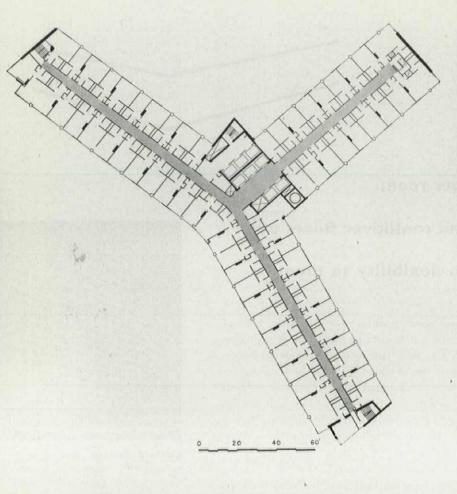
Architect Tabler was betting on his cantilevered construction. Each Dallas wing will have just two rows of columns, all flattened transversely to the building (see sketch), the flat plate floors carried out 8' beyond the columns. This is the first time that a two-column-per-bay cantilever floor system has been used in a multistory building in the US. The effect was to throw the cost estimate on guest-room wings entirely out of the usual "hotel" class into the far cheaper "factory" class based on unvarying repetition of simple elements.

This simple structural system not only lets Architect Tabler take advantage of all the economies of wide cantilevering but also gives him greater flexibility in arranging his room plans than was possible amid the multitudinous columns in the Hartford Statler. (And the Hartford building was already a major milestone in American hotel planning—AF, April '53.) The fact that there are no structural members within the walls explains the special appearance of the building as a vast porcelain-enamel and glass curtain, decorated with embossed porcelain-enamel panels.

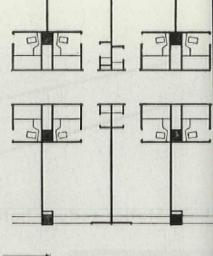
Architecturally, in the Hartford building (photo, above right) the curtain wall expressed the skeleton of columns and spandrel girders, but in Dallas the curtain wall dramatizes the *absence* of columns and girders. The support is indicated at the base by the buttresslike columns recessed 8' back from the face of the building. Less obvious is the shear wall used to provide wind bracing at the ends of the wings (see plan, facing page). The premium rental from corner rooms and luxury sites furnished the motive for the tier of rooms projecting beyond the shear wall at the near end of the building in the photo on the facing page.

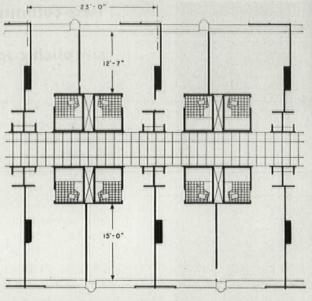


Hartford Statler, now nearing completion, expresses conventional construction with aluminum cover plates over spandrel beams and columns. Dallas Statler's cantilevered structure is revealed on lower public floors (photo, opp.) and concealed behind curtain on upper floors.



Typical bay is based on Hartford scheme (at right) but with important improvements. Two column system for Dallas permits shifting curtain wall to increase variation in room sizes, without structural change or altering standard bath - hall - closet arrangement. Column shift permits 4" reduction in pipe shaft gaining 75 sq. ft. usable area per floor.





## Guest-room floor plan gains flexibility by "mobility" of exterior wall

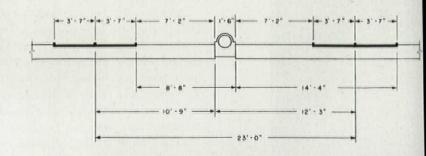
Structurally, the Dallas Statler's Y plan permits any two wings to brace the third at their meeting point, leaving the need for only a sheer wall at each wing end for complete windbracing.

Planwise, the wing lengths are adjusted to "maid-modules"— 16 rooms per maid. The two front wings are three maid-modules long; the rear wing, one. As a small extra, the Y cuts by half the forbidding length of hall seen by guests in so many hotels.

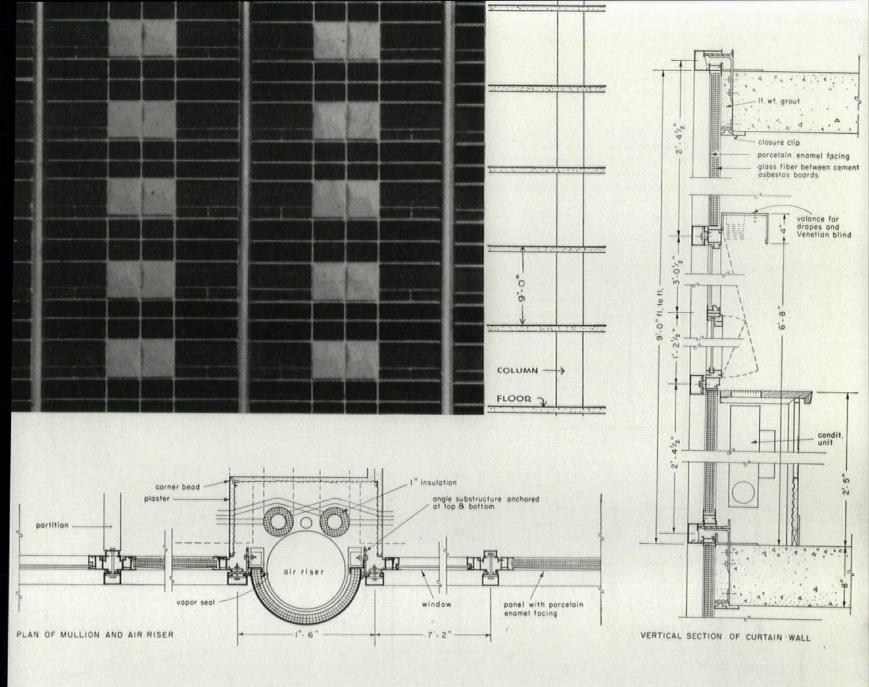
Programwise, division of the bedroom floors into wings permits initial construction of two-thirds of the hotel, later addition of the final third with minimum disturbance.

But it is in the planning of the bedroom wings that the cantilevered construction offers its greatest advantage:

Three building elements that have hitherto always been interlinked are here disentangled from one another: the building frame, the outer wall, the plumbing stacks. The conventional way of handling them is seen in the smaller Hartford Statler plan at the top of page. At Hartford the windows had to fit between columns, and the plumbing stacks were run up tightly against the frame. But at Dallas the flattened columns are about midway between corridor and wall, and the plumbing stacks are close to the middle of each bay. This has yielded considerable plan freedom. Though bays are completely standard, window divisions need not align with them, and indeed the "back wall" is offset from the "front wall" (see room plan). By slight shifts in partitions, the architect was able to offer Statler five variations in room width and two in depth without ever departing from standard bays, standard curtain wall panels and the standard bath-hall-closet arrangement (see table, right).



Three modular wall elements produce 12'-7" deep 15' deep suites Double bedroom 8'-8" wide 132 sq. ft. wide 110 sq. ft. Single room 135 161 10'-9 Large twin 10'-9" Double bedroom 12'-3" 187 Small twin 12'-3" 154 Large studio 180 14'-4" 215 Large studio Parlor 23'-0" 345 Parlor 23'-0" 279 Suite



## Curtain-wall panels are stacked between vertical air ducts

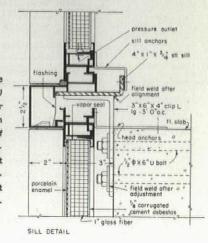
The idea of an all-glass wall for the Dallas Statler was discarded because heat-resisting glass would have cost about the same as insulated porcelain-enamel panels, but the insulated panels would save about \$266 per room on the cost of installing air conditioning. On top of this capital saving, the insulated panels will yield an operating saving of about  $7\phi$  per sq. ft. per year in air conditioning.

The horizontal module for the wall is 7'-2". Each 23' bay has two panels containing windows and one blank wall panel all of this same width, plus a vertical air-conditioning chase 1'-6" wide (photo above). All these panels were designed to let partitions join at any modular point and, in the case of the blank wall units, the partitions would typically come at the half-module point. The 9' floor-to-floor height is roughly half window (4'-3") with blank panels of equal size (2'-41/2") above and below. The blank panels flanking the windows are outwardly projecting tetrahedral pyramids which the architect chose as a strong decorative shape that would produce changing patterns in relation to the movement of the observer.

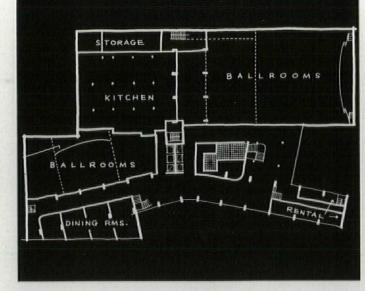
The air-conditioning duct (photo above) is the only strong vertical feature of the facade, and a decorative one. It carries

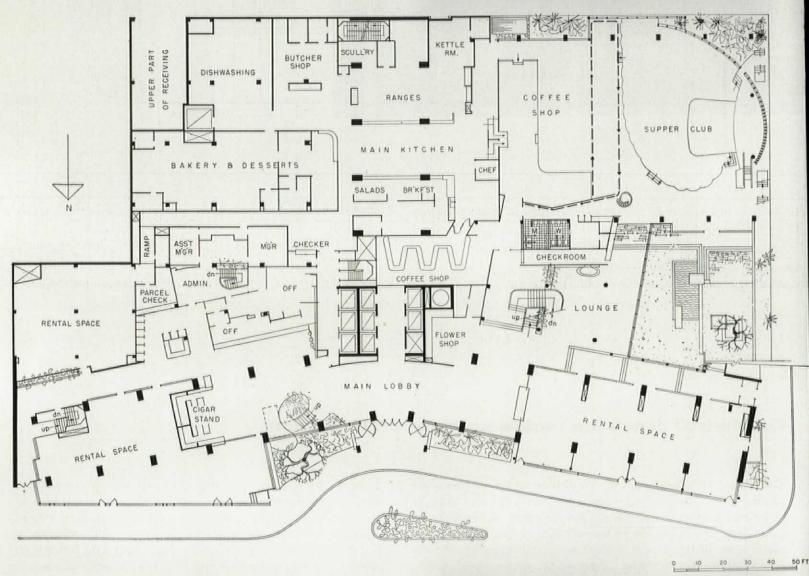
1,200 to 1,400 cfm. of cooled or heated air up from the fan room on the third floor to the first eight floors or down from the roof fans to the upper eight floors. Depending on room size and exposure, it delivers from 60 to 90 cu. ft. of tempered fresh air per minute. The guest can vary room temperature between 60° to 80° F. by thermostatic control of cooled or heated water to room heat exchangers in the enclosures adjacent to the main duct.

Curtain-wall attachment is made by welding slotted clip angle to U bolt after being brought to proper level for subsill. Subsill is then brought to line desired for face of curtain wall. This two-stage alignment and welding is improvement over bolting method used at Hartford which did not make sufficient allowance for errors in placing concrete and anchor bolts.



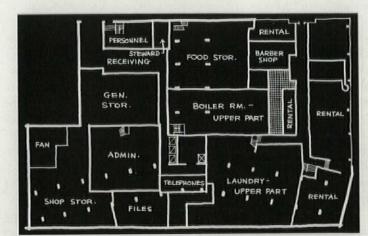
Second floor has largest ballroom in southwest (which will spend most of its life divided into smaller assembly units), smaller ballroom (divisible into three) and four private dining rooms. Second floor kitchen is directly over main kitchen.





Main floor (above) features off-street drive tucked into recess of Y-shaped plan. Elevators are only few steps from entry, further cutting down walking distances for guests and staff. Multiple use of supperclub coffee shop through movable partition will cut loss hotel generally expects from running good night-club. Note landscaped court off lounge.

Basement administrative area is directly below front office with which it has direct access by stairs. Employees' entry, receiving facilities and personnel department are grouped at left rear. In subbasement, laundry is adjacent to boiler room.





Sheltered entry of hotel is served by private drive and flanked by store space

## High efficiency of hotel's lower floors is based on step-saving plan

A straight line as the shortest distance between two points dominates much of the planning of the public areas. From taxi to elevators, the guest goes a few short, straight steps without crossing the lounge or passing the registration desk which is off center and to the rear. If he wants to lounge and look at the interior garden and pool, he may do so but they are not on his required route.

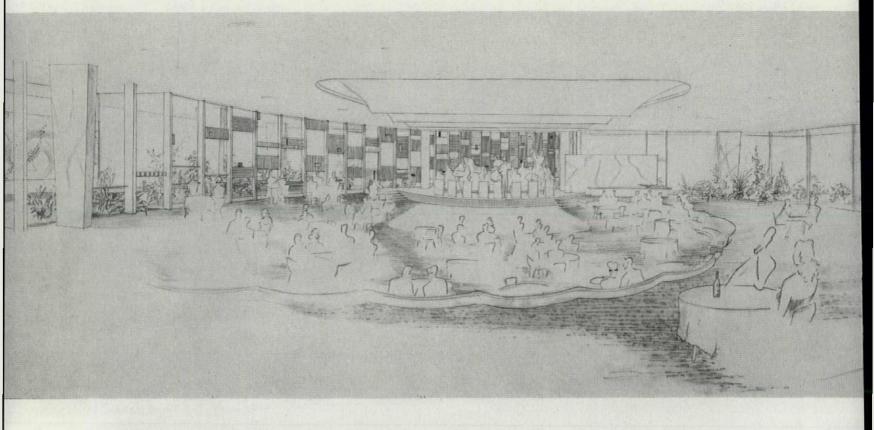
On the ballroom floor the two-way access to elevators and two sets of stairs will permit running several conventions at the same time. Outsiders attending conventions or social functions can reach the supper club or grand ballroom through the side entrance without crossing guest traffic lanes, ballroom spaces and exhibit rooms in the west wing are reached by open stairs at the left of the main guest entrance.

Being in Texas, it was of course necessary that the hotel have the largest ballroom in the entire southwest. The grand ballroom, 95' x 140', can seat 2,300 or be divided into two ballrooms by a movable partition consisting of two independent panels spaced 5" apart which give 45 db. of sound insulation. This is better than most plaster partitions.

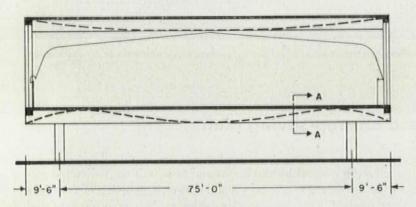
The close coupling of service functions in this hotel are so obviously in line with efficient operation that one is inclined to accept them as the obvious solution. It is only after comparing the plans with other Statler Hotels that one realizes the progress that can be made from continuous study where service areas are studied as tools for production. Related work areas were grouped to cut

unnecessary travel by employees and to permit more direct supervision by executives. It was found that close coupling of functions also resulted in cutting cost of installing equipment, piping and airconditioning ducts. Features of special note in the service areas:

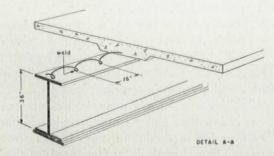
- ▶ Close coupling of all administrative offices by placing the accounting and sales offices directly below the front and executive offices, and the banquet captain directly above them, permits easy interdepartmental travel by stair.
- ▶ Consolidation of laundry, mending and housekeeping areas cuts washable uniforms required from three to two per employee. (In New York these rooms are separated by four floors.)
- ▶ Side-by-side position of laundry and boiler room cuts installation costs and heat loss in transit.
- ▶ Stacking of ammonia room, ice machines and refrigerators cuts cost of installing piping and reduces loss in transit.
- Direct fan connection to stores is made from two auxillary fan rooms. Stores' needs differ from needs of the hotel.
- ▶ Direct entrance to employment offices keeps job applicants out of hotel, also out of the way of regular employees passing timekeeper's window.
- ▶ Grouping of receiving area, control desk, food storeroom permits the assistant steward in corner of receiving room to keep an eye on everything from his desk.
- Location of room-service checkers' station next to service elevators gives positive control at this exit from kitchen area.



## Dual-purpose ballroom works day and night with aid of acoustical partition



Stress diagram (dotted lines) shows how second-floor ballroom floor load is balanced by roof load acting as a lever over first floor supper-club walls as fulcrum.



Beam detail shows how welding spiral steel reinforcing to girder makes roof slab act as extra flange to girder. "Alpha" system used is adaptation from bridge design.

One of Architect Tabler's smartest prestidigitations is his conversion of a daytime coffee shop into a spangdangle night club.

It is a hotel axiom that the twain never meet, that night club space is dreary and empty in daytime.

Tabler's first device for his magic trick is the curved "mural wall," which is solid at its focus behind the bandstand, with opaque colored panels; but it gradually opens up with translucent and ultimately clear glass panels, separated by bigger and bigger gaps through which to look in daytime at outer nature. The mural was designed by H. J. Stojowski, architectural designer.

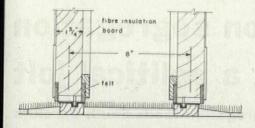
Tabler's second device is two sets of dual movable partitions by means of which the room can be divided into five different sizes.

As evening comes and night clubers begin to drift in, the partition nearest the orchestra can be closed, the drapes drawn, and activities started in a small, cozy space. By degrees as the coffeeshop business dwindles on the other side, section after section can be shifted from it to the night club, by successive repartitionings.

And the floor is convertible, too. The dance area mounted on lifts may be elevated 2' for a stage or lowered 1' to create a small ice skating rink.

The structure of supper room and ballroom is of special interest. The ballroom upstairs is wider and is cantilevered out beyond the supper room below. The whole weight of the ballroom's roof plus its wall and the projecting part of its floor is all carried on the cantilevered portion of its floor frame and this counterbalances the weight of its central floor span, permitting it to be much lighter construction.

The free span of the roof is wider than the free floor span but need carry only a 25-lb. live load. It has been framed with girders only 3' deep by welding a spiral reinforcing atop the girder (by the "Alpha" system used in bridges) so as to make a composite section of steel and roof slab.



#### **Flexible partitions**

Dallas cashed in on the Hartford research project which found that flexible space for public gatherings would give economy, provided satisfactory sound reduction could be obtained with movable partitions. Statler found that the only way of getting a movable partition sufficiently soundproofed to permit simultaneous use of the divided space for a musical and a party was by using twin partitions. The 45 db sound reduction obtained by the use of two completely independent partitions was entirely satisfactory. At Dallas, the twin partitions subdivide the grand ballroom into two ballrooms plus private dining and conference rooms; the large ballroom in another wing is subdivided into three auditorlums or ballrooms and the supper club can be divided at two points.

The 4" wide panels which make up the twin partitions are of door construction with the inside surfaces covered with insulation to absorb sound that gets by the first barrier into the 5" wide air gap. Each door has two strips of felt at both top and bottom to seal off edge leakage. Verticle meeting edges have felt gaskets that are made tight by pressing the assembled sections together from one end after the partition units are in place.

Each 4' section is carried independently on two swivel rollers running on the floor. It is guided at the floor by a pin at each end which runs in a metal grove and at the ceiling by a horizontal wheel that keeps the partition in place without undue friction against the felt seals at the ceiling.

#### Heliport on roof

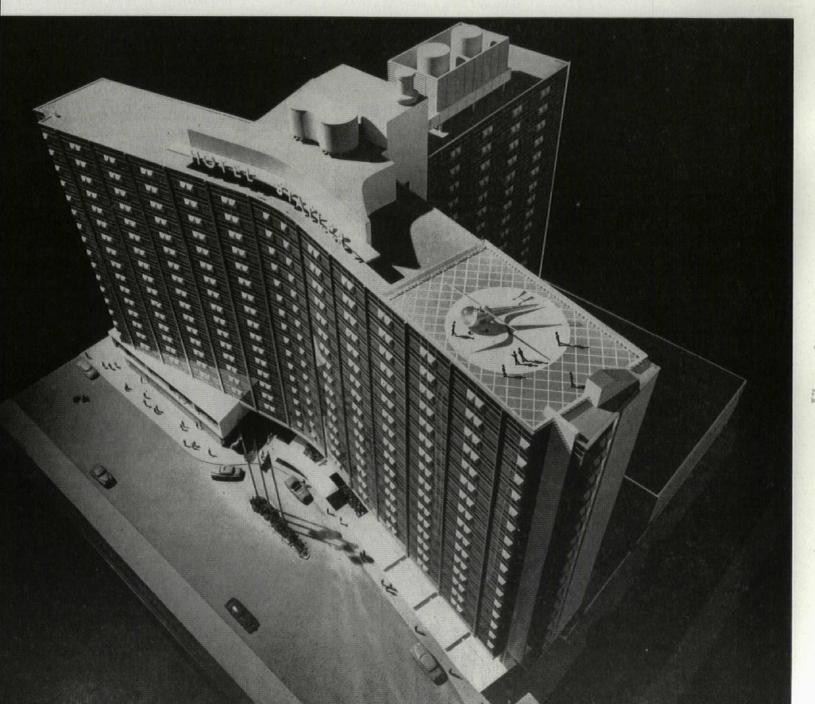
The Dallas Statler will be the first hotel to have a rooftop heliport, although at least one other hotel has its own ground heliport.

Conscious of the fact that in many cities

a traveler has to allow an hour or more to get from his downtown hotel to an airport, the Statler believes that for midtown-to-midtown travel between cities less than 220 mi. apart, a 100-mi.-per-hour helicopter is faster than a 170-mi.-per-hour airliner used for short flights. The added cost of heliport was surprisingly low.

Analysis of the impact load from helicopter landing showed that the roof slab did not have to be thickened and very little additional steel was required for reinforcing. Since the building code required the fire stairs be carried to the roof in any case, access to the heliport did not add cost.

The "touchdown pad" surfaced with 11/2"-thick asphalt paving blocks will have a distinctive yellow circle, about 40' in diameter, surrounded by a pattern of white crisscross stripes. This pad is slightly larger than the pad on the roof of the Port of New York Authority building in New York City which has been in almost daily use since 1951. The heliport promises to be an accepted feature for all future hotels.



# Supreme Court ban on segregation gives public housing a political jolt

Decision barring school segregation leads South Carolina to halt building program, but long-range effect on building is expected to be slight—perhaps a 5% drop

IN THIS MONTH'S NEWS

(see pp. 39 through 56)

How should city planning concepts be altered to fit the threat of H-bombing?

Legislatures in 14 states vote \$1.08 billion for building, with hospitals and schools getting the biggest share

Senate kills controversial rider which would have banned nonresidential construction in urban redevelopment

Senate committee writes a bill that experts think would wreck FHA rental housing and much else in Eisenhower's home program

Peter A. Strobel, NY engineer, named US public buildings commissioner to succeed retiring W. E. Reynolds The US Supreme Court, through two decisions against racial segregation, appeared last month to have dealt a fatal blow to public housing, at least for this year and perhaps permanently.

The first decision was the court's unanimous verdict that school segregation is unconstitutional because—in Chief Justice Warren's words—"separate educational facilities are inherently unequal."

This set up the policy framework for the second ruling: the court refused without comment to hear an appeal from a lower court that had ruled unconstitutional the San Francisco Housing Authority's policy of segregating races in public housing projects according to existing neighborhood patterns.

Next day, public housing lost the political support of enough southern Congressmen to indicate that a quick but noisy burial was impending.

Said Sen. Burnet R. Maybank (D, S.C.), senior Democrat on the Senate banking committee and long a powerful advocate of public housing: "I regret that the Supreme Court decision [against the San Francisco Housing Authority] . . . makes it impossible for me, believing in local government, to support any public housing. I, therefore, oppose any public housing program." Fuming, Maybank charged the court "ignored several past votes in the Senate banking committee and one in the Senate itself, which flatly rejected antisegregation amendments in public housing."

Dixie vs. public housing? Maybank, it was understood by Capitol Hill experts, was speaking for most, if not all, southern senators. Without support of southern senators, it was a pretty good bet that the Senate will vote to kill public housing at the end of this fiscal year. The House has already voted to do so. Ironically, it was Maybank himself who made the successful motion to reinstate a 135,000 to 200,000-a-year public housing program during consideration of the 1954 housing bill by the Senate banking committee. Now, he planned to move on the Senate floor to kill his own amendment.

Northern senators, including Illinois' Douglas, promised a fight. Top HHFA officials were worried. Said one: "This is going to be a civil rights rather than a housing fight." In the process, they expected amendments to be proposed banning segregation in urban rehabilitation and redevelopment and a stiff open occupancy rider for all FHA titles. Either of these, experts thought, could be a staggering blow to the programs involved. The nation might be ready for integration in theory (its laws had leaned that way for 100 years), but was it ready to put it into practice? It seemed questionable, especially in housing.

Historic pattern. The San Francisco case involved three Negroes who were refused admission to the new North Beach project (designed by Architect Ernest Born) which lies in the city's traditional Italian district. This was in line with the authority's policy since 1942 of preserving as much as possible "the same racial composition which exists in a neighborhood where a project is located." Behind this lay much tradition. Ethnic neighborhoods have been the signature of much of San Francisco since gold rush days. Thus, Ping Yen, another new project, was plunked in the heart of Chinatown to provide public housing for Orientals without disrupting the city's pattern of life. The California Supreme Court held that this policy violated the 14th amendment by denying the three Negroes equal protection of the law.

Beneath the public debate—and a factor in the southern revolt against public housing—was the fear that unsegregated public housing could in many cities quickly become all Negro public housing. Two years ago, the San Francisco Housing Authority pointed out these facts:

- ▶ Whites, comprising 90.7% of the city's population, occupy 60% of its 13,263 public housing units.
- Negroes, comprising 5.7% of the population, occupy 37% of the units (4,859).
- ▶ Other races, representing 3% of the populace, occupy 3% of the units (434).

One-race housing? Said one official at the time: "Frankly, the whites move out about as fast as the Negroes move in. Abolish the pattern, and within two years virtually all public housing would be Negro-occupied. Public housing would thus become housing for one race, and I do not believe it could be justified as a public expenditure."

