architectural **FORUM**

the magazine of building

SEPTEMBER 1955

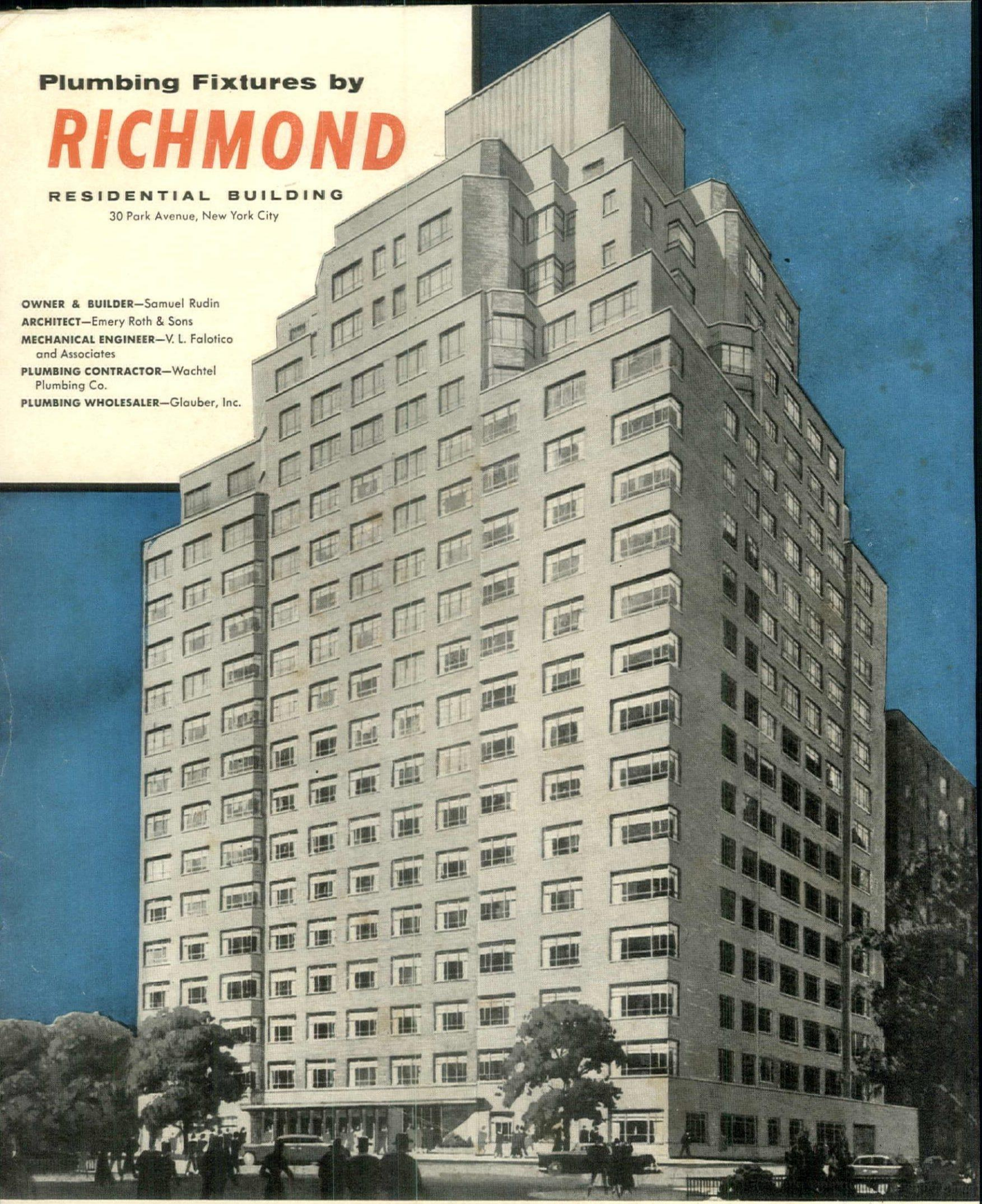
Plumbing Fixtures by

RICHMOND

RESIDENTIAL BUILDING

30 Park Avenue, New York City

OWNER & BUILDER—Samuel Rudin
ARCHITECT—Emery Roth & Sons
MECHANICAL ENGINEER—V. L. Falotico and Associates
PLUMBING CONTRACTOR—Wachtel Plumbing Co.
PLUMBING WHOLESALER—Glauber, Inc.



RICHMOND FIXTURES FOR 30 PARK AVENUE BUILDING

RICHMOND
RADIATOR COMPANY
16 Pearl Street, Metuchen, N. J.
AN AFFILIATE OF REYNOLDS METALS COMPANY

architectural **FORUM**
the magazine of building

SEPTEMBER 1955

Cover: Notre-Dame-du-Haut
Architect: LeCorbusier
Photo: Moosbrugger—LIFE

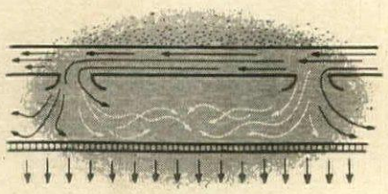
98 Editorial data (including masthead) and subscription data

280 Advertising index

VOLUME 103, NUMBER 3

Published monthly by TIME, Inc.
9 Rockefeller Plaza, New York 20, N.Y.
Re-entered as second-class matter at New York, N.Y.
Subscription price $5.50 a year

SHADOWLESS LIGHTING—BY GUTH GRATELITE*



"THE GREATEST LIGHTING-IN-ACTION TEST EVER MADE!"
(PHOTO NOT RETOUCHED)

. . . it shows why the Martin Company of Baltimore chose Guth GrateLite Ceilings as *"the best possible lighting"* for their new 70,000 sq. ft. Engineering Building:

65 foot-candles without shadows from drafting instruments or hands. No sight fatigue after close, accurate work with fine details.

The entire ceiling glows with seemingly sourceless light . . . softly diffused, low brightness light . . . glare-free and evenly distributed.

PLUS AN AIR-CONDITIONING BONUS!

The ⅜" grids help diffuse the conditioned air and distribute it evenly over the entire work area without drafts.

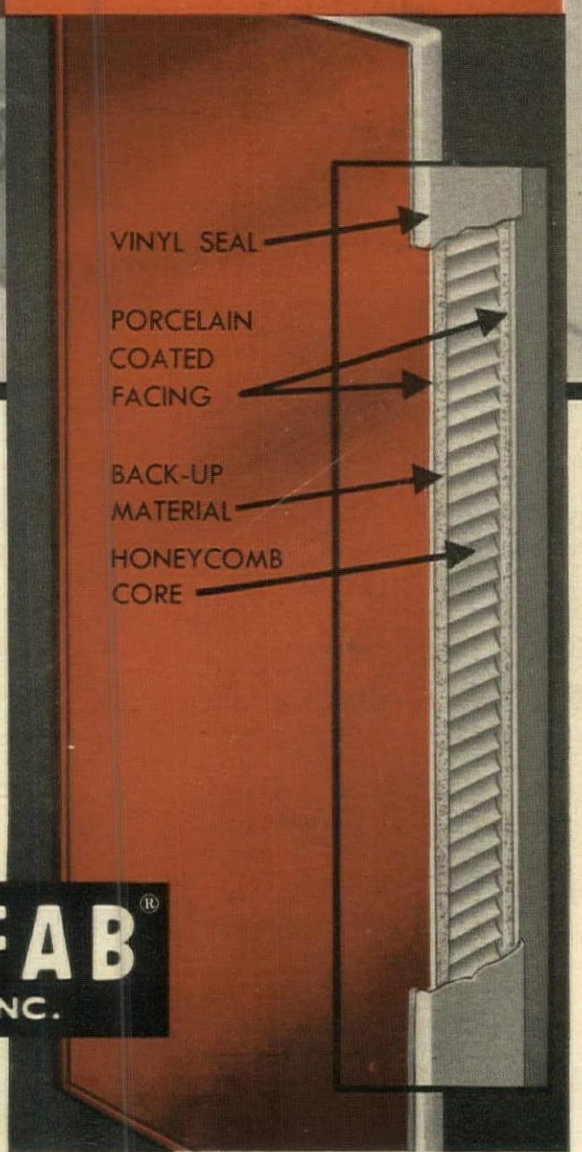
WRITE ON YOUR LETTERHEAD FOR DETAILED GRATELITE INFORMATION.

THE EDWIN F. GUTH COMPANY Guth **ST. LOUIS 3, MO.**

trusted NAME IN LIGHTING SINCE 1903

*TM REG. U. S. & CAN. PATS. PEND.

PANELFAB® porcelain PANELS



6-YEAR-OLDS GO TO COLLEGE

To help provide the answers to better elementary education, the most advanced school of its type is being constructed* on the main campus of the University of Miami.

The school will combine the latest methods of public instruction with the finest available equipment and facilities. Panelfab is proud to play an important part in this unique installation.

More and more architects are specifying Panelfab porcelain and aluminum curtain wall panels and rugged, lightweight Panelfab aluminum doors. We will be glad to provide you with full details on how Panelfab products contribute to better, more economical construction.

*West Laboratory School
University of Miami
Coral Gables, Florida
Architect: Robert M. Little, A.I.A.

PANELFAB®
PRODUCTS, INC.

2000 N.E.146th Street, North Miami, Florida

Through a patented process Panelfab Panels feature facings of genuine porcelain enamel on thin-gauge steel with hard back-up material—providing better "U" values, reduced sound transmission and far greater impact resistance.

so often glass is how we see

Here, at Libbey·Owens·Ford, experts have developed the most distortion-free plate glass ever made in America.

That's tremendously important when you consider these two things:

From inside, almost everything we see *outside*, is seen through glass. So the distortion-freedom of Parallel-O-Plate is vital in homes, schools and almost every kind of building.

From outside, almost everything we see *inside*, is seen through glass. So, Parallel-O-Plate is a "must" for any storefront. And every building we look *at* looks better when its windows are Parallel-O-Plate . . . because this glass is so distortion-free.

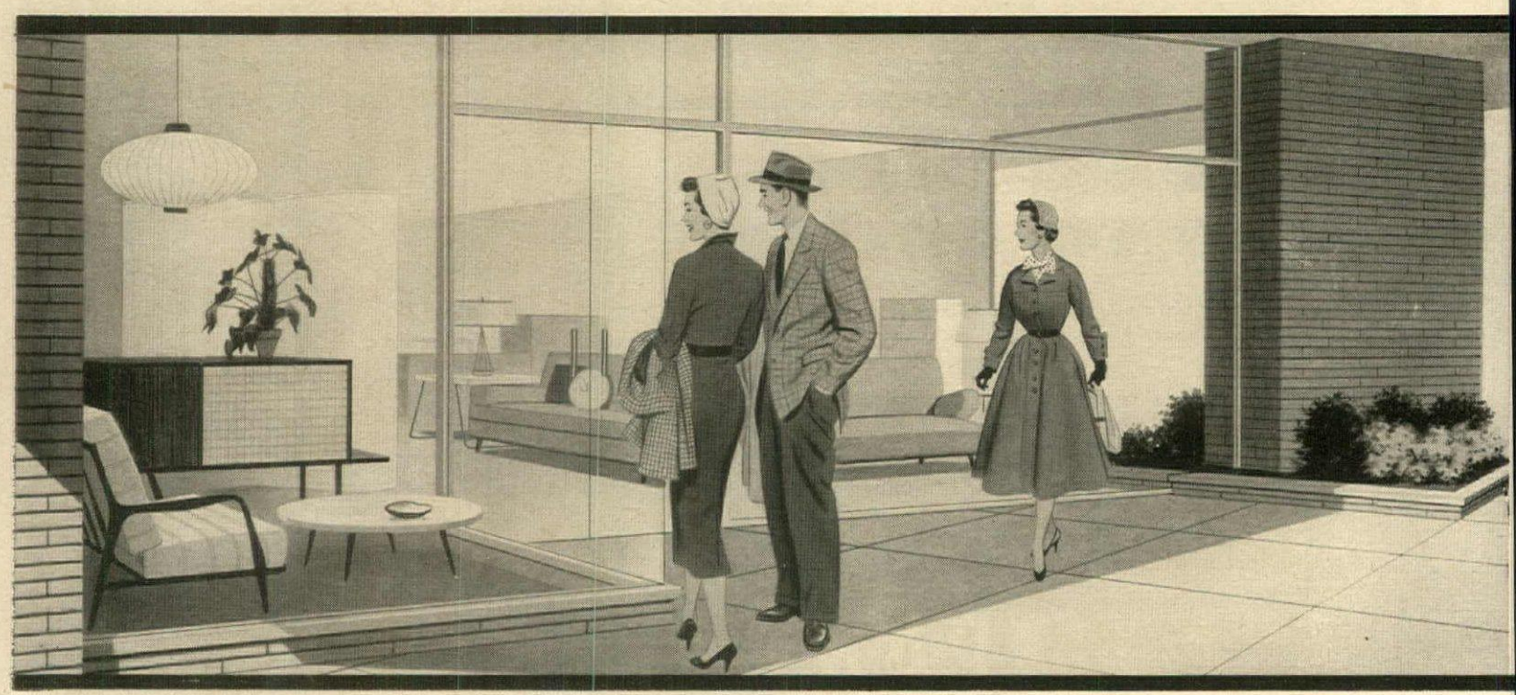
In most localities, this remarkable product costs no more than regular plate glass! So insist on it for *your* windows. If you plan on using double-pane insulating glass, be sure you get *Thermopane** made of Parallel-O-Plate. And make sure the mirrors you buy are made of it.

You can get Parallel-O-Plate from any Libbey·Owens·Ford Distributor or Dealer. You'll find his name under "Glass" in the yellow pages of most phone books. Or write to Dept. 8895, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio, for complete information. *®

L·O·F Parallel·O·Plate Glass

finest plate glass made in America . . . only by

LIBBEY·OWENS·FORD *a Great Name in Glass*



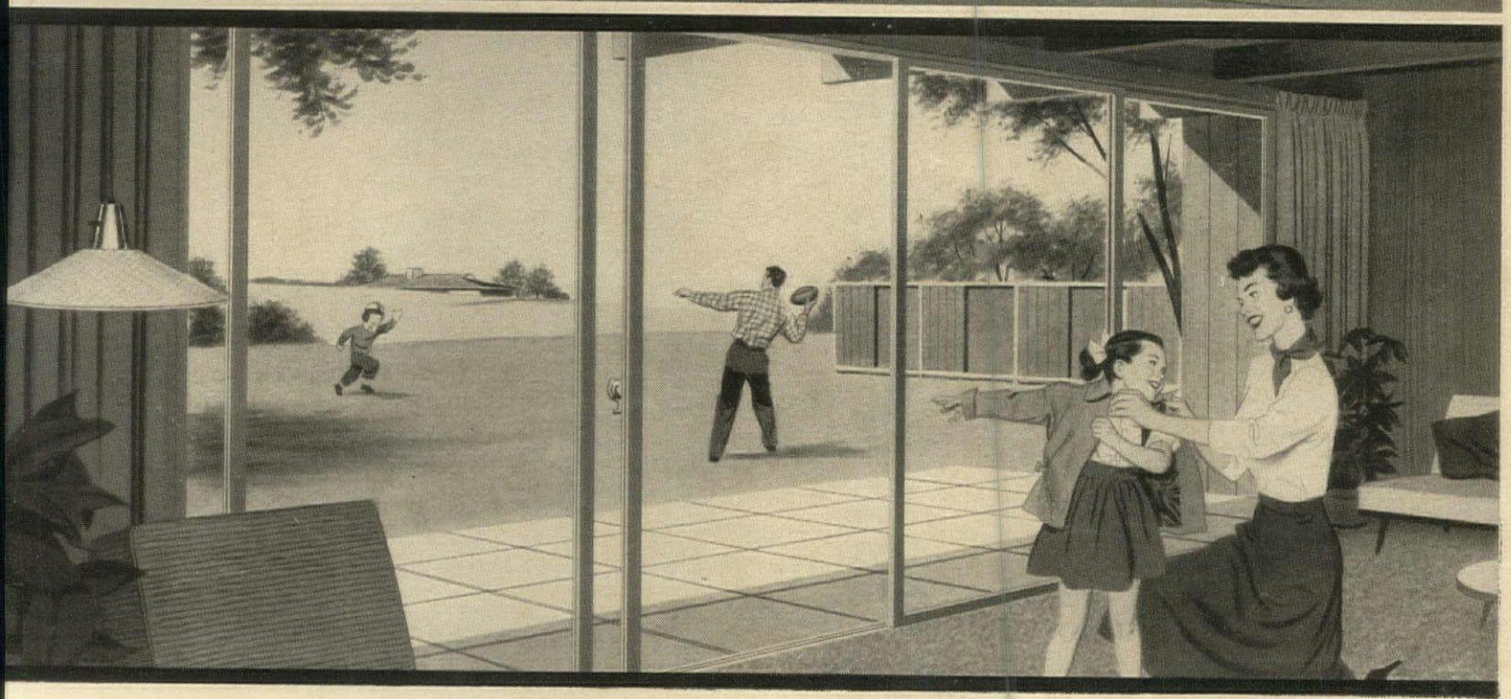
LOOKING IN through the Parallel-O-Plate Glass in a storefront, you hardly know the glass is there.

LOOKING AT windows of Parallel-O-Plate Glass, you see how much its truer reflections mean to exterior appearance.

TWIN GROUND

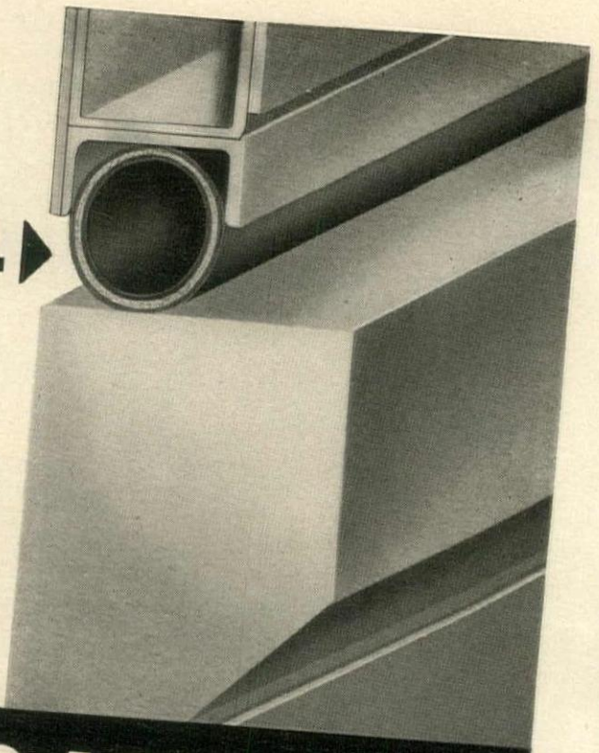
LOF

Polished PARALLEL-O-PLATE



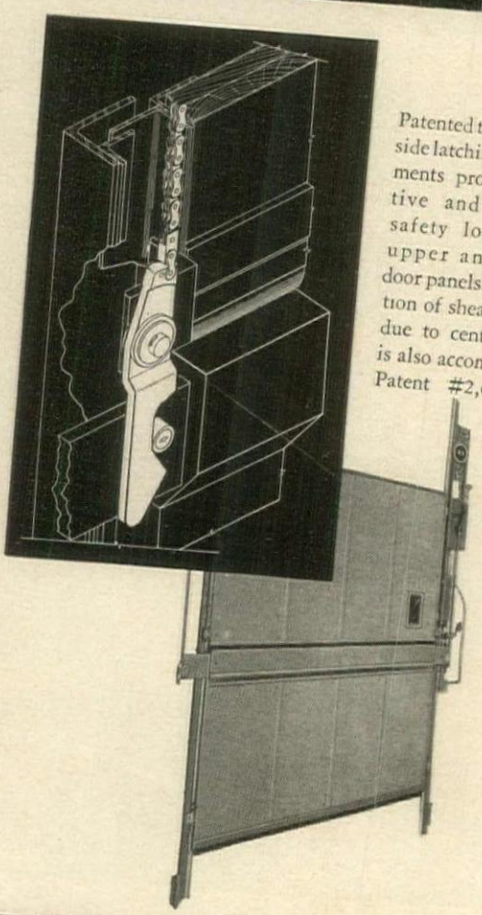
LOOKING OUT of your sliding glass doors made of Parallel-O-Plate *Thermopane*, you see the scene as it *is*.

THE PEELLE SAFETY SEAL ASTRAGAL



Cross section at the meeting rail of the Peelle Freight Elevator Door showing the Peelle Safety Seal Astragal—a flexible tube of neoprene and asbestos. This eliminates the dangerous shear hazard of an overlapping steel astragal.

PREVENTS SHEARING ACCIDENTS ON FREIGHT ELEVATOR DOORS



Patented tension dual side latching arrangements provide positive and parallel safety locking of upper and lower door panels. Elimination of shear hazard, due to center latch, is also accomplished. Patent #2,659,457.

Here is the greatest safety advance in freight elevator doors since the introduction of the electric interlock. The Peelle Safety Seal Astragal completely eliminates the danger of sheared fingers by an overlapping steel astragal which, until recently, was necessary on all bi-parting freight elevator doors bearing the Underwriters' Laboratories label. Now both Underwriters' Laboratories and Factory Mutual Laboratories have approved the use of the Peelle Safety Seal Astragal on Peelle Doors with 1½ hour rating.

Peelle Freight Elevator Doors, equipped with Peelle Safety Seal Astragals, are now being used by Eastman Kodak Company, Aluminum Company of America, United States Rubber Company, American Cyanimid Company, Goodrich Tire & Rubber Company, General Analine & Film Company, the Consolidated Edison Company and many others.

Peelle Safety Seal Astragals may be installed on Peelle Freight Elevator Doors now in use and can also be applied to any other Peelle Bi-Parting Horizontal or Vertical Sliding Doors.

Write for details.

MOTORIZED DOORS SPEED UP ELEVATOR SERVICE

THE PEELLE COMPANY • 47 Stewart Avenue, Brooklyn 37, N. Y.

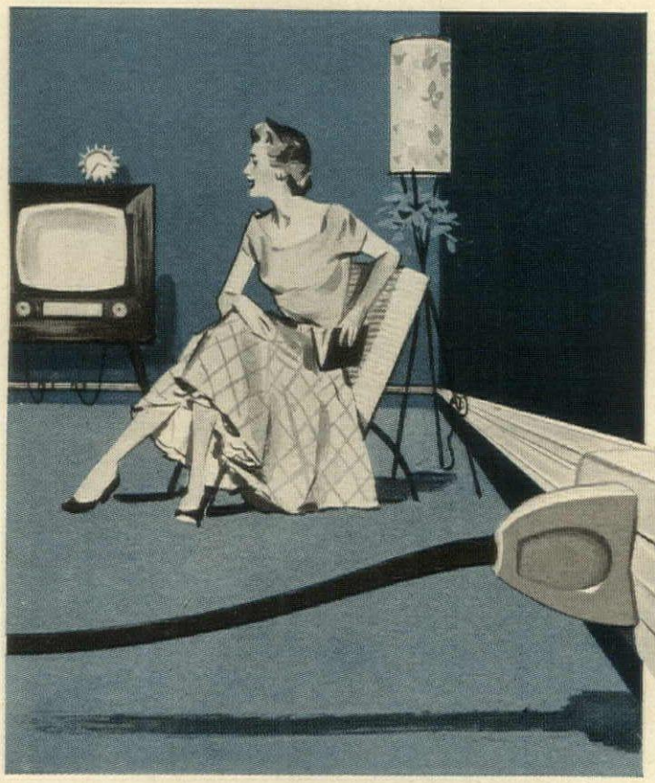
Offices in Principal Cities

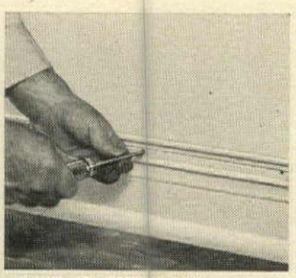
PEELLE MOTORSTAIRS • INDUSTRIAL DOORS • FREIGHT ELEVATOR DOORS • DUMBWAITER DOORS

NEW BULLDOG *Electrostrip*

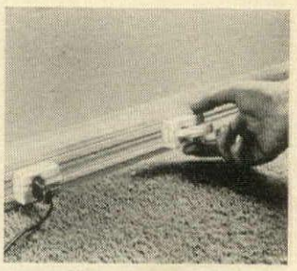
PATENTED

ELIMINATES ELECTRICAL OUTLET PLANNING

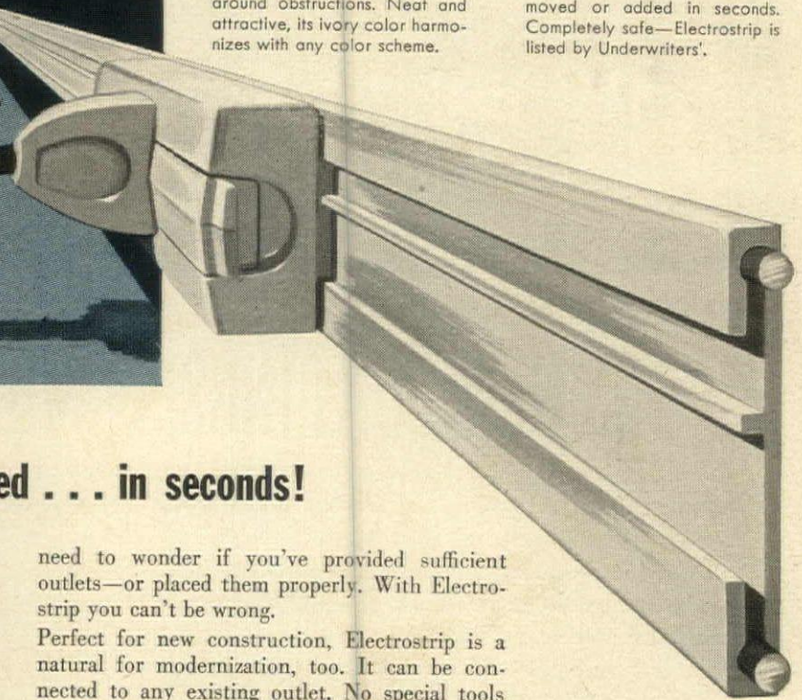




EASY TO INSTALL! Electrostrip can be easily and quickly installed on walls, baseboards, floors, anywhere...hand-formed to fit room contour and to bend around obstructions. Neat and attractive, its ivory color harmonizes with any color scheme.



OUTLETS THAT MOVE! Receptacle plugs lock into Electrostrip wherever you want them. Outlets can be placed, and spaced, at any spot on the strip, moved or added in seconds. Completely safe—Electrostrip is listed by Underwriters'.



An outlet wherever it's needed . . . in seconds!

Forget about outlet planning! Simply install new BullDog Electrostrip® and you can be certain that electric outlets will always be *where* needed . . . *when* needed. For Electrostrip is sturdy molding that provides outlets *every inch along its length.* Outlets that can be moved or added in seconds—as requirements change and new needs arise.

Electrostrip mounts neatly on any surface in any home, institution or commercial building. Handy receptacle plugs lock into the strip at any interval . . . exactly where needed. To add more outlets, just add more plugs. It's as simple as that. No need to wonder if you've provided sufficient outlets—or placed them properly. With Electrostrip you can't be wrong.

Perfect for new construction, Electrostrip is a natural for modernization, too. It can be connected to any existing outlet. No special tools required. No need to break into plaster. No wire-fishing or costly replastering. And long, dangerous extension cords become things of the past.

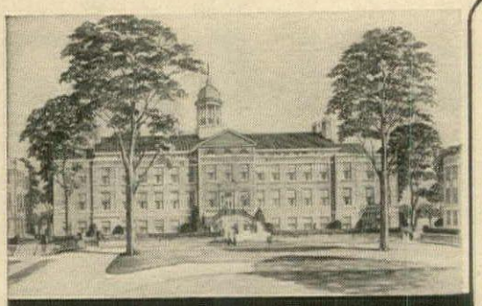
Electrostrip is sold by BullDog distributors only to electrical contractors. See yours. Or write: BullDog Electric Products Co., Detroit 32, Mich.

IF IT'S NEW
. . . IF IT'S DIFFERENT
. . . IF IT'S BETTER . . . IT'S

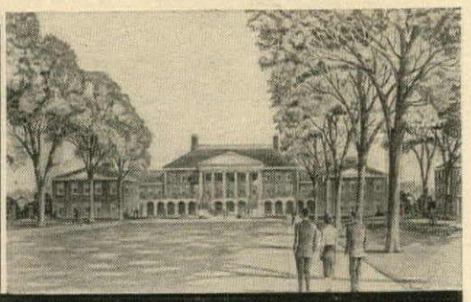
BULLDOG
ELECTRIC PRODUCTS COMPANY
A Division of I-T-E Circuit Breaker Company

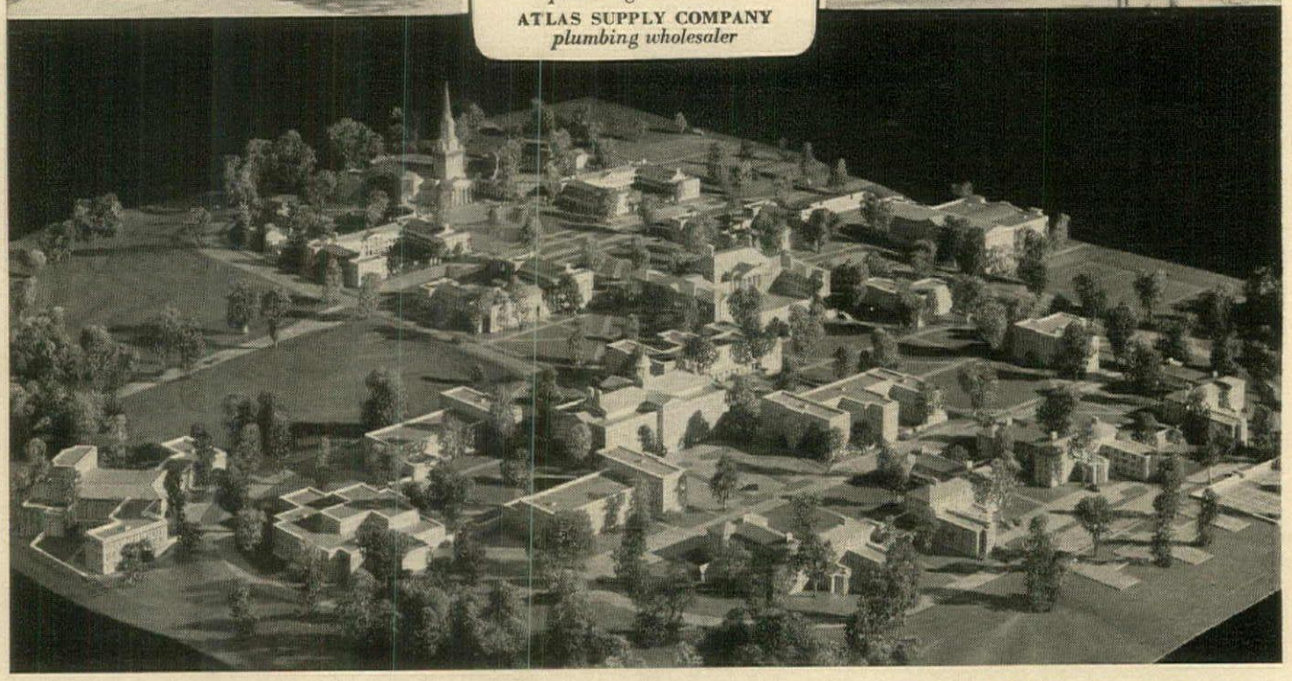
Export Division: 13 East 40th Street, New York 16, New York. ***In Canada:*** BullDog Electric Products Company (Canada), Ltd., 80 Clayson Road, Toronto 15, Ontario.

THE VAST MAJORITY OF THE NATION'S FINE BUILDINGS ARE SLOAN EQUIPPED



JENS FREDERICK LARSON
architect
LOUIS M. BOUVIER
mechanical engineer
FOWLER-JONES CONSTRUCTION CO.
GEORGE W. KANE
FRANK L. BLUM COMPANY
general contractors
J. T. BATES & CO.
W. H. SULLIVAN CO.
ROWE GOODEN JONES, Inc.
plumbing contractors
ATLAS SUPPLY COMPANY
plumbing wholesaler





WAKE FOREST COLLEGE MOVES TO WINSTON-SALEM, NORTH CAROLINA

23 NEW BUILDINGS, 19 MILLION DOLLARS

• It was exciting news when 121 year old WAKE FOREST COLLEGE announced it would move from its namesake town in North Carolina to an entirely new campus at Winston-Salem in the same state. Next June the dream of bigger and better facilities will come true. At a cost of more than 19 million dollars, 23 new buildings will welcome faculty and students. Other structures will be added later. Principal buildings now being completed are University Center (*upper right*), Library (*upper left*), Chapel and Christian Education, Science and Research, Law, Gymnasium, 6 Dormitories, 10 Faculty Family Apartment Buildings, Power and Central Heating Plant. All buildings will be of colonial design with skillfully planned interiors and inbuilt equipment of the highest rank. All will be equipped throughout with world-famous SLOAN *Flush* VALVES.

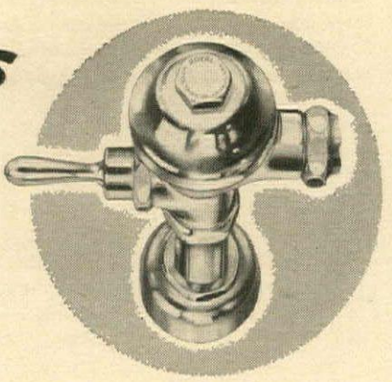
SLOAN *Flush* VALVES

FAMOUS FOR EFFICIENCY, DURABILITY, ECONOMY

SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

Write for completely descriptive folder



Congress adjourns after voting minor building bills, ignoring school crisis

In its first session the 84th Congress did relatively little of any serious significance for the construction industry, and did not even do some of that very well.

It enacted many useful minor measures affecting building, but won no glory for its action on housing act amendments, or its inaction on two of the biggest construction proposals advanced in Washington in many years: a large scale program for US assistance for critically needed school construction, and a vastly accelerated federal-aid highway extension program.

The score on various enacted measures:

public housing. The 1955 amendments authorized a new installment of 45,000 units during the year ending next July 31, but they scrapped the "workable program" requirements of the 1954 law that limited new projects to cities having HHFA approved urban renewal programs. When signing the bill President Eisenhower criticized deletion of these requirements, took occasion to note that the two-year, 70,000-unit program he proposed is still needed and could have been administered in "a more orderly and efficient manner."

Urban renewal. To spark this lagging program (a year old without a single loan), the FHA was authorized to insure Sec. 220 mortgages based on "replacement value" rather than "estimated value," but still subject to the "cost certification" requirement, which should prevent any abuses of this liberal appraisal standard that might result in new "windfall" mortgage cases. Redevelopment project rules also were changed to allow federal loans (but not grants) for industrial or other nonresidential redevelopments on open land areas. Such loans, however, would be limited to 2½% of gross costs of all other Title I urban renewal projects in each area, and it was understood this clause was drawn for the special benefit of Chicago, although not referring to that city by name. Total capital grant authorizations for this program were also boosted by $500 million for the next two fiscal years.

Military housing. The Wherry Act was given several curious twists. On Defense Department certification it will now allow FHA to insure 100% mortgages; but if FHA then has any misgivings about the economic soundness of such a project it can insist that the Pentagon reinsure the deal. Commented one industry observer: "Combining as it does contract negotiation with a competitively bid contract price—the only remaining instance of this kind of legislative foolishness—this program will certainly never get off its crippled feet. Moreover, it is the most bald-faced example of the new idea of expanding government expenditures without affecting the legal debt limit that has been concocted so far. It is undoubtedly fortunate that its impracticalities will prevent its wide use."

Other FHA and HHFA changes. The FHA's $5 million per project limit on various types of rental housing mortgages was raised to $12.5 million, but would provide little stimulation so long as its rental housing programs remained ineffectual because of other basic shortcomings (AF, June '55). Sec. 213 cooperative project mortgages can now be based on "replacement" costs, instead of value, but are still subject to cost certification regulations.

The HHFA college housing loan fund was increased for $300 to $500 million, and was extended to authorize loans for such extra facilities as dining halls, student centers, infirmaries and cafeterias. Also expanded were HHFA loan programs for local public works planning and buildings.

Hospital construction. For the current year $111 million was appropriated to match state and local funds spent under the Hospital Survey and Construction Act. VA was given $30 million for modernizing and rehabilitating its hospitals.

Washington area buildings. After 92 years of procrastination, the 84th Congress appropriated funds to extend the east facade of the Capitol approximately 49′, bring it more in line with the separate House and Senate wings. It also instructed the Capitol architect to acquire land and prepare plans for a third new $35 million House Office Building, proceed with a second new $20 million Senate Office Building on which bids should be received this month. Also approved were a $46 million Central Intelligence Agency building to be erected in the metropolitan Washington area, a $10 million AEC headquarters building in nearby Germantown, Md., to be designed by Voorhees, Walker, Smith & Smith, a new State Department building adjacent to its present overcrowded quarters.

Bragdon named first US public works "Coordinator"

Before adjourning, Congress authorized funds for an Office of Coordinator of Public Works in the Executive Office of the President. By a separate bill allowing former Maj. Gen. John S. Bragdon to serve in a government post so long as he relinquishes his Army retirement pay, it also paved the way for President Eisenhower to name Bragdon to this new White House staff position at a salary of $16,000 annually. Before retiring from the Army in 1951 Bragdon was Deputy Chief of Engineers, later became vice president of Vermilya-

continued on p. 12

BRAGDON

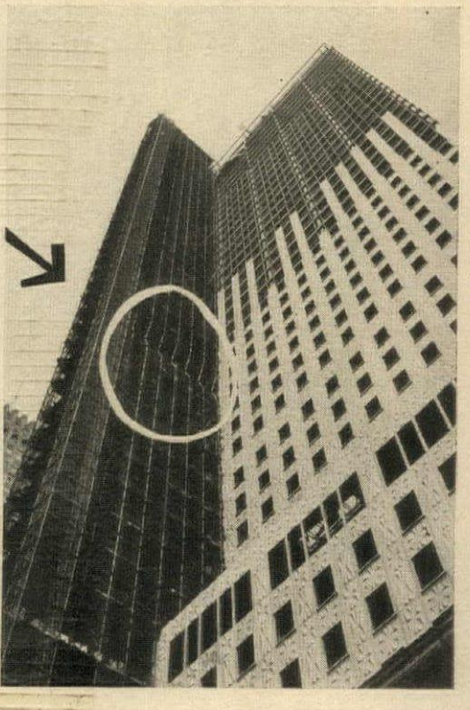
Hildegarde Sandhusen—LIFE

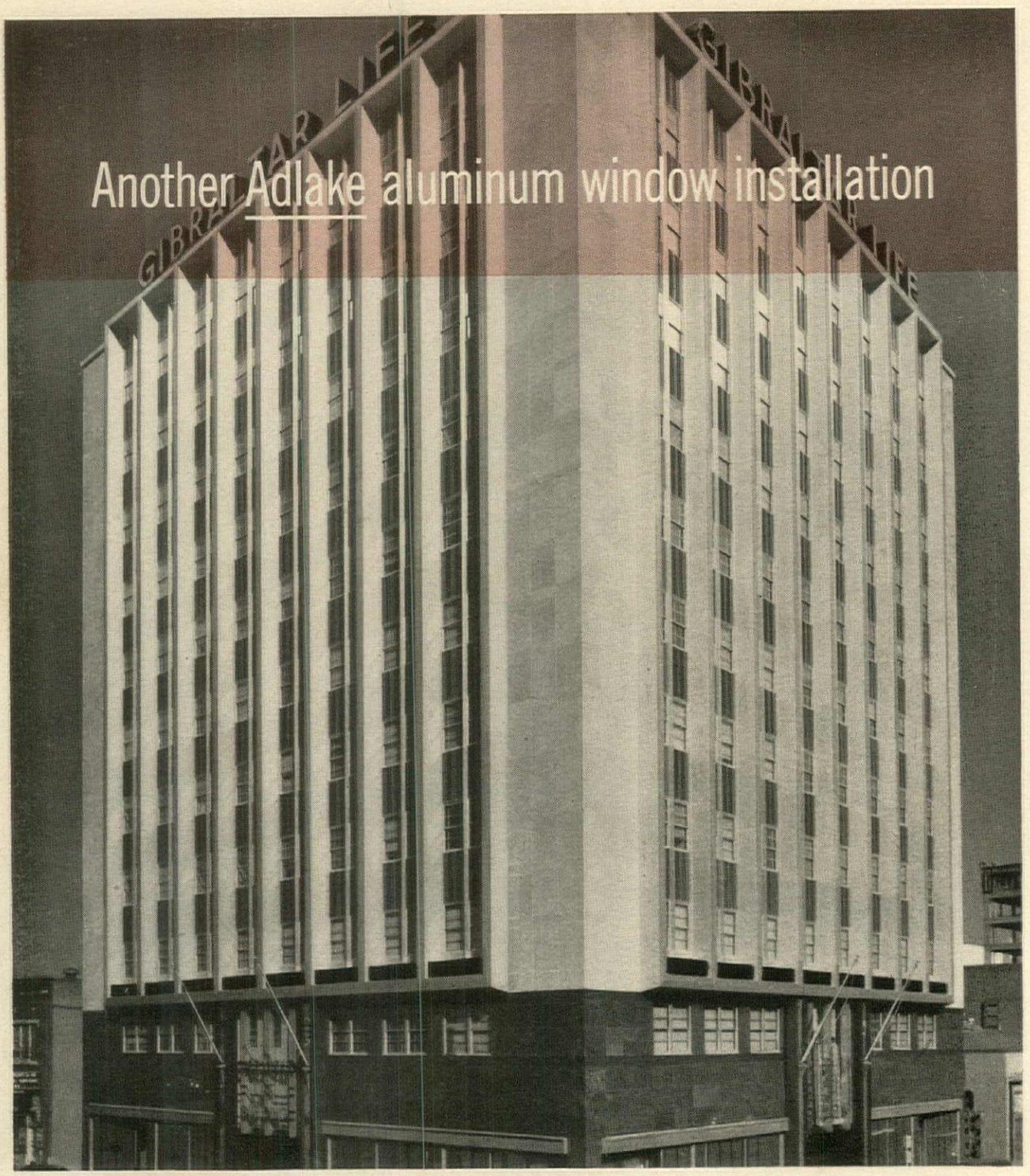
Ira Rosenberg—NY Herald-Tribune

Scaffold pipes bend in NY; Coliseum collapse blame fixed

On a hot Friday afternoon last month the walkways linking curbside hoist towers to the upper 28 floors of the 45-story Socony Vacuum building in New York suddenly dropped seven inches as pipe columns bowed (see cuts). Streets were cleared and buildings across 41st Street from the structure were evacuated while workmen took up weight of the walkways with cables from the building. Over the weekend workers installed pipe columns beside the bent ones, extending several floors above and below the warped area. The city building department and Chesebro-Whitman Co., which leases the scaffold structure to Turner Construction Co., contractor, were looking for the cause. The bowing occurred just above where vertical pipes were reduced from 3½" to 2½" in diameter.

A few weeks ago New York District Attorney Frank Hogan's office blamed "inadequacy of the supporting structure under pressure of a horizontal or oblique thrust" for collapse of falsework supporting forms for the main floor slab of the New York Coliseum. Diagonal bracing of vertical timbers and steel jackpoles under the formwork were conspicuously missing before the collapse in May (AF, June), but conspicuously present last month as rebuilding progressed.





Gibraltar Life Insurance Company Building, Dallas, Texas. Architects: Thomas, Jameson & Merrill
General Contractor: J. W. Bateson Construction Co. Equipped with Adlake Double Hung Aluminum Window

Adlake
PROVEN QUALITY WINDOW
This window meets or exceeds all quality industry specifications for aluminum windows.
THE Adams & Westlake COMPANY Elkhart, Indiana

- Minimum air infiltration
- Finger-tip control
- No painting or maintenance
- No warp, rot, rattle, stick or swell
- Guaranteed non-metallic weatherstripping
  (*patented serrated guides on double hung windows*)

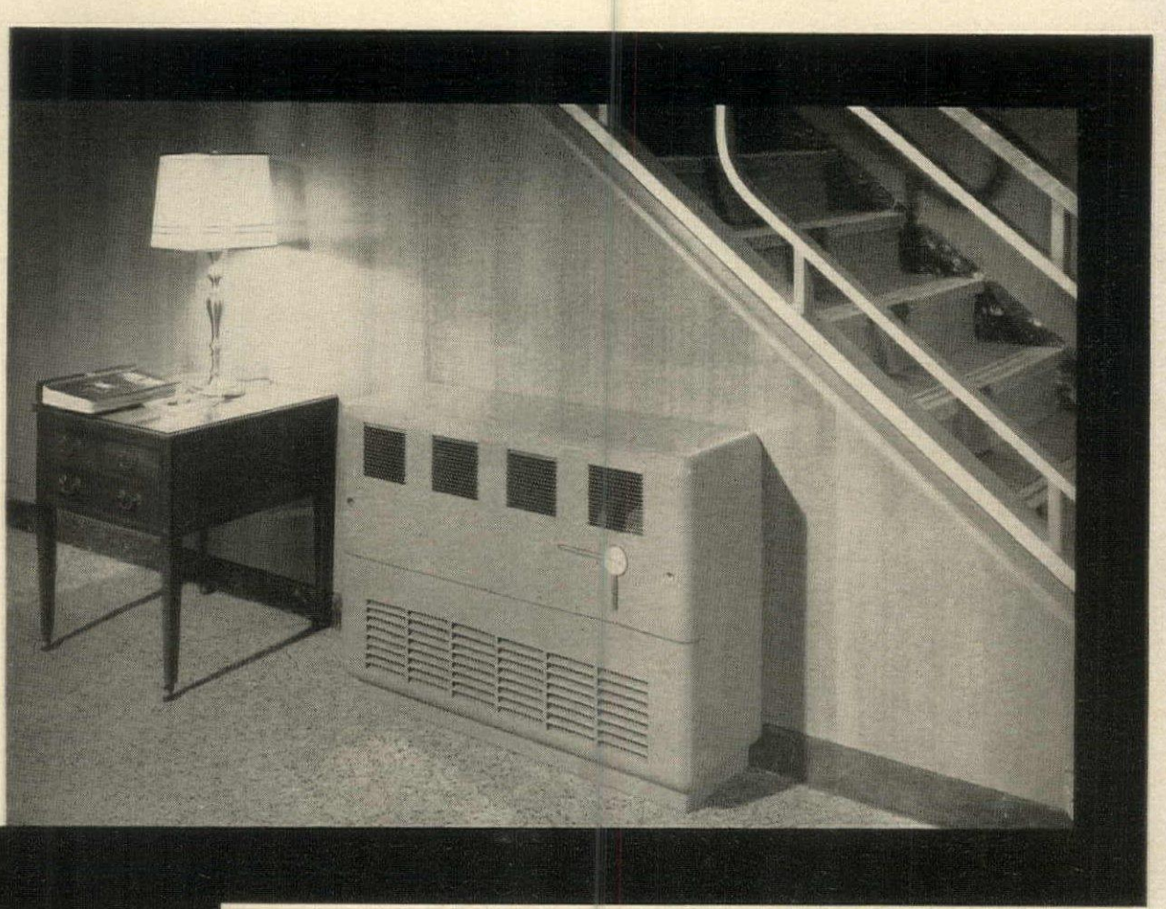
Adlake
98th year
of serving the transportation and building industries

the Adams & Westlake company

ELKHART, INDIANA • Chicago • New York • Established 1857

definite

beauty...



HERMAN NELSON

console

heater

infinite **variety...**

FLOOR INSTALLATION	WALL INSTALLATION	INVERTED INSTALLATION	CEILING INSTALLATION
Top Discharge	Top Discharge	Top Discharge	Top Discharge
Front Discharge	Front Discharge	Front Discharge	Front Discharge
Fully Recessed	Fully Recessed	Fully Recessed	Fully Recessed
Semi-Recessed	Semi-Recessed	Semi-Recessed	Semi-Recessed

Here at last is the heater that combines a *definite* graceful beauty all of its own with the highest standards of performance. You'll want to use the Herman Nelson Console Heater in stores, restaurants, institutions and offices—for it is almost *infinitely* adaptable. Whether installed on floor, wall or ceiling—whether recessed or inverted—it adds both a rich style accent and a new heating efficiency.

Quiet performance and surprisingly economical operation are other important "pluses" you'll value in the Herman Nelson Console Heater. Fan wheels turn with an almost imperceptible sound. Units are simple to install . . . operate with either steam or hot water. Mail coupon below for complete information.

AAF herman nelson

American Air Filter

COMPANY, INC.

LOUISVILLE, KY.

Now Ready!

Here are all the facts on the beautiful new Herman Nelson Console Heater!

AMERICAN AIR FILTER COMPANY, INC.
427 Central Avenue, Louisville 8, Ky.
Please send me my free copy of Bulletin No. 727 immediately.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

Brown Co., Inc., builders. Early in 1954 he took an assignment as coordinator of public works planning in a unit of the President's Council of Economic Advisers. On joining the White House staff, Bragdon received a letter from the President requesting that he be kept informed about federal, state and local public construction required "by an expanding economy," long range public works programming by various levels of government, and the possibilities of expanding such construction "in the event that economic conditions make such acceleration desirable." Keeping track of advance planning presented no problem. The big question was how much power the coordinator would have to order an actual slowdown or speedup of public works by any particular agencies whenever such action might seem advisable.

Building boom will feel few effects from government's credit policy changes

Although changes in credit or monetary policies sometimes can have rapid, serious consequences for construction, the government's housing and banking credit curbs last month were hardly likely to put any noticeable crimp in the continuing construction boom. Despite these new moves, FORUM's forecast for 1956 construction spending (p. 128) anticipated another 6% increase over the record-breaking $41.8 billion estimate for this year made by the Commerce and Labor Departments.

While the government's new policies reflected a great deal of genuine concern about inflationary potentials in overexhuberant business activity, it also was probable they included a good deal of political calculating, too.

Not a brake; a governor. The main objective, of course, was to slow up the racing economic machine a trifle. This might make it less "easy" to finance or promote some projects for awhile, but not make it at all "difficult" to launch any sound venture. Not to be overlooked was the fact the government would always need a healthy, busy building industry to maintain a strong, active economy, and, as required by the Employment Act of 1946, "to promote maximum employment, production, and purchasing power."

At the slightest sign of any major drop in construction, the industry could be quite certain the government would reverse its policies, take homebuilders by the hand, even spoon-feed them, liberally aid home buyers in all income brackets again, and devise other stimulants for nonresidential big building. If any surplus construction off the top of this year's boom was pushed over into 1956, naturally the government would do its best to get it launched then, when the approach of the national elections in November would undoubtedly make all officials more alert and responsive.

No "emergency." The most significant thing about the new policies was the demonstration they gave of the ever increasing role of the federal government in the national economy—and in construction.

For real estate and homebuilding leaders who liked to lambaste public housing as socialism, but laud FHA and VA for providing government incentives to spur private enterprise projects, it might have been a shock to observe how much "government regulation" they now had to accept in the FHA and VA restrictions: it was the first time such housing credit curbs were introduced without any national "emergency" situation that could be cited as requiring their imposition.

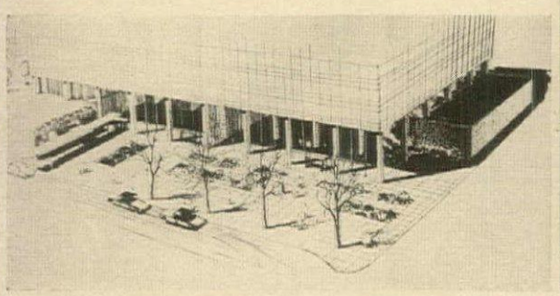
HHFAdministrator Albert M. Cole also disclosed that they were not even imposed with primary reference to homebuilding, but to the over-all national economy. He told a savings conference in Fort Collins, Col.: "These actions were not taken because of any general overbuilding in the housing field. They were designed, along with other precautionary and preventive steps taken in the over-all credit field—such as the Federal Reserve's recent increase in discount rates—to avoid further stimulation of credit buying which at this time would contribute measurably to inflationary factors in the economy as a whole."

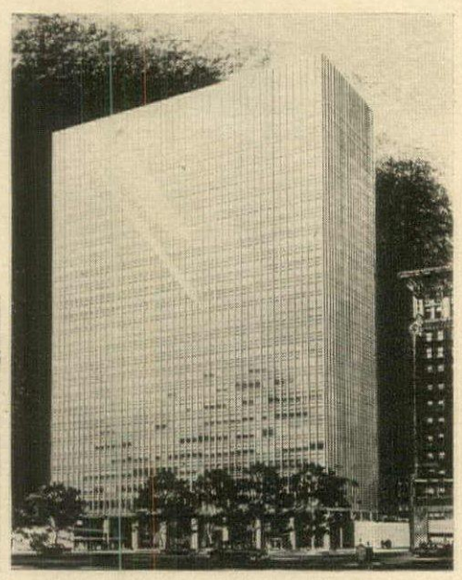
A month earlier Commerce Secretary Sinclair Weeks announced that vacant housing for sale or rent between April and June amounted to only 2.2% of all dwelling units in the US. This rate, he said, was "low enough to dispel recent apprehensions about overbuilding at this time . . . indicates that a major construction problem is not overbuilding, but rather building enough of the right kinds of housing in the right places." The new FHA and VA restrictions made no effort to be selective, however, or to favor particular locations or particular types of needed housing. They applied universally to all VA or FHA supported financing—on new housing and old housing, on single-family units and likewise on apartment construction, even on the urban renewal program mortgages.

Credit, politics and timing. As for the likelihood the new government policies included some political calculations, a Kansas City *Star* editorial summed up these possibilities rather pointedly:

"Credit has been the foundation of [a large portion of recent boom conditions] . . . . Politically, any tightening of money or credit is not popular . . . . Aside from issues of war and peace, people have the habit of voting their pocketbooks more than any other factor. For the administration, the timing of the 1955 boom is not good, politically. It wasn't planned. It just came, and a year too early. An election this fall would probably be a walkaway for Ike. But a recession or slow-down from the present pace next year could be very harmful politically. Whether the various moves to hold spending and business activity to a sound basis will be successful remains to be seen. They may have the result of stretching the present economic pace well through 1956. That is essential and smart if the GOP is to have any chance whatever of regaining Congress.

"The present credit moves can be switched the other way at the first real indications that the brakes have taken hold too hard. . . . The political pressures will all work for a sturdy industrial 1956."





Cleveland office tower will have public plaza area

Cleveland's first major new office building in 25 years will be this $17 million, 22-story, air-conditioned glass-and-metal covered structure. It is designed by Carson & Lundin, New York architects, with McGeorge-Hargett & Associates, Cleveland engineering and architectural firm, engaged to design mechanical features and supervise construction.

Fronting on Public Square, the building will have an expansive, modern two-story lobby, and a 65' x 200' plaza with reflecting pool and planting area (separate detail). Lower-level parking will be provided, and the city has been asked to condemn an adjoining plot for a six-story, 400-car garage.

The Cleveland Electric Illuminating Co. has leased the first six floors, 96,000 sq. ft. of the structure's 400,000 sq. ft. area, and it will be known as the Illuminating Building. Associated with the Ostendorf-Morris Co., Cleveland realtors, in developing the project, which will increase Cleveland's first-class office space about 6%, are New York investors represented by Brooks-Harvey & Co.

St. Louis two years after start of labor cleanup: costs are up instead of down

Two years ago federal grand juries, aroused by a series of St. Louis *Post-Dispatch* articles, began a cleanup of racketeering in some of the area's construction unions.

The paper's stories by Reporter Carl Baldwin confirmed what many St. Louisans had known: extortion of money from out-of-area contractors by union leaders was common. The alternative to payoffs: slowdowns, strikes and artificial shortages of workers that could cause a contractor to lose his shirt. Collusion among union leaders, materials suppliers and some big local contractors was known to exist, but hard to prove. Building construction in St. Louis was almost monopolized by local contractors. This was especially evident in the letting of brick subcontracts.

Hope was that an antiracketeering drive would increase competition in St. Louis' construction industry and bring down soaring building costs.

Prosecutors' box score: 24 labor leaders have been convicted since Jan. '54, most of them bricklayers, steamfitters, laborers and operating engineers.

Now the crusade has run its course. What were conditions in the building industry in St. Louis last month? Costs were not lower, but higher than ever; union control had been passed by most of the convicted labor leaders to picked successors; out-of-town contractors still were afraid to come into the area, and collusion between suppliers, contractors and union leaders still existed, according to well-informed sources.

Here was the picture statistically:

- St. Louis construction costs, fifth highest in the nation in 1953, were third highest at midsummer, 1955.
- The rate of increase of construction wages in St. Louis apparently was sliding; it was third highest in 1952 and sixth highest in 1953, but was down to only eighth highest in the nation this summer.

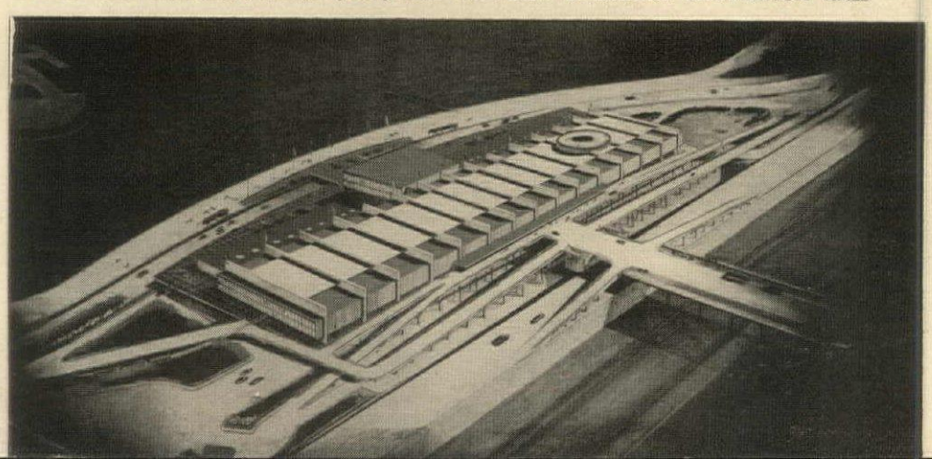
Some detailed cost data. For these ratings, FORUM used a composite of several standard construction cost indexes. Based on just one, the Boeckh Building Cost Index, long a standby in construction, here's how St. Louis costs looked:

- In June 1954 Boeckh rated average national building costs at 254.3; in June 1955 Boeckh found the national average to be 262.5. This meant an increase of 3.2%. During the same year the index for St. Louis, instead of dropping as had been hoped, rose from 262.0 to 270.9, an increase of 3.4%, or 0.2 more than the increase in the national index.
- From June '54 to June '55, Boeckh's average of building cost indexes for four cities comparable to St. Louis in location and building conditions—Atlanta, New Orleans, Kansas City and Memphis—rose from 232.9 to 240.2, an increase of 3.1%, compared with St. Louis' 3.4% increase.

Cynical observers in St. Louis were frank in theorizing that St. Louis contractors probably were making more money than ever. Contractors, if they had some other explanation for the cost increases, were withholding it. Some of them denied that St. Louis costs were rising at a higher rate than those in other cities.

Strongest negotiators removed. The explanation for the decline in the rate of wage increases among St. Louis' construction workers appeared to lie in the shift in union leadership. Most of the jailed union officials were top-flight negotiators. Their successors gave in this year without much fight. Result: lower wage increases.

REVISED FORT DEARBORN PLANS (TOP) AND PROPOSED LAKEFRONT CONVENTION HALL



Two Chicago civic projects move ahead several stages

Revised plans for the huge Fort Dearborn redevelopment project proposed for central Chicago were unveiled last month. Since initial disclosure a year ago (AF, April '54), the city's Land Clearance Commission, Plan Commission and Housing and Redevelopment Coordinator have endorsed this project in principle, state enabling legislation has been adopted, and this month the City Council will act on a resolution creating a new interagency city commission to expedite this redevelopment. The revised Skidmore, Owings & Merrill plans (left), which are still primarily schematic, cut the project area from 151 acres to 147 acres, contemplate total outlays of about $288 million, rather than $400 million. The main project area boundary is extended four blocks farther north (into the background in cut), but trimmed five blocks in the area just behind the Merchandise Mart (lower left) from Wells St. westward (1) to the North Branch of the Chicago River. A heliport is added, beside the Merchandise Mart, but the proposed University of Illinois campus, Hall of Justice, Hall of Records, City Courts and Public Library are omitted.

Also passing through various Chicago agencies were plans for a $34 million convention hall designed by Holabird & Root & Burgee and Ralph H. Burke, Inc., architects and engineers (see cut). A bond-issuing authority created to erect this is slated to receive about $4 million from a state pari-mutuel tax fund. Several downstate counties have gone into court to challenge this allocation, however, and in Chicago the AIA chapter, real estate board, plan commission and other groups are opposing as impractical the hall's proposed lakefront site at 23d St. An earlier candidate for the enticing state funds available for a Chicago convention hall was an immense 700′ square, clear span, deep-truss, 50,000-seat structure designed by Ludwig Mies van der Rohe (AF, Dec. '53).

NEWS *continued on p. 16*

WON'T LEAK!

Joints of Chase® Copper Water Tube and Chase® Solder-Joint Fittings mean a radiant heating job that lasts longer!

Because they're strong *solder joints*, the connections you make with Chase Copper Solder-Joint Fittings stay leak-proof *for good!*

And because Chase Copper Water Tube comes in long lengths of 60 to 100 feet, *fewer* fittings are required, installation is faster and easier!

Together, Chase Copper Water Tube and Chase Solder-Joint Fittings mean a *quality* radiant heating installation that will protect your reputation for years! On your next job, specify Chase!

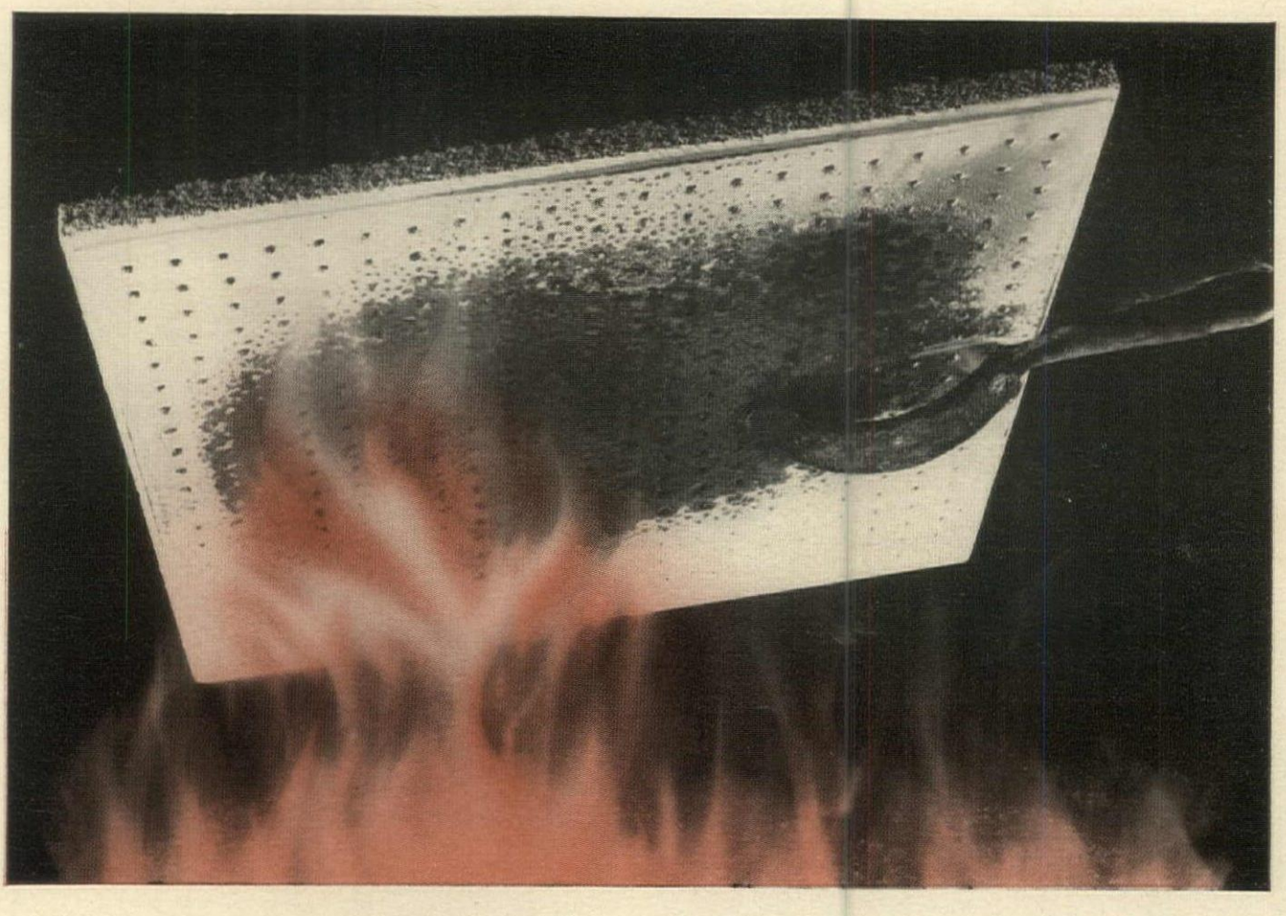
Chase®

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper (†sales office only)

Albany†	Chicago	Detroit	Los Angeles	New Orleans	Rochester†
Atlanta	Cincinnati	Grand Rapids†	Louisville†	New York	St. Louis
Baltimore	Cleveland	Houston	Milwaukee	Philadelphia	San Francisco
Boston	Dallas	Indianapolis	Minneapolis	Pittsburgh	Seattle
Charlotte†	Denver	Kansas City, Mo.	Newark	Providence	Waterbury



New fire-retardant paint protects with "insulating blanket"

Duo-Tex is here! It's a remarkable new paint that prevents rapid spreading of fires! Laboratory tests and actual fire conditions prove that this remarkable new paint reduces damage to a minimum on interior surfaces. The Duo-Tex film expands when exposed to flames and forms a heavy char blanket.

This protective blanket retards the spread of the fire for a considerable period of time and also acts as a non-burning insulation between the inner wall structure and the heat of the flames.

Duo-Tex is recommended for wood, acoustical tile, wallboard, plywood, plasterboard and metal. It is listed by Underwriters' Laboratories Inc., and meets Federal Government fire-retardant specifications SSA-118A.

Write to The Glidden Company, Maintenance Finishes Division, Department AF-9, 11001 Madison Avenue, Cleveland 2, Ohio for complete details.

- Checks the spread of flash fires
- 12 pastel colors matched to SPRED SATIN
- Excellent washability

Glidden

Professional Maintenance Finishes

RENEWING OUR CITIES:

Edward Clark—LIFE

St. Louis has enormous downtown parking lot on white-elephant Jefferson Memorial site. Close-packed city (bottom) is looking to redevelopment to keep industry and residents.

When citizens of St. Louis, Mo., became concerned about inadequate street lights in 1900, Mayor Henry Ziegenhein set the tone for a half century of conservatism—and municipal obsolescence—by a classic remark: "We got a moon yet, ain't it?"

Two years ago a new generation of St. Louis citizens looked at their city and were appalled. Municipal finances were shaky, city buildings were dilapidated, public services were deteriorating for lack of funds, slums were spreading and thousands of residents were deserting the city for its suburbs.

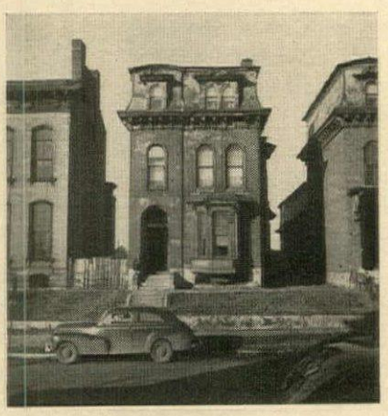
St. Louis had the typical American city problem of the post-World War II era: central city, with its land used up, decays while suburbs boom. The automobile, which made the suburban growth possible, was choking downtown St. Louis. In the spread of urban rot was the same old financial story: St. Louis' 13.68 sq. mi. of slums (67,000 dwellings) were costing more in police, fire and health protection than they were paying in taxes.

Enviable debt position. But the St. Louis solution was hardly typical. While other US cities were abustle with rebuilding activities, St. Louis was clinging to its tradition of avoiding debt. Its per capita debt, $66.58 early this year, was the lowest among the nation's large cities. Houston's was $320 (highest in the country), New York's $279, Cincinnati's $275; all were investing heavily in new streets, parks and civic repairs.

No city is completely backward in maintaining its physical assets; St. Louis was partially offsetting slum growth by a big public housing program.

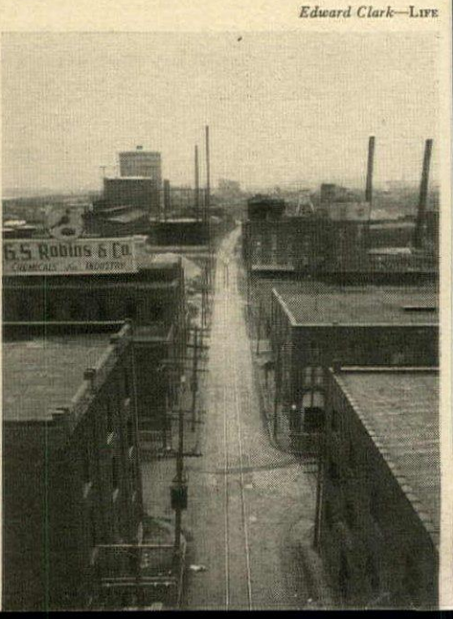
This was the situation two years ago. Then the urge to rebuild began to infect the city. The first symptoms were small. Example: a $1.5 million bond issue to finance the city's share of land acquisition

Edward Clark—LIFE



Slums give way slowly to public housing (left); city hopes to upgrade decaying neighborhoods (above) with bond money. Crowded industrial area (right) may be expanded.

Edward Clark—LIFE



St. Louis off to late start

Conservative, decaying city, ringed by booming suburbs, digs deep for public works money under spur of business leaders

for a downtown Title I redevelopment project was turned down; six months later it passed easily. Most recent symptom is impressive by any city's standards: a $127 million bond issue, passed last spring, to pay for expressways, wider streets, bridges, parks, hospitals, schools, slum clearance projects and a new municipal dock.

What happened to awaken St. Louis?

- Mayor Joseph M. Darst, now dead, created Civic Progress, Inc., a 20-man organization of business and industrial leaders which has moved the city out of its doldrums without acclaim, staff, office or agenda.
- The St. Louis *Post-Dispatch* pounded away at its readers with a series of articles, "Progress or Decay?" The paper, which won the 1954 outstanding achievement award of the National Assn. of Housing and Redevelopment Officials for its series, clarified and defined the city's needs and then stimulated rehabilitation efforts.

New Spirit of St. Louis. A decade of the energy, wise planning and skillful promotion that put over the big bond issue could easily bring St. Louis up to the standards being set by many big cities in their postwar rebuilding drives.

Before St. Louis could undertake a big bond issue, city finances had to be stabilized. From the beginning, Civic Progress, Inc. understood that meeting daily operating costs was as pressing for the city as the need for a comprehensive public improvement program. The city had found a way to balance its budget with a tax on earnings, a ½% levy on gross earnings of individuals and on net profits of corporations. This enabled city residents to pass to suburbanites part of the cost of municipal services. But the tax depended on the whim of the rural-dominated Missouri state legislature. Every time the enabling act expired, St. Louis was thrown into a new financial crisis.

Mayor Raymond R. Tucker, who succeeded Darst, stumped the state, appealing to legislators to give St. Louis the right to manage its own finances. Civic Progress members, acting as individuals because their charter prohibited political activity, supported the mayor. Former Mayor Aloys P. Kaufmann, a Republican, went out stumping with Democrat Tucker. The legislature, afraid earnings taxes might become contagious in their home communities, grudgingly continued the St. Louis tax and left perpetuation of the levy up to a city referendum. The legislators were astounded last fall when the people of St. Louis, responding to a campaign led by CPI President Powell McHaney, an insurance man, voted 6 to 1 for a charter amendment permitting home rule in financial matters.

Urban Land Institute help. With its finances in order, St. Louis could make plans for a bond issue. The Urban Land Institute made a study of the downtown section, sponsored by the St. Louis Real Estate Board, the Building Owners' and Managers' Assn. and the Chamber of Commerce of Metropolitan St. Louis CPI members paid more than $20,000 of the $25,000 cost. ULI sent in 16 experts. Their findings: the city needed expressways in a hurry, more parking space, more downtown office space. The panel blamed the city for sleeping so long, praised it for waking up.

Then CPI set out to get the recommended improvements. Banker Sidney Maestre, one of its members, headed a citizens committee which drew up a $110.6 million public works program. David R. Calhoun Jr., another CPI member, also a banker, ran the campaign to sell the program—and a $16.4 school bond issue—to the voters.

More than a third of the public works issue was allocated to traffic improvement projects, $18 million for rights-of-way for three expressways, $11.6 million for street work, $2 million for grade separations, $11 million for bridges and $2 million for paving. Ten million dollars was proposed as the city's share in future urban redevelopment projects; $4 million was allocated for neighborhood rehabilitation—parklets, trees, street improvements and other steps to preserve property values and encourage home owners to upgrade their property. And, to make the break complete with the 1900 conservatism of Mayor Ziegenhein, $6 million was proposed for new street lights. Other projects: hospitals and health centers, rubbish incinerator, parks and playgrounds, voting machines, a workhouse and a youth guidance center, expansion of the famous St. Louis zoo, expansion of the art museum and new library branches. Science-minded St. Louisans, headed by Howard Ohlendorf, operator of a dental laboratory, worked a planetarium proposal into the bond program as the nucleus of a science center.

How to sell a bond issue. The campaign to get public acceptance of the bond issue may become a classic in municipal financing. Under Calhoun's direction, more than 1,000 St. Louisans bombarded the citizenry for four weeks from all angles.

They distributed a million leaflets, 750,000 sample ballots, 500,000 automobile

continued on p. 21

Edward Clark—Life

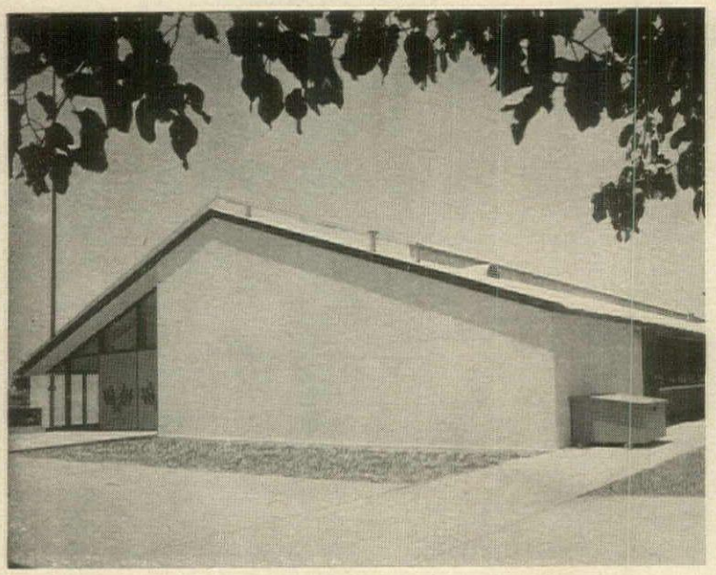
Mayor Tucker won home rule on financing

McCrea

Two big adjoining public housing projects, William L. Igoe Homes and Wendell O. Pruitt Homes, have 2,868 dwelling units.

St. Louis Post-Dispatch

Upper level of airport terminal, already national landmark; demolition (left) is almost finished for Plaza Title I project. Architects for housing and airport: Hellmuth, Yamasaki & Leinweber.



Flowing Wells School, Pima County, Tucson, Arizona

Standard Roof Co., Inc., Albuquerque, New Mexico

Canada Dry Bottling Plant, Phoenix, Arizona

St. Francis Xavier Cabrini Church, Richland, Iowa

How architects provide good looks, low cost, fast erection with **BUTLER** steel buildings

The buildings above show the striking appearance (both outside and in) that architects can achieve with Butler steel buildings. They show what *you* can do to provide exceptional good looks, yet keep costs exceedingly low and erection time surprisingly short.

Limitless modification of Butler steel buildings is permitted by solid rigid-frame construction, which results in tremendous strength with no dependence on sidewall support. Thus vast areas of glass are possible with no sacrifice of rigidity.

Savings up to 40 per cent of the cost of other types of construction are not uncommon in architect-designed Butler buildings. And speed of erection—often as little as four weeks with Butler steel buildings—is an important consideration for architects.

Spacious clear-span interiors and optional ceiling Lite*Panls to supplement artificial lighting—contribute to making your clients happy with their buildings.

See your Butler dealer. Ask him for a copy of the new Butler Architect's Brochure—A.I.A. file number 14i. It will tell you more about the architectural adaptability of Butler buildings. Write for the name of your nearest dealer and more information by mail.

BUTLER

BUTLER MANUFACTURING COMPANY

For prompt reply, address office nearest you:
7336 East 13th Street, Kansas City 26, Missouri
936A Sixth Avenue, S. E., Minneapolis 14, Minnesota
1036 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 36A, Richmond, California

Manufacturers of Oil Equipment • Steel Buildings • Farm Equipment • Dry Cleaners Equipment • Special Products

Factories located at Kansas City, Missouri • Galesburg, Illinois • Richmond, California • Birmingham, Alabama • Houston, Texas • Minneapolis, Minnesota

GOLD COAST CHERRY

Exciting...
Exceptional...
Exclusively
MENGEL!

BUT *not* expensive — no, sir! Which is precisely why builders are actually excited about Mengel Doors in rotary-cut Gold Coast Cherry.

This newest addition to our extensive line has swept to exceptional popularity in but a few short months. Because with all its beauty, all its glamour — *it is actually priced lower than many domestic hardwoods!*

What's more, Mengel Doors of Gold Coast Cherry save you extra money in finishing. One finish coat on their satiny, close-textured surfaces is better than two coats on many other woods.

That's Mengel for you — better looks, better *value!* See for yourself: order an inspection lot from your distributor.

Door Department, THE MENGEL CO., *Louisville 1, Ky.*
World's Largest Manufacturer of Hardwood Products
(Mengel Permanized Furniture, Doors, Kitchen Cabinets, Wall Closets)

GOLD COAST CHERRY
BY
MENGEL
CUT FROM OUR OWN EXCLUSIVE TIMBERING CONCESSIONS

MENGEL
Flush
DOORS

LUXURY plus UTILITY

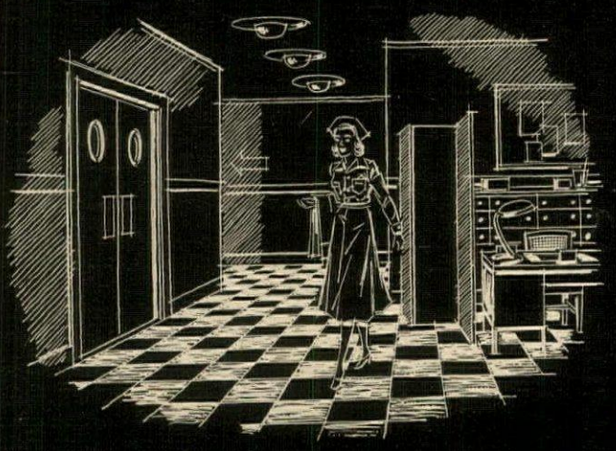
for every type of installation

For unparalleled luxury, combined with utility and durability, no rubber tile flooring comes up to the standards set by Wright. In fact, many Wright floors installed over thirty years ago are as beautiful and serviceable today as they were then.

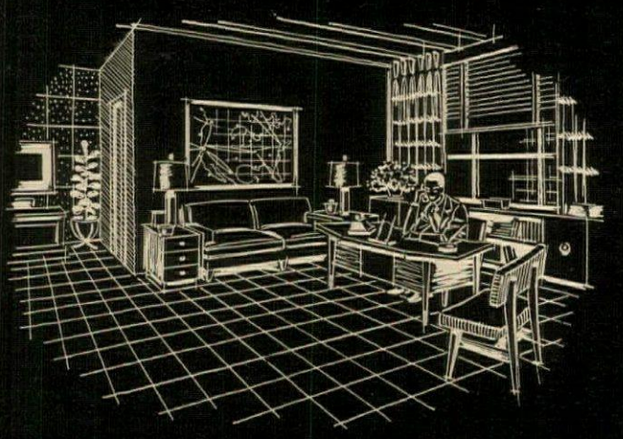
Oldest and most progressive name in its field, Wright Rubber Tile has exceptional uniformity of color, dimensions and physical characteristics. Its restful resilience... sound-softening effect... deep richness of color and pattern... ease and economy of maintenance...above all its superior resistance to wear and abrasion, make it ideal for virtually every type of installation.

...All in all, a perfect luxury-plus-utility flooring that you can select with confidence.

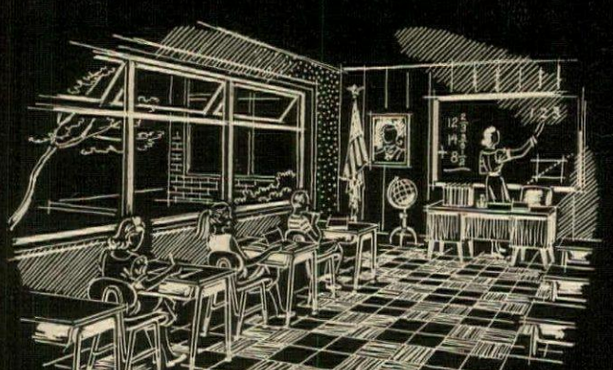
WRIGHT MANUFACTURING COMPANY
Division of Mastic Tile Corporation of America
Houston, Texas



FOR HOSPITALS



FOR OFFICES



FOR SCHOOLS

WRIGHT MANUFACTURING COMPANY
Div. of Mastic Tile Corporation of America
Dept. W6-9 P. O. Box 986, Newburgh, N.Y.

Please send me information and free samples of
WRIGHT Rubber Tile ☐ Vinyl Tile ☐

Name_____

Address_____

City_____ Zone____, State_____

WRIGHT Rubber Floor Tile

WA2

stickers. They called 50,000 registered voters. There were advertisements on buses, streetcars, billboards, appeals from the pulpit, spot pleas on radio and television—paid because the committee wanted to avoid claims for equal free air time by opponents of the bonds. Department stores contributed newspaper advertisements and 70 motion picture houses carried film trailers. A motion picture, "The Big Issue," used to promote the bond program, recently won the documentary film award of the International Film Festival at Edinburgh, Scotland.

Rain and gale winds could not keep voters in on election day last May. A record 142,968 turned out. All of the proposals were passed, some 6 to 1.

Now St. Louis County, which has increased 38% in population—from 406,349 to 563,149—in the past five years, is following the city's lead and is planning a $40 million bond issue, similar to one defeated last year. This would buy $24 million to $28 million of expressways to connect with those in the city's bond program. Also proposed: parks, a civil courts building, a children's building.

White elephant, yellow rash. St. Louis is well behind most of the big cities of the country in building expressways and limited access highways to move cars in and out of downtown. Only one, the 3rd St. Interregional Highway, is under construction. More than 7% of the bond issue will go into 26 mi. of freeways, funneling traffic downtown from three directions.

St. Louis temporarily has been spared the full burden of finding parking space in its crowded central core by the unintentional creation of an enormous parking lot along the downtown riverfront. Every day 4,200 cars rest on an 82.58-acre site cleared of buildings in 1937 to make room for the ambitious Jefferson National Expansion Memorial. St. Louisans blame Congress that the memorial has not been built. Since the thirties, when St. Louis voters authorized a $7.5 million bond issue to be matched with federal funds, the city has been hoping Congress would put up some $22 million. Ground was bought and cleared with $6.7 million of federal emergency relief money, and $2.5 million of the bond issue, but that was as far as the project got. Last year Congress agreed to contribute a maximum of $5 million, with strings attached which left the project as far from reality as ever.

Traffic engineers nationwide have been smiling at one St. Louis peculiarity: the city is covered with a rash of yellow stop signs, and more appear daily. Most traffic experts, agree that stop signs lose their effectiveness when they are used in excess, wonder when St. Louis will decide to sweep away most of its 7,000 signs.

Tear it down, build it up. In 1950 the *Post-Dispatch* pledged $250,000 to start a fund for rehabilitation of blighted areas on the fringes of downtown. Business leaders joined in, and the Urban Redevelopment Corp. of St. Louis was organized, with $2 million subscribed for working capital. Now 8½ blocks of the Plaza area on the western edge of the shopping district have been cleared for a public park and private housing development, the city's first Title I (federal subsidy) project. Last month the corporation was drafting its bid to buy the housing site for 1,100 air-conditioned apartments to cost $20 million. Purpose: to anchor purchasing power in the heart of the city.

Meanwhile, passage of the bond issue has enabled the municipal Land Clearance for Redevelopment Authority to take on another Title I project—demolition of 5,630 substandard dwellings in a 460-acre slum known as Mill Creek Valley, to provide tailor-made tracts for business, industry.

Other industrial redevelopment plans: Midtown Industrial Redevelopment Corp., a group of businessmen, hopes to make a new industrial district in the Mill Creek Valley project; Conduit Industrial Redevelopment Corp. plans to create large industrial tracts on the riverfront in north St. Louis.

Early mainstay. The size of St. Louis' public housing program (9,200 units finished, under construction or committed, costing a total of $111 million) is probably the result of the advocacy of public housing in the postwar years by the *Post-Dispatch*. The paper looked into the city's housing at the close of World War II and found that slums had grown to dismaying proportions. Its subsequent series of articles and editorials did much to condition builders, real estate men and the citizens to accept public housing.

A month ago staffs of the St. Louis Housing Authority and the land clearance authority were consolidated to produce efficient administration of the public housing and expanded slum clearance programs. The agencies will maintain their identities, will simply work together out of one office. They demonstrated how well they can work together during the past year when the 265-person housing staff aided the 13-person land clearance force in relocating families displaced in the Plaza project.

Upgrading downtown. An outstanding characteristic of St. Louis is the obsolescence of its downtown office buildings. But there has been some progress: real estate owners spent $70 million since World War II expanding and improving their office structures. Standard improvements: new fronts, modern lobbies, fast elevators, air conditioning, new lighting. The last office building was built downtown in 1929. Now, two new office buildings are in the offing: a $10 million, 25-story stainless-steel-skinned replacement for the Merchant's Exchange, and an office structure—recommended perenially by business groups—on the site of the old federal building.

Next step: area thinking. St. Louisans, like residents of most cities, have not yet come to view their city as part of a metropolitan complex, even though many of their woes have resulted from industrial and residential expansion of suburban communities. But one big pioneer step has been taken: the Metropolitan St. Louis Sewer District was established a year ago to provide the city and most of the country with a single system for operating and extending sanitary and storm sewers.