Privately, some HHFAides were furious at San Francisco for fighting the case all the way to the Supreme Court, where the inevitable decision threatened to have such repercussions across the nation. They argued it would have been years more before such a case from a southern state would have reached the high tribunal—and that mean-

while a lot more public housing could have been built.

The high court ruling made it seem likely that Negroes soon would blast their way into white housing projects in the South—via the courts. Three days after the court's school segregation decision, 18 Negroes asked a Savannah federal court to enjoin the Public Housing Administration and the Housing Authority of Savannah against denying them admission to Fred Wessels Homes, a new apartment project. They also asked \$90,000 damages. Their attorneys were led by NAACP's Thurgood Marshall of New York, the chief legal brain of the school segregation case.

School time bomb. If reaction to the court's public housing decision seemed violent, one reason was that its results could be immediate. The decision on school segregation, on the other hand, was a delayedaction bomb. By announcing that it will not formulate decrees to carry out integration until fall, the court allowed for a cooling-off period. Reaction was calmer.

The decision cast doubt over the future of some \$800 million of planned school construction in the 17 states where racial segregation is required by law.\* Most drastic action was taken by Gov. James Byrnes of South Carolina. He cut off state money for new public school construction contracts pending further studies. The effect was to halt the state's huge school building program intended to equalize facilities for whites and Negroes. In three years, South Carolina had spent or earmarked close to \$100 million for some 400 school buildings-about two thirds of them for Negroes. Another \$76 million of school construction, much of it for Negroes, was planned.

In Georgia, however, Gov. Herman E. Talmadge said the Supreme Court decision would not affect school building because the state needs the schools. The program totals some \$200 million for 1,036 grammar and high schools. Contracts have been let for about 600.

Architect Marcellus Wright Jr., AIA regional director for the middle Atlantic area, forecast: "The aggressive school building program for the benefit of both races, operative since the war, will grind to a standstill. . . ."

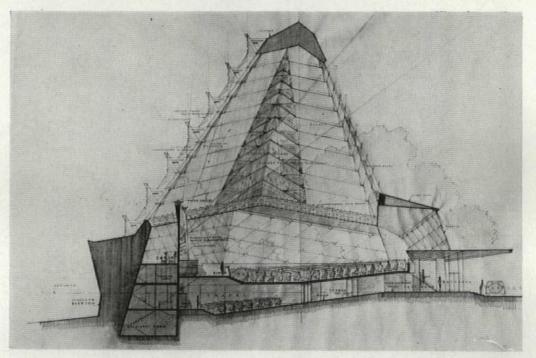
Evasion devices. In most other states, the chances were that school building would be slowed while devices to get around the court's ruling are explored thoroughly and fervently. One of the likeliest: gerrymandering of school districts, which would work in spots where there is effective residential segregation (but would not work in rural areas, or, for example, in Charleston, S.C., where whites and Negroes often live in different parts of the same block). Mississippi was

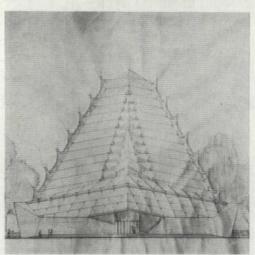
counting on a law enacted at the last session of the legislature, which says: "In making assignments of children to schools or attendance centers as provided by this act, the Board of Trustees shall take into consideration the emotional needs and welfare of the child invovled, the welfare and best interests of the pupils attending the school or schools involved, health and moral factors at the school." It contains no mention of segregation, but gives trustees almost unlimited power to segregate just the same.

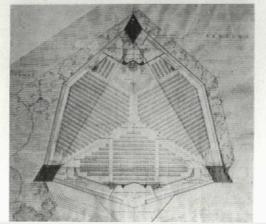
One leading school expert ventured the guess that while the decision would slow school building in the South, eventually almost all the schools planned will be built. Both white and Negro schools are overcrowded in many areas. Many Negro schools are obso-

lete, even unfit. On balance, the biggest foreseeable drop in southern school building looked like about 5%.

In Congress, the antisegregation decision put more steam behind demands for increased federal aid for school construction. In the past, the two most serious roadblocks to more federal school aid have been objections by southern Congressmen that this would become a device to smash segregation and objections by religious groups—mostly Catholics who profess to see a threat to their parochial schools. Currently pending is a bill to spend \$100 million a year for five years for federal aid to school building. The AFL executive council, scoffing at that as "abysmally inadequate," demanded \$1 billion to help the South build racially integrated schools.







## Glass-towered synagogue, Frank Lloyd Wright's first

Rabbi Mortimer J. Cohen of Beth Sholom Congregation in Philadelphia made some sketches of what he thought a synagogue should embody and showed them to a friend. The friend said: "Only one man can do it—Frank Lloyd Wright," Wright did it (above). When he submitted the drawings, he wrote: "Herewith the promised hosanna, a temple that is truly a religious tribute to the living god," Said Rabbi Cohen: "It is Mt. Sinai wrought in modern materials."

The distorted-hexagon structure will have double outer walls, of wire glass and blue-tinted plastic, with about an inch of air space between. Stamped copper shells will be filled with reinforced concrete. It will be 175' at its widest, 100' tall and is expected to cost \$175,000. Projections on outside (left) are symbolic of the menorah—candelabra—of the ancient tabernacle. Chapel (part of floor plan, lower left) seats 268, an auditorium 1,214. Atop the triangular glass tower will be a floodlit message in Hebrew: I am the Lord, Your God. "With the intuition that only genius mysteriously attains," said Rabbi Cohen, "Mr. Wright has created . . . a Jewish symbol in and of itself."

<sup>\*</sup> The 17: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia and West Virginia. Segregation is a matter for local option in four others: Arizona, Kansas, Wyoming, New Mexico.



# **BUSINESS BUILDS A CITY**

On 3,000 acres of Canadian farmland grows a new town planned for industry,

commerce and 35,000 residents

In the aerial view (at left) you see the first town of its kind in North America: a well-balanced satellite city, complete with its own industries, conceived and built entirely by a real estate developer.

Nestled between the two forks of the Don River 7 mi. northeast of downtown Toronto, the new town of Don Mills is a planner's dream coming true. In minimizing the risks of an investment that may eventually total \$200 million, its industrialist-developers aim at a healthier balance of industry, housing and commerce than any US or Canadian-planned community has achieved to date.

**Industry:** the developers of Don Mills have supplied the missing link sought by so many new-town planners: a broad industrial base. Already eight factories are in operation and a dozen more are on the way, providing jobs within the community and lightening the tax load on residents (see next page).

Housing: the developers hope to lengthen the community's economic life through a natural variety of housing. Instead of bleak uniformity which ultimately lowers property values, they have planned 12,000 houses and apartments varied in price and design, built by many different architect-builder teams (17 are at work in Don Mills this year). To make sure housing will not be out of date in a few years, it must conform to design standards more contemporary than anything Toronto has yet seen (see p. 150).

**Commerce:** Don Mills Developments, Ltd. will cash in on the long-term prosperity thus created by expanding the convenience stores now abuilding into a full-fledged regional shopping center, which will be the developer's main source of long-term income (see p. 151).

Metropolis in miniature (left) closely integrates all elements needed by population estimated to reach 35,000-40,000 in 1960. Industrial districts 1) at north and south take advantage of flat land near railroad junctions. (Main track at right runs out of sight in ravine; interswitch track at left will be buffered by planting.) Residential neighborhoods 2) are grouped around schools and churches; northwest quadrant is nearly complete. Construction has started on shopping and civic center 3). Scheduled for future are high school 4), higher-income residential neighborhoods with schools and shops 5), country club 6). Town's \$1,250,000 sewage treatment plant 7) is now in its second phase of expansion, bordering mile-long recreational lake to be formed by damming east fork of Don River. Parkland and sports bowl 8) and wooded area 9) complete greenbelt ring.



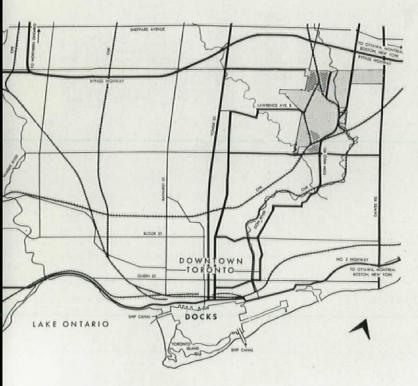
Townsite is long-empty pocket of land in path of Toronto's growth. Suburbs on three sides provide labor pool for industry, nearby market for housing and retail goods (one dot equals 100 persons.)

Albert A. Milne



The team: president of Don Mills Developments, Ltd., is Karl C. Fraser (left), 53, former Canadian wartime mutual aid administrator and long-time assistant to E. P. Taylor, Toronto industrialist backing the venture as board chairman. Fraser started the Don Mills idea seven years ago, traveled to dozens of US cities to study urban development at first hand before ground was broken. Assisting Fraser in industrial and commercial development is James F. Harris (center, standing), 34, former industrial analyst for Canadian National Railways. Director of planning is Macklin L. Hancock (right), 28, trained at Harvard's School of Design, assisted by Architect Douglas Lee and a design staff. Vice president and housing expert is Angus McClaskey (not shown), former regional chief of Canada's Central Mortgage and Housing Corp. Original studies for Don Mills were made by John Layng, Toronto architect and town planner; consultants include Sir William Holford, noted British town planner, Hideo Sasaki of Harvard, members of the Community Builders' Panel of the Urban Land Institute, Seated (above) is Arthur Weinstock, first of 17 housebuilders to sign.

# For INDUSTRY: planned factory districts to provide jobs, help pay the taxes



#### Don Mills location, ideal for industry:

In greater Toronto, near center of North America's industrial heartland and proposed St. Lawrence seaway (strategic location and cheap hydroelectric power).

At an interswitch of Canada's two major railroads (easy trans-shipping).

Just south of Toronto's main by-pass highway (trucking to major Canadian and US cities, direct access to Toronto's Malton airport).

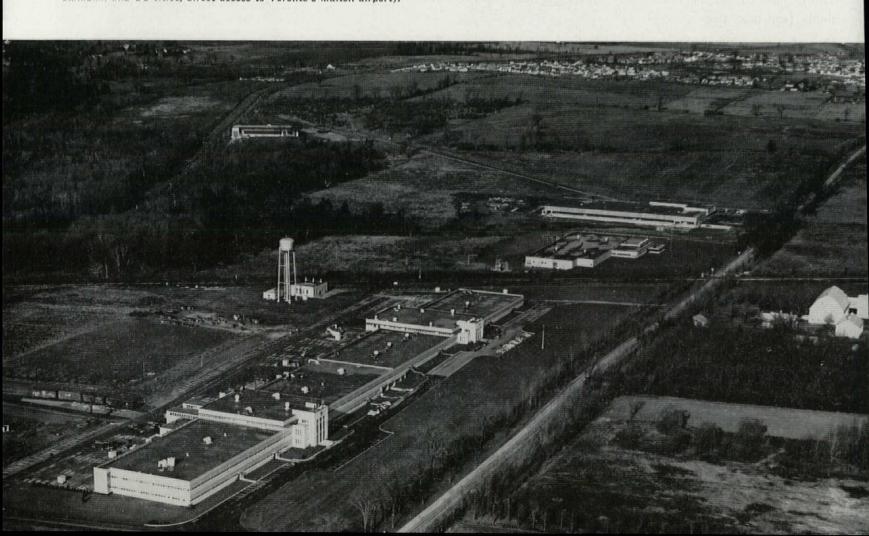
By attracting factories first, the developers of Don Mills avoid the disadvantages of a "bedroom town" whose residents must carry the full tax load of schools, streets and utilities, fire and police protection—plus the cost of commutation to distant jobs. (Park Forest, Ill., a speculatively built town of 35,000 which comes closest to Don Mills, set aside land for industry but put housing and shops first. Jobs and the potential industrial tax revenue are still 30 mi. away in Chicago.)

At Don Mills, factories, stores, offices and other nonresidential buildings will cover only 17% of the land, yet will pay 40% of the taxes. This leaves the average resident with a low \$200 annual property tax—and, incidentally, more pocket money to use at the developers' shopping center.

By getting high-wage industries, the developers further bolster their stores, which will depend for their biggest profits on the upper three-fifths of the local income bracket.

By balancing industry types, they avoid the evils of a "company town." A planned variety of employers reduces the impact of a strike or layoff in one plant, helps flatten out seasonal peaks and valleys of employment peculiar to individual industries, provides a common pool of labor which can shuttle back and forth between factories without having to leave the community. For still further balance, Don Mills welcomes companies employing women, balancing the plants that offer jobs almost exclusively to men. At present, 20% of the residents are employed by the town's new factories; the developers do not expect this to go over the 50% figure they have set as a limit.

Today eight factories are operating (three are expanding). A ninth is under construction, nine more will build this summer, four more hold options. Over one million square feet of plant space will be in use by year's end.





Hugh MacLean Publications, Ltd.: new 35,000 sq. ft. plant for 150 employees in northern district. Architects: Weir & Cripps.



Kawneer Canada, Ltd.: generous setbacks and landscaping for 38,000 sq. ft. factory employing 100. Architect: Clare G. McLean.



Barber Greene Canada, Ltd.: (materials handling equipment): 26,000 sq. ft., 100 employees in southern district. Architect: John Layng.

By keeping industries neat and clean, the developers can place them within a 15-minute walk of home, also use them as showpieces to attract more industries. Don Mills Developments, Ltd. sets high standards:

No "nuisance" industries are allowed. Restrictions, based on performance instead of blanket refusal of certain industry types, prohibit the creation of "noise, odors, gases, fumes, smoke, dust, cinders, soot or waste."

▶ Purchasers must start a building program within three years or the land reverts to the developers at the original price (\$6,500 to \$7,500 per acre including utilities) plus any taxes paid. If at any

First industry to move in was International Business Machines, which purchased 75 acres in southern industrial district, built and later expanded to 325,000 sq. ft., \$3,150,000 plant employing 1,700. Just north of IBM are Perfect Circle and Philco plants; Barber Greene is near interswitch track (far left).

time during 20 years after purchase an industry must dispose of its land, it must first offer it back to the developers.

Minimum setbacks are a generous 150' in front, 50' each side, with no employee parking permitted in front of the building line. No more than 50% of the land may be covered by buildings. Outside operations and storage are prohibited.

▶ Building designs and landscaping plans must meet the approval of the development company's architectural board. Exterior materials are limited to glass, steel, four types of masonry. No signs or billboards may be erected without written consent.

By setting high requirements, Don Mills developers have kept out all but the quiet, clean, light industries that make good neighbors for everyone. They have stuck to their guns in spite of attractive "deals," turning down a large automobile plant that would have dominated the town, a manufacturer who needed outside storage for unsightly equipment, a dusty grain-storage and milling plant, a lumber mill and yard. Said a company official of Ortho Pharmaceutical, now planning a 30,000 sq. ft. plant: "We've been looking for this kind of location for seven years."



Photos: Panda

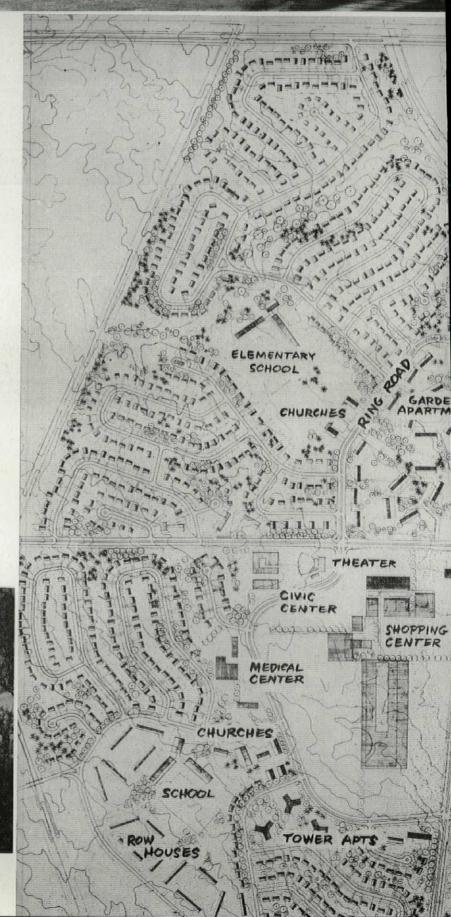
## For RESIDENTS: 12,000 houses and

#### apartments around schools and parks

In each of Don Mills' four big quadrants, houses and apartments focus on their own elementary schools and churches, giving each neighborhood an identity and a central green space. Greenbelt fingers and underpasses provide traffic-safe pedestrian walkways for school children and shoppers. Curving and culde-sac streets with T intersections make for safety, quiet and visual interest; collector streets tie into a four-lane ring road linking neighborhoods with shopping center, high school and churches. On this master plan the developers sell improved 60' lots at \$2,750 to builders, require them to use architects, submit designs for approval. The first 561 houses, by 14 architect-builder teams, are priced at \$11,200 to \$17,000; local factory workers get first priority. To keep up future property values, housing is as contemporary in design as the market will permit, diversified in type and price class. Result: some of the best builder houses in Canada. Note how houses face away from thoroughfares and from northern industrial district, how park strips open up the tight, economical housing pattern.

Typical apartment building is 24-family walk-up







Don Mills houses make good use of split-level plans, daylight basements, neatly panelized exteriors. Trees are preserved, front lawns sodded, power and telephone lines placed in rear for attractive streets. Developers keep close control over siting and color schemes (muted pastels with bright trim.) Architects: James Murray, George Hassig, Michael Bach.

### For COMMERCE: shops and offices

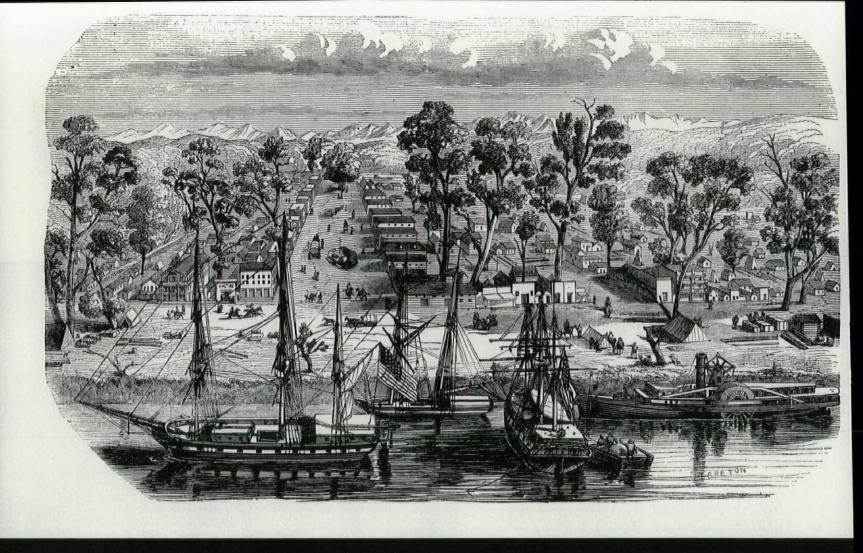
#### in a giant project at center of town

To serve Don Mills' growing population, estimated at 6,000 by the end of 1954, the developers have broken ground for a \$2 million convenience goods center, first phase of the 44-acre, \$15 million regional shopping center (shown at right). Opening this fall: a 20,000 sq. ft. supermarket (1), followed by smaller stores (2), service station (3), brewers retail store (4), variety store and post office (5), two banks and a restaurant (6). Second phase: a 200,000 sq. ft. department store at the southern end (7), 50 to 60 smaller shops along a central mall (8), a second, smaller department store (9), an office tower on stilts above a landscaped central plaza (10). Across the road to the west plans call for a medical building, theater, library and other community buildings.

The entire shopping center, including buildings and parking for 4,000 to 4,500 cars, is laid out on a 20' grid for flexibility. Based on the concentration of pedestrian purchasing power in the town, plus a trade area of 400,000 people within 20 minutes driving time, retail sales are expected to reach \$50 million annually by completion in 1960. Architects and engineers: John B. Parkin Associates. Economic and planning consultant: Kenneth C. Welch. Traffic consultant: Wilbur Smith.

-TRUCK TUNNEL SECOND FLOOR LEVEL PARKING

Main shopping building will have stores on two levels facing roofed, air-conditioned central mall. Across one end (background) is major department store.



Sacramento a century ago
... the fast-growing capitol of California fights its gold-flecked pas
Sacramento today



# SACRAMENTO...

# a model for SMALL CITY REDEVELOPMENT

is rebuilding 25% of its central business area

and reclaiming its historic river front

Sacramento, Calif.'s capital, is one of the 38 US cities in what might be called their teens, climbing from the 125,000 population mark toward 200,000 (1950 Sacramento population: 136,000; predicted for 1960: 182,000). But it is one of 14 in this second echelon of American metropoli farsighted enough to have requested federal money for redevelopment under Title I of the 1949 Housing Act.

Recognizing that not only our biggest cities are running fevers, Sacramento registered a shrewd awareness of its sickness as long ago as 1947, when the first tentative stirrings toward redevelopment began. Now, in 1954, the first actual bite will be taken out of Sacramento's moldering West End section, initiating a program which will in time include 25% of the city's central business area-a redevelopment program proportionately larger than even Pittsburgh's Golden Triangle.

Sacramento's redevelopment project has lessons to teach big cities or small; how to recognize and approach a redevelopment area (p. 154), how to run development in block chunks rather than ripping out an entire section and imposing a costly master plan with new street patterns (p. 156); how to plan to reclaim a river front from what it is in most cities, a railroad right-ofway (p. 158); how to spread parking through a business district (p. 159).

But the biggest lesson in Sacramento's unique small-city redevelopment plans may be one which parallels one of modern medicine's axioms: medical attention in the years of greatest development is the best insurance for a healthy maturity. This should have happened to New York, Boston and Philadelphia a century ago.

Rettman Archive



MEMENTO: Sacramento's West End is a tarnished souvenir of the California Gold Rush of 1849. It was a year earlier, in Jan. 1848, that a carpenter named John Marshall was hired by Capt. John Sutter, proprietor of Fort Sutter on the site of today's Sacramento, to build him a water-driven sawmill back 40 mi, in the Sierra foothills, where timber was plentiful. Sutter himself was a nervy 48-year-old Swiss adventurer bent on setting up a feudal stronghold, New Helvetia, in California, and he had been successful to the extent by getting more than 200 sq. mi. granted to him by the Mexican government, owners of the area. In return he became a Mexican citizen and captain in the Mexican army, but when the US in 1847 made muscular gestures toward California, Captain Sutter went along. (In return for being guaranteed title to his grantswhich didn't work-he died in a hotel room in Washington, D.C., 33 years later, broke, still arguing his case.)

Sutter hoped to set up an agrarian empire, but an entry in the diary of one of his carpenter's helpers lit the fuse which exploded his dream: "Jan. 24, 1848. This day some kind of mettle was found in the tail race that looks like goald, first discovered by James Martial, the Boss of the Mill."

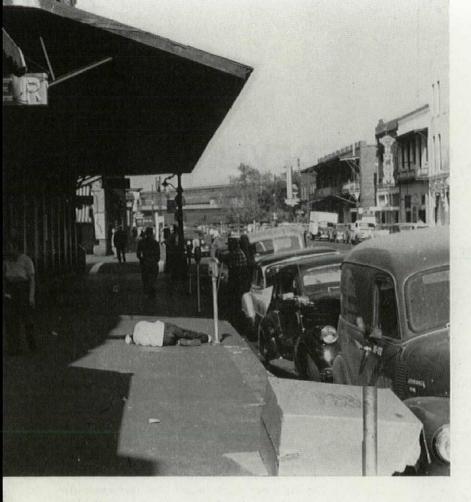
"Gold!" The cry went out across the world; and by 1853, more than \$200 million of the precious metal had been dredged out of California's river beds by scores of thousands of miners, and the state had become a greedy, roaring, no-man's land. A few years later the miners were singing a different song, part of which went:

"And yet I'm poor when the truth is told, I'm a lousy miner in search of shining gold."

Not so poor were the merchants who built up the supply terminus of Sacramento, storing their wares in boats anchored in the river for protection against thieves. This was the beginning of the West End.

The river was to punish Sacramento in years to come. Seasonal floods became common and soon no one would build down near the river, except on stilts. Soon after that the town began to grow back toward higher ground, encouraged not by gold, but by the stuff that Sutter's dream was made of, Sacramento Valley agriculture. But the West End

California's capitol surmounts old area of city now sunk in blight

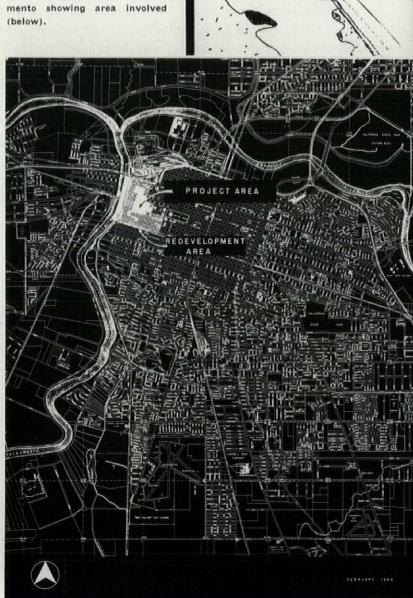


#### **SUNLIT SLUM**

In 1947, when the City Council of Sacramento looked at the West End, the stretch of choice land between the state capitol and California's greatest river, the slogan of their sovereign state of California, "Eureka-I have found it," rang very thin. There was little change from what had been built in this area 100 years back, and no improvement. The streets had been filled in up to the stilted second-story level, but many of the prefabricated houses shipped around the Horn by boat from the East Coast in the boom of the 1850's remained. In the previous 20 years, as the commercial center of the city had retreated from this antique decrepitude, the assessed valuation of the West End had fallen 50%. The tax scale was sliding every year, while the civic load was growing; containing 8% of the total city area and 7.5% of the population, the West End had 26% of the fires, 36% of the Juvenile delinquency, 42% of the adult crime and 76% of the tuberculosis cases.