Last January city and county voters, in a light vote, rejected a metropolitan transit district proposal. Advocates of a unified transit setup may try again when they see results of a transit survey planned for the area. Meanwhile, St. Louis University and Washington University have been seeking funds for a joint study of the possible advantages of city-county integration.

St. Louis Post-Dispatch

Civic Progress Inc. at work: no stand-ins, no red tape

When Civic Progress, Inc., was formed in 1953 to reverse the downslide of St. Louis' central core, the 20 business and industrial leaders invited to join were warned, "We don't want any third assistant vice president or spokesman representing you in this organization. We want you."

Much of CPI's success in awakening St. Louis to its predicament and in getting its major renewal program started can be traced to that policy. Members, all top men in their businesses, are accustomed to making big decisions; together they have a way of getting things done swiftly, without red tape.

Original plan was to have a sizable membership and a professional planning staff —something like Pittsburgh's Alleghany Conference. However, the St. Louisans found their small group working so well after a few meetings that they changed their minds.

Informal meetings are held once a month, unless a special session is needed. They start at 4 P.M. and last two or three hours. At first meetings were held in hotels; now members meet in the office of CPI President Powell McHaney, president of General American Life Insurance Co. Whenever a member is in the city, attendance at CPI meetings is given priority on his schedule. "No one would think of sending a stand-in," said McHaney. "Why, he wouldn't be admitted."

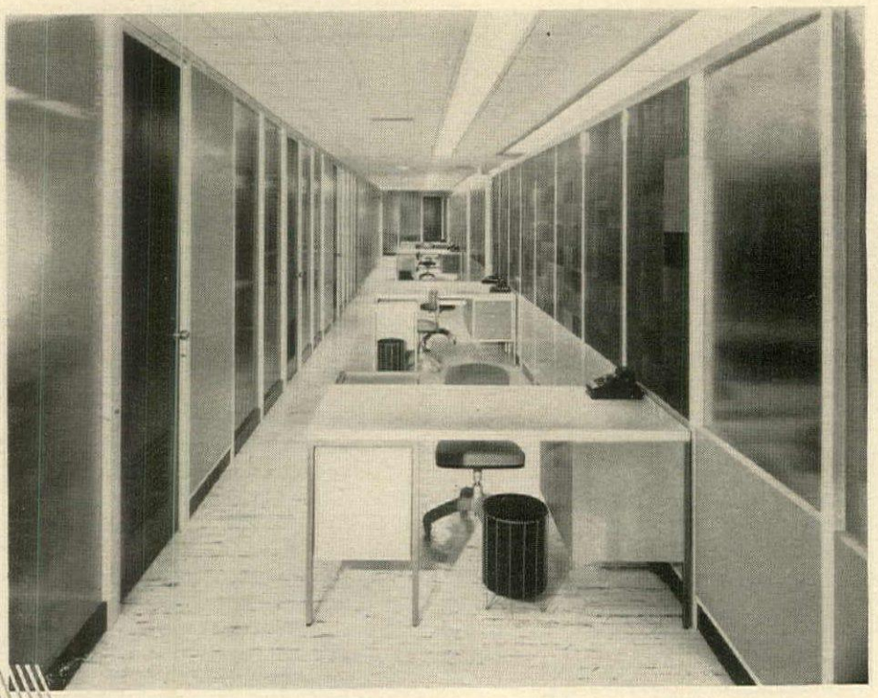
Big CPI accomplishments in addition to selling St. Louis' $127 million public works bond issue to the voters: getting the city's building code amended over opposition of bricklayers and brickmason contractors to permit metal panel construction, thereby enticing a shoe company to build a $6 million warehouse in the city instead of in its suburbs; rescuing the St. Louis symphony orchestra from its annual financial crisis last year and putting the orchestra on a sound financial footing.

NEWS *continued on p. 25*

AETNAWALL...

for Olin-Mathieson

A contribution to Modern Design



AETNA STEEL PRODUCTS CORPORATION

E. J. BOYLE DIVISION

730 Fifth Avenue, New York 19, N. Y.

For the Olin-Mathieson Chemical Corporation offices in New York, the Boyle Division designed and installed something entirely new in the partition field — flush, movable walls without bulk, which feature interchangeable panels of either steel, wood, glass or corkboard.

These newly-designed walls combine mobility and "thin-line" appearance without sacrificing any of the accepted, functional characteristics of floor-to-ceiling hollow metal partitions.

Interiors designed by Designs for Business, Inc.

*Pat. Pending †Trade Mark
††Licensed under DuPont Patent

AETNA ALSO PRODUCES

The new Arnot PARTITION-ettes*†, modular office furniture, desks and OFFICE-ettes††. Elevator enclosures, convector enclosures. Hollow metal doors and frames. Marine joiner work and bulkheading (aluminum and steel). Ships' interior outfitters.

JOHNSON-CONTROLLED HEAT PUMP

Insures Ideal Comfort, Cuts Heating and Cooling Costs

Year 'round air conditioning for the award-winning Roanoke Public Library* is accomplished by an application of the reverse cycle heat pump, utilizing two 40-ton refrigeration compressors. The installation is one of the first of its kind in a library building.

Precision control of this modern air conditioning system is provided by a specially engineered system of Johnson Automatic Temperature Control. Strategically located Johnson Heating-Cooling Thermostats maintain refreshing, even temperatures throughout each of the nine zones into which the building is divided. Behind the scenes, other Johnson Thermostats, Valves and related apparatus constantly keep the system in balance with outdoor temperatures.

Whether it's the spacious main reading room, a filled-to-capacity auditorium or one of the many smaller special activity rooms, there is constant comfort to satisfy the occupants. Control is so perfect that occupants never feel the need for more or less heating or cooling.

Operation of the system is completely automatic, including all heating and cooling, defrosting and indexing of the room thermostats. Added to the comfort and convenience features of Johnson Control are equally important economy advantages. The efficient control of this heat pump installation results in virtually waste-free heating and cooling performance!

Whatever your control problem—whether it involves a new or existing building, a simple or intricate system—it can be solved best by Johnson. Why don't you take advantage of the more than 70 years' experience of the nationwide Johnson organization? An engineer from a nearby Johnson branch will gladly make recommendations without obligation. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

*Roanoke Public Library, Roanoke, Virginia. Frantz & Addkison, architects, Roanoke; Wiley & Wilson, mechanical engineers, Lynchburg, Virginia; R. H. Lowe, air conditioning contractor, Roanoke.

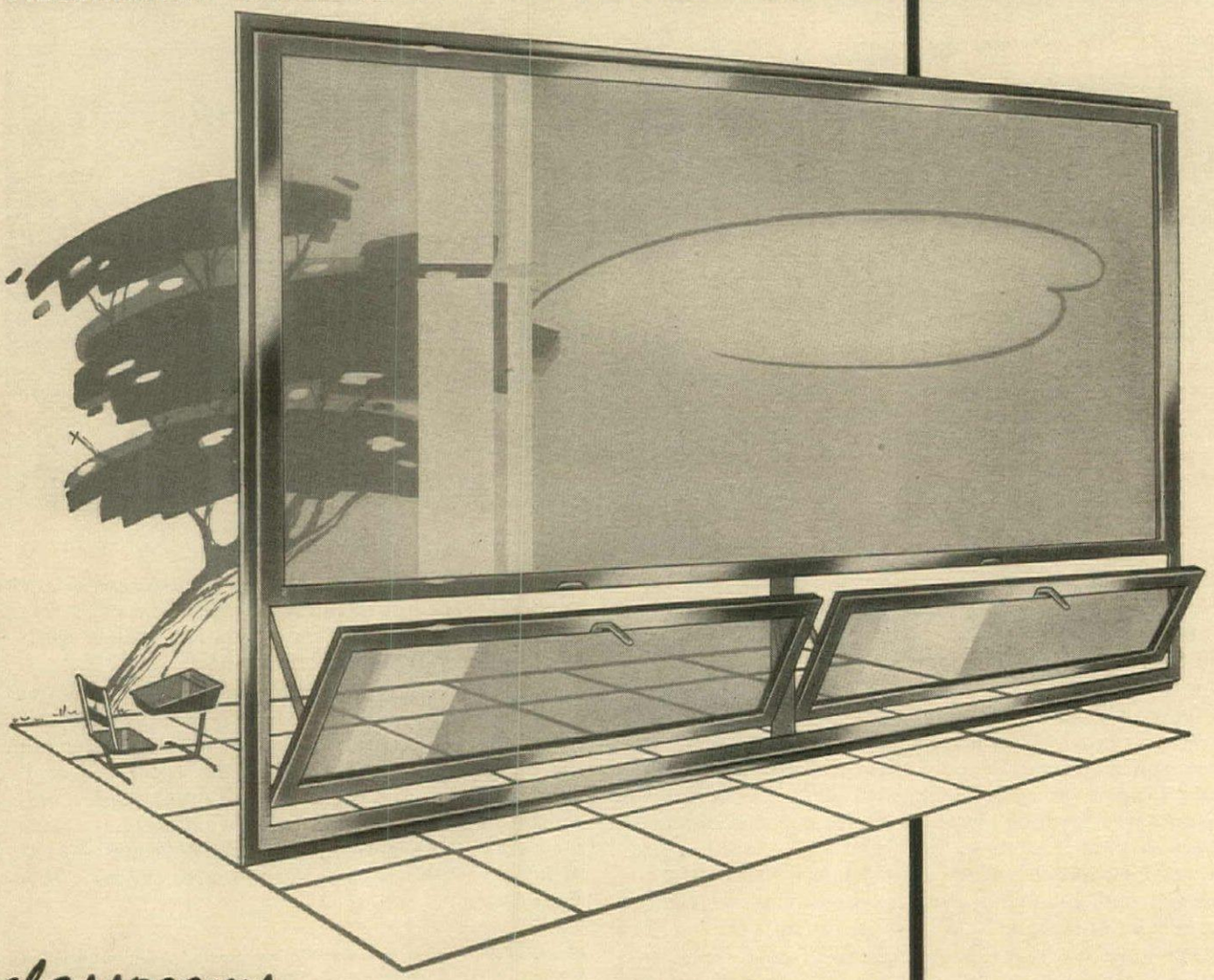
JOHNSON CONTROL

TEMPERATURE AIR CONDITIONING

PLANNING • MANUFACTURING • INSTALLING • SINCE 1885

Alcasco

ALUMINUM INTERMEDIATE PROJECTED CLASSROOM WINDOWS



classrooms LIGHT *as all outdoors!*

From grade schools to universities, Alcasco Aluminum Projected Windows meet the most rigid requirements of good fenestration. Extruded in our own mills, Alcasco Classroom Windows are engineered to provide highest standards in window performance—controlled ventilation, ease of operation, maximum light, weather tightness, permanent beauty, lower first cost and may be installed in one operation by one contractor. For specifications see Sweets catalog.

QUALITY APPROVED P-A2

ALCASCO PRODUCTS INC.
12640 BURT ROAD, DETROIT 26, MICHIGAN
DIV. DETROIT GASKET & MANUFACTURING CO.

Monsanto launches research program for superstrength structural plastics

A year ago an exclusive FORUM report disclosed how atomic irradiation of materials may bring about a revolution in building products and methods, and in experimental tests made "an ordinarily soft sheet of plastic stronger than the same thickness of today's structural steel and so resistant to heat that it could be used in the afterburners of jet engines; i. e., so resistant to heat that in building it could be used naked without fireproofing." (AF, Sept. '54).

Last month, as they started organizing an important new structural plastics research program, two Monsanto Chemical Co. scientists discussed another process (the low pressure chemical catalyst method) which they think will more quickly provide a practical, economical way for developing superstrength plastics for all sorts of construction uses. The scientists: plastics division Engineering Director Allan W. Low and Michael F. X. Gigliotti, manager of the division's new structural plastics engineering research department set up last month in Springfield, Mass.

LOW

GIGLIOTTI

Two processes contrasted. Commenting on the success achieved in low pressure chemical catalyst processing of polyethylenes to obtain high tensile strength materials, Low noted that these have not yet been produced with resistance to continuous heat in excess of 250° F., but their tensile strengths run as high as 6,000 psi, elongation as high as 1,200%. He and other Monsanto personnel are reluctant to commit themselves on just where they expect low pressure catalyst process will eventually lead, but one sure sign of their enthusiasm and optimism was their creation of Gigliotti's structural plastics research group.

Gigliotti supervised construction of Monsanto polyethylene plants in Cincinnati and Texas City, knows both construction and plastics. Comparing catalyst and gamma ray radiation processes, he points out that particular characteristics can practically be "tailored" into a product using the catalyst system, while the properties are added after the material is molded under the radiation system, and the radiation may be hard to control evenly when treating materials of varying thickness.

Shy at picking winner. Neither scientist would predict whether radiation or catalyst action would prove the best means in the end for producing maximum-strength, weight-supporting structural members—if these will still be a part of building in the future.

They were agreed, however, that the whole concept of building will be changed—relatively lightweight plastics replacing heavy conventional materials, and shell-type buildings eliminating any need for the load-bearing members required in present construction.

Initially, says Gigliotti, he intends to concentrate on a four-point practical program: 1) discover the needs of architects and builders, not only for residential structures, but also for industrial, commercial, institutional buildings and heavy engineering; 2) develop the material and ways to apply it; 3) build with, test and promote the material; 4) follow through, provide service after sales to insure full satisfaction of the users.

The key to his whole success, he adds, will be to make sure architects use the right type of plastic for the correct purpose in the first place.

MIT report issued. Research is not a new thing for Monsanto's plastics division. For

continued on p. 28

SIDELIGHTS

Incorrigible estimators?

For a new Youth House in the Bronx to accommodate 250 delinquent boys in individual rooms, engineers for the New York City Public Works Department estimated the cost should be $3,500,000, or $14,000 per delinquent including central facilities. When the bids came in the lowest set totaled $5,341,930, or $21,360 per guest. Only $3,540,000 was provided in the current capital budget for the structure, designed by Architects Kahn & Jacobs, but after a short delay Commissioner Frederick H. Zurmuhlen let contracts for its construction on the lowest bids received.

California phoenix

Viewed in one light, the 1952 Bakersfield, Calif. earthquake was probably the "most beneficial disaster" that ever happened to a city of 50,000, according to Chief Building Inspector J. A. Olsson. On the third quake anniversary on Aug. 22, Olsson took stock of some of its after-effects that have helped make Bakersfield a far more modern community, with its applications now pending for designation as a second-class rather than a third-class city, and a first-class instead of second-class rating for its fire department. After the quake 400 commercial buildings were posted as unsafe, and 125, mostly skid-row structures, were demolished to make way for new improvements. Replacement or reconstruction has been completed for eight grade schools that were destroyed, thirteen that were damaged. Twelve new churches have been built; $3 million spent on repairs and improvements for two damaged hospitals. A new $700,000 city hall has replaced the tremor-ruined municipal headquarters; a $900,000 county courthouse replacement is in planning.

Ranch mansion

Lake County, Ill. Building Commissioner Harry Carlson looked twice at plans for a house designed by Chicago Architects Ralph and William Zimmerman. They blueprinted a $250,000 ranch house with 43 rooms on the ground floor, 27 in a full basement, on a 400' square lot between Lake Forest and Libertyville. Owner? Chicago Publisher Marshall Field Jr.

Still another office tower for New York's Park Ave.

Stainless steel and glass will sheath this 41-story $40 million headquarters tower to be erected in 1957 for Union Carbide and Carbon Corp. on the Park Ave. blockfront in New York five blocks south of Lever House. Preliminary designs by Skidmore, Owings & Merrill also provide for a 13-story section on the Madison Ave. frontage of the two-acre full block site. Union Carbide, which canceled 1952 plans to move its headquarters to a suburban Westchester location, will occupy the entire 1.2 million sq. ft. of gross space in the structure, above ground floor stores. In arranging transfer of New York Central and Webb & Knapp long-term leasehold rights to the site to Union Carbide, W & K President William Zeckendorf said Union Carbide's decision to remain in the heart of the city marked "the end of the brief vogue for corporate rustication."

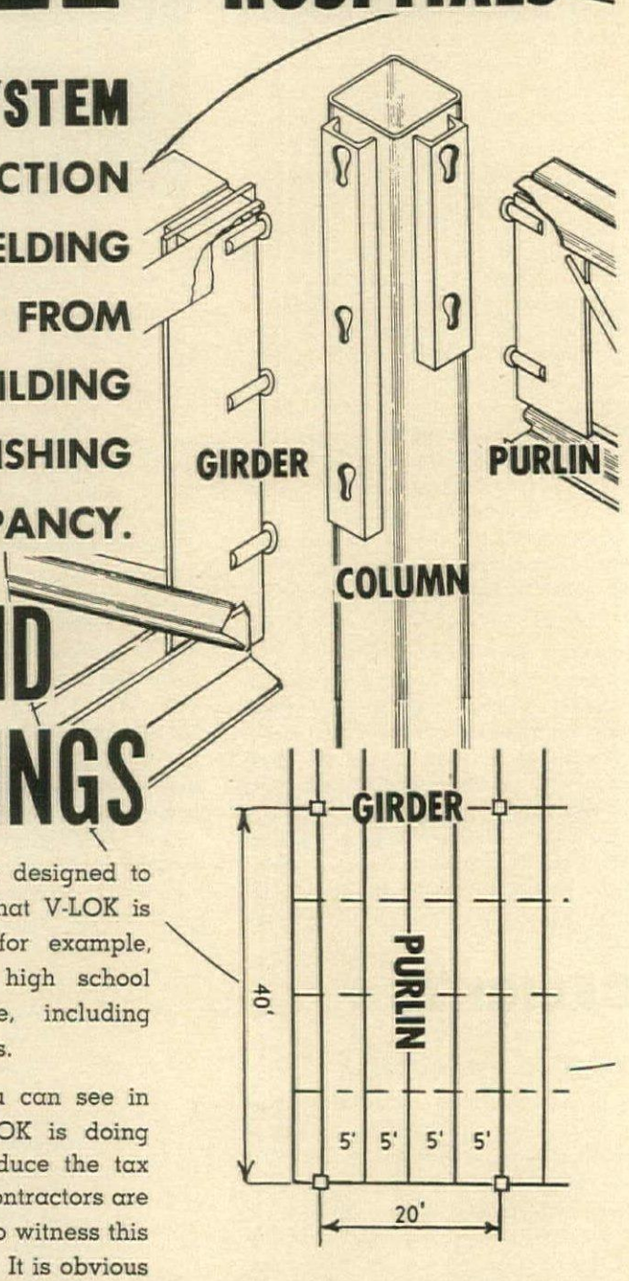
V-LOK

TRADE MARK REGISTERED

SCHOOLS HOSPITALS

A STRUCTURAL FRAMING SYSTEM

EMPLOYING A RIGID CONNECTION WITHOUT BOLTS, RIVETS OR WELDING — REDUCING ERECTION TIME FROM WEEKS TO DAYS—GETTING A BUILDING UNDER ROOF TO SPEED UP FINISHING WORK AND ADVANCE OCCUPANCY.



COMMERCIAL AND INDUSTRIAL BUILDINGS

Think back—think of all the products or systems ever designed to reduce construction costs. Then for factual proof of what V-LOK is doing in school work, for example, watch a big rambling high school frame erected complete, including steel deck, in a few days.

You're a tax payer. You can see in parents' faces what V-LOK is doing across the country to reduce the tax burden. Architects and Contractors are actually inviting parents to witness this construction achievement. It is obvious that a medical center, suburban insurance office, factory or warehouse will give YOU and the OWNERS the same advantage. One V-LOK job is so satisfying, others follow. **Write for Design Manual**

A RIGID EXPANDABLE STEEL STRUCTURE

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER INCORPORATED

CANTON 1, OHIO

• ENGINEERING • FABRICATING AND ERECTING •

NAILABLE STEEL JOISTS
•
LONGSPANS
•
BOWSTRING ROOF TRUSSES
•
METAL DECK
•
V-LOK STEEL FRAMING
•
STRUCTURALS

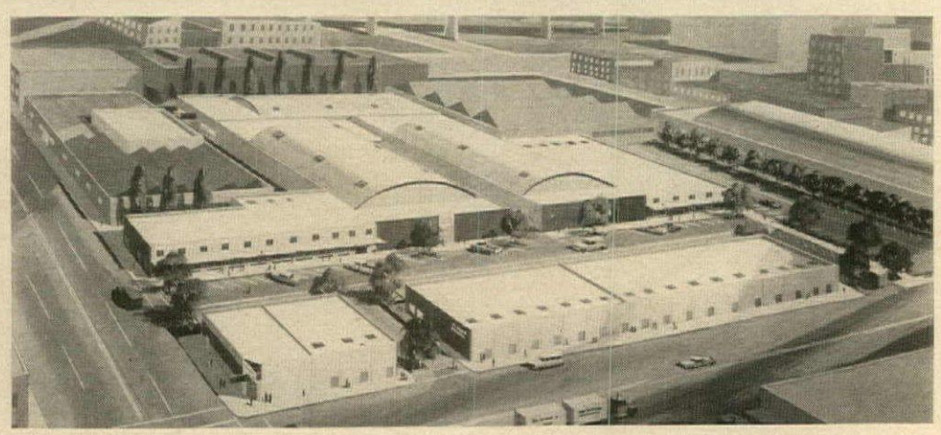
more than a year it has been sponsoring a comprehensive study by MIT's department of architecture covering all sorts of present and prospective uses of plastics in housing. MIT's large-size 77-page illustrated brochure-report on the first year of research, written and published by MIT, was issued in July. Title: Plastics in Housing; $2 a copy from Monsanto, Springfield, 2, Mass. Next project: construction of a demonstration house employing as many plastic products as practical, under supervision of several officials of MIT's school of architecture and planning.

Academy gets building funds; Wright hits American Legion

The Air Force will get $20 million to carry it through the rest of the year in starting construction of the controversial (FORUM, Aug. 1955, News) Air Academy at Colorado Springs. Congress voted to appropriate the money after Senate-House conference committee had compromised between the withholding of all funds insisted on by the House and the $79 million approved by the Senate.

Frank Lloyd Wright struck back at the American Legion when he learned through FORUM that the Legion had threatened to publicize his antimilitaristic record a year ago if he stayed in the running to design the academy. Said Wright: "I do not know why the American Legion puts me on its blackened page unless because I hate war and openly oppose it. I equally hate American Legion opposition to the exercise by others of the same rights it takes to itself. I do not want to see our sovereignty of the individual sacrificed to fear, even fear of communism—see ourselves reduced by the professional warrior to communism's level."

Richard Hawley Cutting, Cleveland architect who put together Kitty Hawk Assoc. a year ago, with Wright as designer, to go after the academy commission, last month broke a year's silence over the Legion's threat: "My only criticism of the American Legion is that it is not interested in the contributions of great people. It is interested in their records, their personal beliefs. To hurt that man [Wright] would have done immense damage to US public relations abroad."



UNION OIL CENTER FOR LOS ANGELES (TOP) AND SAN FRANCISCO FLOWER TERMINAL

West Coast projects planned on liberal building sites

In many western cities it is still feasible to acquire large building sites on which central city commercial structures can be erected without excessive coverage of the entire building plot.

Last month, for instance, Union Oil Co. of California announced plans for the immediate start on a $20 million headquarters complex that will occupy a five-acre site on a downtown Los Angeles hilltop just west of Harbor Freeway. Because of its hilltop location, the center's 13-story diamond-shaped home office building (see cut) will be the highest structure in the city. To the right (in cut) will be an auditorium and employees building, and other structures will be separate sales organization and chemical division buildings, and a three-level, 1,500-car garage. Architect-Engineers: Pereira & Luckman.

In San Francisco last month three cooperative flower growers' associations united to start construction of a $1 million wholesale flower distribution center on a four-acre site formerly occupied in part by a Marine Corps supply warehouse. The three separate terminal sales halls and a modern restaurant and cocktail lounge, will have their own private tree-lined streets for off-street parking, and according to Architect Mario J. Ciampi this redevelopment of a previously deteriorating industrial area should set a pattern for the rehabilitation of other blighted commercial central city districts. The new flower mart site was selected not only for its adequate land area, but also for its strategic location for the trade in relation to the freeway system and main city traffic routes.

Porcelain enamel competition offers $25,000 in prizes

To stimulate design interest and widen experience in the use of porcelain enamel steel and aluminum, to improve application methods and develop new uses, Ferro Corporation of Cleveland has announced a $25,000 porcelain enamel design competition approved by the AIA committee on competitions.

Use of porcelain enamel metal in construction has increased 25-fold since 1940, and it is now being adapted to many new exterior and interior building uses almost daily, Ferro officials point out. But so far, they add, only a limited number of designers have gained a knowledge of its advantages, and only a few of its limitless possibilities have been thoroughly investigated. One basis for competition awards will be "practical new uses of these materials and improved methods of detailing."

The competition has two divisions: one is the design of an elementary school, the other, a community youth center. Grand Prize will be $5,000. Twenty-four other awards will consist of first prizes of $3,000 in each division; second prizes: $1,500 each; third prizes: $1,000 each, and nine honorable mentions in each division: $500 each.

The competition sponsor, one of the nation's leading producers of porcelain enameling materials and equipment, has appointed FORUM to conduct the competition, which is open to architects, designers, draftsmen and students of architecture who are residents of the US or Canada. Harold R. Sleeper, FAIA, has been appointed professional adviser. The jury will consist of Architects Pietro Belluschi, dean of MIT's school of architecture and planning; John Lyon Reid of San Francisco; Eero Saarinen of Bloomfield Hills, Mich.; Hugh Stubbins of Boston, and Engineer Edward X. Tuttle of Giffels & Vallet, Inc. and L. Rossetti, associated architects and engineers, Detroit.

PEOPLE

Wriston tells how to be on good terms with both traditionalists and modernists; Kimball, Philadelphia museum head, dies

Some views on what a college president must know about architecture were given recently by Henry M. Wriston, president emeritus of Brown University. Wriston, who retired last month after being a college president for 30 years, has had plenty of experience buying college buildings, most of it at Brown, where his popularity with the Rockefellers drew millions for construction. Speaking at Harvard's College Administrators' Institute, he said: ". . . the president must not only be an expert in esthetics; he must . . . please the modernist and also the traditionalist; but he must never compromise between the two, for that is unsatisfactory to both.

AP

WRISTON

"An architect can seldom give you something good you do not know you want. He is almost certain to give you something you do not want unless you have a very precise knowledge of what you desire. What you want is not to be determined by inspiration, but by hard study and analysis. Only so can you bring your requirements within reach of your financing while sacrificing nothing in the functioning of the building. Thin partitions in a dormitory will save money on construction, but you will pay for them many times over in noise and consequent disciplinary problems. The perfect classroom has yet to be designed, but unless it is designed within your administration, you will be held accountable."

Edmund Claxton, director of research of Armstrong Cork Co., and **William Muirhead,** president of William Muirhead Construction Co., Durham, N.C., have been elected president and vice president of the Building Research Institute by the institute's board of governors. Six new members of the 18-man board: **Charles W. Atwood,** president of Unistrut Corp.; **John F. Hennessey,** president of Syska & Hennessey, Inc., New York engineering firm; **Robert K. Mueller,** vice president of plastics division, Monsanto Chemical Co.; **Otto L. Nelson Jr.,** vice president for housing, New York Life Insurance Co.; **Andrew Place,** Place & Co., South Bend, Ind. **Charles H. Topping,** senior architectural consultant for E. I. du Pont de Nemours & Co., Inc.

NAMED: **John H. Stevens,** architectural service worker for Libbey-Owens-Ford Glass Co., as senior architect for the firm; **Rev. John W. Whetstone,** pastor of St. Andrews Lutheran Church, Muncy, Pa., as assistant director of the department of church architecture of the United Lutheran Church in America, to serve in the new post under **Rev. Edward Frey,** director; **Glenn A. Hutt,** 22 years with Ferro Corp., Cleveland, as vice president of the firm's new building products division; **Roland Rodrock Randall,** Philadelphia real estate counselor, as coordinator of Philadelphia's zoning advisory commission; **E. Manning Brown,** a vice president of New York Life Insurance Co., as head of its real estate and mortgage loan department, succeeding retiring **Charles R. Van Anden; Louis B. Wetmore,** widely experienced state and federal level planner, as head of University of Illinois' city planning and landscape architecture department, succeeding **Karl B. Lohmann,** retiring.

ELECTED: **Joseph D. Keenan,** sec'y.-treas. of the International Brotherhood of Electrical Workers, as a member of the American Federation of Labor executive council, succeeding **J. Scott Milne,** IBEW president, who died a month ago; **Elmer R. Ligon,** research director of W. S. Dickey Clay Pipe Mfg. Co., Pittsburg, Kan., as president of the National Clay Pipe Research Corp.; **Robert W. Sweeney,** western sales manager of The Ruberoid Co., as president of the Building Materials Exhibitors Assn.; **Joseph W. Barker,** chairman and president of Research Corp., New York, as nominee for president of the American Society of Mechanical Engineers.

Architect **Fiske Kimball,** 66, who resigned last January after 30 years as director of the Philadelphia Museum of Art, died Aug. 14 in Munich, Germany. Kimball, who restored Monticello, was of the "old school." He spanned the gap from Beaux Arts to modern, a knowing and intelligent historian and critic of architecture, although in one early book he tried to pass off modern architecture as flash in the pan. He believed in refining former styles in fastidious elegance. In his early years Kimball taught art and architecture in several universities. He became head of New York University's department of art in 1923 and helped shape a department that emphasized training professional artists and cooperated with industry in developing arts in trade—a new approach at the time. He went from NYU to the Philadelphia post. His restoration activities included Robert E. Lee's home in Stratford, Va. Kimball, by no means exclusively an antiquarian, was on the advisory boards of Rockefeller Center and of the National Park Service. He was influential behind the scenes, and was an advisor to President Truman, upholding him in the White House back porch controversy.

Allan Grant—Life

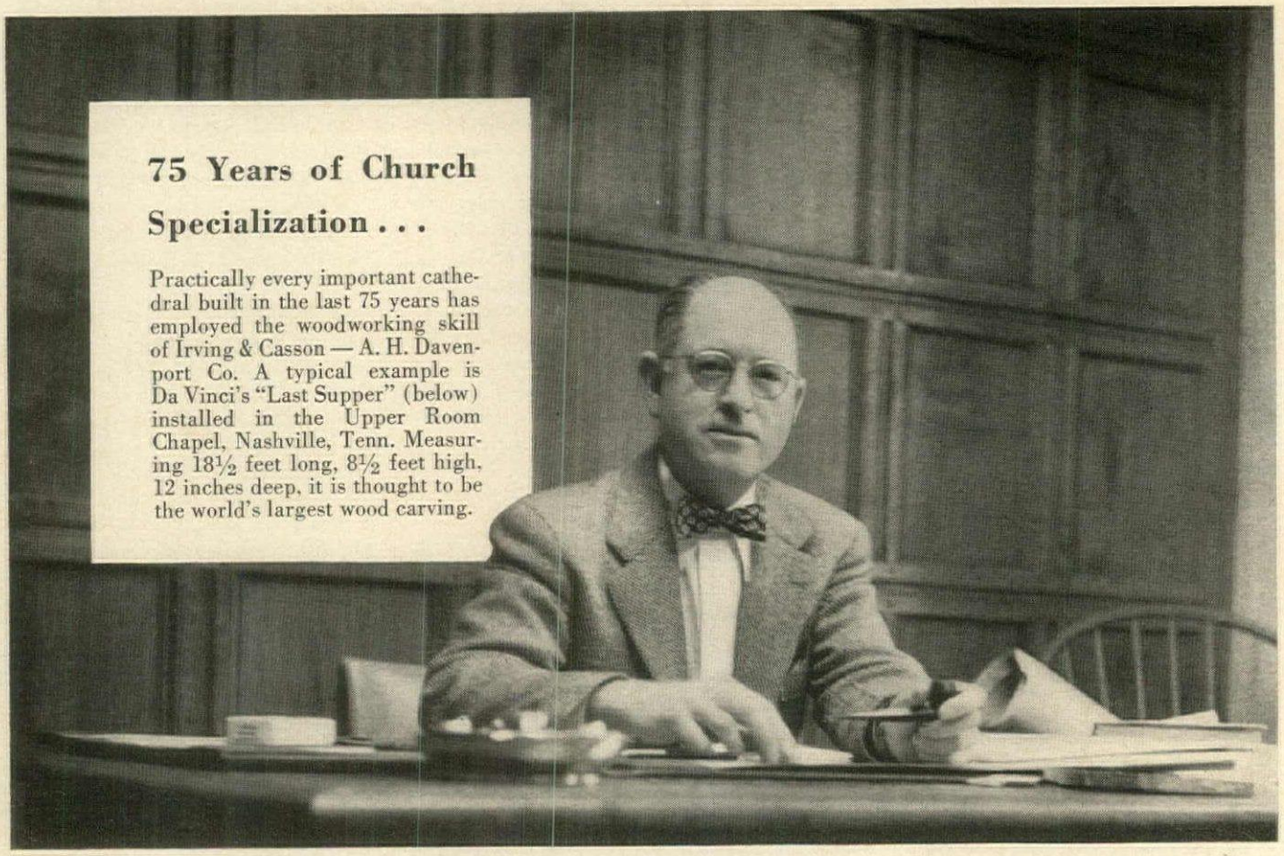
KIMBALL

ALSO DIED: **Daniel W. Kimball,** 74, board chairman of Owen-Ames-Kimball, Grand Rapids, Mich., construction firm, and president in 1942 of Associated General Contractors of America, July 17, in Grand Rapids; **Albert Cummings,** director of research for Raymond Concrete Pile Co., July 20, in New York; **Ramsay Findlater,** 50, national leader in the public housing movement, and president 1952-53 of the National Assn. of Housing and Redevelopment Officials, July 24, in Cincinnati; **Alvin Pierson,** 69, New Jersey school architect, July 26, in New York; **John H. Collier,** 70 former president and board chairman of Crane Co., July 27, in Fairfield, Conn.; **Edward C. Crossett,** 73, president of Crossett Timber Co., Wanna, Ore., July 29, in Montecito, Calif.; **Richard Reynolds Sr.,** 73, board chairman of Reynolds Metals Co., and builder of a big industrial empire, July 29, in Richmond, Va.; **George B. Walbridge,** 80, Detroit construction man, national leader in the industry and president of AGC in 1925, July 30, in East Tawas, Mich.; **Robert Smith,** 50, for 20 years chief architect of the Austin Co., July 31, in Kirtland, Ohio; **Henry S. Jacoby,** 98, bridge engineer and author of structural textbooks, Aug. 1, in Quakertown, Pa.; **David P. Appell,** 70, vice president of George A. Fuller Co., Aug. 8, in West Orange, N.J.

Pilot classes established to teach stone masonry

Journeymen, students at a stonemason training course in Hartford, Conn., cluster about Architect Philip DiCorcia, in white jacket. This is one of two pilot courses—the other is in Stamford, Conn., and is for mason apprentices—to teach the fading art of stone setting. DiCorcia told the students bricklaying is mechanical, but stone setting should be creative in order to interpret the architect's feeling. The Building Stone Institute has hopes for a pattern of nationwide classes.

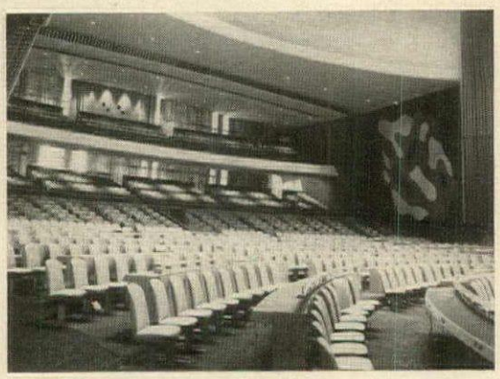
for news about TRENDS—p. 32



75 Years of Church Specialization . . .

Practically every important cathedral built in the last 75 years has employed the woodworking skill of Irving & Casson — A. H. Davenport Co. A typical example is Da Vinci's "Last Supper" (below) installed in the Upper Room Chapel, Nashville, Tenn. Measuring 18½ feet long, 8½ feet high, 12 inches deep, it is thought to be the world's largest wood carving.

Nine carvers, working in the Cambridge plant, spent almost a year in the completion of this reproduction of Da Vinci's work.



UNITED NATIONS BUILDING—Delegates' desks and chairs in General Assembly room at the United Nations are further examples of the craftsmanship of this century-old woodworking firm.

"Without it our buildings would not be standing today"

"At our factories in Cambridge, Mass., a flash fire occurred last December in the paint department", relates Mr. C. A. Thurston, Treasurer, Irving & Casson — A. H. Davenport Co., furniture manufacturers and custom builders of woodworking specialties. "Had it not been for our Grinnell Sprinklers going into action immediately, I am honestly afraid to think of the consequences."

"Most of our buildings are well over 125 years old. To replace them would cost perhaps a million and a quarter dollars. That is why we installed Grinnell Sprinklers as far back as 1900.

"Over the years we have had our share of fires. But on every occasion, our Grinnell Sprinkler System has been on the job and damage has been held to a few dollars. I am sure that without it our buildings would not be standing today."

Grinnell Sprinklers stop fire at its source, wherever and whenever it strikes, night or day, with automatic certainty. 77 years experience proves this. Moreover, a Grinnell Sprinkler System will often pay for itself in a few years through reductions in fire insurance premiums. Grinnell Fire Protection is an investment that pays real dividends . . . any way you look at it. Grinnell Company, Inc., 292 West Exchange Street, Providence, Rhode Island.

GRINNELL

PROTECTION AGAINST EVERY FIRE HAZARD

Manufacturing, Engineering and Installation of Automatic Sprinklers since 1878

. . . the finest structures rest on RAYMOND FOUNDATIONS

PRUDENTIAL SOUTH-CENTRAL HOME OFFICE BUILDING
Jacksonville, Florida

CLIENT: The Prudential Insurance Company of America
ARCHITECT: Kemp, Bunch & Jackson, Architects, Jacksonville, Fla.
GENERAL CONTRACTOR: Daniel Construction Co., Inc. of Alabama, Jacksonville, Fla.

THE SCOPE OF RAYMOND'S ACTIVITIES . . .

IN THIS COUNTRY

FOUNDATIONS . . . MARINE STRUCTURES . . .
HEAVY CONSTRUCTION . . . SOIL INVESTIGATION.

OUTSIDE THE UNITED STATES

COMPLETE SERVICES FOR ALL TYPES OF CONSTRUCTION.

AROUND THE WORLD · FOUNDED 1891

RAYMOND
CONCRETE PILE CO.
140 Cedar Street • New York 6, N. Y.
Branch Offices in principal cities of the United States, Canada, Central and South America.

TRENDS

Construction outlays, material prices, building costs, all setting records; structural steel orders show big increase

Good or bad, the trends for just about everything were sharply upward.

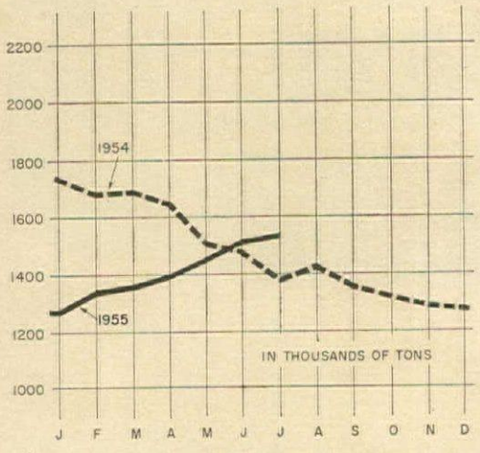
Observers could debate whether soaring indexes of one sort or another indicated inflationary conditions or solid, booming prosperity, whether the government's credit tightening moves (p. 12) were motivated mainly by political or by anti-inflationary considerations—or by a combination of both. But whatever their causes or effects, no one could argue with the factual reports responsible for all-time records on practically every type of construction industry index chart.

The sharpest increase in any index in July occurred on the chart for average wholesale costs for building materials as compiled by the Bureau of Labor Statistics. This soared 1.6 points, or 1.3%, the biggest hike since a 2.0-point, or 1.6% jump exactly a year earlier. This put this index 4.3% ahead of July, '54, 6% over June, '54.

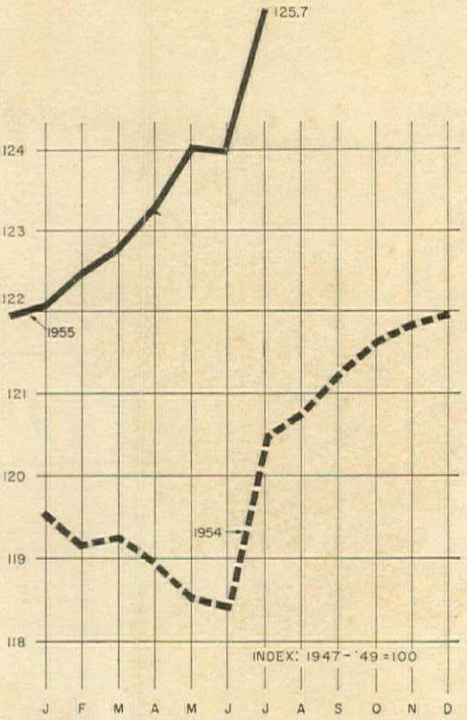
Mainly responsible for the latest one-month advance, from June to July were metal door, sash and trim, up 8.3%; structural shapes, up 7.7%; plate glass, up 4.2%; structural clay products, up 3.6%; prepared asphalt roofing, up 3.8%.

Almost as spectacular was the 1% increase in nonresidential building costs from June to July on the index compiled by E. H. Boeckh & Associates. This index raced up 1.7% between May and July, was 5% above its level in April, '54.

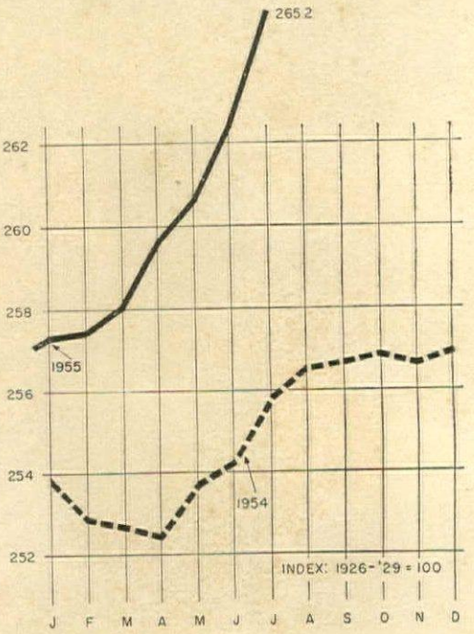
But as building and materials costs were ballooning, so was construction activity (see chart and table), and the backlog of unfilled orders for structural steel was growing fatter.



UNFILLED ORDERS for structural steel July 1 totaled 1 706,000 tons (highest figures since Jan. '54), reflected new orders in June for 318,150 tons, largest monthly new business since April '51, according to American Institute of Steel Construction. For first half of 1955 new orders were 33% ahead of orders in same period of 1954.



BUILDING MATERIALS prices soared to 125.7 in July, highest ever, on the index of average wholesale prices compiled by the Bureau of Labor Statistics, after deceptively holding steady for one month at 124.1 in June.

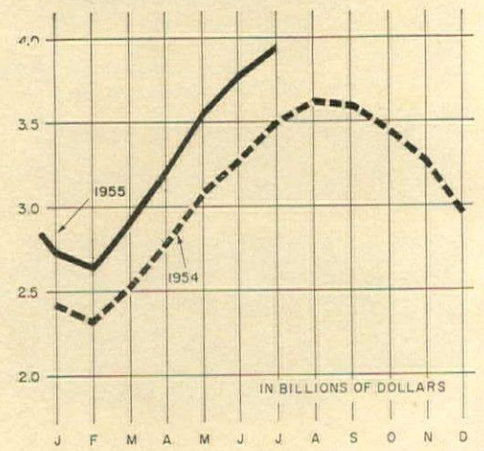


BUILDING COSTS for nonresidential structures shot up from 262.4 to 265.2 from June to July on the national index compiled by E. H. Boeckh & Associates. The component for apartment, hotel and office buildings rose 2.0 points, from 262.1 to 264.1, while the component for commercial and factory buildings advanced 3.3 points, from 262.7 to 266.0.

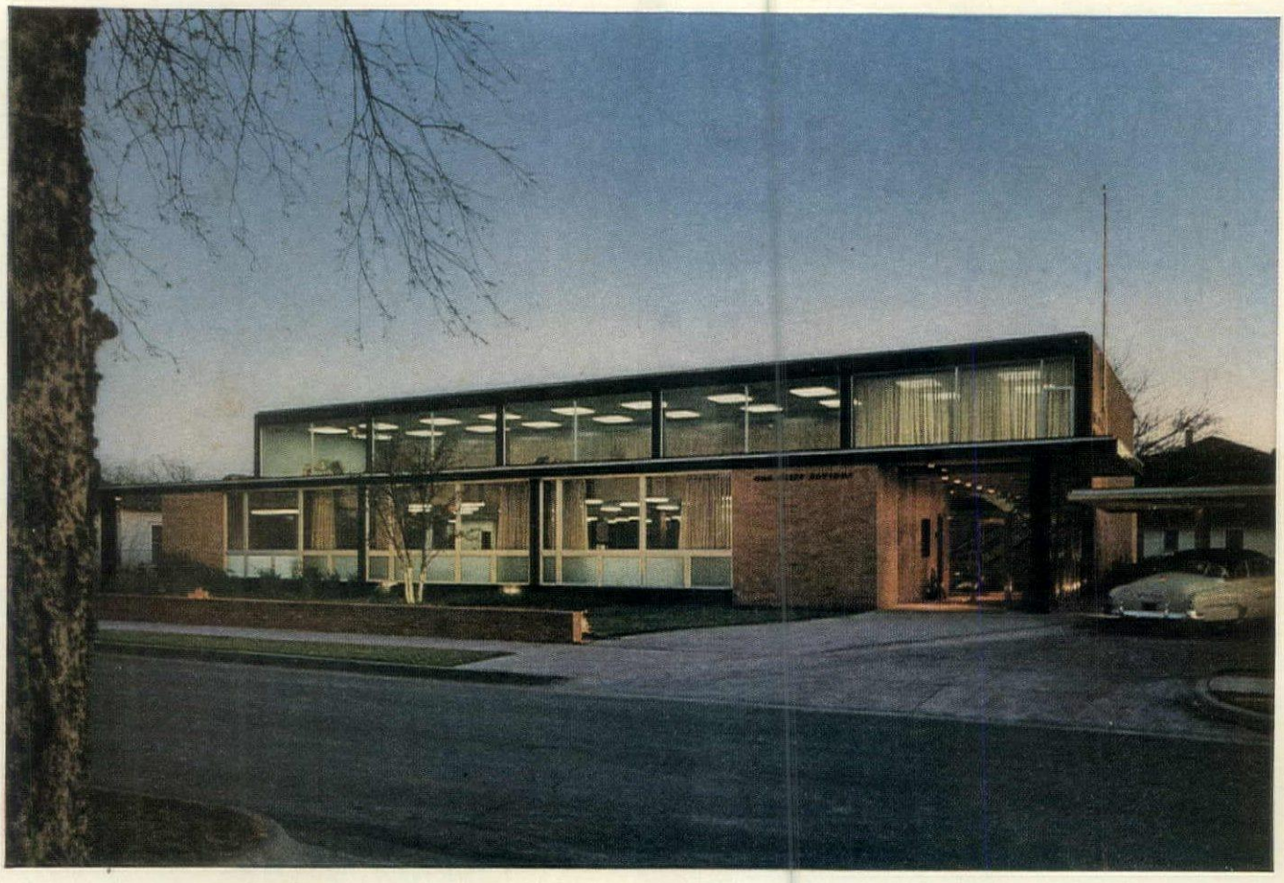
July construction, almost $4 billion: another record

(millions of dollars)	June '55	First seven months 1955	1954	%±
PRIVATE BUILDING				
Residential (nonfarm)	1,533	9,032	6,984	+29
Nonresidential*	667	4,103	3,466	+18
Industrial	197	1,312	1,177	+11
Commercial	276	1 577	1,195	+32
Offices lofts; warehouses	94	605	516	+17
Stores; restaurants; garages	182	972	679	+43
Religious	66	401	304	+32
Educational	41	279	287	—3
Hospital; institutions	31	203	191	+6
Public utilities	410	2,476	2,384	+4
*PRIVATE TOTAL	2,774	16,538	13,810	+20
PUBLIC BUILDING				
Residential	21	154	220	—30
Nonresidential	392	2 543	2,687	—5
Industrial	62	516	959	—46
Educational	225	1,409	1,183	+19
Hospital; institutions	32	204	211	—3
Military	115	680	551	+23
Highways	460	1,970	1,856	+6
Sewer; water	99	614	549	+12
*PUBLIC TOTAL	1,193	6,541	6,476	+1
*GRAND TOTAL	3 967	23,079	20,286	+14

* Minor components not shown, so total exceeds sum of parts.



TOTAL CONSTRUCTION expenditures in July reached a new monthly peak of nearly $4 billion, for the first seven months of the year totaled a record $23.1 billion, according to the Commerce and Labor Departments. Seasonally adjusted, July's spending rate averaged about $42 billion, in line with forecasts for expenditures for the entire year (see p. 128). July housing starts totaled 115 000, a decline of 12,300 from June, or a seasonally adjusted rate of 1,202,000 annually, the lowest seasonally adjusted rate since July '54.



For lighting at its best... **Plexiglas**

Fine buildings deserve fine lighting. That is why more and more owners of buildings, and their architects, are specifying lighting equipment with diffusers made of PLEXIGLAS®. This acrylic plastic gives them lighting at its *best*, because it provides:

PERMANENCE. Rigid, strong and durable, PLEXIGLAS is noted for resistance to discoloration and to breakage. It complements the firm, solid appearance of floor, wall and ceiling surfaces.

QUALITY ILLUMINATION. PLEXIGLAS provides maximum transmission and complete diffusion of light, yet has low surface brightness that is easy on the eyes.

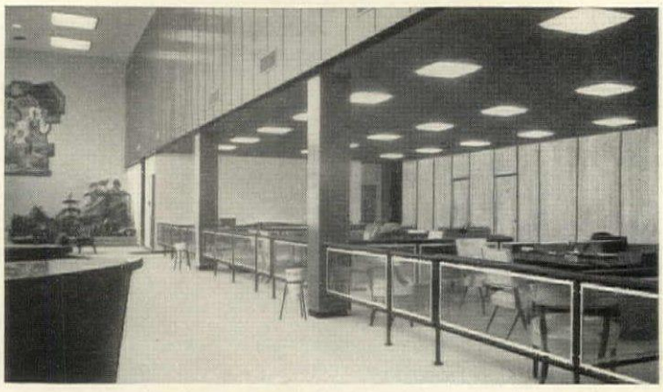
DECORATIVE APPEAL. When lighting fixtures have diffusers made of PLEXIGLAS—most beautiful of all types of plastics—they are highly attractive in appearance, lighted or unlighted.

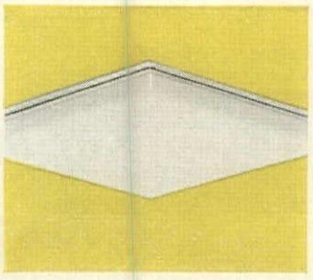
For complete satisfaction in lighting, make sure your plans include the use of PLEXIGLAS. We will be glad to send you a folder that shows many of the diffuser shapes and designs that are available. Just ask for "Architectural Lighting with PLEXIGLAS."

ROHM & HAAS COMPANY

Washington Square, Philadelphia 5, Pa.

Representatives in principal foreign countries

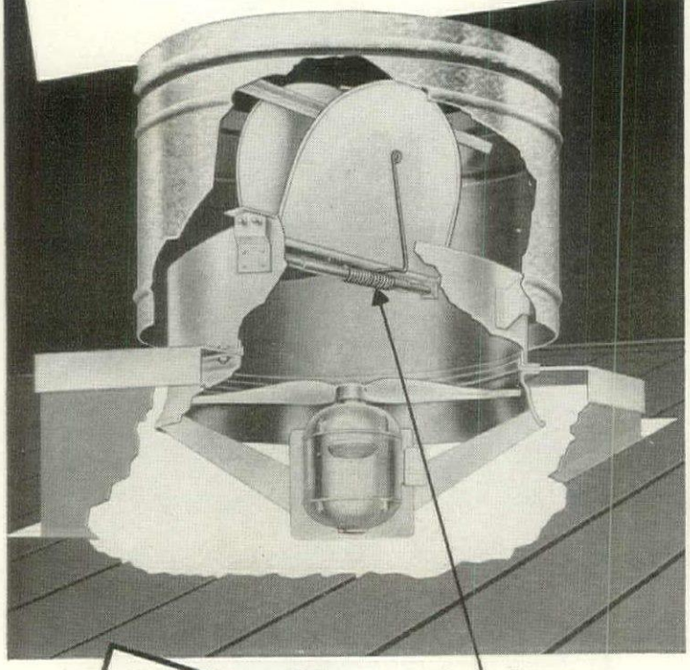




Oak Cliff Savings and Loan Building, Dallas, Texas. Lighted throughout by recessed fluorescent luminaires with diffusers of PLEXIGLAS. Architects: Prinz and Brooks.

Canadian distributor:
Crystal Glass & Plastics, Ltd., 130 Queen's Quay at Jarvis Street, Toronto, Ontario, Canada.

SKY-BLAST Roof Ventilator **now vents fires** automatically!



Exclusive New Feature

Smoke-trip*
EMERGENCY DAMPER OPENER

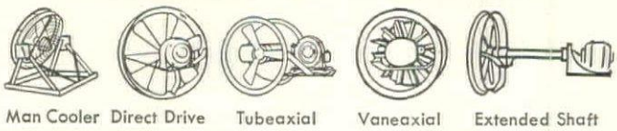
This powerful roof ventilator is now available with an important new safety device . . . the Smoke-Trip emergency damper opener developed as the result of recent fire studies. Heat from an uncontrolled blaze inside the building will melt a fusible link, releasing high-torsion springs which open the dampers. Treacherous smoke, heat and fumes which hinder fire fighters are vented to the outside air.

Fan operates independently — The Smoke-Trip device does not affect ventilating action of the Sky-Blast in normal use. The high-efficiency airfoil propeller scoops up heat, moisture, dust and fumes and blasts them high in the air. Powered by a dependable Robbins & Myers *All-Weather* Motor, the Sky-Blast is ruggedly built of zinc-coated steel for long, maintenance-free service. Available in 24 sizes with certified air deliveries from 2820 to 78800 CFM.

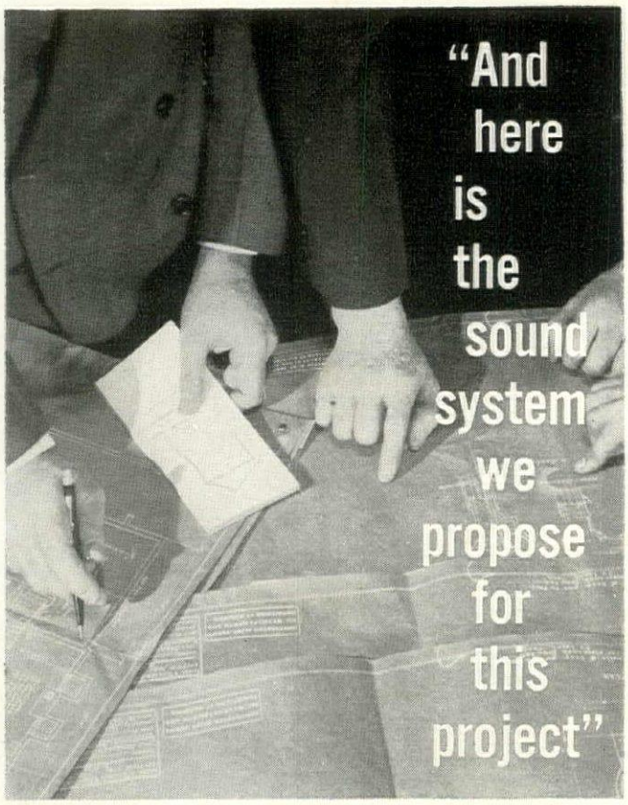
Certified Ratings — AMCA — PFMA

Write for Bulletin 685-A

PROPELLAIR®
SKY-BLAST VENTILATOR
ROBBINS & MYERS, INC., SPRINGFIELD, OHIO



Man Cooler | Direct Drive | Tubeaxial | Vaneaxial | Extended Shaft



Your local RCA Sound Distributor knows Sound Engineering!

For expert, "no obligation" planning assistance, you'll find your RCA Sound Distributor a good man to know. He can offer you advice on the latest in equipment, the newest in sound techniques—how to specify a sound system which will reflect credit on your professional reputation. His experience covers a wide range of applications including schools, plants, hospitals, institutions, hotels, stores, and auditoriums . . . Call on him for the answers to any questions involving sound.

See our catalog in Sweet's Architectural File, $\frac{31a}{Ra}$

RCA's new booklet—"Sound in Industry" contains the kind of information architects need to evaluate the advantages of sound in various applications. The coupon will bring your copy by return mail.

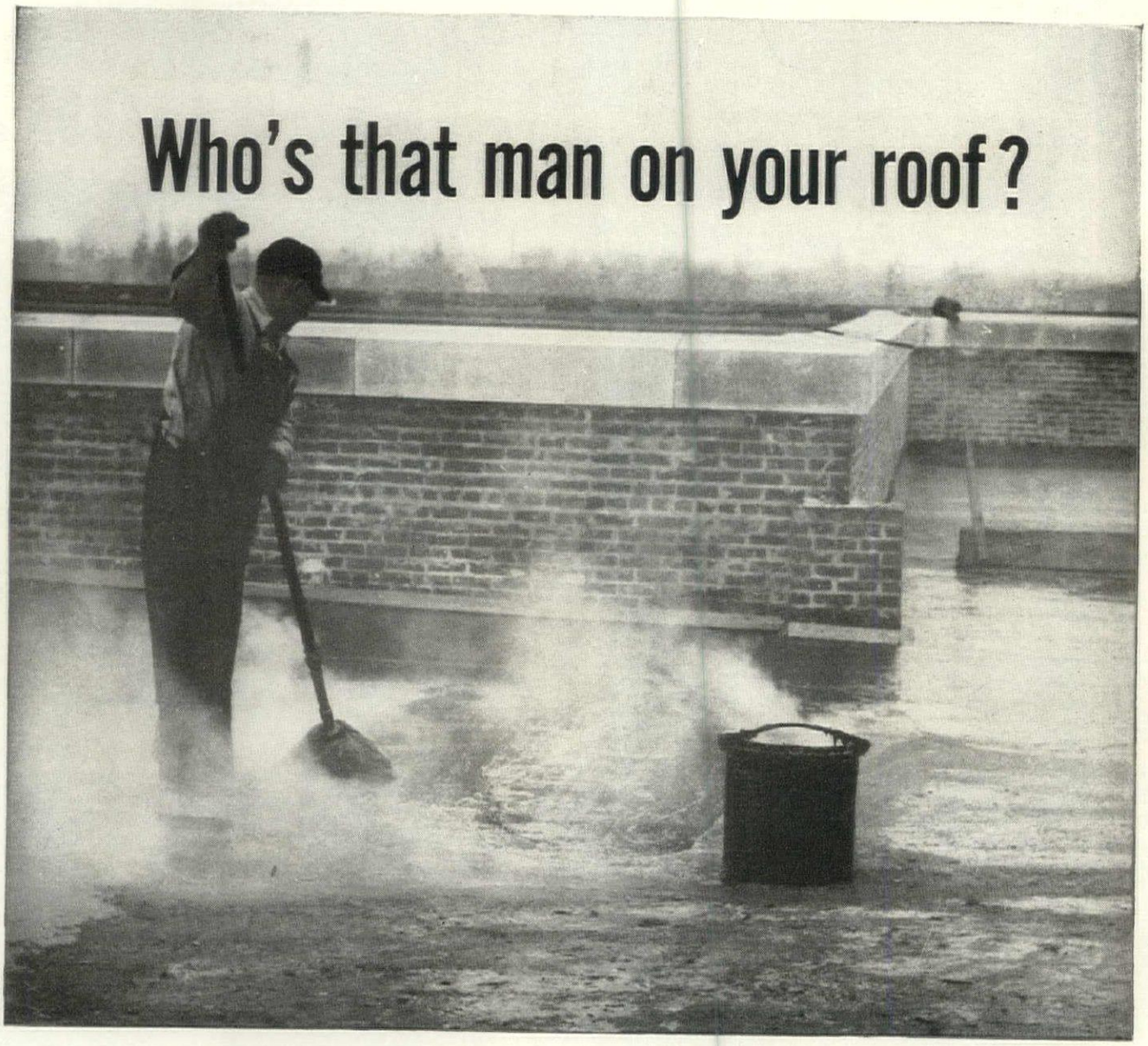
SOUND PRODUCTS
RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DIVISION, CAMDEN, N. J.

RCA®

In Canada: RCA VICTOR Company Limited, Montreal

Radio Corporation of America
Dept. W-269, Building 15-1, Camden, N. J.
Please send me free RCA's new booklet "Sound in Industry."

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

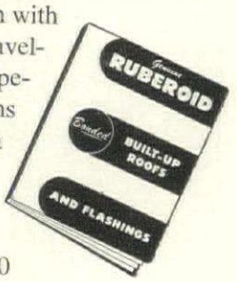


Did you *specify* the *roofer* as well as the roof, application methods and materials? The right roofer is as important as the right roof.

If he's a Ruberoid Approved Roofer you can be sure of getting the experience and "know-how" that means uniform quality of application and the avoidance of costly headaches.

You can count on your Ruberoid Approved Roofer for sound advice, too . . . not only because of his experience . . . but because Ruberoid makes every type of built-up roof in specifications to meet every need. Ruberoid Approved Roofers are not prejudiced in favor of any one type.

The Ruberoid Built-Up Roofing Specification Book is handy, useful reference for the selection of any type of roof . . . 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., New York 36, N. Y.

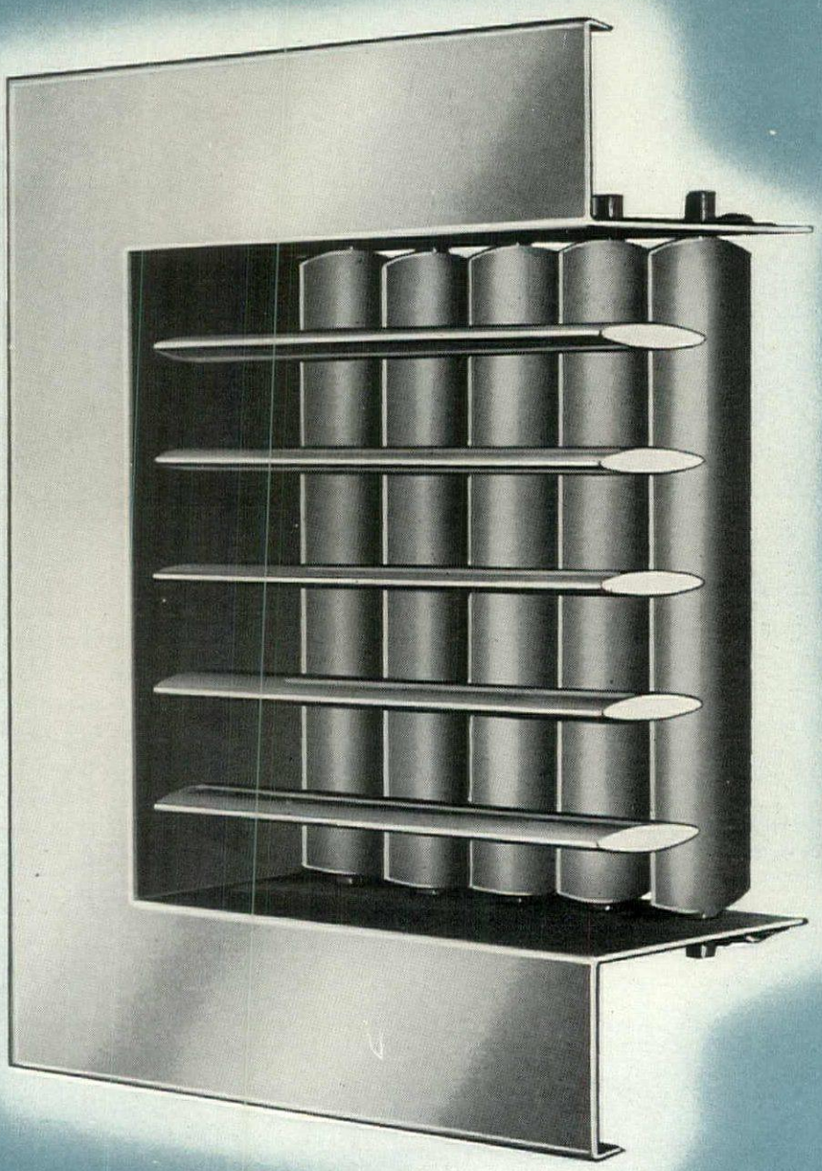


The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

ROOM AIR DISTRIBUTION . . .

TITUS *ELIMINATES INSTALLING*



IS NOT COMPLICATED

50% OF GRILLE ENGINEERING & ADJUSTMENT PROBLEMS

NEW MORE AIR CONTROL BUILT-IN

By engineering MORE AIR CONTROL per square inch into each diffuser and grille . . . *right at the factory* . . . Titus simplifies all phases of grille *specification, selection, installation* and *adjustment.* Eliminates any necessity for special factory schooling or instruction at the contracting, engineering or tradesman level. Any workman can install a Titus grille without unbalancing the whole expensive system.

NEW MORE SIMPLE INSTALLATION

Install grille in 2 easy steps. (1) Fasten grille in place with screws. (2) Adjust louvers for correct air patterns. Titus *makes it easy, makes it simple* to obtain correct air patterns . . . patterns that give *maximum room comfort . . . from any air conditioning system.*

NEW MORE FLEXIBILITY OF ADJUSTMENT

Most important . . . any miscalculations that have crept in during the installation period may be simply and easily corrected by quick adjustment of streamlined Airfoil louvers. ADJUSTING IS DONE *WITHOUT* REMOVING GRILLES FROM WALLS. COSTLY TIME-CONSUMING "CALL BACKS" ARE ELIMINATED.

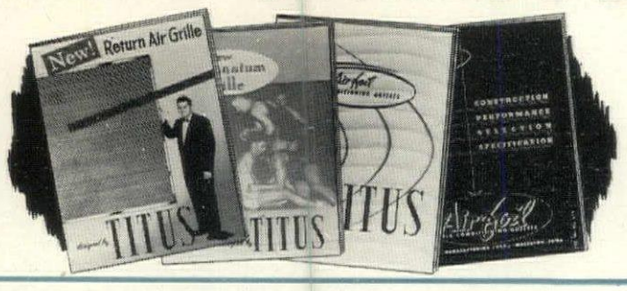
NEW SIMPLIFIED, FOOL PROOF DESIGN

All Titus grilles and diffusers are built under the most rigid, precision-controlled standards. They give finest air diffusing performance. Air control cannot be lost at the installation level. Titus grilles are so carefully constructed it is almost impossible to have anything but correct diffusion of air . . . no matter who installs or adjusts them.

SETS PERFORMANCE STANDARD FOR ENTIRE AIR CONDITIONING SYSTEM

Directs air where it is needed. Keeps uniform temperatures throughout room. Eliminates old-fashioned drafts . . . low level stratification. Truly controls comfort . . . *at the room level* . . . THE ONLY AREA WHERE THE UNIT'S ENTIRE HEATING OR COOLING PERFORMANCE IS JUDGED.

FREE CATALOGS



Get information on the complete line of Titus grilles now.
Order actual samples. Look at them. Hold them in your hands. Test them. See for yourself why Titus can save you money. Can give you better air diffusion performance . . . in every type of building where air conditioning is used.

TITUS MANUFACTURING CORP., WATERLOO, IOWA

Gentlemen: I wish to simplify my grille installation problems and to lower my grille installation costs. Please send me complete information on the following Titus grilles.

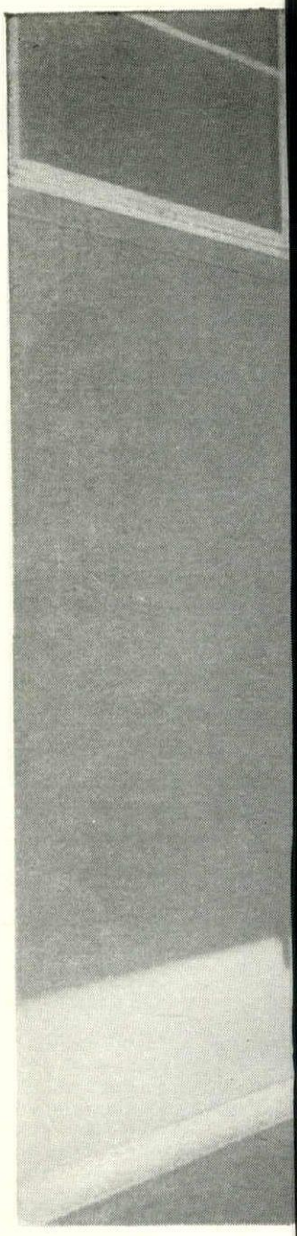
☐ Supply Grilles & Registers ☐ Return Air Grilles ☐ Volume Controllers
☐ Frames and Accessories ☐ Gymnasium Grilles

Name _____

Address _____

City _____ State _____

Weldwood Fire* and Stay-Strate® Doors offer unusual beauty, durability and an unequalled lifetime guarantee



Beautiful Weldwood Fire and Stay-Strate Doors end forever the problems of door warping, shrinking and sagging. They keep their natural good looks and working efficiency so long and so well that United States Plywood guarantees these doors *for the life of the building.*

Here's why Weldwood Fire and Stay-Strate Doors are so superior:

Incombustible Weldrok® core in both doors is lightweight mineral material that's stable and extremely strong. This core is an *exclusive* Weldwood feature.

Fires are prevented from spreading to the other side of the door due to Weldrok's extremely low heat transmission factor. During a one-hour fire test, a Weldwood Fire Door was subjected to 1700°F: the highest temperature registered one foot from the other side of the door was only 102°F! Weldwood Fire Doors are edge-banded with fireproofed hardwood for additional protection. Fire Doors are labeled by Underwriters' Laboratories for class "B" (vertical shaft) and class "C" (room and corridor partition) openings.

Extreme durability of Weldwood Fire Door was proved by test of Underwriters' Laboratories that mechanically opened and closed the door *200,000 times.* The same door was then *slammed shut* with great force *100,000 times.* The door was unaffected and still operated perfectly!

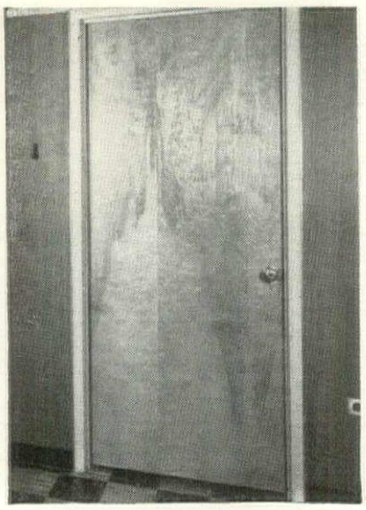
Maximum dimensional stability. A Weldwood Stay-Strate Door in daily operation has been subjected to a relative humidity of 90-95% on one side and exposed to all the natural elements of the weather on the other: it operates as efficiently as the day it was installed *over 5 years ago.*

Beautiful standard thickness veneers 1/28" thick mean superior door construction, better performance, longer service. Lovely oak, natural birch, glowing walnut and blond Korina® are some of the many fine hardwood faces available.

Guaranteed for life, Weldwood Fire and Stay-Strate Doors are unconditionally guaranteed against warping, twisting or manufacturing defects *for the life of the building* in which they are installed. Any Weldwood Fire or Stay-Strate Door failing to meet these standards will be replaced without charge including *all* labor costs of hanging and refinishing involved.

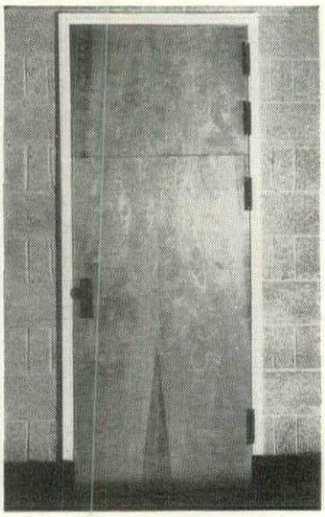
Send coupon for more details or visit your lumber dealer, or any of the United States Plywood branches—87 offices in principal cities.

*PATENT NO 2583050



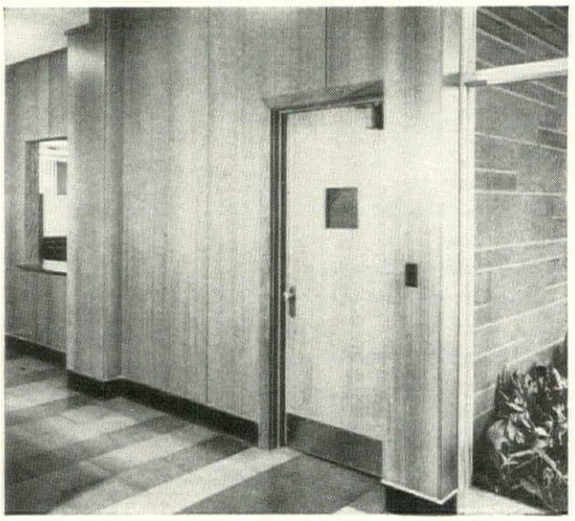
ARCH.—HENDERSON AND VOTOW

Birch Weldwood Fire Door in St. Mary's Hospital for children, Bayside, L. I., N. Y., acts also as a noise barrier—cuts sound level by about 31 decibels.



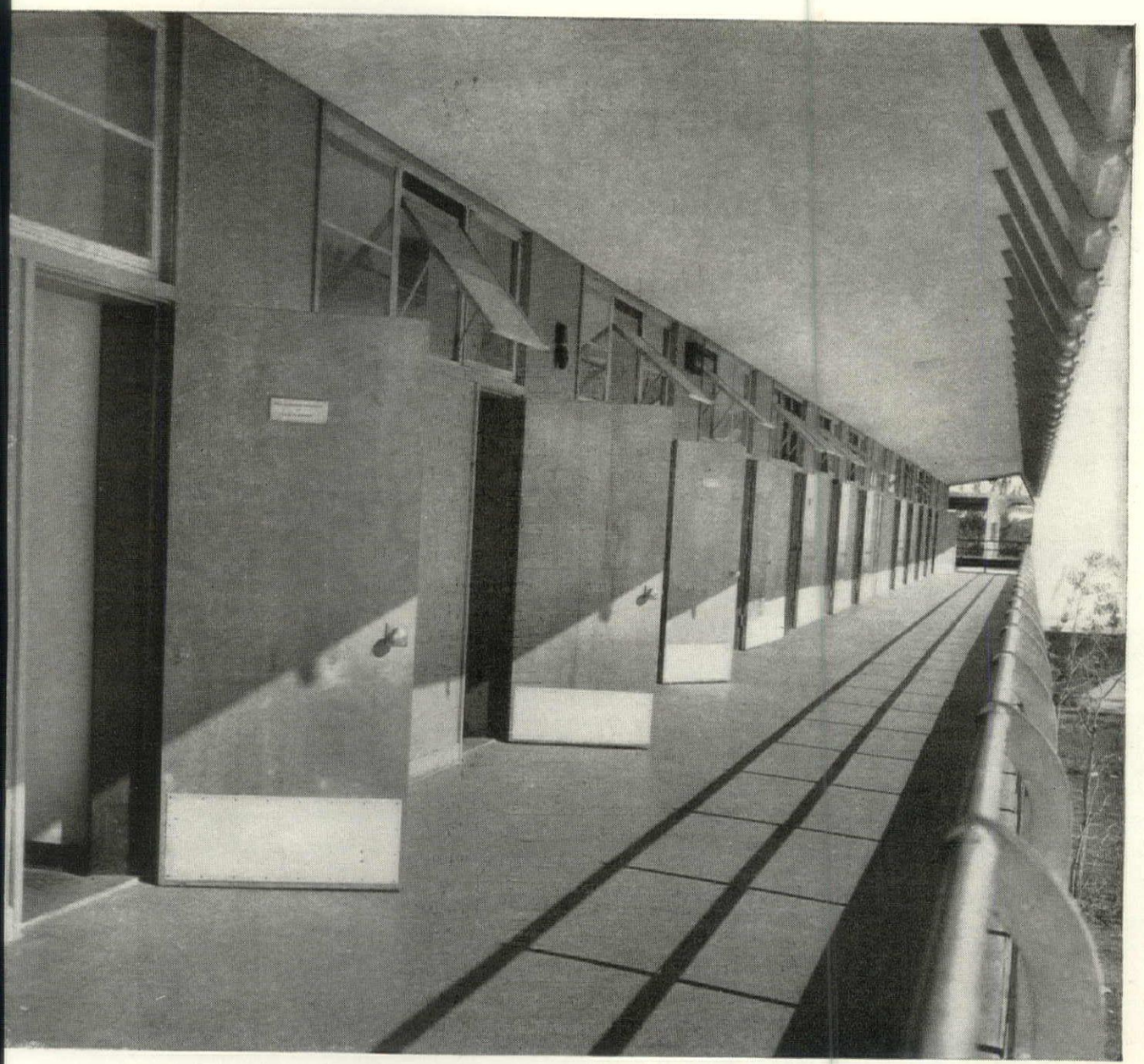
ARCH.—SHERWOOD, MILLS & SMITH

Unusual divided birch Weldwood Stay-Strate Door covers dumb-waiter (bottom) and mechanism (top) in South Kent School, South Kent, Conn.



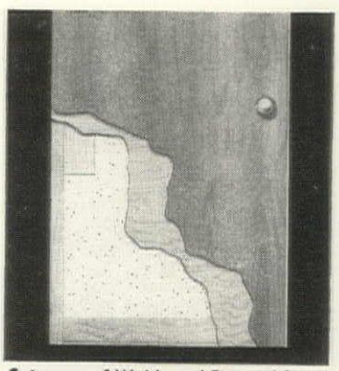
ARCH.—ALPHONSO ALVAREZ, JR.

Reception room of Bankers Life National Insurance Co., Montclair, New Jersey has a beautiful African Mahogany Weldwood Fire Door with matching Weldwood paneling.



ARCH.— ROBERT L. WEAD AND MARION MANLEY

Beautiful unselected birch Weldwood Stay-Strate Doors are used in the University of Miami dormitory, Miami, Florida. Doors never need painting: maintenance consists of occasional waxing.



Cutaway of Weldwood Fire and Stay-Strate Doors shows sturdy, quality construction. Besides its incombustibility and sound deadening properties, Weldrok core also gives 25% greater insulation than ordinary core.

Guarantee label attached to every Stay-Strate Door shows individual guarantee registration number and explains Weldwood's famous lifetime guarantee.

Weldwood

Weldwood® Doors

UNITED STATES PLYWOOD CORPORATION

World's Largest Plywood Organization

UNITED STATES PLYWOOD CORPORATION
Weldwood Building
55 West 44th Street, New York 36, N. Y.

Please send me brochures that give all the details on the unusual advantages of Weldwood Fire and Stay-Strate Doors, including the unique lifetime guarantee.

AF-9-5

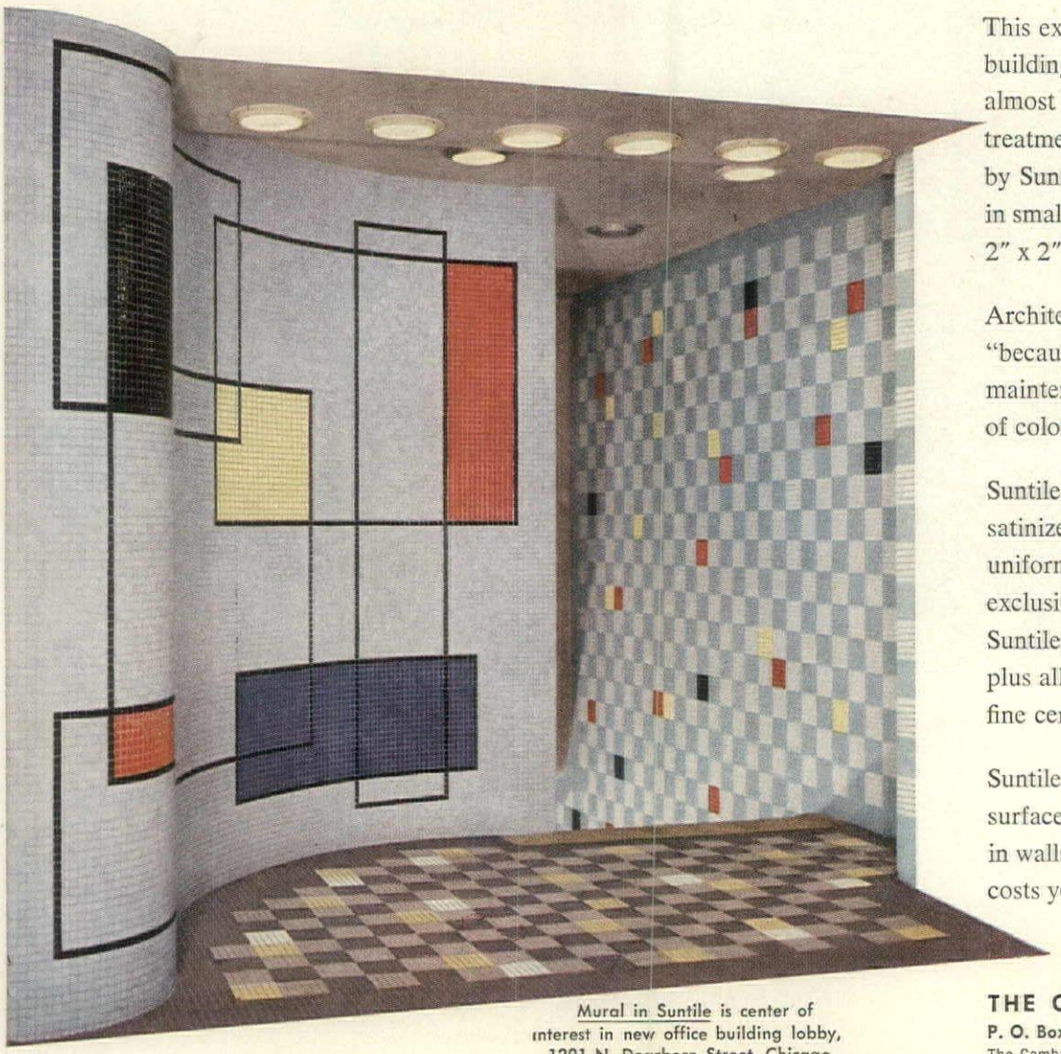
NAME.....

COMPANY.....

ADDRESS.....

CITY.....**STATE**.....

bold pattern in *Suntile* ceramics GIVES AN OLD LOBBY new life



Mural in Suntile is center of interest in new office building lobby, 1201 N. Dearborn Street, Chicago, Illinois. Alper & Alper, Architects.

This exciting remodelling of an old office building lobby is just one example of the almost unlimited variety of decorative treatments made available to designers by Suntile Ceramics—durable ceramic tile in smaller sizes (½" x ½", 1" x 1", 1" x 2", 2" x 2").

Architect Max Alper selected this material "because of its permanence, ease of maintenance, flexibility, range and depth of color, and design possibilities."

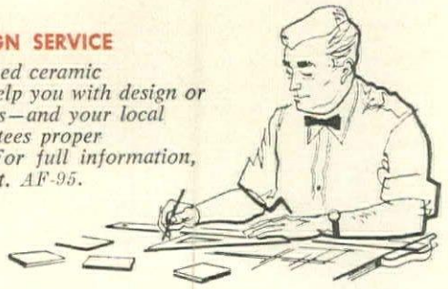
Suntile Ceramics combine attractive satinized finishes and soft colors in both uniform and mottled shades. Used exclusively, or in combination with glazed Suntile, they offer you new design freedom plus all the practical advantages of fine ceramic tile.

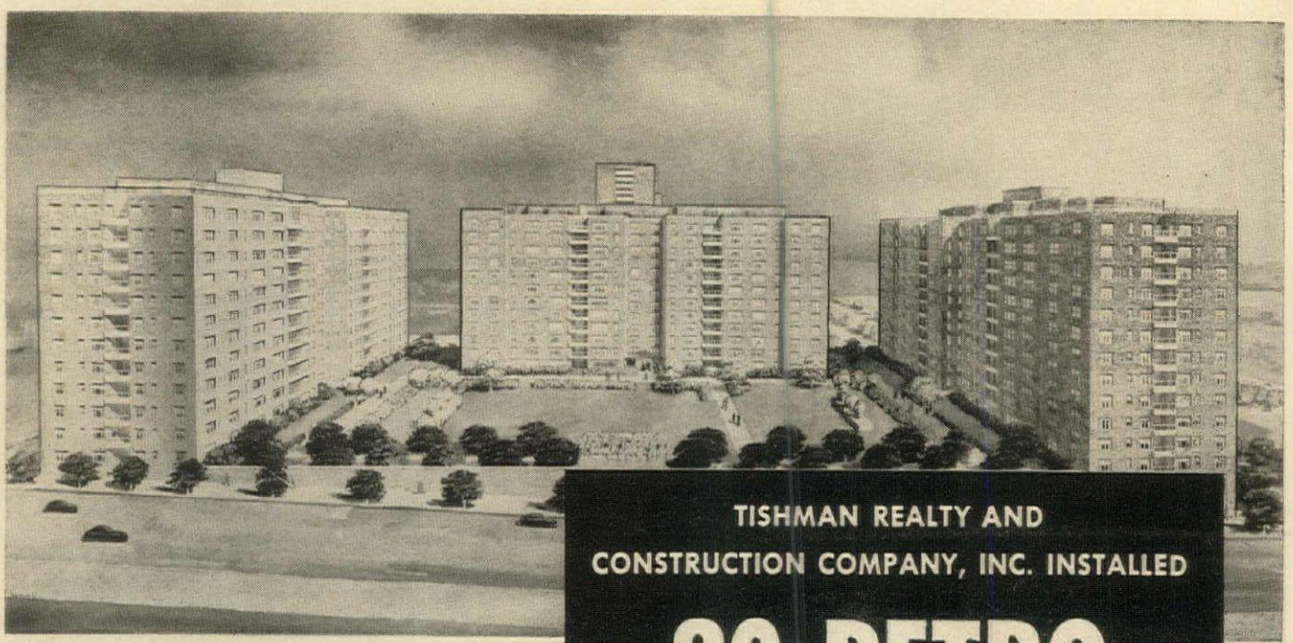
Suntile Ceramics have an especially tough surface which serves equally well in walls or floors, saves maintenance costs year after year.

THE CAMBRIDGE TILE MFG. CO
P. O. Box 71, Cincinnati 15, Ohio
The Cambridge Tile Mfg. Co.,
470 Alabama Street, San Francisco 10, Calif.
The Cambridge Tile Mfg. Co.,
1335 South LaBrea, Los Angeles 19, Calif.

SPECIAL DESIGN SERVICE

Our staff of trained ceramic specialists is ready to help you with design or layout problems—and your local Suntile dealer guarantees proper installation. For full information, just write us, Dept. AF-95.

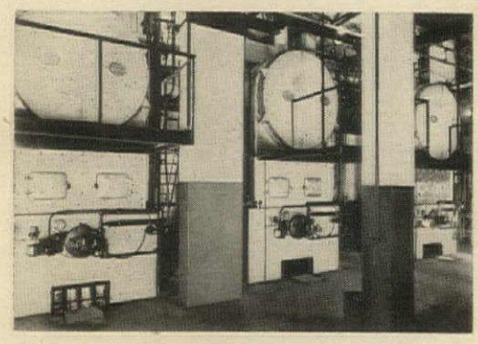




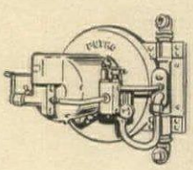
TISHMAN REALTY AND
CONSTRUCTION COMPANY, INC. INSTALLED

20 PETRO OIL BURNERS

IN TEN BIG NEW YORK BUILDINGS



Sutton Terrace (shown at top) consists of three 12-story buildings accommodating 495 families. Heat is supplied by three Titusville boilers, each rated at 42,500 sq. ft. of radiation and each fired with a WD 8 AH Petro burner. This installation has three 15,000 gallon, 10 ft. diameter fuel storage tanks.

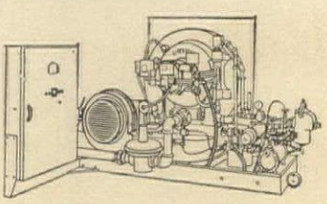


ROTARY OIL BURNERS

Horizontal rotary oil burners make possible substantial fuel savings by burning the low-cost heavy fuel oils with complete dependability. Models for every industrial need. Capacities up to 600 boiler horsepower.

COMPLETE PACKAGED UNIT

A complete forced draft combustion system with all parts factory assembled and tested. Saves installation time and cost, gives top performance and fuel economy.



***"Petro oil burners give us the cleanliness, dependability, and economy of operation we require,"* says Alan Tishman**

Providing heat for 9 huge apartment developments and power for a 13-story manufacturing plant is a tremendous responsibility, but Tishman Realty and Construction Co. Inc., have found that they can rely on Petro oil burners to do the job. "The ability of our Petro oil burners to immediately respond to fluctuating heat and power demands without over-firing or under-firing is a vital factor in keeping our fuel costs low and our tenants happy," says Mr. Alan Tishman.

Oil automatically preheated for sure firing and lower fuel cost To insure quick positive starting and steady, uniform firing, Petro oil burners automatically *preheat* oil to an efficient temperature before it is injected into the firebox. This Petro method of preheating oil also enables users to burn the heavy fuel oils (Nos. 5 & 6), which average 8% richer in heat value, without complicated mechanical gadgets that cause service and adjustment problems. You save worry *and* money with Petro oil firing.

PETRO oil burners are adaptable to any boiler room

Petro industrial oil burners are designed and built to *modernize* the firing of your present boilers. The flame is adjustable to any firebox, and the installation is adaptable to any boiler room layout. This means that you save substantially on initial installation costs, and save more money every day on fuel and labor costs. Mail coupon for free catalog and information.

CLIP AND MAIL FOR FREE CATALOG

PETRO
3214 West 106th St., Cleveland 11, Ohio.
In Canada: 2231 Bloor St., West, Toronto, Ontario.

Name_____

Company_____

Address_____

City_____ State_____

PETRO

T. M. REG. U. S. PAT. OFF.

OVER 50 YEARS OF LEADERSHIP IN AUTOMATIC HEATING AND POWER EQUIPMENT

HERCULITE®

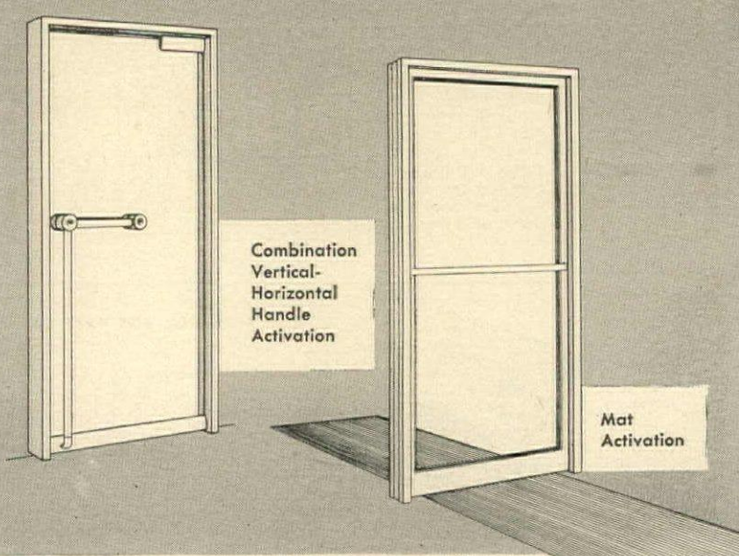
Leading American architects and building owners are specifying *quality* Herculite Doors by Pittsburgh, because they add a distinctive, fresh look to any type entrance. This installation at the National Bank of Commerce, New Orleans, La., utilizes Herculite doors set in bronze frames, equipped with "the nation's finest automatic door opener"—the Pittcomatic (see description here). Made from Pittsburgh Polished Plate Glass, Herculite undergoes a special tempering process which makes it four times stronger than ordinary glass of the same thickness. Architect: H. T. Underwood, New Orleans, La.

With the PITTCOMATIC®

...Herculite and Tubelite Doors open at a touch!

How the Pittcomatic operates: Smooth hydraulic power is supplied by the power unit, through ⅜" copper lines, to the hinge under the door. In the *handle*—or *mat*—there is a 10-volt circuit which passes through the control box and activates the power unit. Adjustments provided in the control box and the hinge regulate the action of the door. The Pittcomatic is the safest automatic door opener; it is the easiest to install and maintain.

For detailed information on Pittsburgh doors, see Sweet's Architectural File . . . sections 15a/Pi and 15d/Pi, or write to Pittsburgh Plate Glass Company, Room 5286, 632 Fort Duquesne Boulevard, Pittsburgh 22, Pa.



TYPICAL PITTCOMATIC INSTALLATIONS

Pittsburgh Doors offer

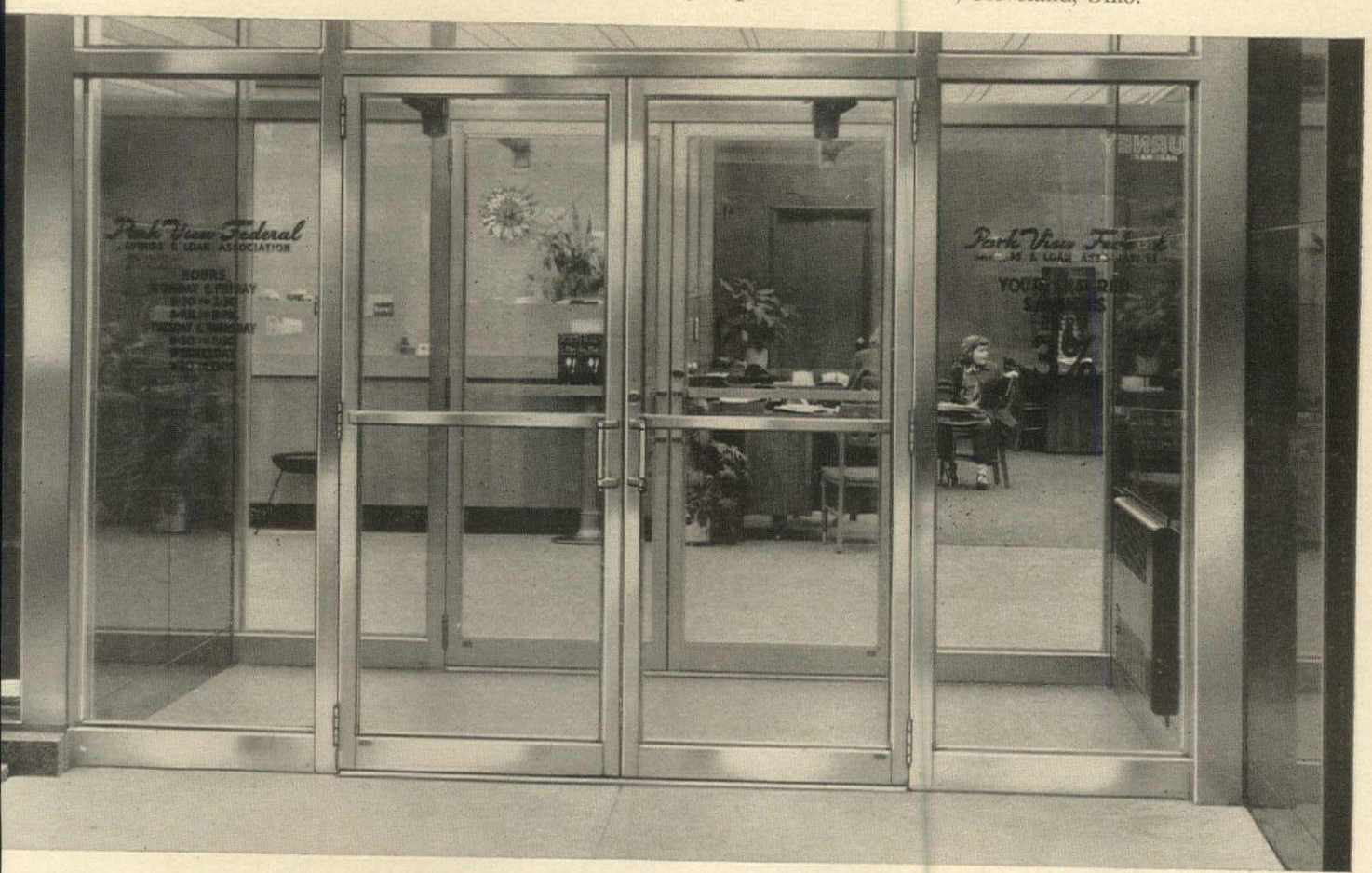
design flexibility... handsome appearance ...long, dependable life

Whatever your entrance requirements may be, there is a Pittsburgh Herculite or Tubelite door to meet them exactly.

When you install these doors, you are assured of the highest possible quality in materials and fabrication. They are designed to complement and enhance any architectural plan. And Pittsburgh doors are easily handled, dependable in operation, and long-lived.

TUBELITE®

These doors and frames mark a decided step forward in hollow metal entrance design, with lines that are clean and simple. Tubelite is thus adaptable to any type of construction. Another important advantage found in these doors is the unique interlocking feature of the frames. This assures maximum rigidity, making it possible to hold the true shape of the frames through long and continued use. Tubelite doors are easily and quickly glazed and installed. Feature-for-feature, they offer the highest value at the lowest possible cost. Park View Federal Savings & Loan Association, Cleveland, Ohio; Architect: Anthony S. Ciresi, Cleveland, Ohio.



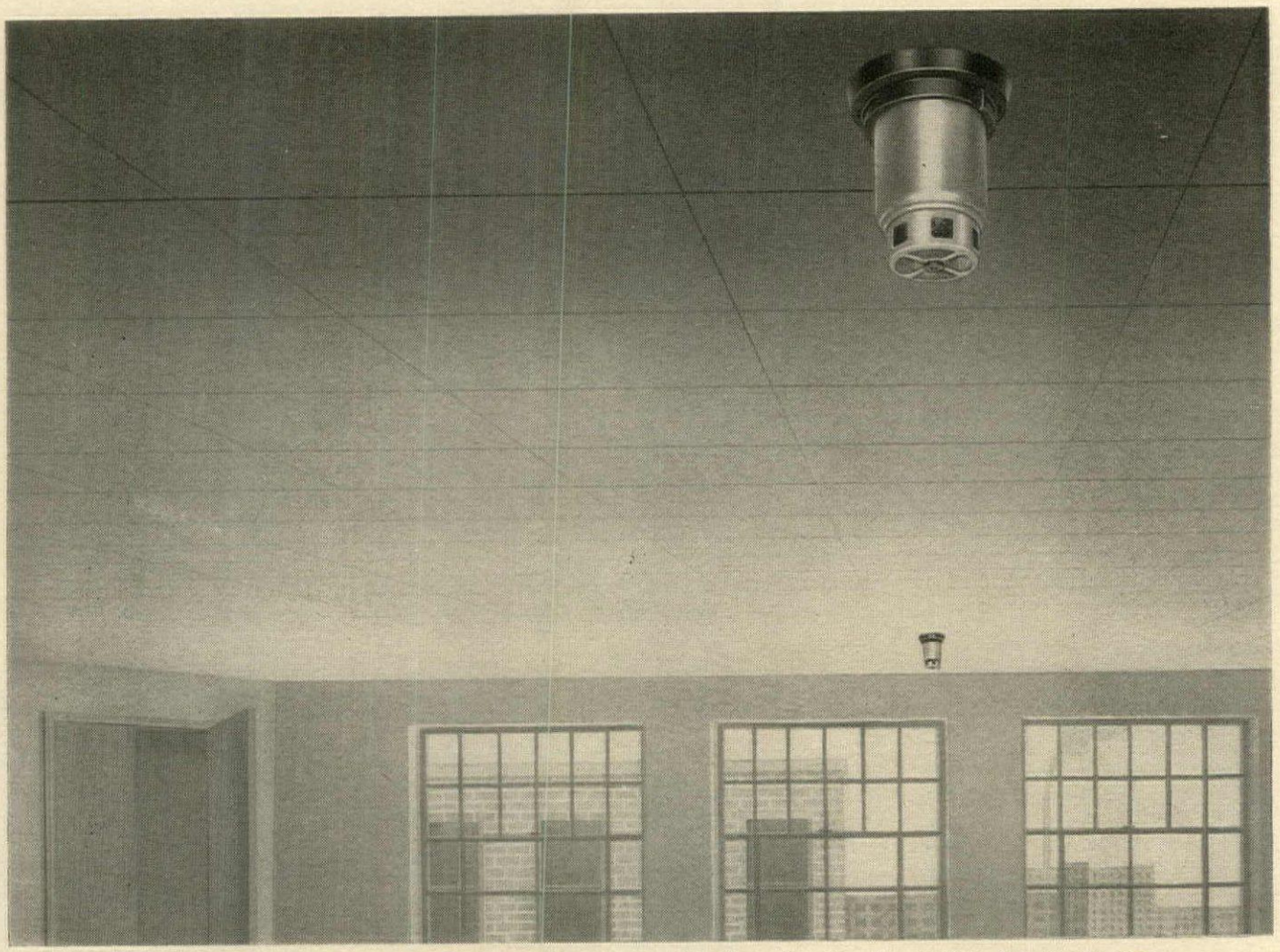
PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area... harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire... requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

Pyrene

PYRENE — C-O-TWO

NEWARK 1 • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

C-O-TWO

COMPLETE FIRE PROTECTION

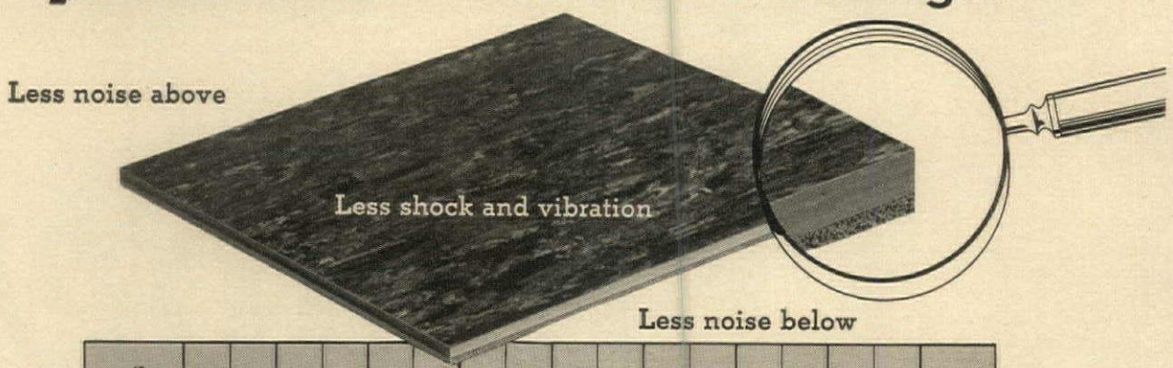
portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

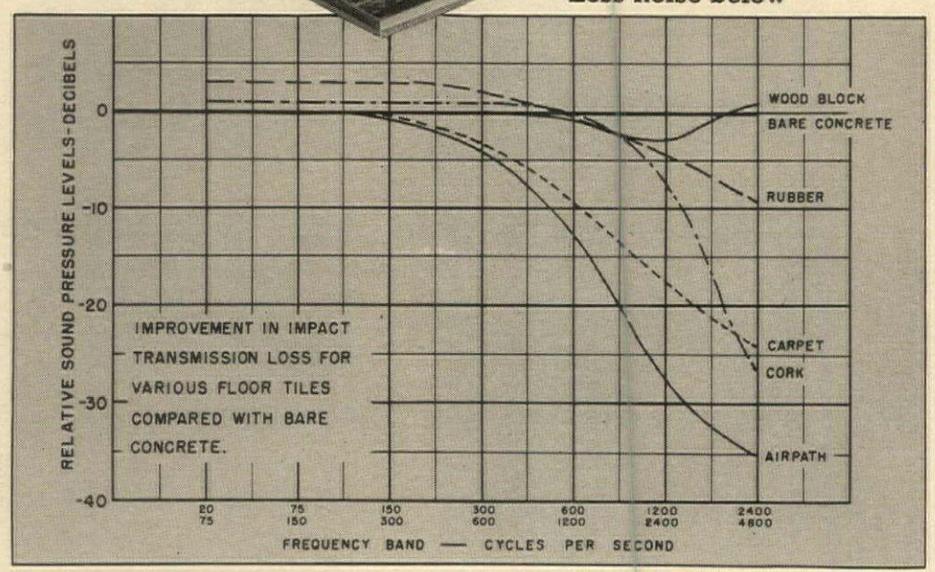
CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

NEW B.F.Goodrich AIRPATH

Cushioned Rubber Floor Tile

quieter than other floor coverings!





Tests made by an independent acoustical engineering laboratory — copy of report available on request.

Now you can satisfy clients' requirements for a quiet, easy-to-clean floor. Tests by leading engineers prove there is no other flooring like Airpath for acoustical efficiency.

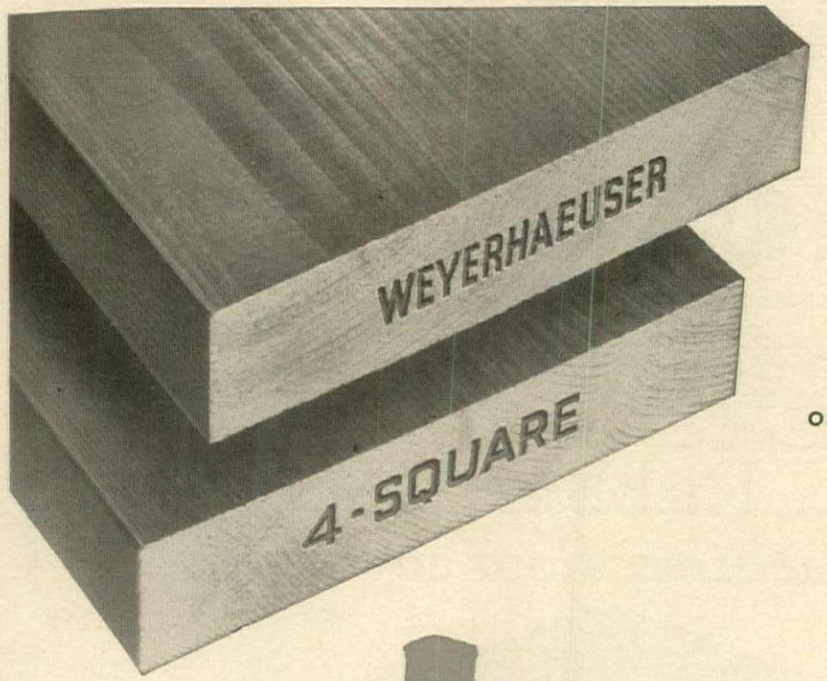
B. F. Goodrich Airpath has an extra soft, buoyant cellular rubber cushion backing that is *naturally resilient.* It cushions footsteps . . . deadens their sound in both the area being used and the area below . . . absorbs shock and vibration.

B. F. Goodrich Airpath has *Super-Density*, too — the exclusive feature that eliminates dirt-catching surface pores, makes floors easy to clean and keep clean.

Airpath is ideal for all areas where noise control is essential: hospital corridors, nurseries, lounges, churches, theaters, libraries, and business and professional offices. Available in 10 attractive, marbleized colors. Write: ***B. F. Goodrich Co., Flooring Division, Dept. AF9, Watertown 72, Massachusetts.***

B.F.Goodrich FLOORING PRODUCTS

RUBBER TILE • ASPHALT TILE • KOROSEAL TILE • RUBBER COVE BASE • ACCESSORIES



This brand name on lumber also brings you . . .

Lumber

STRUCTURAL SOUNDNESS

Why is Lumber Sheathing Preferable?

One reason for the preferred position of wood sheathing is its great strength and long life. Often called "storm sheathing," wood binds the entire structure into one firm, rigid unit, which withstands enormous wind and snow loads. This strength also makes alterations easier and safer. The strength is not lost as a result of accidental wetting.

Other advantages of genuine wood sheathing include superior nail-holding power . . . which assures a solid base to which one can securely attach exterior covering. This firm base also permits the use of a variety of exterior coverings, such as vertical siding and shingles.

A Traditional Mark of Quality

Fine homes are sheathed with lumber—because architects recognize lumber as the ideal sheathing material for sidewalls, roofs, and subfloors.

Generations of dependable service have proved the value of this fine building material. Homes and other light construction built with lumber sheathing offer the owner or purchaser the best in terms of durability, strength, and rigidity—which means true structural economy.

Sheathing

AND TRUE ECONOMY

Available in a Wide Range of Widths, Species, Grades and Patterns

A broad selection of Weyerhaeuser 4-Square Lumber items is offered for use as wall and roof sheathing and subflooring. There are species, widths, and grades to serve most building requirements.

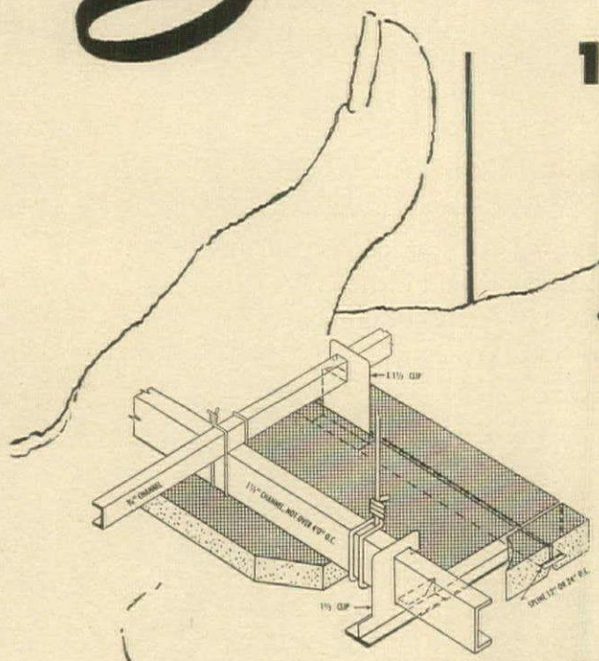
For greater structural soundness and for true final economy in light construction, specify Weyerhaeuser 4-Square Lumber sheathing. Your Weyerhaeuser 4-Square Lumber Dealer is ready to deliver a species and type suited to your needs.

Weyerhaeuser Sales Company

ST. PAUL 1, MINNESOTA

Securitee

1½ SYSTEM for . . .



- ECONOMY IN PURCHASE
- EASE OF INSTALLATION
- LONG, TROUBLE-FREE SERVICE
- A TRUE AND LEVEL CEILING

In the face of rising building costs
it is important that every possible economy
be made, without sacrificing
quality, or disturbing the safety factor.
Securitee 1½ System, for the
erection of acoustical tile, is the outstanding
mechanical suspension system on the
market. It fulfills each requirement with complete
satisfaction and offers, in addition,
the best possible base for troffer type lights.

Specify and insist on Securitee Systems.

* Securitee SYSTEMS

W. J. **HAERTEL** & CO.
832 W. Eastman St., Chicago 22, Ill.
DEPT. F

Please send me, without obligation, your complete line of new brochures.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

*T.M. Reg. U.S. Pat. Off.

BUILT FOR

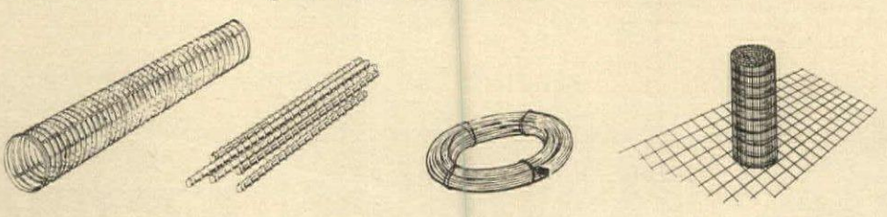
DURABILITY

WITH

LACLEDE STEEL REINFORCEMENT

Laclede reinforcing steels—including multi-rib round reinforcing bars, spirals, tie wire, welded wire fabric and accessories—give vital strength and permanency to this new St. Louis housing project.

Scheduled for occupancy early in 1956, the Darst Homes will provide attractive and comfortable living quarters for 1,238 families.



LACLEDE

LACLEDE STEEL COMPANY

SAINT LOUIS, MISSOURI ◆ Producers of Steel for Industry and Construction

BARBER COLMAN

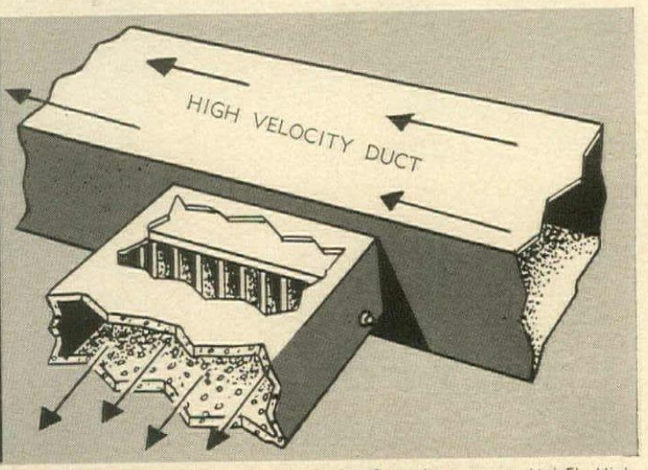
uni-flo Engineered Air Distribution

How high velocity air valves solve space and cost problems

Several problems faced engineers planning a year-round, high velocity air conditioning system in this Morrison, Illinois, building after it was purchased by General Electric Company. The air conditioning system with all ten zone reheat coils had to be installed in a small equipment room. Ducts had to be located over existing suspended ceilings, without interfering with piping already in place. Efficient distribution at low noise level was the final objective—at a price within budget requirements. A trip to the Barber-Colman Laboratory convinced system designers that Uni-Flo Air Valves can be used at branch duct take-offs to deliver low velocity air to branches from high velocity trunk ducts. With all diffusers on each branch served by one air valve, and using a minimum of sound attenuation material, costs were reduced to meet budget figures.

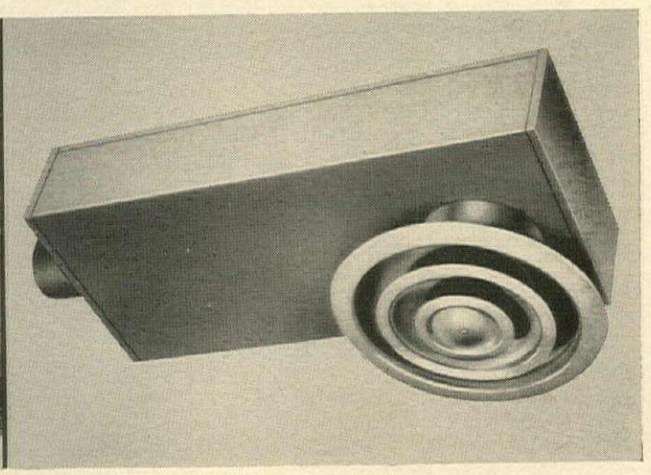
Project Engineers—BOOTH BROTHERS AND COMPANY

Two-story office building in Morrison, Illinois, acquired by General Electric Company. Space and cost problems arising from year-round air conditioning of an existing building were solved with a modern high velocity air distribution system, using Uni-Flo Air Valves.



Fewer Air Valves Are Required, Reducing Costs, because one Uni-Flo High Velocity Air Valve can be installed at a low velocity branch duct take-off from a high velocity trunk duct to serve several diffusers. This is a pioneer advantage of the Uni-Flo design.

Venturi-Flo Ceiling Diffusers harmonize with modern office decor, contribute efficient distribution of the conditioned air, free from drafts and disturbing noise. Each diffuser is individually adjustable for simplified balancing of the system. Pleasing results testify to sound engineering of the system.



A Uni-Flo High Velocity Control Unit is combined with a Venturi-Flo Ceiling Diffuser and made available as a "package" ready to attach in locations where it is desirable or necessary to continue high velocity to an individual diffuser.

BLAZING THE TRAIL TO BETTER AIR DISTRIBUTION

First with comprehensive, reliable, high velocity data

When Barber-Colman introduced the Uni-Flo Air Valve, results of laboratory tests on high velocity performance were released to the air conditioning industry. That reliable data enabled system designers to proceed with a greater number of satisfactory applications. Comprehensive performance data and design information for engineers are available in bulletin F-6598. You may obtain your copy by calling our nearby Field Office, or by writing us.

Barber-Colman Company

Dept. U, 1135 Rock Street, ROCKFORD, ILLINOIS, U. S. A.

Field Offices in principal cities

Air Distribution Products • Automatic Controls • Small Motors
Industrial Instruments • Aircraft Controls • Overdoors and Operators
Molded Products • Metal Cutting Tools • Textile Machinery

BARBER COLMAN

Barcol® OVERdoors

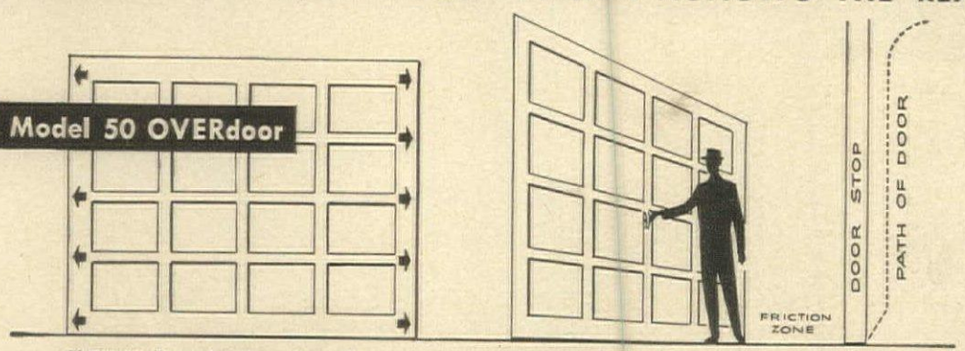
close tighter, yet open easier!

Barcol CAM ACTION OVERdoors close tighter because door rolls easily down with ⅜" clearance and then is pushed forward by cam levers and held firmly and evenly against door stops. No wedging . . . no dragging . . . no scraping.

Barcol CAM ACTION OVERdoors open easier, at a turn of the latch handle, because *extra* Cam Springs at bottom pull entire door ⅜" *back* from stops—overhead springs then lift friction-free door upward. Friction zone (see below) is reduced to a minimum, allowing wood to swell in damp weather without sticking, binding, or wedging.

THE IMPROVED OVERHEAD DOOR . . . CAM ACTION'S THE REASON!

BARCOL Model 50 OVERdoor

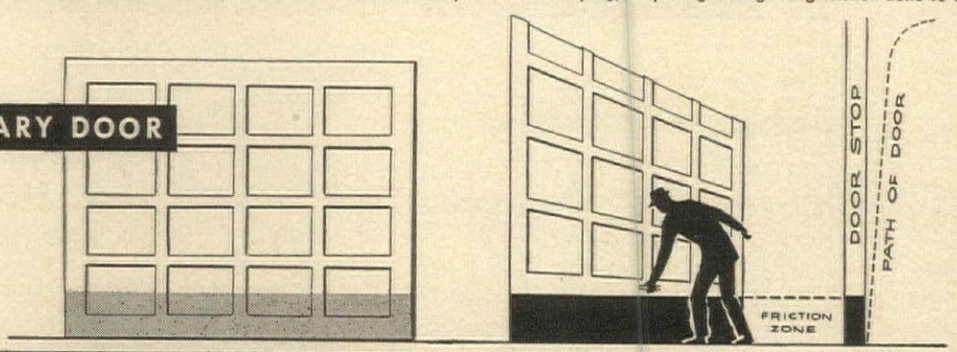


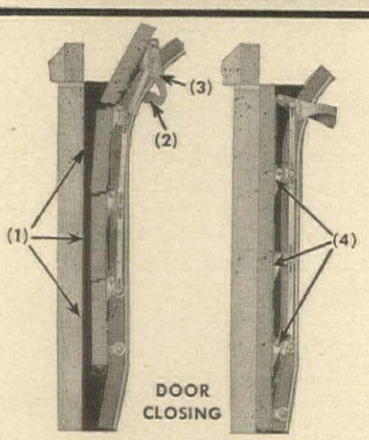
CLOSING: Door *first* closes free of stops; *then* cam levers press door against stops.

OPENING: Cam levers immediately free entire door from stops; friction zone is less than 1 inch!

No dragging or wedging to close weather-tight and rattle-proof. No stooping, no pulling through *long* friction zone to open.

ORDINARY DOOR





***SEE* HOW CAM ACTION WORKS!**

(1) Uniform ⅜" clearance assures all-weather friction-free opening and closing. Stop (2) engages cam lever (3) linked to other cam levers (4) pushing all door sections simultaneously against stop strips.

Only Barber-Colman OVERdoors give you all three—

CAM ACTION releases immediately for easy opening even when door swells—yet closes weather-tight and rattle-proof even when door shrinks.

WEATHER-KING PANELS—guaranteed for life not to weathercheck, split, crack, or delaminate.

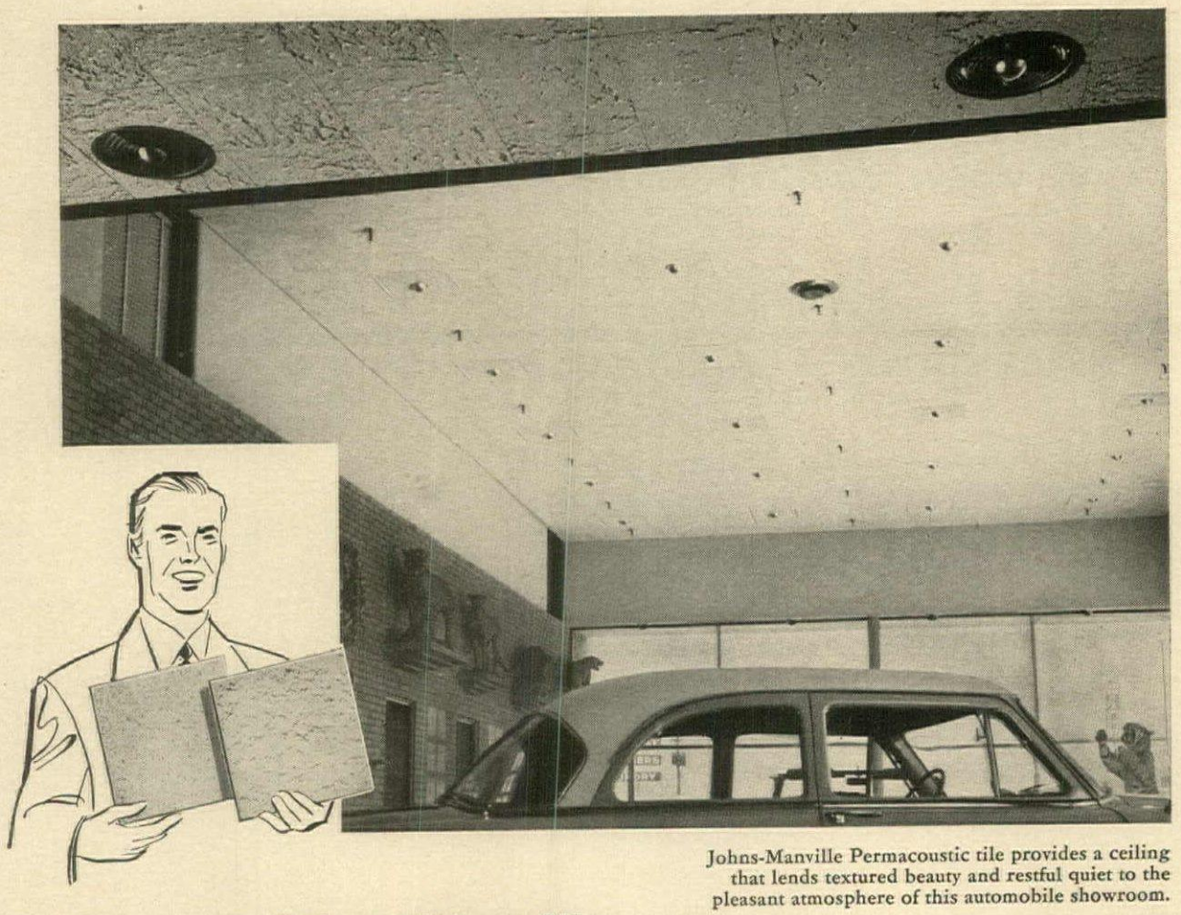
INDIVIDUALIZED DESIGN—new *Doornaments* make standard doors into custom designs at only fractional extra cost. For free design service, call your Barber-Colman distributor (under "Doors" in phone book). or write:

Barber-Colman Company

Dept. U59, Rockford, Illinois

WARDROBEdoors • Automatic Controls • Industrial Instruments • Air Distribution Products • Aircraft Controls • Small Motors • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery

A beautiful Solution to noise control problems



Johns-Manville Permacoustic tile provides a ceiling that lends textured beauty and restful quiet to the pleasant atmosphere of this automobile showroom.

Johns-Manville Permacoustic decorative acoustical tile

J-M Permacoustic® is an acoustical ceiling tile that combines maximum acoustical efficiency with unusual architectural beauty and non-combustibility.

Permacoustic is available with either a textured or fissured surface. These random-textured finishes increase its high sound-absorbing qualities, and provide design and decorative interest.

Made of baked mineral wool fibres, Permacoustic is rated incombustible. It is easy to install on existing ceilings or slabs, or by suspension using a spline system of erection.

Send for your free copy of the new brochure about Permacoustic tile. Write Johns-Manville, Box 158, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

INFORMATIONAL DATA ON PERMACOUSTIC

Sizes 12" x 12" 12" x 24"	Thickness 3/4"*	Color: white
	ACOUSTICAL EFFICIENCY Test No. A55-88	Test No. A55-87
cycles per second	cemented to plaster board (mounting No. 1)	mechanically mounted on special metal supports (mounting No. 7)
125	.18	.56
250	.35	.64
500	.83	.77
1000	.86	.92
2000	.82	.99
4000	.77	.89
noise reduction coefficient	.70	.85
weight per sq. ft.	1.3	1.3

*Also available in 7/8" thickness

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville

40 YEARS OF LEADERSHIP IN THE MANUFACTURE OF ACOUSTICAL MATERIALS

Satisfy your clients with MONEL

...assure them all the rust-free, economical, hot water they need!

Free yourself from future complaints about rusty hot water ... by specifying modern Sanimaster gas water heaters.

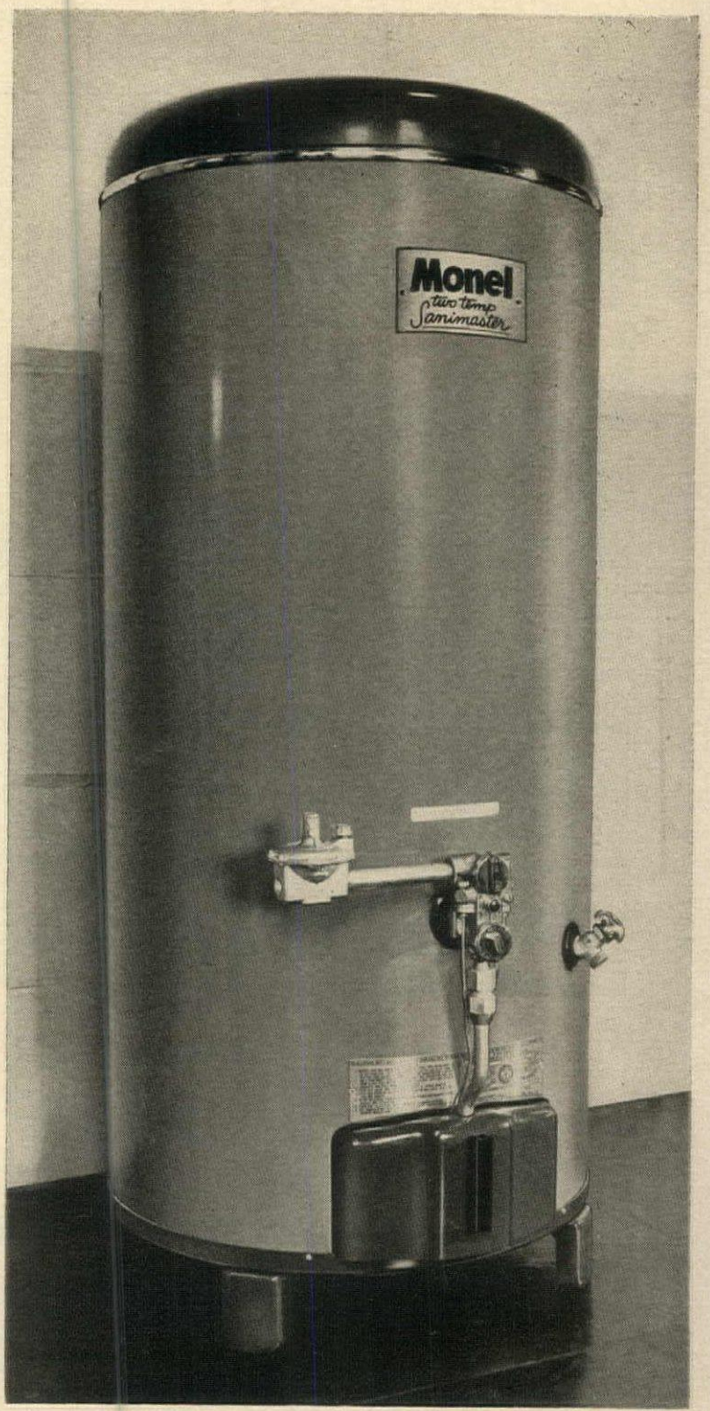
Then your clients have tanks of solid, long-life MONEL® ... strong, wear-resistant, high in nickel content, corrosion resistant and rust-proof.

They can count on having all the hot water they need with either the Ruud-Monel or Crane-Monel Sanimaster. And at two temperatures!

They get a constant, low-cost supply of 180° *sanitizing* hot water for automatic dish- or clothes-washing machines. And 140° *regular* hot water at sinks, showers, faucets, and lavatories. From the same tank. At the same time. All sparkling clear.

There's nothing like plenty of rust-free hot water to keep clients satisfied. So be sure to specify Ruud-Monel or Crane-Monel *two-temp* Sanimaster . . . for apartment houses, churches, restaurants, motels, clubs, schools, dormitories, etc. Mail coupon for details.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.



The Ruud-Monel or Crane-Monel two-temp Sanimaster requires less than 1 sq. yd. One man installation. Multiple units can be added, as needed. Meets code requirements. Carries A.G.A. seal of approval for operation at 180°. A.S.M.E. relief valve is standard equipment. No electric controls. Distributed by Ruud Manufacturing Company and Crane Co. outlets only.

INCO TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC.
Dept. AF 9-55
67 Wall Street, New York 5, N. Y.

Please send detailed information on Monel Sanimaster Automatic Gas Water Heaters.

☐ Literature only ☐ Have representative call

Name_____

Name of Establishment_____

Street_____

City_____ State_____

In Columbus, Ohio, the Town and Country Shopping Center houses 85 stores. Steeltex was used for cantilever floors and mezzanines. The architect was C. Melvin Frank, A.I.A., Columbus. The contractor-owner is Don M. Casto, Columbus, who has used almost 400,000 square feet of Steeltex in 13 shopping centers.

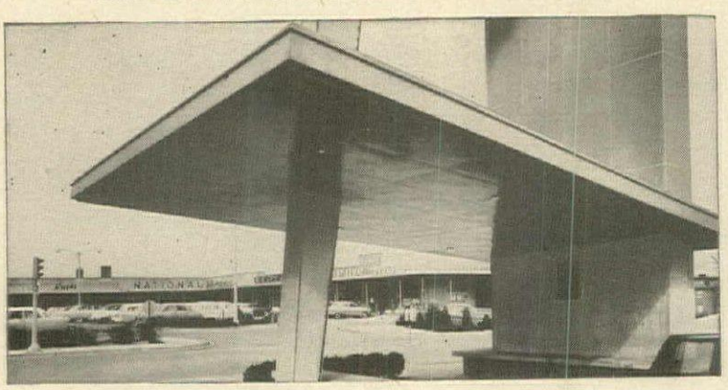
Steeltex Is The Choice For New Shopping Centers Because It Saves Construction Time And Money

Steadily mounting building costs are sharpening competition. That's why the men who build shopping centers—the architects, the design engineers, the contractors and the owners—choose Pittsburgh Steeltex floor lath for concrete floors and roof decks.

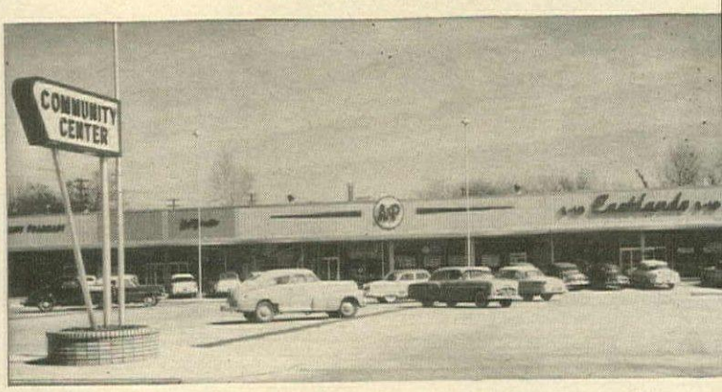
That's been the story ever since the first neighborhood shopping centers were built back in the 1920's. And when the first big regional shopping center, designed to serve a whole area instead of just a neighborhood, was built about 1948, Steeltex was the builder's choice.

New shopping centers are being built by dollar-conscious businessmen who demand a full measure of value for every penny they put into design, materials and construction.

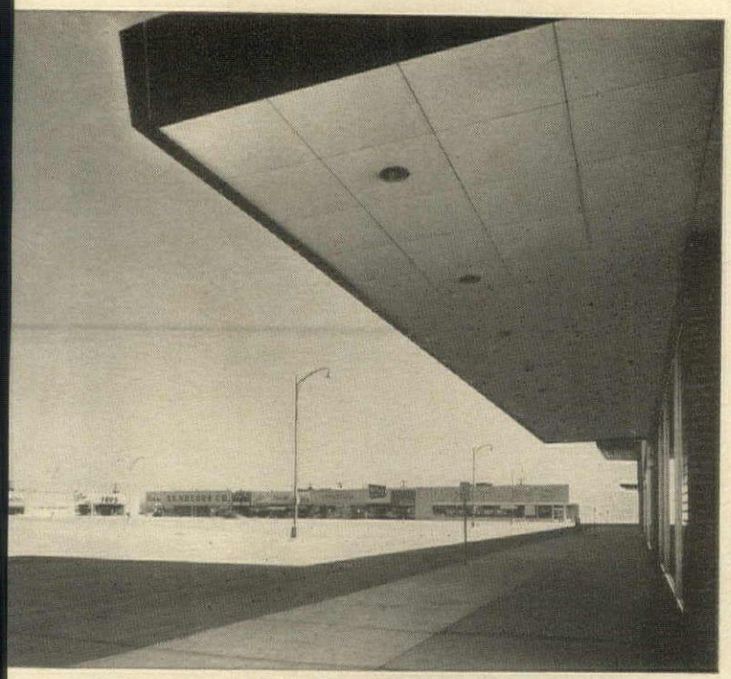
Here's what they say about Pittsburgh Steeltex, the galva-



In La Grange Park, Illinois, The Village Market Shopping Center used more than 22,500 square feet of Steeltex. The architect was Mittelbusher and Tourtelot of Chicago. The contractor-owner is William Joern & Sons, La Grange Park, Illinois.



In Waco, Texas, this $320,000 Community Center used Steeltex for 35,500 square feet of roof deck. The architects were Spicer, Bush and Witt, of Waco. The contractor was McClelland Construction Co., of Waco. The owner is Community Center, Inc., Waco.



In Detroit, the $5 million Eastgate Shopping Center covers 26 acres and has parking space for 3,000 autos. Steeltex was the architect's choice for the basement and mezzanine area. The architect was T. Rogvoy, A.I.A., Detroit, Michigan. The contractor was Walter L. Couse Co. of Detroit and the owner is the Eastgate Shopping Center, Inc., of Detroit.

In the Pittsburgh area, the $3.5 million Miracle Mile Town and Country Shopping Center has 25,000 square feet of Pittsburgh Steeltex in its floors. The architect was C. Melvin Frank, A.I.A., Columbus, Ohio. The contractor was Joseph Skilken & Company, Columbus. The owner is the Pittsburgh Miracle Mile Town and Country Shopping Center, Inc., Columbus. Don M. Casto, Developer.

nized reinforcing wire mesh which carries its own waterproof form right on its back:

• **Architect:** "We found Steeltex is easy to work, lighter, faster to handle and quicker to install. It takes up less storage space, holds its form on wide spans, prevents looping, eliminates dribbling and permits a wetter mixture of cement. When we must stay within a tight budget, Steeltex proves itself a quality material in its price range."

• **Design Engineer:** "After using all types of forms and reinforcing, we turned to Steeltex because it combines strength, workability and light weight at a realistic price. We have cut form costs 20 per cent by switching from wood to Steeltex. We've found that Steeltex is 20 to 30 per cent less expensive than competitive methods of reinforcing."

• **Contractor:** "With Steeltex, a contractor has everything in his favor. The number one reason is its water-holding ability. We like to see Steeltex specified because we know that all we have to do is roll it out, fasten it down and start pouring.

"Steeltex combines lath, form and support all in one package—ready for use."

• **Owner:** "Our shopping centers feature fireproof, noiseless, vibration proof and vermin proof construction and we stress a low maintenance theme throughout. Steeltex fits into our plans."

If your plans call for construction of a shopping center or any other project with poured concrete floors, roofs, plaster walls or ceilings, or Portland cement (Stucco) exteriors, there is a special style of Pittsburgh Steeltex to help you do a better job faster at lower cost.

Write today for your free copy of the new 24-page, illustrated booklet "Pittsburgh Steeltex, Backbone of Concrete, Plaster, Mortar." Or see the Steeltex catalog in Sweet's.

Send for your copy of "Pittsburgh Steeltex—Backbone Of Concrete, Plaster, Mortar."

STEELTEX®

a product of

Pittsburgh Steel Products Company

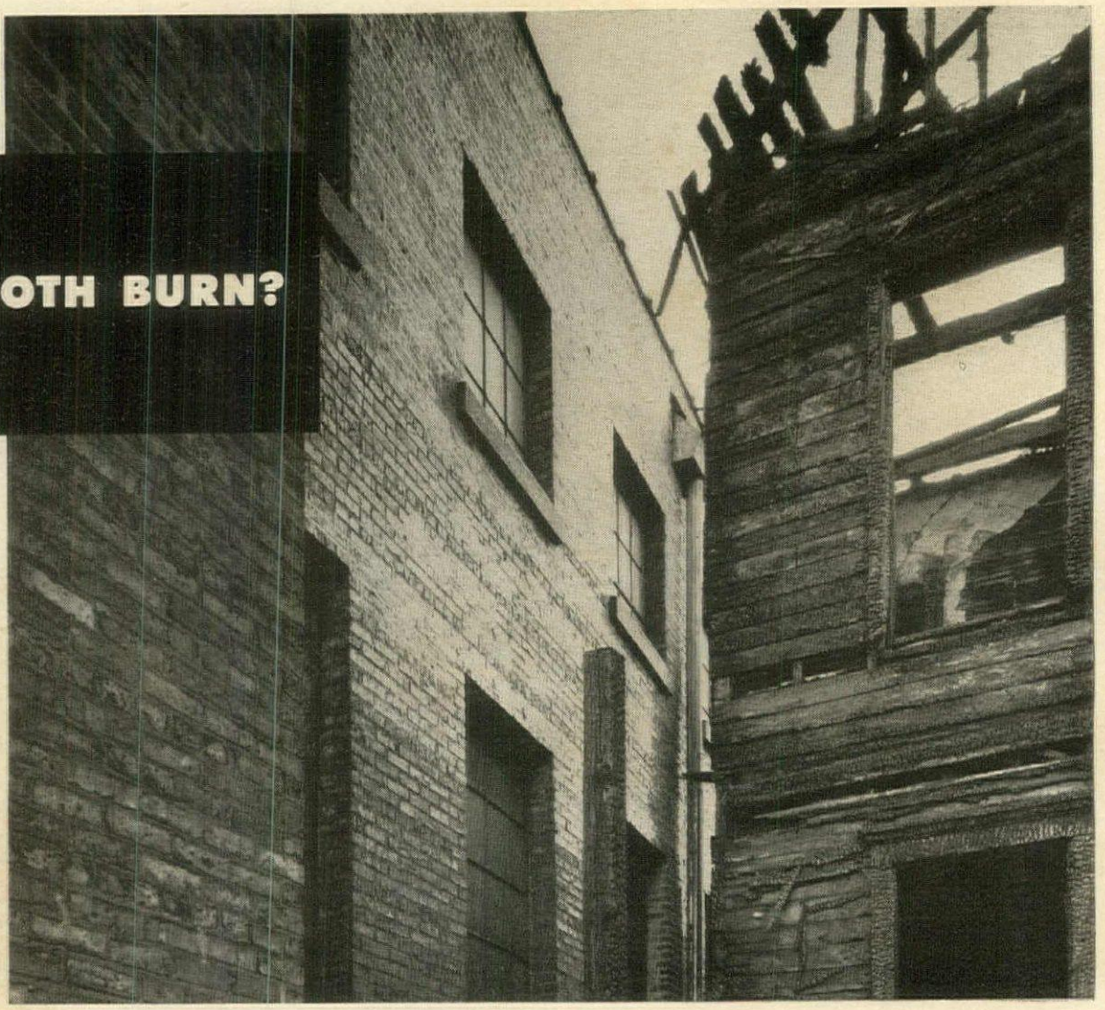
a subsidiary of

Pittsburgh Steel Company

Grant Building • Pittsburgh 30, Pa.

DISTRICT SALES OFFICES: Atlanta • Chicago • Cleveland • Columbus • Dallas • Dayton • Detroit • Houston Los Angeles • New York • Philadelphia • Pittsburgh • San Francisco • Tulsa • Warren, Ohio. PLANTS: Monessen, Pa. • Allenport, Pa. • Akron • Los Angeles • Unionville, Conn. • Warren, Ohio • Worcester, Mass.

WHY DIDN'T BOTH BURN?



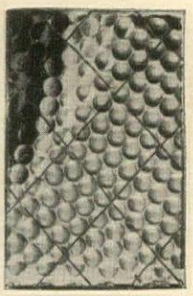
Mississippi Wire Glass Helps Protect Buildings Against Tragic, Costly Fires

When fire utterly gutted this building, it was unable to spread to the neighboring structure because Mississippi Wire glass windows, in metal frames, efficiently prevented windblown sparks and searing heat from reaching the interior. For though cracked by heat or smashed by a blow, wire glass tends to remain in the opening . . . continues to offer utmost protection at minimum cost.

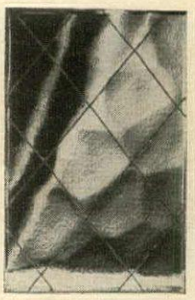
And these same properties enable Mississippi Wire Glass (Approved Fire Retardent No. 32) to help bottle up fires and prevent them from roaring into a costly tragedy like that above.

Mississippi Wire Glass has saved many lives and millions of dollars' worth of property from fiery destruction. It is recommended for installation in windows, skylights, partitions, doors and in all other vulnerable locations where fire or breakage protection with daylighting is desired.

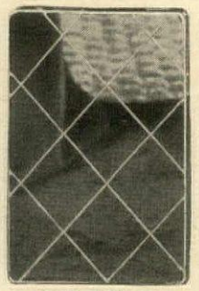
Fence out fire. Specify Mississippi Wire Glass . . . the original wire glass upon which the Underwriter's Standard was based . . . the standard today by which all others are judged. Available in hexagonal or Misco wire mesh in types for clear vision or diffusion, wherever quality glass is sold.



Hammered Misco Wire Glass



Smooth Rough Misco Wire Glass



Polished Misco Wire

Send today for free literature. Address Dept. 6.

see our catalog in S or write for copy

MISSISSIPPI Glass COMPANY

88 ANGELICA ST. NEW YORK • CHICAGO

SAINT LOUIS 7, MO. FULLERTON, CALIFORNIA

WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

A new high in **HIGH VELOCITY**

The photograph above shows main banking floor of the First National Bank in Dallas. Note how straight line All-Air High Velocity units blend perfectly into the architectural design. *See next page for detail.*

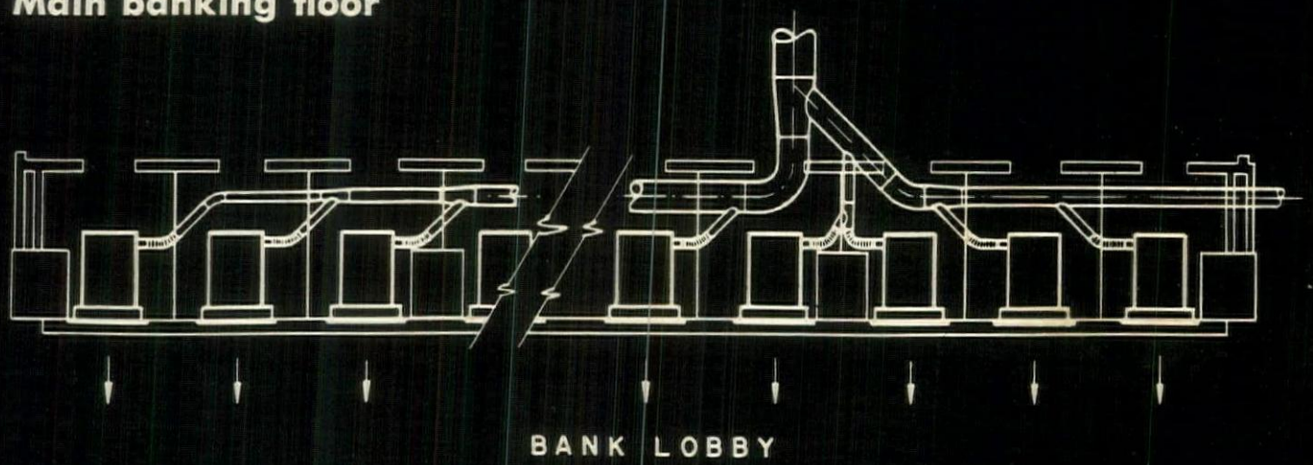
The All-Air High Velocity system also provides draftless comfort throughout the bank as well as in the second floor executive offices (shown at left). *See next page for detail.*

Architect: George L. Dahl

Consulting Engineer:
Landauer, Guerrero & Shafer

Contractor:
C. Wallace Plumbing Co.

Main banking floor

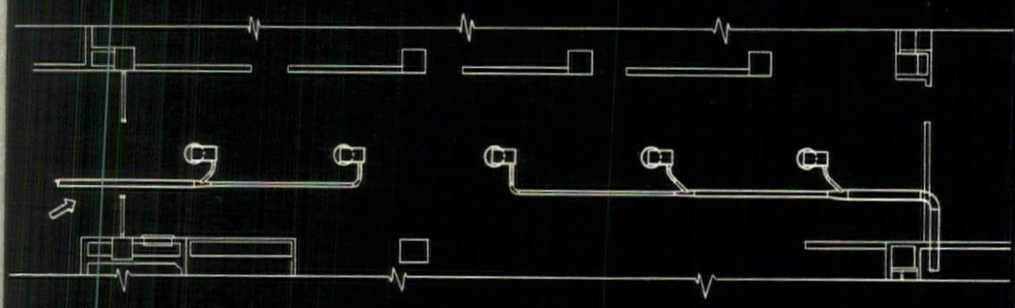


Sketch of photograph on preceding page shows the installation of twenty-four Anemostat 36-inch HPSL-100 High Velocity units, each supplying 200 cfm. A total of 4800 cfm is delivered to the main banking floor.

These pages illustrate the use of the Anemostat All-Air High Velocity distribution system in a modern air-conditioned bank. Anemostat High Velocity units are also being used throughout the country in many other applications such as hospitals, schools, department stores, office buildings and plants. • Here are some of the important architectural and engineering advantages of the Anemostat All-Air High Velocity distribution system. It can be used with smaller than conventional ducts. It can be installed faster and at less cost. It requires no coils, thus eliminates leakage, clogging and odors. Anemostat round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.

For latest data on Anemostat All-Air High Velocity units, write on your business letterhead for new Selection Manual 50.

Second floor executive offices



Diagrammatic ceiling view of offices on preceding page. This shows the installation of five Anemostat HPCM-1-100 High Velocity units, each supplying 125 cfm.

ANEMOSTAT®

DRAFTLESS *Aspirating* **AIR DIFFUSERS**

ANEMOSTAT CORPORATION OF AMERICA

10 East 39th Street, New York 16, N. Y.

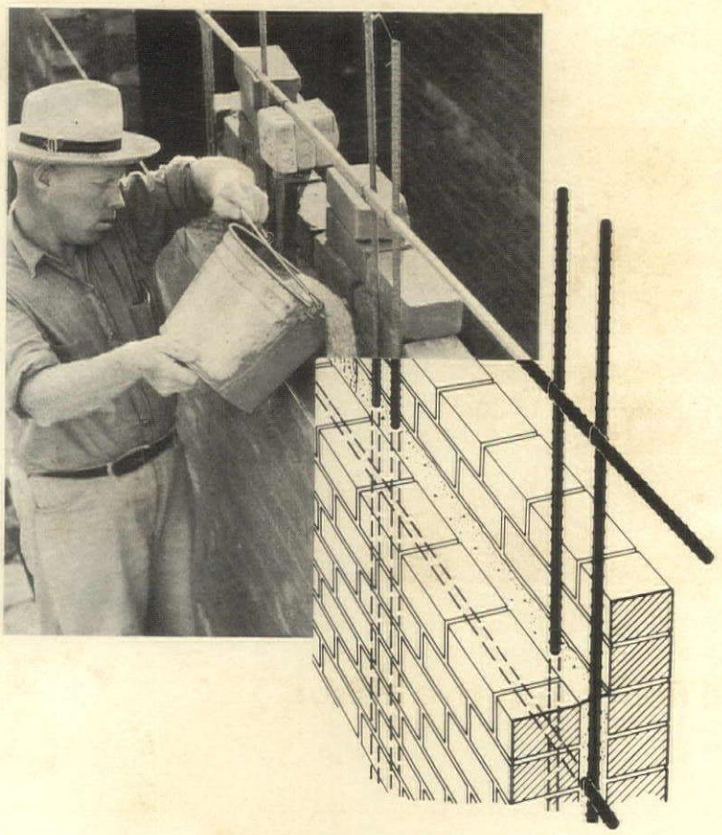
REPRESENTATIVES IN PRINCIPAL CITIES

"No Air Conditioning System Is Better Than Its Air Distribution"

economy...appearance...extra strength...

when all three count, consider **Reinforced Brick Masonry**

RBM



There's no need to sacrifice beauty when you are designing walls for

- **Extra strength with no extra thickness**
- **More lateral force resistance**

Reinforced Brick Masonry can provide brick's full range of color and texture—and yet compete with other reinforced materials on the basis of both cost and structural performance.

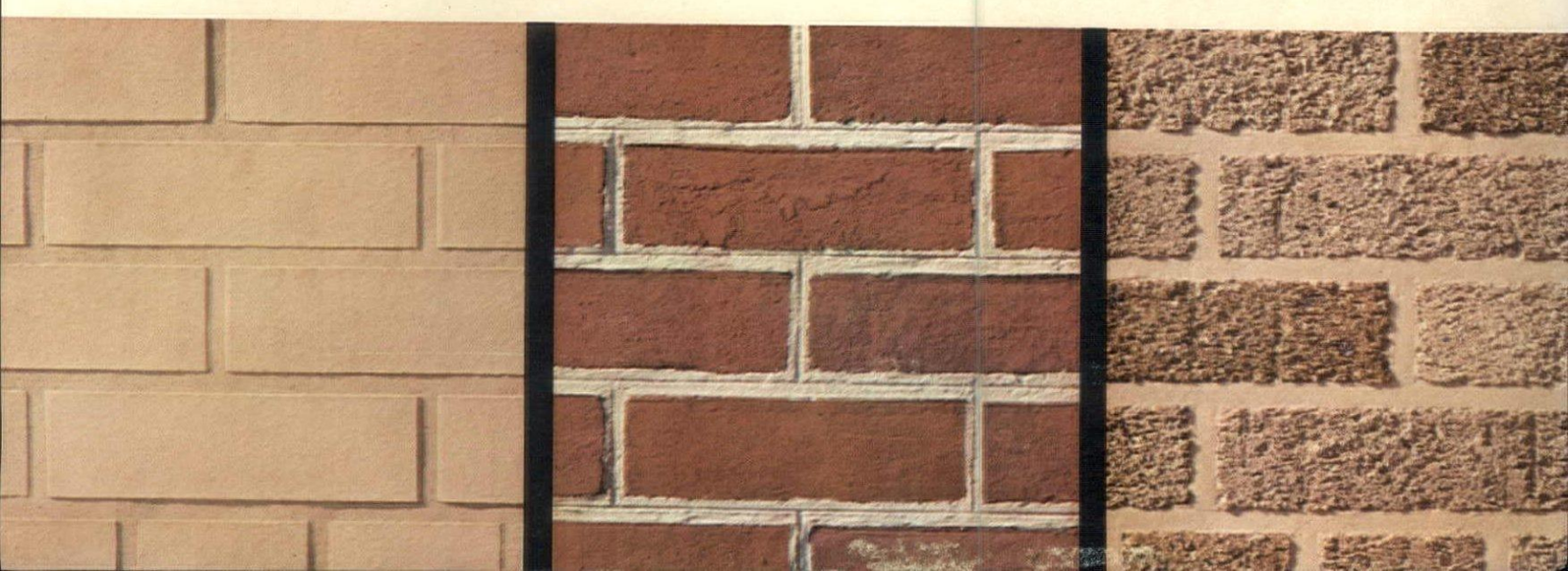
Basic cost and technical data *on RBM will be sent to you free if you write. An authoritative complete RBM design manual is also available at a cost of only $4.75.*

Structural Clay Products Institute

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

▶ The beauty and variety of brick and tile are suggested here by only a few of the hundreds of types available.

SCPI
STRUCTURAL · CLAY · PRODUCTS · INSTITUTE
WASHINGTON, D.C.



FOAMGLAS®

the cellular, stay-dry insulation

Airview of Grace Bleachery, the world's largest . . . recently enlarged by The Springs Cotton Mills at Grace, S.C. *Engineers and Architects:* Robert & Co. Associates, Inc., Atlanta, Ga.; *Roofers:* Ingold Company, Inc., Hickory, N.C. and Arvett & Ledbetter Roofing and Heating Co., Charlotte, N.C.

On Springs Cotton Mills' 16-acre bleachery roof FOAMGLAS insulates effectively because it stays dry

On this 16-acre roof of their Grace Bleachery, The Springs Cotton Mills has found that FOAMGLAS insulates effectively because it can't absorb moisture and lose insulating efficiency.

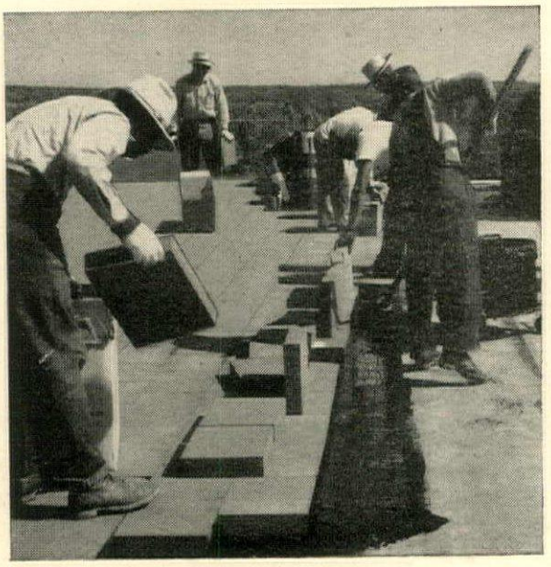
Installed in 1947 on the original bleachery roof, FOAMGLAS has effectively kept down condensation on the roof slab and conserved heat in the winter. Seven years later it was picked again to insulate the roof of a major addition to this bleachery, the largest in the world.

This unique cellular glass insulation has been used extensively by the Springs Mills in other ways . . . on 350° steam lines . . . in cold storage spaces . . . and on 20 additional acres of mill roofs including one in Lancaster, S.C. covering more looms (7,500) than any other roof in the world.

It will pay *you* to get the full story on the use of FOAMGLAS for buildings, cold storage space, piping, or tanks and equipment. Please write today for a sample and literature indicating your specific interest.

Pittsburgh Corning Corporation

Dept. D-95, One Gateway Center
Pittsburgh 22, Pennsylvania
In Canada: 57 Bloor St. W., Toronto, Ontario



Since the introduction of the Benjamin Porcenell Surface, it has become evident that here is a new concept in modern chalkboards. Teachers, principals, custodians, purchasing agents and architects alike want to know the full story behind the Better Visibility, Greater Damage Resistance and many other advancements in better seeing and instruction made possible by Porcenell. This new brochure is published to answer that demand.

Now, read the story behind...

NEW BENJAMIN PORCENELL CHALKBOARDS!

this **FREE Brochure** brings you the FACTS (including laboratory test data) every architect and educator should know about this newest advancement for Better Visual Education.

Send Coupon Today!

Send now for your free copy of this revealing 8-page brochure—all about the lifetime chalkboard, Porcenell. Go behind the scenes to see how Porcenell was developed, after 15 years and ¾ million dollars of research.* Watch the exacting manufacturing methods and latest processes that give Porcenell chalkboards a new high in visibility. Read and see why this remarkable surface has many times the damage resistance of ordinary boards. Study the many ways in which Porcenell makes possible better, more modern learning. See how Porcenell licks the high cost of installation. It's all here—in eight fact-packed pages that will make fascinating reading to everyone who is interested in the Visual Welfare of Young America!

*Porcenell is a patented, vitreous process developed by Vitreco, Inc., a research organization jointly owned by Youngstown Sheet and Tube Co. and Poor and Co.

Benjamin Electric Mfg. Co., Dept. Y.Y.
Des Plaines, Illinois

Please send me a copy of your new brochure "Porcenell Chalkboards . . . for the Visual Welfare of Young America". I understand there is no cost or obligation.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Distributed by: Beckley-Cardy Co., 1900 N. Narragansett, Chicago 39, Ill. and Educational Equipment Inc., 2623 Woodhill Road, Cleveland 4, Ohio.

DATES

American Bankers Assn., annual convention, **Sept. 25-28,** Conrad Hilton Hotel, Chicago.

American Society of Planning Officials, annual planning conference, **Sept. 25-29,** Sheraton-Mt. Royal Hotel, Montreal.

Associated General Contractors of America, mid-year meeting of the board of directors, **Sept. 26-28,** Minneapolis.

American Transit Assn., annual meeting, **Sept. 26-29,** Hotel Statler, Boston.

First trade fair of the atomic industry, sponsored by the Atomic Industrial Forum, Inc., **Sept. 26-30,** Sheraton-Park Hotel, Washington, D.C. Exhibits will include displays of construction and fabrication techniques of atomic power plants and equipment.

US Civil Defense Council, annual conference, **Sept. 29–Oct. 1,** Hotel Statler, Boston, Mass.

American Public Works Assn., Oct. 2-5, Hotel Schroeder, Milwaukee, Wis.

Producers' Council, Inc., fall meeting and chapter presidents' conference, **Oct. 2-5,** Hotel Statler, Detroit.

National Assn. of Assessing Officers, Oct. 16-19, Hotel New Yorker, New York City.

National Association of Housing and Redevelopment Officials, annual meeting, **Oct. 16-20,** Hotel Statler, Cleveland.

National Conference on Standards, sponsored by National Bureau of Standards and American Standards Assn., **Oct. 24-26,** Sheraton-Park Hotel, Washington.

National Motel Show, second annual, **Oct. 24-26,** Morrison Hotel, Chicago.

Institute of Traffic Engineers, annual convention, **Oct. 24-27,** William Penn Hotel, Pittsburgh.

Porcelain Enamel Institute, annual meeting, **Oct. 26-28,** The Greenbrier, White Sulphur Springs, W. Va.

National Paint, Varnish & Lacquer Assn., annual convention, **Oct. 31–Nov. 2,** Shoreham and Sheraton-Park Hotels, Washington.

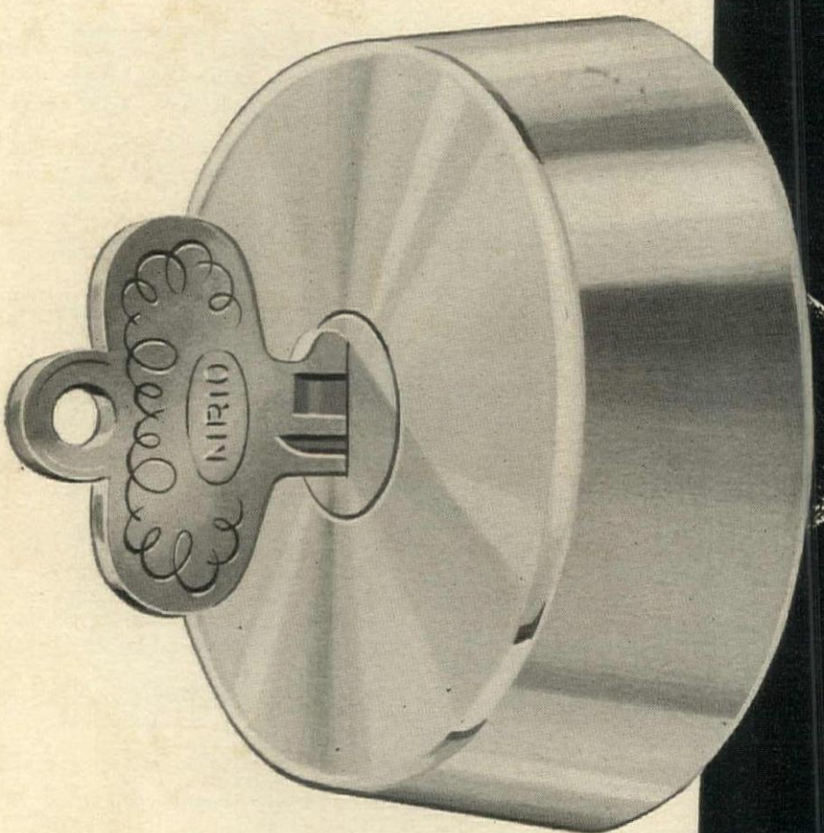
Mortgage Bankers Assn. of America, annual convention, **Oct. 31–Nov. 3,** Statler and Biltmore Hotels, Los Angeles.

AIA district meetings: Northwest, **Sept. 9-11,** Glacier Park, Mont.; Sierra Nevada, **Oct. 6-8,** Santa Barbara, Calif.; Gulf States, **Oct. 6-8,** New Orleans; Central States, **Oct. 13-15,** St. Louis; New York, **Oct. 13-15,** Albany; Texas, **Nov. 2-4,** Houston.

US Savings & Loan League, annual convention, **Nov. 7-11,** Miami Beach.

Porcelain Enamel Design competition closes **Dec. 12.**

4 ways you can look at hardware ... of stainless steel



For any hardware item — from door-pulls to wall ties, escutcheon plates to finish trim — no other metal can match Crucible stainless steel for both beauty and long-term economy. For its use is well justified, not by its beauty and strength alone, but by the care, cleaning and maintenance it saves ... throughout its service life.

Call your Crucible representative for reference information ... or for immediate help in selecting the stainless steel designed for your specific requirements. *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

YOU NEVER POLISH IT
Just once-over-lightly and it's as bright and clean as new ... it can't rust, tarnish or stain.

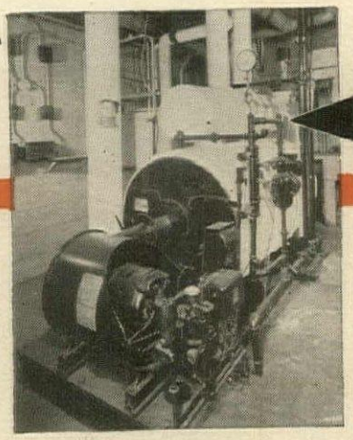
YOU NEVER REPLACE IT
Can't wear out, chip or crack ... in fact, the more it's used, the more attractive it gets. Needs little maintenance.

COST IS IN LINE
with that of any other metal of similar appearance and strength.

BUILT AS YOU WANT IT
Stainless steels are easy to work with— to bend, solder and weld ... to form and machine.

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America



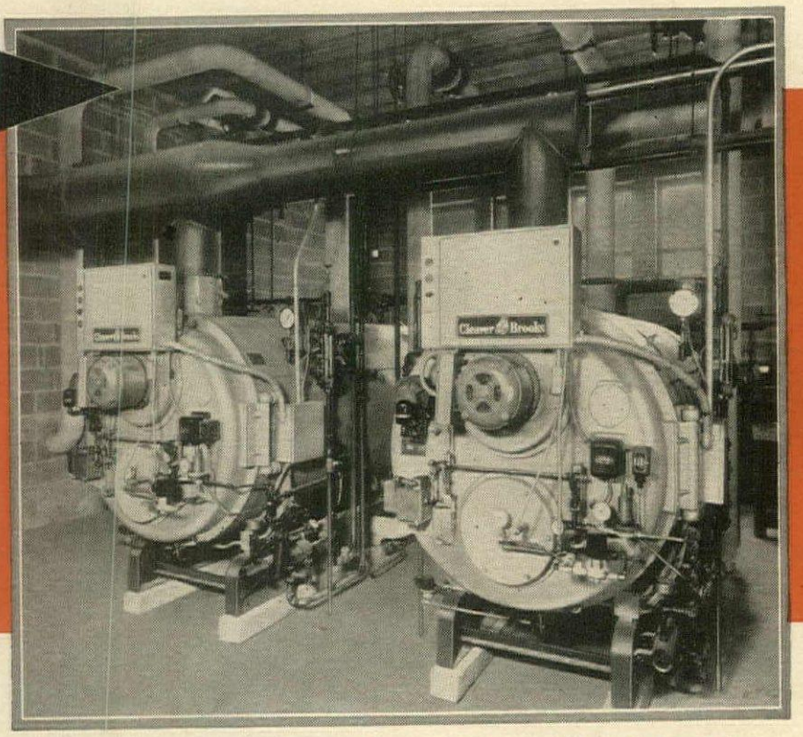
1931

Cleaver-Brooks pioneers big steam capacity in small space

This veteran 20-hp heating boiler — built by Cleaver-Brooks and installed in 1931 — is still in daily use. It is proof of the dependable service you can expect from Cleaver-Brooks' famed four-pass, self-contained boiler construction for any heating or processing need.

1955

Cleaver-Brooks is first again with the ALL NEW "CB" boiler



The "CB" is the most easily maintained package boiler on the market. Removal of only nine bolts (on the largest sizes) opens hinged doors for fast inspection, cleaning or service. This convenience has earned widespread praise of insurance firms.

- All main burner components are completely integrated for automatic operation.
- More boiler capacity in less space through elimination of extended burner assembly platform.
- Guaranteed 80% efficiency — Four pass construction. 5 sq. ft. of heating surface per bhp.
- 11 sizes — 79 models — 15 to 150 hp, (steam or hot water) for oil, gas or combination oil/gas use. Other models available through 600 hp.
- Complete (Boiler-Burner) unit approval by Underwriters Laboratories — conforms to ASME codes. Factory tested before shipment.

BOILER users will quickly appreciate the surprisingly silent operation of the new forced-draft "CB" — *with the fan mounted inside the front hinged door* Design avoids use of thin sheet metal housings and usual "chattering" and vibration.

Even greater combustion efficiency is yours with the new "CB" air-atomizing burner, with integral air compressor. All burner components are confined to the front head and the control panel is at operator eye level.

For complete facts on the boiler that's ahead in design, performance and economy, write: Cleaver-Brooks Company, Dept. K, 377 E. Keefe Ave., Milwaukee 12, Wis., U.S.A. Cable Address: CLEBRO — Milwaukee — All Codes.

Write for copy of latest "CB" Boiler Bulletin covering your size requirements — contains specification data to help you plan.

Cleaver Brooks

Originators of the self-contained boiler

PARENTHESES

(ORGANIC)

In restoring an old Dutch castle at Dusser, toppled by time, the architects came across this handsome piece of structural framing.

It needed no restoration. Note the pipe following the trunk to the right.

(LEANING)

Gordon A. MacEachern recently reported (in the *Journal of the Royal Architectural Institute of Canada*) a conversation he had in Dublin, Ireland, with Michael Scott, architect of the new bus station there (AF, June '55):

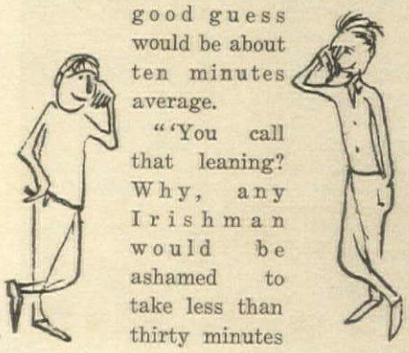
"Now then," said Michael Scott, 'are the Canadians pretty good leaners?'

"'Leaners?' said we.

"'Yes, building leaners,' said he.

"Finally getting the point, we admitted that our people were fair average leaners—

"'How long do they lean at a time?' asked Scott, to which we replied that a good guess would be about ten minutes average.



"'You call that leaning? Why, any Irishman would be ashamed to take less than thirty minutes to an hour against the corner of any building with a crony.'

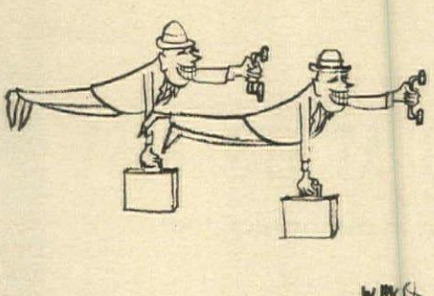
"This exchange took place on our way out of Mr. Scott's latest building, the contemporary and therefore controversial ten-story bus station in the heart of Dublin. On the boards, at the moment, he has the new Abbey Theatre, a building in New York and others.

"To continue—'Now then,' said he, 'let's try the corner of this building for comfort. You take that side, I'll take this one.'

"To our amazement, it made mighty comfortable leaning and even though we were of different statures our shoulders fitted perfectly.

"Fitted into each of the corners were solid blocks of black Belgian marble into each of which had been carved a vertical water drop design, brilliantly polished, of course—decorative they are, but the basic idea, in a location that is close to the docks which means greasy coats and in a land where leaning is a fine art—well, make it easy for them and you keep the sides of the building clean plus allowing the sleeves to keep polishing the marble, in perpetuity."

The tourist center Scott is designing for New York is on 50th St. just off ebullient Madison Ave. What he probably should put on this one is handles—for clutching desperately to reality.



(CHIC)

The other week end out at the shore, with a sigh for a sweet summer morning being misspent, we shaved and drove into the village to pick up the Sunday newspaper, then came back, and settled down to plod through it looking for architectural plums to pull out for you. By then, everyone else in the household was lying out on the sand by the water, prone, passive, blanked out beautifically by the sun's soft weight, dreaming of ice cold beer for lunch. Indoors, behind the stud walls that survived the hurricane last year and may again this year, a sunless lassitude began to descend. It was the weight of newsprint, five or seven pounds of it. Front page: "Discipline Weakens In Nation's Schools"; p. 3, "Guam Executives Curbed"; financial section, "Aerosole Bombs Show Big Spurt"; society, "Miss Horst Wed to an Ex-marine," "Patricia Savage Becomes Bride"; Hollywood, "Cine-Miracle" . . . ; gardens, "The Hybrid Lilacs Need to Be Pruned Now"—all spaced out with such summery general headlines as "Indians Seek Return of Lands in New Mexico," "Parley on Cypress Held Likely" . . . hmmm, was that beer getting cold yet? . . . better check . . . but wait a minute, what was this?

In the next column to "Parley on Cypress Held Likely" were two advertisements for a New York women's store. The top one was a photograph of a well-dressed young lady looking wistfully at an unfolded letter (Her expression said, "What does he *mean*? Did he write just because he thought he *should*?") Underneath was printed, rather callously, "*'Tunic tonic' . . . perk up your wardrobe.*"

But the bottom ad, by all that's holy, showed one of our readers:

There she was, one of the prettiest of the familiar photographers' models, dressed in "*A sliver of skirt, a pert peplum jacket, and a removable white spun rayon dicky to wear or not as you will . . .*" She was holding a copy of the FORUM of last June. (*A sliver of news, a few pert buildings, and a removable subscription blank to use or not as you will.*) A fine sight. Perhaps next summer there'll be champagne on the ice for lunch.

This lady's name is Miss Dolores Hawkins, we found out later in the week; she is

continued on p. 68

the new smithcraft troffer is

RECESSED LIGHTING AT ITS BEST

in clean, trim appearance . . . and in mechanics, too!