It was not that the area was a slum as vicious as Chicago's South Side, or New York's Harlem. It is not. The remaining growth of trees make it more of a Huckleberry Finn slum, except for Skid Row itself. And the presence of 27 different national groups, from Chinese to Mexican, gives the area a firm, interesting character. It has a function, too. The Sacramento West End is the biggest hiring hall for agricultural labor in northern California. It plays commercial host to thousands of migrant workers, especially in late summer harvest months; 15% of all California's agricultural hiring is done right here, some 60,000 jobs filled per year. But, from the view of the city, this does not help the situation of blight; it emphasizes it. It makes the greatest part of the population unattached men, floaters on the day-rate labor sea. Their age group is remarkably high; one fifth are over 65; another quarter are between 55 and 64. The female population averages 32, 21 years younger than the male average, but there are few women. Once a notorious red-light district and gambling hell, the region has been purified, but still one out of every three retail stores has an alcoholic license. In the 12 blocks proper of Skid Row there are 167 bars. They are about the only recreation left. There is hardly anywhere else to sit down.

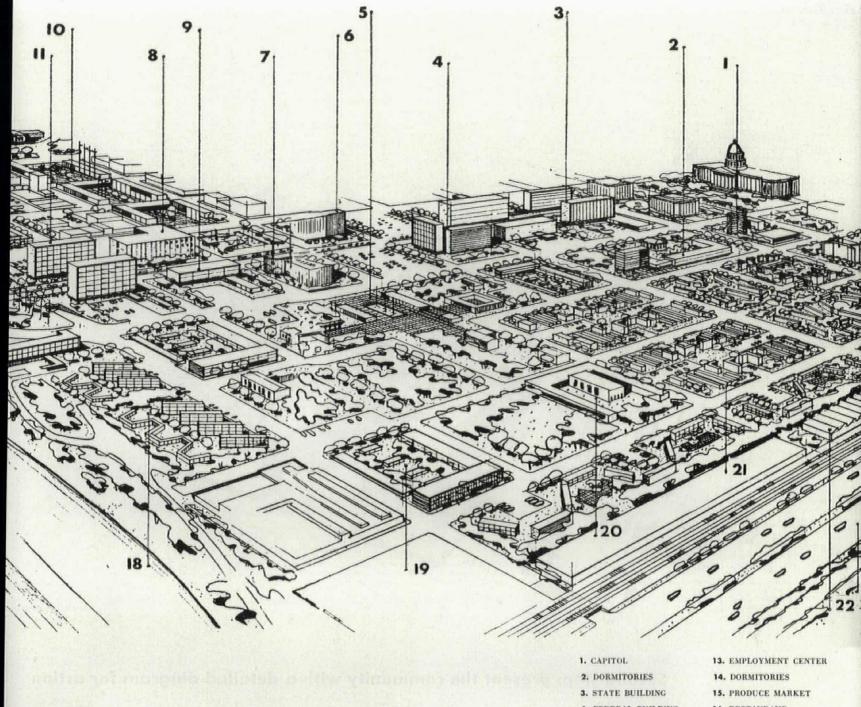
First vision for over-all redevelopment (right). Map of Sacramento showing area involved



13

14

15



# First step: make a brilliant, prophetic presentation to mobilize the community against blight

4. FEDERAL BUILDING 16. RESTAURANT 5. CULTURAL CENTER 17. MOTOR HOTEL 6. CITY HALL 18. HOUSING 7. MEMORIAL HALL 19. HOUSING 8. COUNTY OFFICES 20. SCHOOL 9. PRIVATE OFFICES 21. HOUSING 10. BAZAAR 22. LIGHT INDUSTRY 11. HOTEL 23. FREEWAY

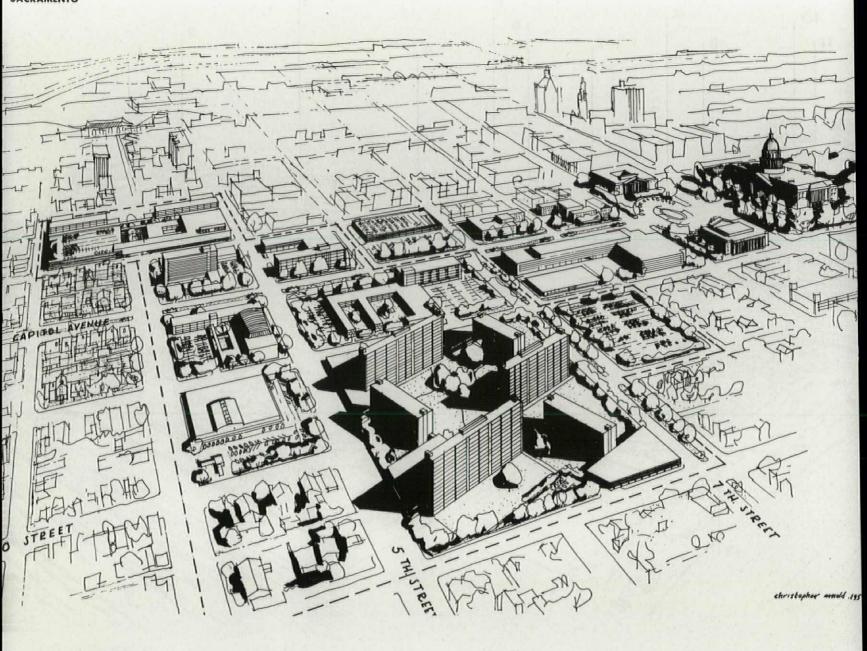
Sacramento really started swinging against its blight late in 1948 when the city council appropriated \$3,200 for a redevelopment survey. Then, after a year of establishing the need, Plan Commission Executive Glenn Hall brought in Richard Neutra and Robert Alexander to inspire a solution. Their brilliant view of what could be done (see drawings, above and p. 158) added imaginative momentum to the program; the city council asked HHFA to reserve \$364-000 in federal funds under Title I, and hired Planner Joseph T. Bill to head a redevelopment authority. The goal was to rebuild the 62 blocks of the West End by 1960.

Bill recognized early that a major aid in the program was the presence of the state capitol. This century's proliferation of government had turned Sacramento into the government town, thinning the agricultural emphasis, and the blighted area was the front yard of the capitol buildings. Even more de-emphasis of agriculture

was clearly on the way with manufacturers like Procter & Gamble eyeing the city for plant sites. A study by Catherine Bauer and Davis McEntire even recommended moving the labor market of the West End to the outskirts of the city to a hygienic campus, but this was clearly a long-range proposal. It also would involve more public money than available under Title I, while city redevelopment by blocks could be largely private commercial investment.

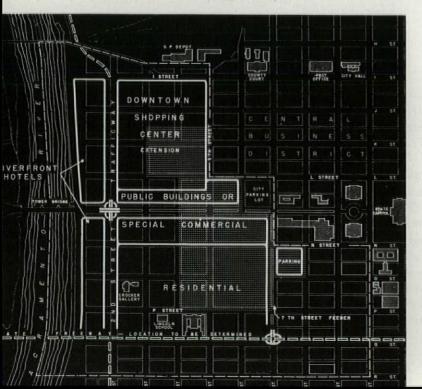
12. STATION

The first bite at the blight Bill proposed, was a two block area at the north edge of the West End. It would have been all commercial, and had a good basis. Chinese family and benevolent associations were ready to underwrite more than 30% of the proposed development. But then the city council indicated it was willing to up the ante, and the first proposal was quickly shelved in favor of a 15-block area centering on the Capitol Mall, including not only commercial, but also governmental and residential areas.



## Second step: present the community with a detailed diagram for action

Redevelopment area and first 15-block project (shaded). Air view (above) shows how this 15-block project will look when completed. Capitol mall to river is axis, but high-rise apartments, off axis, unfortunately outwelgh it.



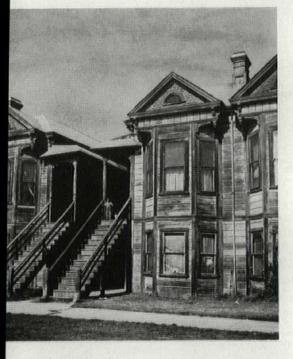
Fifteen Sacramento blocks presently occupied by run-down hotels, bars, restaurants, gas stations, old frame dwellings and outright slums will become an integrated complex of high-rise residential, shopping, parking and office buildings, centered on state office buildings, to be set on the stem of a central mall, a green-bordered highway running from the capitol to the river.

Sustained at birth by Title I federal money, the redevelopment may shortly stand on its own feet by virtue of a law indigenous to California—a law which should be even more nourishing to redevelopment than the California sun is to oranges. This law permits the rise in tax income created by redeveloping an area to be routed into the city redevelopment fund. The estimated rise for this project will be \$1/4 million per year (see chart), thus city money to be invested in the project could easily come from a bond issue based on this tax income. The city is not eager for one single giant insurance company to move in and take over, but will designate at least three blocks for disposition in small parcels.

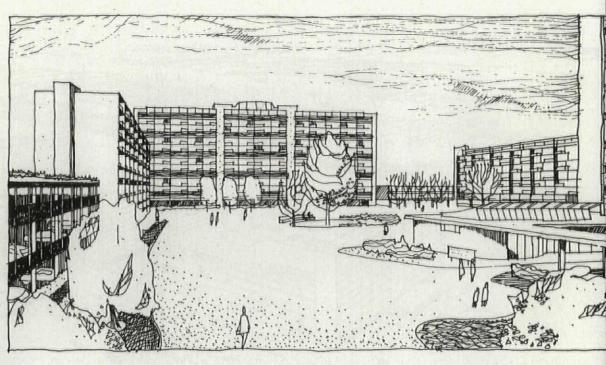
Only 700 families reside in this area, so relocation will not be difficult. But relocation of the floating farm-labor population will be. Bill believes also there is a moral responsibility to assist, where possible, in the relocation of small businesses purchased by Japanese-American citizens in this area after they emerged from World War II relocation camps.

Land use:	Acres 2.5
Residential	14.1
General commercial	8.0
Shopping convenience	2.5
Special commercial including public	12.5
Total net area	39.6
Street rights of way	18.7
Gross area	58.3
Maximum building coverage in the re	siden-
tial areas will be 30%; maximum popu	lation
density, 140 persons per acre. Off- parking will be required in both resident and commercial zones, ranging from	lential
space per each 400 sq. ft. in public bui	
up to one space for each dwelling u	
structures of four or fewer dwelling i	

High-rise apartments are not usual in Sacramento, but will have ready market in semitransient government employees.



To be replaced: old frame buildings show how high it was necessary to build "first" floor of houses to protect living-room furniture from flood waters.



# "The big problem is to secure a wide understanding of what you are trying to do and how you propose to do it. . . ."

General differences between big-city and small-city redevelopment have emerged in the creation of this program. Says Bill: "I think large cities can push forward in an impersonal way with a program which is clearly needed more easily than in the small city. where, due to its size, personal acquaintance and accountability for one's actions are more important. This applies to legislative bodies as well as individuals. . . . Like most cities of this size, Sacramento moves very slowly on a project that requires dramatic change. It must in truth be a grass-roots program. . . . I have discovered that no high pressure is needed. The big problem is to secure a wide coverage of understanding of what you are trying to do and how you propose to do it . . . it is a problem of communication.

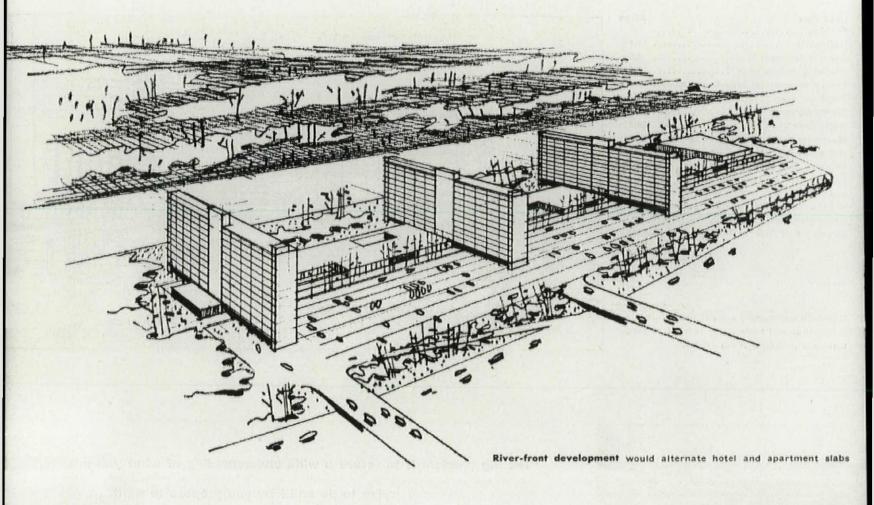
"A key difference may be that redevelopment in Sacramento (as in other small cities) is not based so strongly on the need for new family housing. Due to the downtown location and the fact that much of the project land is destined for commercial reuse, the write-off should be less than much eastern redevelopment . . . but it would be most difficult to develop a financial plan for this size project satisfactory to the citizens of Sacramento were it not for the tax-pledge method.

"Another point is the degree of blight. Most large cities are old cities. This age sometimes results in the accumulation of blight being greater than in our new cities. Although a small portion of Sacramento is older than Chicago, most of the city is relatively new. The people of Chicago and Philadelphia

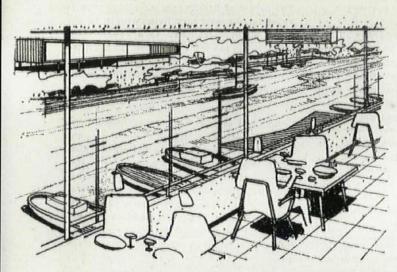
have been living with their blight a long time. The people of Sacramento have been able to avoid, for the most part, living with it, for the worst blight is confined to a concentrated area. (I use the word "confined" in a limited sense, because it has been moving into the central business district and the state capitol area at the rate of about one block every ten years.)

"In large eastern cities redevelopment has been proposed as a method of reclaiming the central core. That is true in Sacramento also, but because serious blight only exists in less than 8% of the land area in the city, and because Sacramento has a fast-growing population and an expanding economy, one might also say that an important function of redevelopment will be to set the stage for healthy future growth as an important tool of planning.

"An unusual amount of interest has been shown on the part of redevelopers in our program. There have been offers of commitment for more sites than could be provided in the project. More of this expression of interest has been from out of town, although interest has been shown to some degree in Sacramento itself. All redeveloper interest mentioned is based on the plans developed so far, including a nationally known chain of department stores, a corporation interested in multistoried apartments and several offers to build hotels. A federal building to be constructed under the recent lease-purchase legislation which has passed Congress is in the offing. Additional state construction and a convention hall are also projected."



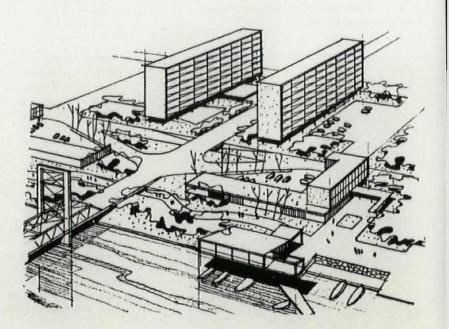
## Future steps: cleaning up the river front and using history



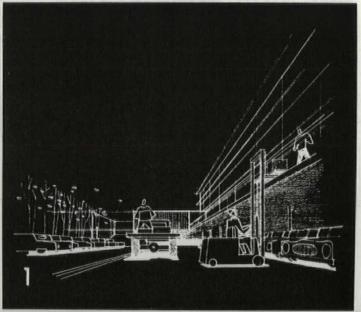
Restaurant cantilevered out over river would be on site now used by railroad tracks. Part of long-range plan would be to make park of opposite shore of Sacramento River.

Back from shore, beyond restaurant, would be motor hotel and, on either side of main avenue, two high-rise hotels.

The rest of the big redevelopment area of Sacramento's West End probably will be largely rehabilitation, under patterns being developed now. But the river front still is the big opportunity for architecture, and if the railroads which occupy it continue to cooperate, the architecture may get built. Architects Neutra and Alexander visualize a parklike complex of hotels, boathouses, etc., replacing the railroad right of way.





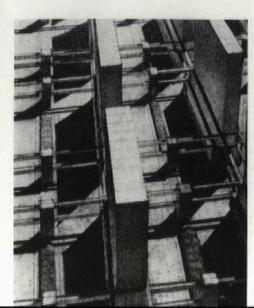




#### nake room for parking

Another of Neutra's and Alexander's schemes for this redevelopment area would use the low centers of some of the blocks whose surrounding streets have been filled in to the original stilt-high level of the old "floodproof" buildings. Neutra would leave the lower level intact, and ramp down to it for parking, to help cure what he has termed the automobile thrombosis of the heart of the city.

Sketches (at right) show 1) how low center of business block would be used for parking and delivering goods to stores above; 2) how ramps to street could connect with city traffic, 3) how lower level could also be used for display of wares.



Rush City revisited: Neutra's 25-year-old proposal for a solution to city traffic snarls.

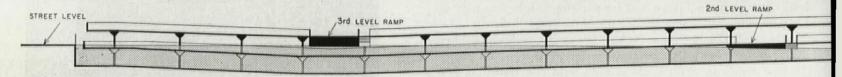


# **BUILDING ENGINEERING**

- 1. Tilted floors make parking easy in multideck garage
- 2. Box-shaped steel arches span record 278'
- 3. Ball-and-socket hinges add demountability to precast concret
- 4. Notes—seven added developments of engineering interest



Diagonal parking on 4% slope means only 1.6% slope in direction of parking stalls. Bumpers between stalls are 27" wide and 3" high



# 1. SLOPING GARAGE HAS NEITHER RAMPS NOR ELEVATORS

Three decks tilted into ground provide street-level access for every floor

When the May Co. ordered a 1,200-car parking garage for its department-store shoppers, it set two requirements: 1) that it be a self-parking garage with a minimum of attendants, and 2) that it contain no tricky ramps that might discourage timid women customers. But the only land available in that particularly flat section of Los Angeles was an existing 230' x 500' parking lot, which only held 500 cars.

The solution: a three-level parking garage tilted 3% into the ground so that each deck is directly accessible from street level. The bottom deck is entered from one end, the middle deck from both sides and the top deck from the other end. The 364,500-sq. ft. structure was erected in 69 working days for a cost of \$1,082,000, equal to \$2.95 per sq. ft. or \$917 per car. It holds 1,179 cars.

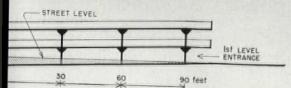
Since the decks themselves double as access ramps, about 9,600 sq. ft. of conventional floor-to-floor ramps are eliminated, which, at 315 sq. ft. per car, makes room for 30 more cars on the parking decks. To allow for concentrated drainage runoff (demanded by Los Angeles building codes), the decks actually tilt two ways: from one end the decks slope 3% downward for 380' to the upper-deck access and exit bridges; from there the decks slope 4% upward for

110' to the other end. There is 9' clearance between the flat-plate concrete floors. The structure contains 18,000 cu. yd. of concrete with an unusually low proportion of reinforcing steel, only 7.2 lb. per sq. ft.

Because of poor soil conditions, oily sand with water table only 9' below grade, the structure is freestanding in what is virtually a floating concrete box. The floor is an inverted flat slab, 16" to 30" thick and water-proofed, tied to waterproofed retaining walls, within which the two upper decks are built. Ten-inch deck slabs are carried on 16" and 18" diameter bell-topped columns averaging 30' o.c. each way. Edges of upper



Photos: Julius Shulman



Reinforced concrete parapets, 31/2' high, protect careless drivers, shield headlight glare from surrounding buildings, also give lateral support to edges of slabs that are cantilevered out 13'.

Lower deck at one end is at street level. Only stairs and pedestrian ramps give access to upper decks; there are no automobile ramps between decks.

decks are kept 5' to 17' away from the retaining walls to give adequate ventilation.

The upper decks are cast in two halves separated by a subway grating type of expansion joint that allows movement up to 3". Free-hanging drainage gutters are slung beneath the joints.

Twelve 15" thick, Z-shaped shear slabs built near the center of the structure provide lateral rigidity against seismic forces. Their 12' stems and 8' wings are designed to fit unobtrusively between parking stalls.

Albert C. Martin & Associates are the architects and engineers; T-S Construction Engineers Inc., general contractors.





Completed frame (above) is roofed with ribbed galvanized steel sheeting and suspended glass-fiber insulation boards. Note longitudinal bracing.

The 278' truss (below) is 4' wide and 8' to 14' deep. It is assembled on ground in quarter sections, hoisted in place by cranes.





Completed building is 589' long, 180' deep including 40' lean-to in rear. Total hangar area is 74,000 sq. ft., plus 26,000 sq. ft. of office and shop between hangars, in lean-to.

# 2. BOX-SHAPED STEEL TRUSSES SPAN 278'

Three-hinged frame cuts roof weight to 23 psf, framing costs to \$7.45 per sq. ft.

Spanning 278', these prefabricated boxshaped steel trusses are believed to be the longest three-hinged steel arches ever built. They frame two adjacent hangars at Allegheny County's Greater Pittsburgh Airport with a dead load of 23 lb. per sq. ft. of area covered. Erection of the steel structure took 9,200 man-hours. Framing cost: \$744,630, equivalent to \$497 per ton or \$7.45 per sq. ft.; cost of the entire project, \$1,964,163 or \$19.64 per sq. ft.

Each hangar is framed with six 42-ton arches spaced 25' o.c. having a rise of 76'. Arch sections are composed of four chord angles connected with stiffeners to form an open box 4' wide and varying in depth from 8' at the base and crown to 14' at the eaves.

Longitudinal bracing is by a knee-braced truss at every fourth purlin between arches. Diagonal wind bracing in both upper and lower chord systems of all except the center bays transmits forces to the foundations.

The hangar is designed for 23-lb. dead load, 30-lb. snow load and variable wind pressures following ASCE recommendations: 20 psf against vertical surfaces, 12 psf suction on the windward quarter of the roof arc, 13½ psf suction on center half and 9 psf suction on leeward quarter.

Components are prefabricated, with gusset plates shop-welded to the arch chords ready for bolted assembly into quarter-span sections at the site. Side arch sections are erected first, the base hinge pins driven home and each section supported on a temporary erection tower while adjacent sections are joined together with purlins, struts and diagonal bracing. Next, two cranes lift the two center arch sections into position

where the chords are spliced and the crown hinge pins installed. Finally, before releasing the arch load, tie-bars below the hangar floor line carry arch thrust.

#### Displacement caisson foundations

Because the new Pittsburgh Airport hangars are built upon boulder-strewn fill of inadequate bearing capacity, it was necessary to carry the foundations down to a compact shale and rock strata some 8' to 40' below grade. Ordinary steel or cast-in-place piling would have been costly because of the need to remove boulders. The concrete displacement caissons finally selected saved \$7,000 over drilled or open dug caissons. The 108 displacement caissons, each carrying 110 tons, cost \$25,000, or \$231 each.

Only recently introduced to the US, this displacement caisson technique involves first driving a 13%"-thick, 20"-dia. steel casing down to rock (in this case) by blows of a 3½-ton drop hammer on 2' to 3' of dry concrete at the base of the casing. Thus the casing is pulled down rather than driven. At a predetermined depth the casing is raised slightly and the concrete rammed out to form a bulb roughly 3' in diameter. Then the casing is gradually withdrawn while more and more concrete is added, resulting in a column of dense, 1,000-psi concrete, from 22" to 24" dia., which has carried up to 250 tons in tests.

The arch structure of the new hangars was designed and fabricated by Dresser-Stacey Co., Ideco Div., in cooperation with Joseph Hoover, consulting architect and Leland W. Cook, consulting engineer. Foundations, by the Franki Foundation Co.



Bottom-rolling doors, 40' high and 255' long, are electrically driven, nesting into pockets at sides. Each hangar is fully sprinklered, heated by unit space heaters.

Interior of hangar is 38' high. Inner columns, 20' high, permit ample clerestory lighting between them.

# 3. DEMOUNTABLE PRECAST HANGAR SPANS 130'

Ingenious hinges eliminate grouting, help cut cost to \$5 a sq. ft.

To speed construction and to provide a fully fireproof structure that can be easily dismantled and rebuilt elsewhere, the Royal Canadian Air Force built this hangar entirely of precast units that are assembled dry. All critical joints are designed as hinges transmitting only normal and shear forces but no bending moments. With a span of 130' plus 18' side bays, the first 160'-long prototype hangar was precast by 18 men in 30 days and erected by 10 men in 28 days. Cost: \$5 per sq. ft.

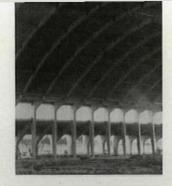
Entirely prefabricated, the unique structure is composed of a series of bents 10' o.c. Each bent is developed from six precast concrete members: a pair of three-hinged side frames carrying between them a 110' three-hinged arch (see diagram below). Thus the structure is statically determinate and is not affected by variations in temperature, shrinkage of concrete or uneven foundation settlements. Most of the load is concentrated on the external lean-to columns through which the horizontal thrust is also transmitted. Thus maximum friction is developed in the foundation to resist hori-

zontal thrust and the foundations can be kept comparatively small,

To permit the use of standard truck cranes for erection, the maximum weight of precast members is kept below 12 tons each—outer lean-to members weigh 11 tons; inner cantilever columns, 7½ tons; and the 60'-long arch ribs, 6½ tons. Precast roof slabs span between bents. There are no purlins; lateral stability is assured by reinforced concrete stiffeners between the main bents and by adjustable diagonal cable bracing in the two center bays.

The hangar is designed for a snow load of 40 psf and a wind pressure of 30 psf using concrete of 4,250 psi for primary members and 3,000 psi for the roof slabs.

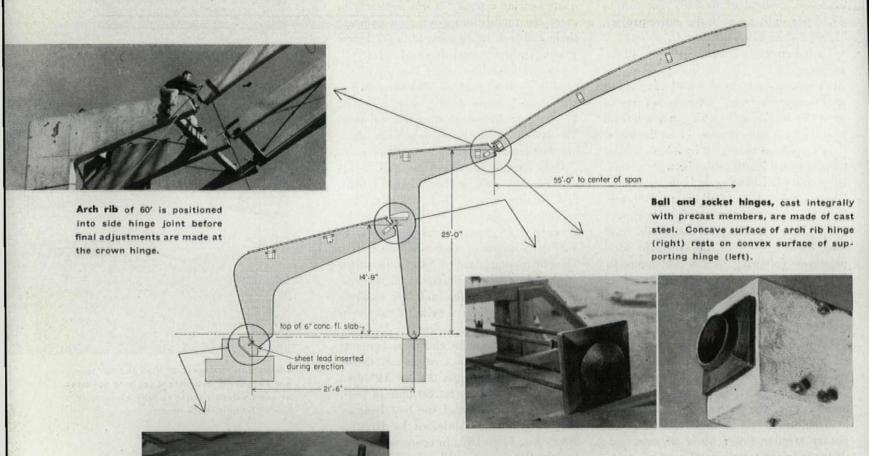
Before pouring the precast members, cast steel "ball-and-socket" hinges are anchored to the reinforcing steel in the forms. To permit both horizontal and vertical movement, these hinges have spherical contact surfaces (a convex surface of 8" radius supporting a concave surface of 91/4" radius), with a tapered steel pin at the center of the hinge to handle shear.



Main hinges at the foot of the lean-to members are of concrete. The curved end of the lean-to member is seated on a small precast block of slightly larger curvature, with a cushion of sheet lead between the two concrete surfaces to prevent binding.

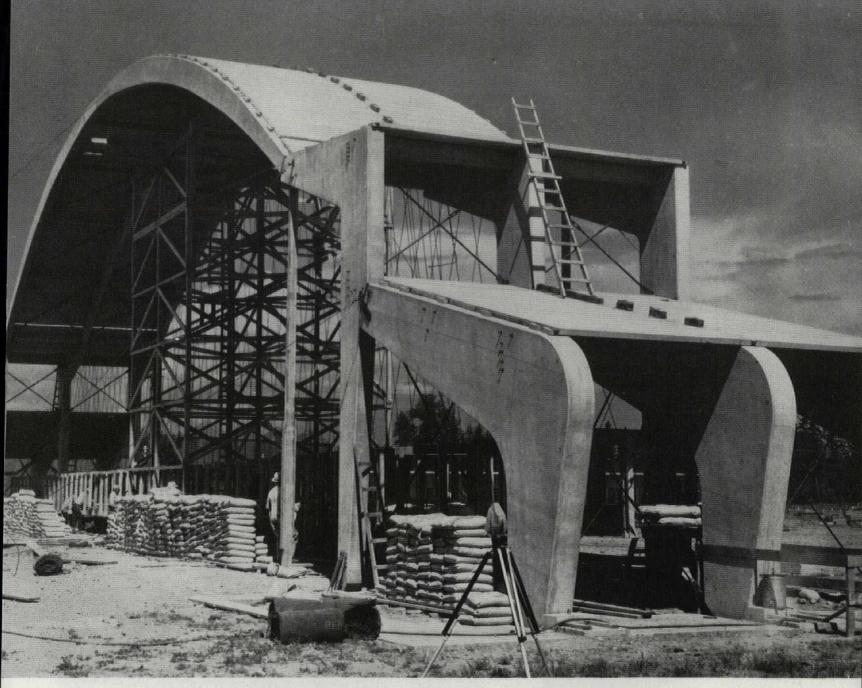
Erection sequence: 1) lean-to members are supported on adjustable struts; 2) inner columns are connected with the aid of temporary steel straps to form the side frames; 3) adjacent frames are joined by stiffeners and diagonally braced; 4) to avoid uneven stresses either in the arch ribs or in the cantilevered ends of the inner columns, a temporary raking strut is used atop an erection tower; 5) with the aid of a built-in screw jack on the tower, the angle of each raking strut is adjusted to develop a horizontal thrust equal to the vertical load in the completed structure; 6) when adjacent pairs of arch ribs are thus positioned and braced with stiffeners, they are lowered on the jacks until the crown hinges meet.

Erected cost of the 26,560 sq. ft. hangar is \$134,000 excluding utilities. Designers: Safir Engineering Consultants Ltd.



Main foundation hinge is precast block with steel pin to handle shear, Lead cushion prevents binding with column.

Photos: (top opp. p.) Elliot:-Motion Picture Services; (others) courtesy American Concrete Institute



Test loading of completed framing bents (above) is carried out with sandbags on suspended platforms. Loaded to  $1\frac{1}{2}$  times design load, deflection at crown was only  $\frac{3}{8}$ " (1:4,000 span ratio) and recovery after 24 hours of applied load was 75%. Giant bents weigh 50 tons, but are made in six pieces to facilitate handling.

Clear span of 130' (below) was major RCAF requirement of this hangar. Other requirements: 20' clear height at sides, 30' minimum height for the center 60' of width and as much height at the crown as economically feasible. (Actual height: 38'.) Three hinged arches of 110' span and 18' rise are carried between cantilevered projections from inner columns.



# 4. ENGINEERING NOTES

#### Freestanding stairs make 500° turn

This freestanding reinforced concrete spiral staircase at the New Johannesburg Railway Station, South Africa, is claimed to be the first concrete spiral of more than one complete turn supported only at top and bottom. It contains 13% turns in 26′ with a further ½ turn built into the bottom anchor. The stair treads, 10′ long, are cantilevered from a 16′-diameter inner spiral beam, having a helix of 11′ internal diameter with a pitch of 16′. The staircase is designed by A. S. Joffe, consulting engineer for South African Railways.



South African Railways

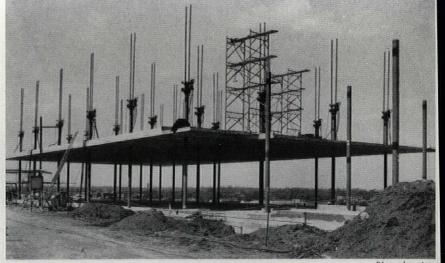


Photo-Associate

#### Lightweight lift-slabs speed construction

A total of 250,000 sq. ft. of lightweight concrete slabs are being jacked up supporting columns to provide intermediate floors and roofs for five RCA-Victor laboratory and office buildings at Camden, N.J. This familiar Youtz-Slick technique is claimed to be 20% faster and 15% cheaper than cast-in-place construction—the structures are going up at an average rate of  $2\frac{1}{2}$  slabs a week (about 22,500 sq. ft.) for an estimated cost of \$1.83 per sq. ft.

The 80' x 110' slab (shown in photo)

is lifted 6' per hour by reciprocating jacks atop 24 concrete-filled steel pipe columns, each 8" in diameter and spaced 18' to 24' apart. Expanded shale aggregate used in the slabs cuts weight down to 104 pcf for a compressive strength of 3,000 psi. Slabs are 8½" thick for a 50-lb. live load, 10" thick for 100-lb. The buildings are designed by Architect Vincent G. Kling and engineered by Severud-Elstad-Krueger, consulting engineers. Turner Construction Co. is general contractor.



#### Drive-in bank turns customers around

Because the lot adjoining the drive-in window of the Citizens & Manufacturers National Bank of Waterbury, Conn. is only 35' wide, a 25' diameter automatic turntable was installed to give motoring customers a 120° turn.

Control is by three sets of photoelectric cells and a three-color traffic light (mounted atop two posts on left). At the green signal, the customer drives onto the turntable, breaking the electric eye at the front of the table, which brings up a yellow light in the signal box. When his car breaks a second electric eye at the rear of the table, a red light appears

telling the motorist to stop. Five seconds later the table is rotated 120° in about three seconds by an electric motor beneath the driveway.

When the table has come to a standstill, the motorist drives off, breaking a third electric eye across the far driveway, which allows the turntable to handle the next car. Rotation of the table is semicontinuous; it does not reverse back to its original position for each customer. Copper heating coils are laid in the driveway and turntable to eliminate snow and ice in winter. The turntable is designed by Mosler Safe Co. Photo: Cornelius, courtesy Aluminum Co. of America



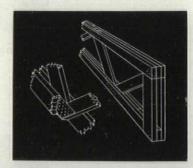
# Insulated aluminum wall for \$1.11 per sq. ft.

A lightweight sandwich wall consisting of glass-fiber insulation between two sheets of corrugated aluminum is being used to enclose a heavy press plant for the US Air Force at Cleveland, Ohio. Having a "U" value of 0.155 (twice the insulating value of a 12" masonry wall), this new sandwich wall was selected from direct competitive bids with alternate wall constructions. The average material and installation bids: aluminum sandwich wall, \$1.11 per sq. ft.: two sheets of painted galvanized steel with glass-fiber insulation, \$1.45 per sq. ft.; and one sheet of cement asbestos siding with asbestos board insulation backup, \$1.32 per sq. ft. Weight of wall: 11/2 psf.

Weighing only 21/2 lb. per. sq. ft., this aluminum wall is simple to erect, needs no painting and very little subsequent maintenance. First, corrugated sheets of 0.024" aluminum siding are fixed to steel supporting girts with 3/4" self-tapping screws, then 1" thick sections of glass-fiber insulation are temporarily bonded to the aluminum siding with a reclaimed-rubber adhesive and finally an exterior siding of 0.032"thick corrugated sheets aluminum is fastened to the steel girts with 2" self-tapping screws to hold the entire construction firmly in position. Cadmium-coated, stainlesssteel screws are used for the connections, holes being drilled before the screws are tapped into place. Side and end laps on the exterior aluminum siding are secured with 3/4" aluminum sheet-metal screws.

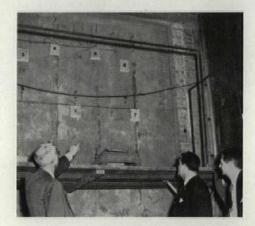
In all, 157,711 sq. ft, of aluminum sandwich wall is employed, plus 60,808 sq. ft, of corrugated translucent plastic for the fixed window areas. The plant is designed by McGeorge-Hargett & Associates, architects and engineers.

# Timber joints strengthened by gusset plates



Timber joints can be given 50% greater shear strength with less nailing by a new Swedish technique of placing sheet steel gusset plates between connecting members. Made of galvanized sheet steel only 1 mm. thick that can be penetrated by ordinary nails, each gusset plate has sharp projections to grip the wood. As the nails can be driven in at close spacing, no great accuracy is needed to give a rigid and safe joint. Such gusset plates have been used in 2,000 Swedish roof structures with spans up to 72'.

#### Vermiculite spandrel wall earns five-hour fire rating



A 10' x 10', 4''-thick vermiculite concrete spandrel wall successfully withstood a 53/4-hour Underwriters Laboratories' fire test and has been awarded a five-hour rating, highest of UL classifications. Temperatures ranged from 1,700° in the first hour of the test to 2,200° in the fifth. The wall also withstood a hose stream pressure of 45 lb. for five minutes on its fire-exposed side in the subsequent fire-hose test,

Made from a 1:4 mix of vermiculite concrete and designed for a 30 psf wind loading, the panel was framed by 2" x 2" x 3/16" angle irons top and bottom connected by 1½" x 1½" x 3/16" channels bolted 2' o.c. It was designed and constructed by the Vermiculite Institute.



#### Reinforced brick panels for \$1.25 per sq. ft.

Top and bottom walls shown being erected on an addition to the Schulze & Burch Biscuit Co. plant at Chicago, Ill., are prefabricated. Reinforced brick panels in sizes from 7½' x 3', to 8' x 5' and 2½" thick are attached by metal clips to a steel frame. Erection is rapid: four men with a light crane install 550 sq. ft. a day. Installed cost: \$1.25 per sq. ft., including grouting, while conven-

tional masonry on the same job cost \$1.40 per sq. ft. Panel weight: 27 psf.

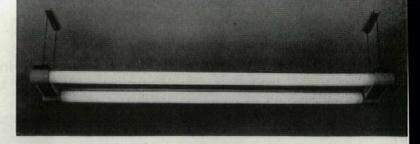
Designed to withstand a 20 psf wind load, panels are precast in special molds, reinforced horizontally and vertically with steel rods spaced 9" o.c. and backed with insulating board. The addition is designed by Architects West & Anderson; Silbrico Corp. designed and manufactured the reinforced brick panels.

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## **NEW PRODUCTS**



Random grain veneer hung like wallpaper(p. 204)

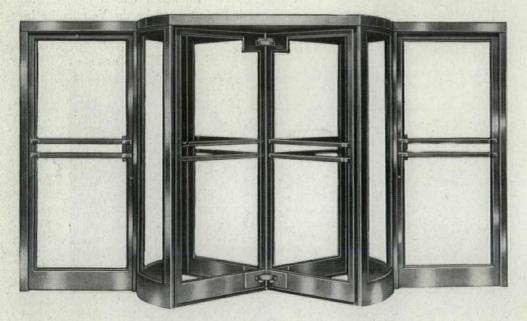


Lighting fixture absorbs working parts in basic design (p. 202)



Grouting machine forces mortar into stonework (p. 194)

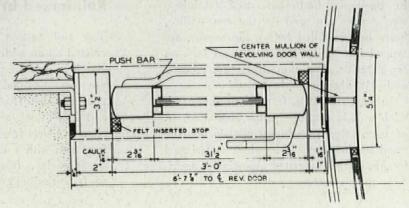
#### Pushless revolving doors come packaged with swing doors



Revolving door flanked by swing doors comprise the basic plant-assembled entrance unit. Doors can be ordered in various combinations, several metal finishes, and with choices of hardware.

> Pre-engineered connections between swing and revolving sections make site assembly of stock entrance less costly than custom components.

Offering complete entrances of revolving and swinging doors from a single source, International Steel Co. promises contractors-and the clients they represent - production-line savings in initial price as well as lower installation costs. This factory assembly does not tie design strings on the architects, however. Choice of metals, hardware, trim and various combinations of door groupings can be made among stock models. The manufacturer also fabricates custom packages of doors, jambs, side lights, transoms, pushbars, ornamentation and speed controls to specifications. One attractive to-order group is the entrance to the Sinclair Oil building in New York (AF, Jan. '52). It was, in fact, the success of the custom continued on p. 194



#### ROOF FINISHES-Part 4 (for parts 1-3, see AF, Apr. '54)

					BL	BUILT-UP		ROOFING				
DESCRIPTION	MA	SLOPE X. MIN.	WGT.	SIZE	COSTS	M'F'RS. BOND	TSM'F'RS UNDER-	FASTENER	APPL I CAT I ON	LAP	COLOR & TEXTURE	U.L.R.
Wood or Nailable Deck	5-Ply 2"to 4"	0 to 1/8"in 12"	525#/sq. 625#sq.	ap	al . 22 bl . 22	20 yr.	Rosin Sheath- ing	Galvanized nails & Asphalt	5-Layers #15 A.S.F. & Gravel or slag imbedded in hot asphalt	19:8 244。	Rough Various colors	Class
	4-Ply do.	do.	480 #/ sq. 580 #/ sq.	do.	a-b. 19 cl . 21	15 yr.	do.	-op	Similar to above but use H-Layers #15 A.S.F.	6T	do.	do.
GRAVEL Non-combust-4-PI	-Ply do.	do.	550 #/ sq.	do.	a-b. 23 cl . 25	20 yr.	Asphalt	do.		275 #	do.	do.
insulated	3-Ply do.	do.	505#/ sq. 605#/ sq.	do.		15 yr.	.op	do.	Similar to above but use 3-Layers #15 A.S.F.	24-213"	· op	do.
Wood or	5-Ply 3" to 2"	2" O"In 12"	, 530 #/ sq.	do.	Q.	20 yr.	Rosin Sheathing	Galv. nails & Pitch		19 11 2 2444 11	· op	do.
	4-Ply do.	do.	490 # sq.	do.	a-b. 19	15 yr.	·cp	do.	Similar to above but use 4-Lavers of #15 P.S.F	19 "	do.	do.
SLAG Non-combust-4-Ply	-Ply do.	do.	560 #/ sq.	do.	9	20 yr.	Pitch	do.	do.	275 "	•op	do.
insulated Deck	3-Ply do.	do.	520#/ sq.	do.	1.0	15 yr.		•op	Similar to above but use 3-Lavers of #15 P.S.F.	24-2/3"	·op	do.
or Nail	able 2"in 12"	12"0";n 12"		do.	6	10 yr.	Rosin Sheathing	do.	1-#30 P.S.F. & 2-#15 P.S.F.	116 II	· op	do.
or Nail:	ble 6"in 12"	2" 1 "in 12"		-op	91.	ю уг.	-op	Galv. nails & Asphalt	1-#30 A.S.F. & 2-#15 A.S.F. (or 4#15A.S.F.) & Asphalt coat	19 11	Smooth: Black	Class
le "	Deck 3"in 12	12" do.	19 4# sq.	•op	и.	10 yr.	Asphalt Primer	. op	3-#15 A.S.F. & asphalt coating	24-2/3"	do.	do.
	4-Ply 9"in 12"	12" 3" in 12"	, 235# sq.	do.	. 24	15 yr.		Galv. nails & Asphalt	2-#15 A.S.F. & 2-19" Wineral Surfaced Roofing	19 "	Rough: Various	do.
	4-F1y do.	do.	200 #/ sa.	•op	.24	lo yr.	do.	do.	Similar but less asphalt	do.	Colors	do.
Concrete 4_	4-Ply do.	do.	270 # sq.	do.	. 25	15 yr.	Asphalt	do.	2-#15 A.S.F. & 2-19" Mineral Surfaced Roofing	do.	•op	do.
	3-Ply do.	do.	225# sq.	do.	. 23	Do yr.		do.	Similar but 1-#15 A.S.F.	do.	do.	do.
Aluminum and chips over built-up roof	m)		265#/ sq. 365#/ sq.	.002" Thick Foil	æ.	ZD yr. Material Guar.	L-30 * & 2-15 * Feats	Aluminum nails & cement	Aluminum applied over Asphalt roof & imbedded with marble chips.	3" End lap 3" Side lap	do.	Class A
Mica Surface		2"to3" in 12"	65#/ sq.	36 ". wide 36' long	or.	Con-	None	Galvanized or Aluminum nails	Nail to wood sheathing cement all laps	19 "	•op	Class
Gun Metal both sides		•op	55#7 sq.	do.	or,	tractor would	do.	& Asphalt Cement	do.	2"	Gray Smooth	do.
Mica Surface both sides		do.	45# sq.	do.	og.	ally.	do.	•op	*op	6T	Rough Various	None
Mineral Surfaced	- pao	•op	90 to	do.	. 12	two	do.	do.	do.	2"to 4"Head 4"to 6" side,	colors	Class C
Pattern Edge Roll		4"in 12"	105#/ sq.	32"\$ 36"W. 42'\$ 48'L.	.15	guar- anty	do.	do.		2" Side lap 14" or 16" Exposure	do.	do.
19" Selvedge Double coverage	- de	1"in 12"	140 # sq.	36" wide 36" long	. BE	the se	do.	.cb	do.	19 " Head lap 17 " Exposure	*op	op.
Smooth Roll			6 5#/ sq.	b 5 %/ s a.	. 10	71			THE RESERVE THE PERSON NAMED IN COLUMN 1	HARRY CO. L. C. L. C.	Section 1997	4855

ABBREVIATIONS: A.S.F.-ASPHALT SATURATED FELT; EXP.-EXPOSURE; GA.-GAUGE; GUAR.-GUARANTY; L-LENGTH; M"F"B-MANUFACTURERS;
P.S.F.-PITCH SATURATED FELT; SOFT.-SQUARE FOOT; U.L.R.-UNDERWRITERS LABORATORY RATING; W.-WIDTH;
M/SO.-POUNDS PER, SQUARE; A.S.AS.F.-ASPHALT SATURATED ASBESTOS FELT; P.S.AS.F.-PITCH SATURATED ASBESTOS FELT.

Minneapolis School of Act

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# BUILT-UP ROOFING (cont.)

TYPE	DESCRIPTION	MAX. MIN	WGT.	SIZE	SO.FT.	BOND LAY	LAY	FASTENER		APPLICATION	LAP	TEXTURE	U.L.R.
ROMENADE OOF	For use under Promenade Tile	1"1 12" O"1"1	0"in12" 275# sq.	36" wide rolls	.20	None	Pitch Coat	Pitch	1 + 1	15# P.S.F. 15# P.S.F.	19"	Black Smooth	1
SBESTOS	Asphalt Saturated Asbestos Felt. Over Insulation	6"in12" ½"in12"	2" 145 to 190#/sq	32"&36" Wide Rolls	.22 .19 .18	20 yr. 15 yr. 10 yr.	111	Nails & Asphalt	3 t	15 1b. A.S.As.F 15 1b. A.S.As.F 15 1b. A.S.As.F1#15 A.S.F.	245" 22" 17"	ор	Class A with Covering
	Pitch Saturated Asbestos Felt. Over Insulation	12" in 12" (0" in 12"	ږ do.	do.	.21 2	20 yr. 15 yr	11	Nails & Pitch	# - 15 3 - 15	lb. P.S.A <sub>S.</sub> F lb. P.S.A <sub>S.</sub> F	24½" 22"	do.	do.
	Asbestos felt may also be applied over a wood deck	also be appl	ied over a	wood deck	0	a non-co	r over a non-combustible deck.	e deck.			THE RESIDENCE		
REPARED SBESTOS ELT	A.S. As. F. Smooth Surface Granule Surfaced White Top	2"in12" 3"in12" 3"in12"	2" 85#: sq	32" W. 40'6" L.	.15	Normal. 2 yr. contr- actor	1	Galvanized Nails Asphalt Cement	0.000	Applied directly over T.&G. wood sheathing cement Horizontal Laps	2" Head lap Butt Sides	Various colors Smooth Rough White, Smooth	Class
						ROOF	FING	SHINGLES	GLES				
TYPE	DESCRIPTION	SLOPE MAX. MIN.	WGT.	SIZE	THIC	BUTT. COST THICK.SO.FT.	GUAR-	-UNDER- LAY	FASTENER	APPLICATION	LAP OR EXPOSURE	COLOR &	U.L.R.
SBESTOS	American Individual	4"to 5" In 12"	2" 300#/sq 600#/sq	8 to9½ W. q 16" to q 18½" L.		" Varies widely			Galv. iron, Copper or Aluminum Naiis	Laid on matched roofer's covered with waterproof	CATT	Smooth: Various Colors	Class
	American Duplex (2 shingles)	do.		16 to 17½ W.	W. 5/32"	ор		Water- proof Paper.	do.	paper or slater's felt.	do.	do.	do.
	Dutch or Scotch	5" in 12"	12" 260#/sq	q 16 to 24" W.	W. do.	ор	10 to		do.	do.	3" Head lap	do.	do.
	French or Hexagonal	do.	245 to 265#/sq	q 16" x 16"	. do.	op	Years	do.	do.	do.		do.	do.
	American Strip (3 Shingles)	do.	. 300#/sq	q 16"to 32"W.	w. do.	ор		do.	do.	do.	2" Head lap	do.	do.
	3-Tab Hexagonal Strip(3 Shingles)	do.	245 to 265#/sq	36" W. q 11 1/3 L	do.	Ор		do.	do.	do.	4 2/3" Exp.	do.	do.
SPHALT	Asbestos-Plastic Coating - 3 Tabs	4"In 12"		9 36" W.	3/8"	ор	10 Yrs	do.	do.	do.	2" Head lap 5" Exposure	do.	Class
	Strip Shingle 3 tab	3"in 12"	12" 300#/ sq	36" wide	.2"	do.	10 yrs.	15# . felt	galv. iron or alu, nails	laid on 6"-9" T& G wood decking	5"	Course mineral many colors	Class
	Individual Dutch lap	4"In 12	12" 160#/sq	STATE OF THE PARTY.	16" to	ор	ор	+ 4	Copper, Galv. ire	Laid on matched roofer's covered	-	Rough	
	American	, op	320# sq	q 16"L.x12"	. do.	ор	do.	Roofing	Aluminum Nails	with Asphalt Felt or Roll Roofing	6" Head lap 5" Exposure	Colors	do.
	Strip Shingles 3-Tabs	op.	210 to 275#/sq	36" Wide q 12" Long	do.	ор	ор	do.	do.	do.	2" Head lap 5" Exposure	do.	do.
	Hexagonal Strip 2 or 3 Tabs	op		36"	Op .	op	ОР	ор	op	do.	2" Head lap 4 2/3" Exp	do.	ф.
	Inter- Standard locking	do.	. I70#/sq	q 19×19 3/8'	3" do	op	ор	op	do.	do.	2 to 3差"Head 4去" Side lap	do.	do.
	Double	do.	. 230#/sq	4 182×23 3/8"	op "8	op	do.	op	do.	do.	4½" Head lap 67/8"Side lap	do.	do.
	Lockdown	do.	135 to 162#/sq	16" x 16"	do.	op	None	do.	Copper Staple	do.	2½" Side &	do.	do.
LUMINUM	4-Way Interlocking	. 4"to 5" in. 12"	5" 12" 40#/sq	8" × 74" 8" × 242"	3/8"	09.	None	#15 or #30 Felt	Aluminum Nails	Over solid deck sheathing.	Interlocking	Smooth & Embossed Many Colors	1
LATE	Sloping Standard 20"in. Roofs Textural 12"	20"in. 4"in 12"   12"	12" 750#/ s: 900#/ s: 1400#/s: 1800#/s: 2700#/s:	750%/sq 10"to 26" 900%/sq Long 1400%/sq 6" to 14" 1800%/sq wide 2700%/sq	3/16" 2/4" 6 3/8" 8 3/4"	1.05	20 yrs.	15#Felt 30#Felt 30#Felt 45or65# Roll Roof	Copper or Galv. Iron nails & Slater's Cement.	Applied to tight sheathing or nailing compound.	4" Lap up to 8" in 12" slope 3" lap over 8" in 12"	Smooth or Rustic. Many Colors	

# ROOF FINISHES—Part 6

ROOFING SHINGLES & TILES (cont.)