Twelve important features of the new Smithcraft Troffer illustrate the completeness of design development that went into this new outstanding recessed lighting. Important among the twelve features for architects and engineers is the fact that they can now create absolutely clean, trim, architectural lighting effects without the disturbing blemishes caused by exposed hinges, locks, fasteners or screws. The ceiling is uncluttered . . . the final lighting effect is crisp, modern and efficient.

The new line of Smithcraft Troffers is truly complete, offering troffers with or without integral trim flange, with the widest choice of shielding media and adaptable to virtually any ceiling construction.

Specify Smithcraft for superior appearance, unsurpassed lighting performance together with ease and economy of installation.

Complete details are offered on the new Smithcraft 12" wide troffers. This new Smithcraft Troffer book also gives complete information on the new Smithcraft line of 2-foot wide troffers — available with many types of shielding media and for many different types of ceiling construction.

1. No visible catches, latches, hinges, bolts or screws.
2. Door frame containing glass, lens or plastic opens or closes by simple pressure upwards with the new exclusive Smithcraft Pressure-Catch. (Patents pending). To remove door-frame simply lift off without tools or loose parts.
3. In louvered units, louvers hinge from either side, close by simple pressure upwards, and are removed without tools or loose parts. (Patent #2,559,640)
4. Architecturally precise modules for exactly 12" openings — perfectly straight, trim, in-line rows, whether mounted individually or in continuous rows.
5. No light leaks.
6. Slimly-designed glass frame for better appearance and better efficiency.
7. Wide selection of shielding media, spot boxes, pattern lighting, etc., for flexibility of design.
8. Troffers are available with integral trim flange for finishing the ceiling opening, if required.
9. Adaptability to today's ceilings is virtually universal. Simple clips adapt troffer to all of today's most common ceilings; simple provision for adaptability to all others. The new Smithcraft Troffer-in-plaster frame method assures perfectly square openings.
10. From start to finish only tool required is a screwdriver.
11. No exact positioning required; maximum simple adjustability at every critical point, with the Smithcraft Yoke-Aligner Hanger (Patent #2,597,875, other patents pending)
12. Minimum number of parts and assembly on the job.

Smithcraft LIGHTING DIVISION, CHELSEA 50, MASS.

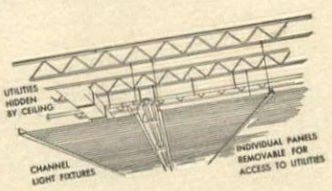
America's finest recessed lighting

Solving noise problems and moisture problems, too . . .

ReynoCoustic

Wherever noise problems exist ReynoCoustic aluminum acoustical system offers an efficient solution in attractive form . . . combined with minimum maintenance and ready access to utilities above the ceiling. Incombustible, high in light reflection and easily cleaned, the ReynoCoustic system also has high thermal insulation value.

In addition, this YWCA natatorium at Charleston, West Virginia, demonstrates another advantage. These rustproof aluminum panels combined with glass fiber blankets, are unaffected by moisture, a common problem in acoustical treatments. The result is ideal for swimming pools and many other applications where high humidity conditions exist.



Typical installation showing method of support for ceiling members and lighting fixtures. This system provides a noise reduction up to .90—uniformly high at all frequencies.

A complete installation service is available. For name of nearest franchised acoustical applicator, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. For complete literature write to Reynolds Metals Company, Building Products Division, 2020 South Ninth Street, Louisville 1, Kentucky.

REYNOLDS ALUMINUM
BUILDING PRODUCTS

Thalhimers Department Store, Richmond, Virginia

Architects:
Copeland, Novak & Associates, New York, N.Y.

Engineers and Builders:
The Austin Company, New York, N.Y.

Architectural Metal Fabricator-Erectors:
The Keller Aluminum Corporation, Philadelphia, Pa.

REYNOLDS ALUMINUM SERVICE TO ARCHITECTS

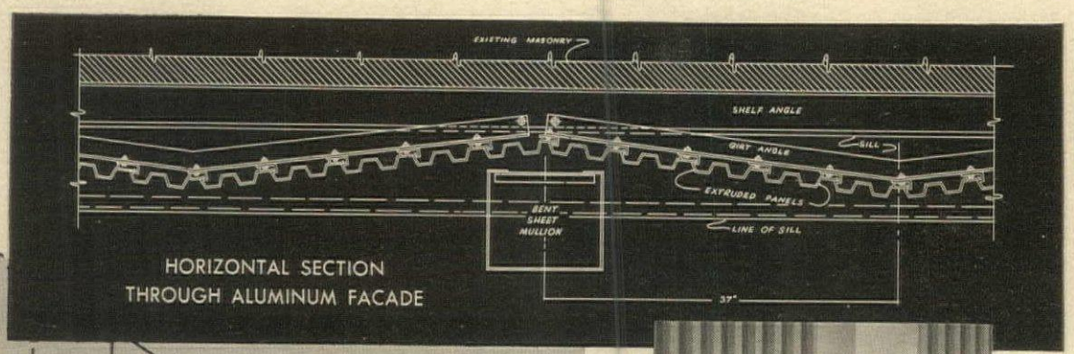
Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, standard mill product applications and commercially fabricated aluminum building products. They can help coordinate varied aluminum needs for procurement efficiency and economy. Address inquiries to Architect Service, **Reynolds Metals Company,** Louisville 1, Ky.

REYNOLDS

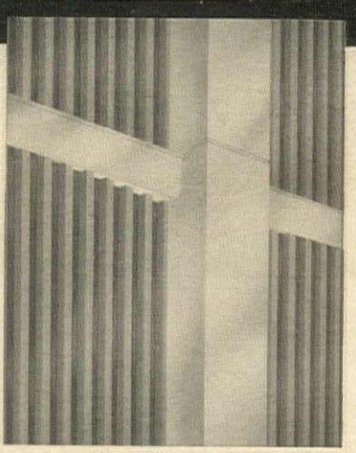
The transformation of Thalhimers is the first department store application of this interesting modernization method—distinguished by unusual architectural treatment in its extruded aluminum spandrels anodized grey. *

The principle is to enclose a group of buildings, both new and old, within a complete new shell—remodeling and air-conditioning the original interior.

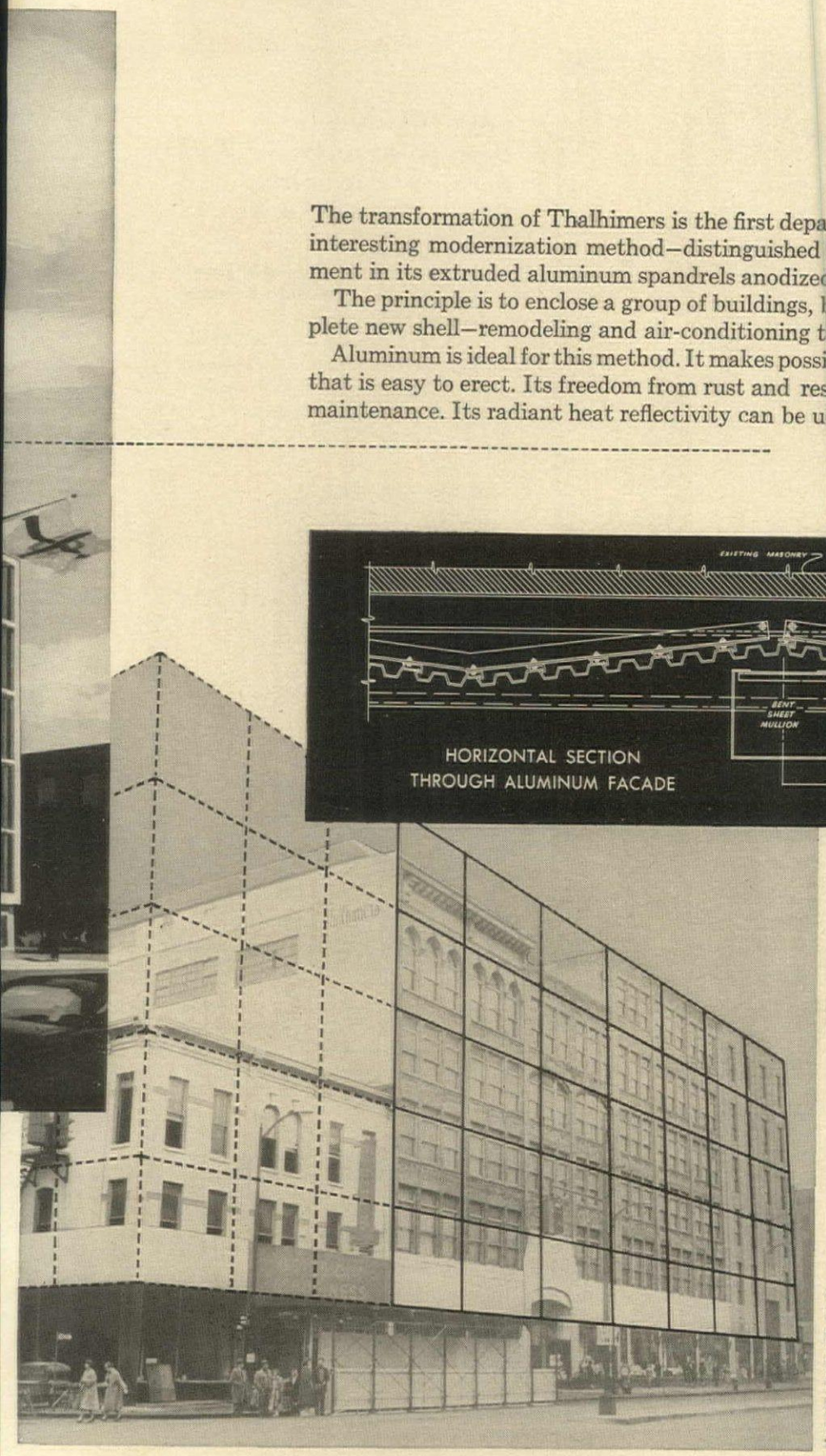
Aluminum is ideal for this method. It makes possible a light, strong exterior shell that is easy to erect. Its freedom from rust and resistance to corrosion minimize maintenance. Its radiant heat reflectivity can be utilized to add insulation value.



HORIZONTAL SECTION
THROUGH ALUMINUM FACADE



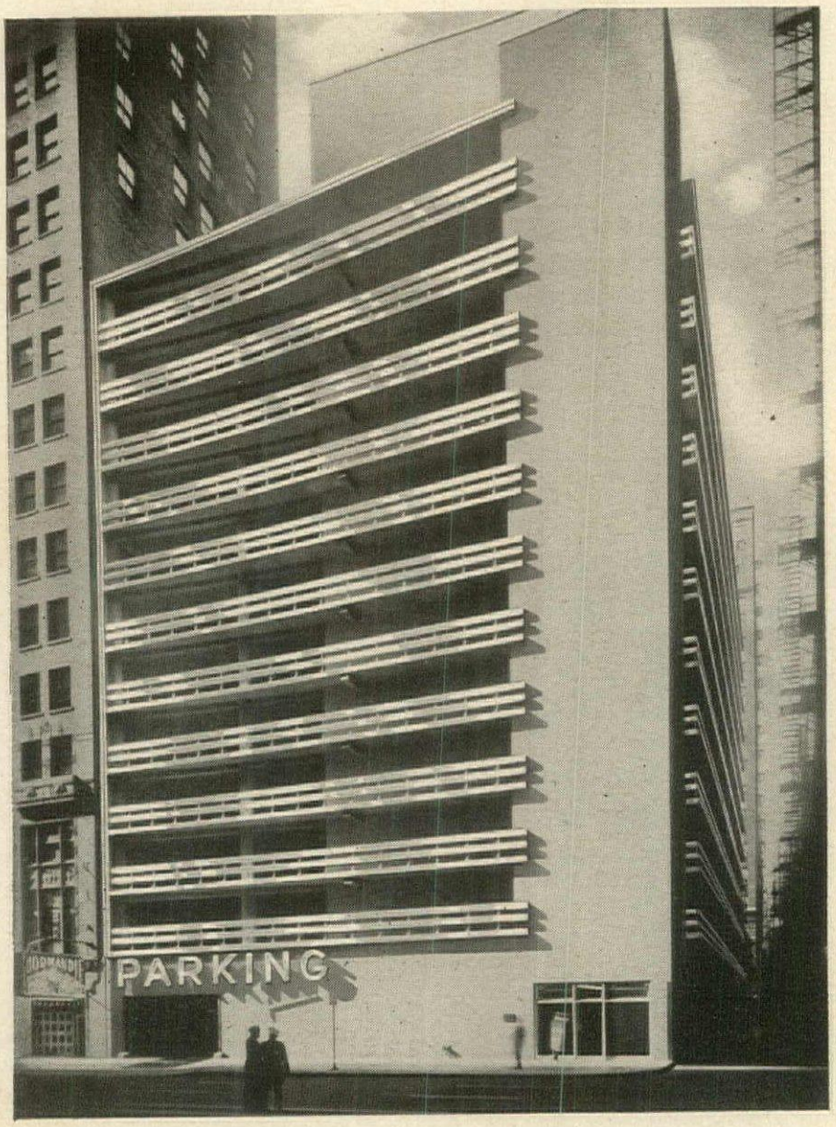
DETAIL OF SPANDREL,
MULLION AND PILASTER



Overlaid lines show how the Thalhimers buildings will be enclosed by an all-aluminum shell — all Reynolds Aluminum except for ground floor display windows. Spandrel panels are extruded aluminum, anodized grey. Horizontal mullions and pilasters are natural color aluminum formed sheet. Dotted lines indicate how the entire buildings at the left corner will be replaced by a new structure.

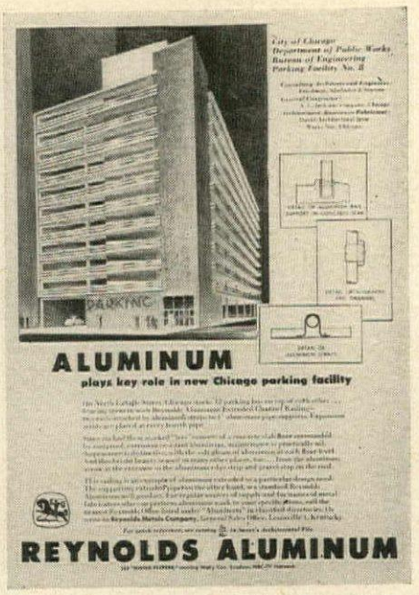
*Reynolds is completing an expansion program which will provide the largest aluminum anodizing facilities in the world.

ALUMINUM



City of Chicago
Department of Public Works
Bureau of Engineering
Parking Facility No. 8

Consulting Architects and Engineers:
Friedman, Alschuler & Sincere
General Contractor:
A. L. Jackson Company, Chicago
Architectural Aluminum Fabricator:
David Architectural Iron Works, Inc., Chicago



The ad above, using an architect's rendering, appeared in the August 5, 1954, issue of Engineering News Record. At the left is the building now completed.

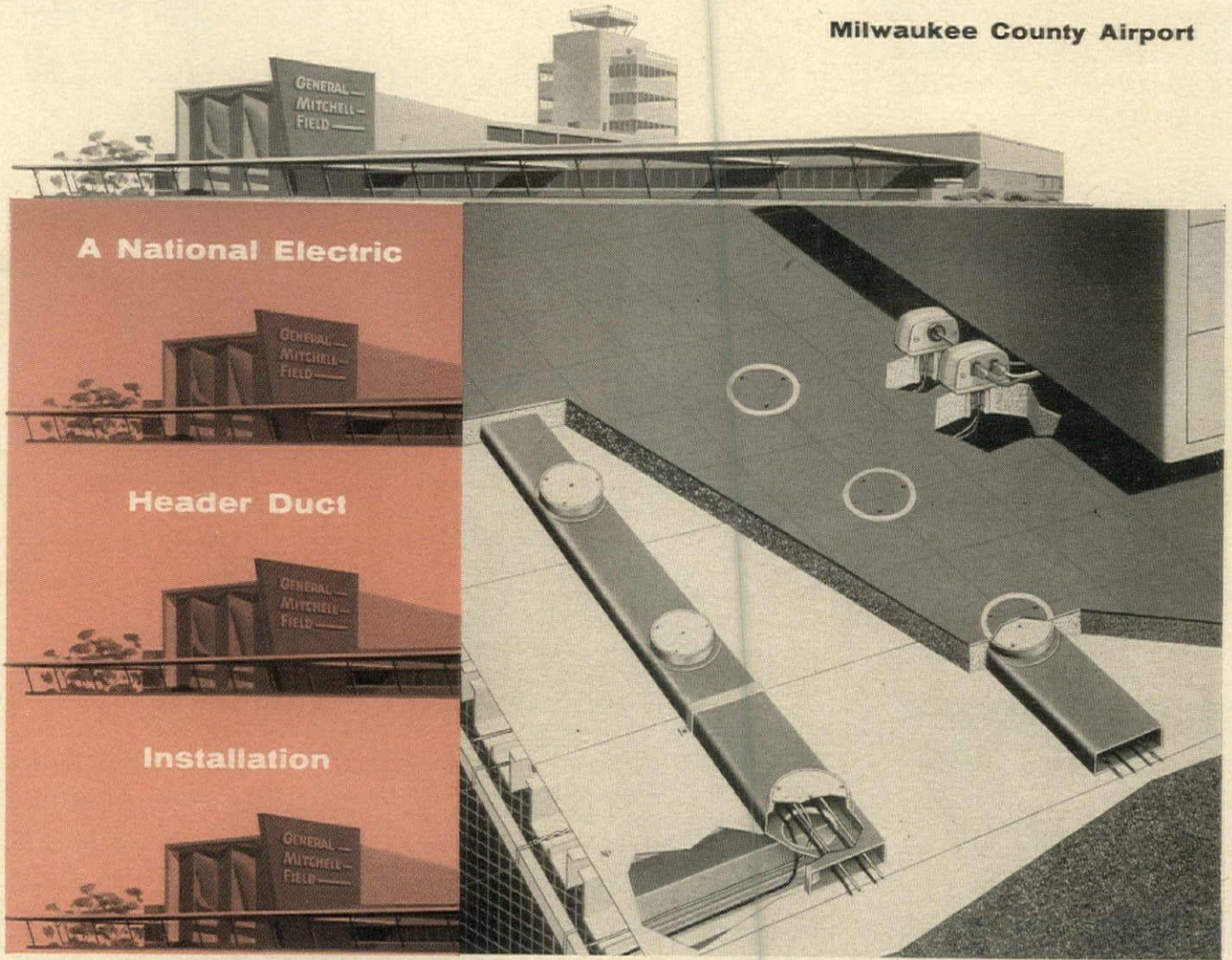
ALUMINUM DOES THE JOB!

In its completed state this building shows aluminum to an even greater advantage than the architect's rendering first published. The Reynolds Aluminum Extruded Channel Railings are more massive in appearance... gleaming softly, along with the aluminum entrance sign and the aluminum edge strip and gravel stop on the roof. You can see that the structure is entirely of concrete and rustproof, corrosion-resistant metal... so maintenance is practically nil. These railings are examples of aluminum extruded to order. The supporting pipe, however, is a standard Reynolds Aluminum mill product. For regular sources of supply and for names of metal fabricators who can perform aluminum work to your specifications, call the nearest Reynolds Office listed under "Aluminum" in classified telephone directories. Or write to **Reynolds Metals Company,** General Sales Office, Louisville 1, Kentucky.

For quick reference, see catalog $\frac{5a}{Re}$ *in Sweet's Architectural File.*

REYNOLDS ALUMINUM

Milwaukee County Airport



Cellular steel floor by Detroit Steel Products Co.

where modern UNDERFLOOR ELECTRICAL DISTRIBUTION heads off high cost alterations

Milwaukee's General Mitchell Field Airport boasts an underfloor electrical distribution system that's planned for growth and change without high cost alteration or disruption of work routine.

The Milwaukee County Architect's Office selected a cellular steel floor—a Fenestra-Nepco Header Duct installation. National Electric Header Duct provides easy access to the Fenestra cellular steel floor. The result is a combined steel raceway system that makes electrical outlets for power, light and communication easily available at *any time* in *any square foot* of floor area.

If you're planning for cellular steel floor construction you can get complete, efficient, electrical distribution with a National Electric Header Duct system. It's the economical way to cut your client's operating costs by providing for the easy relocation of electrical services in the future.

Listed By Underwriters' Laboratories, Inc.

NATIONAL ELECTRIC PRODUCTS CORP. PITTSBURGH, PA. 50TH ANNIVERSARY 1905—1955

National Electric Products

PITTSBURGH, PA.

3 Plants • 10 Warehouses • 36 Sales Offices

PARENTHESES

continued from p. 61

one of the top fashion models, and one of the smartest, too, we were told. Among her accomplishments outside fashion is the proprietorship of a small stable of show and racing horses, which she maintains at Goshen, N.Y., and operates with success. Miss Hawkins is a subscriber to the magazine *The Harness Horse*. We're waiting now to see if her subscription blank for the FORUM comes in. If so, The Austin Co. may soon have some heady new competition.

(INCENTIVE)

The US Junior Chamber of Commerce knows how to treat its executives; this summer the Jaycee president moved into a house built for him by the organization in Tulsa, designed by Architects Leonard Lungren of Lungren, Mauer & Associates, and Joseph M. Wilkinson of Tulsa.

According to the Southern Pine Assn. (whose lumber was used), "The White House is the result of the combined efforts and imaginations of Jaycees throughout the nation, and the final product represents a distinct triumph over the usual limitations imposed by space, weather and the abilities of building materials.

"The US Jaycees are the first of civic organizations to build a White House for their president. . . ."

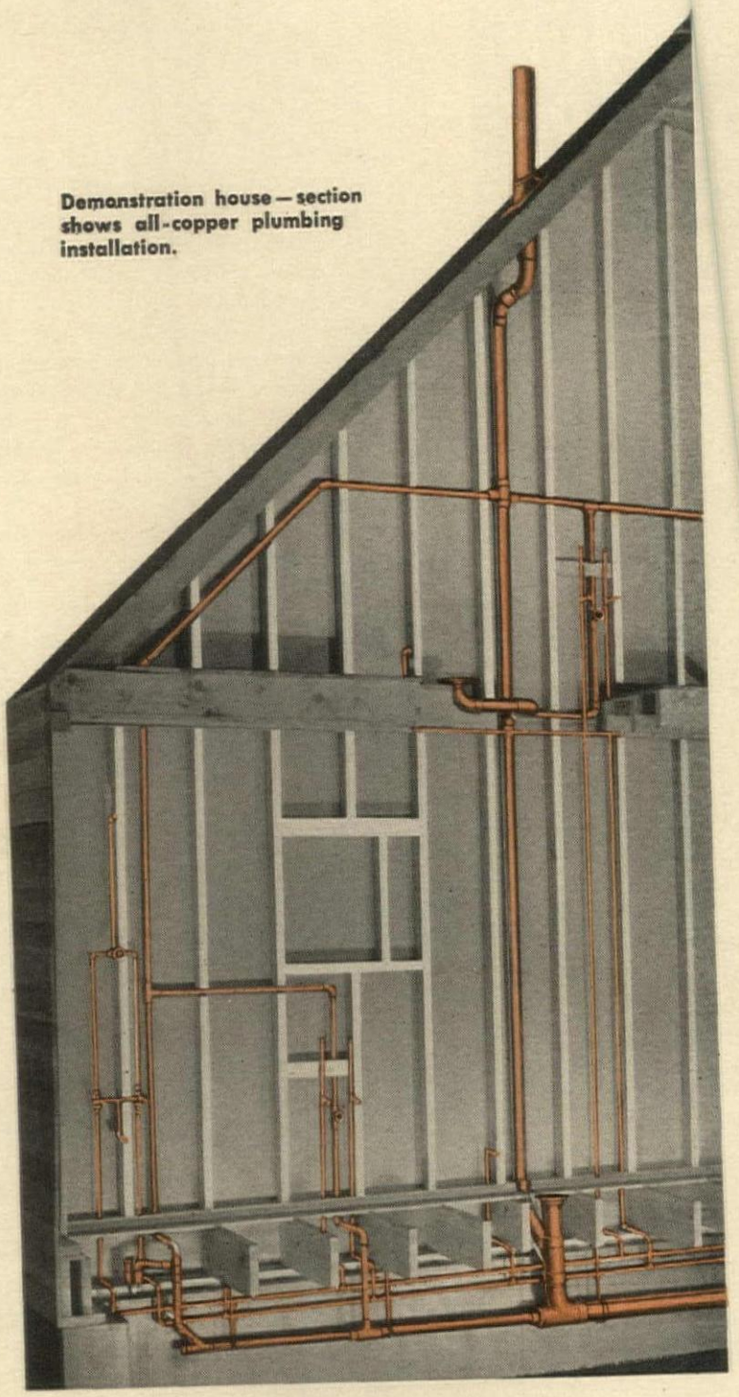
(AH-OOGAH)

Two conflicting attitudes on noise in the environment have been vibrating in New York State this summer. A New York City legislator suggested a legal prohibition on all automobile horn honking inside the city limit, at all hours. But on the other hand a federal judge overruled a Long Island residential community which had passed a local ordinance banning airplane flight lower than 1,000′ over town. (The ordinance was unconstitutional, said the court.)

Lawful or not, these contradictory approaches both have precedent. In Paris, for example, all automobile tooting and honking was banned not long ago by the chief of police. One result: a major *decrease* in accidents. Less *joie* more *vivre*. Up there in the air, there are, of course, plenty of local US ordinances fending off planes; constitutional or not, there are going to be plenty more, with jets coming into commercial use.

The universal beating on our ear drums is an increasingly annoying problem, which can be solved only to a small degree architecturally. The final, lasting legal thought

continued on p. 70



Demonstration house—section shows all-copper plumbing installation.

USE COPPER

for sanitary drainage systems and gain these advantages

1. **Fast, tight connections easily made** in even the hard-to-get-at spots!

2. **Carpentry and space savings.** No costly and space-consuming "build-outs" or extra-wide partitions. A 3″ copper tube stack *with fittings* can be installed within a standard 4″ partition.

3. **Long lengths eliminate many joints.** Anaconda copper tube is furnished in standard 20′ lengths.

4. **Pre-assembly saves time, reduces costs.** Copper tube's light weight permits economical shop fabrication of standard sections for housing developments. Units can be easily transported to job site and installed in place without special lifting equipment.

5. **Roughing-in is faster.** Workmen handle 75% less weight when using copper tube. For example, a 20′ length of 3″ Type DWV copper tube weighs only 34 lb.

6. **Salability of homes increases.** Exposed lines are neat and trim. To prospective home buyers one sign of quality construction is all-copper plumbing.

ANACONDA COPPER TUBES
ASK YOUR PLUMBING CONTRACTOR

ANACONDA®
COPPER TUBES

AnacondA Copper Tubes are available in all standard wall thicknesses—Types K, L, M and the new lighter weight Type DWV, which offers additional savings in job costs.

Within the past few years, many state and local sanitary plumbing codes have been modernized to include approval of the use of copper tube and solder-type fittings. Others are in process of revision. The recently issued American Standard National Plumbing Code (ASA A40.8-1955), published by The American Society of Mechanical Engineers, lists copper tube as approved material for sanitary drainage systems.

Types M and DWV are recommended for all lines of the sanitary drainage system above ground, and Types K and L for that part of the system buried underground.

5510A

FREE BOOKLET

The American Brass Co., Waterbury 20, Conn.
In Canada: Anaconda American Brass Ltd., New Toronto, Ontario

Here's the information you need on copper tubes and fittings for sanitary drainage systems. For your free copy mail coupon today.

NAME.....

COMPANY.....

STREET.....

CITY.....ZONE....STATE.....

PARENTHESES

continued from p. 68

on it probably has not yet been pronounced. Haven't the authorities ruled that licensed sound trucks may be used in city streets to scream political slogans? Haven't the authorities ruled, on the other hand, that a captive audience of bus riders cannot be subjected to audible advertising? Is there a middle legal ground? (Probably not, for a policeman told us just yesterday that you can legally honk your car horn in New York today only if you're in danger—but who's to deny that taxi drivers live lives of steady danger?)

Our ears alternately are sacred, or just something to wash every morning.

(RUSTLING)

In New York the past continues to go out to sea. Take old Greeley Square as an example. During some sort of retailing convention a few months back, the city obliged the visiting supersalesmen by changing its name to Brand Names Square for a few days.

BRANDING GREELEY SQUARE: Launching Brand Names Week, Greeley Square's name is changed to Brand Names Square by, left to right, Joseph L. Eckhouse, executive head of Gimbels; Harry E. Abt, president of Brand Names Foundation, and Richard Blum, executive head of Saks 34th St. With this ceremony today 119 winners of nationwide Brand Name Retailer-of-the-Year competition began 3-day program which ends Wednesday with Brand Names Day awards at the Waldorf. Photo by Miller.

Hit-Run Driver Hurts

In the Old West, this tampering with an already established brand might be penalized by severe rope burns around the neck.

continued on p. 74

HERE'S HOW Q-FLOOR WIRING WORKS

1. Floor outlet for electrical service placed exactly where desired.
2. Junction unit where wires make a turn from the header into the floor cell.
3. Standard header duct.
4. Floor covering adapter.

Miss Foster connects...wherever she goes!

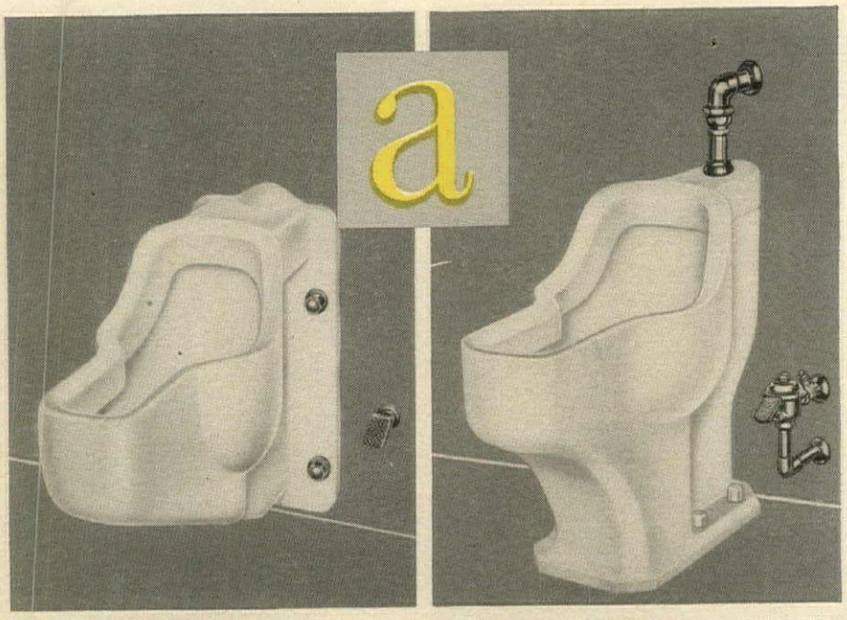
Every square foot of floor space is available for electrical outlets when you plan and build with the General Electric Q-Floor wiring system. G-E Q-Floor wiring is designed for installation in cellular steel subflooring and converts every cell into a raceway or conduit for present and future circuit requirements. There is no costly alteration, no litter, no tie-up of space no matter how often or how much your electrical requirements change.

This system provides complete electrical availability for typewriters, dictating machines, calculators, telephones, intercoms, lighting, postal machines, and other electrically operated equipment. It provides for maximum utilization of floor space both for your own use and for rental to others. G-E Q-Floor wiring is doing this in such outstanding buildings as the new Second National Bank of Houston, Texas, and the San Mateo Community Hospital in California.

For more information on General Electric Q-Floor wiring, call your G-E Construction Materials district office, or write to Section C52-94, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product

GENERAL ELECTRIC

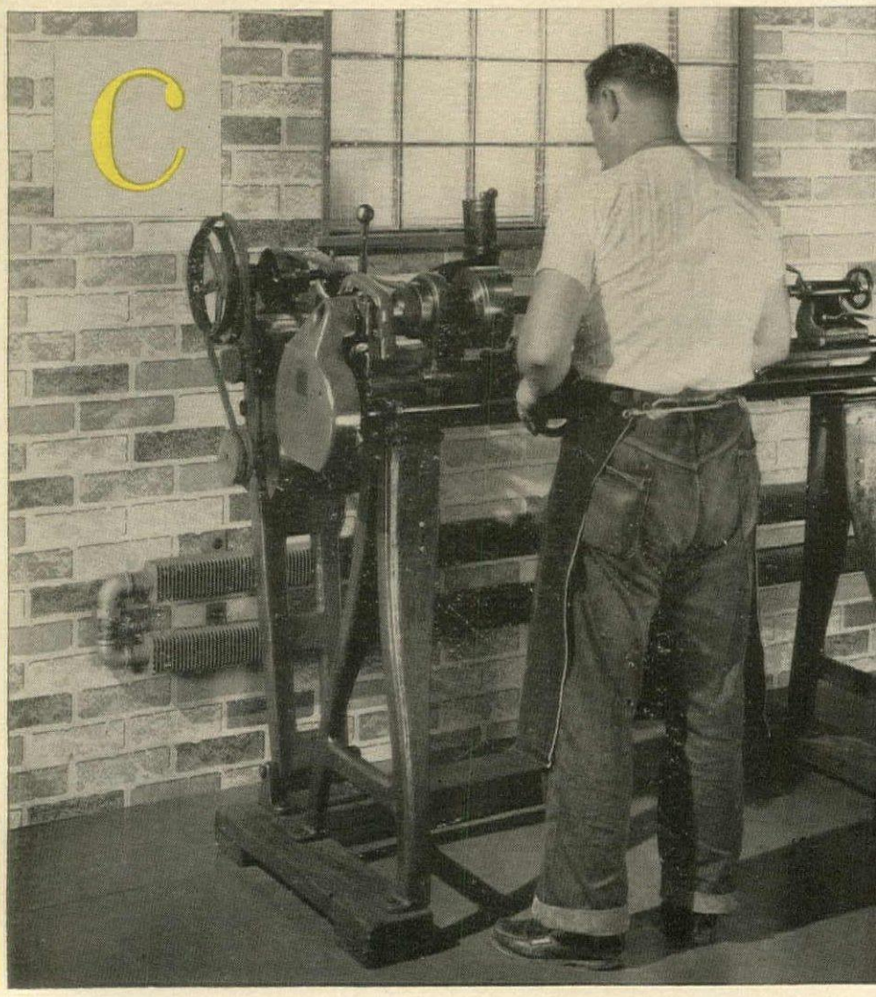


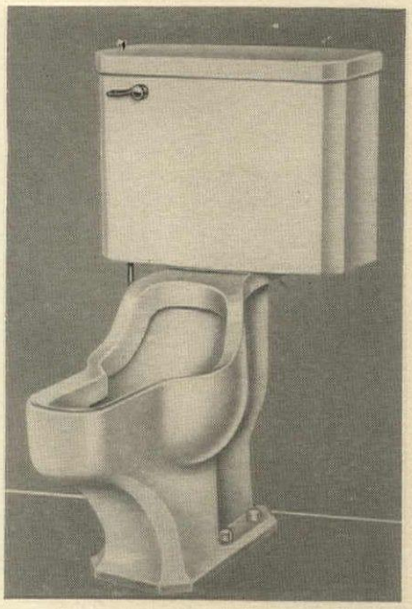
a **New Rest Room Sanitation.** The Sanistand, a popular urinal for women, provides outstanding sanitation and convenience in commercial, industrial and public rest rooms. Designed so that the user need not touch the fixture, it is made of genuine vitreous china for easy cleaning and long life. There's a model for every type of installation . . . wall hung, pedestal type, and a tank model for low water pressure areas.

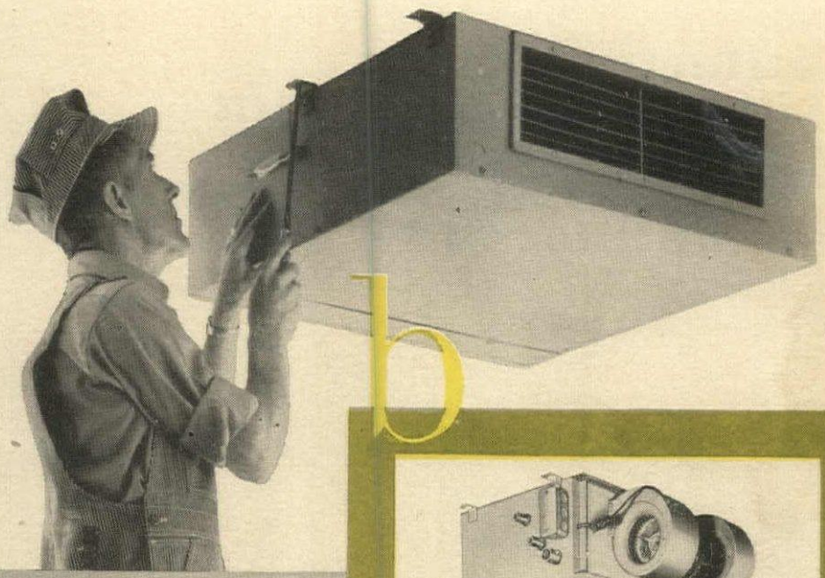
Picture studies in function and

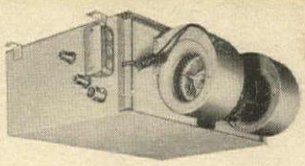
b **Space-saving Heating-Cooling.** These Horizontal Remotaire Heating-Cooling Units can be hung on the ceiling—out of the way—leaving floor and wall space free. They are easy to suspend between rooms, in closets, above false ceilings. These new room conditioners heat, cool, filter, ventilate and circulate the room air for year 'round comfort. Horizontal Remotaire Units come in three models and four sizes to meet every room need. Shown top to bottom: Model H, ideal for use in a hallway; Model HB, especially suitable for closet installation; Model HR, best to use free-hanging from a ceiling.

c **Efficient, Low-Cost Heating.** Temtrim Finned Tube Radiation is easy to install and maintain. Simple wall brackets hold it in place—up high or down low, as shown here—in single or multiple tiers. It can be used with forced hot water or two-pipe steam systems. Temtrim is made of tough pressure steel tubing and heavy steel fins. It's one of the most efficient, economical types of heating ever offered. Lengths of Temtrim can be installed with fins exposed or with any one of three attractive covers — shown top to bottom: a snap-on expanded metal grille, a flat top cover, a sloping top enclosure.

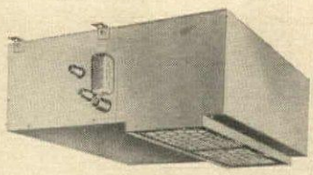


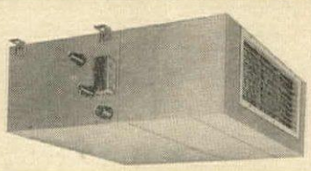


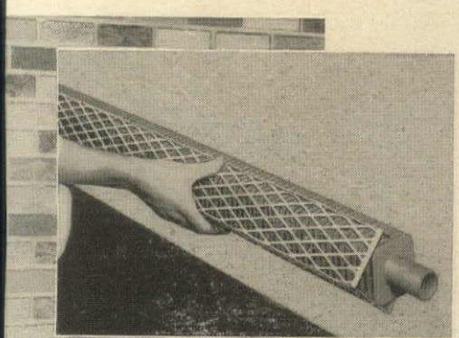


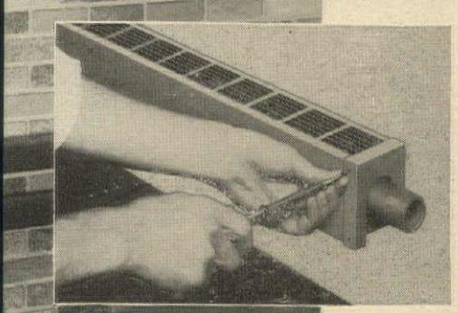


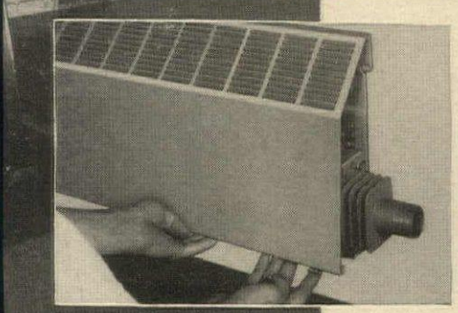
design by American-Standard

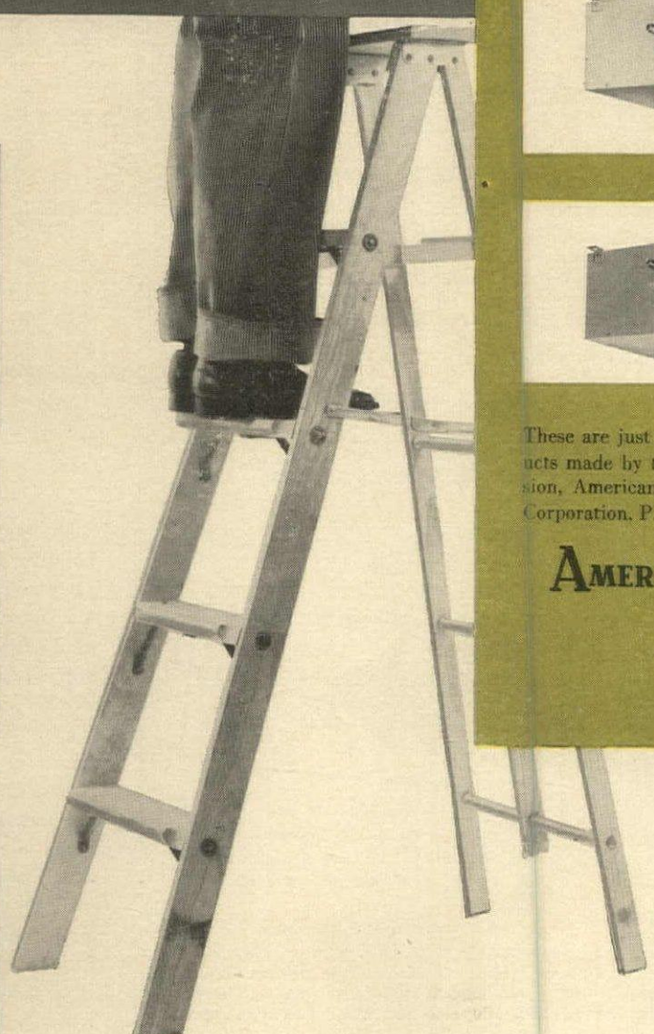












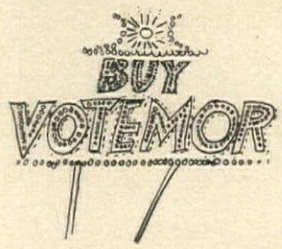
These are just a few of the many quality products made by the Plumbing and Heating Division, American Radiator & Standard Sanitary Corporation. P. O. Box 1226, Pittsburgh 30, Pa.

AMERICAN-Standard

PARENTHESES

continued from p. 70

The good old New York City Hall has recently been undergoing what is called a thorough face-lifting and renovating. When the last of the scaffolding departs, will



some great neon spectacular crouch atop the roof?

Such things are hardly permanent, of course. Common law takes over. Prohibition perishes. Greeley Square returns to being Greeley Square and Hallowed Horace rests again. Take the case of Sixth Avenue in New York. Years ago the late Fiorello LaGuardia changed its name to The Avenue of the Americas, in an attempt to lead it up from blight. There even was formed an *Avenue of the Americas Association* to try to parallel the very effective job the *Fifth Avenue Association* has done in policing its posh blocks.

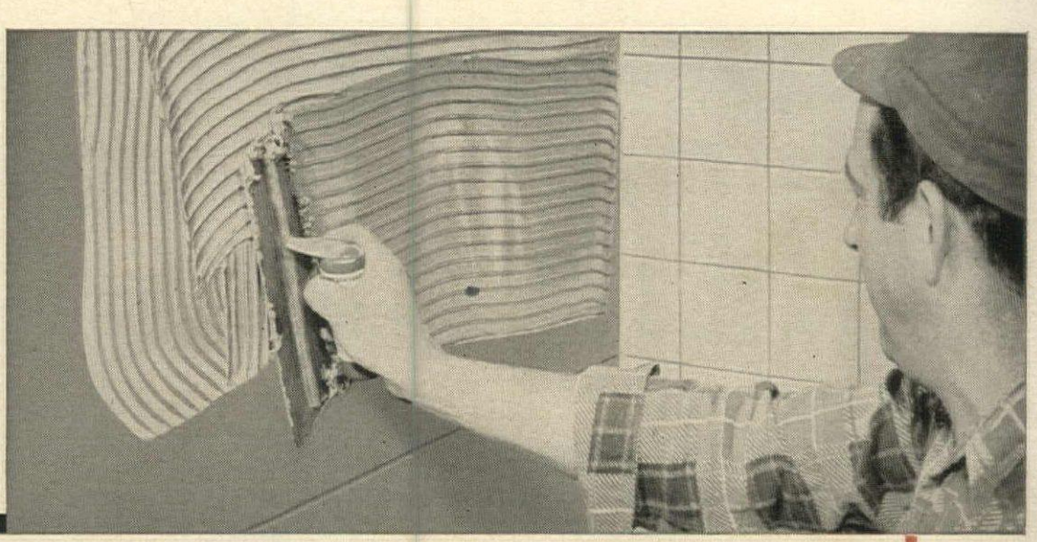
Years after this change of name one of our assistant editors had occasion to telephone the *Avenue of the Americas Association* about a news story in which the Association figured. As she ended the conversation, the Association man on the other end of the wire asked her to send them a tear sheet of the story when it appeared.

"Sure—where shall I send it?" she asked.

"1150 Sixth Avenue," he replied.

(HOPE)

In New York there may actually be more hope for the future than just in habit and common law (pronounced *lore* in New Yorkese). There is a rising grumble about eradicating all the past of New York, and not just among professionals. It is getting so the buildings people really cherish are the carved stone ones, and the cast iron fronts. Perhaps with this in mind, several New York organizations cosponsored a dinner meeting last spring, entitled "How to Build a Better Looking New York," at which planners, historians and real estate men viewed the predictable future of the city's building trends with alarm. In the fall, the same sponsoring groups—the Civic Design Committee, the Architectural League, and the Municipal Art Society—will be bringing the matter to the public in a series of large lectures.—M. McQ.



Now, all it takes to save up to 20% on a better, longer-lasting clay tile installation is a trowel, any plumb surface and new

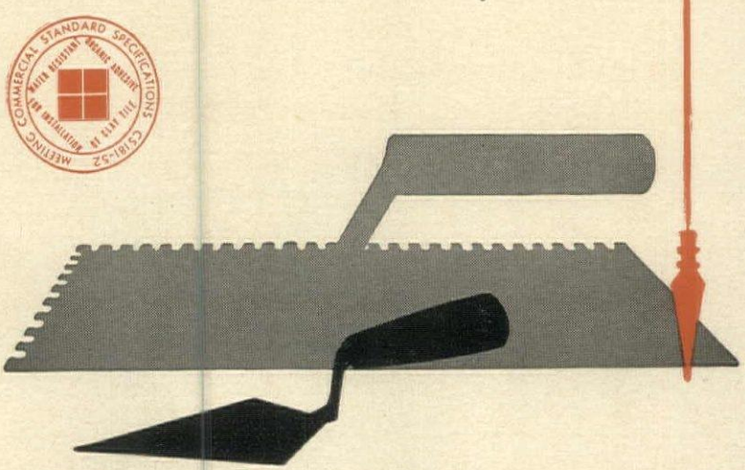
CTA 11

3M's Clay Tile Adhesive

You're a man with modern ideas. Here's a new one for you: CTA 11—the work-saving, time-saving, money-saving Clay Tile Adhesive developed and proved by 3M.

CTA 11 reduces the clay tile installation to barest basics. The contractor trowels it like butter right out of the can on plaster, metal, cement block, dry wall . . . virtually any plumb surface. He sets the tile, grouts in the usual manner . . . and the job's done. And done to stay . . . for CTA 11's grip will resist a pull of over a ton per tile! Better yet, CTA 11 flexes with settling to resist tile cracking for a lifetime. Dries for room occupancy in hours, not days.

Now—the fast, modern, money-saving way—you can offer the luxury of clay tile to every customer . . . commercial and residential, even in lowest-budget homes or remodeling jobs. Specify and use CTA 11. Cut costs just as effectively with CTA 12—3M's companion adhesive for ceramic tile floors. For quick details, write 3M, Dept. 187, 417 Piquette Avenue, Detroit 2, Mich.



MINNESOTA MINING AND MANUFACTURING COMPANY *ADHESIVES AND COATINGS DIVISION*

417 PIQUETTE AVE., DETROIT 2, MICH. • GENERAL SALES OFFICES: ST. PAUL 6, MINN. • EXPORT: 99 PARK AVE., N. Y. 16, N. Y. • CANADA: P. O. BOX 757, LONDON, ONT.

MAKERS OF "SCOTCH" BRAND PRESSURE-SENSITIVE ADHESIVE TAPES • "SCOTCH" BRAND SOUND-RECORDING TAPE • "SCOTCHLITE" BRAND REFLECTIVE SHEETINGS • "3M" ABRASIVE PAPER AND CLOTH • "3M" ADHESIVES AND COATINGS • "3M" ROOFING GRANULES • "3M" CHEMICALS

NEW! HORIZONTAL contour TRANSPORTATION

MOVING PEOPLE HAS ALWAYS

ANOTHER OTIS FIRST! The Otis TRAV-O-LATOR is a modification of the world famous reversible Otis Escalator—another Otis first that was designed to move people, ***not materials!*** It's as easy to ride as an escalator. Its moving surface is an endless platform of metal escalator treads. It is smooth gliding for safe riding; cleated for safe traction; comb toothed for safe interlocking between treads and for safe stepping from moving treads to comb plates at entrance and exit points. In addition, it has the Otis escalator balustrades and handrails. All, long proven safety features.

There's practically no limit to the length, flexibility, or use of the TRAV-O-LATOR. Ask any of our 295 offices across the United States and Canada for details.

OTIS ELEVATOR COMPANY, 260 11th Avenue, New York 1, N. Y.

*Trade Mark

FIRST SAFE ELEVATOR, 1853 • FIRST ESCALATOR, 1900 • FIRST TRAV-O-LATOR, 1955

LETTERS

REBUILDING CITIES DOWNTOWN

This month's Letters department is devoted mainly to comment on FORUM's *Round Table Report on "How to Rebuild Cities Downtown" (June '55). Other letters on this same subject appear in the magazine's main editorial section. Letters on other subjects begin on p. 90.*—ED.

A new kind of transportation

I have only two thoughts to contribute.

The first one concerns the tax policy of the federal government in regard to the depreciation on buildings. There may very likely be some way of placing a premium on the actual use of those funds for physical improvements. This is of course very complicated but it is motivated on my part by the feeling that a great many businesses, particularly in the smaller and older communities, do not think of their physical assets in terms of the esthetic needs of the community, the attractiveness of the market place or anything of the kind.

The second general area of thought that has teased my mind is that perhaps some completely new thinking is needed in terms of providing instruments for transporting people from one point to another. Based on population and auto registrations, we are losing the parking space battle at the rate of about 500 per year. I know that the private automobile owned by every person is used some very small fraction of each day on the average and represents a tremendous capital investment on part of the nation. For instance, if there are 40 million automobiles, the average value of which is $500, we have quite a piece of change tied up in that physical plant. The third interesting factor in this picture is the possible elimination of pilot error, which is the major factor in accidents. I am frank to admit that I have been doing quite a lot of dreaming about the relation of these three problems. I think perhaps somewhere therein there is available to us a better way of moving people.

RICHARD C. GRAM, *manager*
Chamber of Commerce
Ithaca, N.Y.

Welcome, pedestrians

There are three major parts that need attention and separation:

1. The conflict between pedestrian and vehicular movement.

2. The conflict between vehicular parking and the available space.

continued on p. 82

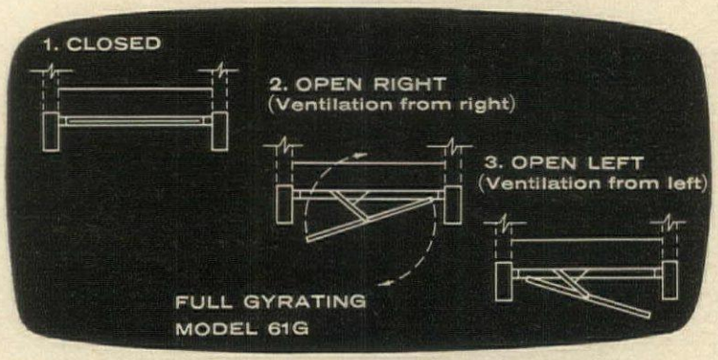
FOR

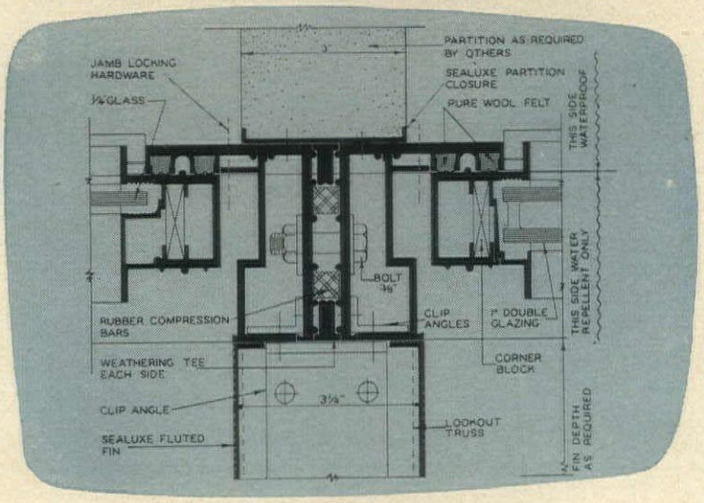
AMERICAN ARCHITECTURE

SPECIFY

Sealuxe GYRATING and SEMI-GYRATING METAL GLASS FACADES

MODELS **61** AND **61G**
SERIES 100





STRUCTURAL heavy type aluminum grid is integral with window and panel, eliminating perimeter frame element of window.

CAULK-FREE system offers protective weatherproofing and avoids seasonal failure of exposed joinery due to faulty materials or workmanship of caulking application.

ERECTION quickly accomplished in floor-high bay unit widths.

- Easily cleaned as all glass areas are cleaned from inside of rooms.
- Opens out for both cleaning and/or directional ventilation.
- Custom fabricated in sizes to suit building conditions. Maximum width of 6′ 0″.
- Flexible location of imposts allow unusual possibilities for fenestration.
- Integral hopper is optional.
- Table glazing is optional.
- Available in aluminum, bronze or stainless steel.

ARCHITECTURAL SERVICE
Universal maintains a department of Design and Engineering with services available to the architect without charge or obligation. Send your preliminary drawings to us at 6710 Denton Drive, Dallas, Texas for study. They will be returned promptly with suggestions.

VERTICAL GRID PATENT PENDING

NATIONWIDE FIELD SERVICE INCLUDING ERECTION ON ALL SEALUXE PRODUCTS

Universal Corporation

MIRACLES IN METAL

6710 DENTON DRIVE DALLAS 19, TEXAS J. P. TRAVIS, President

DALLAS . NEW YORK . CHICAGO . LOS ANGELES . DES MOINES

Carrier absorption refrigeration that cools water with steam

Now with *AUTOMATIC* STOP-and-GO

100 to 700-ton Capacity

NO OTHER REFRIGERATION MACHINE HAS ALL THESE FEATURES:

Cools water with steam. Low-pressure steam from idle or excess boiler capacity or from central or district mains can be used for cooling at great savings.

Quiet operation—no major moving parts. Small circulating pumps are the only moving parts so that the machine operates without vibration and at extremely low sound level.

No damage from overloads. Inherent nature of the absorption machine is such that it cannot be damaged from improper operation or overloading. Sudden or continuous overloads will merely cause the chilled water temperature to rise.

Complete range of load variation. The only refrigeration equipment that operates efficiently from full load down to zero capacity in a completely automatic cycle with perfectly smooth operating curve.

Flexible and economical installation. Installation is simple and economical in any part of a building. Lighter weight, vibrationless operation and compact size permit location anywhere space and steam are available, from roof to basement.

Completely safe. Machine operates under vacuum, with water as the refrigerant and a simple salt as the absorbent. Nothing could be safer.

Operates by TIME CLOCK THERMOSTAT or PUSH BUTTON

Can you imagine starting up a big 700-ton refrigerating machine without turning any valves or throwing any switches? That's exactly what you can do with this new automatic Carrier Absorption Machine.

The simplest of all refrigerating machines is now completely automatic. All the complexities of start-up and shut-down have been made so simple that a tiny push button, a thermostat or a time clock will control the machine's operation.

Only Carrier makes large absorption refrigerating machines. They cool water with steam. They are efficient, quiet and reliable. And now—with automatic STOP and GO—they are the easiest of all machines to operate.

Eleven standard sizes: You choose the size that fits your needs. Capacities range from 100 to 700 tons of cooling.

WRITE FOR FREE 36-PAGE CATALOG

Find out all the advantages of Carrier absorption refrigeration. Colorful, illustrated booklet includes facts, figures and comments from present users. For your copy, call your nearest Carrier office. Or mail the coupon direct to Carrier Corporation, Syracuse, New York.

Carrier

AIR CONDITIONING · REFRIGERATION · INDUSTRIAL HEATING

CARRIER CORPORATION, 335 S. Geddes Street, Syracuse, New York

Please send me your new catalog on Absorption Refrigeration.

Name_____

Firm_____

Street_____

City_____ Zone____ State_____

LETTERS

Continued from p. 78

3. The conflict between the pedestrians, including released riders, and their space destination—whether shopping, business or cultural.

If momentarily these parts are accepted as the gist of the downtown problem, and if we can temporarily put aside the economics of any desirable means to reduce the conflict in and between each phase, then perhaps a greater objectivity can be applied.

A new approach to elevation of some of the traffic arteries may not be forbiddingly costly and may furnish not only a solution to part 1 but may give an optimum solution to parts 2 and 3, that is, it may provide readily accessible parking space and it may place this space close to the destination of the rider and very close to the pedestrian.

The heart of this suggestion is that a direct line of blocks from the periphery of the city, through downtown, and extending to the opposite periphery be razed and an elevated highway be provided, running either through a set of buildings to be constructed or on the roof level of these merchandising and business structures. Existing streets would be bridged.

A continuous no-crossing highway would be available to the heart of the downtown area. Passing through or above buildings, diverting exit and egress ramps could be provided to give access to either roof or sheltered parking. Elevators would serve vertical traffic needs. To the degree desired, connections to the surface streets could be constructed. A super rotunda, or traffic circle, could encompass the civic or central shopping area.

The economics of the entire project would probably be startlingly high but some substantial gain can be envisioned in combining the structural steel of the elevated highway with that of the buildings through or above which this artery would pass.

The old streets, redesigned, would remain and become the pedestrians' shopping paradise!

Pedestrians and vehicles would be separated, parking would be available directly in the structures and the money and merchandise exchange centers would be nearly ideally located with respect to egress and exits.

Of course, there is more to it than I've discussed. Designers, engineers, economists, public servants, money managers, all could contribute to the solution of the separation of the conflicting elements of downtown—in order that we can meet more

continued on p. 86

Attractive **EXTERIORS**

Inviting **INTERIORS**

Versatile Concrete Masonry for stores, shopping centers, offices

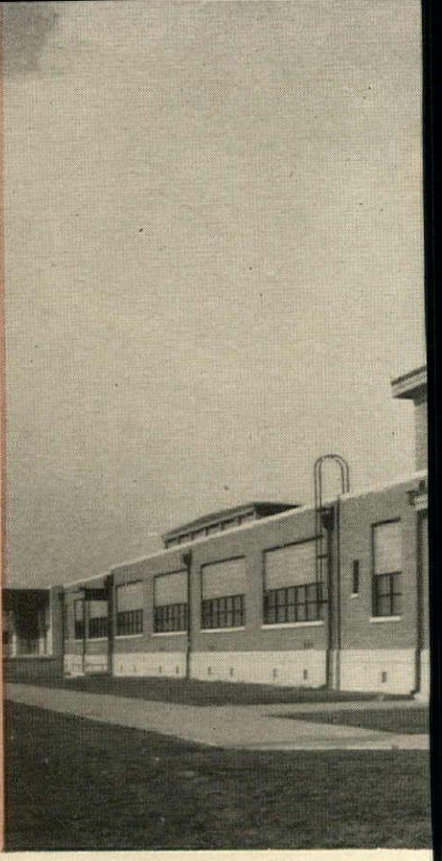
Design Ideas —
Yours for the asking in the award-winning booklet, **Ideas for Wall Patterns with Concrete Masonry.** Ask any NCMA member for your copy.

Specialists in store front design are finding in concrete masonry the variety in texture and pattern and the modern appearance ideally suited to both new and remodeled buildings. Split block and other new sizes and styles are especially popular for front and trim use, with economical 8"x8"x16" units, for other exterior walls.

Concrete masonry offers many advantages for the interior walls, too. Exposed concrete block interior walls provide a dramatic and pleasing textured backdrop for store merchandise, a functional wall design for offices. These same walls **absorb sound,** making both stores and offices quieter . . . at the same time saving on interior finishing costs.

National Concrete Masonry Association
38 South Dearborn St. Chicago 3, Illinois

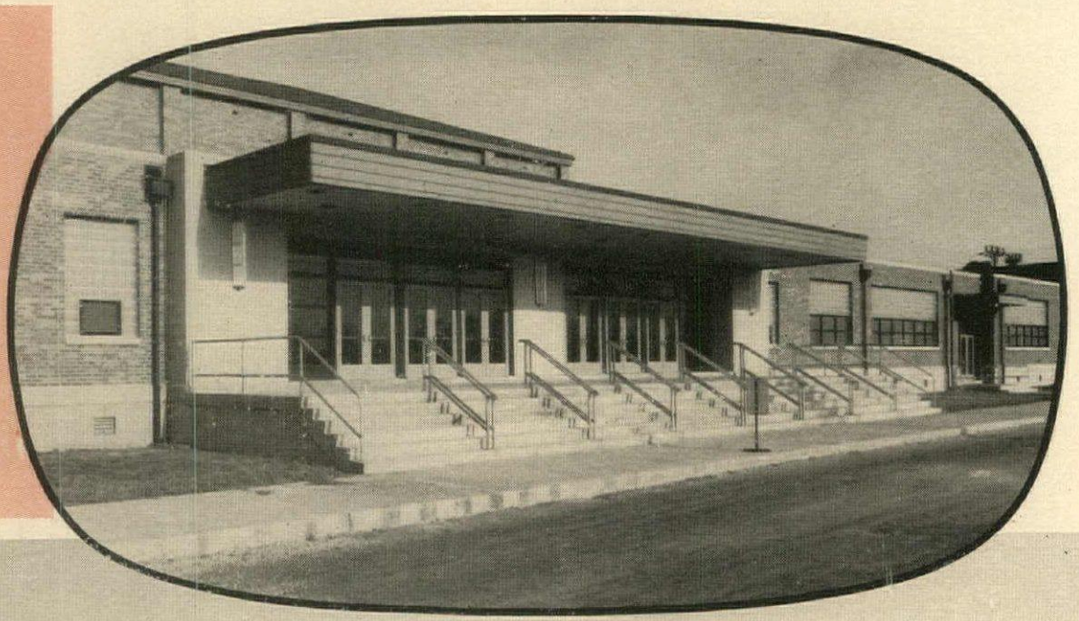
THE MAIN ENTRANCE of Assumption High School. The architects were Paul J. Saunders and Eugene S. Johnson. The engineer was John P. Nix. The general contractor was Wm H. and Nelson Cunliff Co.



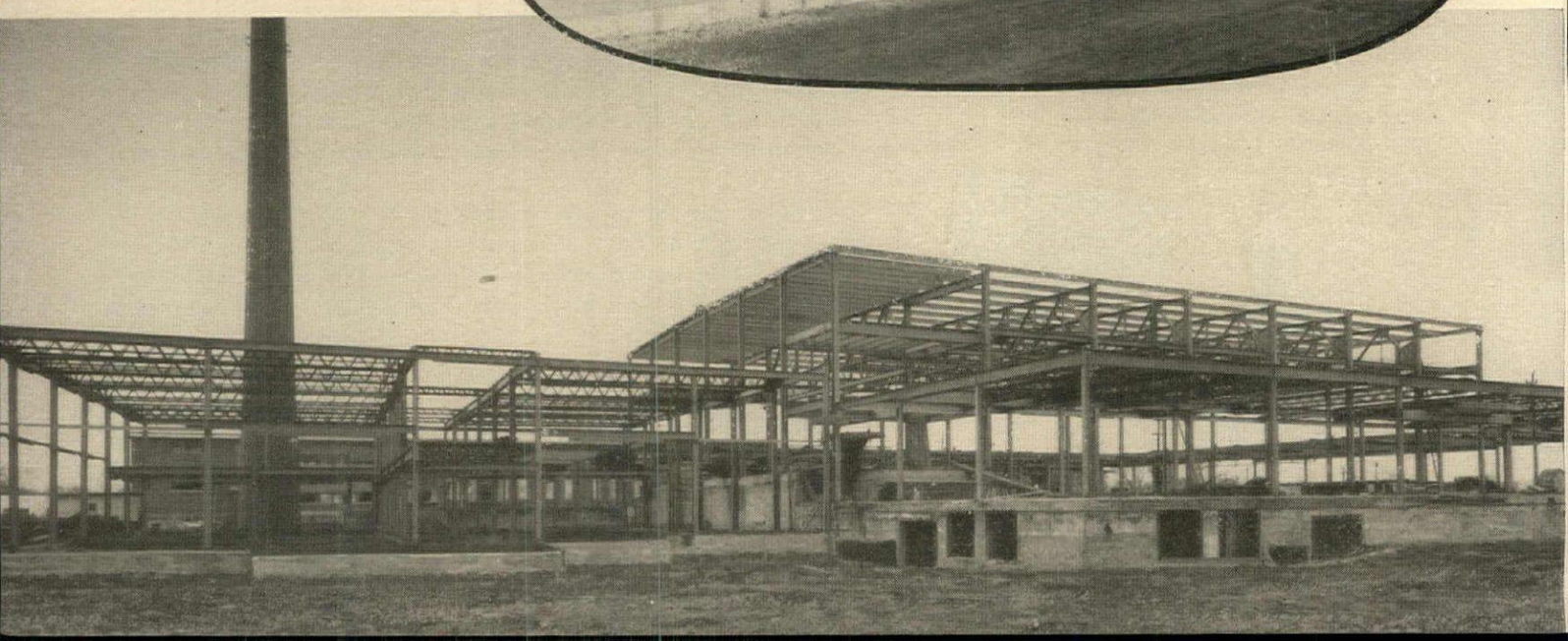
TWO STORY ACADEMIC UNIT, connected to the one story unit to which a second floor may be added in the future.

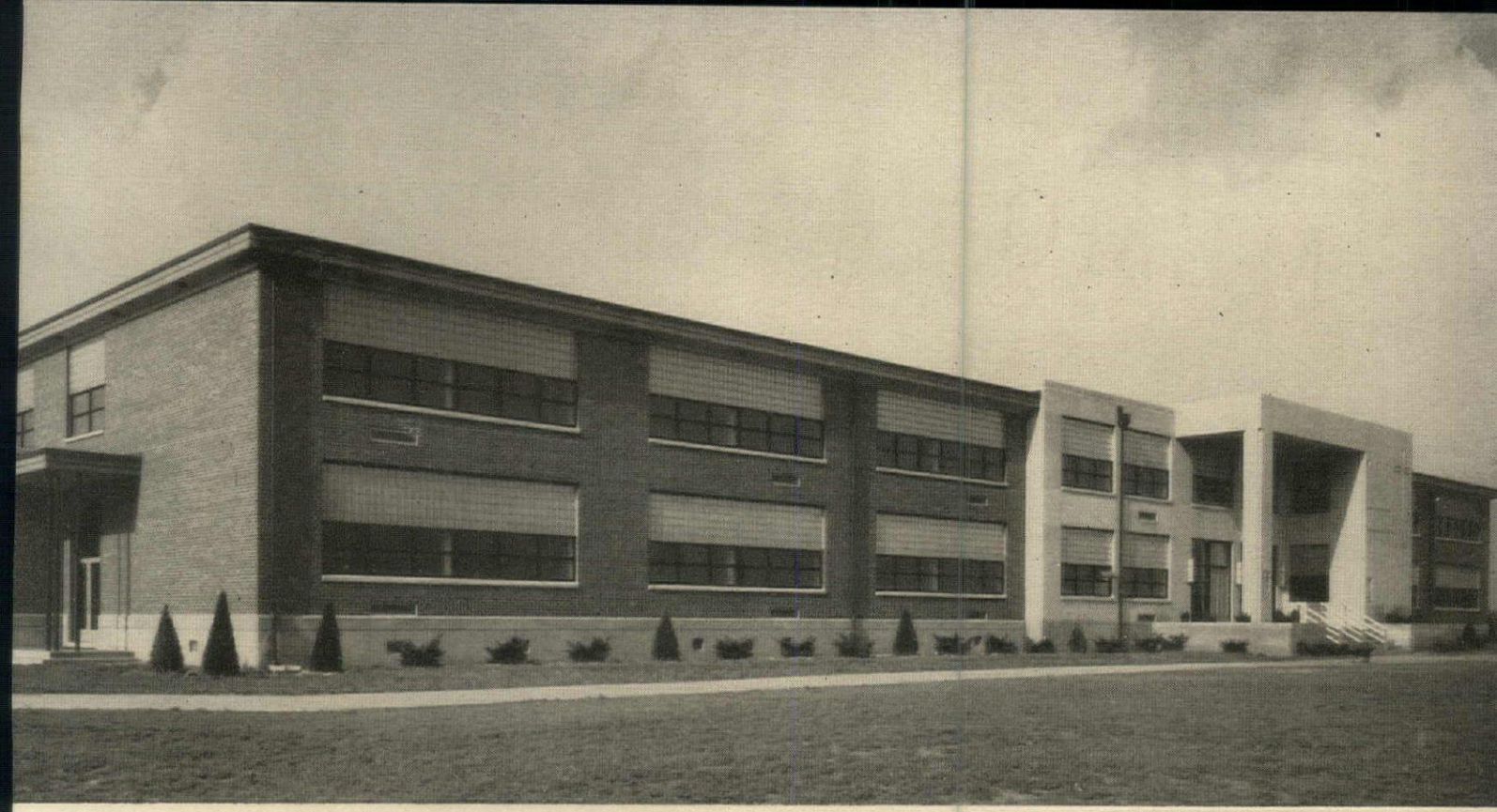
New High School designed with

ENTRANCE to the gymnasium unit. The small doorway to the right leads into a classroom area.



THE STRUCTURAL FRAMEWORK during erection. The more than 348 tons of USS Structural Steel, used in the building, were fabricated by The Mississippi Valley Structural Steel Co., St. Louis, Missouri.





future expansion in mind

The Assumption High School of East St. Louis, Illinois, was built to accommodate 650 students with provisions for expanding horizontally and vertically to provide facilities for an eventual one thousand students.

The school consists of three units: an academic unit containing classrooms; a gymnasium unit including gymnasium, cafeteria, shops, and laboratories; and a Brother's House, independent of the other buildings, which contains living quarters for 24 Brothers. The academic unit has provisions for expansion to the east. In addition, a second floor can be added to the present one story portion. The Gymnasium Unit is designed so that there is sufficient physical education, shop, laboratory, and cafeteria space for additional students if classroom facilities are increased.

Structural Steel was used exclusively in the framing of this new school because of its versatility, its tremendous load bearing capacity, and its economy of use—qualities that make it ideal for *all* types of school construction. Small wonder that today's architects and engineers are specifying Structural Steel frameworks for more and more schools, churches, and small buildings. Just look at these advantages:

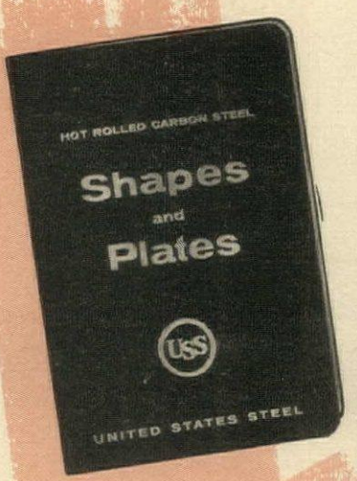
1. Structural Steel is the strongest, yet most economical of load bearing materials.

2. Structural Steel will withstand more abuse than other structural materials, effectively resisting torsion, tension, compression, and shear.

3. Once enclosed in buildings, it lasts indefinitely—requiring no maintenance.

4. Structural Steel may be riveted, bolted or welded . . . can be erected in any weather in which men can work.

5. Steel members are fabricated indoors; therefore, weather can have no effect on the quality of workmanship.



SEND FOR THIS FREE BOOK NOW

United States Steel Corporation
525 William Penn Place, Room 4803
Pittsburgh 30, Pennsylvania

Please send me my free copy of HOT ROLLED CARBON STEEL SHAPES AND PLATES

NAME .....

COMPANY .....

ADDRESS .....

CITY ..... STATE.....

UNITED STATES STEEL CORPORATION, PITTSBURGH • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS STRUCTURAL STEEL

USS TRADE MARK

SEE The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

UNITED STATES STEEL

LETTERS

Continued from p. 82

often, more comfortably in places that we have all always loved—the city market, the downtown shopping and the wonderful downtown fun and recreation that can again be restored.

See you downtown!

G. ANDERSON, *manager*
The Mutual Benefit Life Insurance Co.
Newark, N.J.

P.S. This is an entirely personal comment and does not reflect any thinking of my employer.

It is certainly time to recapture some of these downtown areas for the pedestrian —an idea which FORUM has been pushing for many years.

JOHN C. HARKNESS
The Architects Collaborative
Cambridge, Mass.

Shopping areas, not ribbons

Out of 188 metropolitan areas, almost half the people live in areas of less than a million, and 31% of us live in metropolitan areas of less than a half-million. Large cities always have a greater amount of individuality than our medium-sized cities. But we have problems too.

In most downtown centers, even in a city the size of Grand Rapids, the retail core can have a more fortunate shape, namely an area rather than a long ribbon. Our main street at one time struggled to be a strip 3,200′ long, but a logical shift of the two largest department stores and traffic generators, each one moving in the same direction over 1,000′ from their former location, has reduced the active length to a more sensible 2,000′. This, of course leaves the lower end without a necessary pedestrian traffic generator.

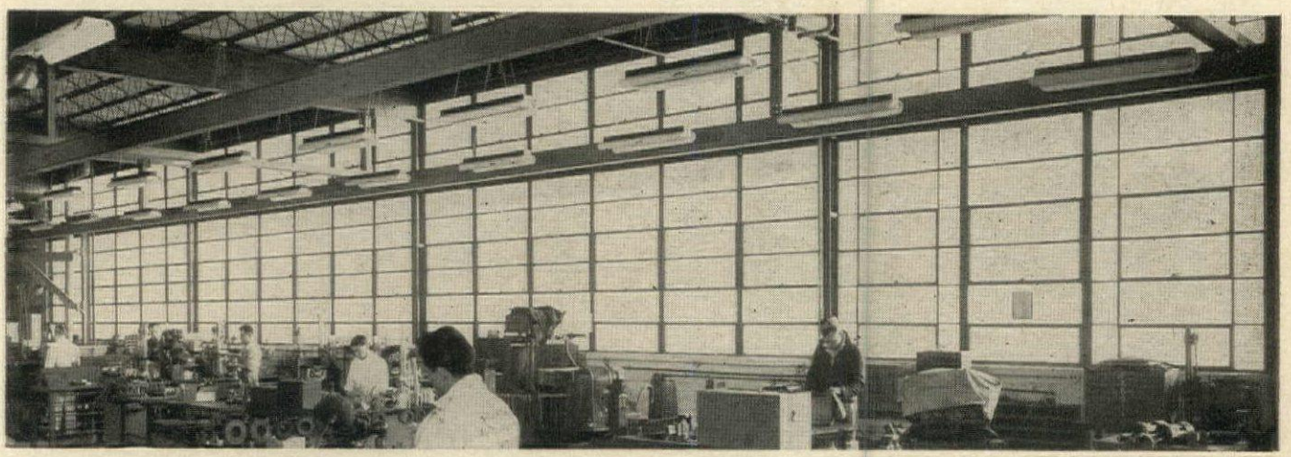
Our trump card, however, is the fact that even in Grand Rapids we have over 2 million sq. ft. of shopping goods presentation. This is eight to ten times that possible in any outlying center in this area designed primarily to serve the free-wheeling suburbanite customer.

The downtown of every city, in addition to housing a within-walking-distance fashion-minded labor force (not possible in the suburbs), has this "size of presentation" advantage. Every comprehensive market study that has been made shows conclusively that it is this great selection of shopping goods that draws the customers regardless of congestion or even lack of parking.

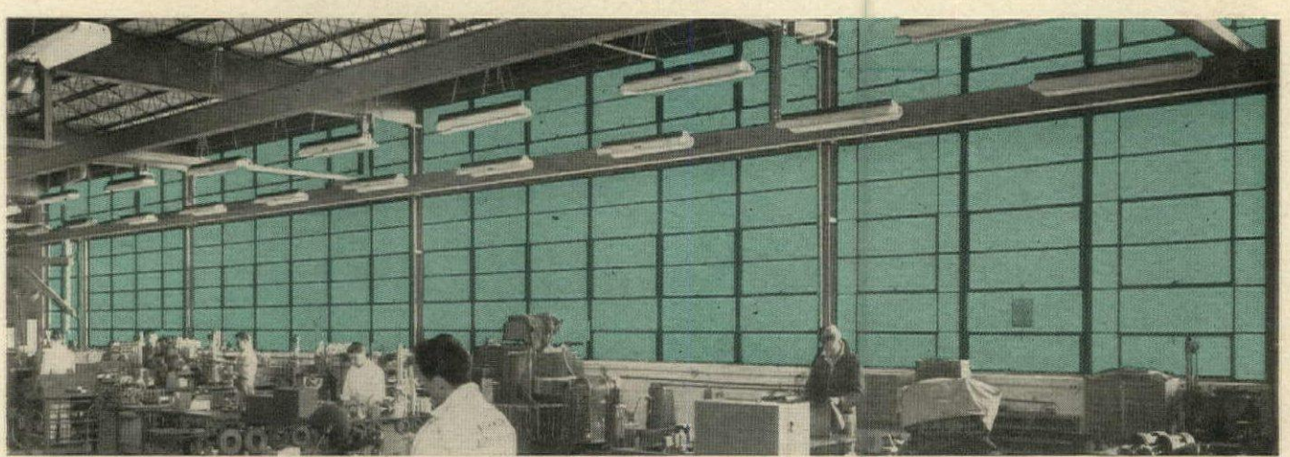
KENNETH C. WELCH, *architect*
Grand Rapids, Mich.

continued on p. 90

Flood a room with daylight . . .



Filtered through Frosted *Aklo*® Glass



. . . finest light for good seeing

Daylight is hard to beat. Eyes were made for it. So, big window walls have become the regular practice wherever good seeing is wanted.

But two drawbacks . . . glare and sun heat . . . sometimes crop up, particularly on south and west walls. And that explains the wide use today of Frosted *Aklo* Glass in so many types of buildings.

It softens and diffuses transmitted daylight, reducing glare of direct sun, bright sky and dazzling reflections. Its subdued blue-green color is restful to the eyes.

Aklo Glass reduces solar heat. It absorbs sun heat as the light passes through, reradiating much of it back outdoors. *Aklo* Glass in ¼" thickness shuts out as much as 44% of the sun's radiant energy. Its blue-green color even makes you feel cooler.

So, there's eye comfort and body comfort in using *Aklo* Glass. It pays off in better workmanship, better employe relations and reduced air-conditioning costs.

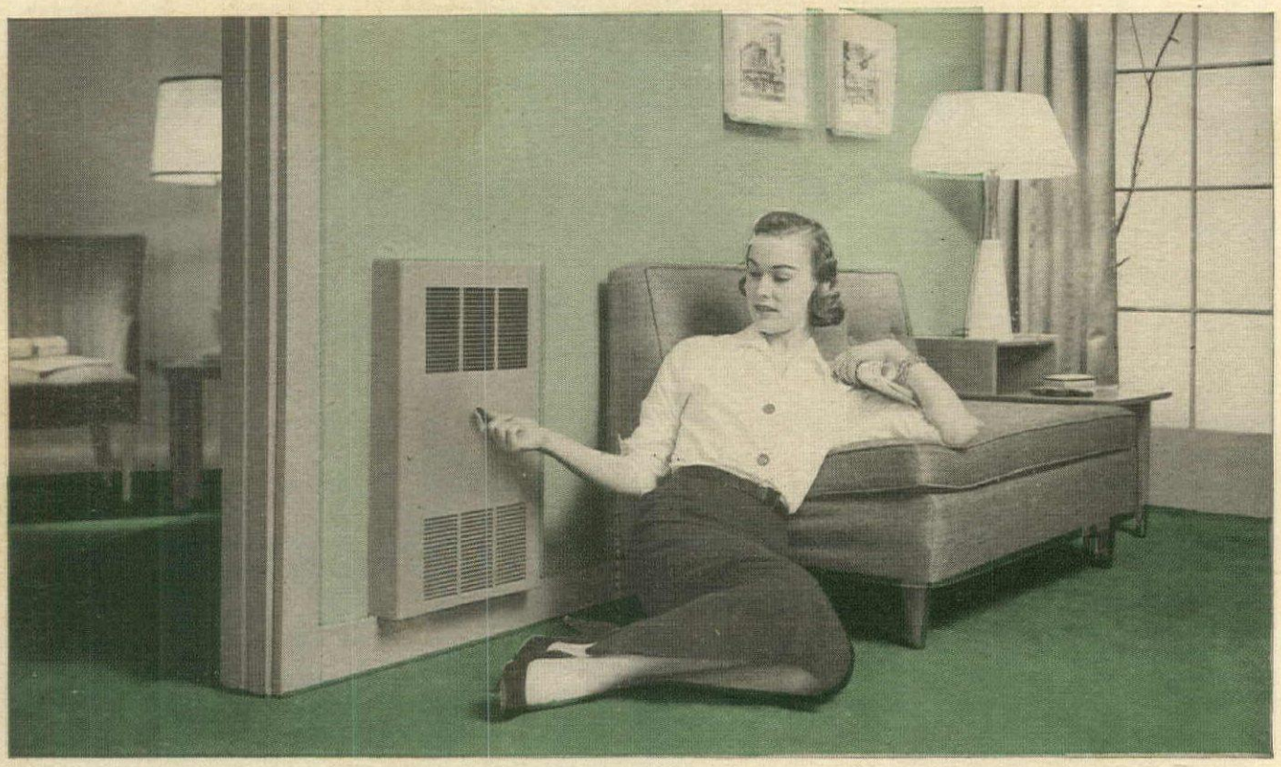
PHONE FOR THIS TEST

A call will bring a radiometer demonstration kit to your desk. It shows you how *Aklo* Glass reduces glare and sun heat. Call your L·O·F Glass Distributor or Dealer listed under "Glass" in the yellow pages of your phone book. Or write to Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

AKLO GLASS FILTERS DAYLIGHT

BLUE RIDGE GLASS CORP. *made by Blue Ridge Glass Corp.*

L·O·F GLASS *sold by Libbey-Owens-Ford Glass Distributors*



Chicago apartment building installs

UNARCO dual-vectors to "beat the heat"

Easy to install . . . The UNARCO dual-vector is easily fitted between studding. The unit contains heating and cooling coil, blowers, motor and controls—and is available in Model DV-60 (shown) and Model DV-120 (of larger dimensions and capacities).

The people who live in this apartment will enjoy year around UNARCO weather conditioning. In winter, clean, even, hot water heating; and in summer, cool, filtered and dehumidified air—ALL FROM ONE SYSTEM.

That's because new UNARCO dual-vectors, each with its own control knob, allow you to select the exact temperature desired for each individual room. The UNARCO "hydro-pac" water chiller supplies the cooled water and your boiler provides heated water for the system.

Truly revolutionary, this new development offers the luxury and comfort of weather tailored to the needs of each member of the family. Most surprising! This combination heating and cooling is available at little more than the cost of a hot water heating system alone.

Builders! Contractors! Architects! The UNARCO dual-vector offers you a fine opportunity to broaden your markets by offering the finest in heating and cooling facilities available today. Write NOW for detailed information regarding cost, design and operational data! Address: Dept. 101B, HEATING & COOLING DIVISION;

UNION ASBESTOS & RUBBER COMPANY
332 S. Michigan Avenue Chicago 4, Illinois

UNARCO dual-vectors

provide year 'round weather conditioning

AMERICA'S TALLEST REINFORCED CONCRETE BUILDINGS...

COST COMPARISON PROVES THEIR ECONOMY

On the lake front of Chicago's near north side, the nation's tallest flat-slab reinforced concrete buildings are rapidly rising. They make up a $25,000,000 project of six 28 and 29-story apartment buildings—luxury "glass house" type—designed by the internationally renowned Ludwig Mies van der Rohe.

Mr. Frank J. Kornacker, structural engineer, said, "Reinforced concrete was chosen for economy reasons after a cost comparison with other structural methods. Another deciding factor was that materials were readily available."

Each year, an increasing number of buildings of all types are going to reinforced concrete construction. Reinforced concrete produces a rigid structure, highly resistant to wind, shock, and quake. Furthermore, materials and labor are readily available from local sources. On your next job, design for durability at low cost . . . design for reinforced concrete.

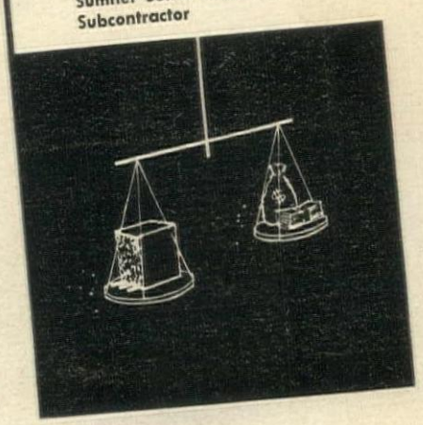
"900 Esplanade Apartments" and "Commonwealth Promenade Apartments" Chicago, Illinois

Ludwig Mies van der Rohe (Friedman, Alschuler & Sincere, Associated) Architect

Frank J. Kornacker Structural Engineer

Herbert S. Greenwald General Contractor

Sumner Sollitt Company Subcontractor



CONCRETE REINFORCING STEEL INSTITUTE C.R.S.I. FOUNDED 1924

Compare...

YOU'LL SAVE WITH REINFORCED CONCRETE

38 South Dearborn Street • Chicago 3, Illinois

CONCRETE REINFORCING STEEL INSTITUTE

LETTERS

Continued from p. 86

Grease for rusty gears

. . . An excellent and constructive job, full of roseate hope as becomes the utterances of forward-looking men.