SLATE Roofs or Heavy Use Special Walks Special Walks Special Walks Special Walks Suchern Pine Redwood Cypress Southern Pine Handsplit & pre- Stained handsplit Spanish-rounded Spanish-rounded Shingle-Flat Shingle-Flat Interlocking Flat Corrugated Shingle-Flat Shingle-Flat Shingle-Flat Corrugated Shingle-Flat Shingle-Flat Closed Closed Roman Fromenade Flat Shingle Greek G	12" 10		2715	THI CK.	So. FT.	ANTY	LAY	L AS LENER	APPLICATION	EXPOSURE	TEXTURE	U.L.R.
Redwood Cypress White Cedar Southern Pine Handsplit & pre- Stained handsplit French Corrugated Spanish-rounded Barrel-Mission Curved Shingle-Flat Interlocking Closed Roman Greek Flat Framch Flat Shingle Flat Shingle Flat Shingle Flat Shingle Fre-Cast Fre-Cast Free Free Free Free Free Free Free Fre		3600#/sq	9" × 10" to 9" × 18" 1" Thick	1	2.00	Depends on Location	Built-up Roofing	Cement	Laid in 1." Cement Bed		Various colors & Textures	
Handsplit & pre- stained handsplit Corrugated Spanish-rounded Barrel-Mission curved Shingle-Flat Interlocking Flat Closed Roman Greek Promenade Closed Roman Greek Flat Shingle Flat Shingle Flat Shingle Flat Shingle Fre-Cast Fre-Cast	3"to6" 2	200#/sq	5 m	3/8" to 1/2" (5/8" to 1 special)	Varies widely do.	15 yrs. extend- ed if dipped	Roofer's Felt	Galvanized or Copper Nails.	Laid on felt over spaced or solid sheathing. Shingles spaced not less than 1/4" apart nor	Exposures 4½" for 16"L 5½" for 18"L. 7½" for 24"L. 8" for 27"L.	do.	
French Corrugated Spanish-rounded Barrel-Mission curved Shingle-Flat Interlocking Flat Closed Roman Greek Greek Fromenade Ouarry Tile Flat Shingle Flat Shingle Fre-Cast Fre-Cast Franch	do.	200 to 250#/sq	25"-27" L. W.varīes	1/2" to 1 1/4"	do.	do.	do.	•op	more than 3/8".	8" to 10" Exposure	Rough Many Colors	1
Spanish-rounded Barrel-Mission curved Shingle-Flat Interlocking Flat . English Closed Roman Greek Fromenade Or Tile Bermuda Flat Shingle Spanish Fre-Cast Pre-Cast	+5" +0 1 5"in12" 1	1000 to 1600#/sq	9T ×6	3/8"	do.	20 yrs.	30#or40# Felt	Copper Nails	Tile Laid over Asphalt Felt	3" Head lap 1½" Side lap	Blues, Grays Greens, Reds	Class A
Barrel-Mission curved Shingle-Flat Interlocking Flat Closed Roman Greek Promenade Quarry Tile Bermuda Flat Shingle Spanish Fre-Cast Fre-Cast	45" in 8		9년" ₩.	1/2"	do.	do.	do.	do.	do.	ap	Fire Flashed & natural	do.
Shingle-Flat Interlocking Flat and Interlocking Closed Roman Greek Fromenade Ouarry Tile Bermuda Flat Shingle Spanish Fre-Cast Frac-Cast	do. 1	1350#Vsq	14" to 18"L. 6" to 8" W.	1/2"	do.	do.	do.	, ob	Wood strip under each cover tile for Nailing	do.	Smooth or Lightly Scored	do.
Interlocking Flat .  Interlocking Closed Roman Greek Fromenade Or Or Quarry Tile Bermuda Flat Shingle Spanish Fre-Cast Pre-Cast	6" 10 1	1500 to 1750#/sq (	12 to 15" L. 6" to 7" W.	3/8"1/2 9/16,5/8, 1",5/8	do.	20 yrs.	30# or . 40# Felt	Copper Nails		2" Head lap over third course above	Blues, Grays Greens, Reds Smoothed or	Class A
Interlocking Closed Roman Greek Promenade Out Quarry Tile Bermuda Flat Shingle Spanish Fre-Cast Pre-Cast	4" în 8	800#/ sd	134" Long 8" Wide	3/4" 4	do.	do.	do.	do.	, ob	3" Head Tap	Scored	do.
Roman Greek Promenade 2" in Quarry Tile Bermuda Flat Shingle Spanish Fre-Cast Pre-Cast		bs /#006	ll" long 8≩" Wide	do.	do.	do.	do.	do.	do.	do.	qo.	do.
Greek Promenade 2"in Ouarry Tile Bermuda Flat Shingle Spanish TE Pre-Cast	45" in 1	1400#/sq	12층" L.	1	do.	do.	do.	do.	do.	2毫" Head lap	do.	do.
Promenade 2"in or Ouarry Tile 12" Bermuda Flat Shingle Spanish Fre-Cast Panel	do. 1	1450#/sq	do.	1	do.	do.	do.	do.	do.	do.	do.	do.
Bermuda Flat Shingle Spanish TE Pre-Cast	1/4"in 9	bs/#006	Square; square; 6x24m or 9m 8x34m or 4m	1/2" to 1 3/8"	do.	do.	Built-up Roof	Cement Mortar	Set in bed of cement Mortar	None	Red. Smooth or Non-skid	do.
Flat Shingle Spanish Pre-Cast Panel	2½"in 1	1050#/ sq	152"x82"	2"	.35	None	30# Felt	Cement Mortar		13½" × 9" Exp.	Many Pastel	1
Spanish Pre-Cast Panel	do. 9	bs/#006	15" × 84"	1,1	.32	do.	do.	do.	roofing. 90# Set Tile in Mortar bed.	13½" × 8½" Exp.	Colors. Rough	1
Pre-Cast Panel	do. 9	bs/#006	15" × 8∄"	1	.32	do.	do.	do.		13" x 8½" Exp.		1
	4 3/16" 1	1600#/sq	2'-t" 2'-t" ".	1 1/8"T.	37.	5 yrs.	None	Elastic Compound Concrete Hook	Tite laid with shoulder hooked over purlin. Joints filled with mastic.	31 min. 7 max. Head lap	Red, Smooth	
PORCELAIN Steel Base 31 31 51 51 51 51 51 51 51 51 51 51 51 51 51	3" in 2	225#/sq	Approx. 1024 **	1	1.70	Indef- inite depends on loca- tion.	30# Felt	Galvanized or Copper head Nails	Laid on Tongue & groove roofing. Felt to overlap each previous	2½" horizontal lap 10" x 10" Exposure.	Many Colors & Textures	1

pre-dipping costs lat extra per so. ft.

PREPARED IN CONSULTATION WITH TURNER CONSTRUCTION COMPANY.

# for anhitects mely

A magnificent opportunity awaits the AIA convention to be held this month at Boston. It can turn the eye of the profession more toward the impact of architecture on the outer world.

In this outer world events are moving so fast that no merely habitual attitudes, inherited and held by unthinking custom from the days of patrons and princes, can cope with it. In a trice, since World War II, the homebuilding industry has been revolutionized and industrialized. Its impact is now collective, and the relationship of architecture to it is also a collective concern. In a trice the biggest building operations have come to be great bases of one kind or another, some of them military or naval, others industrial or commercial; and the relationship of architecture to them has to be worked out in a concerted way. The new materials and building methods that are sure to come with the fuller development of the atomic age are also sure to create new relationships among those who design these materials and methods and those who design the structures coming out of them.

In the face of all this, the profession is too small; it has to be bigger not only to render fartherlooking service but to gain needed power in the midst of other groups.

The profession is not adequately regarded: by government and other big clients it is too often dealt with as a mere adjunct to builders and engineers. It has to make known what it does and can do for the big world of affairs, in addition to tending the Epicurean garden of a few choice clients.

The profession is inadequately paid: it must find allies who will agree that adequate planning, in this complex day, depends on greatly enlarged total planning budgets for the total building operation.

Already one critically important turning has been made, toward the "outward look," in the firm establishment of AIA's public relations program. The crux of this move lies in the abandonment of isolation.

"Allies are what we need," cries John Root, public relations chairman with the new outward orientation. "We make no headway battling by ourselves when we should be finding those who share our purposes." Adds Root, "I was shocked to find only two architects were members of the Building Trades Council of a major city." And he goes on to stress a new attitude, which will concentrate less on fighting opposition (when such things are at stake as adequate registration laws and enforcement) than on making friends among those leaders of other industry groups who are wise enough and big enough to share the architect's interest in safety and performance in the interest of the public.

To all of this FORUM (which takes no part in AIA's internal politics) says amen and congratulates the profession's outward lookers. We share their outlook.

Three years have passed since this magazine took the first steps to initiate architect participation beyond the fine but small field of custom-house design, in the big mass movement that creates the new homes of a majority of Americans. Many are the setbacks and problems that attend the previously unaccustomed collaboration between architects and homebuilders. Yet few are those who can truthfully say they have given the problem their full creative imagination. Measured not against what might be but against what has been, the effect has been excellent because of a group of valiant and outward-looking architectural spirits.

In the matter of getting better acknowledgment and better pay for architecture on all sorts of buildings, a cardinal principle has been reiterated often by AIA's able public relations counsel Walter Megronigle. It is to let others put your case for you. In two AIA-sponsored round tables conducted by FORUM, one in New York sponsored by AIA's national public relations committee, one in Coronado set up by the California Council, able clients spoke more forcefully than architects could with grace speak for themselves, about the value and worth of architects' services. And those individual architects who have used these documents can testify to the value of the outward look, finding friends and setting up alliances.

#### Magazines A, B, etc.

Polls of magazine readers are a favorite diversion of publishers, and Progressive Architecture in May published an interesting review of one which seemed to put at least two of three magazines dealing with architecture in a dead heat for their readers' affections. P/A obligingly furnished the full report, which interested us greatly in "Magazine A." It seemed to have a slight edge in

96), "significant editorial improvement" ("A" 50, P/A 48, "B" 17) and "clip and mark for attention" ("A" 86, P/A 82, "B" 81).

P/A came out ahead, also by small margins, on four other questions ("read regularly," "keep on file," "take home," "receive at home"), so there was plenty of honor for P/A too, as well as for "A", which P/A identified as the one "whose readers like its round tables."

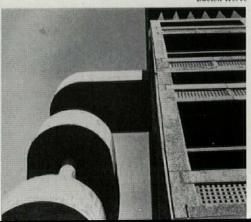
the most important classifications, mainly the ones where the report showed paired votes and votes for all three and not only the single votes. Adding up all the votes (as we think you should) we found "A" leading as "most helpful in your work" with 103 votes (P/A 100, "B" 89), "read most thor-

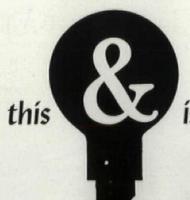
oughly" ("A" 111, P/A 110, "B"

What questions are asked and of whom? is the most interesting aspect of such polls. Naturally FORUM likes best the answers of some 880 of 2,000 AIA architects polled by another research organization. Of these 35.3% voted FORUM "as having the most influence with the architectural profession" against 28.1% for the next in line and 24.9% for the third. Among influential groups outside the profession the same poll gave such results as these: school superintendents voted FORUM "No. 1 architectural magazine in their field" by 7.4 to 1 over the next mentioned; hospital administrators 7.2 to 1; contractors 3.6 to 1; building owners and managers 14.5 to 1-and others in the same range. This does not say FORUM is vastly better than other magazines but it does say we have reached these people-the result of many years' editing with the outward look.

"The new brutalism" is a slogan coined in England for the kind of directness that leaves the studs and cross-bridging of a house exposed. It is a wide movement: witness Corbu's present addiction to concrete rough and reminiscent of the mountain it came from, or other examples of love for the homespun after the slick machine age. But these are basically sensitive designs—honey out of the rock. What will happen when the new brutalism spreads in earnest from our Senate chambers? D.H.







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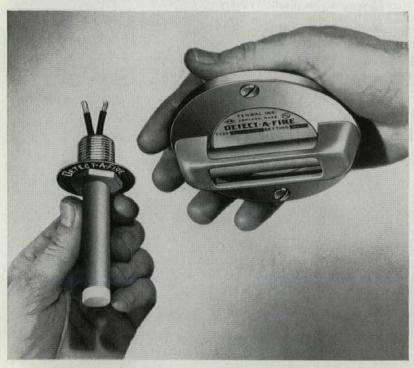
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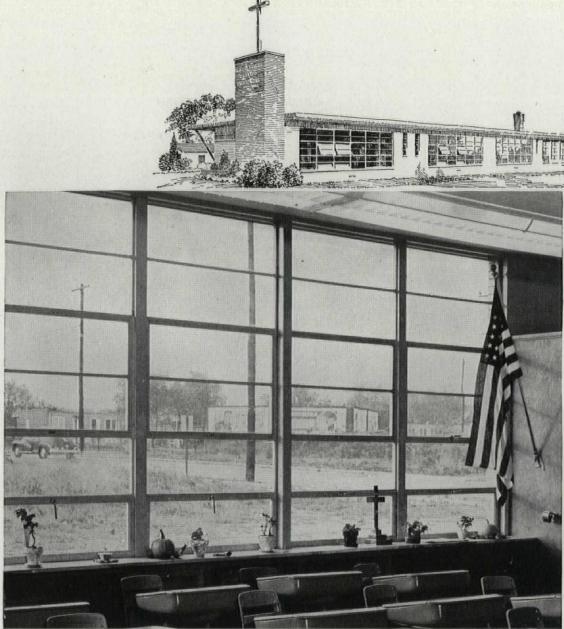
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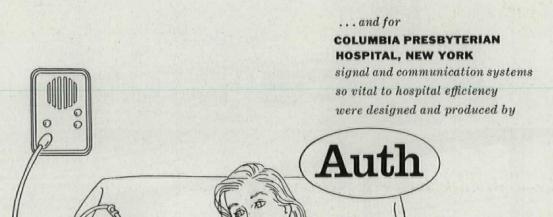


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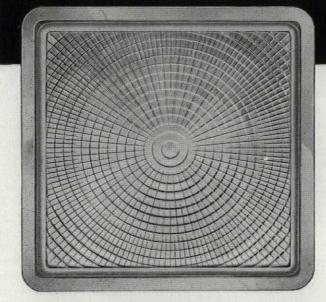
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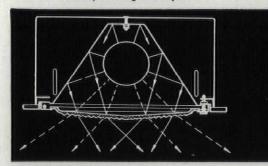


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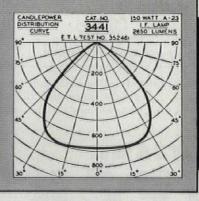
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# **EXCERPTS**

How other people and other publications see the building industry —a digest of interesting remarks by public speakers and of pertinen articles in the nation's press

# "Where'll Moses be when the lights go on?"

New York's controversial Coliseum is criticized for its hodgepodge proportions and disregard for site

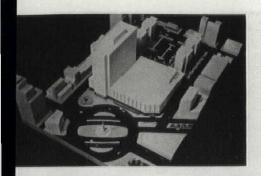
Excerpts from an editorial in the April 1954 issue of Art News

... All visible building is in a sense public. What concerns us here, however, is the official type about which the public has something to say.

Such a structure, probably the largest and most important one in the US since the war, is the New York Coliseum. . . . The huge exhibit and convention hall is being erected, along with a 20-story office building and two 14-story apartment houses, by the Triborough Bridge and Tunnel Authority . . . which is in fact hardly more than a pseudonym for Robert Moses, New York City's park commissioner and holder of some nine other state and municipal jobs (among them heading the TBTA). Bob Moses is no newcomer to controversy or polemics: the same dynamic qualities in him which have produced New York's superb system of parks, highways and bridges have often led him into curious and even outrageous stands on architecture, for his taste here is quaintly antiquarian. . . .

As so often happens when somebody wants to be—as one newspaper report of the Coliseum plans puts it—"conservatively modern," the results here are tragical, not comical.... But nobody except the Architectural Forum... has stressed either the utterly pedestrian nature of the architectural design, the relatively great importance of the location or, above all, the completely dictatorial way in which Mr. Moses is imposing this design upon the public without anyone getting in a word of dissent....

One needs only a rudimentary training in the history of art to appreciate the weaknesses of this design. Its hybrid pseudomodern detail and abbreviations are insignificant beside its total lack of relation to its site. . . . The Coliseum plan looks as if it really disdained, as well as ignored, the arc of the circus on which it is to stand . . . as if it merely faced another shoddy loft building instead of, diagonally across the axis of Columbus Circle, the matching concave double entry into Central Park.



But let us skip even that and the hodgedge of masses and proportions for the ment. Who rules on these matters and says citizens must swallow them? Moses the w Giver alone? For once, not entirely. In nigh-unprecedented gesture of spontaneous eralism he announces, as he gives out the ans, that "because of the prominent locam and the semipublic character of the facility," he has invited an architectural advisory mmittee to sit with him in august judgment a unanimous roster of conservative, eclecarchitects: it is as if the President applied an advisory committee on foreign polycomposed exclusively of isolationists. . . .

#### foreigner looks t US concrete

ustave Magnel says US engineers ould save money by more careful degn and construction

#### gest of a recent talk before e Concrete Industry Board of New York

gain and again I have been told that US ages are too high to permit fine engineering sign and quality concrete construction. his might have been true at one time but is longer true. During a coast-to-coast trip have seen examples of high-quality engineerig comparable with anything we have in urope. But they are exceptions. In general, restressed concrete construction techniques the US lag behind those used in Europe. here are several reasons for this: your retrictive building regulations, your satisfacon with poor concrete, your enthusiasm for aving labor and, perhaps, the fact that enhusiasm for new techniques exists mainly mong younger engineers who often lack exerience in economical design.

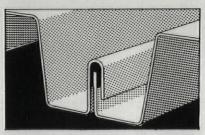
There is no doubt that the technique of restressing that allows Europeans and Canalians to build structures costing 15 to 20% ess than equivalent reinforced concrete or teel structures will eventually become regular practice in the US whether you like it or not.

#### Saving labor can lose money

n this country you have a special religion, save labor—even to the extent of losing money —and therefore you make soup instead of continued on p. 184



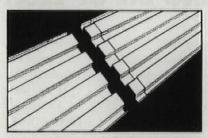
The many unique features of Robertson Q-Deck make it of special interest to the architect and engineer who is concerned about the fire hazard aspect of his flat roof design. Robertson Q-Deck is designed with tight side and end laps to eliminate the need for an inflammable vapor seal. Its two-foot width and long span characteristics mean fewer joints and its surface is either zinc coated or basic Galbestos.



Robertson Q-Deck side laps are designed to form a standing seam. A seal in the form of a continuous caulking material assures a vapor-tight joint.



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Excessive amounts of asphalt are eliminated on Robertson Q-Deck because the adhesive is applied to the *insulation* . . . not to the steel deck. This also results in a better bond between the steel and the insulation.

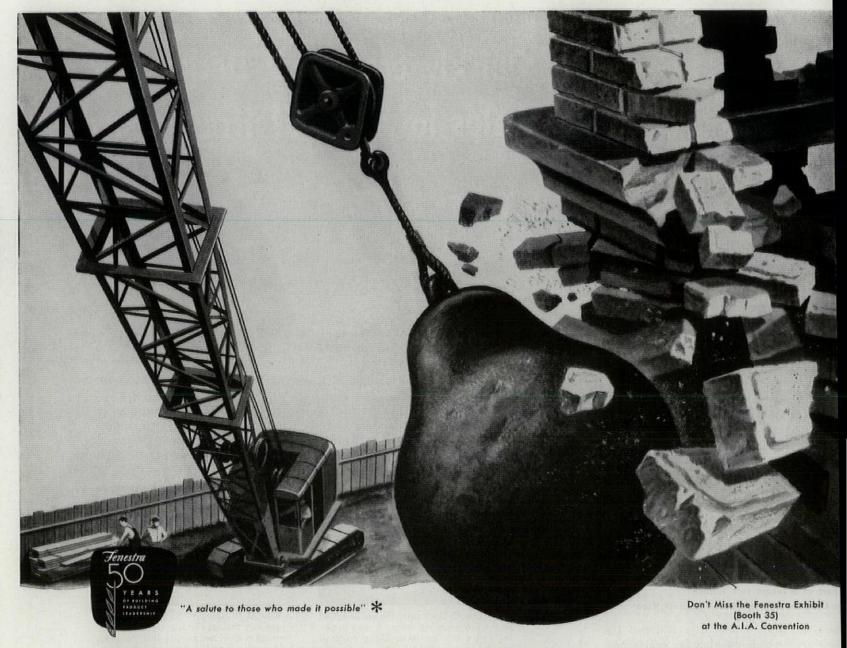
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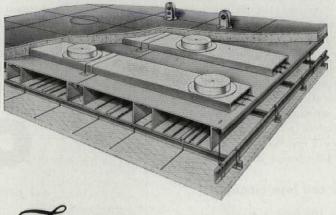
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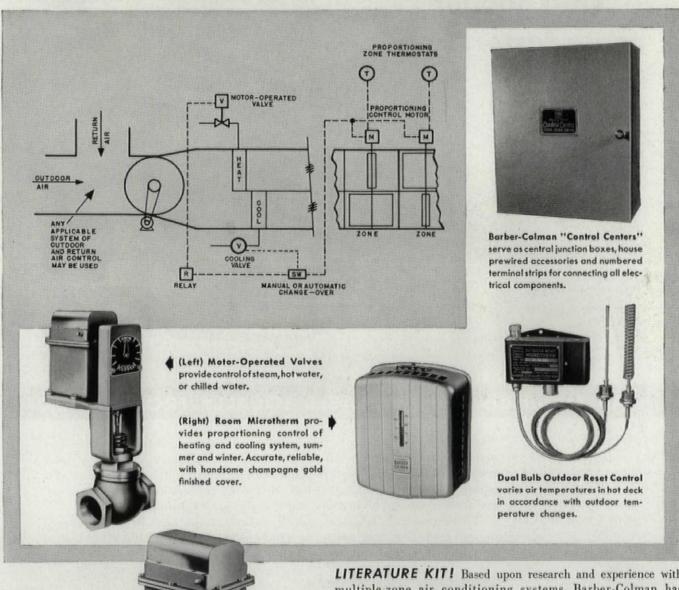
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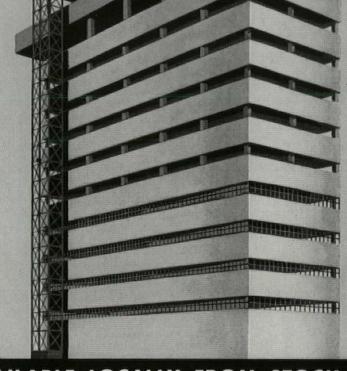
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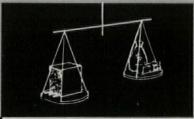




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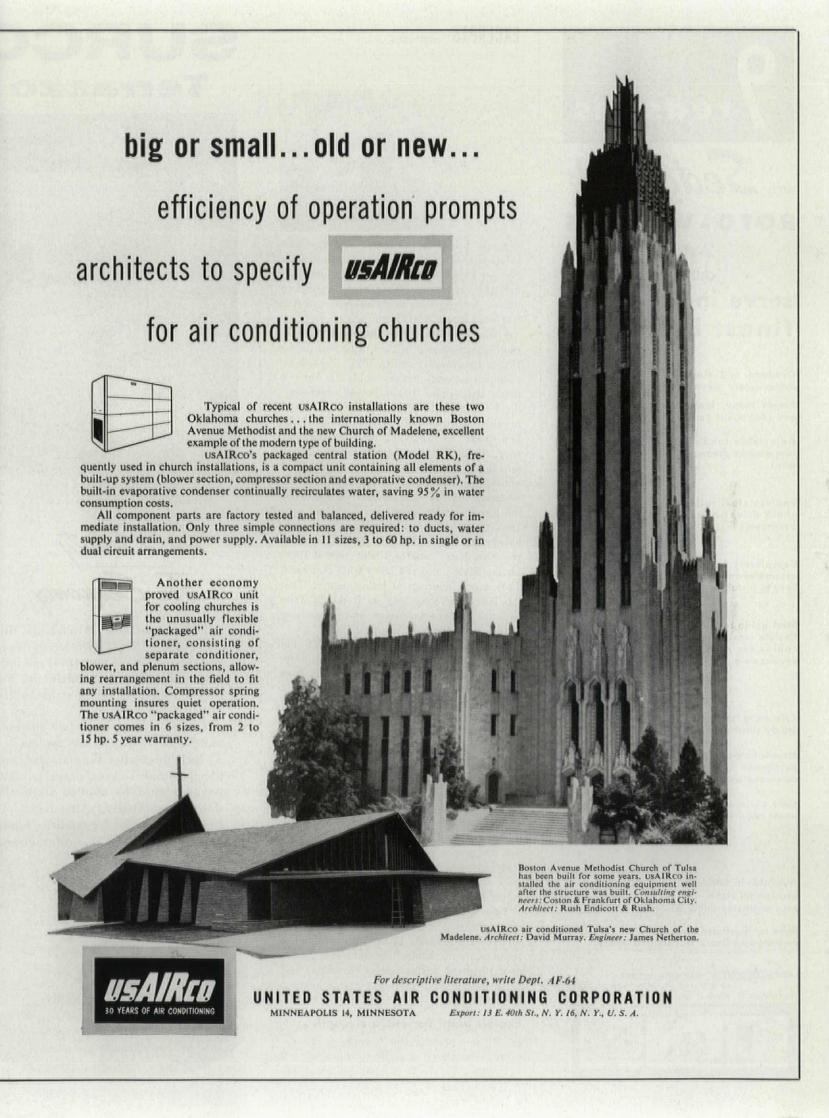


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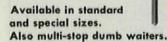
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#### EXCERPTS continued

Belgium's Magnel



H. G. Compton

concrete. I don't criticize this. For ordinary reinforced concrete, 3,000 psi is quite adequate. But for prestressed concrete, which uses only half the concrete and a fifth of the steel required for conventional reinforced concrete, you need better quality concrete.

I was associated very closely with one of the first prestressed bridges to be built in the US, a structure spanning 165'. I asked for no-slump concrete but was told, "In America that's impossible. Labor is too expensive." So. I let them use 2" slump concrete, which requires more cement. Construction of the first beam was supervised by a Belgian engineer. Then the Americans were left on their own and began saving labor. They saved about three hours of work for 20 men by not vibrating the concrete adequately. But when the forms were stripped, you could put your arms through the beam web and there were honeycombs on both sides. They telephoned me from New York to Ghent several times for my advice, and you know what that costs. They saved labor up to losing money. That job lasted twice as long as it should have, and any savings in design and supervision were lost in overhead charges.

After my round trip through the US and Canada, I am convinced that you can do proper prestressing because I have seen it done and have talked with the people who did it.

In Canada I saw a larger prestressed concrete flat roof than any in Europe, the roof of the Ordnance Stores in Coburg, Ont. And that job was obtained in direct competition with reinforced concrete and steel.

In Tacoma I saw a plant producing pretensioned beams up to 60' long using noslump concrete with a water-cement factor of 0.32. Their cube strength was 7,000 psi after three days, and it cost no more money. They use the proper tools—proper grading, good cement, a concrete mixer with a vertical axis, steel forms and high-frequency vibrators bolted directly to the forms.

There are three other important aspects of prestressed concrete practice that are sometimes neglected: 1) the value of bond to supplement mechanical anchorages; 2) the need to guard against stress corrosion; and 3) the use of both limit and elastic analysis for design.

#### **Exploit bond for extra strength**

In all my post-tensioned work, where the wires are anchored at each end, I develop full continued on p. 186

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ARCHITECT: WILLIAM L. PULGRAM. ATLANTA GEN. CONTRACTOR: GREEN CONSTRUCTION CO., ATLANT, FLOORING CONTRACTOR: BARBERI TILE CO., ATLANTA

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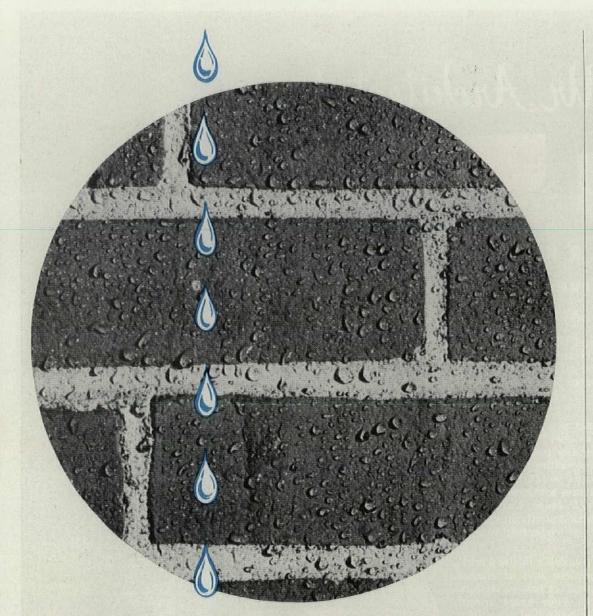
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bond between the wires and the concrete cause it gives me a supplementary factor safety at no extra cost. End anchorages of course, give sufficient strength by the selves, but the wires should be grouted to p vent corrosion. This grouting can be used develop full bond, which will improve strength of a beam by 30 to 40%. In such bonded beam the end anchorages can be away and the beam still behaves like a fu prestressed beam, provided that there enough wires to provide adequate bondi surface.

#### **Guard against stress corrosion**

Recently, in three bridges in Germany a one in Holland, engineers found that 20% the tensioning wires broke spontaneous within four days after prestressing. In ea case hot-rolled steel wire, cheaper than t usual cold-drawn wire, was used. The h rolled wire is rougher, and so develops bet bond than cold-drawn wire, but it is subject stress corrosion, which becomes severe in lo wires that are tightly rolled for ease of tra portation and storage. To avoid such failur the German Ministry of Public Works reco mends: 1) that wires be supplied in I coils, at least 6' in diameter for 0.2 mm. wir 2) that wires be not grouted until at lea five days after prestressing; 3) that wires spaced more than 5 mm. apart; and 4) th not more than two wires be anchored wi one wedge, so if one wire breaks, only th one wedge is blown out.

#### Use limit plus elastic design

Limit design is often wrongly confused with elastic design. Limit design is simply this: analyzing a beam, the engineer calculate stresses by the elastic theory, applying the o and out-dated Hooke's Law to determine th stresses in the steel and concrete. As long a those stresses are within the limits set by th codes, the engineer is satisfied. But the bear does not follow Hooke's Law. Gauges on th beam report strains while the engineer ha calculated in terms of stresses, and the tw are only related by certain problematic modu lars which only coincide within the rang of the elastic theory. That means that if th loads go much above the working load, th theory becomes absolutely wrong.

In designing a reinforced concrete struc ture, limit design must be used to supplemen elastic design. Suppose I want a beam to re sist a working moment M. I can use limit de sign for the beam to withstand a breaking moment of 2M, giving it a safety factor of 2 But besides the breaking load I must also consider the cracking load, which will be smaller than the breaking load, and which can only be checked by applying the elastic theory. This procedure is doubly importan with prestressed concrete.





# IRON FIREMAN Selectemp CENTRAL HEATING

Continuous Modulated Heat with Individual Room Control, for Gas, Oil, or Coal

#### FOR OFFICE BUILDINGS

The temperature of every office can he regulated to suit individual needs. Temperature stays at ther-mostat setting regardless of varied heat loss from glass areas, or from cold and warm sides of the building.



FOR APARTMENTS, HOTELS AND MOTELS

Occupants of each room can have the temperature they select without affecting the heat delivered to other rooms. The steam heat is continuous. Room units circulate warmed air, modulated automatically to balance heat loss from each room and maintain the individual temperature selected. No gas or combustion in rooms—no venting required.



FOR HOSPITALS, SCHOOLS, INSTITUTIONS

The varying needs of patients rooms, of service and operating rooms, of offices and public lounges, are met with extreme precision and with almost immediate response to any desired change of temperature. Filtered outside air for ventilation can be introduced when desired. Positive circulation of air within sech proof but no circulation without the company of the company of the contract of the company of the contract of the con within each room but no circulation between rooms



FOR EVERY SIZE AND TYPE OF HOME

Any temperature desired is available in any room, Any temperature desired is available in any room, at any time. For example: bathrooms at 75°, living room at 72°, work and play rooms at 65°, and grandmother's room or baby's bath at 78°, Air is warmed by steam, quietly circulated by steam driven fans and cleaned by efficient air filters. Room units have no electrical connections

#### A COMPLETELY NEW CONCEPT IN HEATING

Iron Fireman SelecTemp is the only heating system that combines individual room control with continuous, modulated heat, yet initial and maintenance costs are substantially less than other zone control systems, with complex electrical equipment. No other system can accomplish these results in such a simple and practical way, or be so easily installed in either old or new construction. Added to this economy is the exceptionally low operating cost. Unused rooms can be kept at low temperature and then heated to a higher temperature, when desired, within a few minutes.

SelecTemp heating gives many important and unique advantages, not only to occupants but to owners and builders as well. For full information, mail the coupon.



City\_

PRODUCT OF IRON FIREMAN

IRON FIREMAN MANUFACTURING CO. 3159 W. 106th Street, Cleveland 11, Ohio.

Please send literature on Iron Fireman SelecTemp heating.

Address. State



Filtered Daylight through Frosted Aklo Glass in the Goss Printing Press Co. plant, Chicago. Architects: Olson & Urbain, Chicago.

#### It's easier to work in this "blue-green" daylight

You know how irritating, how distracting it is to work with glare hitting your eyes. Windows of Blue Ridge Frosted Aklo\* Glass subdue that time-wasting annoyance—yet let in plenty of useful daylight.

Frosted Aklo Glass softens and diffuses direct sunlight and sky brightness. It reduces reflected glare from ice and snow, and dazzling all year reflections from other bright surroundings.

Frosted Aklo Glass makes working areas cooler in summer. In  $\frac{1}{4}$ " thickness, it shuts out as much as 44% of the sun's heat.

People can produce more in this comfortable daylight. It makes working next to windows easier, giving a building more usable floor space.

SEE AKLO'S ADVANTAGES IN HEAT-IN-MOTION TEST!

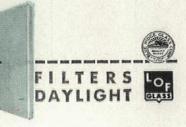


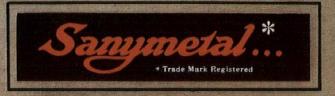
Here's a test that gives you quick, conclusive understanding of the benefits that *Aklo* users enjoy. Before you design for new construction or remodeling, see HEAT-IN-

MOTION right at your desk. Ask your L·O·F Distributor or Dealer for this radiometer demonstration. Look for his name in the phone book yellow pages. Or write directly to Libbey Owens Ford Glass Co., Patterned & Wire Glass Sales, B-2864 Nicholas Bldg., Toledo 3, Ohio.

The booklet, "Filtered Daylight", is yours for the asking, too.

AKLO GLASS





... uses the ageless and fadeless material

# Vitreous Porcelain

on steel for toilet compartments

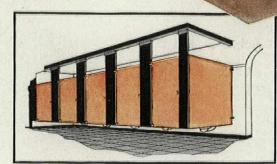
Oanymetal "Porcena" (Vitreous Porcelain on Steel) is a material, not merely a finish. It is in every aspect unlike paint enamel or lacquer finished steel because it is fused to steel at a temperature of 1350°-1550° F. This impregnates the steel with vitreous porcelain enamel to the extent that it cannot be bammered out. Sanymetal "Porcena" (Vitreous Porcelain on Steel) is incomparable with any other material commonly used for toilet compartments. It is a lifetime material that stays new two ways: (1) in appearance; (2) in structure! 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. Sanymetal was first to utilize vitreous porcelain on steel for toilet compartments. Ask the Sanymetal Representative to demonstrate the unusual and exclusive features of Sanymetal Vitreous Porcelain on Steel Toilet Compartments.

Refer to Sanymetal Catalog No. 91 for complete range of types of compartments and colors.

#### THE SANYMETAL PRODUCTS CO., INC.

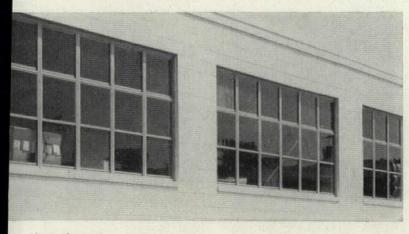
1687 Urbana Road, Cleveland 12, Ohio

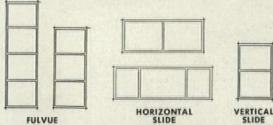
Vitreous porcelain enamel being fused to steel at a temperature of 1350°-1550°F, Baked-on paint enamel finishes would be totally destroyed by this temperature. Vitreous porcelain on steel is unlike paint enamel or lacquer finished steel in every respect.



Sanymetal Century Type Ceiling Hung Toilet Compartment of Vitreous Porcelain on Steel. There is nothing better—nothing so enduringly modern.

### These **RUSCO** Products Offer Unique Advantages For Efficient Remodeling and Modernization





Available in wide range of styles and sizes. For Window Modernization—or Simplified Replacement

#### RUSCO Hot-Dipped PRIME WINDOWS

Fully Pre-Fabricated, Ready-to-Install Units

These windows offer exceptional characteristics of design flexibility, weather tightness and economy. Precision-manufactured in complete form—glazed, finish-painted with baked-on enamel, fully weatherstripped, complete with casing. Installation is extremely simple and fast. Units easily joined in series with streamlined non-load-bearing mullions. Available with insulating sash and Fiberglas screen, if desired.



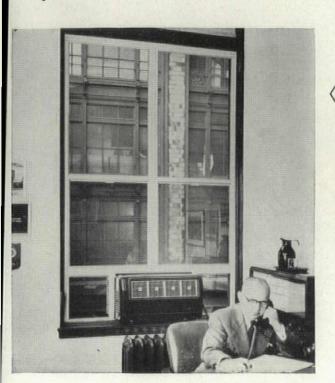


Photos show how Rusco Prime Window units with insulating sash were used to replace old, worn wood windows in Hollenden Hotel, Cleveland, Ohio. Complete replacement effected in hours — room back in service same day!

For Attractive, Efficient, Controlled Window Shading

#### RUSCO Adjustable VENETIAN AWNINGS

A permanent treatment that gives truly effective control of shade, light and ventilation. Louvers are adjustable from inside with gear operator. You will find Rusco Venetian Awnings an ideal answer to the proper shade treatment so necessary to efficient air conditioning installations. Allow continuous air flow, insulate against heat and dispel it. Available in Bonderized, galvanized steel or alodized aluminum—finish-painted with baked-on enamel.





For Practical, Workable Window Unit Air Conditioning

#### RUSCO Air Condition WINDOW

The first window unit designed to accommodate any type of window air conditioner. Completely replaces conventional window. All glass panels, including flankers, are removable from inside for washing, eliminating window cleaning problems. An extra lower glass panel replaces air conditioner unit and flankers when unit is removed for storage or servicing.

RUSCO

Hot-Dipped Galvanized Steel PRIME WINDOWS

For illustrated literature and specifications, write

THE F. C. RUSSELL COMPANY, DEPT. 7-AF54

Cleveland 1, Ohio . In Canada: Toronto 13, Ontario

# Vina - Lux ... makes better school floors



Architects are designing school buildings today that are far more effective in

answering the problems of education at costs that mean greater value to the school community. Many new and better building materials are contributing to these more efficient school plants.

Vina-Lux vinyl-asbestos tile has been designed to give the school architect a *new* type of flooring that performs better in this *new* type of school. Vina-Lux is easier to walk and work on, is made in new lightreflecting colors that harmonize with modern school décor, is much simpler to clean and keep clean, and has a much longer life. Over a period of years, Vina-Lux floors cost less per square foot per year and give greater satisfaction in every respect.

Why not investigate this better answer to your school floor problems? Ask us to have a qualified representative come in and discuss with you all the facts about Vina-Lux — America's leading vinyl-asbestos tile. No obligation, of course.

Vina - Lux
REINFORCED & VINYL TILE

AZROCK PRODUCTS DIVISION • UVALDE ROCK ASPHALT CO.

FROST BANK BUILDING • SAN ANTONIO, TEXAS

MAKERS OF VINA-LUX • AZROCK • DURACO • AZPHLEX

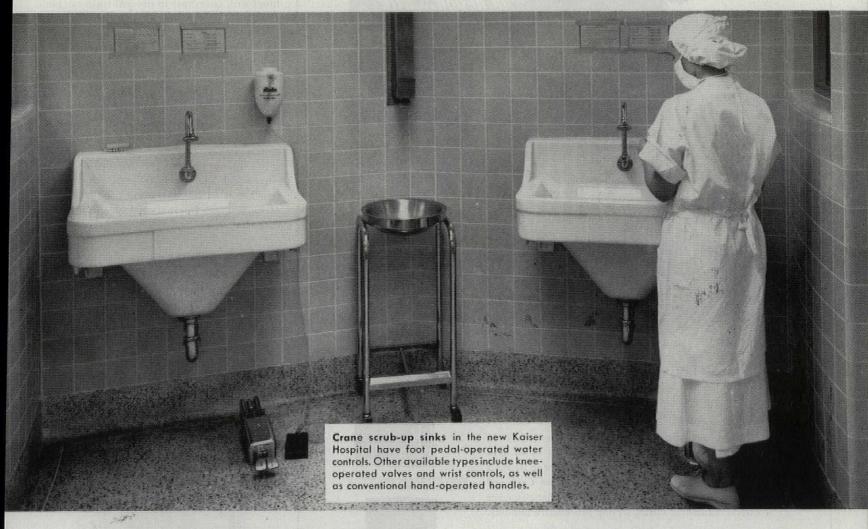
# How CRANE specialized plumbing helps modern hospital planning

Modern hospital equipment of all kinds is designed either to increase the effectiveness of hospital staffs or add to the comfort of patients, or both.

Crane specialized plumbing fixtures are an outstanding example of this. In size, shape and materials, Crane hospital fixtures are carefully designed for specific hospital uses. In fact, Crane offers the most complete line of such equipment available.



One of a growing number of modern, Craneequipped hospitals is the Impressive new Kaiser Foundation Medical Center.



New Kaiser Foundation Medical Center in Los Angeles takes advantage of the warm climate with outdoor balconies that serve as corridors for visitors, while indoor corridors are for sole use of hospital staff.

Other features with more general practicability for any climate include many individual nurse's stations (instead of a few large ones) on each floor... and specialized hospital plumbing fixtures by Crane.

As in domestic plumbing, Crane hospital equipment is

not only superior in itself . . . but enjoys a superior reputation as well.

That's why, in either hospital or domestic architecture, your clients are pleased when you specify Crane.

#### CRANE CO.

GENERAL OFFICES: 836 SOUTH MICHIGAN AVENUE, CHICAGO 5
VALVES • FITTINGS • PIPE • PLUMBING AND HEATING





Packaged entrance is available with swing doors facing front (above) or at angle (photo right)

combinations that prompted the firm to provide units based on stock components. The standard model (shown on left) is available in primed or lacquered mild steel, in satin-finish bronze or stainless steel, and in alumi-lited aluminum. All stock doors are 6'-10" high; revolving sections are 6'-6" wide and the swing doors are 2'-8" or 3'. The group pictured sells for \$5,900 installed—about \$1,000 to \$1,200 less than doors bought separately, says International. (Revolving door



alone is \$4,700.) Since the units will fit under or against transom bars (usually 7' to 7'-6") without tricky alterations, and connections between mullions of revolving doors and swing doors are already engineered, the packaged entrances are especially economical for remodeling work.

All International's revolving models are fitted with governors to prevent train-catchers, clock-punchers and bargain-shoppers from injuring themselves or others in the go-around. An additional control mechanism which should delight weary pushers and makes good sense for many kinds of buildings is a motor that propels the door by a lightly engaged friction drive at a constant, comfortable rate. If a person walking through prefers a slower rate it will respond or stop completely under little pressure. It also will speed up for the energetic occupant—within governored bounds. Extra cost for this convenience is \$1,200, including installation.

Manufacturer: International Steel Co., Evansville, Ind.

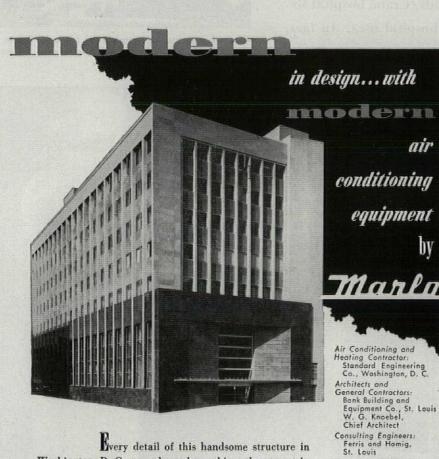
#### AUTOMATIC GROUTER halves construction time for stone walls

Although Da Vinci did not have this machine in his sketchbook, he might not be ashamed to have it credited to him. Full credit for the Foam-O-Matic goes to young (27) Alan L. Robertson of Connecticut for its invention. Turning the usual method of setting masonry inside out, this unique device makes it possible to pour mortar in from the top of



stonework and let a pressurized steel form faced with foam rubber do the work of forcing the grout in and around the stones or brick. Concave joints and stone faces need

continued on p. 196



Wery detail of this handsome structure in Washington, D. C., was planned to achieve the utmost in beauty, efficiency and luxurious comfort. It is the new home of the Perpetual Building Association.

Year-round air conditioning is an important feature of the progressive merchandising techniques which have made this 73-year-old company the leader in its field. Marlo Spray Type Dehumidifiers, Marlo Steam Coils and Marlo Water Coils perform a vital service in the winter-summer comfort-conditioning system serving this modern building.

In the complete line of quality Marlo equipment, you'll find the answer to any air conditioning problem. Marlo will be glad to give you complete details. Write today.



Marlo Spray Type Dehumidifiers

Consulting Architect: Robert O. Scholz, Washington, D. C.

#### See our bulletin in Sweet's Catalog

11111



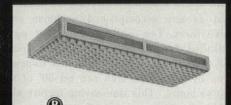
Manufacturers of COOLING TOWERS • EVAPORATIVE CON-DENSERS • INDUSTRIAL COOLERS • AIR CONDITIONING UNITS • MULTI-ZONE UNITS • BLAST HEATING & COOLING COILS

Saint Louis 10, Missouri



architect: THEODORE ROGVOY, detroit

SERIES RS 2828 (above) in main area supplemented by a louverall ceiling using SERIES RS 7084. Illumination—50 f.c.



S. S. KRESGE CO.

SERIES SL 5293 with incandescent spots in main area; SERIES SL 1500 (above) in adjacent area and offices; SERIES SL 7062 in windows. Illumination—100 f.c. in store areas; 40 f.c. in offices.



ZUIEBACK'S

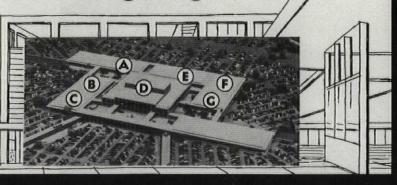
architect: MAXWELL WRIGHT, detroit

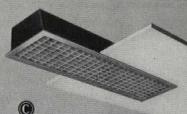
SERIES 3838-3A (above) plexiglas shielded for general lighting to supplement incan-descent accent lites. Illumination—50 f.c.

#### RUBY-PHILITE LUMINAIRES

...first choice for fine lighting

### NORTHLAND CENTER





A. S. BECK SHOES architect: CHARLES SPECTOR, new york SERIES 7062 (above) supplemented by SERIES 2828 and incandescent downlites. Illumination—50 f.c.



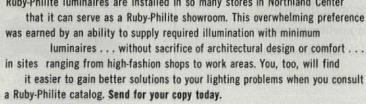
**HUDSON'S NORTHLAND** architect: VICTOR GRUEN, detroit SERIES TD (above) supplemented by SERIES MOTD for many different service areas through the store. Illumination—

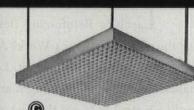


BETTER MADE POTATO CHIPS architect: VICTOR GRUEN, detroit interior: JEROME SCYMASZEK, gen'l mgr.

SERIES SL 25-7 used thruout to obtain 40 footcandles average illumination.

Ruby-Philite luminaires are installed in so many stores in Northland Center was earned by an ability to supply required illumination with minimum luminaires . . . without sacrifice of architectural design or comfort . in sites ranging from high-fashion shops to work areas. You, too, will find a Ruby-Philite catalog. Send for your copy today.





(

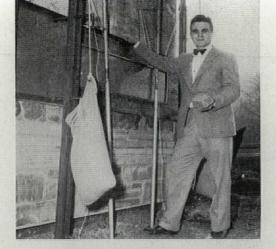
**BAKER'S SHOES** architect: EMIL FOREMAN, st. louis

SERIES 5858 (above) in main area with varied supplemental general and accent lighting. Illumination-50 f.c.



Ruby-Philite Corp.

32-02 QUEENS BLVD., LONG ISLAND CITY 1, N. Y.



Inventor Robertson displays neat mortar Joints and clean stone faces left by Foam-O-Matic.

#### NEW PRODUCTS continued

little or no touch-up; they are as clean and neat as any accomplished workman could make them. Test walls recently put up by unskilled laymen with the new equipment took half the time of conventional stonework done by pros. One man can set 50' of wall in two hours. This time-saving feature alone could put masonry costs for one-story jobs on a par with wood frame. Priced at \$199.50, the professional version of the Foam-O-Matic (a consumer model is also available) con-



sists of a 2' x 4' steel panel edged with 2" angle for rigidity and faced with a 2" thickness of foam rubber. The form, counterweighted with 32-lb. sacks slides up and down 14'-high stabilizers. Rope and pulleys raise and lower the panel, and screw presses - adjustable into any position along the vertical stabilizers-force the rubber facing of the plate against the stone or brick. In its present design, it is primarily suited to one-story work, but a new unit engineered for multistory buildings is being tested which uses scaffolding for support and has levers instead of the screw press of the current model. The height it could serve would be limited only by the scaffolding.

According to the inventor-manufacturer, the chemical action of the grout has little effect on the foam rubber, and with proper cleaning it will hold up for about 100 small construction jobs (1,000 to 2,000 lin. ft. of 8' to 10' wall) before necessitating replacement. If dimensional quarried stone or brick is used, spacers are applied to aid the cement flow. The Foam-O-Matic has been used successfully for 8" solid walls as well as for standard 4" veneer. Mortar setting time runs, according to the absorptive characteristics of the masonry, from about 6 minutes for



limestone, 15 minutes for fieldstone, to 30 minutes for granite and marble. After each setting, the machine is released, leaving stone and seams smooth and clean, and raised to the next level. Units can be interlocked in tandem around an entire building for really fast production. Walls built with the Foam-O-Matic have been found to conform to strict building codes.

Manufacturer: United Research Development, Inc., New Britain, Conn.

continued on p. 198



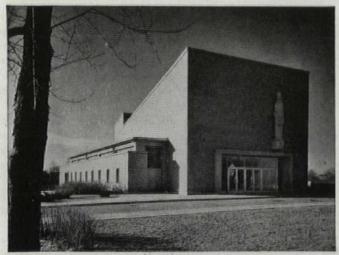
#### LACLEDE REINFORCING BARS

Laclede Reinforcing Bars provide a sturdy backbone for the giant new Trans World Airlines hangar taking form at Lambert Municipal Airport, St. Louis. Representing the perfect balance between high strength and maximum anchorage, these multi-rib steel bars are the first choice of more and more contractors throughout America.