I agree with all that was said and concluded. But there was some underemphasis on four things:

1. Nobody mentioned zoning much. There was plenty well said about the high subsidies being poured into expressways by irresponsible engineers and accepted as essential by an apathetic and ignorant public. But as far as "downtown" is concerned, all the vast expenditure will avail nothing as long as there is no limitation on the bulk of the traffic magnets.

2. The "Kansas City Belt" idea should not be swallowed too fast. A limited access highway is no better than a railroad or other surface obstruction. In fact a limited access highway is nothing but a disorganized railroad. Apparently nothing is remembered of the Chicago Loop.

3. Miles Colean has pointed out that "the cost to the taxpayer of absorbing the difference between acquisition price and use price is far out-running anticipation." Whose anticipation?

It is, or should be, and to a few people (including, I feel sure, Colean) it was, obvious that: 1) the existence of indiscriminate "write-down" would force a hidden "write-up" with the added obvious result that it would force excessive density of construction and population and so prove self-defeating to the "renewal" idea, physically as well as financially; and 2) that for some reason, although "reason" is hardly the word, the worst blighted an area is, the less chance an owner has of selling, the more inappropriate its uses and design, the higher the acquisition value that is attached to land. This discrepancy between "acquisition value" and "use value" is fundamentally absurd, and exists, partly at least, because of the ad valorem tax system and its tie-in with bonded debt.

4. The whole rigmarole of government in "urban renewal," both administratively and fiscally, tends to make any action so fantastically expensive as to prevent action. The conglomeration of agencies, with their procedural requirements, grown up over years, requires a complete and drastic rethinking and simplification. The rusty old gears are all ground together. and not even the grease of graft could get them going again. And when that is true, things *are* stuck.

HENRY S. CHURCHILL
Architect and city planner
New York, N.Y.

continued on p. 92

CITIZEN'S NATIONAL BANK*
Abilene, Texas

*GEORGE L. DAHL
Architects & Engineers

Modern As Tomorrow

RIGHT DOWN TO THE DOOR CLOSERS!

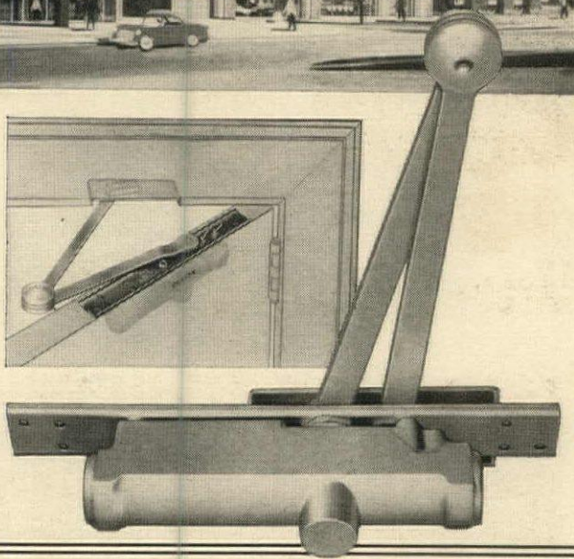
NORTON *"INADOR"*

Used Throughout This Striking New Bank To Preserve the Modern Functional Design Without Loss of Door Closer Efficiency

The considerations which prompted selection of Norton "Inador" in the impressive structure above have won it the same distinction in hundreds of other new buildings across the country. The "Inador" is almost invisible because its extremely compact mechanism is entirely concealed in a mortise in the top rail of the door. There is nothing to distract in any way from the beauty of the door itself.

At the same time, every *Norton "Inador"* is a precision instrument designed and built to last longer under hard service...require less maintenance and provide the long range economies so imperative in all public buildings. If, therefore, you have any such buildings "on the boards" today, by all means look into the advantages of *Norton "Inador"* before door closer specifications are decided upon.

Write today for FREE Catalog on Norton's full line of concealed and surface door closers.



Check These Exclusive Norton Features:

- ✓ **Rack and Pinion Construction** gives uniform, positive checking at every point!
- ✓ **New Aluminum Shell** for lighter weight, robust wear. Proved by use on our surface closers for over 7 years!
- ✓ **Special Spring**—of highest-quality steel!
- ✓ **Non-Gumming, Non-Freezing Hydraulic Fluid** permanently lubricates every inside moving part!
- ✓ **Double Adjusting Levers,** easily moved by fingers, control speed of closing action and latching action!
- ✓ **Regular Arm Series,** as well as Holder Arm models, so suitable for hospital use!
- ✓ **Famous Guarantee** for 2 full years, providing proper recommended sizes are used!

75 years of leadership in door closers

NORTON DOOR CLOSER CO.
Dept. AF-95
Division of The Yale & Towne Mfg. Co.
Berrien Springs, Michigan

NORTON®

LETTERS

Continued from p. 90

WINDOW WALLS

FORUM:

Since the recent advent of curtain wall construction, we have been called upon many times to voice our opinion on the practical values of the various types of glass available for use in this type of construction. Our contention has been that the problem of glass selection is a many-sided one—dependent on such factors as building orientation, air conditioning requirements, type of window fenestration to be used and visibility desired. Unfortunately, we have not been so convincing as we had hoped because of the lack of authoritative literature on this subject. It was, therefore, with great satisfaction that we read the article "What Next for the Window Wall" in your July issue.

STANLEY E. ARONOFF, *vice president*
Southern Plate Glass Co.
Baltimore, Md.

ALLEN ON AUTOMATION

FORUM:

For some reason that escapes me, I frequently find myself sitting as a member of a panel to discuss something about which I know very little. I have tried to rationalize the reason for this; first I thought I was sitting up there at the head table with a microphone, a scratch pad and an ash tray in front of me, for decorative reasons. Perhaps, I thought, I am here because of my almost unearthly personal beauty. I abandoned this theory; in fact, my whole family abandoned it. However, it was hardly necessary for my whole family to roll on the floor and whoop in a marked manner.

Then I thought perhaps I was there to furnish the serious relief. The other members would say something witty, bright and amusing and then I would come in with a dull, stupid remark to kill off the laughs. I rejected this for reasons that I do not care to discuss as my fellow panel members might sue me.

At any rate, I was recently on a panel discussing Automation and the World of the Future. I do not understand automation, but it seems that automation is the offspring of cybernetics and cybernetics is the brain child of Professor Norbert Wiener of MIT. This makes three things I do not understand; automation, cybernetics and Professor Norbert Wiener. I am not sure about MIT, either.

However, I am against automation. In my opinion, with the onset of automation,

continued on p. 95

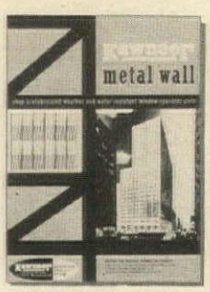
3325 WILSHIRE BUILDING, *Los Angeles, California*
OWNER AND BUILDER: *Tishman Realty and Construction Co., Inc. New York and Los Angeles*
ARCHITECT: *Victor Gruen, A.I.A., Los Angeles, New York and Detroit*

serving the architect, and owner-builder
with metal wall engineering and production quality

This new 13-story office building will be completely air-conditioned. To admit maximum natural light without the discomfort of glare and direct sunlight, the building has been designed with projecting horizontal sunshades on the south and north elevation, and vertical louvers on the east and west elevation. The complete aluminum wall framing and vertical louvers will be Kawneer engineered and produced, saving the architect and builder months of time and giving them the assurance of client satisfaction. Special Kawneer weather-tightness plus expansion and contraction features will be included.

Have you a metal wall problem? Why not delegate the whole responsibility to Kawneer. Five plants in the United States and Canada, a complete engineering staff, and 50 years of experience in architectural metals are waiting to serve you.

Write for folder describing Kawneer services and metal wall jobs.



Kawneer
General Offices
NILES, MICHIGAN
ARCHITECTURAL PRODUCTS DIVISION

WHY HAVE A FIRE ALARM SYSTEM?

The question may seem elementary. Yet many persons don't quite realize – till too late – the vital importance of *time* in any fire, large or small. Fire experts, fire chiefs say *it's the first five minutes that count in a fire*. Hundreds of millions of dollars damage . . . not to mention loss of life . . . occurs yearly because fires are not detected until they've spread beyond control. A low cost fire alarm system can often mean the difference between a ruinous fire and one brought under control before great harm is done.

HOW YOU CAN SAVE BY CHOOSING THE RIGHT FIRE ALARM SYSTEM...

Many systems are on the market. Most are good. There is none – at any price – finer than an Edwards system. Edwards specializes in fire alarm systems, has provided protection to many world-famous buildings (see box below). Edwards systems are so precisely engineered, so completely modern . . . their installation is far simpler than most. *So much so, in fact, your installation costs may often be reduced by up to 50%*. A big saving on any job!

WHAT ENGINEERING SERVICES ARE AVAILABLE?

These famous buildings use Edwards Fire Alarm Systems:

United Nations Building, New York City
Statler Hotel, Los Angeles, California
Patrick Air Force Base, Orlando, Florida
Eastman Kodak, Rochester, New York
Hillsdale School, San Mateo, California
Lever Building, New York City
Grant Park Underground Garage, Chicago, Ill.

With Edwards, you get the services of a highly skilled engineering staff of long experience. Tops in their field. They'll help you solve your fire alarm problems. Help you choose the right system for your particular situation . . . from a complete line of every type of system. Result: a quality system that reflects favorably on your judgement . . . that gives long, dependable, trouble-free service . . . that frees you from costly call-backs and complaints. Edwards engineers are always on call, for consultation, for advice.

EDWARDS FIRE ALARM SYSTEMS

NOTE: For complete information about Edwards Fire Alarm Systems . . . both standard systems and variations-to-your-order . . . call, phone or write Edwards Company, Dept. AF-9, Norwalk, Conn. In Canada, Owen Sound, Ont.

LETTERS

Continued from p. 92

Civilization is at the crossroads. And you know how silly Civilization is; I wouldn't trust Civilization as far as I could throw Rockefeller Center. If Civilization is at the crossroads, Civilization will cross against the lights and that's all, brother. Back to rubbing two sticks together to make a fire, which, as it happens, I can easily do if one of the sticks is a match.

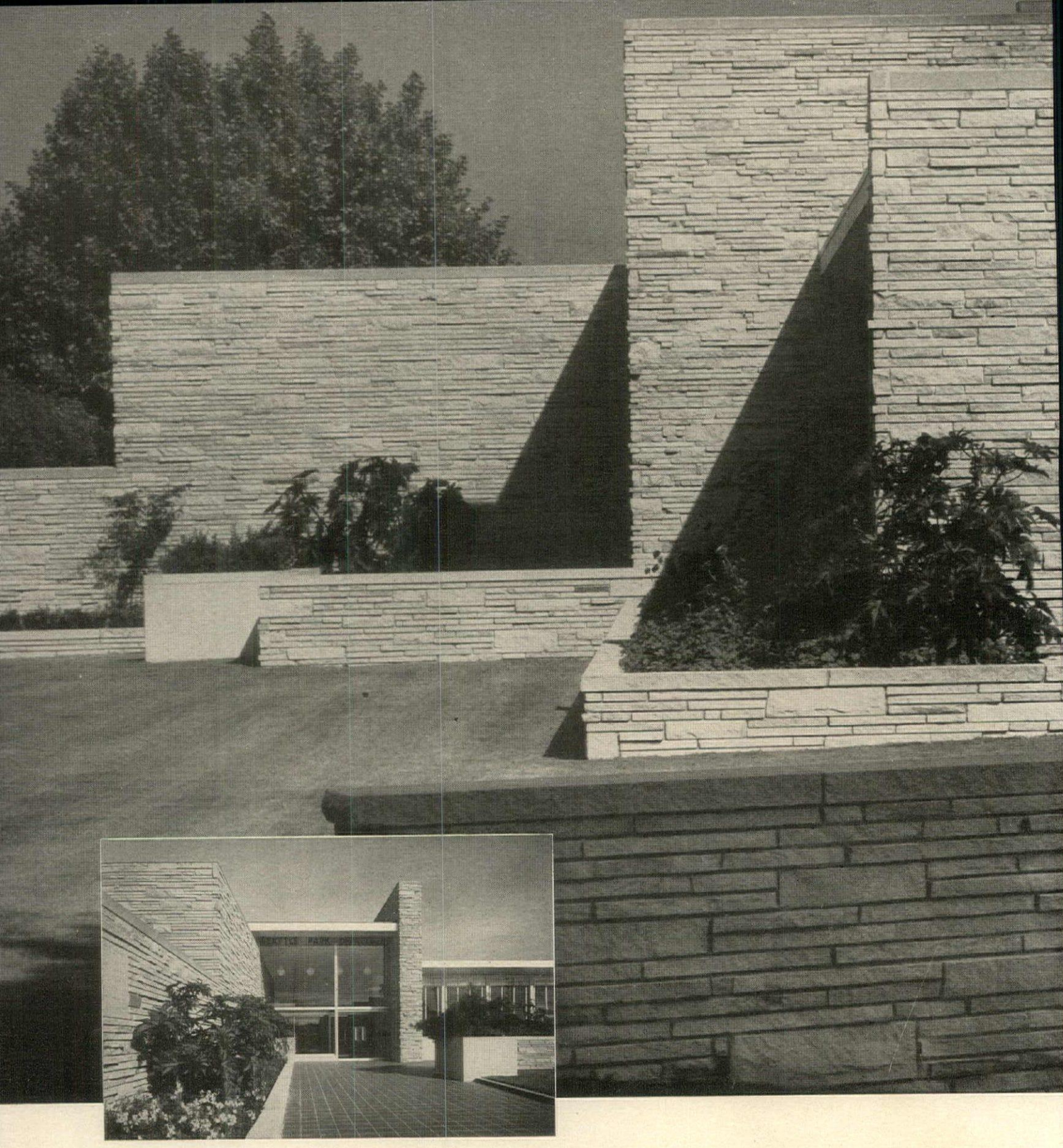
Automation means the push button factory. Professor Wiener says it is possible to make a machine that will reproduce itself by making an endless stream of identical machines. This is a fine thought for a man who doesn't sleep any better than I do. The first thing that will happen—no, the second thing; the first thing that will happen is that this machine will be picketed by indignant rabbits. The second thing is that somebody will invent a push button factory to make nothing but push buttons. In a few months, there will be billions and billions of push buttons around and no place to store them except in our houses. I have already explained to anybody who would hold still long enough, that the average house will eventually be so full of wire coat hangers you will hardly be able to move around in it and when the situation is complicated all up by a few million push buttons per capita, it will mean that Father, Mother and the kids will be living in the broom closet.

Obviously what is needed is a house that will be both wire-coat-hanger-proof and push-button-proof.

Otherwise along about 2361 A.D. an archaeological expedition digging in the sands around Scottsdale, Ariz., will uncover the ruins of a house of the last half of the twentieth century. The wire coat hangers will not have survived, but the push buttons will. "Professor Elmer Quooney," the expedition will report, "pointed out that this family had evidently hoarded food in fear of famine and had filled their entire dwelling, with the exception of a space about 4' square, with small round objects probably of some nutritive value. Professor Quooney took 62 of these objects, simmered them in a puree of simulated spinach broth and swallowed them. The experiment was not entirely successful but Professor Quooney's widow has been recompensated by the State."

I notice in a recent issue of the *Atlantic Monthly* that "Professor Wiener also takes a firm stand on nomenclature. 'Automation,' he says, is barbarous; let it be 'automatization' or nothing." Let's let it be nothing, shall we?

Roger Allen
Grand Rapids, Mich.



stone

BEAUTY BY THE THOUSANDS . . .

It is only within recent years that ashlar stone veneer, whether split-face or ledge, has been available across the country in a great variety of colors and forms, and at prices to compare most favorably with even the least expensive substitutes. New methods of quarrying and producing these stones are largely responsible for this. Increased use has also helped.

DETAIL FROM THE SEATTLE PARK DEPARTMENT BUILDING, SEATTLE, WASHINGTON • YOUNG, RICHARDSON, CARLETON AND DETLIE, ARCHITECTS • PHOTO BY: DEARBORN-MASS

The increased popularity of ashlar stone veneer should not be surprising. Its beauty is the beauty of nature itself, wonderful in its variety and texture, incomparable in its versatility and permanence. Whether used as a prime building material, or as an important accent, STONE enhances good design, magnifies value, improves the appearance of any community in which it is used.

The Building STONE Institute has a wealth of valuable material and information available for architect, builder, or building owner. Contact your nearest member, or write the Building STONE Institute, 2115 Martindale Avenue, Indianapolis, Indiana.

BUILDING **stone** INSTITUTE

FORMERLY INTERNATIONAL CUT STONE CONTRACTORS' & QUARRYMEN'S ASSOCIATION, INC.

architectural FORUM
the magazine of building

PUBLISHED BY TIME INC.

EDITOR-IN-CHIEF: Henry R. Luce

PRESIDENT: Roy E. Larsen

EDITOR: Douglas Haskell, AIA

MANAGING EDITOR: Joseph C. Hazen Jr.

ART DIRECTOR: Paul Grotz

ASSOCIATE EDITORS: Marilyn Grayboff, Jane Jacobs, Mary Jane Lightbown, Walter McQuade, George T. Orick, Vernon Read, Richard Saunders, Ogden Tanner, Stephen G. Thompson

ASSISTANTS: Anne Le Crenier, Dorothy Stone O'Shea, Henry Martin Ottmann, Ann Wilson

ART STAFF: Ray Komai, associate director; Martha Blake, Charlotte Winter

CONSULTANTS: John Hancock Callender, AIA, Miles L. Colean, FAIA, Robert L. Davison

GENERAL MANAGER: Charles B. Bear

ADVERTISING DIRECTOR: Herbert C. Bippart

ARCHITECTURAL FORUM is published monthly by TIME Inc., Time & Life building, 9 Rockefeller Plaza, New York 20, N.Y.

SUBSCRIPTION DATA: Sold to architects, engineers and other individuals or firms engaged in building—design, construction, finance, realty; material distribution, production or manufacture; government agencies and supervisory employees; commercial and industrial organizations with a building program and their executives; teachers and students of architecture and engineering; libraries, professional clubs, society and trade associations connected with the building industry; advertisers and publishers; US, possessions and Canada, $5.50; elsewhere, $10.00. Single copies, if available, $1.

SUBSCRIPTION CORRESPONDENCE should be addressed to ARCHITECTURAL FORUM, 540 N. Michigan Ave., Chicago 11, Ill. When ordering change of address, please name the magazine and furnish an address label from a recent wrapper envelope, or state exactly how the magazine is addressed. Both the old and the new address are required. Allow four weeks for the change.

EDITORIAL CORRESPONDENCE should be addressed to ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y. FORUM will not be responsible for unsolicited manuscripts or illustrations submitted, and it will not return such material unless accompanied by postage.

TIME INC. also publishes TIME, LIFE, FORTUNE, SPORTS ILLUSTRATED and HOUSE & HOME. Chairman, Maurice T. Moore; President, Roy E. Larsen; Executive Vice President for Publishing, Howard Black; Executive Vice President and Treasurer, Charles L. Stillman; Vice President and Secretary, D. W. Brumbaugh; Vice Presidents, Bernard Barnes, Allen Grover, Andrew Heiskell, C. D. Jackson, J. Edward King, James A. Linen, Ralph Delahaye Paine Jr., P. I. Prentice; Comptroller and Assistant Secretary, Arnold W. Carlson.

ABP ABC

GREAT NEWS!

now you can specify

folding doors for every need

from one complete line

of recognized quality

HOLCOMB & HOKE
FOLDOOR
THE SMARTEST THING IN DOORS ®

Only fabric-covered door with "Multi-V" construction for lifetime ease of operation—without "air bellows." Types and sizes to solve every space problem—large or small. Motor-driven or manual, providing maximum space-saving flexibility in any design. Widest choice of colors and vinyl-fabric textures. Track always concealed—with or without cornice. See Sweet's File or your FOLDOOR distributor for details.

FOLDOOR *Beautyline* NEW

First in the moderate-cost field with:Truss-embossed hinges top and bottom; rigid "Multi-V" construction assures pantograph action throughout. Cornice, nylon trolley wheels, metal hardware, textured vinyl fabric. Specify for homes, institutions, hotels, apartments, schools, industrial or commercial projects. Eleven sizes: five widths, 2′-0″ to 4′-0″; three heights, 6′6″, 6′8½″ and 8′0″. See distributor or write.

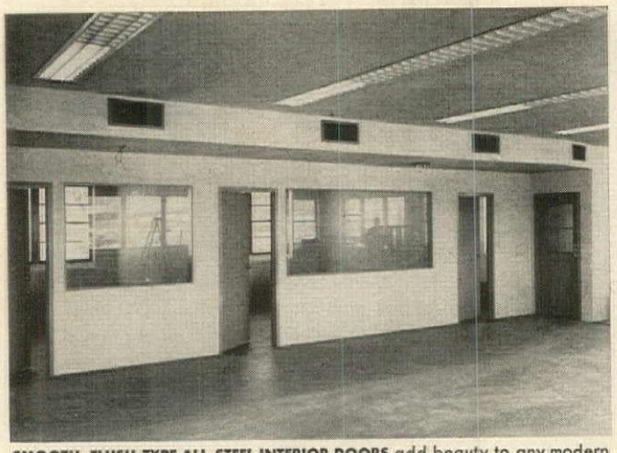
HOLCOMB & HOKE
Fol-Bak
FOLDING DOOR

Quality leader in the economy field. Approved and favored by leading home builders. Three widths, 2′8″, 3′0″, 4′0″, and two heights, 6′6″, 6′8½″. Vinyl fabric in three decorator colors. See your FOLDOOR-FOL-BAK distributor.

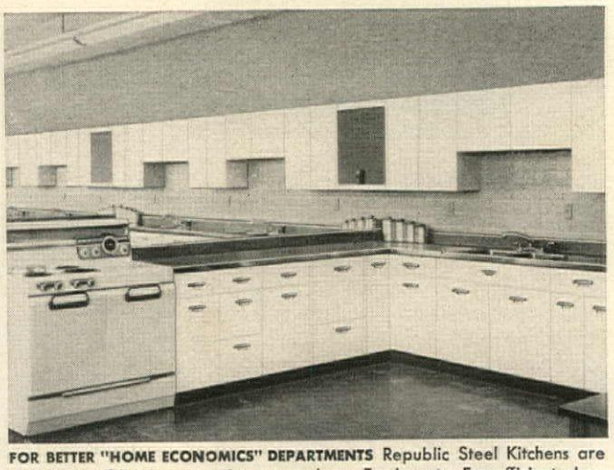
Holcomb & Hoke Manufacturing Company, Inc.
1545 Van Buren Street, Indianapolis, Indiana • In CANADA: FOLDOOR of Canada, Montreal 26, Quebec

INSTALLING DISTRIBUTORS IN ALL PRINCIPAL CITIES

They're handle-free...you use a key



SMOOTH, FLUSH-TYPE ALL-STEEL INTERIOR DOORS add beauty to any modern office or school. A product of Republic's Truscon Division, these swing doors are installed in ⅓ the time usually required to hang conventional doors. They are dimensionally stable under all weather conditions—never stick or bind. Frames and hardware are included. All standard door-opening sizes are available. Ask your Truscon representative for additional information. Or mail coupon.



FOR BETTER "HOME ECONOMICS" DEPARTMENTS Republic Steel Kitchens are the choice of home economists everywhere. For beauty. For efficient planning. For work-saving convenience. Architects appreciate the flexibility of this line which permits unlimited freedom in planning custom kitchens economically from stock units. Republic Steel Kitchens are proving the pacesetter in modern kitchen design; assure you on-time delivery, uniform high quality, client satisfaction. Send coupon for details.

REPUBLIC'S

Key-Control

LOCKERS PROVIDE AUTOMATIC LOCKING

Here's a locker with a memory! No matter how forgetful the occupant, he gets full-time, locked protection—*by simply closing the door.*

There is no handle, no locking routine to fuss with. A key unlocks the door . . . then serves as the handle for opening it. The instant the key is removed the door *pre-locks*—and locks *automatically* when shut. Papers, books, clothing and personal effects are always safe day and night behind locked tamper-proof doors.

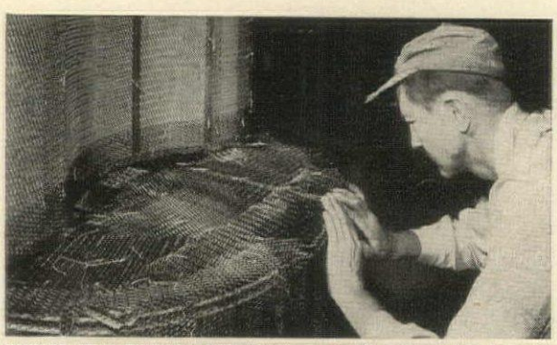
The exclusive Key-Control locker system, developed by Republic's Berger Division, eliminates all need for handle maintenance, too. Locker fronts are clean and modern in appearance. They're flush and smooth, offer no noise-inviting projections.

Before you specify any locker system for new schools or other institutions, investigate Republic's revolutionary Key-Control. Your local Berger representative will be happy to arrange an interesting demonstration. He can also offer architects, school administrators and other officials a complete planning and installation service, including technical and engineeering assistance. Furthermore, Berger assumes full responsibility for proper installation—from start to finish.

Republic's Berger Division is the world's leader in lockers. Only Berger can offer Key-Control—plus the largest selection of standard steel lockers—plus competent engineering and installation assistance. Send coupon for detailed information.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products



EASY-TO-FORM TRUSCON METAL LATH is readily adaptable to every kind of architectural treatment—no matter how intricate. It's lightweight, erects quickly, is fire-resistant. Big Truscon line includes more than 40 kinds of metal lath and accessories, all available for rapid delivery through building-supply dealers, backed by Truscon's dependable warehouse service. Send coupon for illustrated literature describing complete line.

REPUBLIC STEEL CORPORATION
3108 East 45th Street
Cleveland 27, Ohio

Please send me more information on:

☐ Key-Control and Standard Lockers ☐ Metal Lath

☐ Interior Steel Doors ☐ Republic Steel Kitchens

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

K-8100

$25,000

- sponsored by: FERRO CORPORATION
- conducted by: Architectural FORUM
- professional adviser: Harold R. Sleeper, F.A.I.A.

Since 1940, the use of porcelain enamel metal in buildings has multiplied 25-fold and the trend is ever increasing. Whereas in 1940 this material was used mainly as an exterior wall finish for small service buildings and store fronts, today it is used as the principal wall material for important buildings of all kinds: General Motors' technical center, Clemson College's dormitories, Denver's Mile High Center, RCA's Camden offices, Ford's central staff headquarters, Dallas and Hartford's Statler Hotel and a host of others.

Porcelain enamel steel and aluminum are being adapted daily to new uses such as classroom chalk boards, exterior and interior murals, acoustical panels, interior finishes and decorative features. However, despite the rapid development of this building material, only a limited number of designers have gained a knowledge of its advantages and only a few of the material's limitless possibilities have been investigated.

purpose:

The primary purpose of this competition is to stimulate design interest and widen experience in the use of porcelain enamel steel and aluminum, to improve present methods of application and to encourage the exploration for new uses. It is also hoped that the designs submitted in this competition will encourage communities across the nation to build better schools and community youth centers.

the problem:

The competition problem consists of two divisions:

1. The design of an elementary school to consist of a kindergarten, six classrooms, a multi-purpose room and certain attendant facilities.

2. The design of a community youth center to consist of a lounge, a multi-purpose recreation room, a small theatre, a music library and certain other accessory rooms.

A contestant may enter any number of submissions in either or both divisions of the competition. However, no contestant, including the Grand Prize winner, is eligible to receive more than one prize in each division.

porcelain enamel design competition

$25,000 IN 25 AWARDS

GRAND PRIZE - $5,000

Elementary School

1st Prize	$ 3,000
2nd Prize	1,500
3rd Prize	1,000
Honorable Mentions: 9 at $500 each	4,500
TOTAL	$10,000

Community Youth Center

1st Prize	$ 3,000
2nd Prize	1,500
3rd Prize	1,000
Honorable Mentions: 9 at $500 each	4,500
TOTAL	$10,000

The Grand Prize will be awarded to the submission in either division which, in the opinion of the jury, goes furthest toward accomplishing the purposes of the competition.

Basis of Awards:

Awards will be made on the basis of:

1. Skill in planning and excellence of design.
2. Use of porcelain enamel steel and aluminum, including practical new uses of these materials and improved methods of detailing.
3. Clarity of presentation.

Eligibility: This competition is open to architects, designers, draftsmen and students of architecture who are residents of the continental United States and Canada, except the following, their employees, office associates, and families: members of the Jury, Ferro Corporation, its advertising agency, Architectural FORUM and the Professional Adviser.

This competition has been approved by The American Institute of Architects.

The competition closes December 12, 1955.

Announcements of Awards: On or about January 16, 1956.

Contestants must register (coupon right) to receive the program, which will include further details of the competition. This is an announcement only; conditions governing the competition and the awards are set forth in the program.

Harold R. Sleeper, F.A.I.A., Professional Adviser
c/o Architectural FORUM
9 Rockefeller Plaza, New York 20, N. Y.

I intend to enter the Porcelain Enamel Design Competition. Please send me the program, including the conditions governing the competition and the awards.

Name_____

Firm (if any)_____

Address_____

City_____ Zone____ State_____

Check one: Architect ☐ Designer ☐ Draftsman ☐ Student ☐

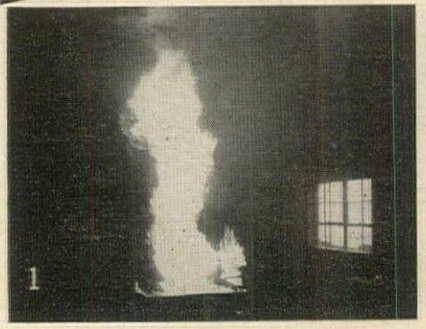
A GREAT NEW METHOD OF AUTOMATIC FIRE-VENTING WASCOLITE PYRODOMES®

Automatic fire-venting with WASCOLITE PYRODOMES could mean the difference between damage and disaster in your clients' buildings. When excessive heat occurs, PYRODOME's fusible link snaps, activating lifting levers which raise the dome. This allows heat, smoke and gases to escape . . . helps firemen to contain and extinguish the fire.

The WASCOLITE PYRODOME is the first prefabricated unit ever developed to provide automatic fire-venting plus the economy of overhead daylighting. Also available: WASCO PYROVENT with solid aluminum cover for venting only.

Write for assistance in planning fire-venting protection: Engineering Division, Fire-Venting Service, Dept. A9.

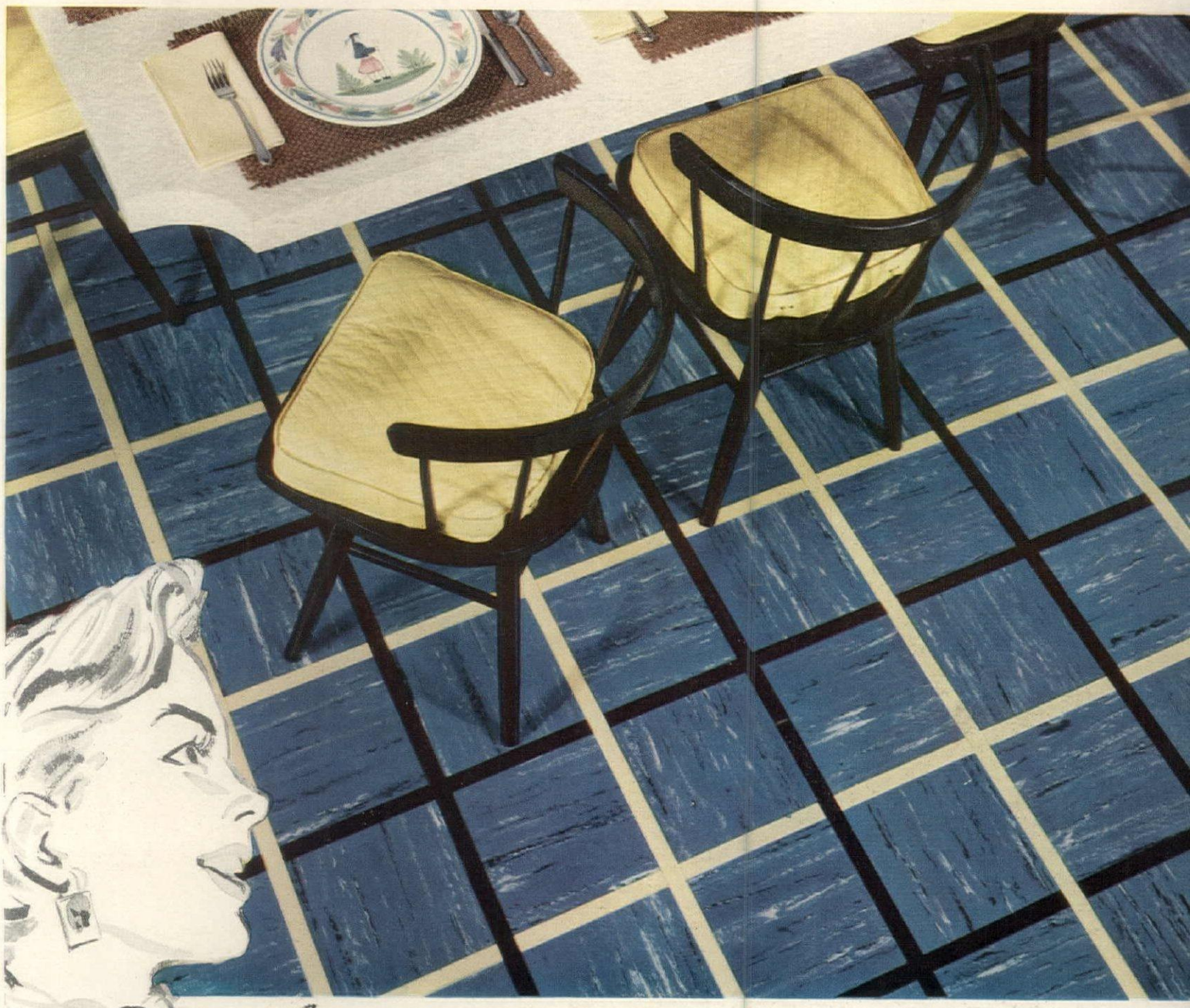
Independent laboratory tests prove the effectiveness of automatic fire-venting with WASCOLITE PYRODOMES:



1. Test fire generated 600,000 Btu per minute. 2. PYRODOMES delay heat build-up, improve visibility — give firemen greater mobility, help contain the fire. Name of laboratory, plus test data available on request.

WASCO PRODUCTS, INC.

BAY STATE ROAD • CAMBRIDGE, MASS.



HAKO Asphalt Tile FLOORING

Inexpensive Luxury!

that is durable, economical and colorful

Wherever indoor highway floor coverings are needed that must give downright durability, use HAKO Asphalt Tile. In institutions and industry that demand economy and long wear, in commercial establishments and homes that want color and design beauty—Standard, New Pastel, or Grease Proof HAKO Asphalt Tile is accepted everywhere. The color will not wear off and the dirt will not wear in. HAKO Tile is reinforced with asbestos fibers and styrene plastic. The smooth sealed surface is permanent for the life of the floor. You can install HAKO Asphalt Tile above, on, or below grade, and over radiant heated floors. Write for suggestions on how HAKO Floor Tiles can help you.

SINCE 1903

HACHMEISTER-INC.

PITTSBURGH 30, PA.

Guaranteed by Good Housekeeping

◆**FLOOR TILES**—Vinylflex, Poly-Krome in Vinyl or Asphalt, Parquetry and CorkAtile ◆**CORONET PLASTIC WALL TILES**—Majesty, Regal, Duke ◆**ADHESIVES**—for Building Products

WHO makes the RLM units I need?

With the recent revisions in RLM Standards for Industrial Lighting Units, featuring new upward-component fluorescent units, it is more important than ever that you know *who* makes units which conform to these newly-established and recently-revised specifications. This chart gives you the up-to-the-minute answer. It is based on the latest report of the Electrical Testing Laboratories who continually check conformance to RLM Standards. For a complete set of RLM incandescent and fluorescent specifications, as well as the addresses of RLM Manufacturers, send for a complimentary copy of the 1955 RLM Specifications Book.

RLM Standards Institute. Suite 830, 326 W. Madison Street, Chicago 6, Illinois.

HERE is your up-to-the-minute ANSWER!

These are the MANUFACTURERS who offer RLM-LABELED UNITS

INCANDESCENT RLM SPECIFICATIONS							FLUORESCENT RLM SPECIFICATIONS														
#1 100-1000w Dome	#2 100-1000w Deep Bowl	#3 100-1000w Sym. Angle	#4 500 & 1000w High Bay	#18 200-1000w Glassteel Diffuser	#40 500 & 1000w High Bay ✲		TD-1 2-40w & 2-38w	TD-1 2-75w	TD-1 3-40w	TD-2 3-75w	TD-2 2-90w & 2-40w T17	TD-2 2-40w & 2-38w	TD-3 2-75w	TD-3 3-40w	D-1 3-75w	D-1 2-90w & 2-40w T17	D-2 2-40w	D-2 2-75w	D-3	SD-1
5		1		2	2	ABOLITE REFLECTOR DIV.															
4	5	2		2		APPLETON ELECTRIC CO.															
5	4	4		3		BENJAMIN ELECTRIC MFG. CO.	OC	OC	OC	OC	OC	OC	OC	OC	OC		C	C			
						DAY-BRITE LIGHTING, INC.						O	O	O	O	O	O	O			
						EASTERN FIXTURE CO., INC.	O	O	O		O										
2	4	2				ELECTRO SILV-A-KING CORP.	OC	O	OC	O	OC						O	O			
						ENDER-MONARCH CORP.	O		O									C			
						FLUORESCENT FIXTURES OF CALIF.	OC	O	OC	O		O	O	O	O		C	OC			
						GLOBE LIGHTING PRODUCTS, INC.	OC	O	OC	O		OC	OC	OC	OC		O	O			
						THE EDWIN F. GUTH CO.	O	O	O	O	O										
						KEYSTONE ELECTRIC MFG. CO.	OC	O	OC	O		O									
						LEADLIGHT FIXTURE CO.	OC	O	OC	O		O	O	O	O						
5			2	2		THE MILLER CO.	OC	O	OC	O	OC	O	O		O						
						MITCHELL MFG. CO.	O		O		O										
4			2	2	2	MULTI ELECTRIC MFG., INC.															
5	4	4				OVERBAGH & AYRES MFG. CO.															
5	4	4	2	2		QUADRANGLE MFG. CO.															
						THE RUBY LIGHTING CORP.	O	O	O	O											
						RUBY-PHILITE CORP.	OC	O	OC	O	O										
						SMITHCRAFT LIGHTING DIV.	OC	O	OC		O	O	O	O	O						
5	4	5		3		SMOOT-HOLMAN CO.	OC	O	OC	O	O	O	O	O	O		O	O			
4		1				SPERO ELECTRIC CORP.															
						SUNBEAM LIGHTING CO.	O	O	O	O											
						SYLVANIA ELECTRIC PRODUCTS, INC.	OC	O	OC	O	OC	OC	O	OC	O	OC	O	O			
4	2	4		1		WESTINGHOUSE ELECTRIC CORP.	OC	O	OC		O					O	O				
5	4	2				WHEELER REFLECTOR CO.	OC	O	OC	O	OC	OC	O	OC	O	OC	C	C			
						WORK-O-LITE CO.	O	O	O	O	O										
						ZANE MFG. CO.	O	O	O	O											

✲ Aluminum Reflectors all others are Porcelain Enamel

TD-1, 2, 3 — without uplight

D-1, 2, 3 — 5–15% uplight

SD-1 — 20-30% uplight

O = Open End

C = Closed End

Note: Many manufacturers make incandescent RLM Units for more than one lamp size. The numerals refer to the number of different-size RLM Units which the manufacturer offers under the specification.

LOOK FOR MANUFACTURER'S NAME HERE

COMPLIANCE WITH SPECIFICATIONS UNDER APPROVED INSPECTION PROCEDURE OF RLM STANDARDS INSTITUTE, CERTIFIED BY ELECTRICAL TESTING LABORATORIES, INC.

RLM STANDARDS INSTITUTE INCORPORATED

The letters RLM stand for Reflector and Lighting Equipment Manufacturers

R-1143

APPLICATION ENGINEERED LOUVERED LIGHTING

PERFALUX® SIDES – UNBREAKABLE, TRANSLUCENT

LOUVRON

LIGHTOLIER

MAIN OFFICE AND FACTORY: JERSEY CITY 5, NEW JERSEY

SHOWROOMS: 11 EAST 36th STREET, NEW YORK • 1267 MERCHANDISE MART, CHICAGO

LOUVRON BY LIGHTOLIER

crisply styled, optically engineered, ruggedly built

A Level top permits fixture to be fitted snugly against the ceiling across its entire width—shields views of bright side of housing.

B 4′ side panels of Polystyrene, Steel or Perfalux are self supporting. No clumsy framing is required. They snap out with fingertip pressure.

C Center braces support side panels on 8′ fixtures, assure positive alignment.

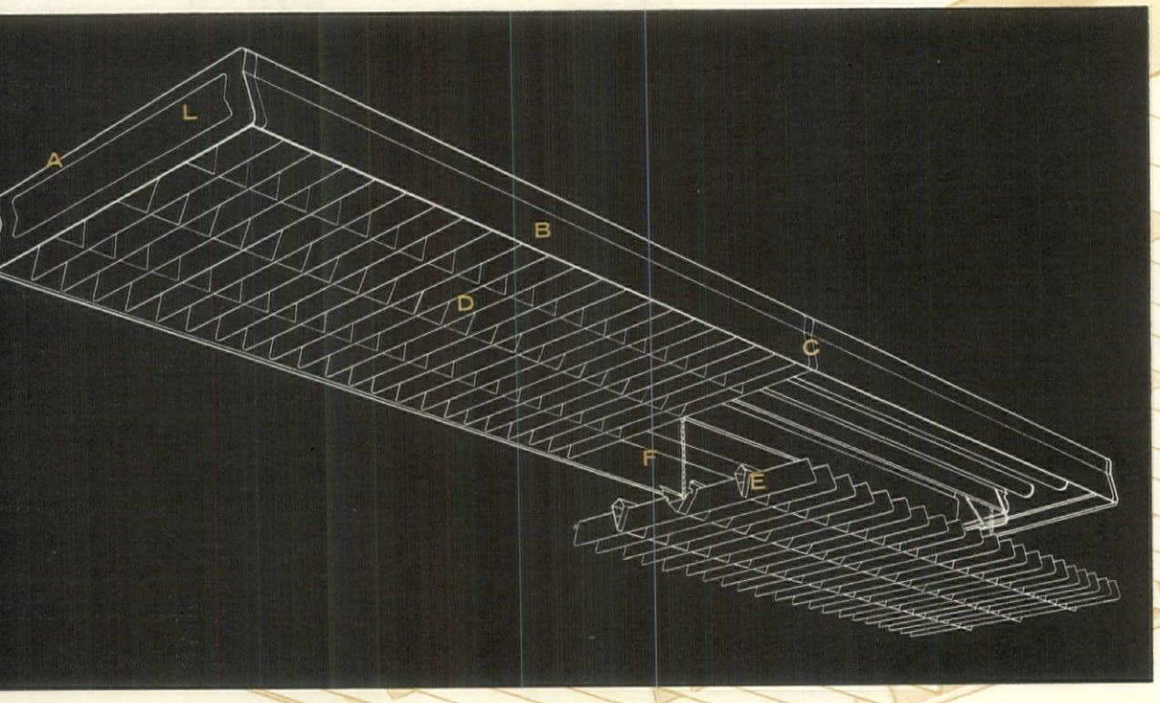
D Louvers are all four feet long for ease of handling and are supported by lock-spring fasteners.

E Interlocked louvers give permanently rigid construction—are available with 35°C-25°L or 35°C-45°L shielding.

F Steel safety chains support louvers in hinged position for relamping.

G Heavy gauge steel housing, channel shaped, gives maximum rigidity.

H Accessory top reflectors increase down-light.



I Swivel jointed stems adjust to 25° from the vertical— – assuring level, straight-line installation.

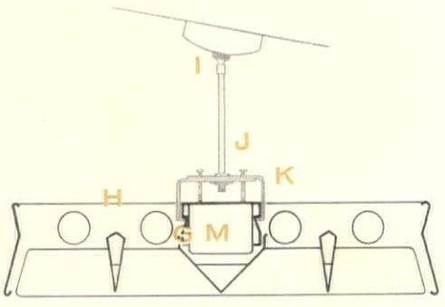
J Stems may be turned after installation, to give vertical fixture adjustment.

K Slide clamp hanger may be attached to fixtures at any point for stem mounting.

L Flush end cap is removable, exposing wide raceway opening and holes for ¼ x 20 screws and nuts for joining in continuous runs.

M Ballasts are removable without removing fixtures from ceiling.

N Ballasts are High Power Factor, E. T. L. approved, for 8′ or 4′ Slimline or 4′ Rapid Start lamps.



L I G H T O L I E R

PERFALUX

SIDE PANELS

STRENGTH OF STEEL, TRANSLUCENCE OF PLASTIC

for the critical lighting professional

Louvron by Lightolier offers a new look in louvered fluorescent architectural lighting. This broad yet shallow light source was designed for contemporary offices, schools, stores and other interiors which call for truly efficient, well-shielded illumination. Louvron can be installed individually or in perfectly aligned rows of light.

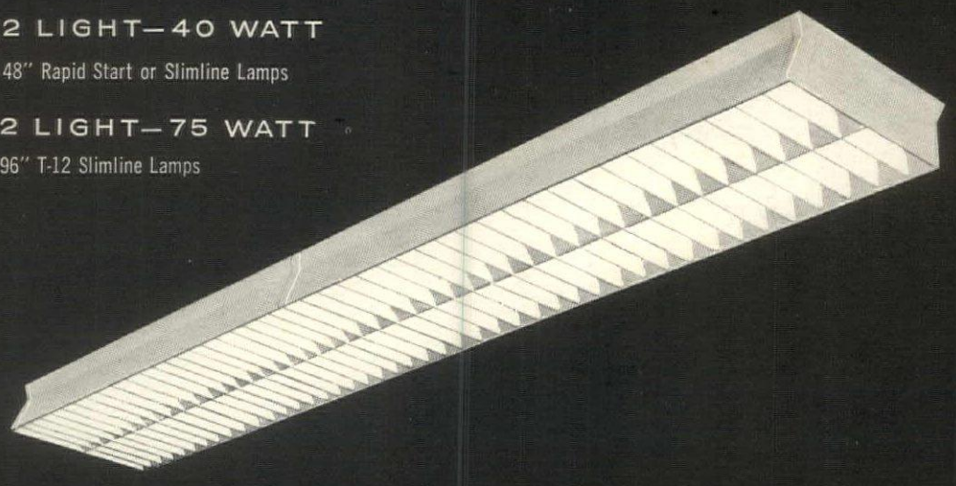
Louvron features Perfalux side panels in addition to conventional steel or ribbed Polystyrene. Perfalux, an exclusive Lightolier development, combines the strength of steel with the translucence of plastic. Perfalux panels have thousands of pinpoint perforations webbed with a fine plastic film. They create thousands of tiny lenses to fully diffuse the light.

Louvron offers 14 other major design features. Each contributes to easier, more economical installation, longer lasting, trouble-free maintenance and, of course, more efficient illumination.

For the complete Louvron story and specifications, fill out and mail the coupon on the next page today.

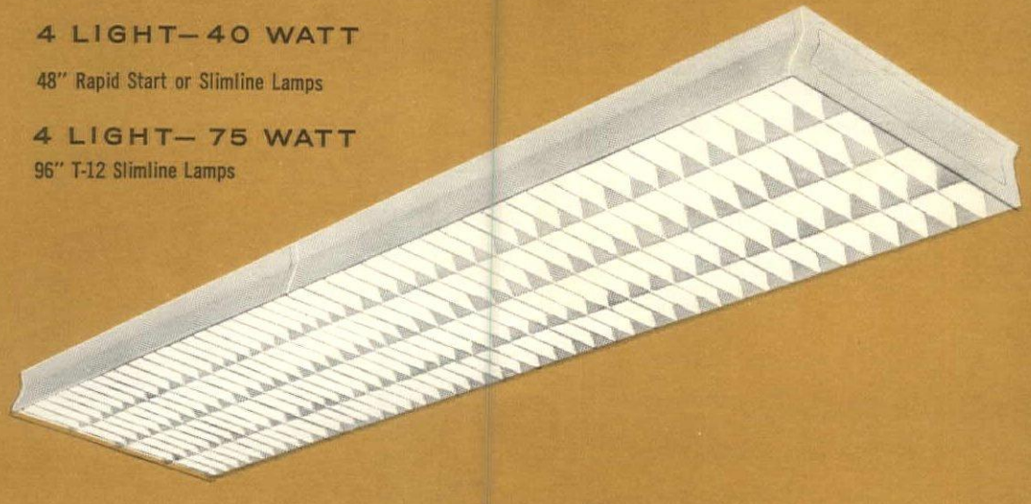
2 LIGHT—40 WATT
48" Rapid Start or Slimline Lamps

2 LIGHT—75 WATT
96" T-12 Slimline Lamps



4 LIGHT—40 WATT
48" Rapid Start or Slimline Lamps

4 LIGHT— 75 WATT
96" T-12 Slimline Lamps



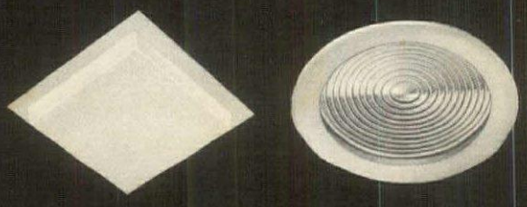
LIGHTOLIER

OPTIPLEX

Broad panels of shadowless illumination through clear white Plexiglas.

CALCULITE

Decorative and functional recessed incandescent down-lighting units.

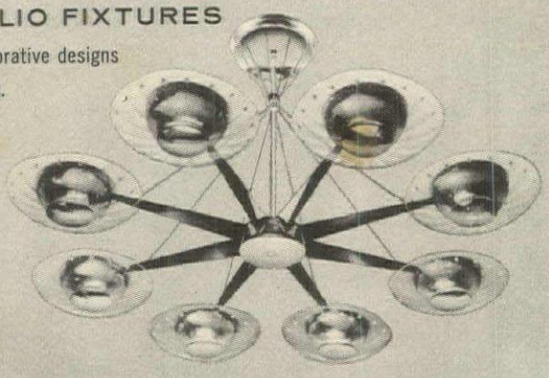


SIGHTRON

Award-winning, free flowing design. Ribbed polystyrene diffusers.

PORTFOLIO FIXTURES

47 different decorative designs
for key locations.



THERE'S

A LIGHTOLIER

FOR EVERY PURPOSE

Lightolier manufactures a complete range of fluorescent and incandescent fixtures for every public and residential purpose. In addition to the architectural fixtures shown here, there is also a collection of "Portfolio" lighting devices which were designed to highlight key interior locations. You will find them unusual in concept, form, materials and flexibility. There is a broad choice of Portfolio designs for such areas as dining rooms, executive offices, board rooms, lobbies, shops, showrooms, stairwells. You will find them excellent solutions to your most vexing decorative lighting problems.

A complete file of architectural and decorative lighting by Lightolier is available. For your copy, fill out and mail the coupon below.

LIGHTOLIER
Dept. AF-95, Jersey City 5, New Jersey

Gentlemen:
Please send me the following for my files:

LOUVRON BROCHURE ☐
COMPLETE ARCHITECTURAL FILE ☐
PORTFOLIO FIXTURE CATALOG ☐

NAME _____
(attach to professional letterhead)

LIGHTOLIER

JERSEY CITY 5, NEW JERSEY

architectural **FORUM**
the magazine of building

Merrill Chase

*Moosbrugger—*LIFE

Behind the blueprints

in this month's FORUM

CLIENT: Earl Roy Searles, dean and professor of pharmacy at the University of Illinois, had long dreamed of the perfect building in which to teach his specialized branch of the healing art (p. 144). Working closely with PACE Associates, Searles drew up a point-by-point program on ten single-spaced, typewritten pages, helped develop the general form of the building before a single sketch was attempted. When the architects proposed such unorthodox and seemingly extravagant features as 60′ clear-span laboratories and ten escalator units, Searles explained to a skeptical, economy-minded building committee the long-term benefits these could bring about.

CONSULTANT: Dr. Wilma Donahue, chairman of the gerontology division at the University of Michigan's Institute of Human Adjustment, had a rich background for the problem of developing a special village for aged people (p. 136). She was able to supply the architects with answers to many unfamiliar questions: How many old people can help themselves physically and financially and to what extent? How many prefer individual homes, apartments, community residences? How should they handle the problem of nursing care, furnishings, bathtubs vs. showers, special safety features? With Dr. Donahue's counsel, it was decided to provide a whole village of varied facilities rather than one large institutional structure.

ARCHITECT: Charles Edouard Jeanneret, known to the world as Le Corbusier, has added another startling building to his list: a haunting little chapel in the foothills of France's Vosges mountains (p. 120). Corbu had been on big jobs: building the new capital city of Chandigarh in India's Punjab, and a second edition of his controversial Marseille apartments outside Nantes. The opportunity to build his first church proved irresistible. At first he turned down the delegation of parishioners that came to him in Paris from the little town of Ronchamp, but one day soon afterward he showed up alone on the high, hilly site, furiously making sketches. The result is more strikingly sculptural than any of his previous work.

ARCHITECTURE IN AMERICA

The men and methods that influence it

Part 1

Whoever works seriously on an active building program cannot rest proud unless the outcome qualifies as architecture. Only so can his satisfaction as owner or proprietor cover the whole range from the practical to the wonderful; he therefore wants to know not only what the best performance is in current architecture but how to go about getting it realized, on the ground.

Most commentators answer him quite simply that architecture is the product of architects. The finest architecture is the product of men of genius. Find one of these and the problem is supremely solved; if none is available, find a man of talent.

Other commentators answer reconditely that architecture is the product of a civilization. The best architecture is the product of a fine civilization. Said Lewis Mumford in his first pace-setting book, *Sticks and Stones,* "The mass of buildings can never be better or worse than the institutions that have shaped them." This broad approach can be of profound value in the hands of a keen wise critic but can lead to useful action only by those who know a few hand-holds. A society as a whole is a most refractory building material.

So a third comment is now in order. Whether the ideals of architecture are those of an owner, or of a genius architect, or of a society, they can be translated into reality only through a medium. The fluid purposes of a society can be poured into a building site only through some kind of a funnel. The specific purposes of a client and his architect have to run a gauntlet. This medium, this funnel, this gauntlet, is the industry of building. The institutions that most clearly affect building are obviously those that are connected directly with building. They have to do with finding land and money, with getting together plans and permissions, with fitting designs and materials and labor, with knowing maintenance and operation. The wise citizen starting a building program today, the smart architect helping him, the competent government official or planner or community leader, must know his way through the ramifying and changing process of building.

Who does what and how does it affect the outcome?

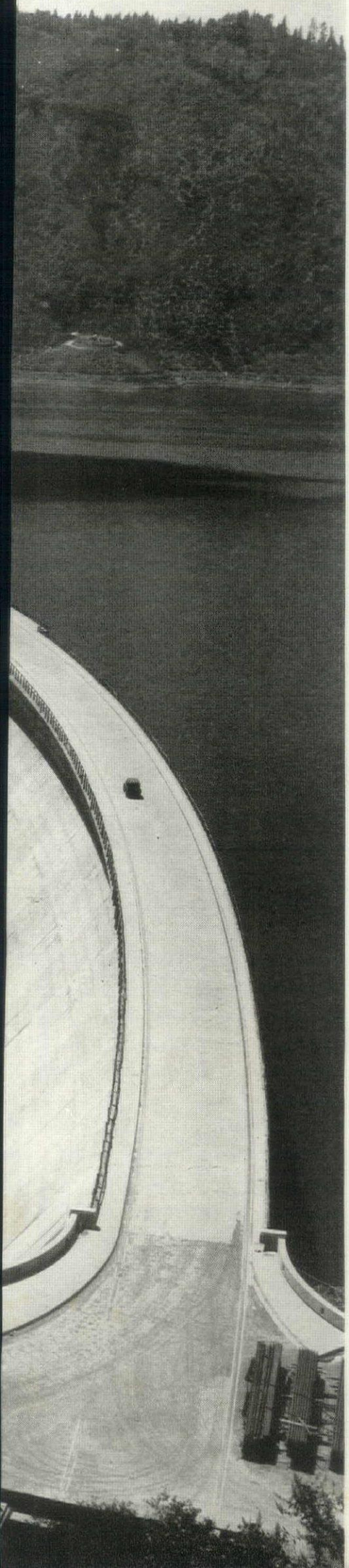
How do you get leverage? Where are the fulcrum points?

If you want to step anywhere off the beaten trail, how can you find the ascent?

The answers will affect far more than the immediate "practical" program: they will affect the qualities of the design itself in its deepest contexts.

MANHATTAN, at the foot of 42nd St.: Urban congestion beclouds the technical daring of the vertical commercial capital. Yet after a lull of 20 years new skyscrapers of 30 floors and more are being piled on the same eighteenth century street pattern. The Traffic Department, in planning to widen avenues to meet new congestion, threatens to destroy neighborhoods being carefully cultivated by the Park Department, School Board and other agencies. Our tough new urban problems demand methods of working things out among different interests, different technicians, before anything like a noble architecture can begin to take shape.

*Photo (opp.): Andreas Feininger—*LIFE



SHASTA DAM. Besides enhancing the landscape here, it produces sunny fertile irrigated valley landscape 500 mi. south. Being really architectural, this scope of effort should be organized as such.

*Photo: Andreas Feininger—*LIFE

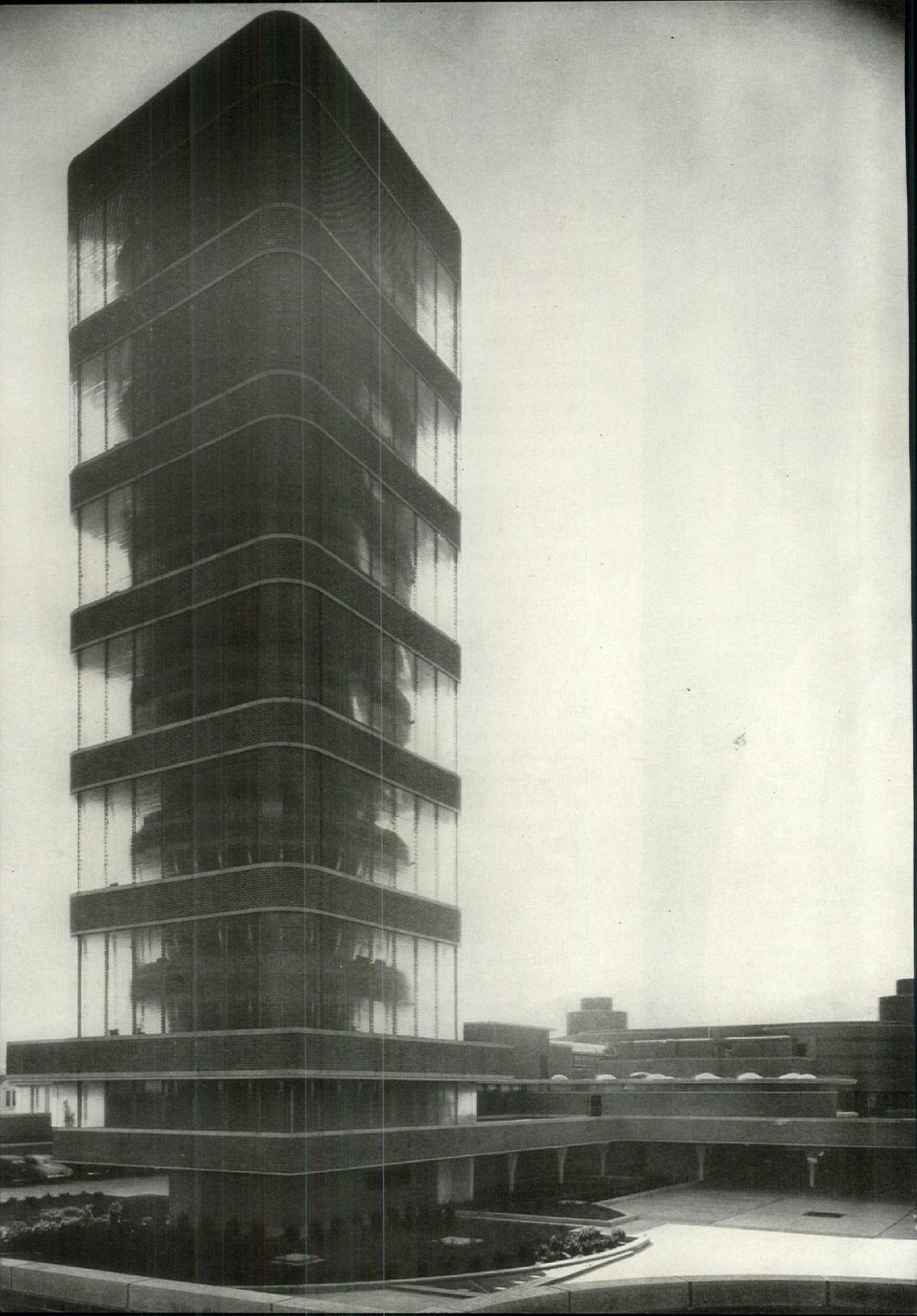
In short, the actual design of a building or group, in the sense in which architects use the word, can occur quite elsewhere than on the drawing board. Realistic study must acknowledge this. For example, a group of government employees can sit down in a Washington office and set up a printed manual for their local FHA loan inspectors. This single act can freeze all the important features of close to a million homes every year for several years: homes for the equivalent every year of a new city of Chicago. It could be argued that this roomful of men will have more effect on the new domestic surroundings of Americans than the whole architectural profession. The idealistic architect will not for that reason be at a complete loss, even though he will be on the outside looking in. It is now up to him to master a whole machinery of appeals and "interpretations" besides marshaling every device of educational propaganda there is to make the next set of regulations better. He must find the fulcrum points where he can get institutional leverage. Otherwise he will be doomed to exercise effective control over an ever shrinking proportion of America's homes.

One great reason the building process becomes so much more complex and builds up a team ever bigger and more specialized is that construction itself is ever more ramifying. A few years ago the conservationist Fairfield Osborn testified that the operations of mankind had now reached a scope that made man, for the first time, another force of Nature. Certainly resources for which unaided Nature was once relied on are now achieved through great processes of construction. Natural water sites were once the great creators of our cities, water being needed for transportation and for drinking and for power. Today great chains of dams and reservoirs together with channel dredgings change the map into something not natural but artificial. Other similar networks are those that redistribute electric power (with atomic power now en route) and fuels, not to mention new kinds of traffic. As these developments go forward they affect human life in every part, including the whole pattern not only of the landscape we see but the cities and towns we live in.

The methods by which such constructions are conceived, designed, and carried through have become of utmost importance as a subject of study, for the reason that qualities of utmost importance to human life are being lost through the single-minded "efficiency" of such engineering. Disaster instead of enchancement too often overtakes large establishments on which we depend —for example the established central areas of large existing cities.

Under such circumstances, to continue to regard "architecture"—the art that insures human quality in building—as a series, just one school, office building, home or hospital after another, is to surrender the idea as a whole while hanging onto tiny fragments. But nothing can be achieved in the opposite way, either, by merely preaching some vague new form of "society."

We can recover our human command only by finding out how to organize new ways of collaborating within the building framework that we have.



Within the framework of the building industry every single element is now changing.

The client is not what he was. The client was once a patron. The biggest undertakings were by magnificent men whom other individuals imitated. The patrons of the architect were by turns the princes of the church, the princes of state, and the merchant princes. In the US at the turn of the century the great patrons had names like Morgan and Vanderbilt and Cassatt.

The successor of this client is an institution. One great important new kind of client we can call the "corporate client." The corporate client is an operating organization, like the Telephone Co., or Du Pont, or Metropolitan. To help this client organize himself for building action is a special study, and to serve him is a special study too.

The kind of architecture that emerges out of such a picture is somehow a different kind with a different quality, even where the tone is set by a dominant personality. The old dominant, domineering patron is rare. He too has to master his organization.

But then there is yet another client grown strong, who is not an "institutional" client at all. What he builds for is investment. What he represents is something the prince did not represent at all—that great institution known as The Market. And where a Morgan used to operate with large funds of his own, the changing investment builder of today uses relatively little capital. He is a broker, a mediator, a getter-together of others pooling their needs.

He, too, is worthy of special study, for there are members of him who are producing rotten architecture, and there are ways within his mode of operation of producing much better architecture—providing only that you understand the game. Those highbrows who refuse to make the effort are merely helping architecture to regress.

One fascinating shift being produced by The Market as a client is the shift to the ready-made. Homes, for example, of which four fifths used to be built on special contract, are now four fifths built ready-made. In a sense they are built for no individual client at all. They are built for the client en masse. And en masse he has to have some kind of an agent or broker to interpret him. That agent, in most cases, is the "homebuilder" although in some apartment cases it has been an insurance company. Yet not even the homebuilder stands alone. Other interpreters in turn serve him. There are, for example, a special tribe of women editors on "consumer publications." To listen to some of them speak of "my public" is a remarkable experience. Many a prototype or exhibition house is designed in their busy minds.

For a first-class architect to win out with his ideals in such a game is an uphill thing, and depends at every turn on a kind of superior cunning. The names of Charles Goodman and Anshen & Allen and Quincy Jones and Fred Emmons and Carl Koch and Keyes, Satterlee & Smith may have a place in future history as pioneers only a little less revolutionary than Frank Lloyd Wright. A study of the institutions and changing methods of homebuilding is their stock in trade. Their aim is architecture.

If clients are changing, so too are America's 22,000 architects. There are at least 20 well-marked different types of these today, compared to the one blanket type of yesterday. Some are in "big business" employing up to 1,000 men, and their heads virtually commute all around the globe. Others are sturdy single-man all-around professionals still. The architects fight for their

LABORATORY TOWER for Johnson Wax Co., Racine, Wis.; Frank Lloyd Wright, architect. The lonesome masterpiece of architecture is what we mainly rely on nowadays for poetry. Here a master shows that the forms and materials of technology can stand like a tree, blossom like a flower, glow like the moon. Yet the work he did in the drafting room was probably eclipsed entirely by time spent battling with problems of men, money, materials. Where such masterpieces occur it is virtually certain, too, that there was a remarkable client at work with the remarkable architect.

Photo (opp.): © Ezra Stoller

place in a world with engineers in it, and industrial designers, and "package dealers," and consultants and dealers in cheap stock plans. The quality of US architecture and of US life depends on what happens in these interchanges.

The builder too is different, the manufacturer is different, the lender is different in this changing world, and every one of them is worth a good long look to see how his changing modes affect quality in the outcome. So too is the city planner, and the code-maker, and the insurance underwriter, and the tax collector—especially he. Architecture is affected by the thinking in all their minds and the paper in their hands.

Once the construction industry has really organized itself to clothe its great services in allurement, perhaps it can open a window and look at other industries that have been supplanting it in public favor. The lure of the automobile is complex, but a strong part of it is surely that it gets people away from dingy areas of building. The unhappy fact is that, instead, the after-effects of the automobile are making great new areas dingy. Traffic as an overwhelming event, as a passion even, is fast destroying towns and, more than that, making a slum of the entire countryside. Miles of signs and juke-box roadside building, along with honkey-tonk, are awaiting the day when someone can restore civilization. Better yet as an answer from the side of building would be the creation of its own romance, which would stir people's imagination with the beauty of staying in loveable settled places.

There will be occasion to come back to that. But meanwhile let us start re-examining Architecture in America by looking at today's US architect, in next month's issue.

LOS ANGELES: The freeway system helps spread building out across immense countrysides. The main features of these homes are decided on through elaborate processes involving FHA bureaucrats and a homebuilder industry with its allies. To lift this vast clean dullness architecture needs new fulcrum points. Highways are clean, so far, of Roadtown clutter.

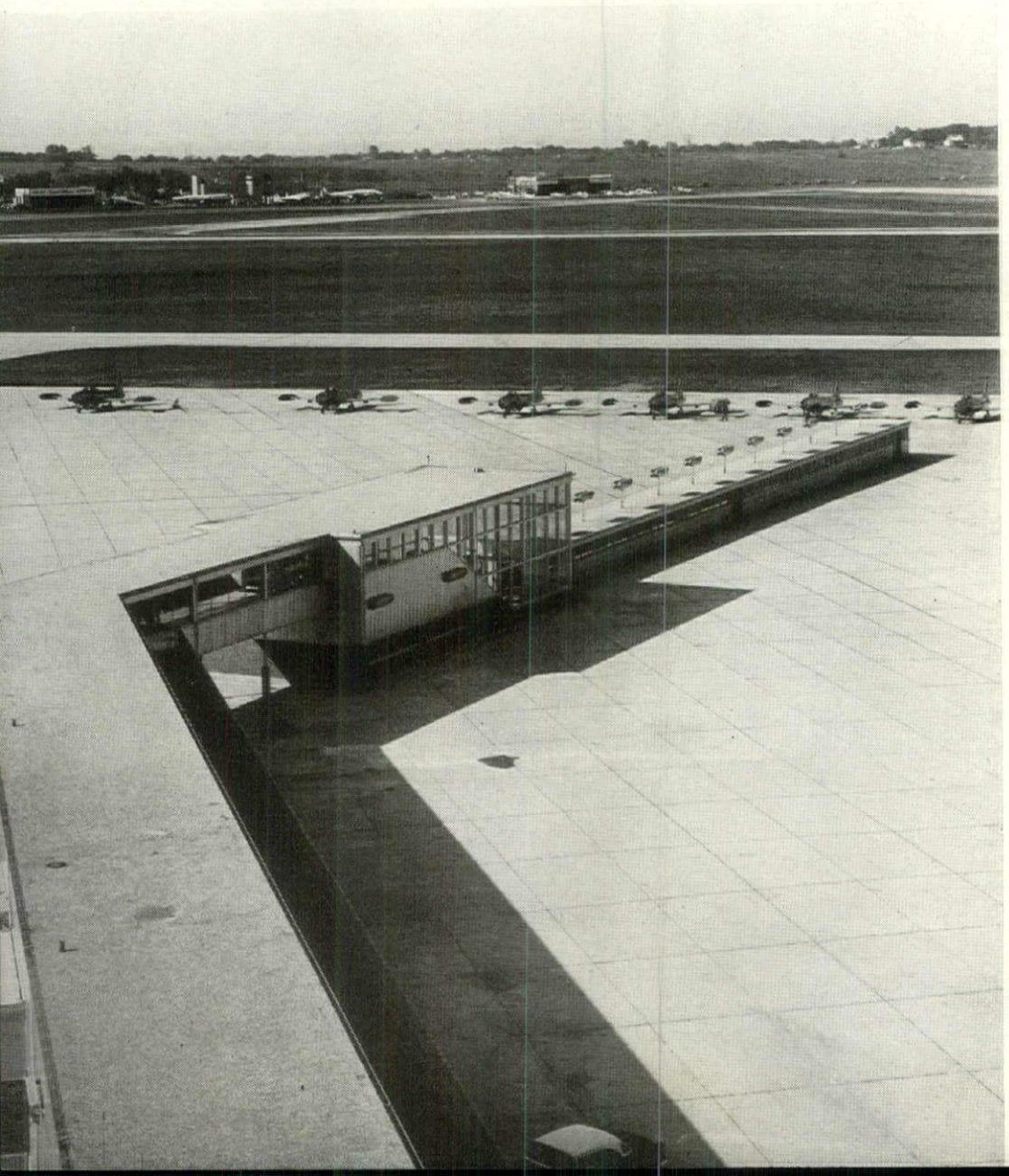
ARIZONA: Roadtown here could as well be Roadtown anywhere, innocent of all architecture and of any plan.

Photos: (below) Andreas Feininger; (top opp. p.) Jack Birns


MOTEL
GARAGE
Mobilga
WEST END
GARAGE
PARTS-ACC
Mobilgas

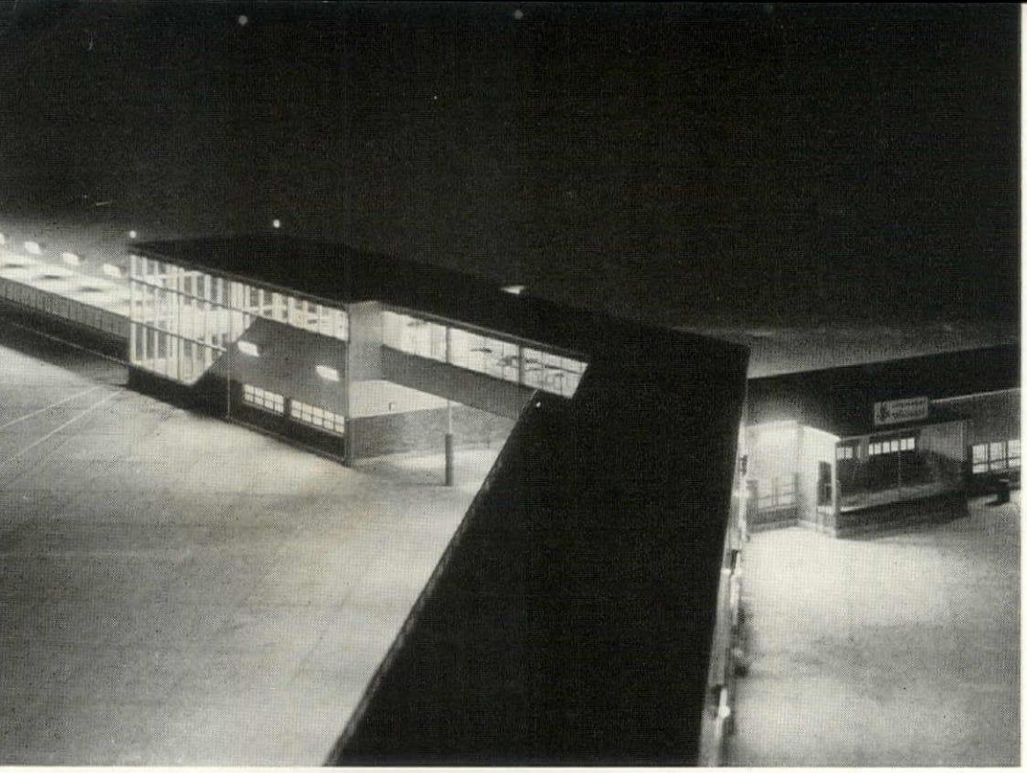
MILWAUKEE GETS

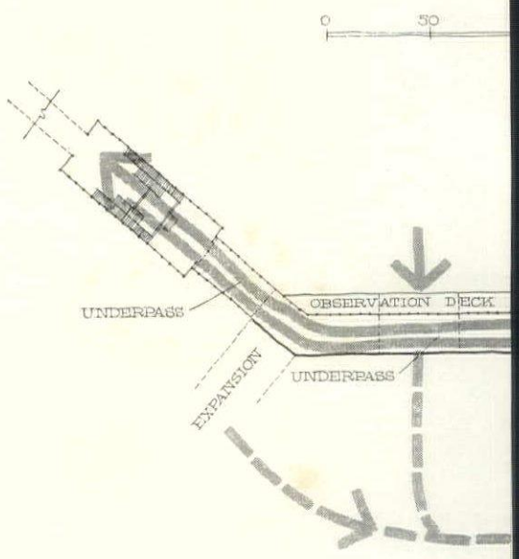
GENERAL MITCHELL FIELD, Milwaukee
ARCHITECT: John Messmer, Milwaukee
County architect; Fred Melms, assistant
CONSULTANTS: Leigh Fisher & Associates
Volk & Holland, mechanical engineers
GENERAL CONTRACTORS:
Jezo Construction Co.; The Druml Co.



Arriving passengers enter glass lobbies, mount escalators to second-story concourses, which lead over truck underpasses, maintenance and cargo offices. Field is shared by National Guard jets, seen in background.

Observation decks along north and south piers give visitors free view of the bustling spectacle on the field below. At left is the central pier, which leads into lounge, bar and dining room.





Floodlights and glass brighten south pier at night

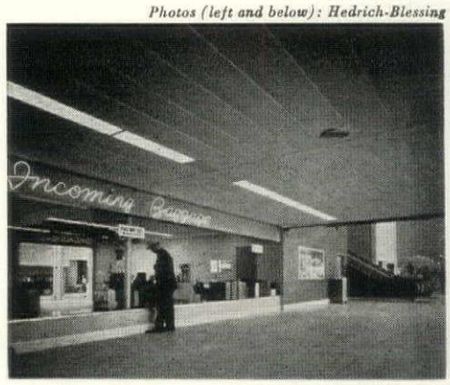
Separate traffic patterns speed passengers above, baggage below

Lobbies on the field: On each of the building's three fingers is a two-story glass box which reveals a welcoming little lounge and moving escalators (photos above). Here, right near the planes, are easy chairs, rest rooms, telephones, telegraph service, baggage lockers—basic conveniences an arriving passenger can get to quickly or a through passenger or delayed departure can use without fear of missing his connection or his place in line for a good seat. (As in many airports, it is a long walk to the central facilities.) The lobby of the central pier, in particular, on an axis with the main airport lobby, acts much like a two-ended telescope, giving arrivals a first framed view toward the city and departing passengers a first framed view of the airport.

Ascending the escalators, passengers find themselves in a broad gallery. On one side, generous glass walls show off the field; along the other side lighted and animated display cases explain some of the region's many products and organizations; new arrivals discover right away that Milwaukee has a lot to offer besides beer and baseball. (These show windows, rented to advertisers by a concessionaire for $600—$1,650 a year each, depending on location, net the county a minimum of $47,000 a year in additional revenue.)

Central concessions: All passengers are routed through the main crossroads where concessions are grouped for maximum business. Passengers or visitors with time to spare can relax in the main lounge (photo below), bar or dining room overlooking the field. (Too bad the decor in these areas does not measure up to the sleek excitement of a modern airport.) Concessions, centralized and limited, show a better profit than too many strung out where fewer people see them: by its first full year of operation the terminal hopes to net $60,000 on a total income of $360,000, of which $148,000 will come from concessions alone (this is three times as much as the old terminal, which year after year operated in the red.) Funneling all

Photos (left and below): Hedrich-Blessing

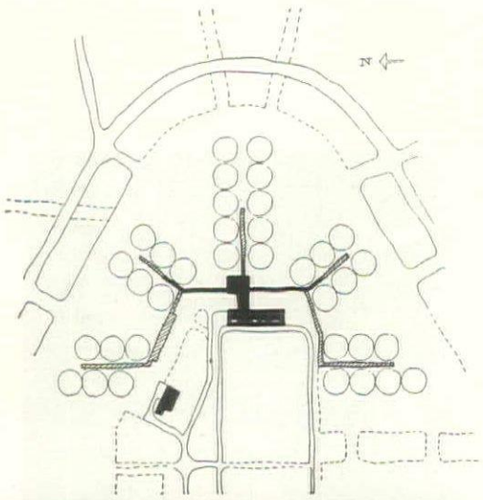


passengers through a central concessions area, however, means that some have to make a long detour from ticket counter to airplane.

No wait for baggage: Down escalators to the main lobby and a few steps to the right is a single, clearly marked baggage claim counter for all six airlines now using the terminal (photo above). Here, for many a hardened air traveler, comes the best surprise of all: his bags are actually waiting there for him on the counter, and only a 60′ carry to a bus or a taxi! Like the quick-moving new St. Louis and Cleveland airports (previewed in FORUM, Nov. '52), Milwaukee closely follows CAA recommendations, separating passenger flow above baggage flow and further separating incoming and outgoing passengers by keeping each to the right (plan opposite). Departing passengers enter one of four doors at the opposite end of the main lobby (photo op-

Arriving planes taxi up 30-acre apron to the terminal's outstretched wings

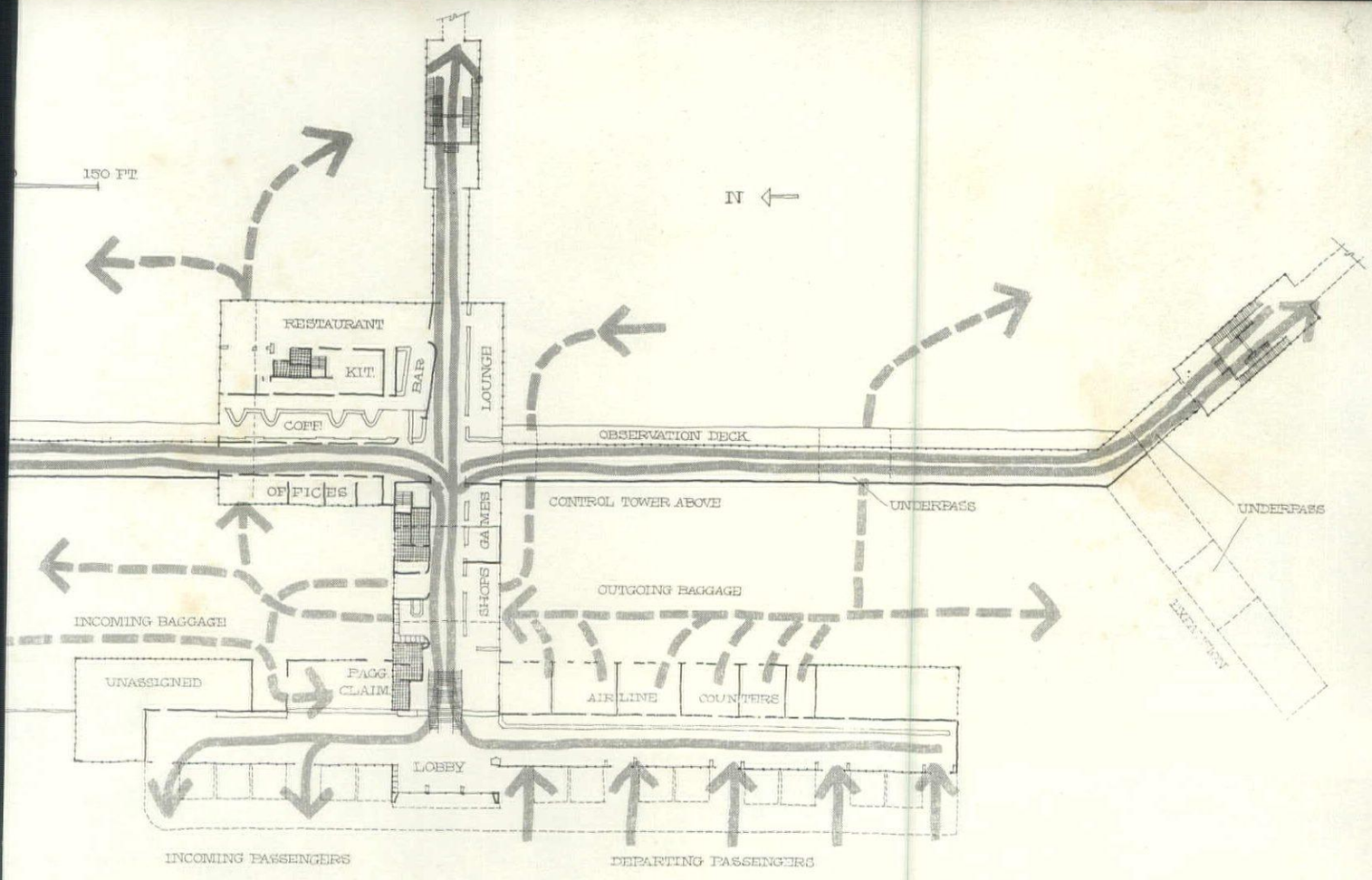
A FAST-MOVING AIRPORT



Not long ago the unpredictable Frank Lloyd Wright stepped off a plane at Milwaukee's new terminal, looked around, and delighted fellow Wisconsinites by pronouncing it "one of the finest airports in the country."

Although close examination reveals some clumsiness in detail and decorating, the new port does its main job well: it keeps traffic moving efficiently, gives most of its visitors an unusually pleasant time, and even makes some money in the bargain.

Photos: Hedrich-Blessing

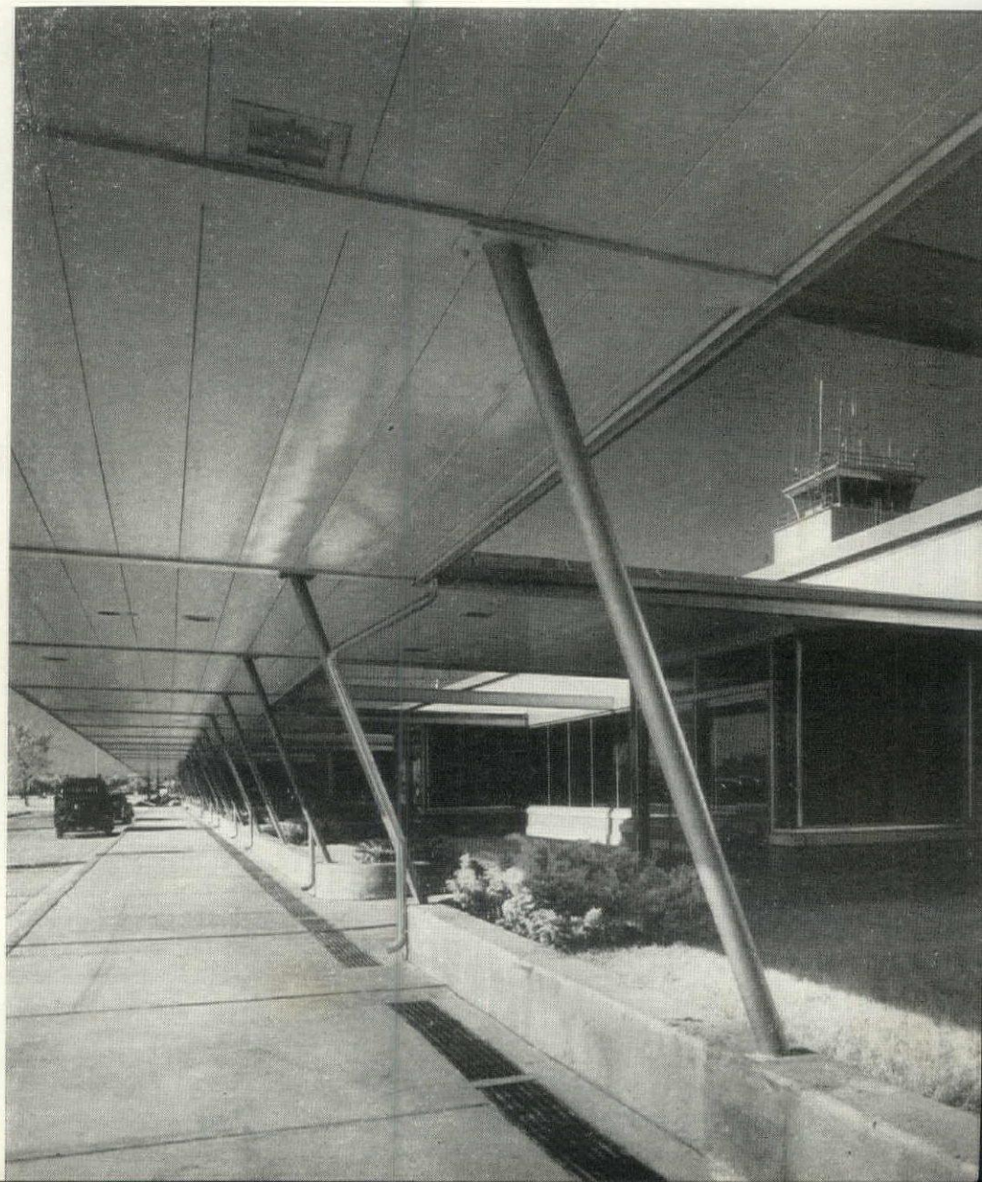


Wide canopies shelter the terminal's seven front doors

posite), check in at a single 180′ counter used by all six airlines—who report faster ticketing, no crowding and a 30% increase in reservations over the old terminal. To move an average of 1,200 passengers a day through the building there are clear, though not elegant, directional signs, eight escalator units, and 100 glass doors automatically operated by passengers' feet as they complete electrical contacts under floor mats.