OTHER LACLEDE CONSTRUCTION **PRODUCTS** 

Steel Joists . Welded Wire Fabric . Pip Spirals • Conduit • Electric Welded and Gas Welded Tubing • Form and Tie Wire • Corrugated Steel Centering



St. Ann's Catholic Church, Normandy, Mo. Architect: Joseph D. Murphy, St. Louis Roofing Contractor: Roofing Application Co., St. Louis



Magic Chef, Inc., General Office, St. Louis Architect: Harris Armstrong, St. Louis Roofing Contractor: Swift Roofing Co., St. Louis



Lutheran Church, Florissant, Mo. Architect: Harris Armstrong, St. Louis Roofing Contractor: Roofing Application Co., St. Louis



St. Louis University, School of Philosophy, St. Louis Architect: Leo A. Raly Co., St. Louis Roofing Contractor: Swift Roofing Co., St. Louis

### St. Louis Chapter, A.I.A.-AWARDS

These handsome buildings were among the five St. Louis Gold Medal Award Winners. The awards were sponsored jointly by the St. Louis Chapter, A.I.A., and the St. Louis Chamber of Commerce for the most outstanding buildings erected in the St. Louis area since 1940.

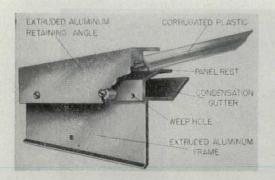
All four shown here received this proud distinction properly attired in a Ruberoid built-up roof. We hope you'll pardon our modest glow of pride in mentioning that, but we like to think that those who lead the way in advanced design rely on Ruberoid Built-Up Roofing Specifications for the right roof every time.

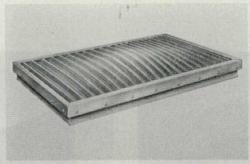
If you have an award winning design on the boards, consult your Ruberoid Specification Book for any type, large or small—smooth-surfaced asbestos, coal tar pitch with gravel or slag surfacing, or gravel-and-slag surfaced Ruberoid Special Bitumen. It also contains practical working details for a wide variety of flashing and eave construction. If you don't have a copy, write for one to The Ruberoid Co., 500 Fifth Ave., N. Y. 36, N. Y.

#### The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

#### NEW PRODUCTS continued





Domed rectangle of plastic comes framed with curb (below, right) or without (above). Integral gutters prevent leakage on both skylight types.

# FOR SALE HOUSES SELL EASIER SELL EASIER

# WHEN WASTE LINES ARE PERMANENT CAST IRON Pipe

Today home buyers are "quality-conscious." A family building or buying a new home realizes more than ever before that they are making an important, lifetime investment. Therefore whether it is a large house or a modest bungalow, home builders and buyers want quality materials throughout.

This is especially important for the waste pipe lines for house sewage. The accepted high quality material for plumbing waste lines is long-life Cast Iron Soil Pipe, which lasts for centuries. When you use Cast Iron, the home buyer is assured that he will be protected in the years to come against leakage and repairs that may be dangerous to his family's health, and which always are expensive and a great inconvenience.

Cast Iron Pipe waste lines are a potent sales stimulant for 1954 housing contractors and architects.



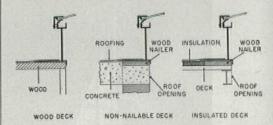
Woodward Iron Company does not manufacture pipe, but we supply leading Cast Iron Pipe foundries with bigh grade foundry pig iron from which pipe is made.

#### WOODWARD IRON COMPANY

WOODWARD, ALABAMA

#### SHATTERPROOF SKYLIGHT shipped assembled in aluminum frame

An effective diffuser, Marco's featherweight top light needs no special roof framing. Weighing 1 lb. psf, it arrives ready to attach over roof curbs with a screwdriver as the only tool. It is made up of a rectangular sheet of corrugated translucent plastic (domed in the middle for rain runoff) held in a simple extruded aluminum frame with mitered and welded corners. Any condensation which might form on the underside of the skylight collects in the frame's integral gutter and is channeled to the outside via weep holes. Twelve standard skylight sizes range from 24" x 41" (\$60) to 73" x 411/2" (\$123). Light green and off-white are standard colors of the plastic-the popular combination of polyester resin and glass fiber. Special sizes and colors can be had on order. Modified models to be introduced this



month will have curb and roof flange as part of the extruded frame. Priced slightly higher than the standard units, these new skylights are merely set over openings in the roof—eliminating the need for building and flashing special curbs. Applications for three kinds of roof construction are shown in diagrams (below). The translucent panel, only 4"

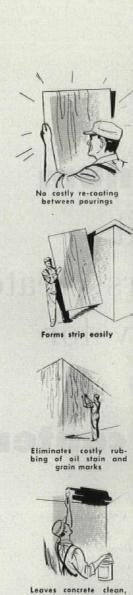


above the finished roof line, can distribute a wider pattern of diffused daylight than skylights perched higher above the roof on conventional curbs.

Another new product of the same weatherresistant materials developed by Marco is a prefab scuttle or hatch cover. Here the aluminum-framed plastic is put to work shedding light in the passageway as well as providing access to the roof.

Manufacturer: The Marco Co., 45 Greenwood Ave., East Orange, N.J.

continued on p. 202



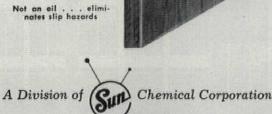


How to get more than 10 re-uses from plywood forms!

Coat them with

formfilm

Protect your investment in plywood forms with FORMFILM. It's a tough, abrasion-resistant, alkali- and water-resistant coating (not an oil). Eliminates raising of wood grain and reduces honeycombing.





A. C. Horn Co., Inc.

Manufacturers of materials for building maintenance and construction since 1897.

#### FREE INFORMATION!

A. C. Horn Co., Inc., Dep Long Island City 1, N. Y.	
Please send Money-Sa	ving Facts on FORMFILM.
Name	Title
Firm Name	
Address	
City	State



# BOHN

#### cast aluminum

spandrels and column covers create lasting beauty for Denver's new

### mile high center

- OWNER: Webb & Knapp, Inc., and George A. Fuller Company
- ARCHITECT: Webb & Knapp, Inc., Architecture & Planning Division, I. M. Pei, Director
- ASSOCIATE ARCHITECTS: Kahn and Jacobs, New York;
   G. Meredith Musick, Denver
- GENERAL CONTRACTOR: George A. Fuller Company







CAST ALUMINUM SPANDRELS are lightweight yet sturdy. They are easily handled, quickly anchored in place. Maintenance costs are extremely low.

CAST ALUMINUM COLUMN COVERS which run the full height of the building are cast with recessed tracks for a traveling window cleaning platform.

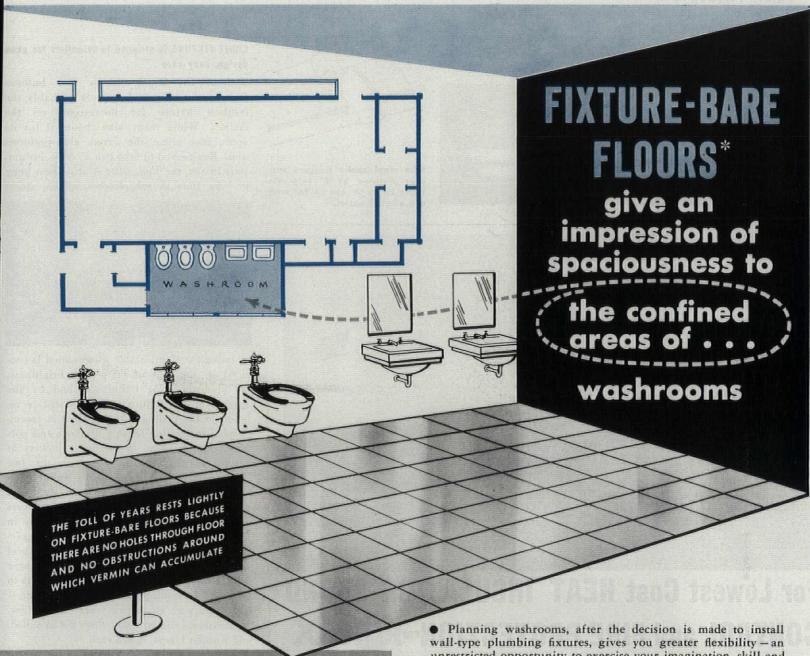
**STRIKING BEAUTY** is achieved by casting spandrels and column covers with a special pattern, then anodizing a dark, richgray to contrast with window frames.

# BOHN

#### ALUMINUM AND BRASS CORPORATION

1400 LAFAYETTE BUILDING . DETROIT 26, MICHIGAN

Sales Offices: BOSTON • CHICAGO • CLEVELAND • DAYTON • DETROIT INDIANAPOLIS • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • NEW YORK PHILADELPHIA • ROCHESTER • ST. LOUIS



FIXTURE-BARE FLOORS\* are obtained by installing WALL-TYPE PLUMBING FIXTURES with the



A Zurn System is available for installing all types and makes of wall-type plumbing fixtures.

Copyright 1954 \*T. M. Reg. U. S. Pat. Off. • Planning washrooms, after the decision is made to install wall-type plumbing fixtures, gives you greater flexibility – an unrestricted opportunity to exercise your imagination, skill and ingenuity. Off-the-floor plumbing fixtures installed with a Zurn System leave surfaces of washroom floors intact and free of obstructions and create a pleasing effect of spaciousness. Such an installation insures against untimely obsolescence of washrooms and reduces the maintenance of cleanliness to an all-time low. Off-the-floor plumbing fixtures installed with a Zurn System permit the use of any type of floor construction; any type of

wall construction; eliminate the need of furring-in drainage lines; simplify drainage and vent pipe layout, and reduce the over-all cost of washrooms.

WRITE FOR FREE BOOKLET entitled, "You Can Build It and Maintain It for Less A New WAY." It presents new ideas for washroom installations in new and existing buildings.

Over 700,000 wall-type plumbing fixtures installed with the Zurn System in buildings of every type from coast to coast. Your Zurn Representative has list of buildings which have washrooms with fixture-bare floors.

#### PLUMBING DIVISION

#### J. A. ZURN MFG. CO. · ERIE, PA., U.S.A.

Sales Offices in all Principal Cities

In Canada: Canadian Zurn Engineering Ltd., Montreal 25, P.Q.

Other Divisions of the Zurn Organization

MARINE DIVISION: Fluid Control and Piping Equipment • INDUSTRIAL DIVISION: Strainers for Pipe Lines • AFFILIATE: American Flexible Coupling Co., Amerigear Couplings with Fully Crowned Teeth J. A. ZURN MFG. CO., PLUMBING DIVISION, ERIE, PA., U. S. A.
Please send me the booklet, "You Can Build It and Maintain
It For Less A NEW WAY."

Name and Title

Company

Street

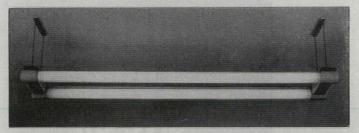
Street \_

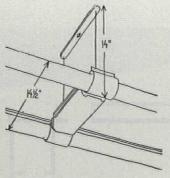
City and State

Please attach coupon to your business letterhead, Department AF-719.

#### NEW PRODUCTS continued

Basic fluorescent light fixture was designed by Architect-Engineer George Ainsworth.





Slim steel spoke hangers support fixtures at 5' intervals. Runs up to 60' can be fed from one electric outlet.

#### LIGHT FIXTURE is stripped to essentials for good design, easy care

Without the usual shields and bulbous casings, the new Budgetlite is probably the frankest fixture for fluorescents on the market. While many may choose it for its appearance alone, the fixture also performs well. Engineered to take two 5′, 40-w. instant-start lamps, the Budgetlite is at its best hung in long runs in schoolrooms, offices, stores



or factories. Comfortable illumination is provided by the type of lamp-low brightness, fat diameter (21/4") bulbs - and by the spacing on the fixture and placement in relation to the ceiling. (Matte white is recommended for ceiling finish.) Ballasts and porcelain lampholders, in minimum jackets of acrylic plastic, are integrated in the two simple end pieces. No heavy spline connects the ends; instead, two slim aluminum tubes set above the lamps serve as spacers and as wireways. Hangers, delicate only in looks, are actually the same high-tensilestrength steel wire used for motorcycle wheel spokes. Maintenance is negligible since there is very little fixture to catch dust, no parts to remove for cleaning, and lamp life is long-6,000 hours or about two years' normal use. Approximate cost of Budgetlites not installed, and without lamps, is \$23 each.

Manufacturer: Ainsworth Lighting Inc., 38-10 29th St., Long Island City, N.Y.

#### PEACH TONE FLUORESCENT complements faces and foodstuffs

Emitting warm, peach-tinted illumination, the Glo-tone fluorescent tube sheds soft light on people and merchandise in restaurants, fitting rooms, florist shops and beauty salons. Its spectrum range, far more intimate and



cheerful than blue-white or white-white light, not only flatters complexions but also makes food—on supermarket counters or café tables—look inviting. Carrying a two-year, burning-life guarantee, Glo-tone lamps are available in all standard wattages.

Manufacturer: Lustra Corp. of America, Dept. GL, 36 Washington St., Brooklyn 1, N. Y.

continued on p. 204

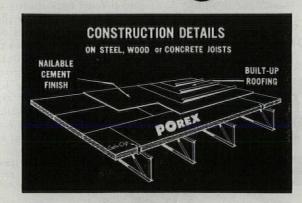


# For Lowest Cost HEAT INSULATION-SOUND CONTROL and FIRE PROTECTION—PEREX

When roof decks must provide maximum quality at minimum cost, architect after architect chooses POREX...because POREX combines all these properties:

- STRUCTURAL STRENGTH
- . LIGHT WEIGHT
- . NAILABILITY
- INCOMBUSTIBILITY
- . HEAT INSULATION
- SOUND CONTROL

Plain POREX for short spans and Composite POREX for long spans are also ideal for Auditoriums, Gymnasiums, Schools, Armories and many other uses. For floors, precast lightweight concrete channel slabs and plank are available.



#### SAFE UNIFORM LOADS

Type of POREX	Thic Slab	Thickness Slab Finish	Weight lbs/	Sate loads las/ sq. ft. Span 1'4" 2'0" 3'4" 6' 8'				
Plain	13/4"	1/4"	7	100	60	_	_	_
Plain	3"	14"	10	-	100	50'	-	-
Composite	3"	1/4"	14	-	-	-	100	60

#### PERETE MANUFACTURING CO., North Arlington, N.J.

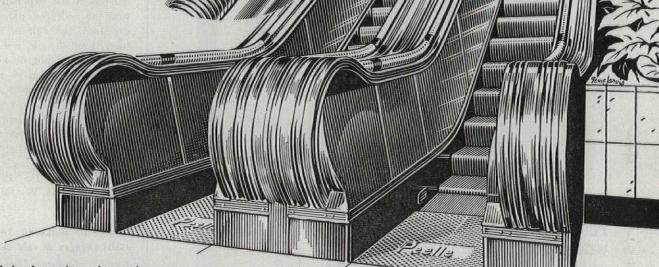
Precast lightweight concrete products since 1920

the

### PEELLE MOTORSTAIR

serves many fine buildings and transportation systems all over the U.S. and Canada

The handsome, all-metal, safety handrail quickly identifies the Peelle Motorstair. This handrail is positively driven and synchronized with the steps to travel at the same speed. Favored by leading insurance companies.



Important and original engineering advances combined with crisp, contemporary styling are making the Peelle Motorstair the considered choice of architects, engineers and management. Write for descriptive literature.

#### PARTIAL LIST OF PEELLE MOTORSTAIR INSTALLATIONS

#### TRANSPORTATION MUNICIPAL PARKING & BUS TERMINAL, Bridgeport, Conn.

Architect, Harry G. Lindsay, Bridgeport, Conn.

Architect, Harry G. Lindsay, Bridgeport, Conn.

TORONTO TRANSPORTATION COMMISSION, Toronto, Canada Architects, DeLeuw, Cather & Company, Chicago, Ill.

PORT OF NEW YORK AUTHORITY BUS TERMINAL, New York, N. Y. Architects, Port of New York Authority Engineers

UNION PACIFIC RAILROAD COMPANY, Seattle, Wash.

WICHITA MUNICIPAL AIRPORT, Wichita, Kan.

Architects, Thomas-Harris-Calvin Associates

HUDSON & MANHATTAN RAILROAD

PENNSYLVANIA RAILROAD

PENNSYLVANIA RAILROAD

GREYHOUND BUS TERMINAL, Kansas City, Mo.

NEW YORK CITY DEPT. OF MARINE & AVIATION, Pier Shed No. 84

NEW YORK CITY DEPT. OF MARINE & AVIATION, Pier Shed No. 57

#### PUBLIC BUILDINGS

PENTAGON BUILDING, Arlington, Virginia
CAPITOL ANNEX BUILDING, Frankfort, Ky.
Architects, Meriwether, Marye & Associates, Lexington, Ky.
METROPOLITAN MUSEUM OF ART, New York, N. Y.
Architects, Vorhees, Walker, Foley & Smith
AMERICAN NATIONAL BANK, Austin, Texas
Architects, Kuehne, Brooks and Barr, Austin, Texas

#### INDUSTRIAL

FORD MOTOR COMPANY, Livonia, Mich.
Architects, Albert Kahn Associated Architects & Engineers, Inc.

BUICK MOTOR DIVISION, Building No. 36, Flint, Mich.
Architects, Albert Kahn Associated Architects & Engineers, Inc.
BUICK MOTOR DIVISION, Building No. 44, Flint, Mich.
Architects, Albert Kahn Associated Architects & Engineers, Inc.
GENERAL MOTORS SAGINAW GEAR DIVISION, Saginaw, Mich.
Architects, Argonaut Realty Co.
ROCHESTER PRODUCTS DIVISION GMC, Rochester, New York

Architects, Argonaut Realty Co.
HOTELS

STATLER HILTON

#### RACE TRACKS

LOS ANGELES TURF CLUB, Arcadia, California
THISTLEDOWN JOCKEY CLUB, INC., North Randall, Ohio

#### CHAIN STORES

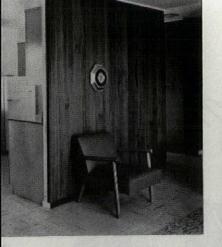
C. R. ANTHONY COMPANY
J. C. PENNEY COMPANY
SEARS, ROEBUCK & COMPANY
McCRORY STORES
W. T. GRANT CO.

#### DEPARTMENT STORES

R. H. MACY & CO., INC.
L. BAMBERGER & CO.
CARSON PIRIE SCOTT & CO.
THE FAIR
HENRY C. LYTTON & SONS

#### THE PEELLE COMPANY

47 STEWART AVENUE, BROOKLYN 37, N. Y. — OFFICES IN PRINCIPAL CITIES



Randomwood is delivered in rolls like wallpaper.







#### WOOD VENEER, paste-applied like wallpaper, plays up grain irregularities

For those who like natural materials treated naturally, US Plywood is introducing Randomwood, a flexible hardwood wall covering. Like its elder brother Flexwood, the gauze-backed 1/85"-thick veneer is applied with paste over any flat or curved, dry, smooth surface. There is, however, a difference in grain between the two veneer products. Shadings and markings vary from sheet to sheet (as they do from tree to tree and limb to limb) in the casual yet elegant Randomwood, while Flexwood offers the more formal floral or matched-grain effect.

Priced at 50¢ per sq. ft, in the roll, about 80¢ on the wall, Randomwood is no more costly than other quality wall coverings and much less expensive installed than some solid or veneered paneling. It also can be procured in walnut, mahogany, mountain tulip, English oak, red birch and tigerwood. Sheets run 8' and 10' long and 15" wide. All veneers can be given the same finish treatment accorded wood paneling: oil, stain, varnish or wax, or clear acrylic spray Where applied to such incombustible materials as plaster or metal, the cloth-backed veneer meets federal specifications for incombustible wall covering.

Manufacturer: US Plywood Corp., Weldwood Bldg., 55 W. 44th St., New York 36, N.Y.

#### ALUMINUM BUILDING TRIM. Interlocking strips resist ravages of rain and wind

Desco's aluminum extrusions can be applied sideways or in up and down runs as complete facings for store fronts, or as trim on entrance doors, display cases and awning hoods. Four basic members comprise this concave series in the manufacturer's extensive line of storefront materials. Pictured (above), top to bottom: a top angle No. 797 listing at \$1.10 per



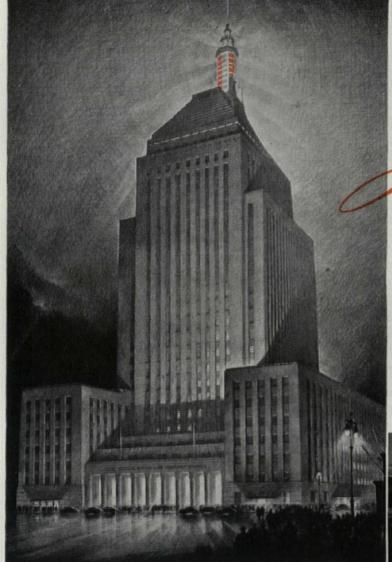


lin. ft.; a 21/4" single flute No. 800 at \$1; a 41/2" double flute No. 820 at \$2.20; and No. 810, a single flute with drip flange at \$1.50. Designed to interlock in any multiple required, the series is anodized for complete weather protection.

Manufacturer: Desco Metals Co., 2264 Wilkins St., Detroit 7, Mich.

continued on p. 210

#### **Used in the Most Prominent Buildings**



# POWERS

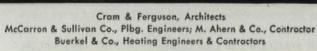
#### WATER TEMPERATURE CONTROL

In Boston's Famous Landmark

MUTUAL LIFE INSURANCE COMPANY BUILDING

Water Heaters, six of which are shown below; 21 Shower Baths; 7 Dishwashers in the company cafeterias; Photostat Developing Baths for two large photostat machines . . . all are regulated by various types of POWERS Thermostatic devices especially suited for their particular use.

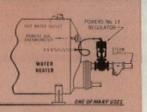
When problems of temperature control arise phone or write POWERS nearest office. With over 60 years' experience and a complete line of controls, some of which are shown below, we can help you find the right solution for your requirements.





POWERS Easy to Read Dial Thermometer POWERS Thermostatic Water Mixer. Insures utmost comfort and safety in showers. Many other uses.

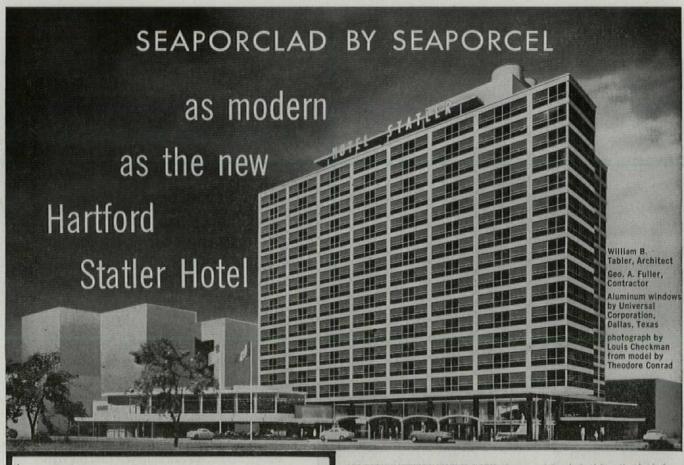


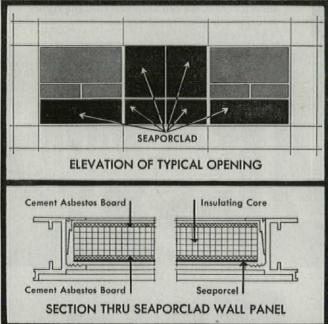


POWERS No. 11 Self-Operating Temperature Regulator for water starage heaters, hat water converters, dishwashers, fuel oil preheaters, jacket water cooling for air compressors, and diesel engines, etc.

(b29)

Established in 1891 • THE POWERS REGULATOR COMPANY • SKOKIE, ILL. • Offices in Over 50 Cities





455 ROOM HARTFORD STATLER HOTEL, Corners of Pearl, Ford Sts., Hartford, Conn.

THE USE OF versatile Seaporclad building panels is finding increasing architectural recognition. A lamination of Seaporcel porcelain with thermal and sound insulating core, Seaporclad has been chosen for the 20,000 square feet of colorful panels for the Hartford Statler, the newest addition to the Statler Corporation's national chain of quality hotels.

MEASURING ONLY 1% inches in thickness, Seaporclad curtain wall panels for the Statler Hotel meet the most rigid requirements of the Hartford Building Department codes. Seaporclad provides a complete exterior and, interior wall... of sandwich construction... weather, fire and corrosion-resistant... with maintenance costs at the vanishing point.

THE STATLER HOTEL panel consists of nationally recognized Seaporcel porcelain, laminated to a cement asbestos board and an insulating core to form a single sandwich unit.

SEAPORCLAD FACADES supplant heavy masonry walls, save space and weight, with resultant reductions in structural steel and foundation requirements. It is also easily and economically installed. Seaporclad is fabricated for a variety of uses in conventional sizes and in any thickness or shape...and is available in the fullest scope of textures and colors.

For Some Job... Somewhere... You Can Use SEAPORCEL\*

Let Seaporclad's successful applications be your guide to future planning... write for brochure #66

There are a few areas in which Seaporcel Metals, Inc., is not represented. Inquiries from interested agents are invited.



SEAPORCEL METALS, INC. 2800 Borden Avenue Long Island City 1, New York SEAPORCEL PACIFIC, INC 1461 Canal Avenue Long Beach 13, California

ARCHITECTURAL PORCELAIN

Member: Porcelain Enamel Institute A. F. OF L. METAL FABRICATING & ENAMELING PLANTS

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

**COMPLETE ENGINEERING & ERECTION DEPARTMENTS** 



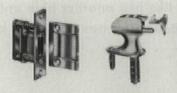




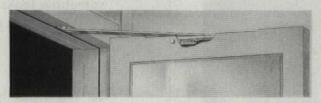


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Push and Pull Action



DOOR BUMPER Dome Type

Refer to G-J Catalog for complete line of door holders, bumpers, and specialties . . . for all types of doors in public and commercial buildings.



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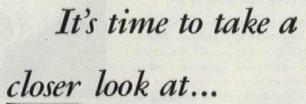
# AND WHAT'S THE BIG CHANGE IN HOUSES

Once again, America is demanding—and getting a new and improved product! Home buyers are losing their zest for cozy Cape Cod antiquity . . . that postwar ranch house is losing its low-slung appeal . . . yesterday's big picture window somehow looks like just another hole in the wall . . . last year's floor plan has too many kinks for convenience.

To see what home hunters want . . . to see what they're getting in a new and finer domestic architecture—mail the subscription form bound in this issue which brings you

### house+home

540 North Michigan Avenue, Chicago II, Illinois





Completely new CORBIN

Cylindrical Locks

Newly improved CORBIN

Door Closers

Completely new CORBIN

Exit Fixtures



These new product features are important to you and your clients. Ask your nearest Corbin representative for complete details.

> P. & F. CORBIN Division The American Hardware Corporation New Britain, Connecticut

The most modern lines in builders' hardware - backed by 104 years of experience!

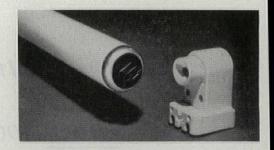


#### NEW PRODUCTS continued



#### FLUORESCENT LAMP hikes output by 35%

General Electric's latest fluorescent tube produces more light than any previous fluorescent source—35% more, say GE engineers. Sure to find quick use in stores, offices, schools and industrial plants, the first of the new line is a standard cool white lamp, 8' long and 1½" through the middle, with a rating of 110 w. Its 6,800-lumen output is about three times that of regular 40-w. tubes, and its rated life is 7,500 hours.

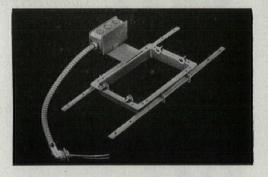


The design, too, is new. Two contacts are recessed in a single element to make the lamp insertion in push-pull lamp holders easy and safe. The lamp is being marketed not as a replacement for but as a supplement to standard high-efficiency and low-brightness types. It will permit illumination engineers to provide higher lighting levels at no increase in cost or upkeep. Maintaining its bright output even in cold weather, the lamp is eligible for outdoor assignment in service stations and athletic-field floodlighting. Price for the 8' lamp is \$3.85. A 6' tube will be made shortly, as well as de luxe cool and warm whites.

Manufacturer: General Electric, Nela Park., Cleveland 12, Ohio.

#### PREWIRED ASSEMBLY for recessed light fixtures put in place with four nails

Engineered to save materials and time on installations of the manufacturer's recessed incandescent lighting units, the *Atlite* factory-wired assembly is nailed in place in



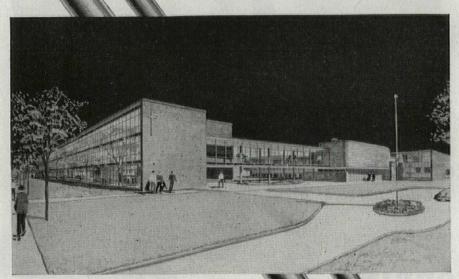
minutes. Special framing, asbestos insulation and slow-burning wires are all eliminated. Supply leads are brought directly to the fixture assembly box. Listing at \$5 and approved by Underwriters' Laboratories, the assembly is made in 60-, 100-, 150-, 200- to 300-w. sizes for any of the Atlas incandescent boxes.

Manufacturer: Atlas Electric Products Co., 319 Ten Eyck St., Brooklyn 6, N. Y.

#### BX CONNECTORS are put outside knockout box after wiring in

Only a screwdriver—no wrench, washer or lock nut—is needed to install *Harbot* castaluminum connectors for armored cable. Designed on the cam-wedge principle, these continued on p. 212

### For longest service... for good appearance



St. Patrick's Academy, Chicago, Illinois Architects & Engineers: Belli & Belli Plumbing Contractor: L. G. Keefe

### Clow"IPS"\*(threaded) Cast Iron Pipe...the pipe that never needs to be replaced

The long life...and long lengths of Clow "IPS" Cast Iron Pipe made it the choice of the architect for all downspouts, vents and waste lines 3" and over in this handsome new school building. The non-corrosive characteristics of "IPS" assure trouble-free service for the life of the building. Its 18-foot lengths permit trim, attractive installations.

\*Iron Pipe Size O. D.

#### JAMES B. CLOW & SONS

201-299 North Talman Avenue • Chicago 90, Illinois

Clow (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8, and 10° sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain) in 18' random

Clow Cast Iron Pipe



on the job, with ordinary tools of the piping trade.

WHOLESALERS OF PLUMBING AND HEATING SUPPLIES Publishers of the Clow Bulletin



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PROTECTED METAL
INSULATED PANELS

No other insulated panel can give you the protection and thermal properties of LIFE-conditioned Plasteel. Panels available in lengths up to 25 feet for field assembly—with interior wall-sheets of steel, a layer of glass fibre insulation and exterior wall of protected metal with Mica coating. Plasteel cuts heat loss, prevents harmful effects from condensation and effectively insulates against outside heat in summer. Result: closer temperature and humidity control.

#### \*ROOFING \*SIDING \*ROOF DECK

Tested and classified by Factory Mutual Laboratories and Underwriters' Laboratories. See Sweet's File.

> MICA makes the difference.



#### PLASTEEL PRODUCTS AF-6-54

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☐ Please send details on Insulated Panels. ☐ Please send new Engineer's Handbook.

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PRODUCTS CORPORATION
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Contact your nearest Plasteel representative before you specify your next Insulated Panels—Roof Deck—Roofing or Siding. Or, mail coupon for details.



Sales Offices in All principal cities



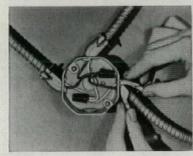
Units shown are two of many Cipco items ... suitable for glass, metal or wood doors.

Your Architectural Hardware Consultant will be happy to plan with you.



#### NEW PRODUCTS continued

simple 3/8", 45° connectors are applied after completion of the wiring, and so should simplify many installations of electrical switches, outlets, motors, junctions and fixtures. Each of the device's two parts has a grooved lip which grips the edge and inside surface of a standard 7/8" knockout opening. Two machine screws pulled up on the cable will fix it in any direction. Creating rigid fittings, the new connectors protect wiring at the point it enters the box-especially welcome in applications where vibration is a problem. They take up no precious room inside the box, thus making it easier for the electrician to do his job quickly. Harbot armored cable connectors carry the Underwriters' seal. Priced at about 11¢ to 14¢ each, depending



on quantity purchased, they are made in 90 models—threaded and long neck as well as the regular type (pictured).

Manufacturer: Unimatic Corp., 52 E. Centre St., Nutley, N.J.

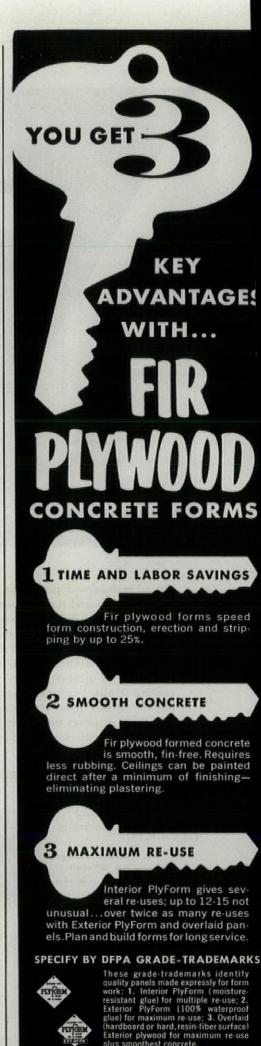
#### PREGLAZED AWNING WINDOWS have recessed hinges

Outfitted with screen and glazing at the factory, this Gate City aluminum awning window makes for crisp fenestration in institutions and factories. It is available in multiples up to five high. The unit's extruded aluminum glazing strips are not guilty of the wrinkling tendency of lighter strips, and also add to



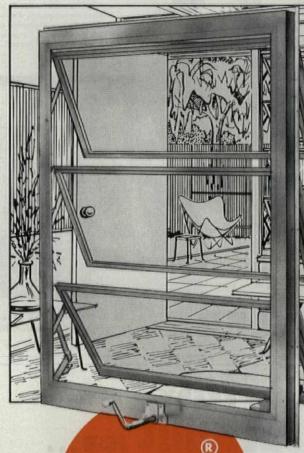
sash rigidity. All operating hardware retracts into the sash for trim appearance. Vinyl tubing is used for weatherstripping at jambs, sills and meeting rails. A three-light window for a modular 4' grid opening retails at \$70. Manufacturer: Gate City Sash & Door Co., 15 S. W. Third Ave., Ft. Lauderdale, Fla.

continued on p. 216



Douglas Fir Plywood Assn.,

# This Window Wins Architectural Plaudits



Ualco U-AL-CO ALUMINUM

# AWNING

Functional! Adaptable! Beautiful! This window fits the needs of residential, commercial and institutional building.

Modern as tomorrow—with slim, horizontal lines of extra-heavy extruded aluminum. Stays beautiful through all the tomorrows because Ualco's exclusive finishing process preserves its satin-smooth beauty forever! Can't rust, rot, warp and never need painting! Will never require upkeep expenses!

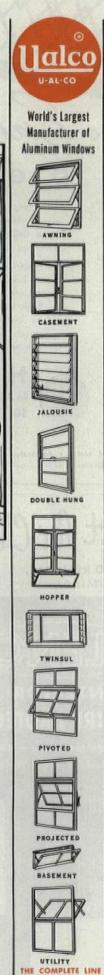
PRECISION-ENGINEERED! ★ Exclusive Strip-Proof completely housed Operator has no separate locking device! ★ Integral fin takes brick fin and fin trim! ★ Jiffy-Quick Sill Clips slide in channel from each side; locate as many as wanted, where wanted. ★ Weatherstripped completely with Koroseal! ★ All vents open up to 90 degrees for 100% ventilation; or

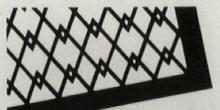
bottom vent, only, opens for night ventilation! \* Easily cleaned from the inside!

ASK ABOUT our Engineering Planning Service, designed to assist architects, engineers and contractors in making "take-offs" and solving window problems.

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE 164 OR WRITE US FOR COMPLETE INFORMATION

SOUTHERN SASH SALES & SUPPLY CO., INC. SHEFFIELD, ALABAMA





# for Enhancing

Add a touch of beauty and utilitarian design to your decorative motif with Hendrick Perforated Metal Grilles, Your clients will go for that extra elegance they add to a room.

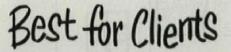
Hendrick Perforated Metal Grilles provide morethan-ample open area for free passage of air and are available in over one hundred attractive basic designs to choose from. And they're easy to install because they always lie flat—they won't bend or warp. For more complete details write Hendrick direct.



# Hendrick MANUFACTURING COMPANY 50 Dundaff Street, Carbondale, Pa.

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Complete Line — 480 Cabinets Alone Modern, Most Widely Used



### Easiest for you

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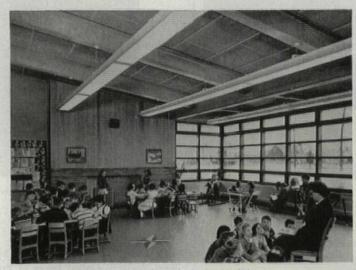
DRINKING FOUNTAIN can be installed with practically any combination of HAWS Fixtures...Pantry Faucets...bubbler type Drinking Faucets...Fill Glass Faucets or HAWS Emergency Eye Wash Fountain! The ideal deck type drinking fountain for all school classroom and laboratory requirements. Adaptable for industry, too! Finished in acid resisting white ename! with stainless steel mounting rim.

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# two big extras at one low price!

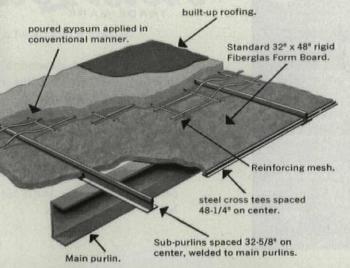


In a Class by itself: fire-safe, inorganic Fiberglas Acoustical Form Board with gypsum concrete keeps light structures snug, safe, quiet—eliminates cost of ordinary acoustical ceiling. Has N. R. C. of .75.

Extra #1.
A fire-safe acoustical ceiling

Extra #2.

A highly efficient insulation



Bucking a building budget for school, factory, shopping center? Consider Fiberglas\* Acoustical Form Board as your solution.

Fiberglas Acoustical Form Board gives you a permanent, dimensionally stable form board . . . plus a highly efficient insulation . . . plus a fire-safe acoustical ceiling. Yet Fiberglas Acoustical Form Board costs no more than an acoustical ceiling alone!

It's easily installed with gypsum in flat, curved or pitched roof framing. Ceiling surfaces are Fiberglas and paintable.

Specify triple-duty Fiberglas Acoustical Form Board for schools, factories, shopping centers, all similar structures . . . get *two big extras* at one low price! For full technical data write Owens-Corning Fiberglas Corporation, Dept. 67-F-17, Toledo 1, Ohio.



\*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation.

SOUND CONTROL PRODUCTS + ROOFING INSULATIONS + ELECTRICAL INSULATIONS + DUCT INSULATIONS + LOW TEMPERATURE INSULATIONS



Twist-Lock No. 7580-G

DUPLEX RECEPTACLES

The many rugged, dependable Hubbell wiring devices specified for this handsome Alcoa Building in Pittsburgh, Pa., are a perfect complement to its modern design and sturdy construction. The Twist-Lock Duplex Receptacle shown here is but one of many Hubbell devices specified and installed in this outstanding building. It is an example of the value received\* when you insist on highest grade, heavy duty materials.

Highest grade HEAVY DUTY

First ... the Finest

\* VALUE RECEIVED

Designed for either back or side

Convenient strip gauge with

sharp metal edge to score in-

Bridge "locked on" for secure

New slot-finding groove meshes

Double-sided contact springs

and large double binding

Completely enclosed in black

molded material, or in ivorene

seating — added strength.

blades with slots.

if desired.



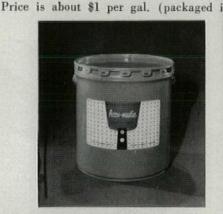
## HARVEY HUBBELL, INC.

BRIDGEPORT, CONNECTICUT

#### NEW PRODUCTS continued

ACOUSTIC TILE MASTIC will not slump or Manufacturer of sundry construction pounds-caulking, putty and sealers-I

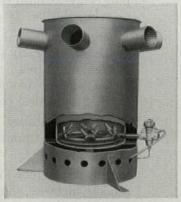
Pontius Co. turned a research crew to ing up a better buttering agent for acous tile. After their Accu-mastic formula p lab examination on texture and stabilit was performance-tested and approved acoustical engineers. The new mastic's sistency is reported to be ideal for application. Nonslumping, it does not s out over tile faces. Once put in place, installed with the proper air gap be them will not move. Accu-mastic form strong, lasting bond in a few days yet pliable enough to withstand stresses wit breaking the bond. It retains its flexib even near heating ducts or hot pipe I



and 5 gal. cans). The material may stored indefinitely in unopened containers. Manufacturer: Dicks-Pontius Co., Dayt

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Manufacturer: Arthur H. Kitson, Inc., 2081 Harper Ave., Detroit, Mich.

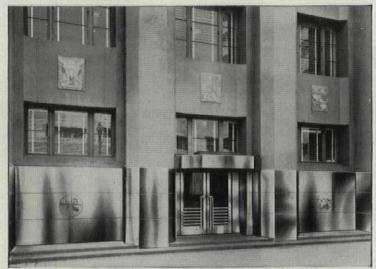
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THE MAGAZINE OF BUILDIN

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outside

or inside





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In short, whether you're considering Allegheny Metal for just the 'hard-wear' spots or for an entire curtain-wall design, keep this fact in mind: no other material costs as little over the long pull as stainless steel.

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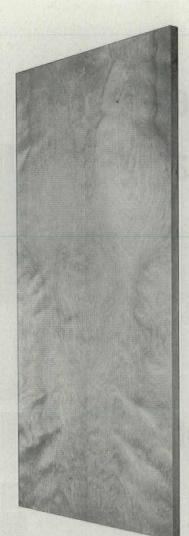
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National Bank of Detroit. Architects: Hawley, Ellington & Day, Detroit, Mich. Featured is Alumiline Curtain Wall Construction (60% of total wall area). The Curtain Wall contains both glass and porcelain insulating panels, with the construction based on  $2'' \times 5''$  tubing. This Alumiline Curtain Wall was sent to the job completely prefabricated.

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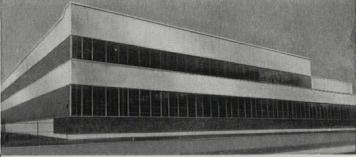


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A complete installation service is available. For name of nearest jobber-erector, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. Or write to Reynolds Metals Company, Building Products Division, 2020 S. Ninth St., Louisville 1, Ky.

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25'x 19' Cookson Power Door (Type FCM-B) with special sloping footpiece. 1 hp motor supplies ample power for .67 ft./sec. operation.

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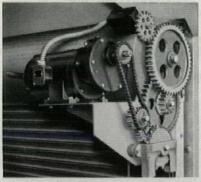
When you can maintain ample margin of power reserve, and still specify a motor a size smaller thanusually required for any given door size, cost savings are obvious.

Cookson power operated steel rolling doors employ a special parallel drive which saves up to 47% of power normally lost through transmission! Frictional loss is further reduced through use of lifetime lubricated ball bearings on curtain mounts.

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For initial and maintained economy plus longer, more dependable service, investigate Cookson Power Operated Steel Rolling Doors.



Cookson parallel drive power unit shown with bracket mount. Also available with wall mount.

Complete descriptions and specifications of Cookson power and manually operated steel rolling service doors, Servire fire doors, grilles, extruded aluminum counter doors, and specialty doors are detailed in our catalog.





#### THE COOKSON COMPANY

1531 CORTLAND AVENUE SAN FRANCISCO, CALIFORNIA

#### CASTO'S SHOPPING CENTERS

(continued from p. 123)

place, settle on a series of sites in order of desirability (not always sites discovered by the advance men), and begin negotiations.

When questions of zoning come up, Casto does not deal with city fathers or big wheels. Instead he concentrates on support from residents in his site area, is backed by a formidable collection of petitions and resolutions before he presents his case. He has lost many an initial battle with officials, only to win it finally with residential support. "The only time you cannot get local residential support for your zoning is when the center is wrong for the area—for instance if you try to put one into a nice settled neighborhood which you will blight; and you ought to lose then."

Negotiations and zoning decisions are a long haul; two years is not unusual, and some never come through. This is why Casto keeps about 20 site deals going at once. He is becoming known as a "developer's developer," every week gets at least three or four visits or calls from promoters who have gotten part way through a shopping center deal and have run into trouble with leases or been unpleasantly astounded by building costs. Usually they want Casto to come in with them. If the site is excellent, Casto follows its fortunes (although he does not buy in), and if and when the original developer wants to sell, Casto is happy to pay him a profit for his work on negotiations. This is how he got his first Toledo site.

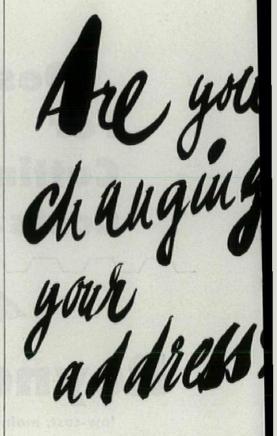
#### Effect of centers on downtown

▶ J. C. Penney has four branches in Casto's Columbus centers and they are among the best percentage gainers in the whole Penney store chain. But the downtown Penney store has recently increased its volume by 12 or 14%, more than could normally have been expected.

The Union, a local "better priced" large apparel store, added 1,800 new accounts downtown in the first eight months after it opened a center branch.

Casto's theory for these unusual gains is that downtown stores are patronized by separate classes but that shopping centers are classless. He is convinced that a great many "quality" customers discovered Penney for the first time in his centers, and then began buying in the downtown Penney, too. Similarly, a lot of "mass buyers" discovered the Union and became downtown customers.

Apparently the centers have made no dent on Lazarus, the big Columbus downtown department store. Casto's viewpoint: "Columbus has grown from 350,000 to 500,000 since the war. There is no space downtown for comparable commercial expansion and no way to handle the traffic if there were. We provide the expansion downtown has no room for."



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#### architectural forum

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The new 300,000 sq. ft. plant of the Rex Manufacturing Company at Connersville, Indiana has an unusual mezzanine floor of Flexicore precast concrete slabs.

cast concrete slabs.

"Flexicore saved us two months," reports
J. H. Stonebraker, job superintendent for the
A. J. Glaser Company, Inc., Muncie, Indiana, general contractors.

"We didn't have to wait for pouring and curing of the mezzanine," he says. "We went right ahead on the main floor without interference from either formwork or shores."

The Rex plant was designed by Giffels & Vallet, Inc. and L. Rosseti, Detroit. It is 760' by 420', with a steel frame, corrugated metal curtain walls and channel slab roof.

The mezzanine runs the 760' length of the

The mezzanine runs the 760' length of the building on one side and varies in width from 60' to 240'. It is used for light assembly, stockrooms, and storage. Flexicore was selected to get flexibility for future changes. The slabs clear-span 20' bays.

The adjoining two-story office building has Flexicore slabs for second floor and roof.

Flexicore concrete slabs make hollow-core fire-resistant floors and roofs. Each slab is a monolithically cast unit with a clean, smooth undersurface that gives an attractive panelled ceiling without plaster. The joint between the slabs forms a grout lock that ties the slabs together in a flat, rigid unit.

Flexicore slabs fit right into conventional design and have cut costs and reduced construction time on thousands of jobs from coast to coast. See Sweets for catalog information. Phone or write your local manufacturer for complete facts.

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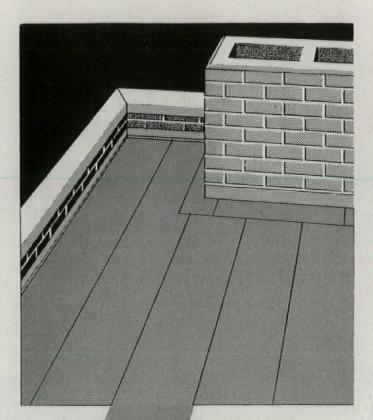
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Follansbee Seamless Terne can be cut to any length up to fifty feet, and installed without cross seams. The elimination of these unnecessary cross seams not only insures a more serviceable weatherproof roof, it cuts down on labor and installation costs as well, and there's a considerable saving of solder, too.

This durable metal roofing material offers many other advantages, as well. It provides strength without the comparable weight of other quality roofing. The coating won't flake off or peel. Terne has been service-proved over long periods on residential, industrial, and institutional installations. Roofing specifications and installation details are available for the asking. Write today for the complete brochure on Follansbee Terne Metal applications.

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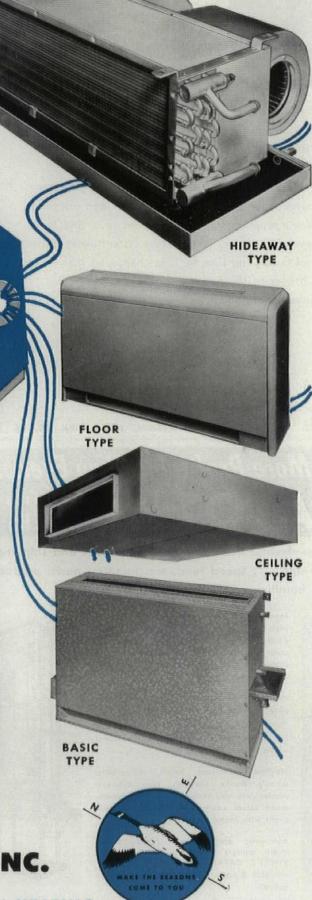
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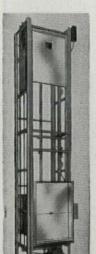


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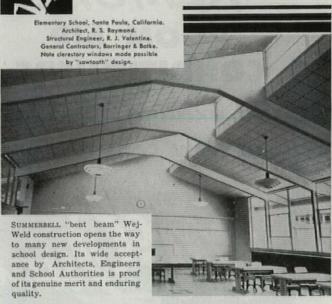
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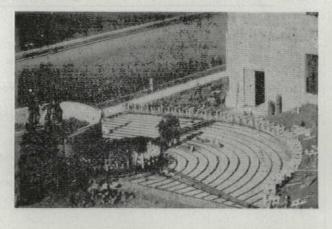
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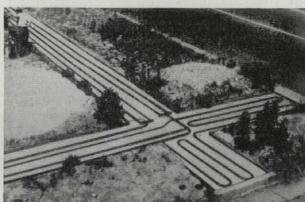


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Liquid compounds, similar in all respects except as to color and viscosity. Applied by brush, roller, spray gun directly to floors, walls, ceilings, old or new. No need for surface preparation. Equal bonding permanence all climates, all types of surfaces, all sorts of conditions.

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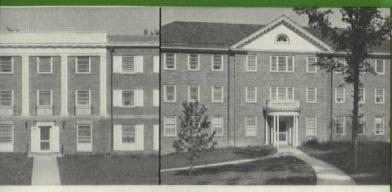
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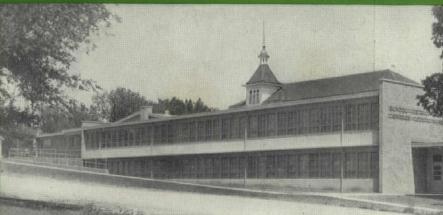


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