Built-in expansion: The airport has yet to make full use of its north pier. In addition, the central pier can be extended and two new fingers added to north and south piers, bringing total plane loading positions from 18 up to 27. Should planes ever be loaded directly from second-story level, another story with extending gangplanks can be added on top of the present covered walkways, tying into the existing stair landing between escalators in each field lobby. There is also room to extend present ticket counters.

Cost: To date, Milwaukee's new terminal building has cost the county, state and federal governments $3,125,000, or $17 per sq. ft., excluding fees and furnishings. (A separate utility building connected by tunnel, plus extensive sitework, paving, aprons and utilities added another $1,669,163.) Construction is largely of prefabricated metal components; cellular steel roofs and second floor; exterior walls of insulated panels faced with aluminum outside and steel inside; ceilings of acoustical steel panels.



Photos: Joseph W. Molitor

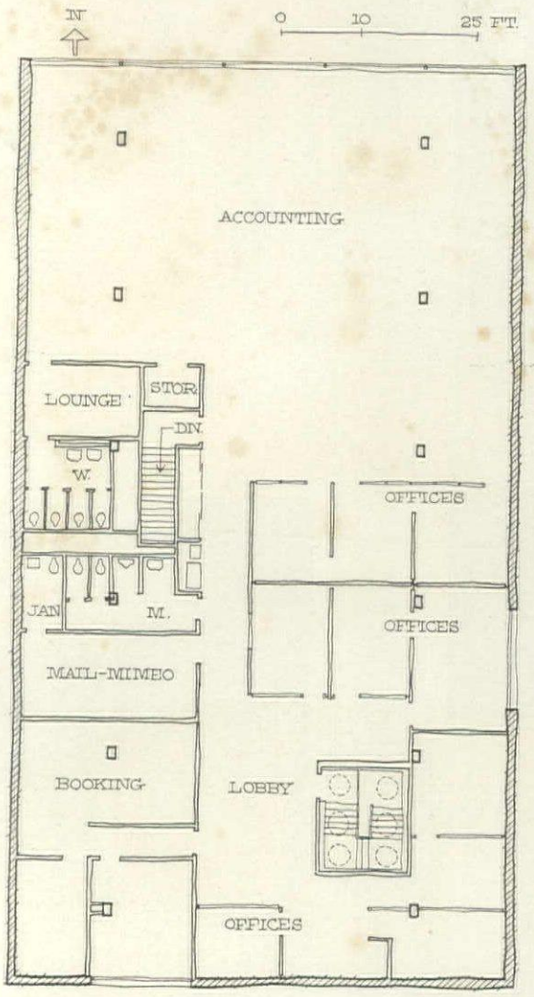
PEDESTAL OFFICE, PARKING UNDER

WILBY-KINCEY SERVICE CORP., Atlanta, Ga.
ARCHITECTS & ENGINEERS: Stevens & Wilkinson
GENERAL CONTRACTOR: E. D. Smithfield

The Wilby-Kincey people, who handle operations and accounting for a group of southeastern movie theaters, are right on top of the office parking problem. Having struggled with the shortage of car space downtown, they and their architects decided to use an available parking lot, and built new headquarters atop a big concrete platform that shelters stalls for 17 cars. Employees and visitors leave their autos under cover, walk to a little glass entrance chamber (or to the service trunk) and ascend a stair well lit by plastic skylights.

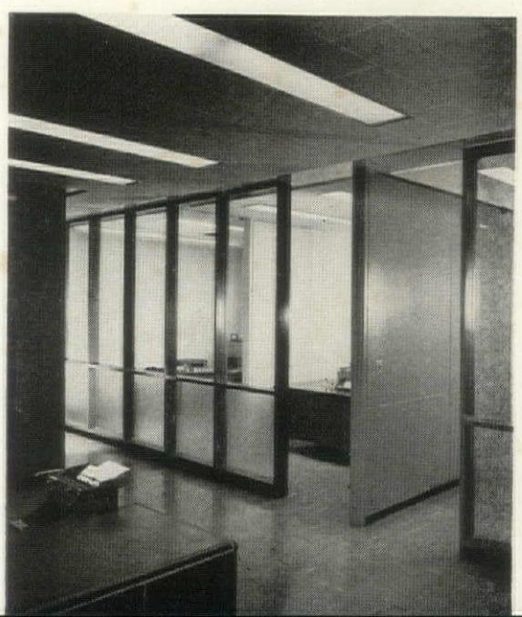
To save on year-round air conditioning, large glass areas first considered were given up in favor of 10″ cavity walls; the only windows are single panels at two executive offices on the south and east, and a long, narrow ribbon across accounting space at the north.

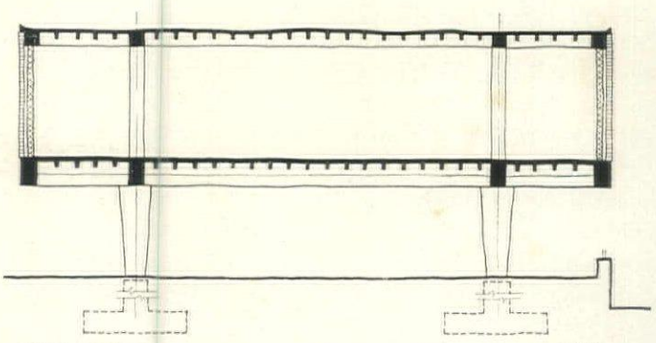
Note the refreshing way the architects handled their brick curtain wall. Unlike some modern masonry masses that float mysteriously on steel lintels almost hidden from the eye, this one rests its visual weight on a 3′ beam of reinforced concrete. This wide band and the tapered piers under it form a table that gives a strong sense of support and accents the horizontality of the building. A narrower, echoing cornice finishes off the structure against the sky.

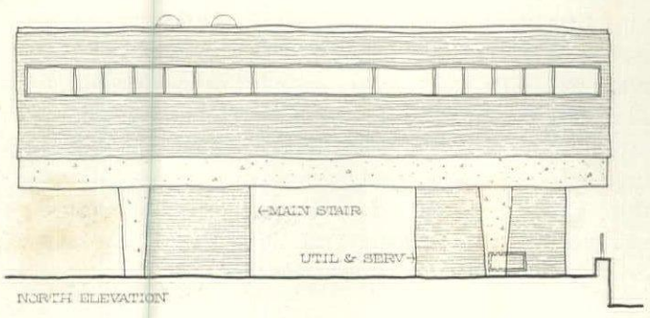


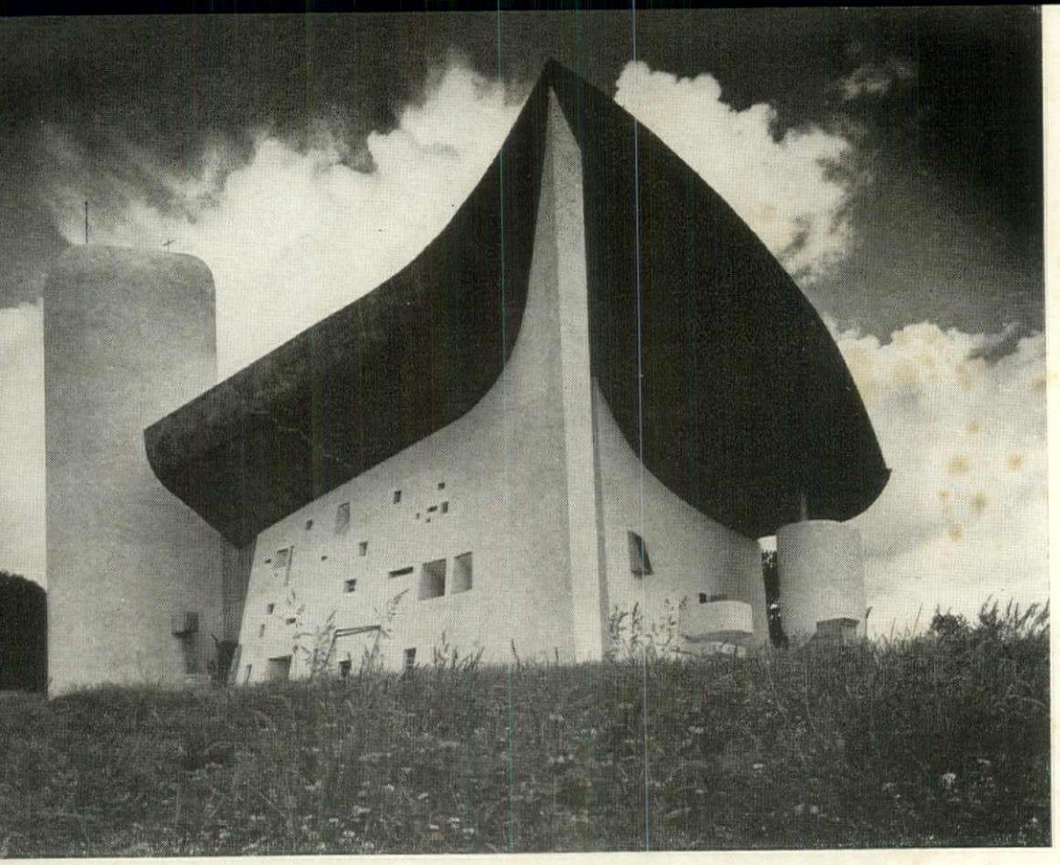
STURDY FRAME of reinforced concrete and lightweight pan slabs gives visual support to brick wall above. At left is executive office window, with gray porcelain enamel panels set in knife-edged sash of black anodized aluminum.

GLASS PARTITIONS toward accounting area help open up interior offices. Solid dividers are perforated hardboard with acoustical batts.

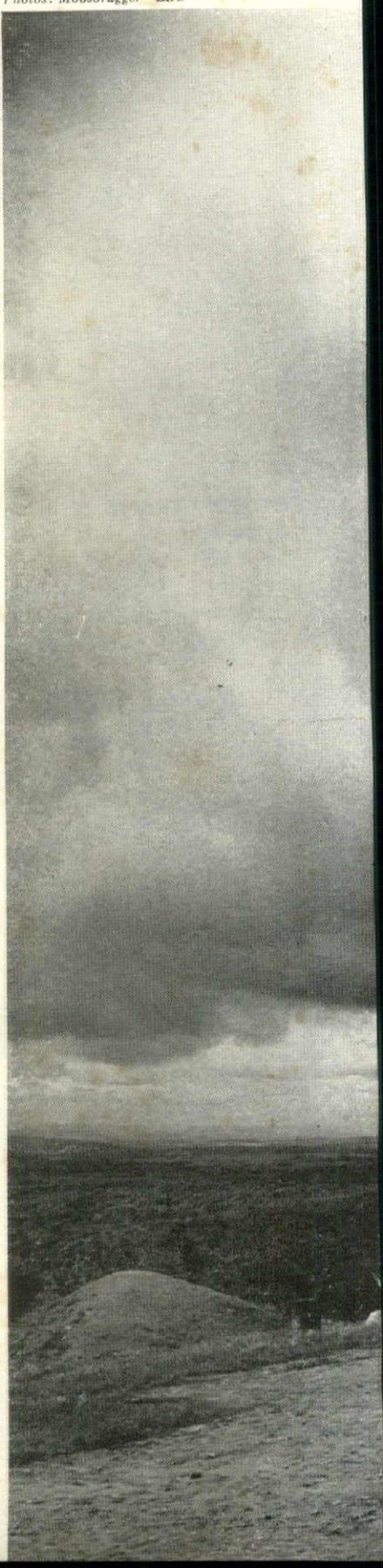








Photos: Moosbrugger—LIFE



CORBU BUILDS A CHURCH

Ever since pagan days pilgrims have climbed the winding road to the top of *Haut Lieu,* a hallowed summit in the foothills of the Vosges. But the "high place," with its wild and beautiful vistas brushed by low-scudding clouds, is also a key observation post, along the Belfort Gap invasion route. Time after time the church on *Haut Lieu* has been destroyed by war, to be built again by loyal parishioners from the little town of Ronchamp below.

The newest chapel of Notre-Dame-du-Haut, replacing the one knocked out by liberating French troops in 1944, is as remarkable as its lofty site. From billowing roof to deep-set slits of colored glass, it is the work of one man: the Architect-Painter Le Corbusier. To some it may seem strange that such a robust, primitive movement of shapes and textures, with some of the pulse of Africa in them, should come from a man who was once so fascinated by the forms of modern industry and transportation that he is still identified with his phrase "machine for living." Yet the sculptor in Corbu, it seems, had been growing. In his early buildings there was an occasional smooth, bulky curve almost hidden among the rectilinear planes. Then the top and bottom of his giant Marseille apartments broke out in moving forms, and these expanded through his town plan and buildings for the Indian capital of Chandigarh. Now, in Notre-Dame-du-Haut, it is almost impossible to find a straight line or two parallel lines, and the thin, rigid planes have become fluid masonry masses. Modeling and piercing as if with clay, the old master of concrete shows how dramatically his material can perform.

LETTERS

FORUM's round table report to its 48,000 readers on "How to Rebuild Cities Downtown" (June '55) and the distribution of reprints to 50,000 more has stimulated a flood of comment. The mail has come from men who have widely varied business interests, but who also have one common interest: the rebuilding of their downtowns. A sampling of this reader comment appears below.

Additional letters on the same subject appear in the regular Letters department (p. 78).

Smaller cities, likewise

The problems of a smaller city differ only in a degree from the metropolitan centers mentioned in the report. I am referring the copy you sent me to the chairman of our City Plan Commission, as I am sure it will be most helpful to him.

EDWARD B. SCOTT, *mayor*
New Britain, Conn.

Downtown-saving time

The only solution for the central core is to abandon its conservatism and offer the public more than the suburban districts can furnish.

Business should change its hours to suit the public convenience. It seems absurd that retail stores, banks, etc., must work the same hours as the customers. If such establishments were to have night service, perhaps the public might again start going downtown. And such a staggering of hours would relieve the traffic situation materially. As night baseball and football have increased attendance at these sports, so night service might revitalize the central core.

W. A. BLAIN
Fort Worth, Tex.

Residential areas, too

There is no question about the essentiality of organized and planned redevelopment to the economic future of our cities, not only for the survival of downtown areas but also for the retention of large residential areas as productive elements of our economy, commerce and culture.

O. R. DOERR, *vice president*
Pacific Gas & Electric Co.
San Francisco, Calif.

An aspirin

There is much meat in the pages—in fact, in passing the sheets on to my colleagues (both in the bus company and in the group of businessmen who are trying to find the proper "aspirin" to relieve our Downtown Harrisburg problem), I find I have underlined something in each paragraph on all but two pages.

HARLEY L. SWIFT
President and general manager
Harrisburg Railway Co.
Harrisburg, Pa.

What happened to downtown fun?

There has been no awareness expressed of one great missing factor in today's downtown areas—excitement. Many studies among women by our agency and others have evoked the fact that many women don't think it's any fun to shop any more. By "fun" these women apparently mean the sales razz-ma-tazz that used to go on in the big department stores and other downtown retail establishments.

The fashion shows, the household fairs and bazaars, the demonstrations and other special events have been gradually lessened until they are now very sporadic.

As downtown stores have become more exhibit halls for merchandise than sales operations, the lively atmosphere, wherein something was always going on, has given way to disinterested, impersonal trading.

In my humble opinion, if downtown merchants would get together and plan events full of the old excitement and interest, the downtown areas would be jammed with shoppers regardless of parking, transportation and other difficulties.

Such promotional programming has to be part of any downtown development plan or, in my opinion, the full results will not be achieved.

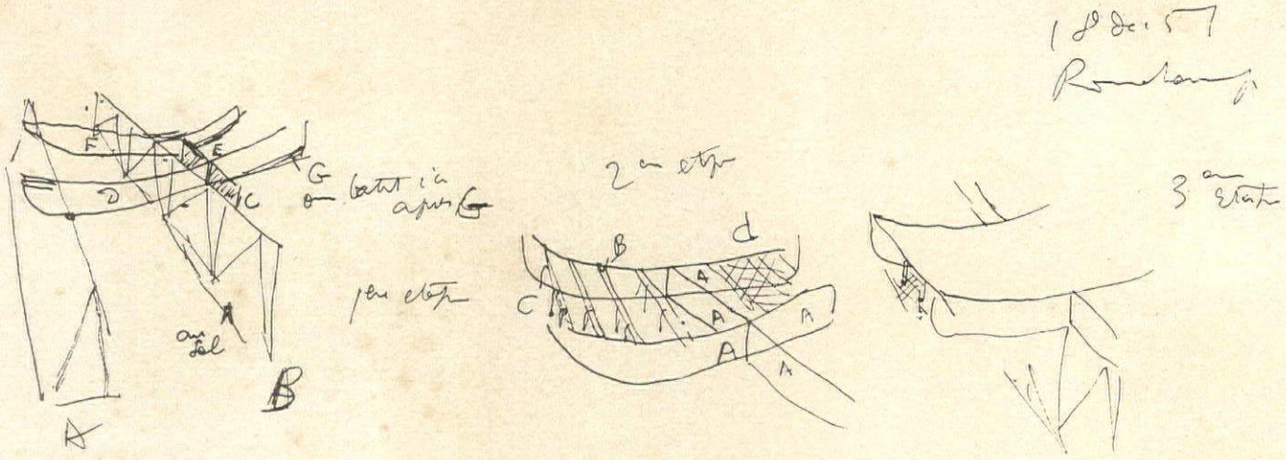
H. K. JONES
Vice president and director of research
Brooke, Smith, French & Dorrance, Inc.
Detroit, Mich.

Tax enlightenment

The fact that from an economic point of view the central business areas are the lifeblood of the metropolitan city tax structure, is not too evident to the general public. If we could continuously hammer away at these facts and awaken an upsurge of demand by the citizenry themselves for making the necessary changes, there would be no problem as far as having the political heads of the city go along with that demand.

The forming of committees of leading citizens alone is not sufficient and neither is it necessary that in the background of these committees there be powerful philanthropic institutions who are willing to contribute funds for this purpose. There is sufficient leeway in the realty values of most downtown areas today that under proper planning and development the necessary financing can in most cases be taken in stride, and a city will find itself with a very handsome gain in increased ratables because of the healthy atmosphere created.

P. GUERRIERI, *president*
Kresge-Newark, Inc.
Newark, N.J.



Sway-backed roof is built like an airplane wing: reinforcing struts and partitions between two skins of concrete. Photo below shows how it hovers on posts just above the rough-textured masonry wall.

Planning above politics

To secure results it takes either a strong private group or an able, highly respected town planning organization. The big problem as I see it is to secure support for and increase the strength of town planning and to do this it is generally necessary to put them above political considerations. Admittedly this is difficult, but I believe some progress is evident in this direction.

H. C. TURNER JR., *president*
Turner Construction Co.
New York, N.Y.

The return of the pendulum

We live in the age of specialists and there are very few great minds that grasp the universal laws. The staggering development of industrialization, transportation and communications unbalanced our life. There is a basic overemphasis of material values over spiritual values and most fields of human endeavor suffer from extremes —brilliant results of specialization without a happy synthesis.

Efforts such as the round table are most helpful in speeding up the return of the pendulum that overshot its mark to its normal cycle including a sound urban redevelopment.

L. L. RADO, *architect*
Antonin Raymond & L. L. Rado
New York, N.Y.

Modernization, too

In the rehabilitation of central areas, people apparently have completely forgotten that much can be done with what they already have—if they will just go ahead and do it.

In many cases the downtown streets are still illuminated with gas lights and little, if any, widening of thoroughfares has been done. In fact, the area today is much the same as it was 50 or 75 years ago. I can't help but wonder what would happen if the merchants were to just modernize their existing building with installation of modern show windows, good lighting, architecturally changing the exterior of the buildings and the installation of high-speed escalators. This would certainly attract customers.

HENRY A. BARNES, *director of traffic*
Department of Traffic Engineering
Baltimore, Md.

A new kind of taxation

As long as the rate of downtown property values continues to appreciate greater than the loss of revenue from the majority of businesses, no cooperative action will be taken. Ideally speaking, it would be desirable to revise our taxing system to permit the building structure to be taxed in a modified form, inversely proportional to the improved property's economic and esthetic contribution to the community.

This would tend to decelerate the property values and provide a more spontaneous response from property owners to cooperate for immediate private and public improvements.

W. B. DOLPHIN
General engineers and designers
Chicago, Ill.

The need for reversability

Any program with respect to the development of city hearts predicated on flights to the suburbs must have some degree of flexibility and facility for the reversal. This recent centrifugal flight has been made possible by the high degree of individual mobility permitted by wide-scale ownership and use of automobiles. A reduction in the amount of motor fuel or substantial increase in its cost would have a very sharp effect in helping again to reconcentrate populations. This is a possibility that is almost likelihood within ten years or so.

IRVING S. SMITH, *executive vice president*
Continental, Inc.
Seattle, Wash.

Since the subject is of major importance and affects everyone of us, it is going to require a coordinator or possibly a national organization with counselors and technicians, planning officials and building congresses, etc., to translate ideas into action.

C. M. TOELAER
Chicago, Ill.

Cut-rate transit rides

Instead of the city subsidizing the transit system, which would be very unpopular, try this: Let each establishment buy tickets (weekly passes), pay full price and let store customeres who make a $10 purchase, have them at a 10% reduction.

Also have a nonprofit bus line run to various downtown shopping places and parking lots at a charge of 10¢ with receipt given. Then when a purchase is made —$5 or more—give credit of amount paid (10¢) on sale, upon surrender of receipt.

H. J. SCOTT
Avon Lake, Ohio

The round table article

. . . Very well done and very interestingly presented.

WALTER HOVING, *president*
Bonwit Teller
New York, N.Y.

. . . You have made a real contribution.

W. C. KEESEY, *vice president*
The Fidelity Mutual Life Insurance Co.
Philadelphia, Pa.

. . . One of the most constructive projects any publication could tackle. I doubt that any of us fully realize what a toughy it is becoming.

CHESTER H. LANG, *vice president*
General Electric Co.
New York, N.Y.

. . . I found it interesting and am in general agreement.

RALPH WALKER, *architect*
Voorhees, Walker, Smith & Smith
New York, N.Y.

. . . The article was filled with wisdom and constructive objectives and should be distributed to all planning commissioners in the country.

JOHN B. GODDARD
Western Mortgage Loan Corp.
Ogden, Utah

. . . This is not only an excellent but a very important study.

ROBERT L. SOMMERVILLE, *president*
Atlanta Transit System, Inc.
Atlanta, Ga.

. . . Some of the most convincing arguments I have ever read.

JAMES C. HESTAND, *general manager*
Mineral Wells Chamber of Commerce
Mineral Wells, Tex.

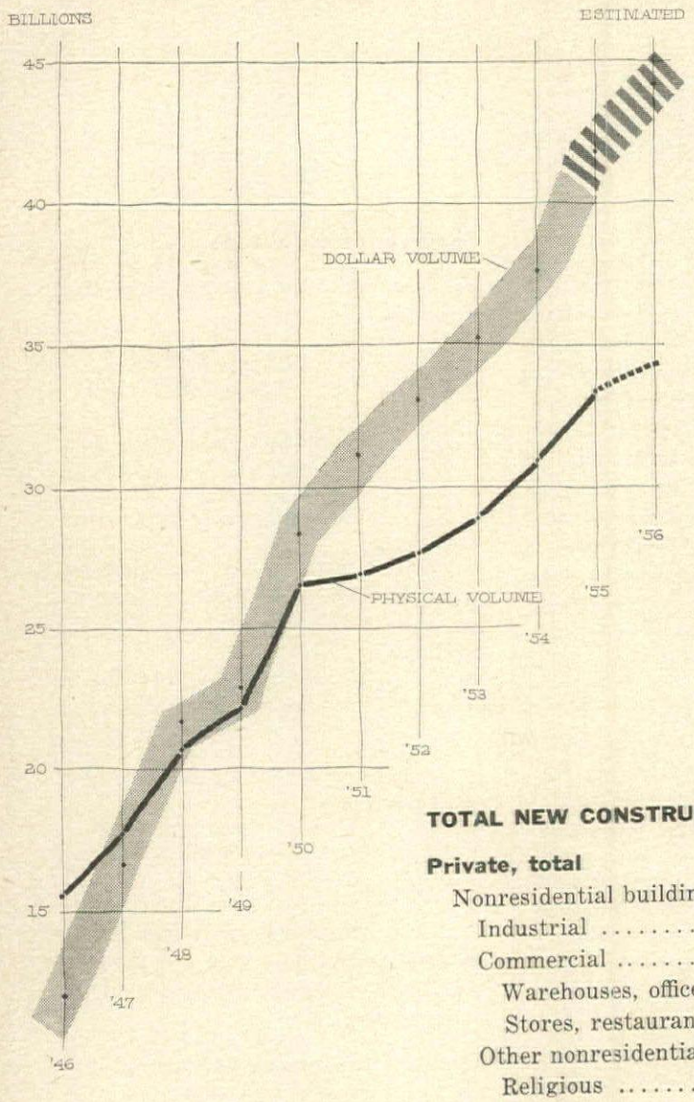
. . . This superb article can be a magnificent propaganda tool (in the best sense of the word) as was your earlier article on parking and traffic (AF, Feb. '52).

WATTS HILL JR., *vice president*
Durham Bank & Trust Co.
Durham, N.C.

Conservative and critical

I am somewhat conservative and I hesitate to say that I am stirred by the big, bold concepts and dramatic presentations. These are the terms of hucksters and not of the conservative engineer.

SEYMOUR B. MANY
Allied Maintenance Corp.
New York, N.Y.



FORUM FORECAST:

NEW CONSTRUCTION ACTIVITY[1]
(millions of dollars)

	1954 Actual	1955 Estimate	1954-55 Change	1956 Forecast	1955-56 Change
TOTAL NEW CONSTRUCTION	**$37,577**	**$41,800**	**11%**	**$44,100**	**6%**
Private, total	**$25,768**	**$29,485**	**14%**	**$31,000**	**5%**
Nonresidential building	6,250	7,285	17	**8,400**	15
Industrial	2,030	2,200	8	**2,600**	18
Commercial	2,212	2,875	30	**3,300**	15
Warehouses, office and loft buildings	958	1,075	12	**1,150**	7
Stores, restaurants and garages	1,254	1,800	44	**2,150**	19
Other nonresidential building	2,008	2,210	10	**2,500**	13
Religious	593	750	26	**900**	20
Educational	529	500	—5	**550**	10
Hospital and institutional	337	370	10	**400**	8
Social and recreational	228	265	16	**300**	13
Miscellaneous	321	325	1	**350**	8
Residential (nonfarm)	13,496	16,125	19	**16,400**	2
New dwelling units	12,070	14,600	21	**14,700**	1
Additions and alterations	1,130	1,200	6	**1,300**	8
Nonhousekeeping[2]	296	325	10	**400**	23
Farm construction	1,560	1,400	—10	**1,300**	—7
Public utility[3]	4,341	4,500	4	**4,700**	4
All other private	121	175	45	**200**	14
Public, total	**$11,809**	**$12,315**	**4%**	**$13,100**	**6%**
Nonresidential building	4,641	4,490	—3	**4,500**	0
Industrial	1,506	870	—42	**600**	—31
Educational	2,134	2,550	19	**2,800**	10
Hospital and institutional	365	310	—15	**300**	—3
Other nonresidential	636	760	19	**800**	5
Residential	336	250	—26	**300**	20
Military facilities[4]	1,030	1,150	12	**1,000**	—13
Highway	3,750	4,200	12	**4,800**	14
Sewer and water[5]	982	1,100	12	**1,300**	18
Miscellaneous public service enterprises	218	300	38	**350**	17
Conservation and development	704	650	—8	**650**	0
All other public	148	175	18	**200**	14

Sources: 1954 and 1955, US Departments of Commerce and Labor; 1956 estimated by ARCHITECTURAL FORUM

[1] Also includes major alterations and additions.
[2] Includes hotels, motels and dormitories.
[3] Includes buildings of various types (power plants, telephone exchanges, stations, maintenance shops, warehouses, etc.) as well as power, telephone and telegraph lines and other nonbuilding construction.
[4] Includes mainly buildings of various types (warehouses, barracks, theaters, hangars, schools, etc.) as well as airport and other nonbuilding construction.
[5] Includes buildings of various types (sewage plants, pump stations, etc.) as well as nonbuilding construction.

1956 will set another new record in building activity—$44 billion

Private nonresidential construction will pace the field with a 15% increase

Building next year will continue its upward surge, surpassing even this year's unexpectedly large volume, to make the tenth successive record-breaking year in dollar volume and the seventh in physical volume of work put in place.

Although the rate of growth in 1956 may be somewhat less than it has been this year, it will still be sufficient to boost the total over $2 billion to around $44.1 billion.

In 1956 the main advance will come from private business building, private industrial building and public works—mainly highways, schools and water and sewer facilities. Private residential building, though not quite so spectacular a feature as it has been in most previous postwar years, may still be slightly above 1955 in dollar volume, and will continue to make up well over one third of total construction.

The year 1956 probably inaugurates a trend that will be with us until we are into the sixties—a rather stable volume of housing, a gradual easing of commercial building, a mounting volume of industrial building and an expanding activity in the types of government construction that most directly serve the expansion of the private economy. These gains should more than offset any sag in residential building that may later develop before the renewed uptrend in family formation that will surely be underway within the next six or seven years.

PRIVATE CONSTRUCTION as a whole will be fairly steady in 1956, with a small—around 5%—push upward.

Industrial building's husky resurgence, after a two-year slide, was the big news in 1955. In 1956, plant expansion will continue the new uptrend at a quickened rate, as industry faces up to the capital requirements of an increasing population, an increasing standard of living, and the need to offset increasing labor costs with more efficient productive processes. Industrial building will amount to $2,600 million next year; and over the next ten years, it should steadily advance to a level about 50% higher than the 1955 estimate. Because of the constant search for new products, improvements in and new uses for old products, *research facilities* will figure prominently as an integral part of plant expansion.

Commercial building will have another flush year ($3,300 million), though the advance will not be so strong as during 1955. *Office buildings* will make up better than 90% of the category of warehouses, office and loft buildings. Rising vacancies in *loft buildings* in New York City, the main center of this activity, foreshadows a decline in the building of these structures. The *shopping center* boom will still be on, perhaps in milder form than in 1955 but still of sizable proportions. Here the prospective highway program, with its creation of new strategic points of traffic confluence, will be influential—as it also will be in the stimulation of new *restaurants and service facilities*. *Parking garages* should also get a good play.

Residential building will be close to this year's dollar volume despite somewhat fewer dwelling units—say around 1,250,000. Dollar volume will hold up because of more large units and slightly higher costs. (This estimate takes into account the tougher mortgage terms for FHA and VA loans instituted on July 30.) About 90% of the units will be in single-family houses. Private multifamily construction (five units or more) probably will account for no more than 5% of the total, or about 60,000 family units in all. Of this, perhaps half will be in elevator buildings. *Apartment building*, for reasons pointed out by FORUM (April, May, June '55), has little investment appeal; and there is nothing in prospect in indicate an improvement. Rental residential building therefore will be only an incidental feature of next year's building and will be concentrated in a few centers like New York, Chicago and Washington. *Nonhousekeeping residential building*, which includes hotels, motels and dormitories, is expected to show some increase. This is particularly true in motel building, which will continue to prosper along with the advancing highway program. Wherever a new toll road or freeway is projected, motels will not be far behind.

Religious and institutional building will be buoyant. We are in the midst of the greatest *church building* boom (including Sunday schools, parish houses and the like) of all time and there is no sign of abatement. About a fifth of this expenditure will be for other than churches proper. Probably a fourth to a third of the *private educational* building will be in the *college and university* category, where capacity will have to be enlarged around 30% within the next five years if we are to accommodate the demand for private higher education. Attitudes toward racial integration are likely to give a special boost to private primary and secondary schools, particularly in the South. *Private hospital* building will move steadily ahead (see below).

Utility construction will move along, largely under the impetus of expanding electric light and power activity. Most of this, of course, will be in the nonbuilding category. For example, probably no more than 12% of *railway construction* will be in terminal facilities, shops, etc., and about 5% of the expenditure for *telephone, telegraph, electric* and *gas* facilities will be for buildings.

PUBLIC CONSTRUCTION will move ahead more vigorously (up 6%) in 1956 than in 1955, under the pressure of the population increase and the demands of the private economy for supporting facilities. The shift in emphasis from federal to state and local expenditure will continue. Of the total public outlay, about 70% will come from state and local governments, with emphasis on educational, hospital, highway, and sewer and water facilities.

Public housing will get a modest boost to $300 million, reversing the downward trend of the past several years.

Industrial building at $600 million (much of it for atomic energy) will again be downward.

School building will continue to move up—to $2,800 million. However, despite the high pressure of current and future demand, the rate of increase will probably be slower than between 1954 and 1955, due to the problems created by the integration issue, mainly in southern states. It will probably be at least a year before adjustments in attitudes and financing programs can be made in sufficient degree to permit school building to advance in line with needs. About 85% of next year's public educational building will be for *primary* and *secondary schools*, the remainder for *colleges* and *universities*. During the next several years, the proportion representing higher education may be expected to increase. Public school construction will account for about 60,000 elementary and secondary classrooms in 1955; the number will go to at least 65,000 in 1956.

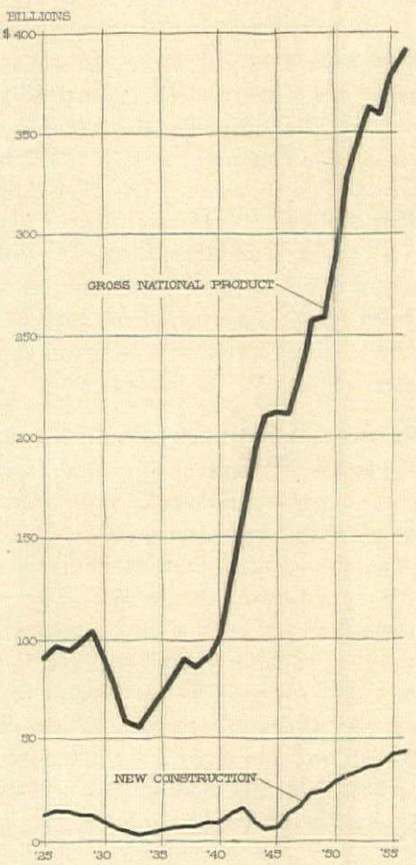
Hospital and institutional building, at $300 million, should just about hold its own. Combined, private and public hospital construction will produce space for about 43,000 beds in 1955; next year the combined total should be about the same.

Military construction, despite a substantially increased housing component, will decline as a whole.

Highway building may advance to 15% above the 1955 level despite the refusal of Congress to up the amount of federal aid.

Sewer and water facilities will be a big business ($1,300 million)—even bigger than in 1955 due to an increasing emphasis on *treatment* and *pumping facilities*.

Other public construction: *conservation work*, mainly in connection with water supply projects, will halt a five-year downtrend. *Public administrative building* (referred to as "other nonresidential" in the table) will do better next year than this on both federal and other fronts.



Expanding economy, measured by gross national product, accounts for increasing postwar market for construction industry. Note that, whereas construction in 1954 was only 8% of GNP, since 1950 it has steadied at about 10% of GNP.

WHY THE BUILDING BOOM CONTINUES

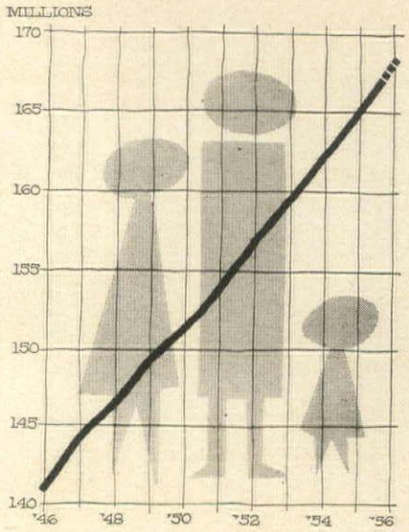
All the forces that have sustained building during 1955 will be present in 1956 and some of them will be present with greater vigor. For example:

International tension has lessened and the more peaceful scene will give greater confidence to private business. Despite some prospective cuts in defense expenditures if all goes well (and it is not likely to go so well as to permit drastic cuts), total expenditures of government—federal, state and local combined—mainly because of stepped-up public construction, will be greater than during 1955. Moreover, a decline in the federal portion of total government expenditures is likely to be offset by tax reductions.

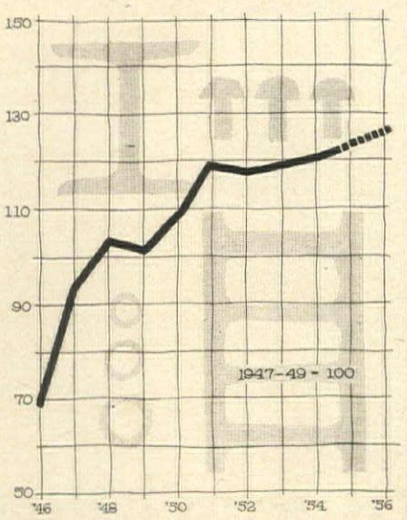
Business generally will be good with the gross national product hitting around $390 billion. *Employment* will reach a new peak. *Unemployment* should again fall close to merely frictional proportions.

Taxes will be reduced again. Added to another round of wage increases, this will give a strong boost to the upgrading of income to which FORUM has called repeated attention during the past several years. The result will be both *increased savings* and *sustained spending*, both of which directly and indirectly stimulate the demand for construction.

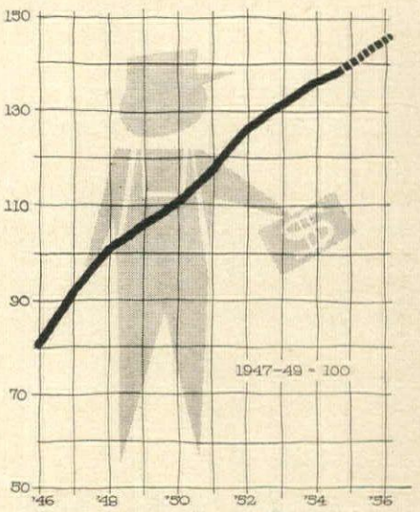
Investment funds are growing. The volume of funds available for capital investment in both equities and mortgages will be substantially greater as a result of larger institutionalized savings (including investment trust and pension



Population of US has increased in almost straight line since 1946. For 1956 a 2.8 million increase is forecast —and a total of 168,070,000. Steady rate of increase presages continued demand for all facilities, including buildings.



Building material prices, which have changed only slightly since 1950, are likely to rise somewhat more rapidly during the rest of 1955 and in the early part of 1956. Index is expected to inch up to 127% of 1947-49 level in 1956.



Wage rates for building trades have mounted steadily since 1946, are expected to continue their rate of increase into 1956. Next year's figure should be close to 145% of 1947-49 average. (1946-54 figures from Commerce and Labor Depts.).

funds) and depreciation accruals. In addition, by the beginning of the year the effects of a more relaxed monetary policy are likely to begin to appear in the mortgage market. Money should become more readily obtainable as the year advances.

Population growth will continue at about the same rate as this year—about 2.8 million. This is larger than the population of the Boston metropolitan area—a comparison which helps measure the ultimate demands for all kinds of facilities implied in the nation's population growth.

Household formation will increase probably at a higher rate than the available statistics indicate—a figure of around 850,000 additional nonfarm households is probably a safe estimate of the actual situation.*

Prices are not out of line. While on the uptrend, prices probably will lag sufficiently behind income so as not to produce a strong deterrent to decisions to build. A leveling of prices toward midyear is a possibility after new manufacturing capacity comes into operation.

Obsolescence is being accelerated. Existing structures of all types are growing old faster than ever before due to the desire of tenants to increase their comfort and convenience and the desire of owners to reduce maintenance and operating costs, and due to the building industry's response to these desires with new and better products and methods and greater emphasis on design and styling.

Capital plant deficiencies are enormous. On the private side, we are far short of the manufacturing, transportation and distributing facilities that we shall need to provide the jobs and meet the demands for goods that will be required by the present growth of population and the future increase in households. On the public side, we have not yet met back demands for schools, roads, water, sewer and all the other facilities needed to support an urbanized economy, while we are almost wholly unprepared to accommodate the demands of the next decade. Consequently there are years of work ahead on these fronts.

On the negative side there are: a continued slow decline in federal government outlays as a whole, a stable or slightly declining situation in household formation, some possible problem in digesting the present high level of debt, and a tightness of credit during the fall and winter months of 1955 and early 1956. Difficulties may be encountered if prices rise more than is anticipated, or if severe shortages of key materials such as cement should develop, or if central banking policy too long prolongs the administering of what is currently considered to be a necessary economic sedative. Failure of public construction, like sewer and water and street extensions, to be synchronized with private demand could put a brake on residential and business building.

At worst, however, these are likely to be restraining rather than restrictive forces. They may temper the advance but they can hardly stop it, in face of an overwhelming weight on the positive side.

At this point the FORUM Forecast looks safely conservative. Construction is bound to win again in 1956.

* No statistics have been more misused than those on household formation compiled by the Bureau of Census. The Census undertakes, on a sample basis, to measure the total number of nonfarm households each year, which it can do with a tolerable margin of error, but it cautions against the use of the figures to measure net growth from year to year because of the magnification of the error when applied to the year-to-year difference. Moreover, the estimates most frequently quoted refer to *total* households, whereas the housing market is concerned with nonfarm households, which have a much larger annual increment than the total.

The health facility that helped patients by giving more convenience to the staff . . . the structural clear span that cost a lot but saved still more and why . . . the spacious clinic on a narrow lot . . .

SEVEN HEALTH BUILDINGS

Every architect has met clients whose declared purposes are wonderful but whose specific demands, point by point, will carry them off in a totally different direction.

And of all clients who exhibit this maddening discrepancy, medical men are the most maddening. They are used to having "laymen" (and to them the architect is a "layman") follow their orders faithfully and even worshipfully, without arguing. They have a wonderful fund of intimidating jargon and special knowledge. In short, they are experts not only in their professional field, but in the art of being one up on the other fellow.

Not surprisingly, the medical client often fails to get the best out of his architect or the best out of his building. A review of a great many current hospitals and medical buildings amounts to a disillusioning course in the timid, the humdrum, the inconsistent and the thoughtless. Very sad, since these qualities do not characterize the practice of medicine itself.

But every so often a medical building turns up that measures up to the thinking in the profession that will use it. Lately, special medical buildings provide more of these happy surprises than do hospitals. Behind these good buildings is always a medical or administrative client who was willing to listen to, and respect, his architect—and an architect who knows what it means to dig in and research what his client is *talking* about, as well as what has been done.

The seven medical buildings presented here are the results of this kind of collaboration. Perhaps the outstanding one (Chestnut Lodge center by Architects Keyes, Smith, Satterlee & Lethbridge, opp.) happens to be a mental hospital facility. This is the medical environment most difficult of all for the architectural "layman" to analyze and recreate. But it was done here, and this job should have great influence both as a specific facility and as an example of what architecture, given the chance, can do for medicine.

Lounge includes library, sedentary games

Photos: © Ezra Stoller

Shaded terrace opens off south wall of lounge

A NORMAL BUILDING FOR RESTORING MENTAL PATIENTS TO NORMAL LIFE

"When we first discussed this building, we had quite different ideas," says Dr. Dexter M. Bullard, medical director of this private mental hospital, most of whose patients are schizophrenic. "But the architects persisted in questioning what we wanted, what use would be made of the building, to the degree that finally their conception of its style and function seemed to be so valid for this kind of a building that we readily acceded to their plans."

This is the first wing of a recreational, social and occupational-therapy building group, and what the client originally had in mind was the usual therapy building, a decidedly clinical institution. Instead the wing turned out to be a community center that would not be out of place on a campus or in a fortunate town, although unobtrusively it is most carefully designed for its special function and future expansion.

The architects' unusual conception of a community center did not arise from refusal to heed the client's wishes. Quite the contrary. They heeded him *in his own field*. They studied his aims and methods of treatment, they zealously researched the pertinent psychiatric writings, and they concluded that their client's thinking was utterly at variance with the architectural solutions he was taking for granted.

The client wanted patients to be drawn to the building, rather than urged or invited, and not to fear it or feel trapped once they were inside. He wanted them to "choose freely" from a range of activities. He wanted it to help put them in touch again with other persons and with normal life.

To the architects this meant, foremost, a "normal" seeming building, and an inviting one. It meant obvious and easy exits, emphasized by terraces. It meant retreats and transition spaces, where patients not yet ready for activity could watch others; a refreshment counter to stimulate the highly social act of sharing food; openness to adjoining lawns and sports to lure the patient into games; a well-defined module for a reassuring sense of order.

The architects also questioned major emphasis on a gymnasium, which has been postponed to a later stage of building; they suggested that the mild Maryland

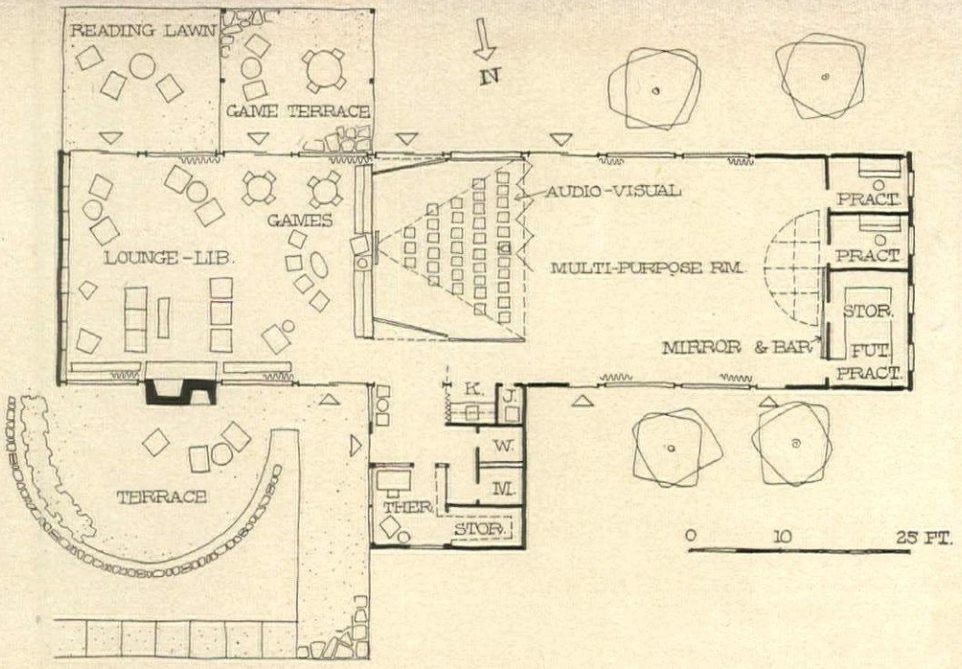
climate invited normal outdoor community sports. They made the deduction, which the client accepted, that if patients were to "choose freely" they had better be provided with choices not necessarily the same as those they would pick in normal life, but from a range that does reflect their normal culture. The patients here include a high proportion of professional and executive people, but for patients from other strata of life the same reasoning would presumably apply.

The architects also applied common sense to the confused subject of institutional vs. "homelike" architecture: "No large group facility can ever recreate the small-group scale of the family. No hospital can be a 'home.' What it can be is a community. It seems 'normal' that workshops, libraries, gymnasiums, etc. look like good community schools or centers rather than like houses. . . . The 'normal' standards must come from the normal community, not from the hospital."

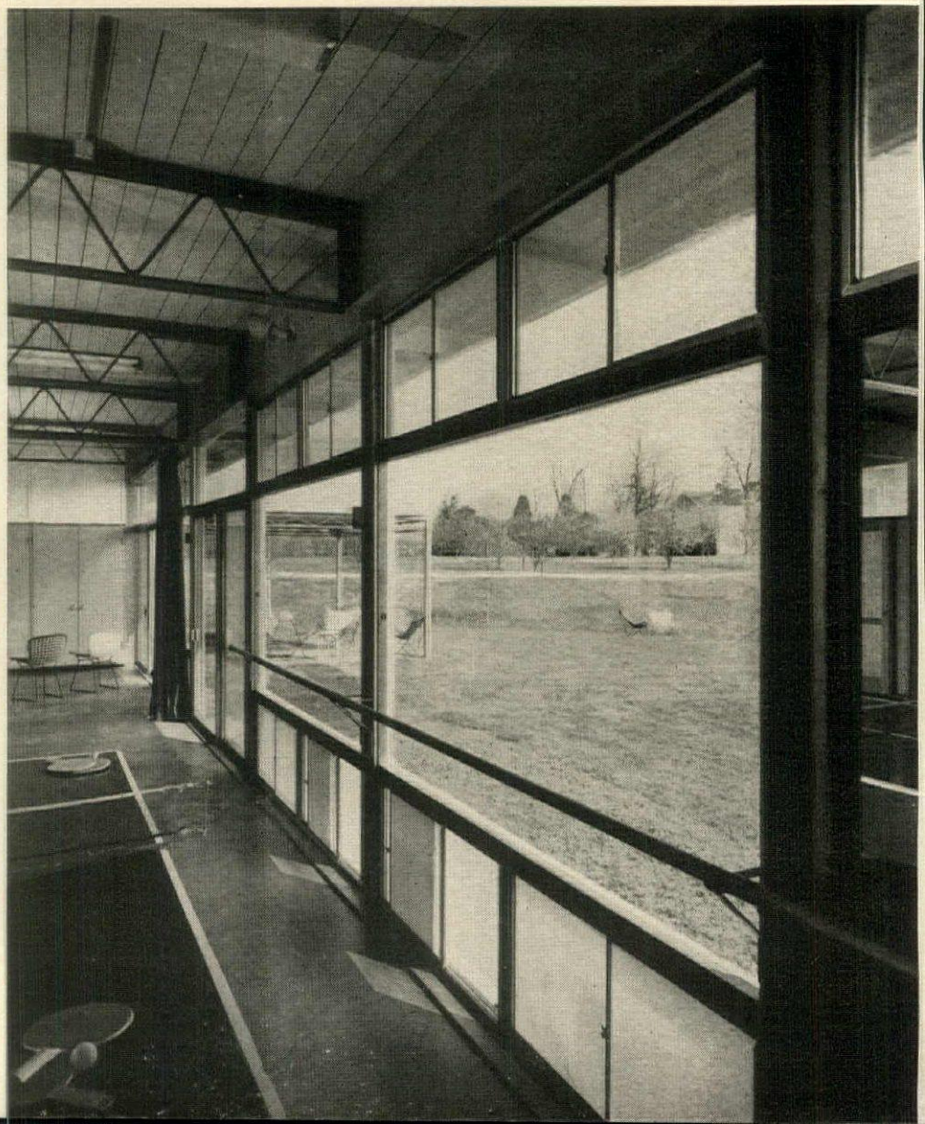
The client reports the building does draw patients and has become a center to a greater degree even than anticipated. "It has also become a center of activity for out-patients, who formerly were much of the time at loose ends. . . . The patients' interests have developed to such a degree that they now manage the activities budget which they prepare and present to the budget committee of the hospital for approval. The patients' planning committee fully controls these funds."

Structure is steel columns with open-web steel joists. (Inexpensive, these do tend to complicate the overhead view.) Columns are spaced to take stock 8′ exterior wall panels and stock sash, for easy changes in future. "Glazing" near the floor is translucent, colored, unbreakable plastic. Top sash is removable, leaving a screened ventilation band for summer. Construction cost, not including fees, was $32,000; $11 per sq. ft.

CHESTNUT LODGE THERAPY BUILDING WING
LOCATION: Rockville, Md.
ARCHITECTS: Keyes, Smith, Satterlee & Lethbridge
STRUCTURAL CONSULTANT: J. Gibson Wilson Jr.
GENERAL CONTRACTOR: Bradley C. Karn

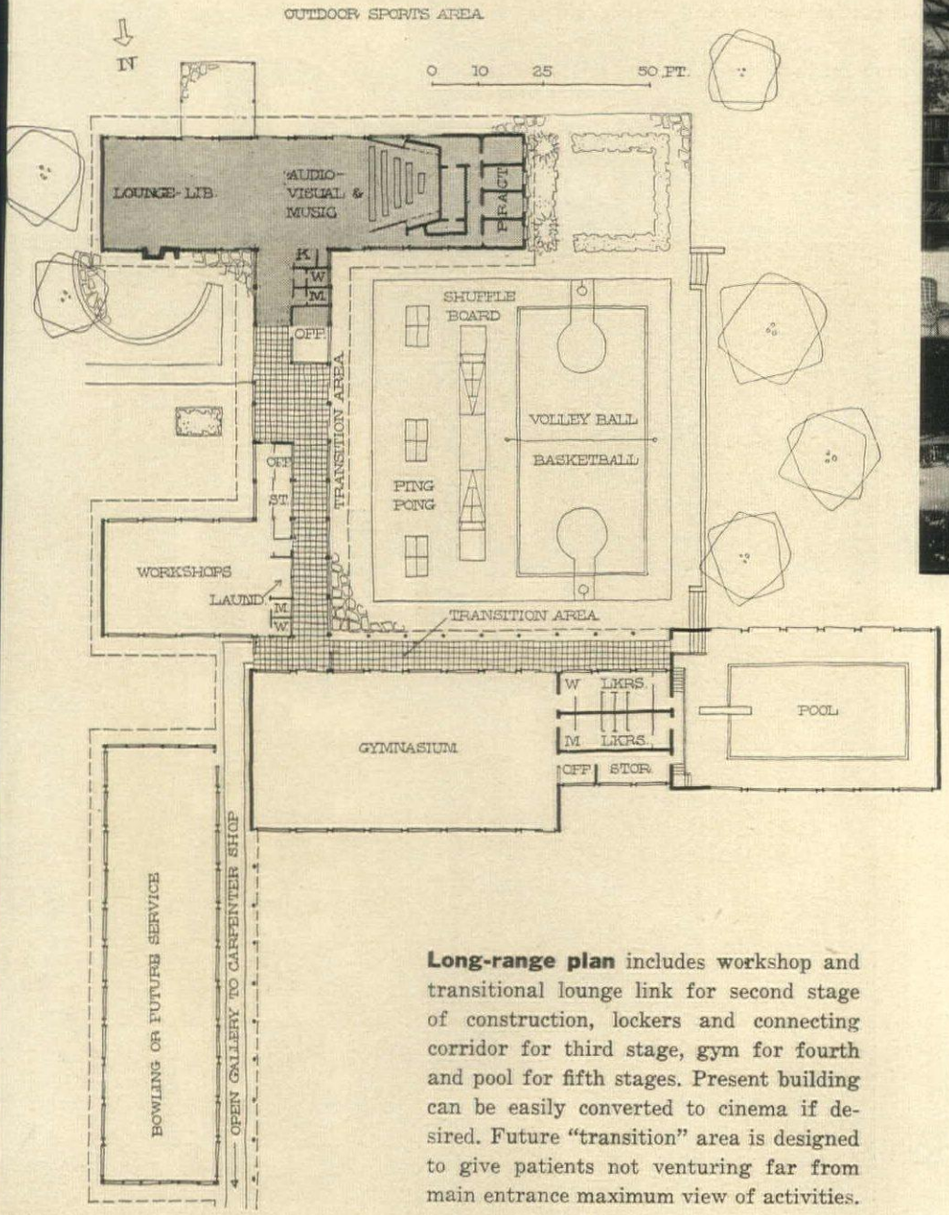


Plan divides activities building for population of 75 patients, 35 out-patients, into three zones with reading, card games, chatting in one area: television, radio and music recording in another; active games, dance practice, psychodrama in the third, with individual rooms for music and typing practice. Therapist's office is control point. Only permanent interior partitions are those of small, sound-treated practice rooms. Exterior wall at therapist's office is temporary for future expansion (see long-range plan). View along multipurpose room (below) shows emphasis on easy exit.



Photos: © Ezra Stoller

Exterior wall panels are removable for future changes. View above is north wall. Stone wall in foreground is patients' project. View at right from lounge looks into lobby and multipurpose room beyond.



Long-range plan includes workshop and transitional lounge link for second stage of construction, lockers and connecting corridor for third stage, gym for fourth and pool for fifth stages. Present building can be easily converted to cinema if desired. Future "transition" area is designed to give patients not venturing far from main entrance maximum view of activities.

VILLAGE FOR OLD PEOPLE

Strictly speaking, this is not a medical facility. It is primarily special housing which includes a future infirmary and nursing unit.

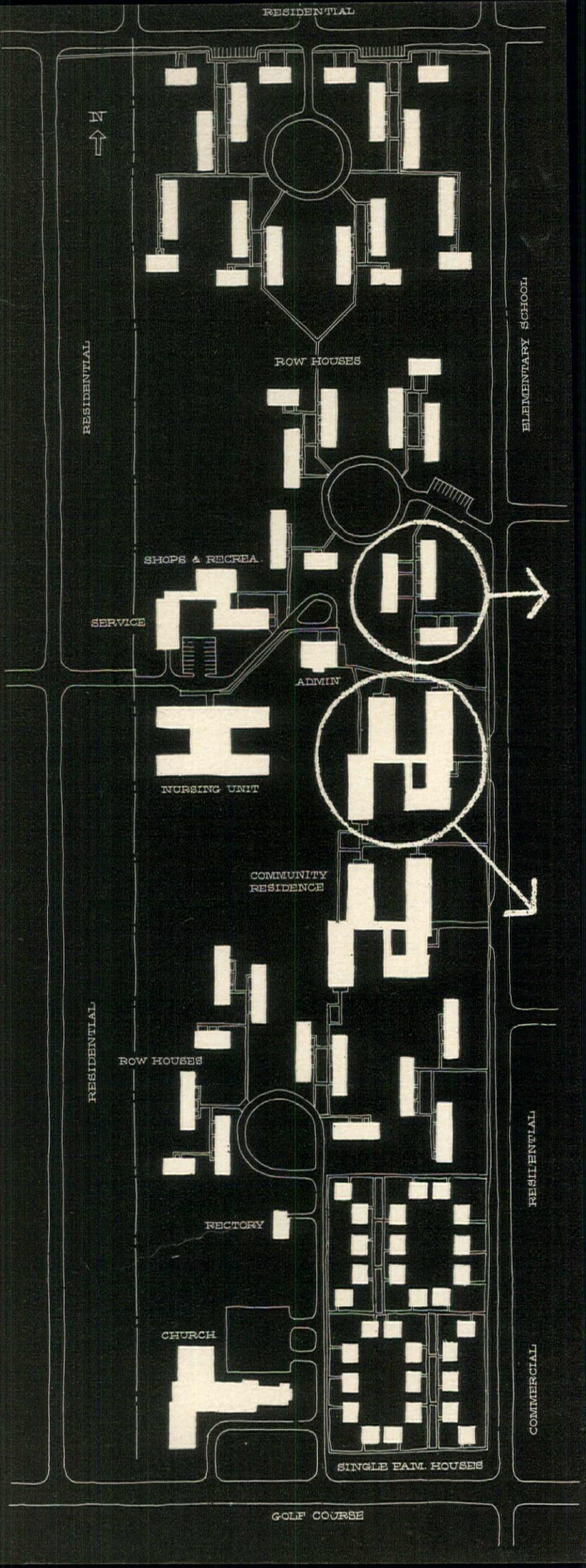
But the planning here does have great bearing on policy, programming and planning of hospitals for the chronically ill and on geriatrics institutions. Any one concerned with hospitals should be aware of this pace-setting, church-sponsored facility for aged of the Detroit area. Wherever its progressive program is adopted, part of the normal chronic and geriatrics load will be absorbed, to the benefit of both patients and hospitals.

The big point about this village is that it is not designed simply for the infirm, chronically ill or indigent; nor is it designed simply for the physically able or financially independent. It is for all of these. When a resident changes from one category to another, the village accommodates the change.

The village has four types of units: 1) individual homes for those able to afford and maintain them; 2) one- and two-bedroom row apartments for couples capable of independence; 3) a community residence for physically able single persons who like community living, for infirm single persons who need some daily assistance, and for couples of whom one is infirm and the other unable to assume the whole housekeeping; 4) nursing units for the chronically ill, the badly infirm and the occasionally ill.

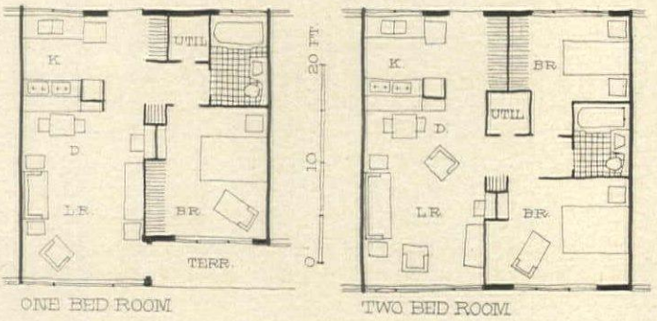
Architects Smith, Hinchman & Grylls were in a sense their own clients on this job because Robert F. Hastings, vice president of the firm, is a director of the village and served on the original planning committee. But the photographs clearly show who the architects thought of as their clients: the residents.

Structure is brick veneer on wood frame. Safety features include grab bars, corridor handrails and cork flooring. In the community residence, half the bathrooms have tubs, half showers, to determine preferences for future planning. Construction has cost, thus far, $296,819; $17.60 per sq. ft. excluding fees.

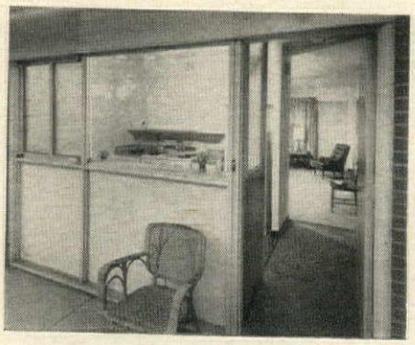


PRESBYTERIAN VILLAGE
LOCATION: Redford Township, Mich.
ARCHITECTS AND ENGINEERS: Smith, Hinchman & Grylls, Inc.
LANDSCAPE ARCHITECT: Hrand Hampikian
GENERAL CONTRACTOR: Walter L. Couse & Co.

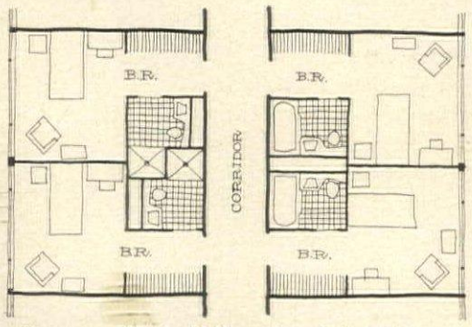
Photos: Lens—Art



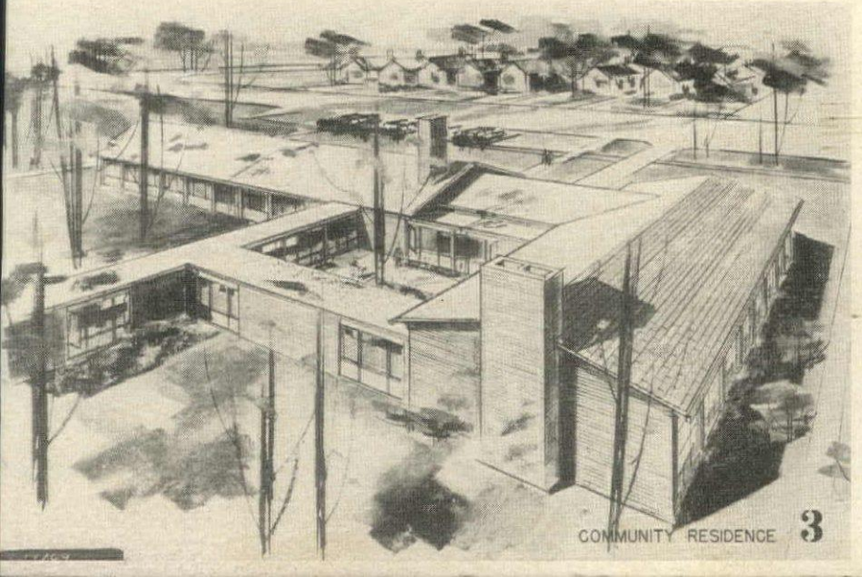
ONE BED ROOM TWO BED ROOM



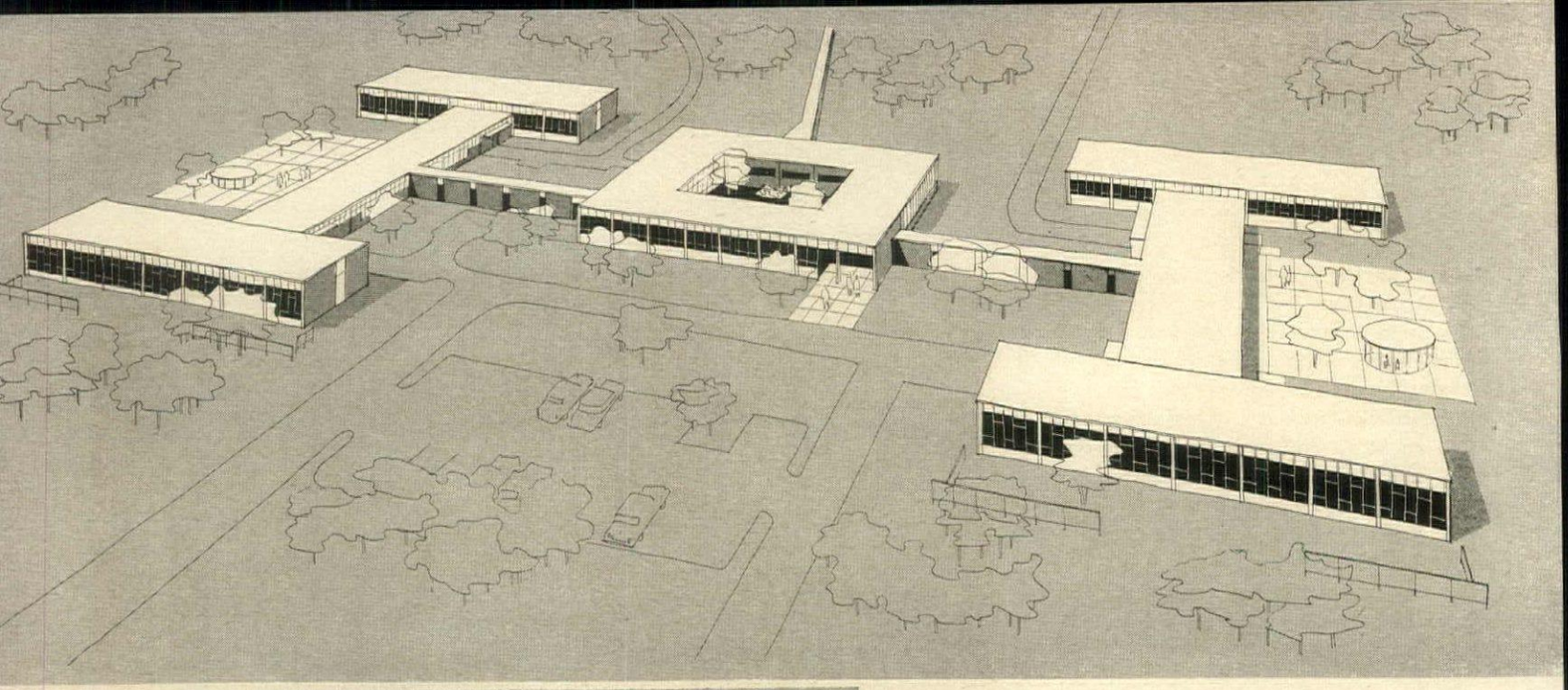
Row houses, indented with sun terraces, contain one- and two-bedroom units. Village was purposely sited within surrounding normal community, close to commercial district and school.

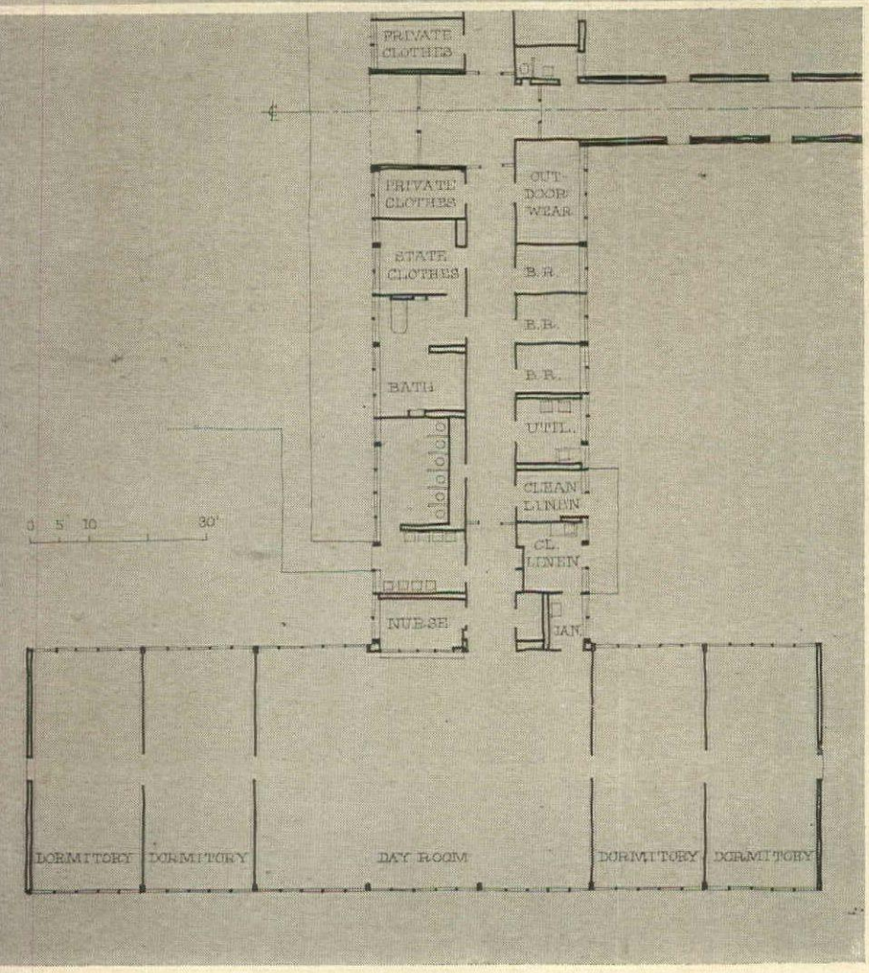


Community building has hotel-like accommodations in low one-story wings. Dining, kitchen and lounge are in wing, already completed, shown at right of rendering. These units are for residents who do not want to keep house or are unable to.



COMMUNITY RESIDENCE 3





Dormitory units are four T's, each with four 12-bed sleeping rooms looking into fence-screened lawn, day room open to view, related facilities in corridor wing. Each unit has own supply dock.

GERIATRICS BUILDING, MIDDLETOWN (N.Y.) STATE HOMEOPATHIC HOSPITAL
STATE ARCHITECT: Cornelius J. White
ASSOCIATE ARCHITECTS: Ketchum, Gina & Sharp and Addison Erdman
CONSULTING LANDSCAPE ARCHITECT: Robert Zion
STRUCTURAL ENGINEER: Severud-Elstad-Krueger
MECHANICAL AND ELECTRICAL ENGINEER: John D. Dillon

CUSTODIAL MENTAL UNIT

AND RATIONAL DISPERSAL

Most mental hospital design founders on a paradox:

The simpler the attendants' procedures can be made, the better for the patients because the attendants will then have maximum time to devote to the patients. Yet designs in which the convenience of the staff is the guiding principle yield buildings so grim, so tightened up, so regimented, that they are bad for patients (and probably for the staff too).

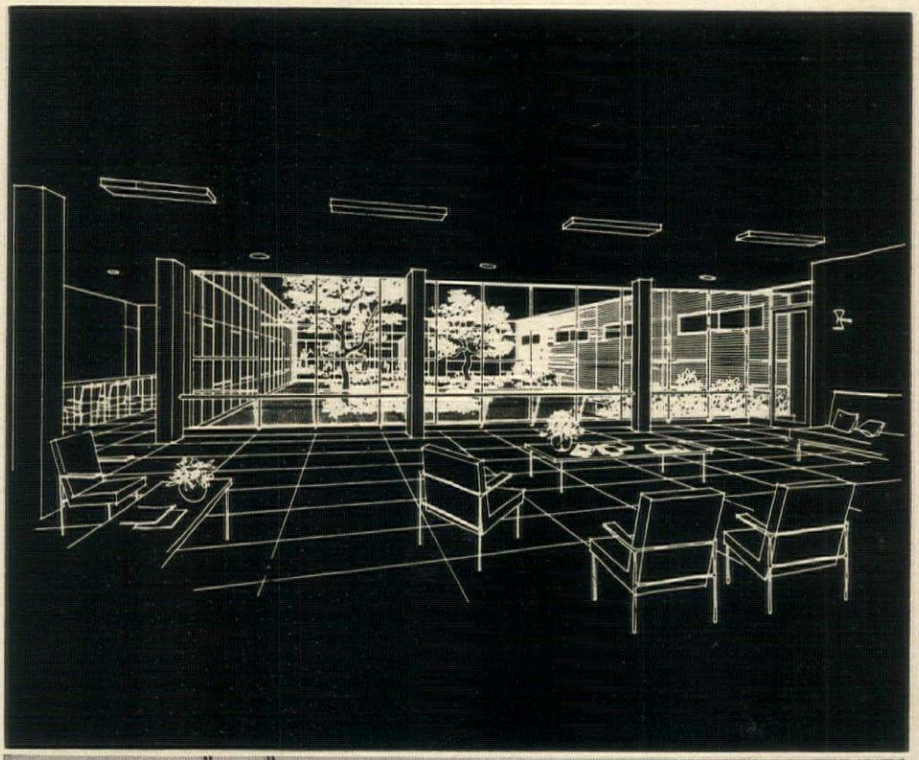
In this building for 200 elderly women mental patients, the architects outmaneuvered that standard dilemma. They concentrated first and basically on what would be comfortable, pleasant and convenient for the patients. Then they refined this scheme from the viewpoint of staff convenience. It comes off well in both departments, and is notable not only as a good facility of its kind but also as a rare example of the patient-first approach.

This is what the scheme provides:

For the patients, dispersal into four dormitory and dayroom groups for 50 patients each, instead of consolidated facilities for the whole mass; single-story plan so all patients can get outside easily and often*; careful organization of the surrounding outdoors; orientation to the best views; two dining rooms; one for each pair of dormitories; unobtrusive railings for circulation control instead of walls; orderly, uncon-

* Middletown's latest preceding building, just being finished, is an eight-story cruciform tower with a pseudocolonial doorway for disturbed patients. You might say the building is disturbed too.

Central unit is built around planted patio; view at right is from visiting lounge. Corridor from serving area runs to central kitchen in existing building. Outdoor space between dormitories and central unit will have garden strips for patients (not indicated on bird's-eye rendering). Sun terraces include circular summer houses. To reinforce the group's intimate scale, off-white brick will probably be used on the central unit and the long walls of the dormitories, red brick on connecting wings and the end walls of the dormitories.



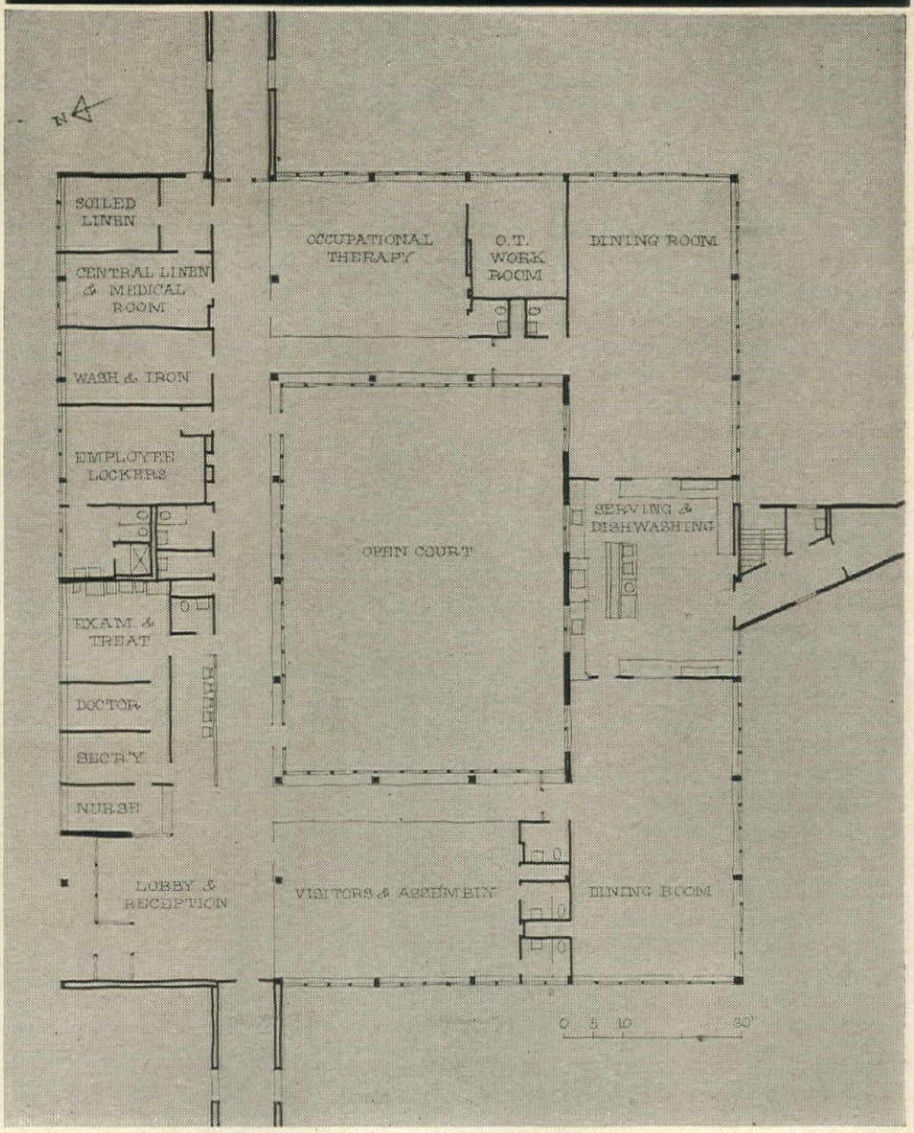
WITH A CHEERFUL AIR

fusing structure and plan; variety of view (i.e., courtyard view on the way to the dining room, the big outdoors from the dining room); plenty of sunshaded light; through ventilation.

For the staff, almost no corridor traffic of supplies; service rooms close to the areas they service; easy visibility from supervision points; strategically placed rest rooms for patients (of more moment to the staff than to the patients).

The general air of cheerfulness is noteworthy because the architects were up against reality. This type of institution is custodial in character and denies the inmates even a small corner for their personal possessions. In most cases, the patients are not susceptible to treatment and are far from visiting families and friends. Against this, new mental and physical interests are provided—indoor occupational therapy, outdoor hobbies such as gardening—and progressive methods of treatment unobtainable at home. Future developments may bring an even brighter outlook. But as long as that is the way we do things, this is a model building group for the poor old ladies and their attendants.

Structure is reinforced concrete for crawl spaces, mechanical rooms and passages below the first floor, light steel above. Roof is precast gypsum plank. Walls are colored brick with aluminum fascia and enameled steel sunshades. Estimated construction cost, including group 1 and 2 equipment, $1,170,000; $23 per sq. ft. Construction is scheduled for 1956.



AN OBSTETRICIAN'S OFFICE WITH THE EXAMINING SUITE RETHOUGHT

Here is a very good thing in a very small package.

For a 25′-wide urban problem lot, the architect devised an obstetrician and gynecologist's office with excellent circulation and controls, an air of spaciousness, and a most ingenious examining room-dressing room-nurse's station suite. What would normally be corridor space is put to work.

The nurse, with headquarters in the circulation atrium of this suite, is in full control of all examination traffic, and also of the patients' small children who sit on little chairs in the atrium, a much more realistic arrangement than attempting to hold them in the waiting room when their mother disappears. The nurse also has the laboratory, with its pass-through from the adjoining lavatory, almost at her elbow. The doctor reports that the suite enables him to carry out examinations more easily and rapidly than he ever thought possible.

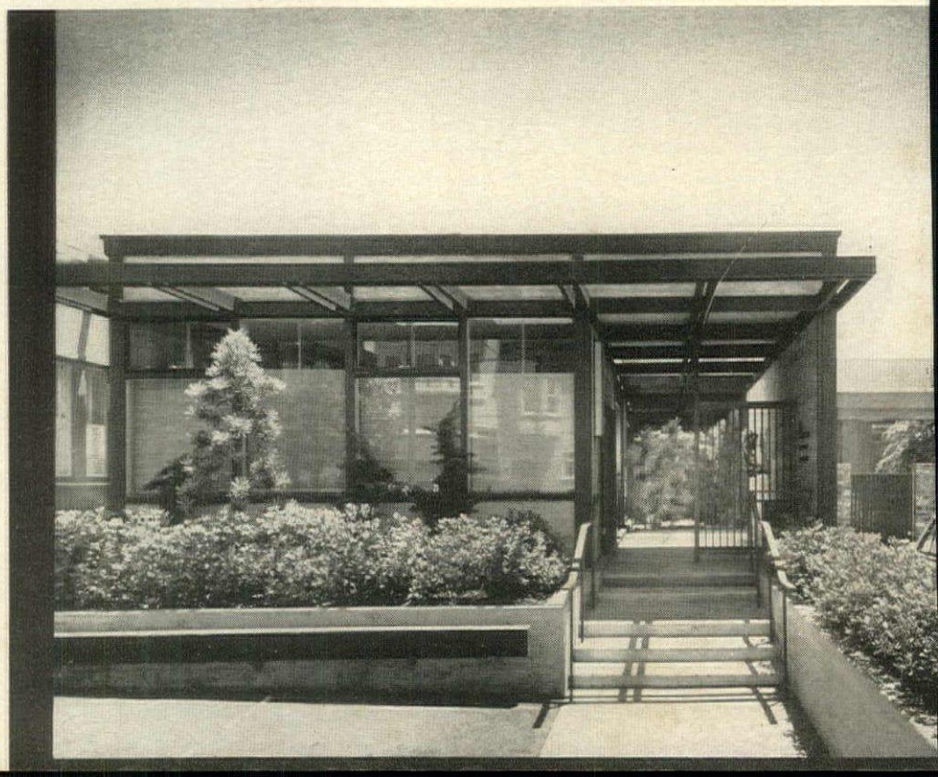
According to the architect, "One reason we did a good job is that we did not have a whole bunch of canned ideas. The essential element in a small medical building of this kind is that it be a personal thing, designed for the doctor himself. We not only worked our way through specific physical requirements, but we also studied emotional and psychological problems and tried to get forms that would not only be reassuring, but also invigorating without seeming neurotic. Any forms that appeared to engender even the slightest sense of claustrophobia were avoided like poison."

A second floor for another physician can be added, with stairs in the entrance court. The second-floor waiting room would extend across the entire front, and the lightwell outside the principal consultation room would be retained. The present roof is drained to the interior, and the only alteration to existing construction would be removal of the parapet cap. New joists would be placed atop the level plates, making the second floor entirely free of the existing ceiling and thus simplifying soundproofing. Utilities are sized for the addition. Framing is conventional 2′ x 4′ studs with fir rafters. The owner will not release figures, but the architect vouches that the square-foot cost "was below the average locally for this building type."

Photos: Ernest Braun

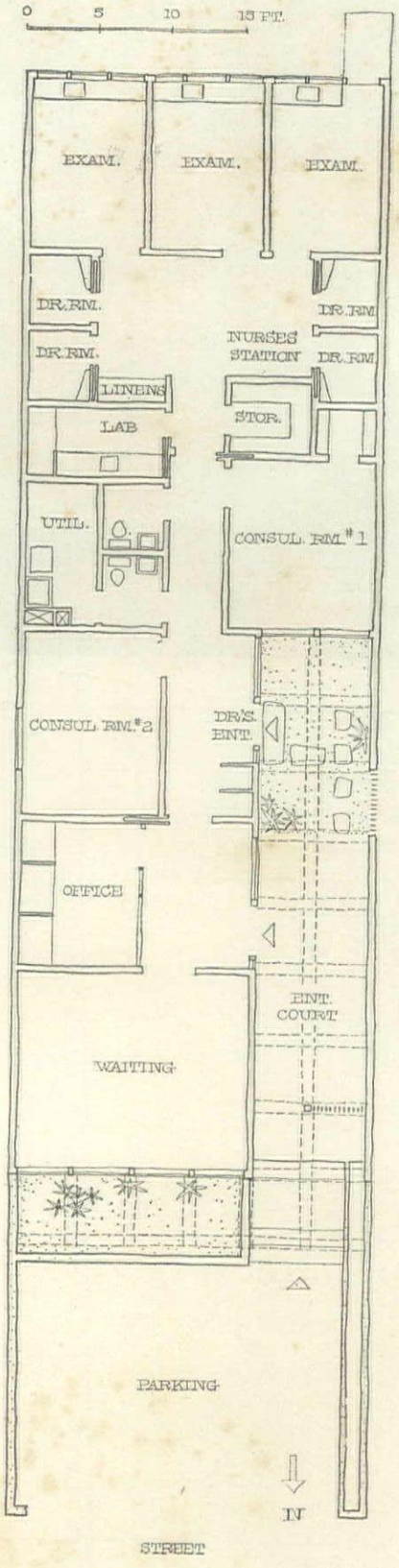
Entrance court is skylighted; garden is partially open to sky. Stepping stones under roof lead to doctor's entrance, designed to appear part of glazed corridor wall.

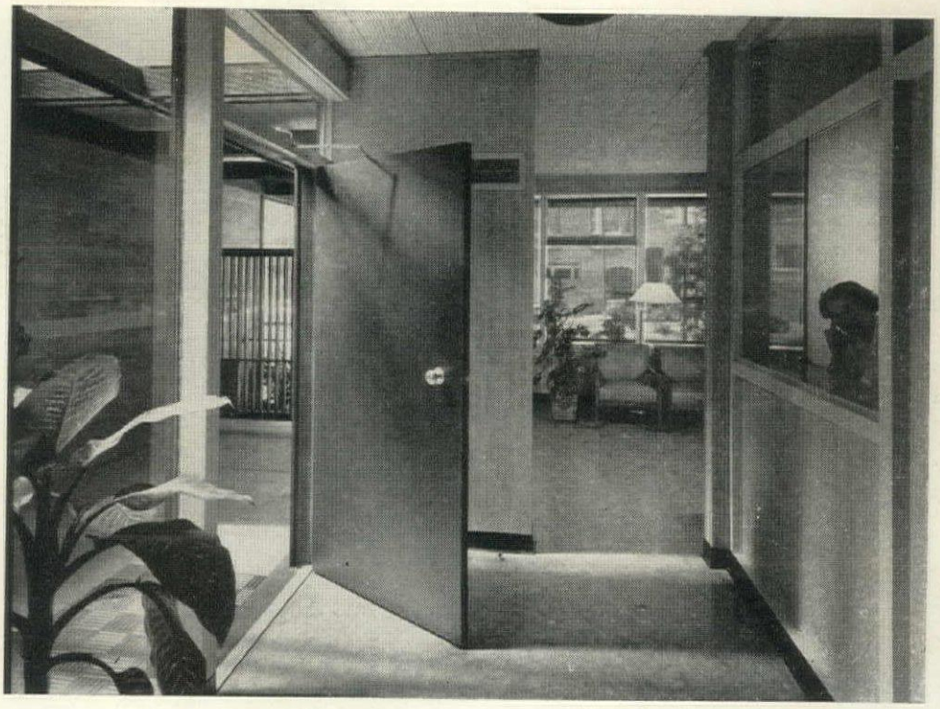
Glazed facade sits back from street, behind parking. Exposed framing is fir.



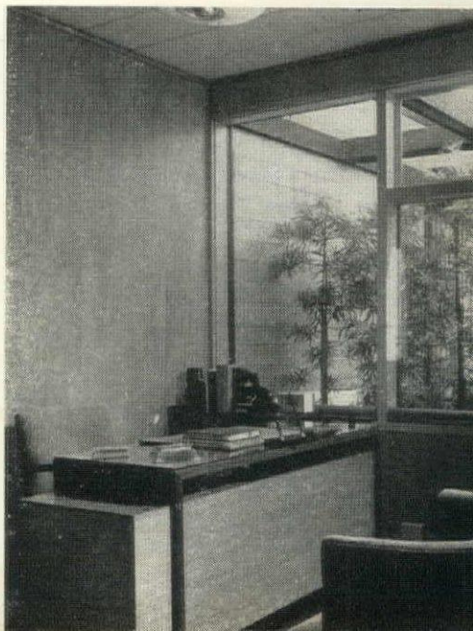
OFFICE FOR DR. KURT WARREN NEWGARD
LOCATION: San Francisco
ARCHITECT: Joseph Esherick
INTERIOR DESIGNER: Robert K. McNie
GENERAL CONTRACTOR: Arthur W. Baum

Nurse's atrium replaces examining suite corridor, controls dressing-examining-laboratory traffic. (Doors slide.) Where sound-insulating partitions were needed, 2″ x 3″ studs were staggered and completely wrapped with glass-fiber insulation, eliminating direct contact of one wall surface with another.

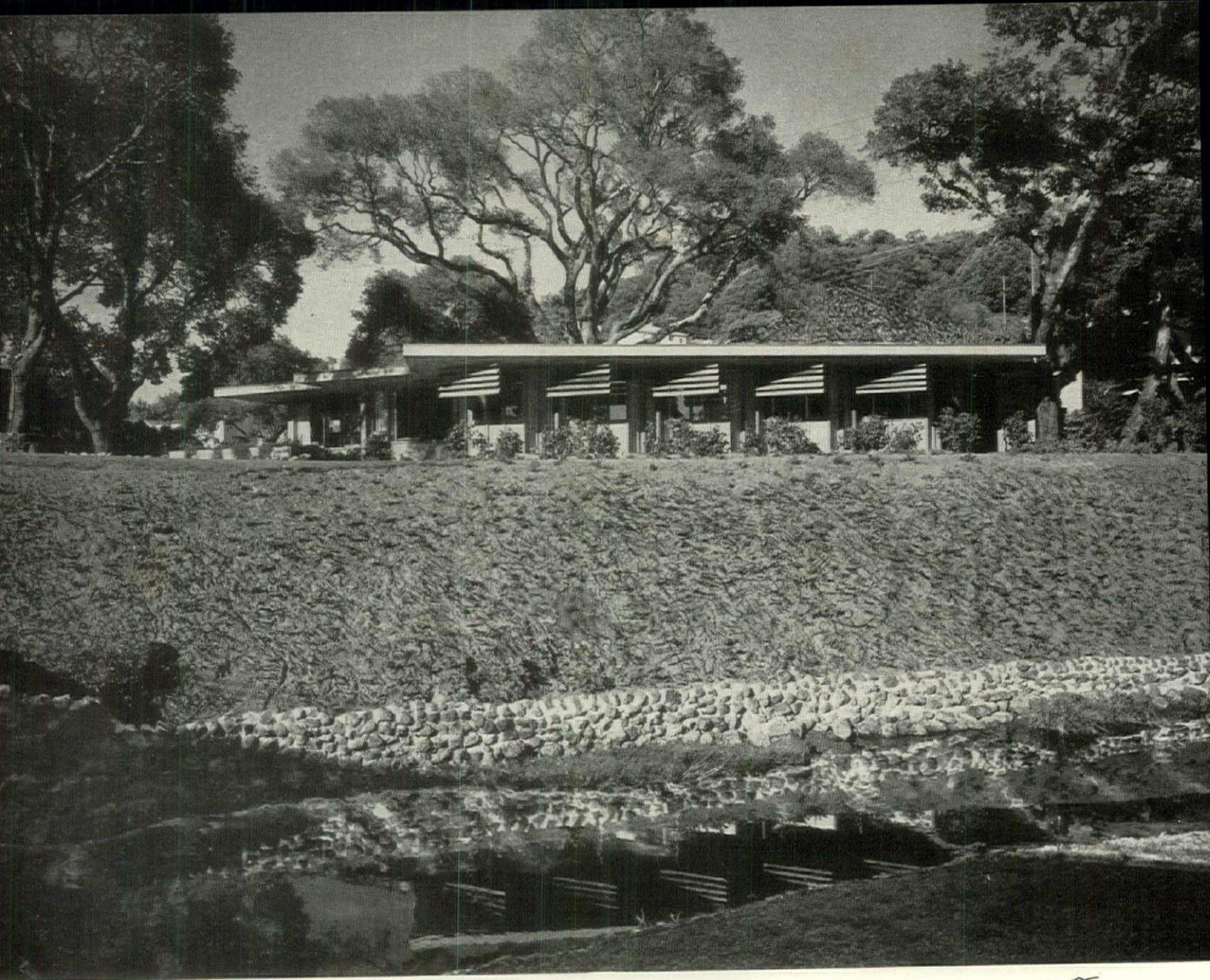




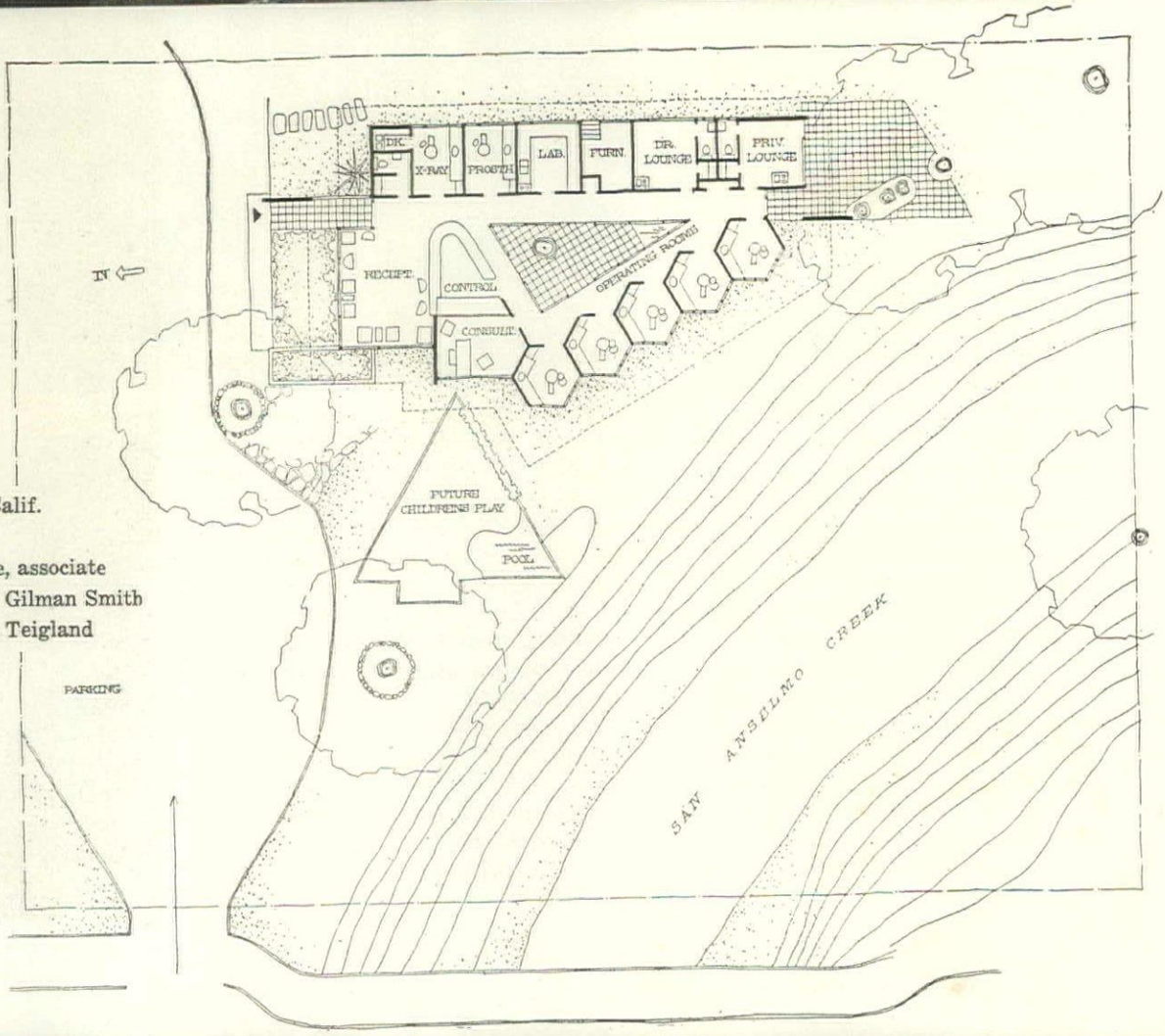
Office for secretary is immediately opposite entrance, serves as information and checking-in point and as appointment desk for patients on their way out.



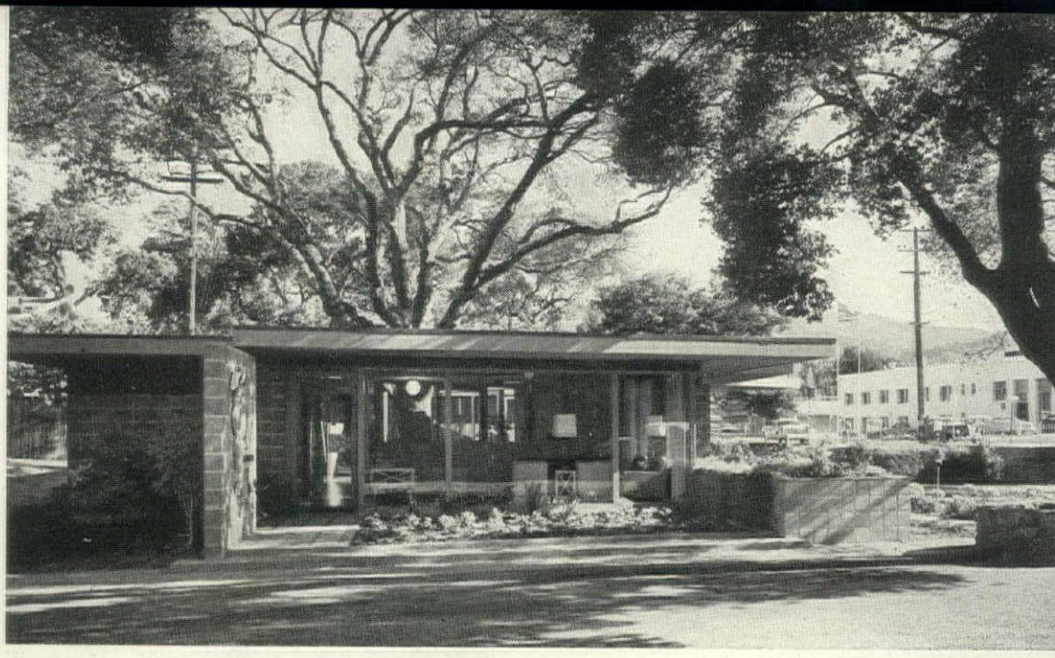
Consulting room adjoins roofless, plant-screened portion of court. Interior wall finish is plywood.



Photos: Roger Sturtevant



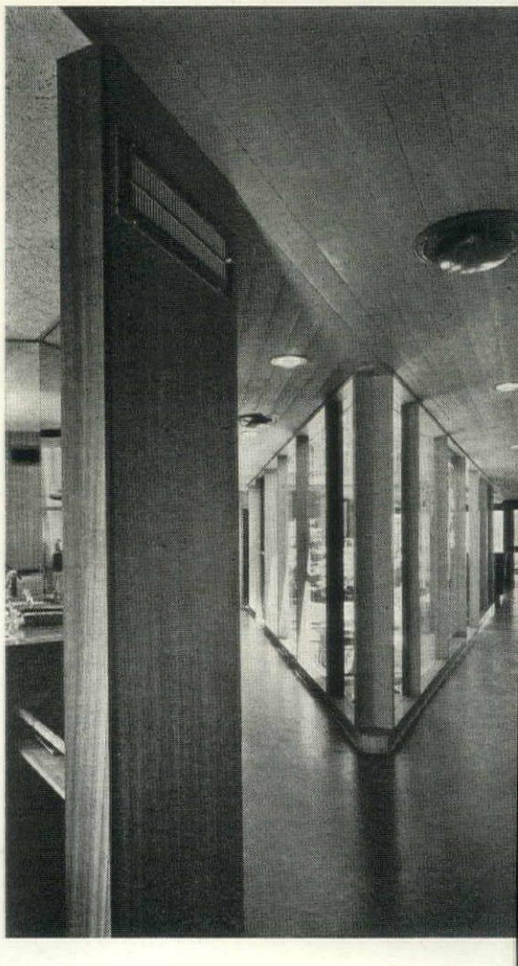
TANNER DENTAL BUILDING
LOCATION: San Anselmo, Calif.
ARCHITECT: Henry Hill;
John W. Kruse, associate
MECHANICAL ENGINEER: H. Gilman Smith
GENERAL CONTRACTOR: B. J. Teigland



Entrance wall is rose-colored concrete block. Landscaping by owner uses huge oak in interior patio.

Control desk is in open area helping patients get quick orientation. Simple hinged screens behind receptionist give privacy to consulting room but allow oral communication. Control area, like operating rooms, has acoustic ceiling.

Passages are divided by prowlike angle of interior patio (might it not better have been blunted?). Framing is wood; ceilings are resawn fir stained gray-gold.



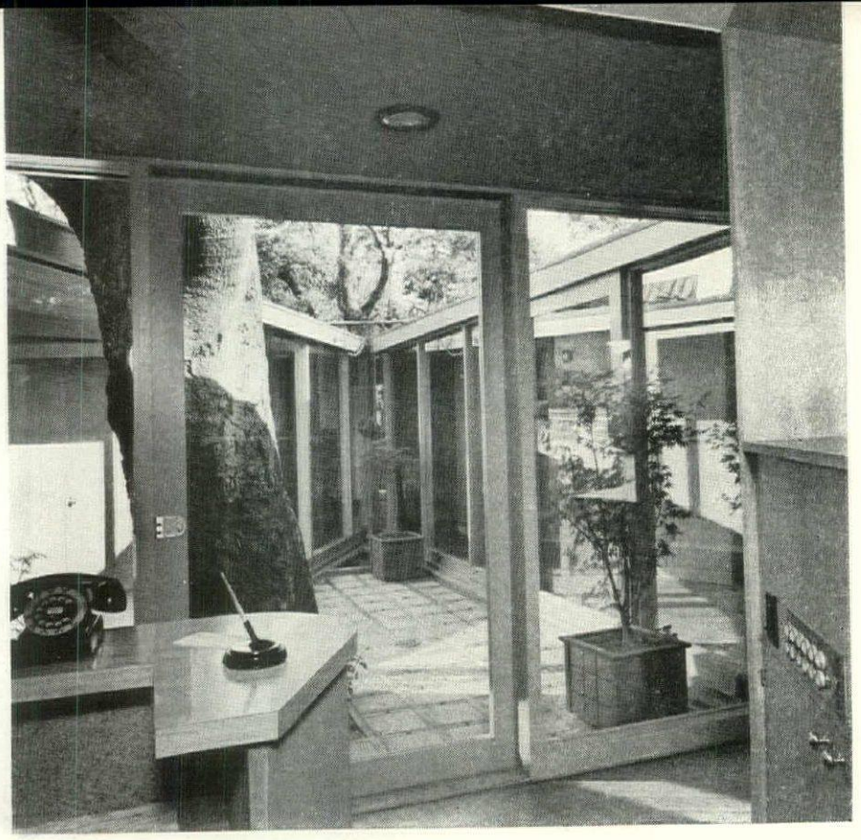
DOORLESS DENTAL OFFICE

Dental waiting rooms are notorious places for brooding. In this office, designed for a doctor and his four assistants, the patient is at least diverted by the doings at the control desk, the view across the bandana-sized interior patio, and the corridor traffic. Doctor and architect were agreed that the usual closed reception room, with the patient fearing or hoping he has been forgotten, and nurses unsure exactly who is waiting at any given moment, is uncomfortable for all concerned.

For operating-room working space, Architect Henry Hill selected the circle as the ideal shape, then modified this to a more economical and practical hexagon. The angled windows give the patient a choice of two views. The best views happen to lie westward; exterior redwood blinds hung on chains down to standing eye level cut out both the setting sun and sky glare, also conceal the patient from passers-by on the main street beyond the creek.

Incidentally, most of the loan agencies consulted were opposed to the site use, assuming that the only sensible procedure was to fill in the creek and build on the main street frontage. By not doing the obvious, the client was saved considerable sitework expense and he also has easily the most interesting and eye-catching establishment in the business section of town. The site contained seven splendid oak trees, all of which were kept. One determined the interior court; another slants surrealistically through the staff terrace wall.

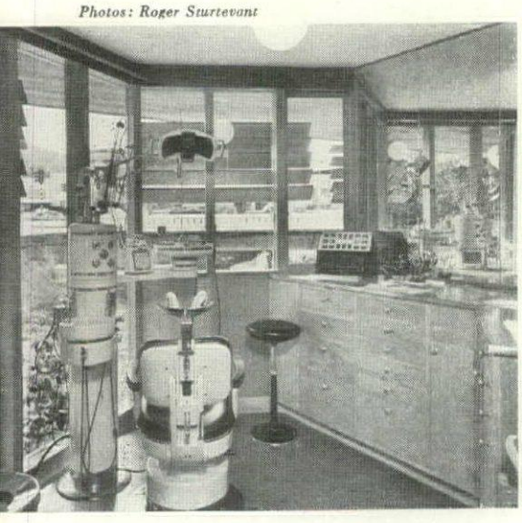
Structure is rose-colored concrete block and wood mullion framing, with panels of glass and insulated asbestos cement. Cost was $20 per sq. ft.



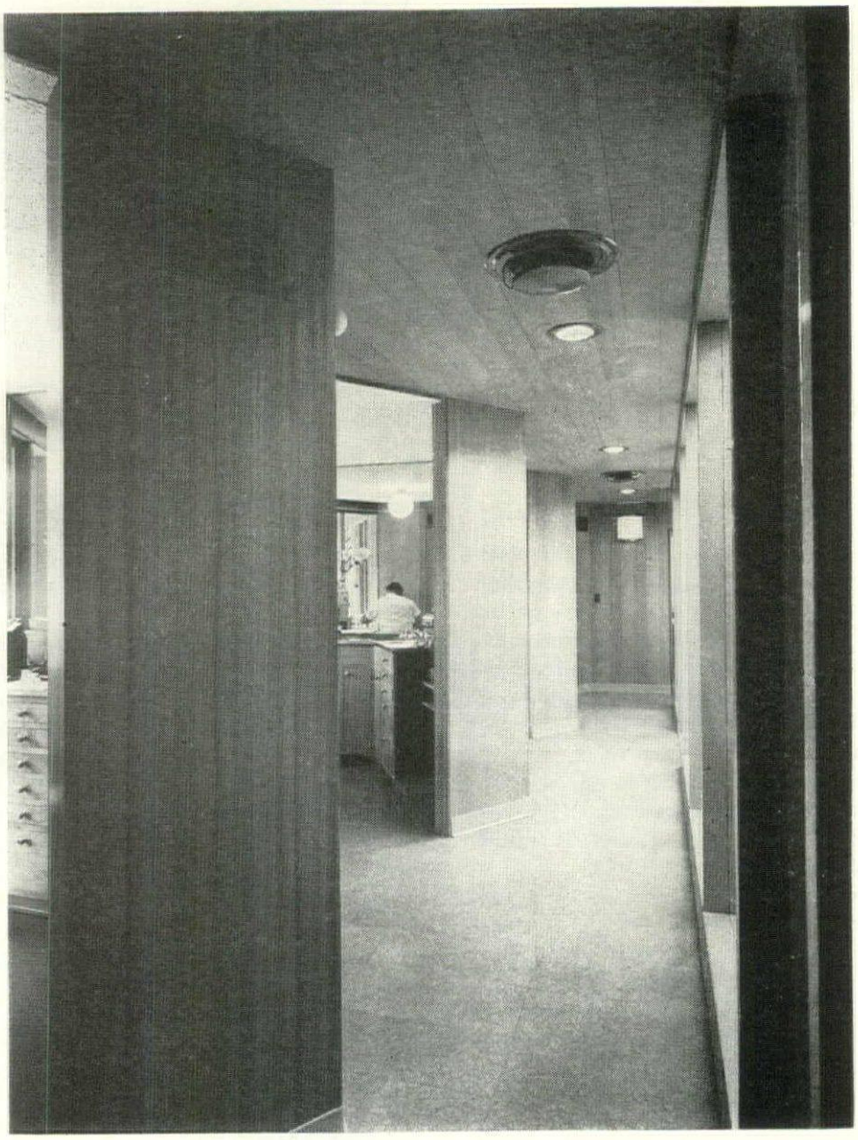
Tiny patio surrounding big oak separates operating suite from other facilities. This view is from control desk.

Operating rooms are open to corridor, but are open to view only from staff end of building. Door in background, one of few in building, is to consulting room.

Photos: Roger Sturtevant



Hexagonal operating rooms have birch casework, designed by architect, along two sides. Note exterior redwood blinds for sun, glare and privacy screening.



Photos: Hedrich Blessing

Dispensing lab is one of seven huge laboratories

LOFTLIKE LABORATORIES FOR A PHARMACY COLLEGE

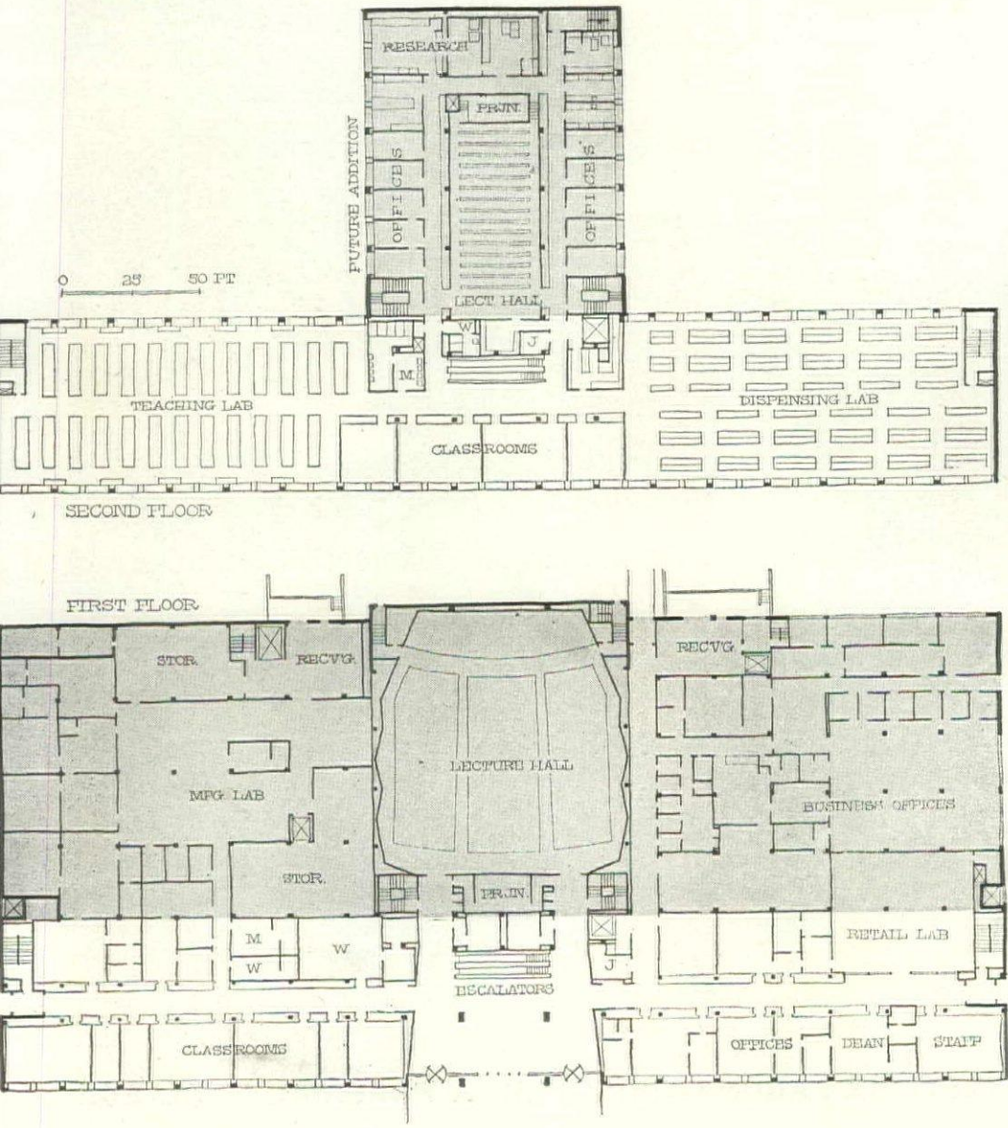
EAST DENTISTRY-MEDICINE-PHARMACY BUILDING
UNIVERSITY OF ILLINOIS
LOCATION: Chicago
ARCHITECTS: PACE Associates
STRUCTURAL DESIGNER: F. J. Kornacker
MECHANICAL AND ELECTRICAL ENGINEER: N. E. Bueter
GENERAL CONTRACTOR: Sumner S. Sollitt Co.

This school for a thousand students is full of things like escalators, movable metal partitions and huge clear-span work space, seldom or never seen in schools. The innovations, drawn from other building types, make good sense in their new context.

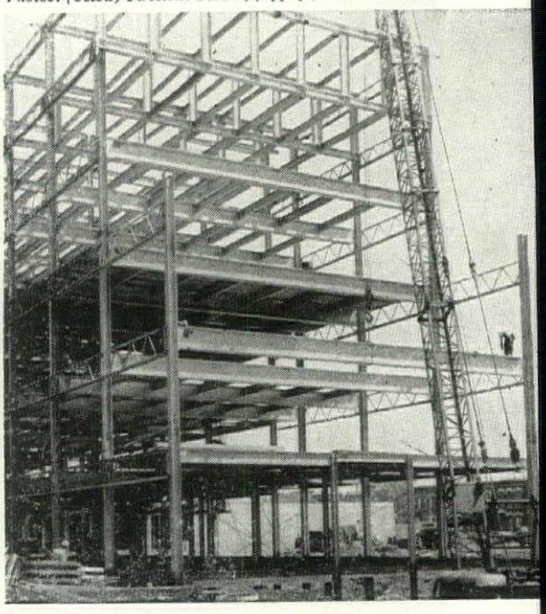
The school also illustrates the rare kind of economy that comes not from cheesepar-ing but from solutions that save still more than their extra cost. At first glance, the school's quality and conveniences appear extravagant. But every one of these features was proved out in dollars and cents, to a skeptical building committee, as a money saver compared with the orthodox "economical" way of handling the same problem.

For instance, the laboratories are housed in columnfree space, like modern factories, but unlike factories they are piled one atop another, necessitating the enormous clear-span girders shown in the construction photograph on p. 146. Why not use "thriftier" framing with columns?

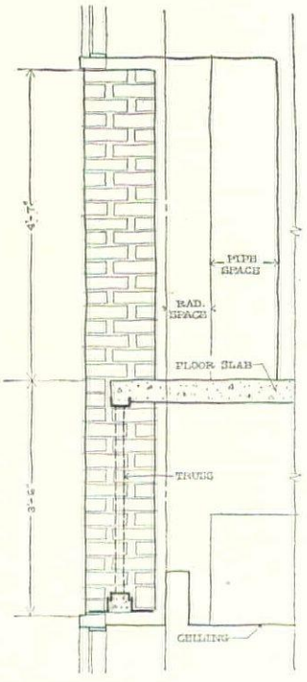
To get the laboratory equipment into column-interrupted rooms, and allow space



Photos: (below) Firestone Studio; (opp. p.) Hedrich Blessing



Spandrel trusses eliminate beams, shelf angles and concrete forming; they are located at center of 13" thick exterior brick wall. The brickwork (English bond), is built through openings of the trusses, eliminating the problem of ice formation behind brick veneer. Attic story is inside Vierendeel trusses; the bottom cord carries attic (sixth) floor; top cord carries roof slab. Lack of diagonal truss members permits clear floor space. Truss construction gave economy of reduced building height.



to detour around columns, would have required 25′ of additional building length on the south wing, a total of 10,500 sq. ft. additional in six floors and basement. The north wing would have required a lesser lengthening. An estimated $80,000 was saved by incorporating the luxury of flexible, completely open space.

The architects' analysis of vertical travel costs should be of interest to all who have the problem of tall school buildings. The ten escalator units cost approximately $250,000, the same as six 30-passenger, attendant-operated elevators; they are expected to save $25,000 in annual operation and maintenance over six elevators. *And the elevators would move less than a fifth as many passengers* in the few minutes allowed for class-change time. The ten escalators can move the entire student body in loss than four minutes (necessary because many have to come from, or get to, other buildings within ten minutes' class change). It would take 45 22-passenger cars to do the equivalent job!

Well, why not the still greater economy of a lower walkup school, the building committee wanted to know. The excess basement and attic space for a building with the mechanical equipment of this one (mechanical costs ran 42% of total) would more than pay for the escalators, to say nothing of added land cost for doubling an urban site. This question stimulated the architects to figure how many stories an escalator-serviced school building could feasibly go; they conclude eight, surely, and in specific cases as much as twelve.

The design of the first floor auditorium was another case of apparent extravagance, with its two huge trusses, 100′ long and 14′ tall, to support four floors above (one floor goes within the truss). The alternative, a one-story structure carrying only a roof on lightweight trusses, would have meant duplication of foyer and some secondary space (an extra 2,500 to 3,000 sq. ft. of construction), more than canceling out the money saved on steel. The auditorium will be much used by Chicago medical groups after school hours.

One of the most ingenious features is double-service air cooling. The five large

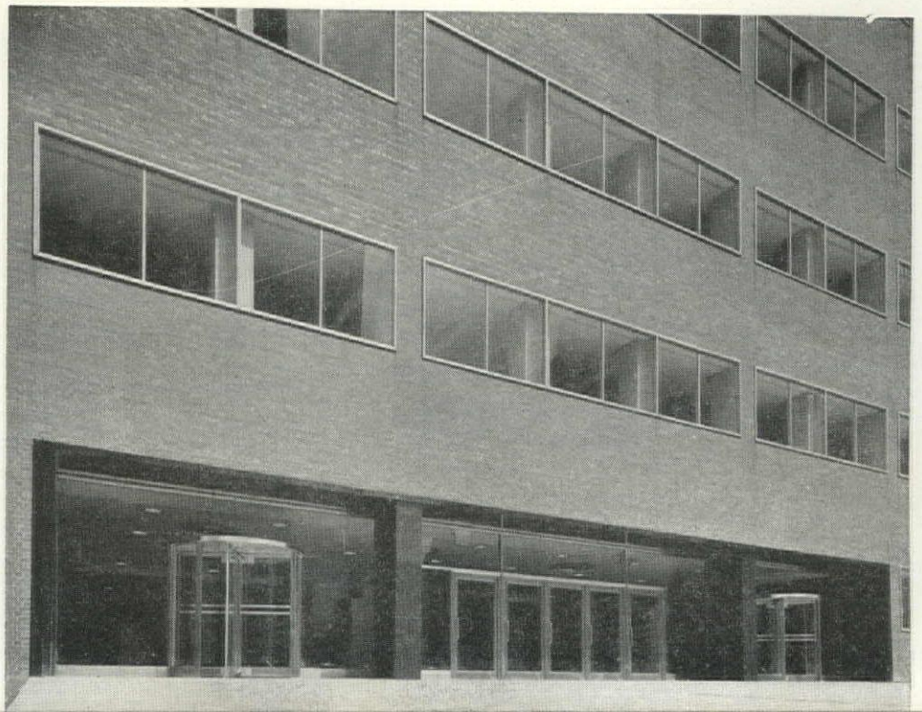
Escalators solve problem of moving building's big student population in class-change surges, take less room than six elevators, do job of forty-five. Ceilings are metal pan.

Lobby doubles as auditorium foyer. Door frames are stainless steel, locally made to architects' design. Fixed aluminum sash (below) was designed by architects.

lecture halls, one to a floor, have no exterior walls losing heat to outdoor air, thus require no heating of their own. (Heat the periphery and you heat all.) When occupied, no matter what time of year, the lecture halls will need cooling to carry off excess body heat generated by occupants. During summer months, when students are away, the lecture room cooling equipment will feed into an alternate set of ducts to cool staff offices. The entire building is mechanically ventilated from under-window heating units; complete cooling can be added in future.

About four fifths of students will be from the university's college of pharmacy, now jammed into the medicine-dentistry building across the street. Medical and dental colleges will share some space in this new building. Only the crosspiece of the building's T is now built. The rear wing and rear portions of the first floor, including auditorium, will come later.

Construction cost for the portion completed was $4,675,000; $26.56 per sq. ft., not including $505,000 for laboratory furniture but including fees.



Photos: Reynolds, Photography Inc.

THE MAYO CLINIC COMPLETED:

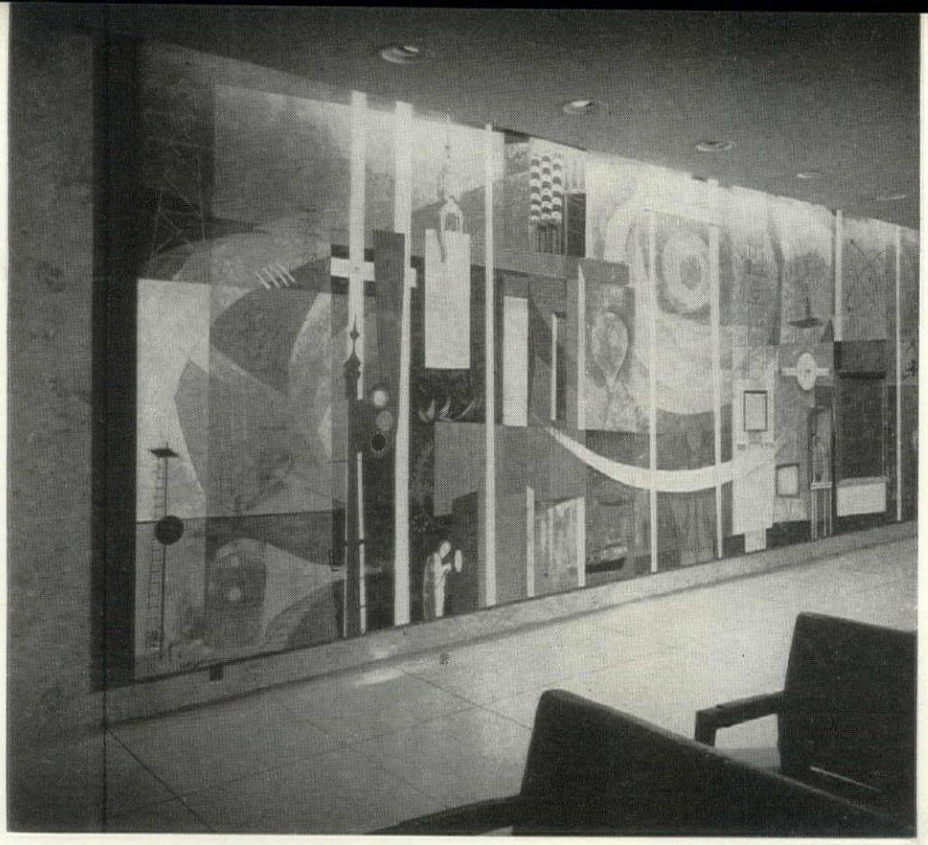
WITH ART AND GARDENS FOR THE WAITING PATIENT

MAYO CLINIC DIAGNOSTIC CENTER
LOCATION: Rochester, Minn.
ARCHITECTS: Ellerbe & Co.
ART CONSULTANT: Warren T. Mosman
GENERAL CONTRACTOR: O. A. Stocke & Co.

Here the physicians have put into visible practice the medical doctrine that the whole man must be taken into account. The diagnostic center for the Mayo Clinic says in visual terms: "In this place is concern for the spirit as well as the body."

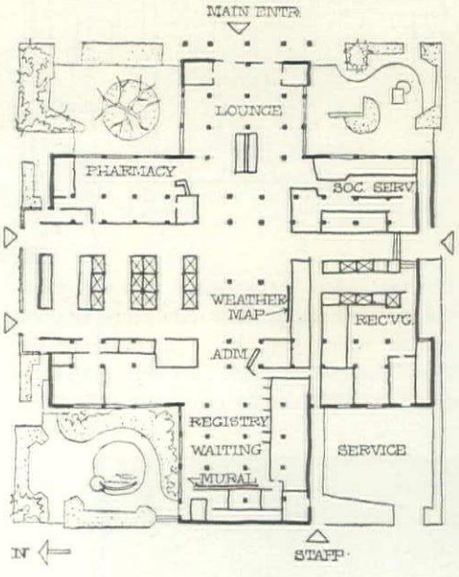
The remarkable functional workings of this center are devised to bring together physician, patient and pertinent data with the least time spent in idle or harrowing waiting (AF, Feb. '54). But forethought has gone further, to lightening the waits that remain. Each medical floor and the first floor lobby have been given a tremendous mural that dominates waiting space and is calculatedly filled with a vast amount of recognizable subject matter. The most successful murals among patients are those in which this "literary" quality of the work is combined with a strong abstract pattern. Two very diverse examples are shown on these pages.

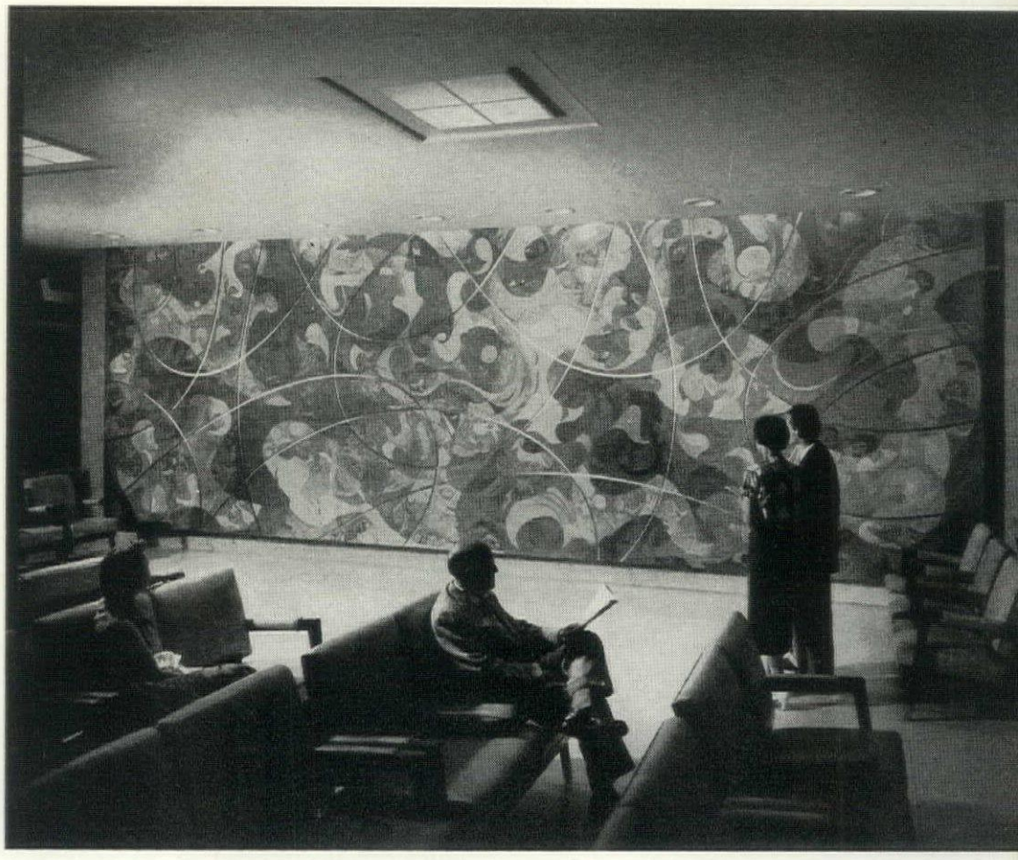
The lobby floor, where patients wait during admission and initial appointment making, has a unique extra focal point. A 7′ x 11′ glass screen displays a projected national weather map in color, made up daily or oftener if necessary. Why a weather map, of all things? Patients come from far and wide, and sitting there in Minnesota they are fascinated to know that it is snowing back home in Wyoming or is cool and foggy in Jersey. Same sort of appeal as seeing the home town paper. And because many of them drive, the weather affects their practical plans. There was a more sensitive reason for the map too: Maybe people within an air-conditioned building, going from one rendezvous to another, need a reminder of the elements.



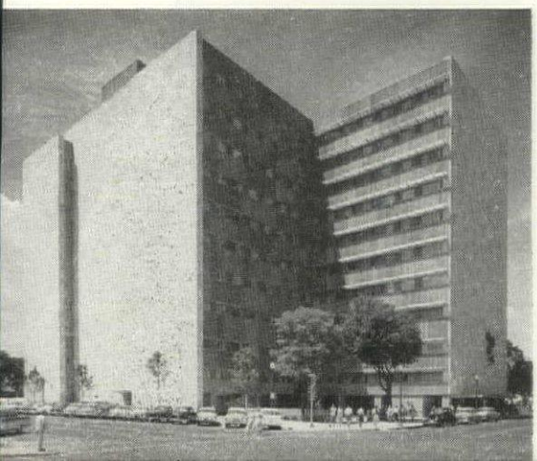
Mural beside waiting space on X-ray (third) floor has appropriate theme of "Man and the Energies" and appropriately hot, brilliant colors; artist, William Saltzman. Murals were planned for enjoyment on several levels; patients who so choose may entertain themselves with subject matter of great wealth, ranging here from steel making and locomotion to photosynthesis and experimental lightning.

Lobby, looking east down main concourse from admissions desk. Concourse lounges near main entrances look out on gardens (see plan); so do waiting areas for registration and payment.



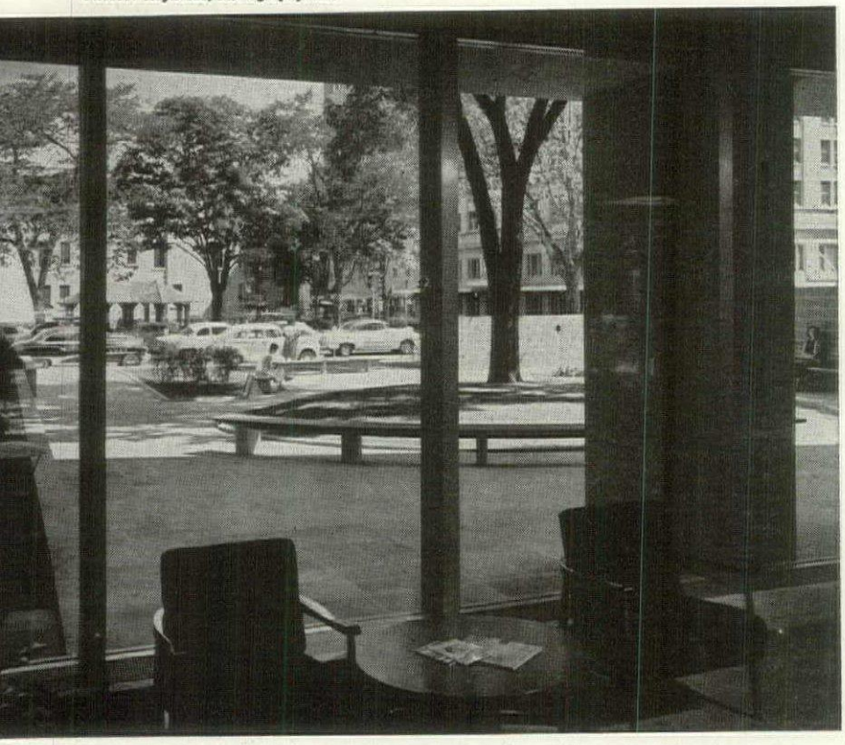


Waiting area on each of seven consulting and examining floors has mural against elevator-bank wall. Above is one of the most popular, "Man's Desire for Companionship," by Franklin Boggs. At first sight, work has effect of patterned tapestry intersected by strongly incised, curving gilt lines. Closer look shows each flat segment depicts a scene, such as picnic, baby-tending, games.

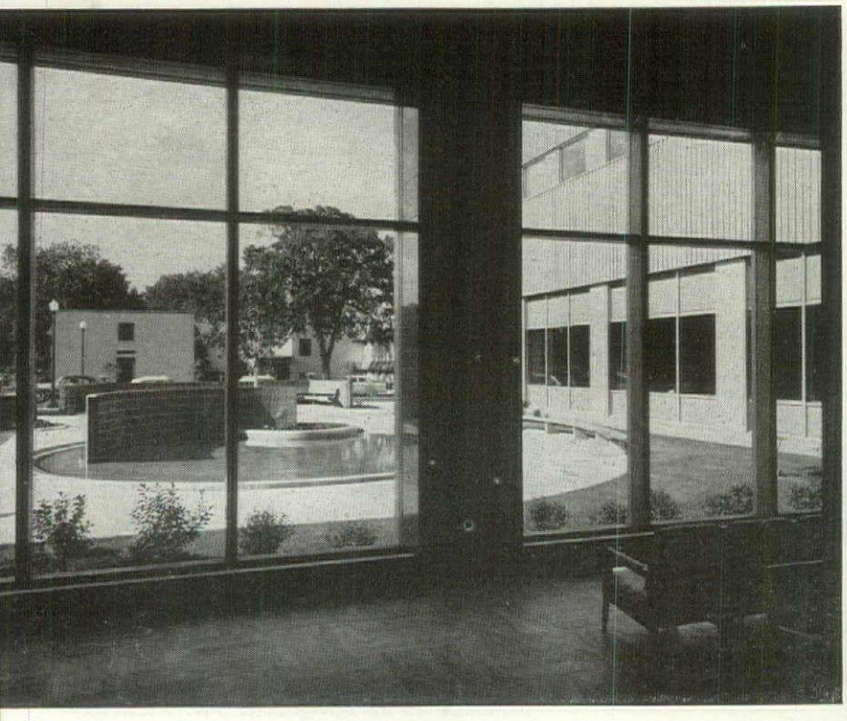


Exterior combines marble end walls and crisp-lined extruded aluminum spandrels. Although building mass is enormous, effect is light and inviting. View here is toward court, showing sunshaded south wall.

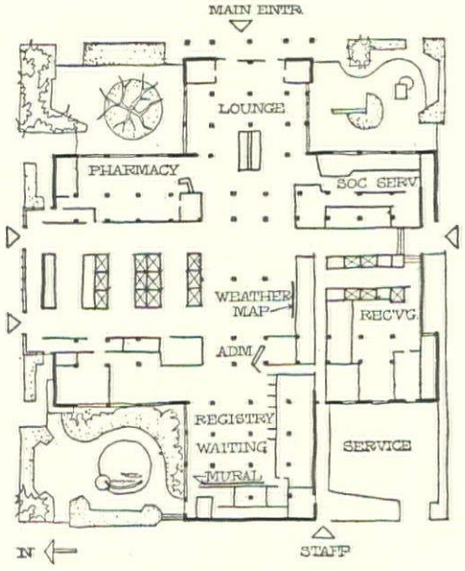
Photos: Reynolds, Photography Inc.



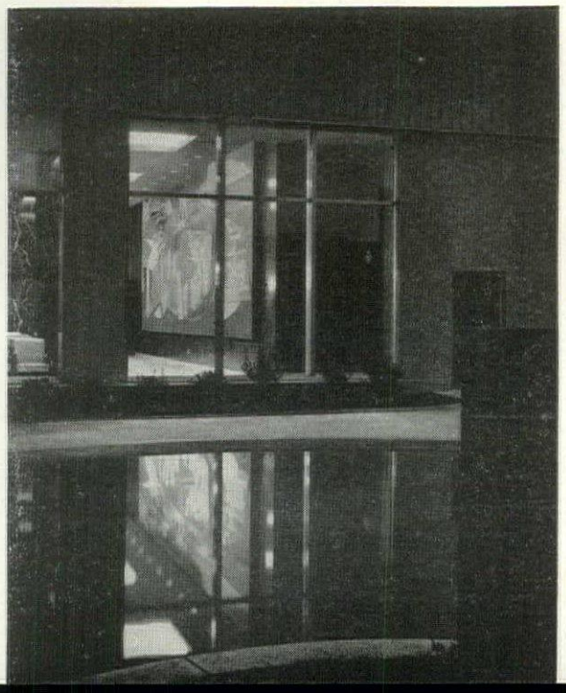
Court with circular grass plot at northeast corner is shown from adjoining concourse lounge. Court pavements are Italian travertine, similar to that used in lobby interior.



Waiting area in admissions section of lobby overlooks northwest court, featuring pool. Outsize custom brick in low garden walls has incised patterns for shadow-line texture. Lobby mural (right), by John Piper, is reflected in garden pool at night. Painting, on theme of man and nature, is 13′ x 41′, serves as focal point of block-long lobby.



Corner view (opposite) shows most formal of three gardens. Sculpture against marble north wall is 28′-high figure by Ivan Mestrovich. East face has sculpture group by William Zorach (AF, Feb. '54).



EXCERPTS

Opinion and comment
on the building industry
from the rostrum
and the press

Opinions expressed
in these excerpts
are not necessarily those
of the FORUM's editors

Ralph Steiner

Half a building

Excerpts from an address by Architect Victor Gruen before the Kansas City AIA chapter

Even when we have built a livable house, we have built only a half a house if the inhabitants are plagued by ugly vistas and smog. Even if we have built an outstanding office building, we have built only a half an office building if the employees suffer under the noise created by traffic outside their windows. Even if we have built a child-loving school, we have built only a half a school if the children, when entering or leaving, are endangered by speeding automobiles. Even if we have built a smoothly functioning hospital, we have built only half a hospital if the patients can't sleep because of the racket created by a nearby factory. Even if we have built a functional factory, we have built only half a factory if the workers coming and leaving are stalled for hours in traffic.

The complexity of our civilization, our technical progress, the mechanization of our life, the millions of automobiles, the smog, fumes and noise have moved in on us, stealing the fruit of half of our efforts, making our buildings half-buildings—our work half-architecture.

We may lose that half too if we don't turn around and fight back.

The time is ripe for integrated planning. Our cities are disintegrating in the middle and stretching out in all directions on the periphery. In doing so they destroy the countryside and create suburban cultural deserts. The time which we are saving, thanks to the 40-hour work week in factories, shops and offices, gets consumed in long drives and traffic jams. Places of cultural and educational enrichment become inaccessible. Our ability to communicate and cooperate with others becomes problematic. There is no space for men. There is hardly enough space for cars.

Is there no solution? Shall we—the architects and planners—sit by and watch with frustration while the fruit of our work rots away?

We have to drain that morass. We have to unscramble the melee of flesh and machines, men and automobiles. We must end the encroachment of damaging uses on our living area. We must end the feudal era of building! We must start the age of democratic architecture!

What can we as architects do?

We can lead, coordinate, plan and design as it is our function. We can exercise our influence in every individual project, small or large. We can help to widen the horizons of our clients to see the potential of large-scale and long-range planning. We must insist in every individual project on integration with its surroundings. We must closely cooperate with and influence the members of the building team—owners, builders, contractors, financing institutions, realtors. We must press for comprehensive planning in city or planning commissions, zoning commissions.

Twentieth-century architecture cannot find its fulfillment in a few sleek glass towers peeking out of the smog of the decaying city.

We don't have to cry over the loss of those clients of the past; of the Pharaohs, the kings, or even the late tycoons if we understand that the client of twentieth-century architecture is society as a whole —the people.

Shopping center planning

Excerpts from the conclusions of the Urban Land Institute's new 25-page Technical Bul. No. 24, "Shopping Habits and Travel Patterns"

From 80% to 90% of shopping is done by women. They do most of their downtown shopping around noon and visit suburban centers usually between 5 and 6 P.M. While the amount of time and money spent in a store depends upon the type of merchandise the shopper is seeking, there is a 50-50 chance that the shopper will buy something in every store visited. This tendency is strongly influenced by the fact that about one third of the buying is not planned—it is impulsive. Also, while the majority of shopping trips originate at home, the downtown worker represents an

important "captive market," since up to one third of the shopping in the downtown area is done by persons already there as a result of employment.

Two major factors influencing shopping habits are: wide selection of goods and the convenience of shopping facilities, particularly in point of time. The travel time to a shopping area and the range of selection available there appear to be more decisive factors than parking.

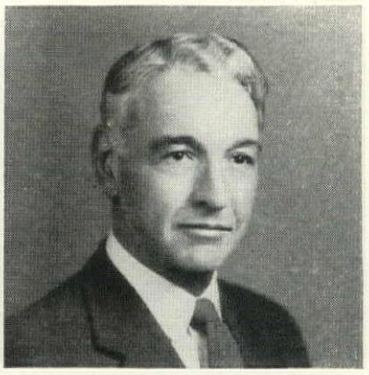
The use of distance as the only criterion for establishing the extent of a trade area is not recommended. The movement of shoppers in an urban area is largely controlled by the competitive relationships of shopping areas, since they follow Reilly's Law of Retail Gravitation. Thus, in analyzing traffic movement in an urban area, it is not enough to evaluate generating characteristics of various types of land use alone but attention must be given to the relationship that exists between the various types of competitive land uses.

There are significant differences in shopping-trip patterns for smaller cities as compared with cities having a population of over 150,000. Shoppers in cities of less than 430,000 population are largely dependent upon downtown for both convenience and shopping goods; shopping trips in the larger urban areas display a more dispersed pattern, with the central business district predominantly a shopping goods center.

The number of shopping trips (auto and transit) generated from any residential area is directly related to automobile ownership. Since transit plays a relatively small role in serving most shopping areas outside the central business district, this relationship explains how two similar shopping centers with trading areas of comparable size can generate different volumes of traffic. It also explains why one of these shopping areas may need only a one-to-one ratio of parking area to floor area, while the other needs three-to-one. This, also, raises serious doubt as to whether zoning regulations related to off-street parking are realistic if the degree of car ownership in the residential areas surrounding such centers is not taken into account.

The frequency of convenience goods trips is much greater than that of shopping goods trips. Therefore, in the planning and development of shopping goods centers, it would be desirable to consider the judicious restriction of convenience goods outlets, in order to relieve such centers of conflicting traffic volumes caused by convenience goods shopping.

Storer of Spellman



Automation for building

Excerpts from an address by Engineer Edward X. Tuttle, vice president of Giffels & Vallet, Inc., L. Rossetti, associated engineers and architects, before the Centennial Symposium of Michigan State College

If better buildings for more people and at less cost are required, and they are, they can only be produced with the increasing aid of machinery.

I doubt if anyone but a trailer manufacturer envisions the complete prefabrication of a dwelling, much less a larger building, and the trailer builder's market is so limited that his operations can only be loosely called mass production; not in any sense automation.

Actually, in terms of man-hours of labor, the cost of many building materials has been reduced substantially in recent years, but the added complex requirements have outrun the savings. Windows have been standardized and are factory assembled on a mass production basis as are boilers, heater units, bar joists, metal and concrete decking, cabinets and some wall and partition units to name a few. But, automation in its full sense has been applied to only a very few items, such as glass, plasterboard, linoleum, bricks and roofing.

The number of parts in a building has been steadily increasing for generations. Our reduction in effort expended upon each part has been the result of grouping these parts into units that can be mass produced and more recently of applying mechanical handling methods to their manufacture. It appears to me that the next step in the development of cheaper, better buildings is a further drastic reduction in the number of different prefabricated units required to construct a building.

Though it must necessarily come in stages, I am convinced that we will have, and perhaps even in our time, a building unit to be used for walls and floors and roofs which will contain within itself and its linkage the elements necessary for shelter, transmission of energy, waste and water and which can be erected by men in a manner not unlike that of assembling a child's building blocks.

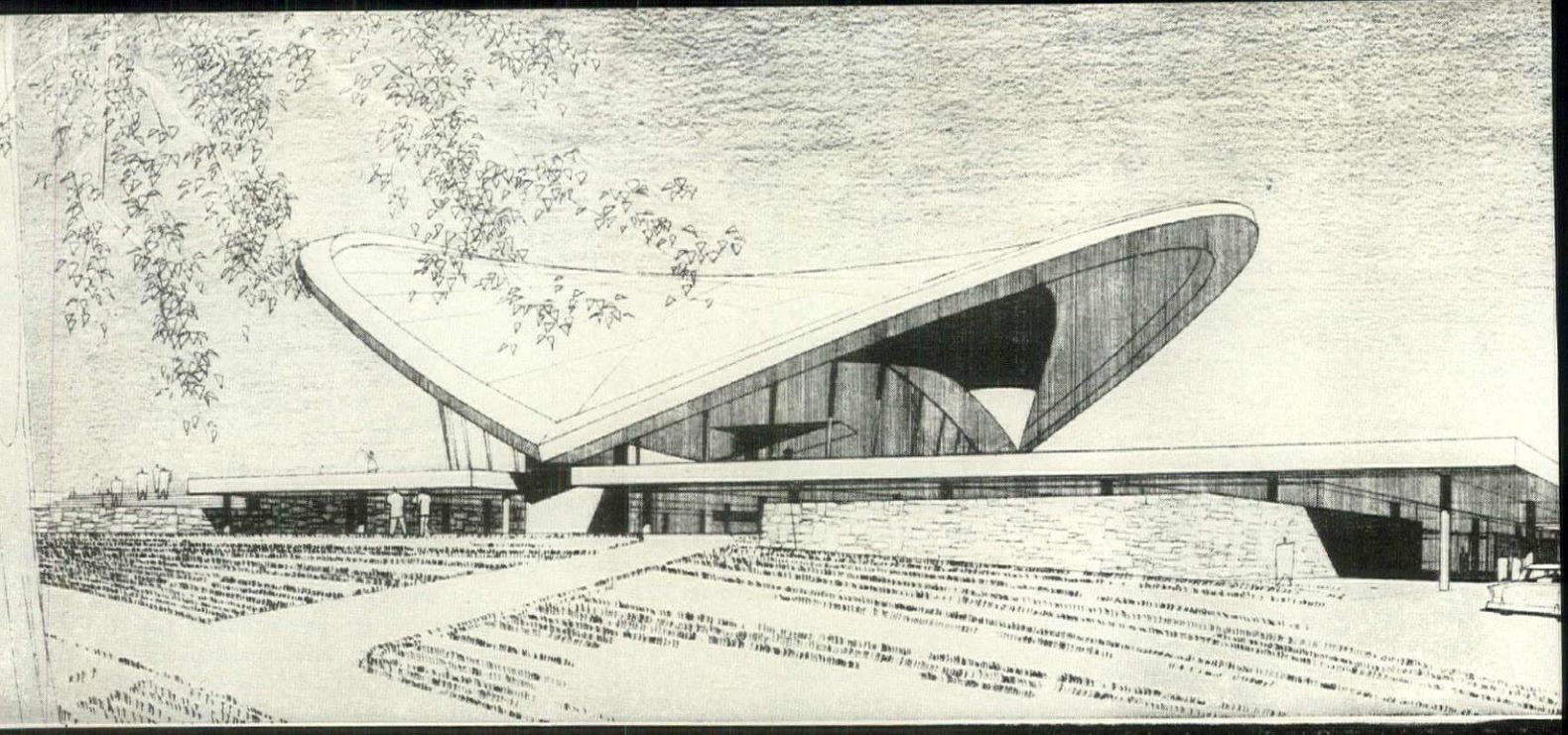
Even before such development reaches this advanced stage, it is conceivable that units may be devised with an application sufficiently broad to permit their manufacture to pass beyond the mass production stage into that of automation.

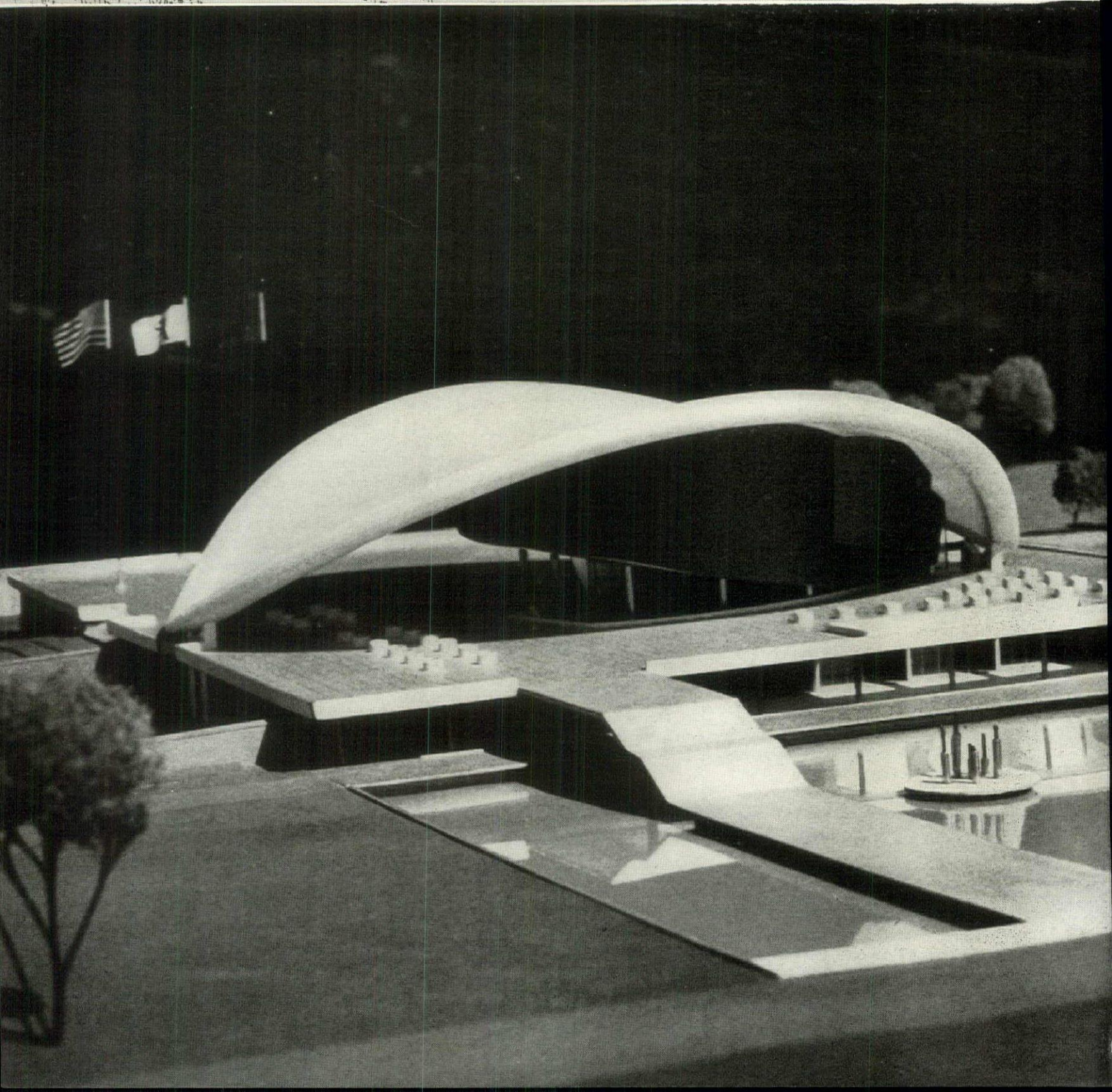
The tremendous capital investment required for automatic production makes it necessary to have and maintain a market of great size and considerable duration. Changes in design of product or speed of production cannot be made often. (Automation is not easily applicable to the manufacture of women's hats.) This standardization of design is one of the great stumbling blocks in the progress of automation. Several theories have been advanced for assuring a market for the period necessary to amortize the investment. Let me mention a few attempts in this direction.

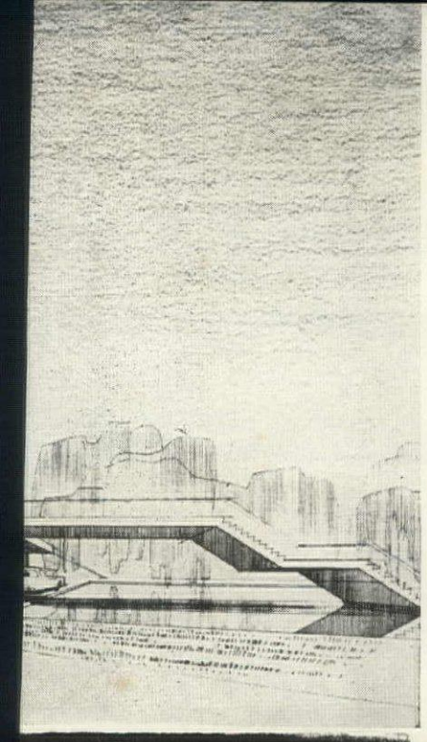
During the past year as I have made occasional trips to New York, I have witnessed the dismantling of a 15- or 20-story office building on Park Ave. down to its frame and floor slabs, and the entire replacement of its skin and all interior facilities—I doubt if this structure was much over 25 years old. It was considered profitable to replace the old with more efficient facilities.

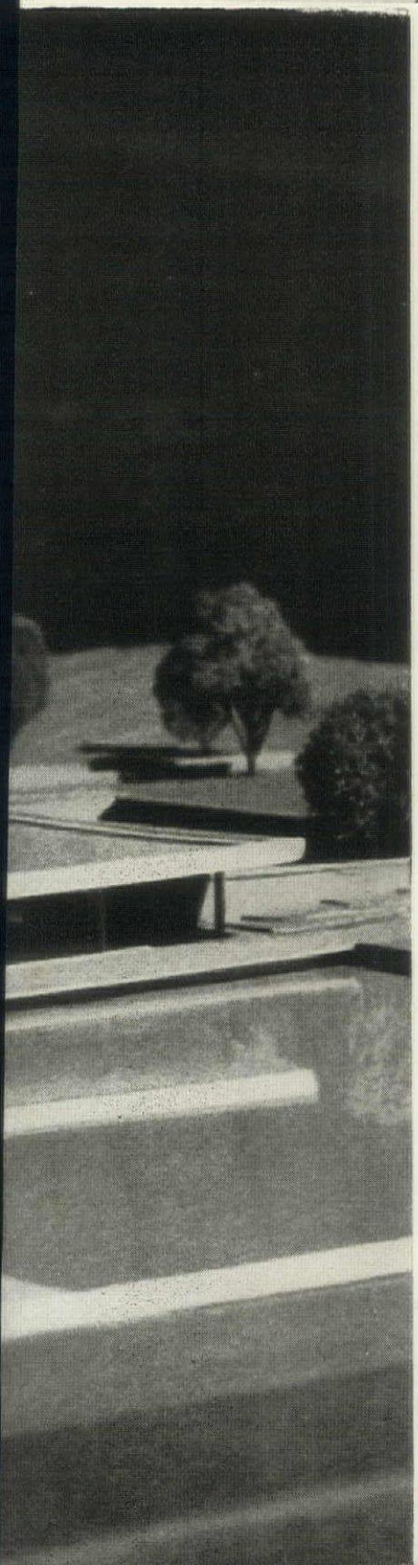
A not insignificant source of sales for the auto industry is that of the car rental people who furnish fleet owners with many thousands of cars and trucks on annual

continued on p. 176









BERLIN CONFERENCE HALL
ARCHITECT: Hugh Stubbins & Associates
STRUCTURAL ENGINEERS: Severud-Elstad-Kruger
CONSULTANT IN ACOUSTICS: Bolt, Beranek & Newman, Inc.
LANDSCAPE ARCHITECT: Lawrence Halprin

WINGED HALL

How do you design a 1,000-seat congress hall that will both accommodate and express freedom of culture and freedom of speech? Architect Hugh Stubbins has given his answer in this winged structure.

The auditorium is to be a conference hall, the gift of one technically advanced country, the US, to another, Germany. It is to stand at the very center of Berlin. An enthusiastic Berlin mayor and council have assigned 11 level acres bounded by the River Spree to the north, the famed Tiergarten Park to the south. The ruined Reichstag building lies to the east directly across a street. This means that the dramatic new saddle roof will be within plain view and easy access from the Soviet sector too. It will serve for international congresses, and will also be a semidetached extension of the forthcoming 1957 Hansaviertel Building Exhibition where Western housing ideals will be shown full-scale.

This pet project of capable Mrs. Alan Dulles was put in charge of the AIA, and it therefore represents directly the architects and the building industry of the US.

The structure is most unusual but can be understood step by step.

Cambridge Architect Hugh Stubbins* took off in his design from the unique roof form of the Raleigh Cattle Judging Pavilion of the late Matthew Novicki (AF, April 1954). But Stubbins arrived both logically and visually at a very different thing. Like Novicki's pavilion this space has a saddle roof bounded by two widely tilted arches joined at their feet. (It's a little as if two people standing toe-to-toe leaned backward, holding each other up with outstretched arms and clasped hands.) Technically the two arches act together as a "compression ring" because the roof membrane, stretched between them, pulls them tight as a drum pulls against its frame. The structural advantage of this roof is that the steel reinforcing of the roof membrane, being all in tension, is used at its greatest strength, like the cables of a bridge, with consequent economy of material.

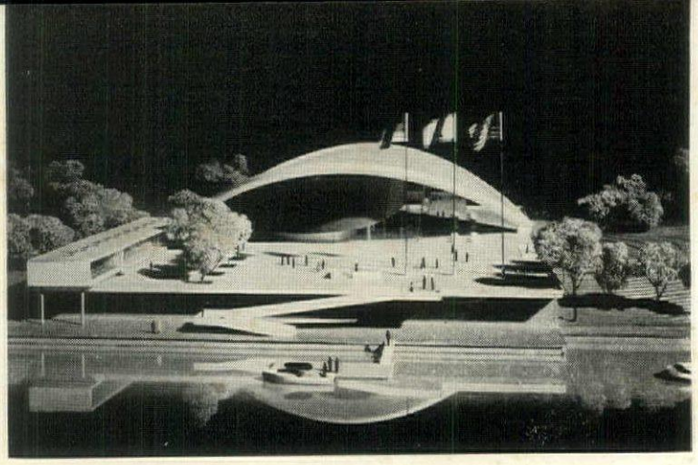
But there is still a second trick that helps this structure's quality of soaring outward. Hitherto the few compression-ring roofs in existence have been supported under their outer edges. This one sits on an auditorium wall that is roughly ring-shaped and stands well inside the overhang. This second, inner ring simply pushes up against the tensioned membrane, like a smallish hat stand under a wide-brimmed hat. The sag of the roof, which is owing to its own weight, will therefore be deformed upward a little where this inner ring comes. The arches are 280′ long and rise 60′; the roof shelters 22,500 sq. ft.

Architecturally this structure is one of easy lightness, like a wing or a sail; it is a form of endless variation; it allows a sweeping view through, and it seems to rise toward the light, admitting a maximum—all of this spelling freedom.

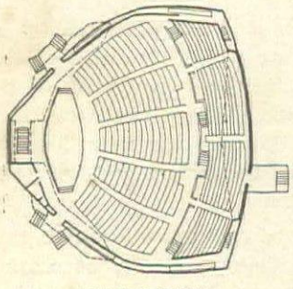
Planwise the main axis of the building leads from the river toward the park. On the river side a boat landing and a ramp to the upper level admits water travelers. On the opposite side is a pool (see photo of model). The lower level, under the great terrace, will house organizational activities, will include reception and exhibition areas, large and small conference rooms, library and sales space, and utility rooms. The upper-level extension terminates in a café. The building is to cost approximately $3 million.

* Consulting with an AIA committee headed by ex-President Ralph Walker, and including Howard Eichelbaum, Moreland G. Smith, John Harbeson, Nathaniel Owings.

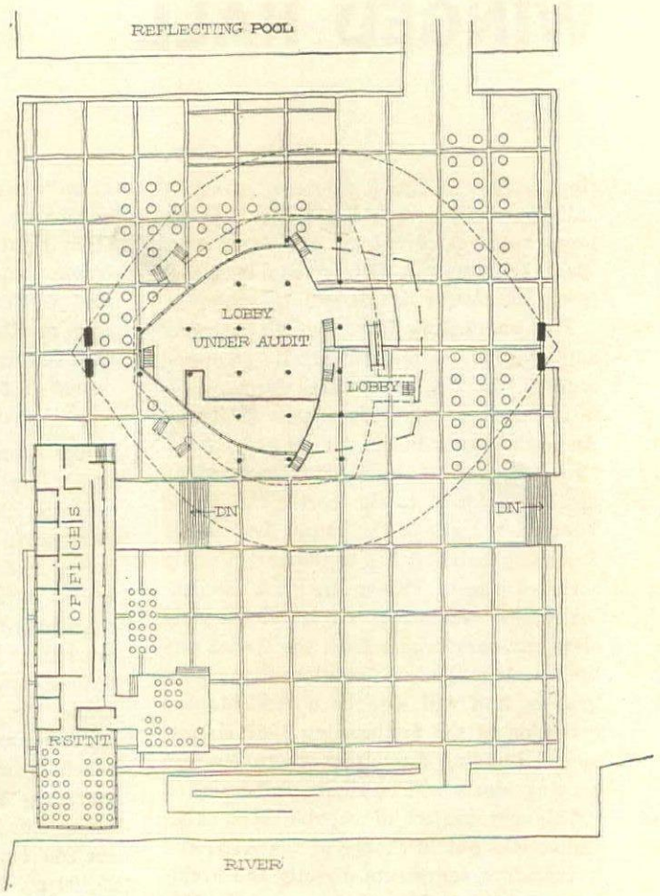
Conference hall viewed from west with old Reichstag beyond (drawing above) and from south (model left).



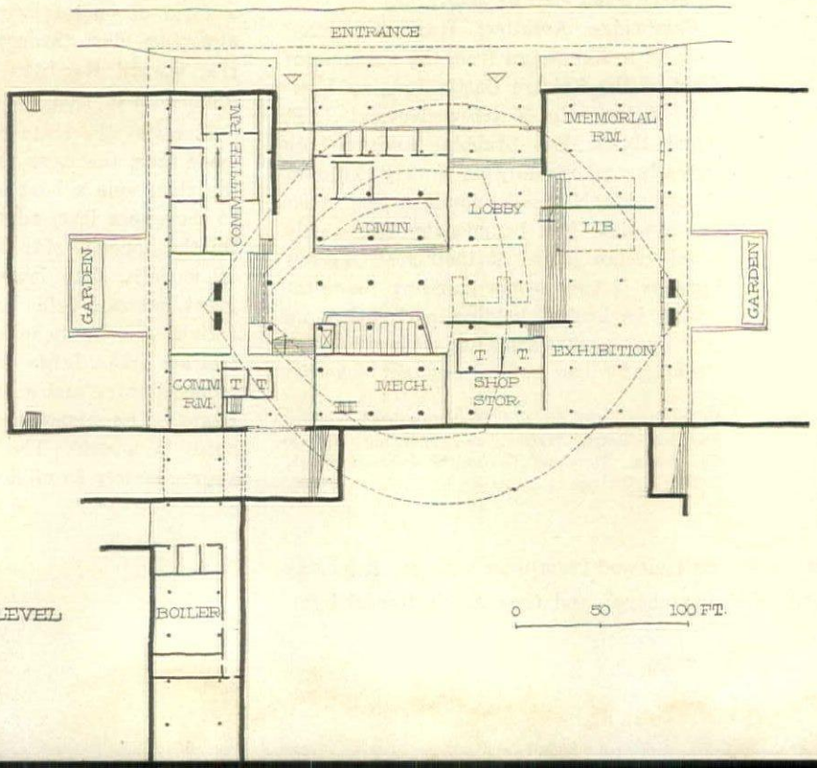
Ramped approach from Spree River puts administrative wing and café partly over water. Floodlighted flags supply needed vertical accent.



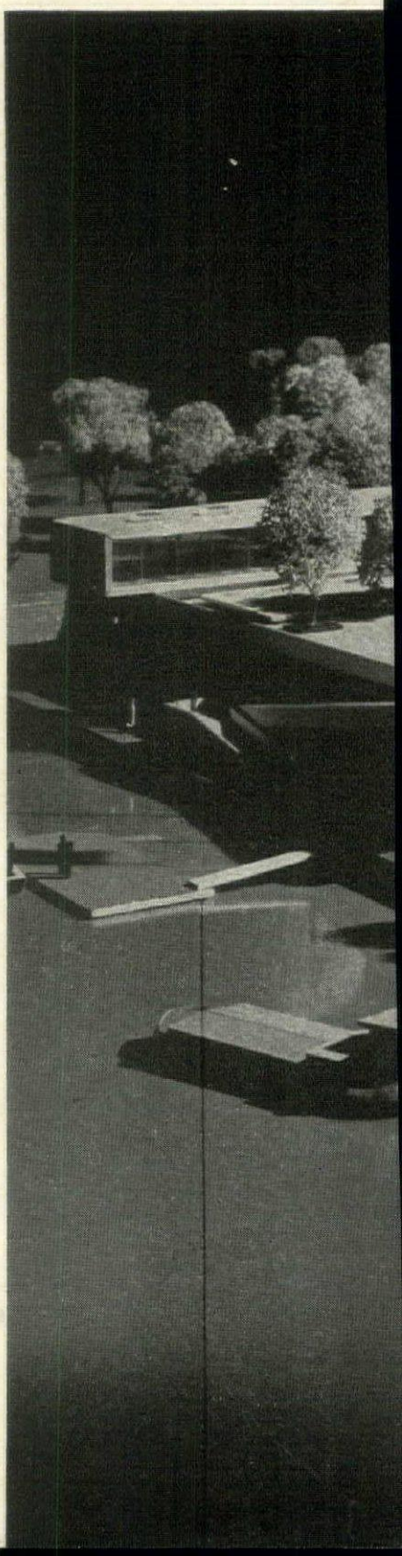
AUDITORIUM

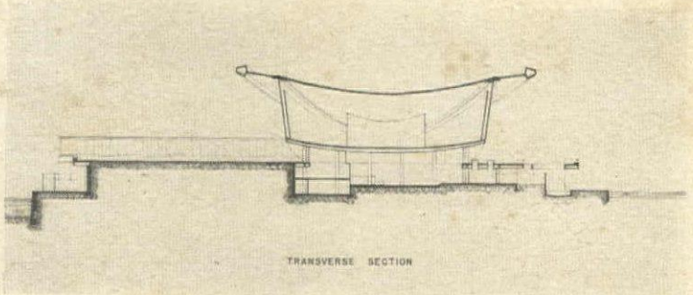


PLAZA LEVEL

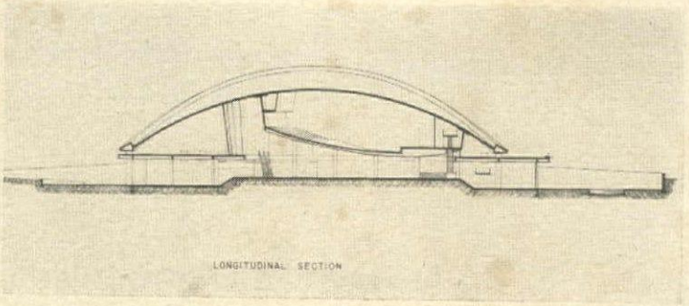


GROUND LEVEL





Compression ring atop cuplike auditorium supports its hanging roof. Arches keep rest of roof in tension, cup stabilizes structure.



Slanted arches soar to a height of about 64′ while the roof membrane reaches only 48′ in the center above auditorium. The arches meet at two points a few feet above upper deck and load is transferred to foundation on piers.

Robert C. Lautman

Conference hall seen from across Spree river

UNVENTED CONTINUOUS ROOFS like the 700,000 sq. ft. concrete deck below cause mushrooming heat and smoke to build up to such uncontrollable conflagrations as occurred in 1953 at the 1,500,000 sq. ft. GM transmission plant at Livonia, Mich. (right).

FIRE AND BUILDING DESIGN

Part I: **SINGLE STORY**

Heat vents and fire curtains check mushrooming of heat, smoke and explosive gases, keep fires small and manageable

Last year's fire losses reached staggering new heights: 12,550 dead and a property loss of $1,099,500,000. There were close to two million outbreaks; 700,000 in buildings. Of these, 313 "large-loss" fires (with losses over $250,000 each) caused almost 20% of the damage, some $202,360,000 and the worst in US history.

The shocking fact about these fires is that we ought to be able to give the occupants and the contents of a building the same protection against fire that we give them against structural failure. All fires start small, but get out of control unbelievably fast. This is mainly because superheated air, smoke and explosive gases become trapped against a roof, build up mushrooming heat and pressure as they are fed from a fire below, and finally explode into flash fires that cause numerous deaths through suffocation and make fire fighting highly difficult if not impossible. This has happened with catastrophic results in all kinds of buildings. Entrapped heat was a major cause of 492 dead at Boston's Coconut Grove night club fire in 1942, of 120 dead in Atlanta's Winecoff Hotel blaze in 1946 and of three dead and a $55 million plant loss at General Motor's Livonia, Mich., conflagration in 1953. Yet the night club and the hotel were of "fireproof" concrete construction, while GM's huge plant was of "noncombustible" steel framing.

Here, FORUM presents the first of a series of reports on fire and the design of buildings. This report shows what owners, architects and engineers are doing to ensure adequate fire protection for industrial plants and warehouses as a result of the new studies initiated by industrial management after the rash of large-loss industrial fires in 1952 and 1953.

The industrial fire studies gave rise to four important means of controlling the spread of fire:

1. *Roof venting.* By putting automatic venting hatches into roofs with a draftsman's pencil instead of waiting for the fireman's axe.
2. *Draft stops.* By subdividing extensive production floors into smaller fire areas, using noncombustible fire curtains at ceiling height wherever changing production

John Zimmerman—LIFE

PLANTS AND WAREHOUSES

lines obviate complete fire walls.

3. *Less combustibles.* By reducing the fire load of both structure and contents and adding special protection for hazardous fire areas.

4. *Fire-fighting equipment.* By providing adequate first aid fire-fighting equipment in realistic proportion to the value of the plant and its contents, using sprinklers, standpipes and hoses and portable extinguishing equipment. Plants outside city limits need special care to ensure that local fire-fighting protection is adequate and to provide additional plant fire trucks and water reserves wherever necessary.

The most notable single-story factory blaze is General Motor's Livonia, Mich., fire of Aug. 12, '53. Because of its size this fire has received more study and attention than any industrial blaze in US history. Direct losses came to an estimated $55 million, but indirect losses, in loss of production, inventories, profits on completed work, relocation, rent of temporary plant accommodation, loss of skilled workers due to plant shutdown, etc., are far more serious. Reports of the National Fire Protection Assn. show that the indirect losses of industrial fires generally amount to five times the direct losses.

GM has a fire safety record considerably better than most other industrial plants. The Livonia building was only four years old, most building code and underwriter requirements had been complied with, and the fire-fighting equipment and employee training were all up-to-date. Actually, however, the Livonia fire could have occurred in any of the scores of similar plants built with continuous unvented roof construction. A rather similar fire did in fact occur in Jan. 1952 in a Ford Co. tank plant, also at Livonia, Mich.

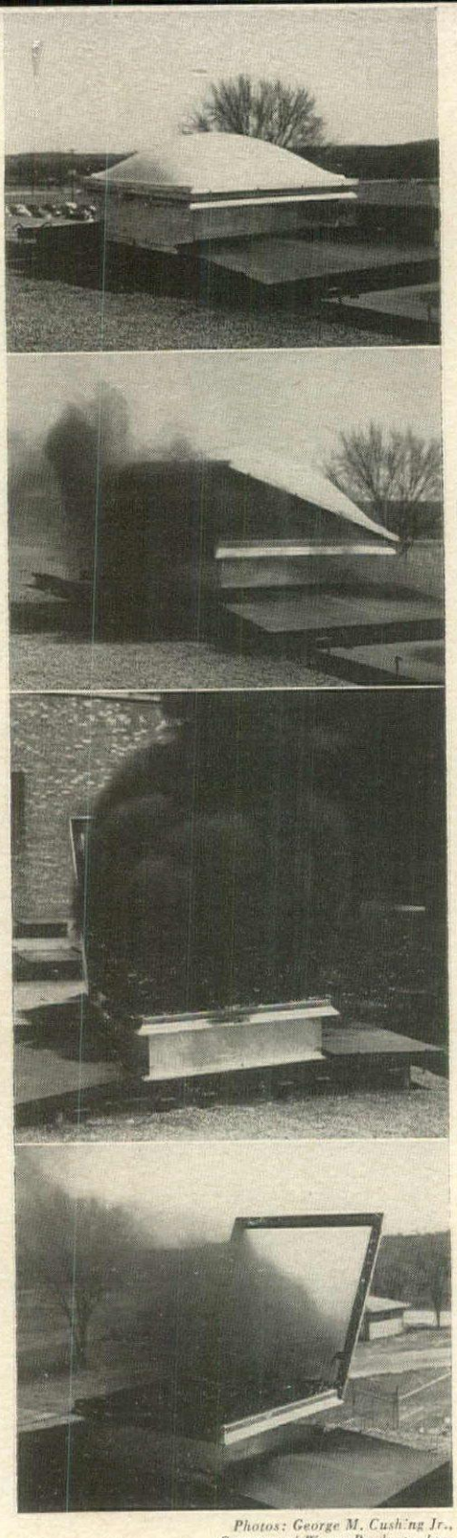
GM's Livonia fire started at 3:50 P.M. by sparks from an oxy-acetylene cutting torch igniting a highly flammable (flash point 97.7° F.) rust-inhibiting liquid in a long drip tray. Although the blaze was immediately attacked with 20-lb. foam extinguishers and 150-lb. chemical extinguishers, by 3:55 P.M. hot gases and thick black smoke from burning oil condensate and oil-soaked floor blocks began banking against the plant's continuous flat metal roof deck. A moment later a main electrical conduit short-circuited, the lights went out, ventilating blowers stopped and dense oil smoke built down from the now unventilated flat roof, driving off the fire fighters. From that moment the fire was out

of control. Forty-five minutes later the entire 866′-wide, 1,200′ to 1,600′-long plant was ablaze, except for a two-story office strip along the front that was protected by a fire wall.

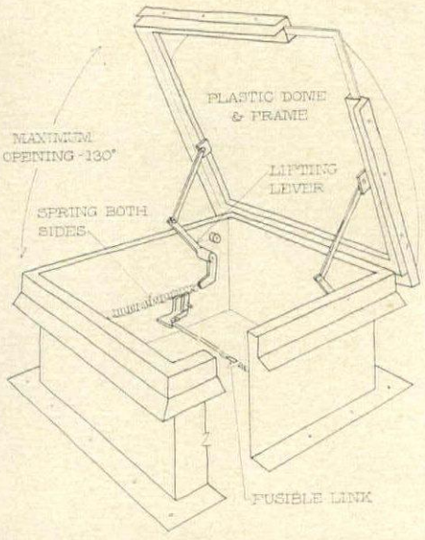
Although both plant and local municipal fire brigades arrived promptly, the absence of fire walls and roof vents in the plant's 34½-acre undivided fire area prevented the localization of heat and smoke and prevented the fighters from getting near the seat of the fire. Three firemen were trapped and died, 15 were injured. Fire Chief Roberts, who saw the fire at 4:05, said: "You gotta get to a fire to put it out. We never even laid a hose on this one." The fire was not extinguished until 14 hours later, when it had virtually burned itself out.

The plant was of typically good noncombustible construction. Unprotected steel framing supported an 18-ga. metal roof deck topped by an asphalt vapor barrier, noncombustible insulation and a standard built-up roof. The heat of the metal deck was enough to melt the asphalt in the vapor barrier, which dripped through the warped deck, to be ignited by the intense heat below. Only 20% of the area was protected by sprinklers, none where the fire started.

According to the National Fire Protection Assn., the main factor of the Livonia fire was "an undivided fire area of 1,502,500 sq. ft. (34.5 acres) in which absence of fire walls and roof vents denied access for fire fighting and prevented localization of heat and smoke." Other factors (listed in the order of their importance) were: lack of sprinkler protection; lack of carbon dioxide fire protection over the drip pan, although it was installed over the dip tank itself and unprotected steel construction; in particular, the thin steel deck did not offer sufficient insulation between banking heat and the built-up roof covering to prevent asphalt from melting and dripping through joints of the heat-warped deck.

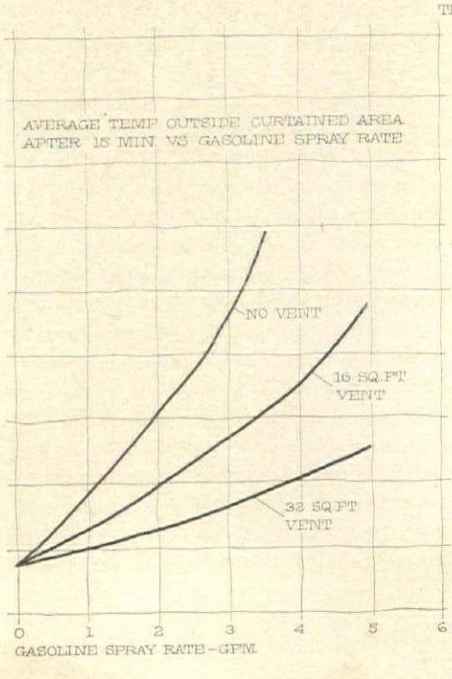


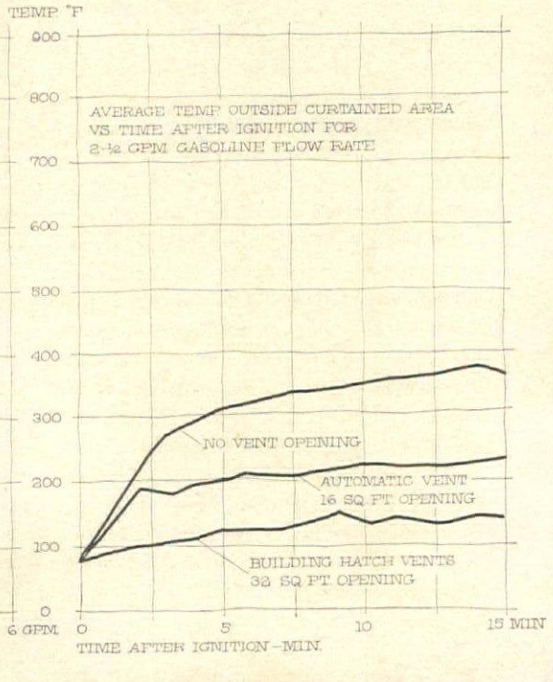
Photos: George M. Cushing Jr., Courtesy of Wasco Products, Inc.



AUTOMATIC HEAT VENT PLASTIC SKYLIGHT is opened by powerful springs, held down by a fusible link that melts at 165° F.

HEAT VENT FIRE TESTS show effectiveness of vent. Left, starting at top: 1) skylight before gasoline spray fire is lit in building below; 2) vent automatically opening 1 minute, 33 seconds after lighting fire; 3) entrapped gases and smoke bubble out immediately after vent opening; and 4) five minutes later, most of the trapped gases are clear and flow of smoke is considerably reduced. Charts below show effects of venting in reducing the temperature rise in the fire area.





New automatic heat vents help control spread of fire

As any experienced fireman knows, a pent-up blaze can be very serious. It may generate severe heat of 1,000 to 2,000° F., when air expands four times in volume, and may spread laterally into concealed openings behind wall and ceiling coverings. Such superheated air and gases mushrooming out from the seat of a blaze cause every combustible material they touch to burst into active flame. Not only that but incomplete combustion in a pent-up blaze often generates explosive mixtures of lethal carbon monoxide and superheated, expanded gases that cause "hot air" explosions when a sudden fresh supply of oxygen develops. At one pent-up blaze the opening of a door touched off a terrific hot-air explosion that blew a four-story building apart, killing 25 men beneath its falling walls.

For these reasons fire fighters always try to release trapped expanded gases by breaking open skylights or otherwise cutting holes in the roof above a pent-up blaze before attacking it from below. Automatic heat vents are designed to release dangerous heat, gases and smoke before they even have a chance to aggravate the fire. The vents are operated by counterweights or powerful springs, activated by fusible links for automatic opening.

The principle of heat venting has long been known. Following Chicago's Iroquois Theater fire that took 600 lives in 1905, heat vents designed for automatic opening, and covering 10% of the stage area, were made mandatory in all theaters to keep flame and smoke away from the audience.

Prewar industrial and warehouse construction contained heat vents as by-products of the roof monitor design that served both lighting and ventilation. In the rush of World War II construction, however, new efficient artificial lighting and ventilation favored a more economical continuous roof construction over huge single fire areas as big as the mammoth 1,500,000 sq. ft. continuous roofs at both Ford and GM's Livonia plants.

Last April, the Factory Mutual Laboratories made a number of fire tests to determine the effects of heat vents in a 2,300 sq. ft. fire area separated from the rest of a single-story building by a 5'-deep sheet metal fire curtain. Temperature rise and smoke build-up were measured for gasoline spray exposure fires using up to 5 gal. of gasoline per minute and with none, 16, and 32 sq. ft. of automatically opening heat vents in the roof (i.e. a venting ratio of 1:144 and 1:72 of the 2,300 sq. ft. area). Conclusions, shown diagrammatically in the accompanying charts (bottom opposite page):

1. Automatic heat vents effectively delay the build-up of heat, smoke and noxious gases from a building fire. At a fuel burning rate of 2½ gpm the average temperature outside the curtained area after 15 minutes rose to 365° F. with no vent, to 235° F. with a 16 sq. ft. vent and to only 155° F. with a 32 sq. ft. vent. Equipped with 165° F. fusible links the vent covers opened automatically 1 minute 33 seconds after ignition.

2. Without vents, a dense smoke blanket quickly worked down to floor level forcing evacuation of the onlookers within 5 minutes after ignition. During tests with heat vents, visibility remained good from floor level to above eye level and the building did not have to be evacuated.

3. Heat vents must be used in conjunction with fire curtains, which aid in producing the chimney effect necessary to move gases through the vent. The greater the depth of curtain, the more effective the vent. Better venting is also achieved by adding a chimney or stack above the roof.

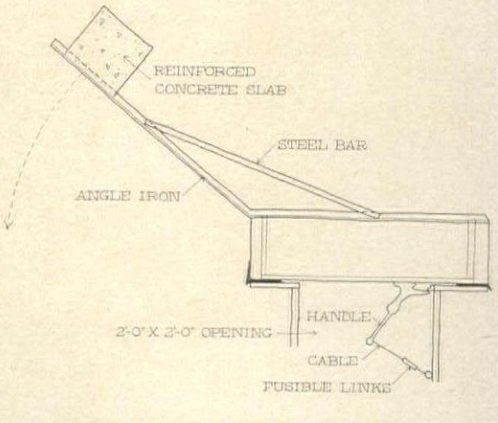
Heat vents are not designed to be used in place of sprinkler protection but as additional safeguards. Because the build-up of heat in a fire is reduced by the vents, fewer sprinkler heads would be opened, thus water damage of building contents, a major factor in fire losses, would be reduced.

Three objections are raised to the use of automatic heat vents for protection from fire. First and most serious is the idea that any venting creates a draft which fans a blaze. In practice there is no contradiction. A draft caused by a window or a door opening is lateral, and uncontrolled, while that caused by venting is vertical and controlled by design. A lateral draft draws the blaze into new areas, offering it new fuel; a vertical draft allows the gaseous products of combustion to escape to open air without adding fuel or aggravating the fire. Applied to a single-story plant or warehouse, natural ventilation through the building would fan the mushrooming blaze and smoke into new areas, making fire fighting more difficult; in contrast, automatic venting of the fire area draws fresh air in from the surrounding plant, thus facilitating fire fighting by preventing build-up of smoke and providing incoming fresh air for the firemen.

A second objection to automatic venting is the danger that flying brands from an open vent might set light to adjoining property. For this reason stage vents in theaters are required to be at least 10' from a lot line and 20' from any door, window or wall opening on the same lot.

A third objection comes from some fire chiefs who feel that a fire should not be vented until fire hoses are ready to control the fire below. Chicago's new code regulation for the control of bowling alley fires requires that concealed spaces between the ceiling and the roof should be equipped with fire and explosion vents having an area of at least 2% of the concealed space, such vents to be automatically operating and connected with an automatic alarm placed in the office of the bowling alley, so that fire fighters could be summoned at once. Further, mechanical ventilating systems in bowling alleys must be equipped with rate of rise temperature activating devices to turn off ventilating fans in the event of fire. Both these provisions could be usefully applied to industrial buildings and warehouses, and, in the case of high fire load areas, the automatic vent may be directly connected to a municipal fire alarm system that would bring a fire company to the blaze within minutes.

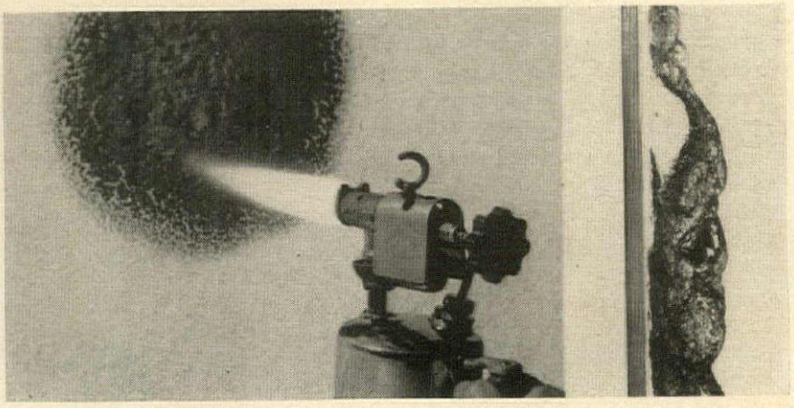
The venting ratio required for any building type will depend on the occupancy, the fire loading and the type of construction. Standards vary greatly from the 1:10 ratio for theater stages to the 1:325 ratio used in Ford's new Mahwah, N.J., plant. Other standards for automatic venting recommended by the National Fire Protection Assn. are 1:90 for piers and wharves, which they describe as "smoke stacks lying on their sides"; and 1:155 for warehouses storing combustible fibers.



INSULATED HEAT VENT used in Woodburn, Ore., warehouse is actuated by a heavy concrete block mounted on an angle iron.

Lexsuco, Inc.

PLASTIC VAPOR BARRIER used atop a metal roof deck at this new General Electric plant does not add fuel to a fire breaking out in the building below.



HEAT RETARDANT PAINT bubbles up into a vesicular coating that is noncombustible and insulating.

New attention to fireloading helps make a fireproof building also a fire-safe one

One of the most costly errors in building construction is the idea that a fireproof building is safe in the event of fire. "Fireproof" means that the structure can withstand temperatures approaching 2,000° F. for several hours with only minor damage. But the building contents, together with any trapped occupants, will long be destroyed. In most industrial buildings and warehouses the contents are often worth far more than the building itself. In practice, "fireproof" is purely an underwriting term and safety to the occupants is only incidental in it.

Another common misinterpretation is in the term "noncombustible construction." The GM and Ford plants were of noncombustible steel-framed construction which did not contribute fuel to the fire. In spite of this the building contents, aided by the asphaltic vapor barrier in the roof (which only burns when there is a fire of over 800° F. beneath it), burned well with a heat intense enough to cause the steel frame to buckle and collapse.

Industrial architects and fire protection engineers are beginning to take a more realistic approach to this problem by evaluating the fire load of a building. The fire load is the expected maximum amount of combustible materials, including structure, walls, roof, finish and anticipated contents in a single fire area. The factors considered are the quantity and calorific value of the combustible materials, the rate of burning, and how the contents are packed, whether tightly bundled, loose, or liquid. Fire load can be expressed in terms of either the weight of combustibles per square foot (the US method) or the Btu per square foot (favored in Britain). One pound of combustibles has an average calorific value of 8,000 Btu.

The US National Bureau of Standards have evaluated average fire loads by occupancy taking into account only the contents of the building, excluding the structure or finish. The fire loads range from a low of 7 psf for school classrooms, 12 psf for department stores and general offices, 30 psf for furniture factories, 36 psf for libraries and reach a very variable 160 psf high for storage warehouses. The British propose three fire load classifications: low, up to 100,000 Btu per sq. ft.; moderate, 100,000 to 200,000 Btu per sq. ft.; and high, 200,000 to 400,000 Btu per sq. ft. Any fire loading above 400,000 Btu is a special hazard and is treated accordingly.

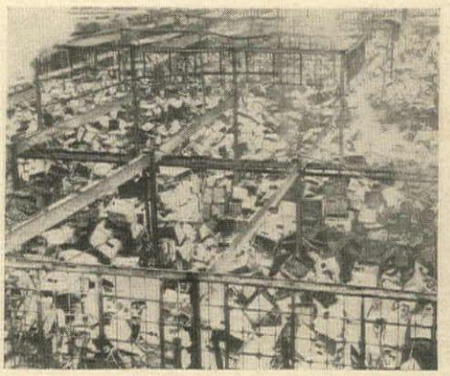
Either system forms a sound rational basis for the determination of the fire resistance and fire protection requirements of a particular building and is especially useful in determining the sprinkler or heat vent needs in industrial plants and warehouses.

Special efforts are being made by both manufacturers and fire underwriters to reduce the fire load of the finishing materials of a building, especially of the paint and fibrous insulating and acoustic panels. The critical danger of these facing materials is that they generally cover hidden cavities through which heat and flame can spread into new areas unless the cavities are protected by both vertical and horizontal fire stops.

Oil-based paints are often a fire hazard, especially when used in the 10 to 15 layers sometimes found in old plants. Water-based paints are considerably safer. Old coats of paint should be removed before repainting. Heat-retardant paints have shown a definite value in fire protection. Such paints are noncombustible and, when heated, bubble up into a ½" thick vesicular coating that gives a useful degree of insulation to a wall panel or structural member (although such insulation is hardly adequate for fireproofing structural steel).

Fibrous insulating and acoustic boards are very combustible once they are dry. This has long been recognized by fiberboard manufacturers as well as by underwriters (whose fire rating bureaus give it particular mention). The manufacturers have now developed techniques of flameproofing similar to those used to flameproof clothing and drapes; and they recommend flameproofed fiber boards for all areas where the fire hazard is critical.

EXCESSIVELY HIGH STACKING rendered the sprinkler protection inadequate in this warehouse fire.



EXCESSIVELY DENSE STORAGE of valuable kitchen appliances caused a total loss of this unsprinklered "noncombustible" building.

New protection for high hazard storage areas

"Large-loss" warehouse fires reached a new high in 1954 with 54 fires causing direct losses of $36,504,500, with eight dead and 102 injured. Of these fires 70% occurred in one-story buildings with excessive fire areas, 88% were in combustible building structures and 88% were not covered by automatic protection. All of these fires show a serious lack of appreciation of the high fire loading that is characteristic of industrial storage methods.

The improvement in warehousing efficiency, developed through the use of lift trucks that can operate in narrower aisles and that can stack pallets up to greater heights, has aggravated the fire hazard. In several cases combustibles have been stacked so high that normal sprinkler protection was inadequate to control a fire, even in fire-resistant concrete structures.

In such cases the only value of the sprinkler system is to get a low rate for the building, though not necessarily for the building's contents.

The value of warehouse contents lost in fires is now averaging three times the value of the building itself, and has reached up to $800 per sq. ft. in certain aircraft factory fires. (New automatic foam sprinkler systems are being used in aircraft plants and hangars where the gasoline fire hazard is high.)

The object of sound warehouse design is to confine a fire in the smallest area possible by the use of fire areas protected by fire walls. The Factory Insurance Assn. recommend that warehouse fire areas should not exceed 5,000 sq. ft. in an unsprinklered wood frame building and not exceed 40,000 sq. ft. in a one-story sprinklered fire-resistant building. Openings in the fire walls should be protected by automatically closing doors actuated by fusible links set at 165° F. The common practice of tying doors back with ordinary rope in place of the fusible link is bad since the rope only burns at about 400° F. The fire door must be insulating as well as noncombustible to prevent radiant heat from a blaze setting fire to combustibles in an adjoining fire area. Each fire area should be protected with adequate heat vents to exhaust heat and smoke from a blaze and reduce explosive backdrafts.

Maximum ceiling heights should be 22′ for one-story and 15′ for multistory construction. Modern lift trucks permit piling up to 30′ high with wooden pallets that provide just the right amount of dry combustible material and vented air passages for a first-class blaze.

Sprinkler systems in storage areas need a particularly generous water supply to cope with the high fire loads encountered. To control a blaze in rubber tires stored 8′ high in 1,000 sq. ft. piles, for instance, tests by the Factory Mutual Laboratories show that spray-type sprinklers need a water density of 0.26 gal. per sq. ft. The National Board of Fire Underwriters recommend that warehouse standpipes have a minimum capacity of 70 gpm at an outlet pressure of 25 psi and that an automatic sprinkler system have a minimum capacity of 500 gpm with a pressure of 15 psi at the highest sprinkler.

Absorbent materials such as paper or jute are a special hazard since they will absorb water, used in fire fighting, and expand. A roll of newsprint, for instance, absorbs one ton of water. Such materials may become soaked in a fire and may cause structural collapse of the building frame either through expansion against the building supports or through excessive weight. FIA recommends 30″ clearance between stockpiles and structural supports.

Due to the high fire loads and the infrequency of careful inspections, automatic fire detection systems with first aid fire-extinguishing equipment are more important in warehouses than in any other type of building. Automatic systems using both flame-detecting and smoke-detecting equipment coupled to the building's fire alarm system are recommended for each fire area. Portable fire extinguishers should be placed every 100′, with larger equipment mounted on all lift trucks. Fire losses are considerably reduced if the fire can be controlled while it is small without setting off sprinklers.

A CONTINUOUS 39-ACRE ROOF covers the 1,700,000 sq. ft. Ford assembly plant at Mahwah, NJ., believed to be the biggest roof area ever built. Architect: L. Rosetti; engineers: R. F. Giffels & V. E. Vallet.

New fire codes written into GM and Ford building standards

As a result of their fire studies GM and Ford have set up entirely new standards for their post-Livonia manufacturing and assembly plants. Their main provisions:

1. *Subdivision of fire areas.* Because production lines change every year, fire walls are impractical in automobile factories. Yet the production lines are so long and involved that huge manufacturing areas covering 30 to 40 acres are essential. The solution is subdivision of fire areas by fire curtains consisting of noncombustible screens extending down at least 3′ from the roof to the bottom chord of roof trusses. Each divided area contains automatic venting skylights to exhaust heat and gases in case of fire.

GM uses such draft curtains to enclose fire areas covering up to 250,000 sq. ft. for regular production areas, and not more than 10,000 sq. ft. for hazardous areas where the fire loading is high. Automatically opening roof vents are provided in the ratio 1 sq. ft. of vent for every 20 to 40 sq. ft. of floor area.

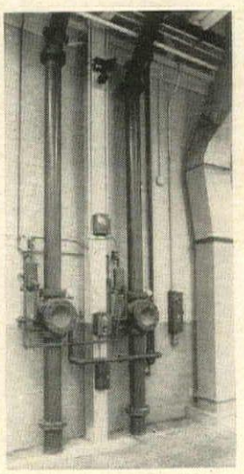
Ford uses draft curtains to enclose fire areas of 70,000 to 80,000 sq. ft. at their new San Jose and Louisville plants and of 50,000 to 60,000 sq. ft. in their new Cleveland Engine Plant No. 2. Automatic smoke and relief vents provide 1 sq. ft. of vent area to 175 to 185 sq. ft. of floor area in the southern plants, and 250 sq. ft. in the Cleveland plant. These are roof houses with collapsible side walls operated by fusible links and by pull chains for manual operation. The openings are large, varying from 7′ x 21′ to 7′ x 25′.

2. *Fire walls.* Continuous floor-to-ceiling concrete block fire walls are used to separate employee facilities, escape routes and high fire-load stockpiles of foam rubber or upholstery from the main production areas. High hazard operations such as heat treatment and painting are similarly protected wherever the operation can be separated from the production line. Fire doors in these walls are self-closing with both fusible link and manual control.

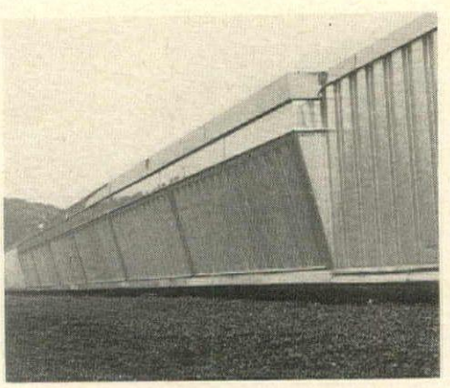
3. *Roof construction.* After numerous fire tests of various roof constructions Ford has stayed with light-guage steel roof decking but with special modification to the vapor barrier below the roof insulation. (It was the asphalt vapor seal that contributed considerable fuel to the flames at both Livonia fires.) On Ford's San Jose and Louisville plants, both in fairly warm latitudes, the vapor seal was omitted; in the company's Cleveland plant the steel deck is covered with a 4-mil thick vapor seal of fire retardant polyvinyl chloride topped with rigid insulation held in place by special fasteners. There has also been considerable progress made in the development of noncombustible aluminum foil vapor barriers. Standard four-ply combination roofing is used on all plants. In contrast, GM's new Fisher body plant at Livonia is roofed with precast concrete roof planks topped with the usual built-up roof.

4. *Sprinklers.* Both Ford and GM are specifying 100% sprinkler protection in their new plants, with extra heads and increased water supply for high-hazard areas. Both companies have also stepped up programs for sprinkler protection in their existing plants.

In developing their standards both GM and Ford obtained considerable advice from the fire rating bureaus which are set up in every state. Fire protection engineers in these offices offer free advice to architects and engineers on the fire protective rating of their building designs before construction.* Typical factors that affect rates set by fire rating bureaus: 1) fire area subdivisions and heat vents; 2) automatic sprinklers and fire warning protection; 3) availability of local full-time fire companies and water supply for fire fighting; 4) construction of fire walls and fire doors, especially at hazardous points such as furnace rooms; 5) construction of fuel oil installations; 6) excessive use of combustible acoustic or insulating boards; 7) smoke pipes or heating ducts too close to combustible materials; 8) provision of emergency power and lighting equipment, especially for escape routes and fire warning devices.



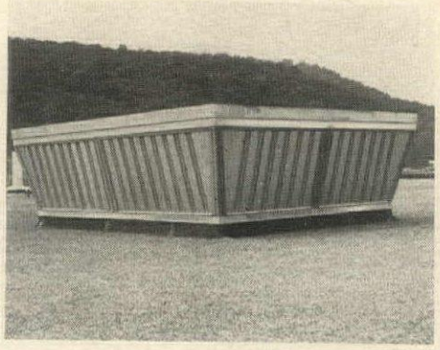
MAIN SPRINKLER PIPES with fully automatic controls supply water to the plant's 19,000 sprinkler heads covering every square foot of floor space.



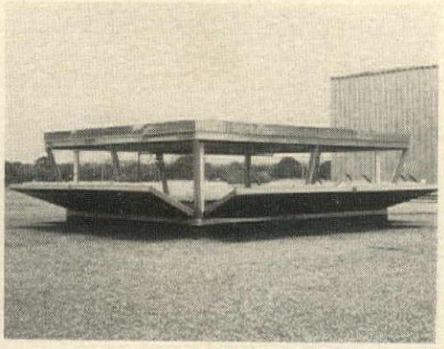
SIDE-WALL HEAT VENTS along railroad bays are 90′ long, 4½′ high, designed to fall automatically should a fusible link give way. Pull ring at center is for manual operation.

* But Chicago's fire rating bureau, for instance, estimate that they are asked to advise on less than 5% of all new construction.

Photos: Marc Neuhof



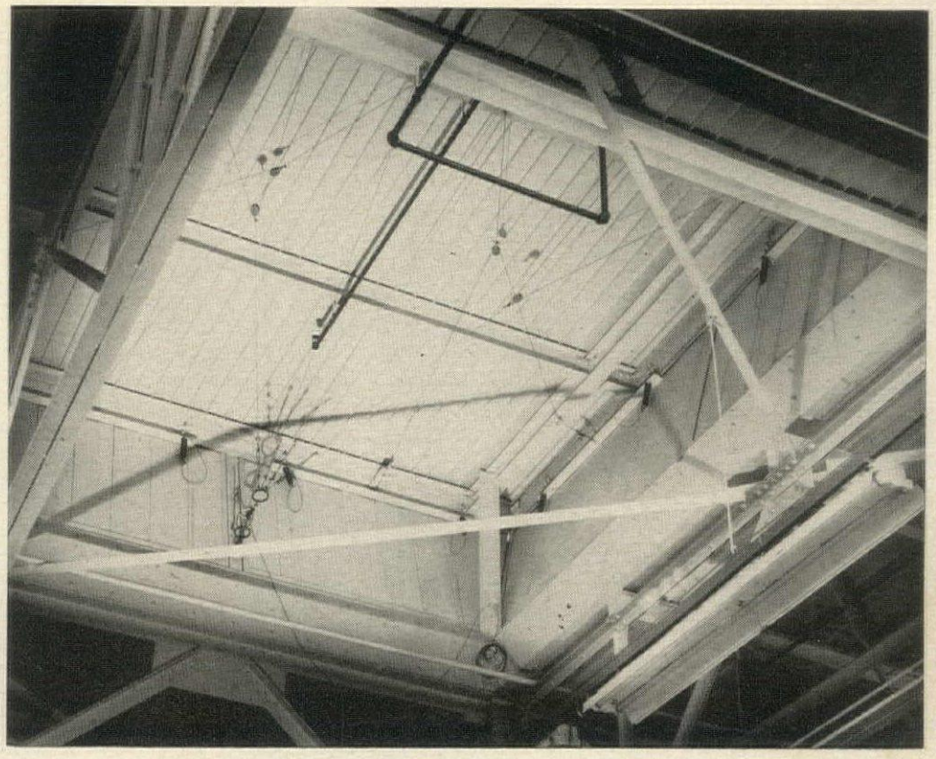
HEAT VENT HOUSES ARE 13′ x 17′, stand 7′ high, one to each of the plant's 18 fire areas.



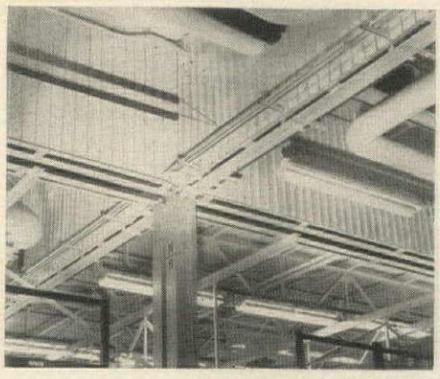
SNAPPED OPEN, side panels fall to end of wires, giving a 4½′-high vent opening.

SIDE PANELS ARE INSULATED, are fitted with springs to absorb shock of opening.

HEAT VENT FROM BELOW shows system of wires that hold up side panels. Wires lead to two rings joined by a fusible link. Pipes supply sprinkler heads at top of vent housing.



INTERSECTION OF FIRE CURTAINS shows double thickness of sheet metal draft stop. Fire wall between extends up through roof into a fire stop projecting 18″ above roof level.



Fire protection requirements designed Ford's 1,700,000 sq. ft. Mahwah plant

One of the first automobile assembly plants to be designed and built since the Livonia fires is the Ford Motor Co's 800′ x 2,115′ plant at Mahwah, N.J., planned to produce over 1,000 units a day.

Built of noncombustible steel framing with 45′ x 50′ bays topped with an insulated steel roof deck, the plant is designed with highly developed fire protection specifications:

1. *Heat vents and fire curtains.* The plant is divided into 360′ x 200′ fire areas surrounded by sheet metal fire curtains extending from the roof down to the bottom chord of 5′ steel roof trusses. Each fire area is further protected by a 13′ x 17′ vent house set on the roof near the center of each huge fire area giving a venting ratio of 1:325. The 7′-high vent houses are built with 4½′ sloping side walls of insulated aluminum siding designed to swing down from the top when a fusible retaining link melts (at 160° F., slightly below the 165° F. release temperature of the plant's sprinkler heads). The vents can also be operated manually from floor level.

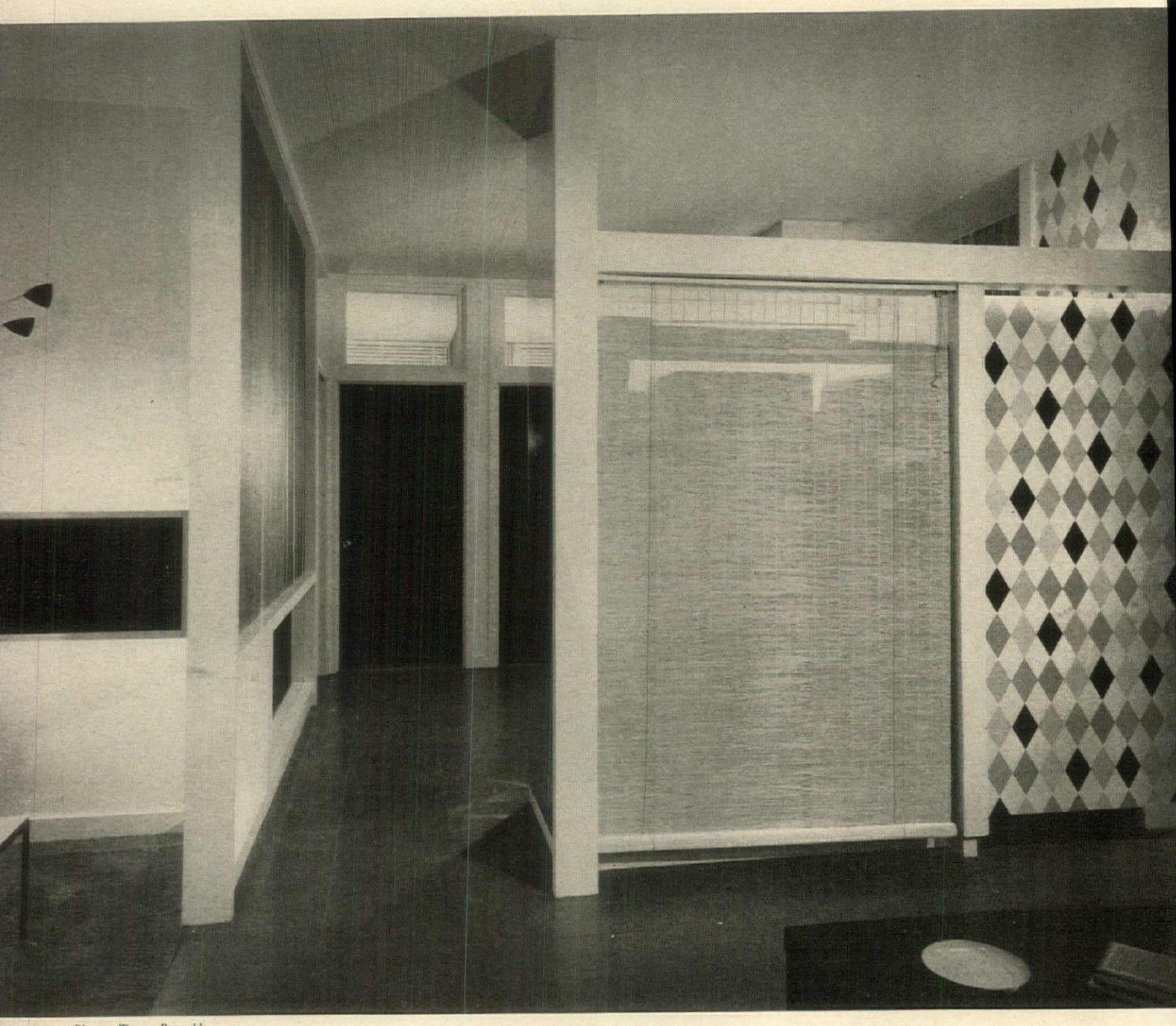
A 90′-wide railroad bay along the east side of the plant has a clear height of 21′-3″ to the trusses. Heat venting of this area is through six hinged doors set in the top of the side wall, each door being 90′ long to serve a 360′ length of the building.

2. *Sprinklers and standpipe systems.* The plant is 100% sprinkler protected, using 19,000 sprinkler heads, each serving 120 sq. ft. of the plant. A 12″-diameter underground fire loop serves two-way hydrants located 300′ apart throughout the main building, each fitted with two 100′ lengths of emergency fire hose. These hydrants are alongside continuous 15′-wide fire aisles, designed to permit fire trucks to come right into the plant.

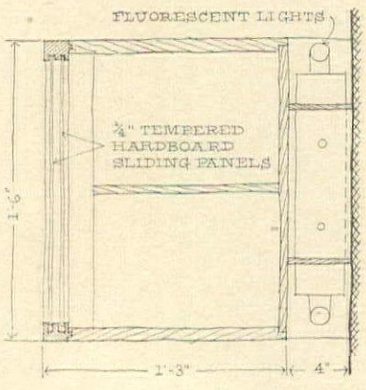
3. *Automatic alarm systems.* Besides the automatic sprinklers and heat vents, which are connected to alarms in the plant protection office, there are manual alarm boxes mounted on columns every 200′ throughout the plant. These are connected to horns, fire gongs and lights as well as to a central alarm system in the plant protection office. Emergency lighting of escape routes is provided by automatically charging storage batteries.

4. *Special hazards.* The oil house and paint mix room are fitted with high density sprinklers, one head to every 60 sq. ft. The oil house is outside the main building and separated from it by a Class A fire wall extending 20′ on either side. The paint mix room is separated from the plant proper by 8″ concrete fire walls with temperature actuated automatically closing fire doors and has additional protection from a two-shot carbon dioxide fire extinguishing system, one automatic, the other manual.

OFFICE OF MERIT: a regular department devoted to new ideas in finishes, fixtures and furnishings—this month, a small real estate management office designed to seem spacious

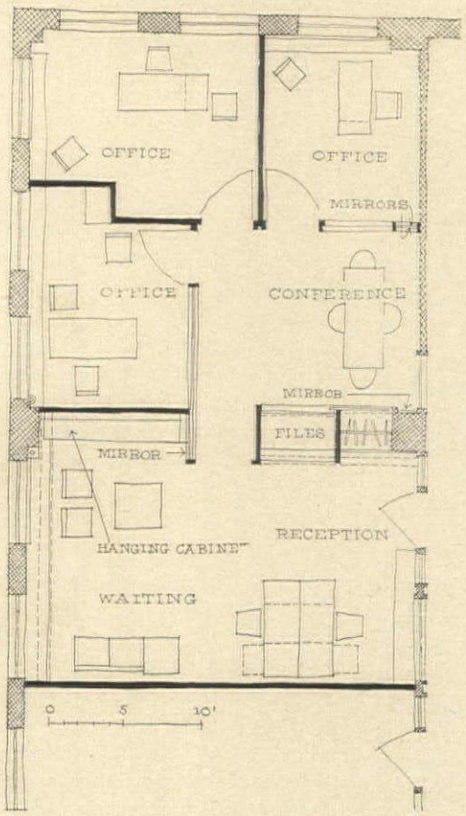


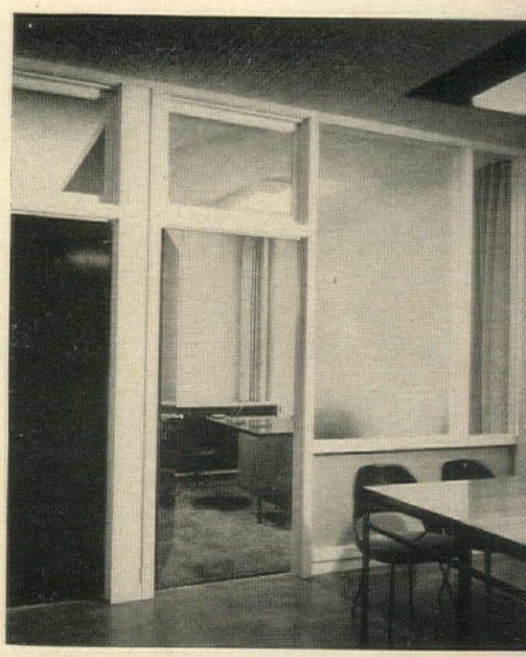
Photos: Warren Reynolds



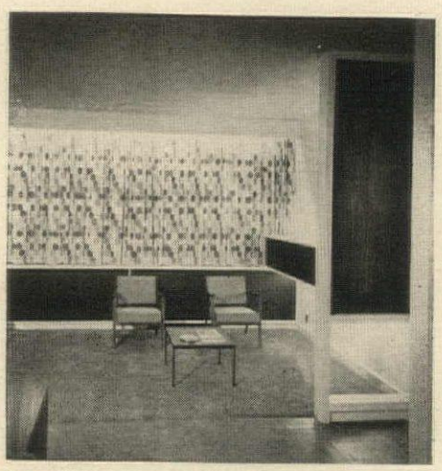
Lively pattern of varied materials combined with openness of partitions gives spacious feeling to small branch office of Chicago realty management firm. This view from reception room shows corner of waiting room at left (with back-lighted wall cabinet—detail, right), conference room and offices in background and low, two-part storage partition at right. White bambino blind conceals file cabinets. Harlequin wallpaper (in black, white, olive green and pumpkin) is on back of closet.

OWNER: Draper & Kramer Inc.
LOCATION: Minneapolis
DESIGNER: Peter Fraser Jr.
GENERAL CONTRACTOR: Robert McNulty





Conference room has mirrors in two panels next to corners so adjacent walls appear to go on through (covered by drapery in this photo). Private offices (in rear) have glass fronts to increase their apparent size and lend light to conference room. Office doors, desk tops, chair backs are black. Opaque lower panel of partition is pumpkin-colored plastic laminate. Chair seats are olive green. Drapery is pumpkin and white. Floor is cork; carpet, olive green.



Waiting room is actually an extension of reception area. Colors of its furnishings echo those of harlequin wallpaper. Perforated pressed wood, finished in its natural brown, screens radiators and is used for sliding doors on wall-hung cabinet. Fluorescent fixtures are behind valance and wall cabinet.

Specifications

FINISHES: Floors—cork tile, Armstrong Cork Co.; carpet, Belrug Mills. Walls—grass cloth, Charles R. Gracie & Sons; Harlequin wall paper, Pageant Wall Papers; paint, Martin-Senour Co.; wood paneling, walnut; mirrors, ¼" plate, Pittsburgh Plate Glass Co.; translucent glass, Mississippi Glass Co.; perforated panels, tempered hardboard, Masonite Corp. Ceiling—12" x 12" striated acoustic tile, Owens-Corning Fiberglas Co. Doors—solid core flush gum plywood, Mengel Co.

FIXTURES: Lighting—fluorescent, Gotham Lighting Corp. and Metropolitan Lighting Fixture Co.; Mercury switches, Mercury Contacts Inc. Hardware—doors, chromium, Schlage Lock Co.; cabinets, chromium, Elmer T. Herbert Inc.; closed sliding doors, Grant Pulley & Hardware Co.

FURNISHINGS: Conference table and desks—Lehigh Furniture Corp. Formica tops of secretarial and conference chairs, coffee table—Knoll Associates. Reception-room settee-table and office side chairs—Herman Miller Furniture Co.

FABRICS: Waiting room curtain—Anton Maix; conference room curtain, Herman Miller; white bambino shade, Holland Shade Co.; linen curtains in private offices, Knoll Associates; chair upholstery, Boris Kroll Fabrics Inc., Herman Miller and Knoll Associates. Curtain fabrication—Ward Co.

Passage between conference room and reception room is "widened" by mirrored panel. Front of storage partition at left stops short of ceiling; walnut panel of wall at right stops short of floor. Horizontal planes of ceiling and floor therefore seem to sweep on through and enlarge the apparent space.

for all concerned

HOW ASSURE FINE PUBLIC BUILDINGS?

The many important federal buildings soon to be built should have the finest architecture. The government must have a reliable method of obtaining it. Unhappily the handling by Congress of the Air Academy architecture shows Congress has much to learn.

What happened was that Congress as "client" held up appropriations until plans were revised more to congressional liking.

Only superficially was the issue whether this piece of public architecture should use more glass or more masonry.

It was basically a question of procedures by which such questions as more glass or more masonry, more architecture of this kind or more of that kind, should be handled.

Why should not Congress spell out the kind of architecture we should have, since Congress represents the people? For the reason that no art or architecture worth having, in the long history of mankind, has ever been created by a process of legislation.

In art as in science and religion, a democratic people can get the best only by delegation. We have to choose those leaders who know more than we, and give them freedom to get the job done. While it is being done they must be free to act with a high disinterestedness and relieved of ignoble pressures.

This can be done only by administrative procedures within a very broad framework of costs and objectives set by Congress.

Precisely this kind of free action had been beautifully set up in the US in both the State Department Foreign Buildings Operation and the Air Force. (Whatever other mistakes Secretary Talbott made, he was a capable administrator in this.)

In both places high administrators had managed to get their architects from among the very best on the basis of merit. And in both places the active architects had been protected, both from excessive enthusiasms of their own and from outside pressures, by authoritative consultant panels: men of their own type who could quietly advise them but not force them.

This was all working well in the case of the Air Academy. One month before the Congressional Donnybrook, the consultants had looked over the preliminary model out in Denver and faced exactly the same objective problem that Congress later tried to handle. Scared by the great amounts of glass, they warned the practicing architects, as a practical matter, against the excessive interior heat it could generate, unshaded, in the Denver climate. The practicing architects took heed in their continuing studies. (It was just because they had started so early that they were able to bring up a "new scheme" so fast to placate Congress.)

When Congress then stepped in and tried to direct architectural decisions in detail, the door was opened to a lot of political pressures on the architects, and many people did and said things they should not be proud of. They settled nothing that had not already been substantially settled in a calm professional manner.

As an example, Congressman Fogarty, the union mason, was allowed to use his office as distribution point for the "fact sheets" of the masonry lobby. Senator Capehart was allowed to use his office as a promoter, for he not only boasted what products Indiana might contribute but took trouble to name specific companies. Fogarty and President Tice of the Veterans of Foreign Wars were allowed to insinuate that glass was an alien and somewhat un-American material. They thus set up the new principle, which would have amazed Washington or Jefferson, that now not only people but inanimate materials must have clearance papers.

For businessmen it is portentous that here for the first time a veterans' organization came before the Congress and in effect wrapped the flag around one building material, while casting doubt on a competing material in the market.

None of these things contributed to a good architecture, or even to free private enterprise, in a free society.

Let us hope that qualified administrators will be allowed again to find good architects and that these will then be left free. Incidentally, a good competition is a fair way of finding the best man, is it not?

MASONRY'S FUTURE

Within the last century other materials led by metals have invaded the masonry realm in fireproof building. Masonry producers have had two replies open to them. One was to seek to entrench masonry through codes and political pressures. The other was to step right out into fresh research, new invention, and vigorous competition.

In recent years it has seemed as if masonry has indeed awakened to the possibilities of the latter progressive method. This magazine was honored to participate through round tables helping to establish the attitudes of architects, owners and maintenance men, just as we would like to assist any improvement in building products. The new possibilities open to masonry are amazing.

Already great progress has been made not only in modular design but in speedy palletized brick handling, in new faster application of mortar. The new SCR brick has given us single-wythe walls of good strength, and high glazes have given us a blaze of permanent outdoor color. Curtain walls, once associated only with "new materials," have been built successfully and beautifully with marble, using no other backup. Granite is coming out in new forms and starting to market its "scrap" down to the saw's screech. And renewed public interest in public architecture is leading to renewed interest in limestone. We like these signs of forward-looking development because they are in the best US tradition. Playing no favorites, FORUM cheers all competition based on merit.

Douglas Haskell

Cincinnati Gas and Electric Co., Cincinnati, Ohio *Harry Hake & Harry Hake, Jr., Architects* *Frank Messer & Sons, Inc., Builders*

Mills Movable Walls promote permanent efficiency through *Space Control* of office layouts

The Cincinnati Gas and Electric Company's handsome new office building utilizes nearly three miles of Mills movable walls, wall linings, column enclosures and railings — a complete Mills interior.

The Cincinnati Gas and Electric Company has provided for future as well as present efficiency in the use of space throughout its new building. *Space Control* has been accomplished by forming the attractive interiors with Mills Movable Walls. Whenever changing space requirements make new layouts advisable, these walls can be rearranged —quickly, easily and at very low cost—without dust, debris, commotion or interruption of normal space usage. Mills Walls combine this efficient flexibility with distinctive architectural design and structural stability. They are fully insulated and soundproofed, and require no maintenance whatever except occasional washing to keep them looking always their efficient best.

Write for the new 68-page Mills Catalog or see it in Sweet's Architectural File.

THE MILLS COMPANY • 917 Wayside Road, Cleveland 10, Ohio

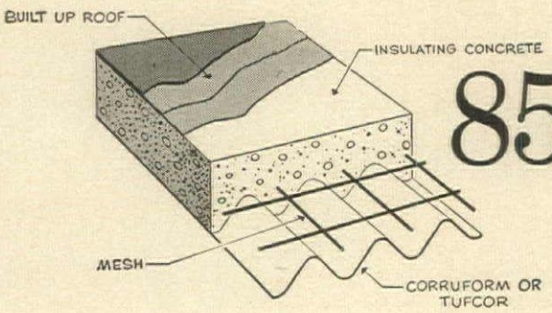
MILLS *Movable* **METAL WALLS**

Job Superintendent

W. C. BOWEN says, "Roofing time was really important and Tufcor kept work moving ahead smoothly. Pre-sizing made it easy for two-man crews to place 7 to 8,000 sq. ft. a day, and pouring was fast, too—28,000 sq. ft. in one day. Tufcor gave us a strong roof and a safe working platform."

Contractor's Representative

WARREN O. LAMB says, "Speed and economy are two big advantages of Tufcor. Roofing proceeded on schedule and we saved the cost of shoring, too. That meant savings in time and labor costs."



85,000 sq. ft. fire-blankets

Nashville architects and builders provide fire protection for owners and tenants, thousands of dollars in insurance savings:

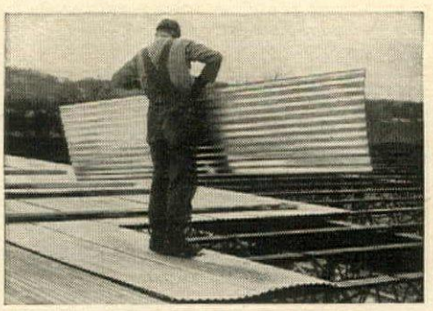
An 85,000 sq. ft. roof of Granco Tufcor and Corruform with lightweight insulating concrete greatly increases the fire safety of the new Green Hills Village Center, a two-story multi-shop facility which will serve over 5,000 Tennessee families in the suburban area about 6 miles southwest of Nashville, Tenn.

Because of its fire-resistant qualities, the Tufcor-based roof serves as a positive check against the spread of fire via the roof should it break out in any one of the center's several stores.

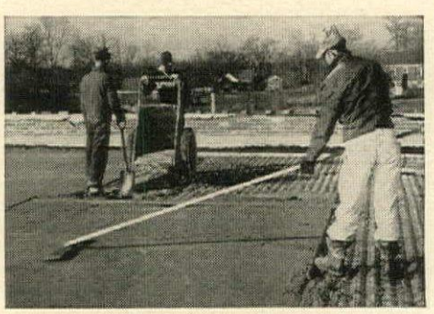
The speedily constructed Tufcor roof follows closely the design of Granco's Tufcor roof which performed so sensationally well in an ASTM E119-50 fire test in 1954. In that 45 minute test, at temperatures up to 1720° (F.), the Tufcor roof didn't burn, didn't feed the flames, and didn't fall. After the test, the roof was still able to carry the full design live load.

Warren O. Lamb, Vice President of W. C. Holt and Sons, general contractors on the Green Hills job, says, "Tufcor is a great time and money saving way to build a fire-safe roof. All you do is open a bundle of Tufcor sheets, place and secure them to the steel framework, and immediately trades have a rigid working platform!"

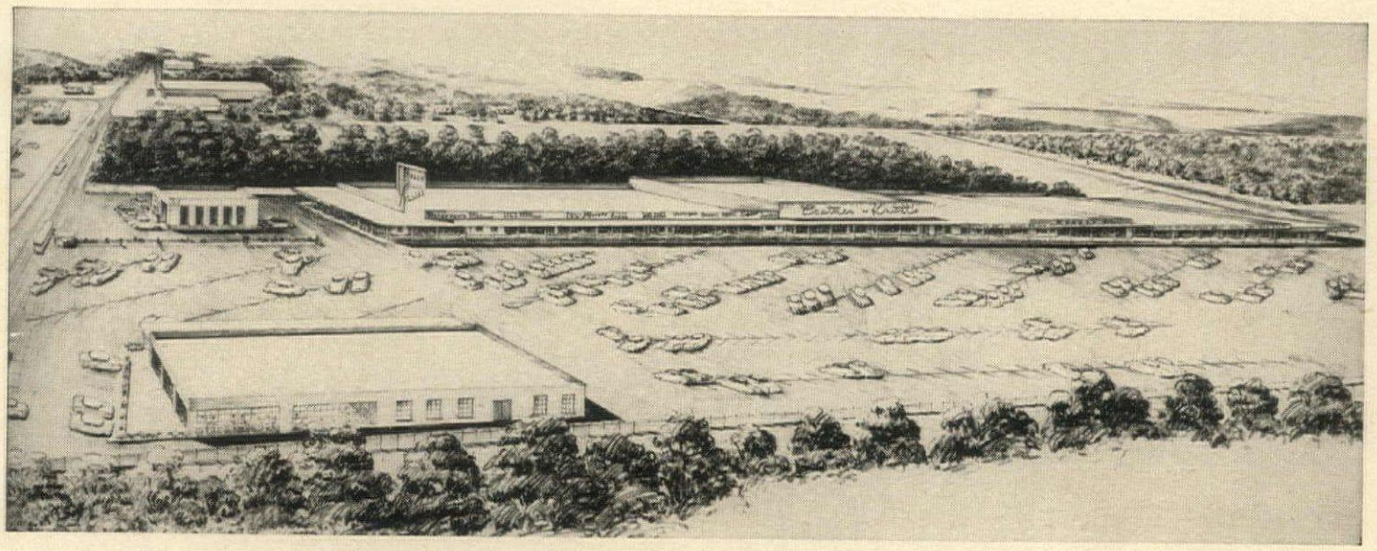
Tough-temper, corrugated steel Tufcor makes fire-safe roof construction simple, fast and economical. For information, estimates or costs on your building plan, contact home or district office, attention Dept. F-5.



Handles Easily, Places Fast. Tufcor arrives pre-cut to building size. Measuring and cutting is eliminated. Two or three men can place up to 10,000 sq. ft. a day.



Permanent, Fire-Resistant Roof Deck is formed by cast-in-place slab. A strong bond forms between galvanized steel sheet and lightweight concrete fill giving high-strength rigidity to finished deck.



Green Hills Village Center, *Nashville, Tennessee* • Owners: *William C. Weaver, Jr., & W. H. Criswell*
Architects and Engineers: *Hart, Freeland & Roberts, Nashville, Tennessee* • General Contractor: *W. F. Holt & Sons, Nashville, Tennessee*

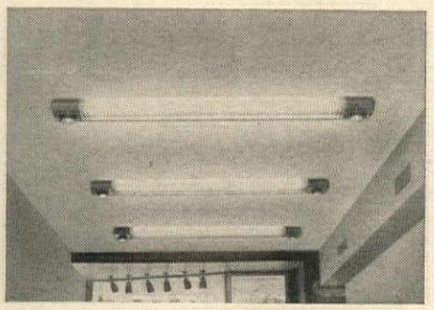
safe Tufcor roof new shopping center

Steel Sheets Are Quickly Clipped to the steel framing. Welding is equally fast. Positive attachment of tough-temper sheets adds rigidity to roof framework.

An Immediate Safe Working Deck is obtained as soon as Tufcor is attached. Light mesh is added for shrinkage control of the lightweight insulating concrete.

Insulating Concrete Placed on Tufcor is fast operation. On an average roof construction, this material weighs less than 6 pounds per square foot.

Perfect Base for Built-Up Roof. Deck offers two excellent advantages—a good firm base on which to apply the roof and an inorganic, permanent base for long life of the built-up roof.



Neat Plaster Ceiling over Fire-Safe Tufcor. Any normal ceiling treatment is easily applied to Tufcor. Its attractive galvanized surface is sometimes left unfinished when light reflection is wanted.

see our catalog in S or write for copy

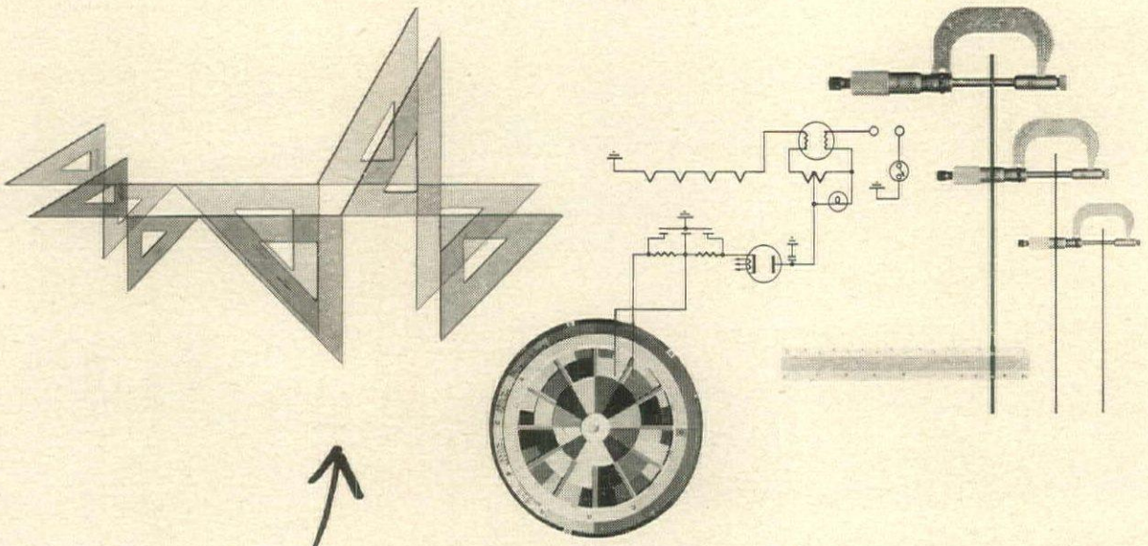
GRANCO

STEEL PRODUCTS CO.

Also manufacturers of
Cofar, Corruform and Roof Deck

Subsidiary of GRANITE CITY STEEL CO.

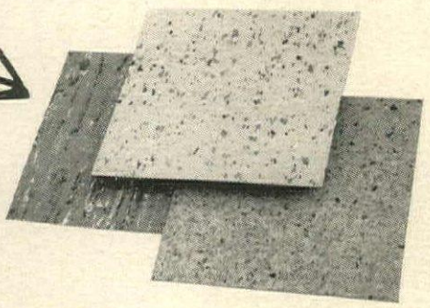
Main Office: Granite City, Illinois
District Offices: Dallas • St. Louis • Kansas City
Chicago • Minneapolis • Atlanta
Distributors in 80 principal cities



ALL THIS

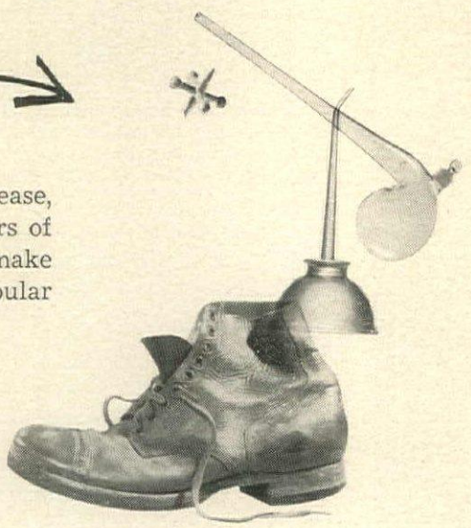
Every tile uniform in thickness: Colors matched by an electronically-controlled "color eye". Constant checking that makes every tile a straight-edged square. These are typical examples of the quality control that helps produce the 10 different tile products of the entire Kentile, Inc. line. All this . . .

TO MAKE THESE



. . . as smart-looking, long-wearing and easy-to-maintain as modern know-how makes possible. In a word, there is a Kentile, Inc. product tough enough to . . .

TAKE THIS



Stand up under heavy traffic — resist grease, alkalies and other liquids — give long years of rugged service. These qualities combine to make Kentile, Inc. products the world's most popular line of resilient tile floorings.

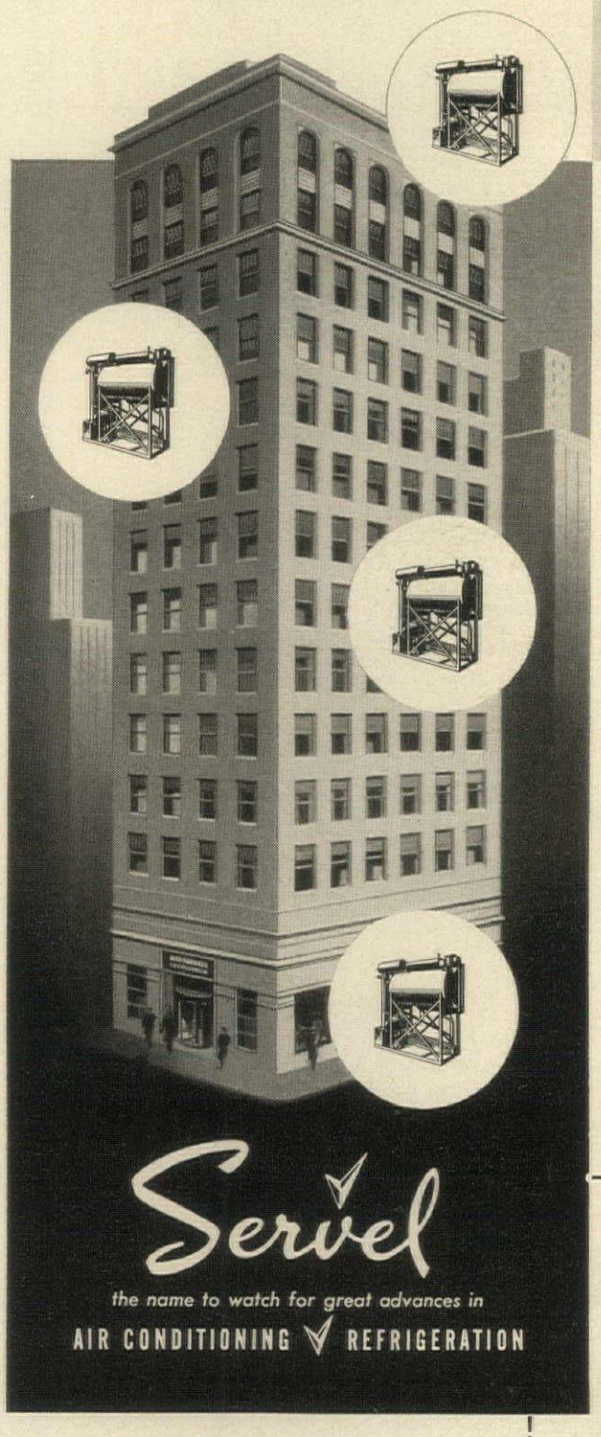
KENTILE, INC.

America's largest manufacturer of resilient floor tiles

KENTILE: Asphalt Tile . . . Carnival . . . Corktone • KENCORK: Cork Tile for Floors and Walls • KENRUBBER: Rubber Tile • KENFLEX: Vinyl Asbestos Tile . . . Carnival . . . Corktone • ROYAL KENFLOR Vinyl Tile . . . CUSHION BACK KENFLOR Vinyl Tile . . . also available by the yard • SPECIAL KENTILE: Grease-proof Asphalt Tile • THEMETILE, KENSERTS: Decorative Inserts • KENCOVE: Vinyl Wall Base • KENBASE: Wall Base

Now!

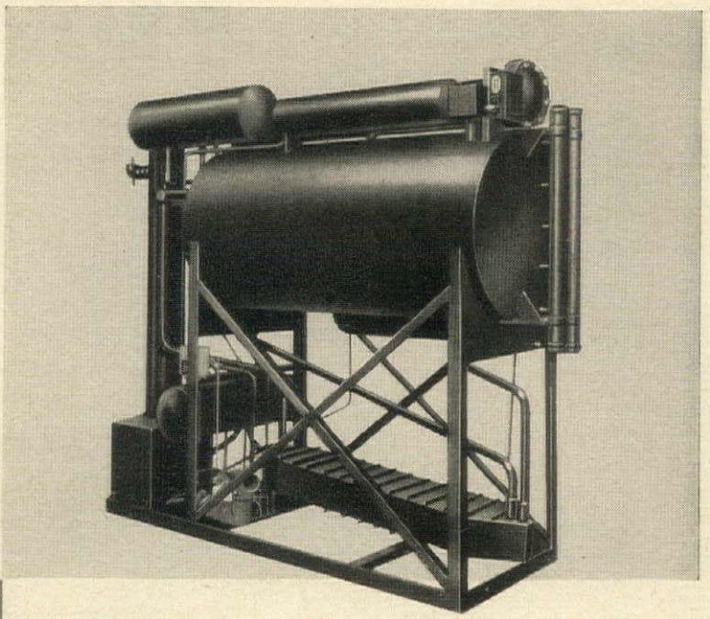
More flexibility for air conditioning existing and new buildings . . .



Servel

the name to watch for great advances in

AIR CONDITIONING ✓ REFRIGERATION



. . . with Servel water chillers

Here's real versatility in air conditioning. Servel water chillers are vibration-free and have low floor loading. That means you can place them anywhere you have space . . . on the roof, in the basement, on any floor in between.

What's more, Servel water chillers are compact in size. Space requirements permit single or *multiple* installations in the most advantageous locations.

And talk about economy . . . these Servel units give you lower air-conditioning costs per square foot of space. They provide summer cooling with the cheapest fuels. What's more, they can be powered with existing boilers. Run them on steam from any source . . . district steam . . . even waste steam. Another important saving is the fact that no heavy-duty rewiring is required.

Servel water chillers save on maintenance, too. The cooling unit has no moving parts, so operation is vibration-free . . . there's nothing to wear.

Check these great Servel advantages against your cooling needs. Servel will gladly supply details and engineering help. Mail coupon today.

SERVEL, INC., Dept. AF-95, Evansville 20, Indiana

Please send me full information on Servel water chillers and air-conditioning equipment.

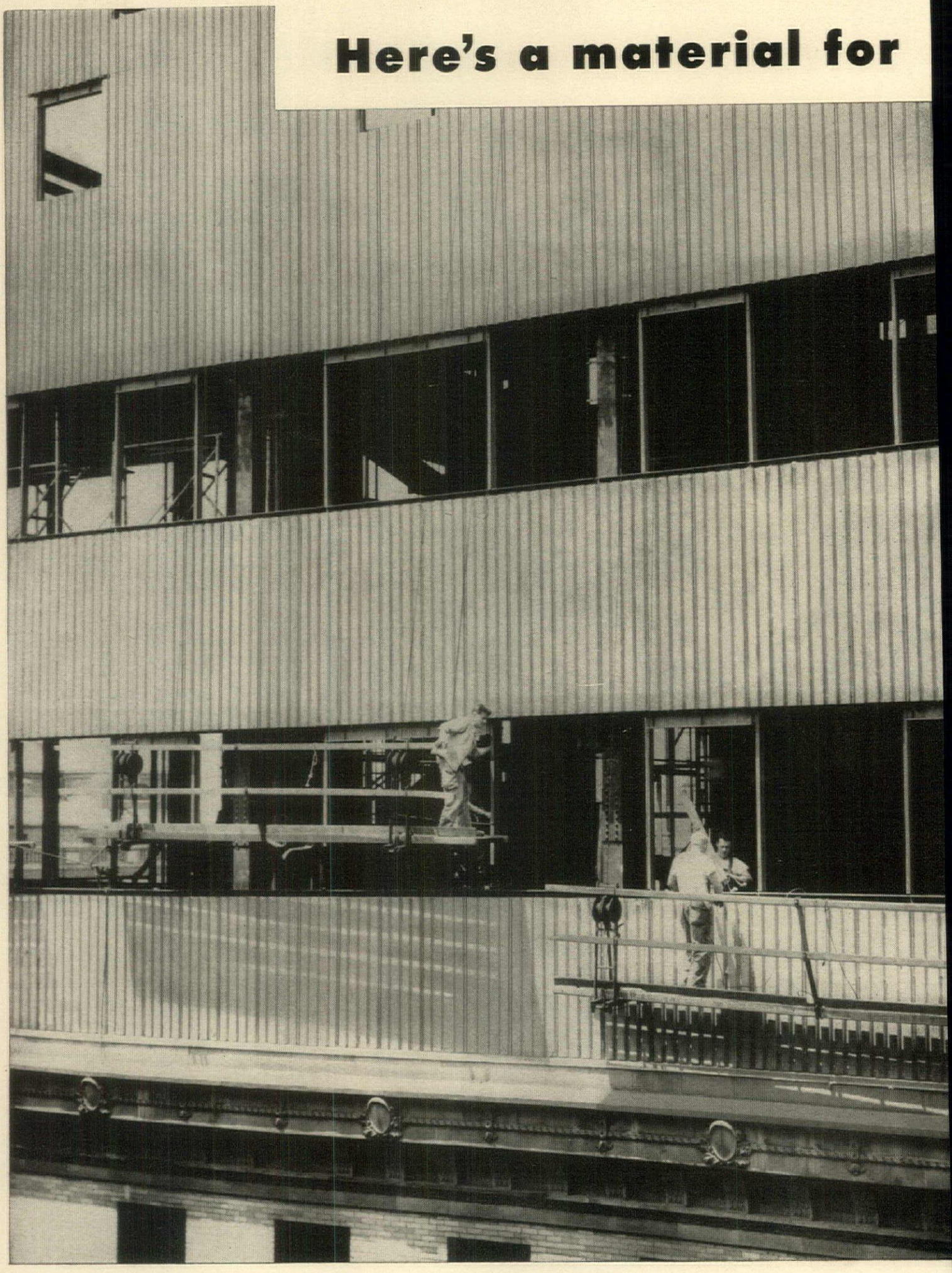
Name_____

Building_____ Size_____ When Built_____

Address_____

City_____ State_____

Here's a material for



curtain wall construction

that solved a weight problem in Bellevue Hospital expansion

STAINLESS STEEL

One of the primary advantages of Stainless Steel as a material for curtain wall construction is the saving in weight its use makes possible. Because Stainless is inherently strong and because no allowance need be made for the effect of corrosion, thin sections can be used.

Never has this advantage of Stainless Steel been better illustrated than in the addition of two floors to New York City's Bellevue Hospital. Existing foundations were limited in the amount of additional weight that could be carried. Stainless Steel panels, weighing 14 pounds per square foot compared with 130 pounds for masonry, were used. This permitted the structural steel to be far lighter, too.

The attractive appearance of Stainless Steel was another factor in its use on this hospital. The architect sought to give the addition the appearance of a totally new facility, rather than a mere expansion without aesthetic appeal. Stainless panels accomplished this, along with permanent good looks.

Erection was handled rapidly with a four-man crew installing four 30-square-foot panels an hour. The construction had more than the required 2-hour fire ratings and the panels had the insulating quality of a 12-inch masonry wall.

As the producer of USS Stainless Steel, we have worked closely with the fabricators of Stainless Steel panels for curtain wall construction. We'll be glad to send you further information and put you in touch with these fabricators. Write to United States Steel Corporation, Room 4918, 525 William Penn Place, Pittsburgh 30, Pa.

* * *

SEE The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

Newly installed Stainless Steel panels on the Bellevue Hospital addition. Architects and engineers: Fellheimer & Wagner. General contractors: Buhl Construction Company. Design and construction under the supervision of the New York City Department of Public Works. Stainless Steel panels fabricated by H. H. Robertson Company.

UNITED STATES STEEL CORPORATION, PITTSBURGH · AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO · NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS — USS TRADE MARK — PIPE · TUBES · WIRE · SPECIAL SECTIONS

5-692

UNITED STATES STEEL

EXCERPTS

Continued from p. 153

service and replacement contracts.

A large appliance manufacturer has given serious consideration to the idea that appliance *functions* might be sold on a long-term basis rather than the appliances themselves, permitting the manufacturer to change his designs and replace the equipment on a schedule that would assure him sufficient time of production to warrant investment in automation.

The "build and lease-back" method that has become so popular in recent years for financing new construction has a very similar purpose, and it might very well be refined to include extensive remodeling and replacement periodically.

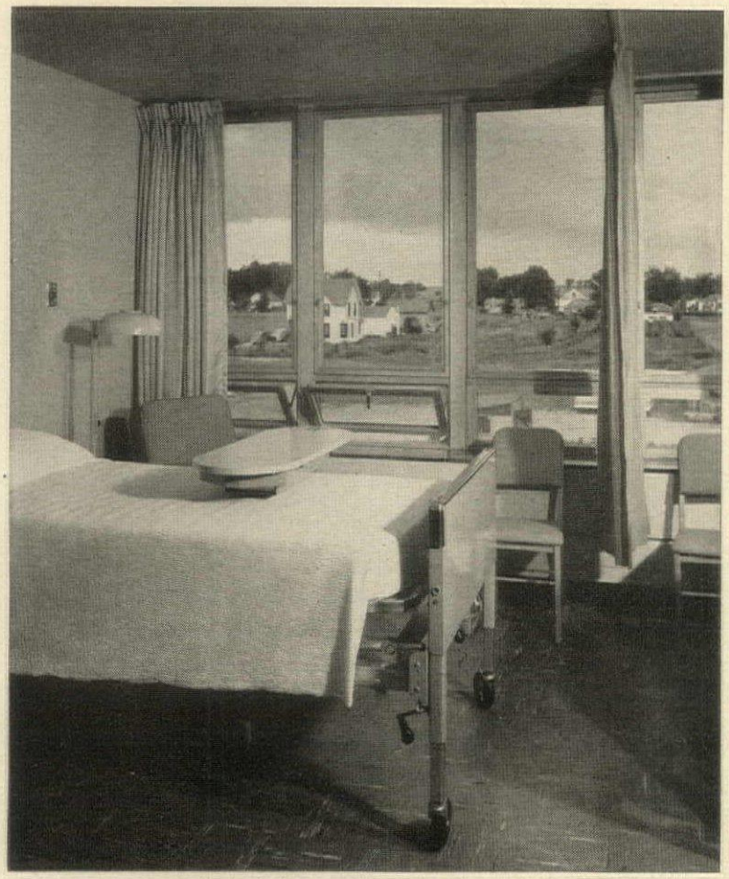
Underlying all these schemes and trends are two principles: First, that design must be frozen for a period long enough to make automation and resulting lower costs profitable; and second, that design should be changed as often as economically possible to permit the adoption of better manufacturing techniques and the production of more efficient and useful products.

The architect is correctly reputed to be highly individualistic in his attitude toward design and one might think upon first consideration that standardized building units would be abhorrent to him. But he is more flexible than he is sometimes given credit for being by those who hear him rant about the good old days when stone masons took pride in their work and Georgian moldings could be had for 25¢ per ft. You may have noticed, however, how many of them have been fighting for places on the metal and glass band wagon in the last five years.

Architects have always found logical ways to use the materials at hand. The first fundamental criterion of good architecture has always been good planning; good circulation. (This, by the way, can also be said of manufacturing.) The plan is good only if it is in scale with the occupants and permits them to be comfortable and efficient in the activities for which the facility is designed. The resourceful architect can develop with the plan, mass and color schemes which, with the employment of materials and methods of the time, will produce a fine building and occasionally a great one.

I cannot become overly excited over the form and function of the spatially integrated organic whole that I have heard earnestly discussed at gatherings of the architectural intellectuals because I have the opinion that architecture in total is going to be, as it always has been, a rather accurate expression of the intellectual and economic development of society.

continued on p. 182



This is the new, 237-bed Rockford (Ill.) Memorial Hospital, equipped with 2,178 *Thermopane* units 30″ x 56″. Associated Architects-Engineers: Hubbard & Hyland, Rockford; Perkins & Will, Chicago.

WILL *Thermopane*® SAVE THIS NEW HOSPITAL $129,520?

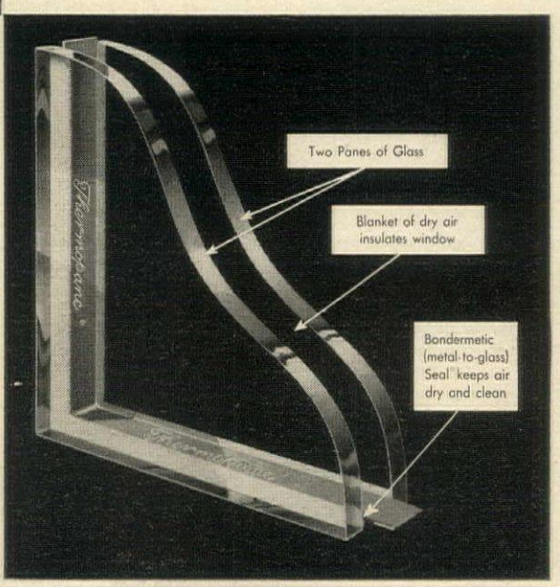
It will, if this hospital is in use as long as the 1883 building it replaced. Even in 20 years it will save approximately $43,200.

The architects figure that the 2,178 *Thermopane* insulating glass units in the windows saved $10,000 on the cost of heating equipment and will save $1,660 per year on fuel costs!

And think what *Thermopane* means to the *comfort* of patients. Each private room has 50 square feet of windows. Each double room has 100 square feet of windows. Each bed is only 4 feet from the glass.

And because of *Thermopane*, patients get all the pleasure of cheerful daylight and view —yet are comfortable even in the coldest weather!

For complete information on *Thermopane*, see your L·O·F Glass Distributor or Dealer, or write to Dept. 5195, Libbey·Owens·Ford Glass Company, Toledo 3, Ohio. *®



Thermopane
INSULATING GLASS

LOF GLASS

LIBBEY · OWENS · FORD

a Great Name in Glass

Wherever people give a building a beating

outside

or inside

That's the place to use STAINLESS STEEL

You *have* to design for maximum attractiveness in those areas of buildings which have most traffic—such as building fronts, marquees, entrances, lobby details, railings, etc. Yet those same places are exactly the locations where you need maximum utility, too.

What's the *best* material to use? Just remember that stainless steel—and *only* stainless steel—gives you the nearest-to-perfect combination of satiny beauty and rugged toughness. No other material is as good-looking and at the same time as strong, hard-surfaced and resistant to rust or discoloration. No other material requires as little maintenance, cleans as easily and lasts as long.

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.*

Let us give you any information or technical assistance you may require.

Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.

"INFO" for Architects and Builders

1 "AL Structural Stainless Steels"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.

2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. AIA File No. 26D.

3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. AIA File No. 15-H-1.

Write for Details

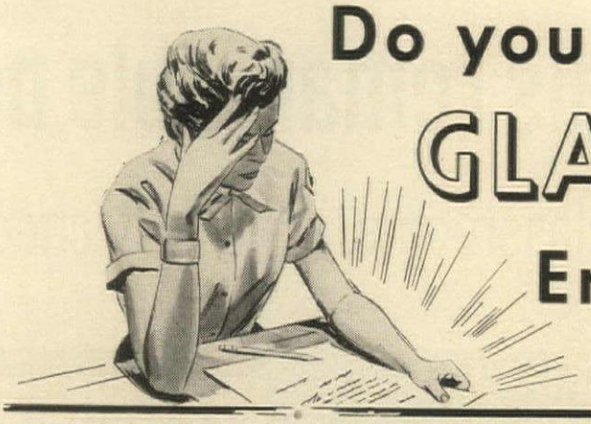
Address Dept. B-69

Make it BETTER- and LONGER LASTING with Allegheny Metal

AL TIME-TESTED STAINLESS STEEL

Warehouse stocks carried by all Ryerson steel plants

W&D 5209



Do you make this GLARING Error?

Litecontrol's Simple Solution

Providing adequate illumination is only part of any lighting problem. Harsh contrasts can easily turn a good installation into a glaring error.

In this office, LITECONTROL uses its fixture No. 3700 with Holophane low-brightness CONTROLENS to furnish the right light — yet eliminate all glare and sharp contrasts. Seeing is relaxed and easy at every point in the room.

Extremely shallow, this smart "surface troffer" fixture is only 4¼" deep. *Trigger Catches* open and close doors *at the snap of your fingers.* No screws or adjustments of any kind necessary.

On your next project, plan on having a better lighting installation, too, at *standard* fixture costs — call in your local LITECONTROL man.

LITECONTROL FIXTURE SERIES 3700

EASY TO OPEN, just a touch on the LITECONTROL Trigger Catches and doors spring conveniently open. No screws or adjustments necessary.

EASY TO CLOSE, simply push the LITECONTROL door shut. Trigger Catches snap and grip instantly, safely, dependably.

Installation: Honey-Krust Bakery, Lexington, Kentucky; **Area:** Office; **Engineer:** J. T. Cole, Lighting Engineer, Kentucky Utilities Company, Lexington, Kentucky; **Electrical Contractor:** Clyde Johns, Lexington, Kentucky; **Fixtures:** No. 3728 2-lamp surface fixture, using Holophane No. 9016 Low Brightness Lenses, and 96T12 slimline lamps. No. 3724 fixture, same, but with 48T12 slimline lamps; **Spacing:** 8'–6"; **Intensity:** Average 62 footcandles, after 2½ months of operation.

LITECONTROL *Fixtures*

LITECONTROL CORPORATION

36 PLEASANT STREET, WATERTOWN 72, MASSACHUSETTS

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

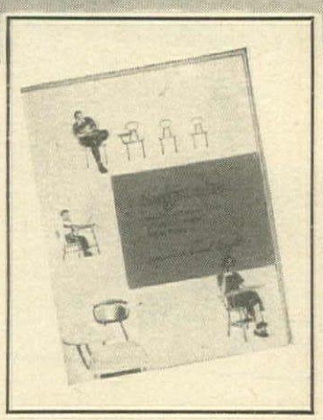
IT'S HERE! This remarkable new

Makes classrooms light and cheerful,

- **4 BRILLIANT NEW COLORS...** Terra Cotta! Turquoise! Brown! Grey!
- **NEW COMFORT-CONTOUR DESIGN** heightens student attention!
- **NEW BEAUTY AND DURABILITY** with Hard Wood or Plastic work surfaces!

The Mobile Samsonite *Open Front Desk* gives maximum storage space! Forms related unit with matching Pivot-Back chair.

New Samsonite *Pivot-Back Chair* has silent, rubber-cushioned glides, kick-proof "spats". Pivot-back swivels *silently*, adjusts to individual body contours.



NEW CATALOGUE

New Samsonite Classroom Furniture Catalogue. Complete specifications on new Samsonite Classroom Furniture. Fully illustrated in color. Write Shwayder Bros., Dept. Q-10. Classroom Furniture Division, Detroit 29, Mich. for a copy and for the name of your nearest distributor.

Makers of the famous Samsonite

Samsonite

Classroom Furniture by Samsonite

students attentive and bright!

Samsonite has created an entirely new concept in Classroom furniture...as exciting as it is practical.

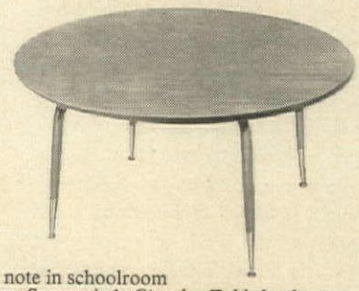
4 Paint-Box Colors make classrooms bright and fun to work in! Tested on school officials in 30 states, the colors mix or match harmoniously, blend with every wall color!

Shaped for Tomorrow! The gracefully curved contours are posture-designed to build healthy bodies, make attention less tiring, learning more fun!

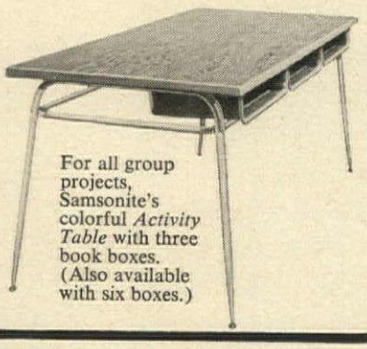
Miracle of Mobility! Mix these units, move them room to room, with never a conflict in color or contour.

Mischief-Proof! Aluminum "spats" on legs defy kick and mop marks! Desk-lid hinges and countersunk "bumpers" can't be loosened, even with a screwdriver!

It's Not Expensive! Samsonite actually costs *less* than old-fashioned furniture... because it's strongest, lasts longest!

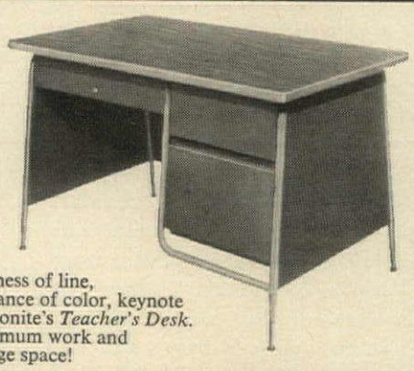


A new note in schoolroom furniture, Samsonite's *Circular Table* lends an informal, non-institutional look to the classroom!

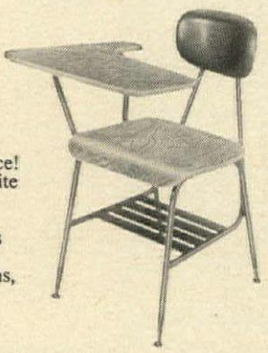


For all group projects, Samsonite's colorful *Activity Table* with three book boxes. (Also available with six boxes.)

Samsonite's colorful *Lift-Lid Desk* is noiseless, slam-proof, tamper-proof. Fingers can't be caught between lid and book box.



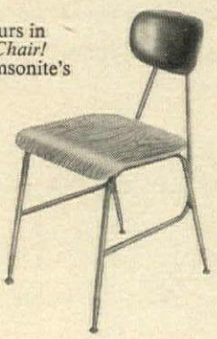
Newness of line, brilliance of color, keynote Samsonite's *Teacher's Desk*. Maximum work and storage space!



290 square inches of writing surface! New Samsonite *Tablet Desk Chair* plays multiple roles in classroom, meeting rooms, lunchroom.

Samsonite *Student Desk* can also serve as table. Several can be pushed together for group projects.

New Samsonite *Trapezoid Table* adapts in groups to endless combinations for varied schoolroom activities.



New rolling contours in Samsonite's *Unit Chair!* Available with Samsonite's new *swivel back*. Back swivels to cradle every body movement!

Plenty of leg room and storage space! The Samsonite *Shelf Desk* brings modern color, graceful lines to the classroom.

folding tables and chairs for every institutional use!

...the Classroom Furniture that's **STRONGEST...LASTS LONGEST!**

SHWAYDER BROS., INC., CLASSROOM FURNITURE DIVISION, DEPT. Q-10, DETROIT 29, MICH.
Also makers of famous Samsonite Luggage and Card Tables and Chairs for the Home.

EXCERPTS

Continued from p. 176

Arcades downtown

Excerpts from an article by Robert C. Weinberg and Alvin E. Gershen in the *Journal of the American Institute of Planners*

It is possible to develop downtown frontage so that retail store values and public street area can both be increased without any additional cost to either the private investor or the city other than that of a little time, good will and the price of careful design. The secret is the creation of covered or arcaded sidewalks by recessing pedestrian ways within the property lines without, however, requiring the city to purchase title to such land.*

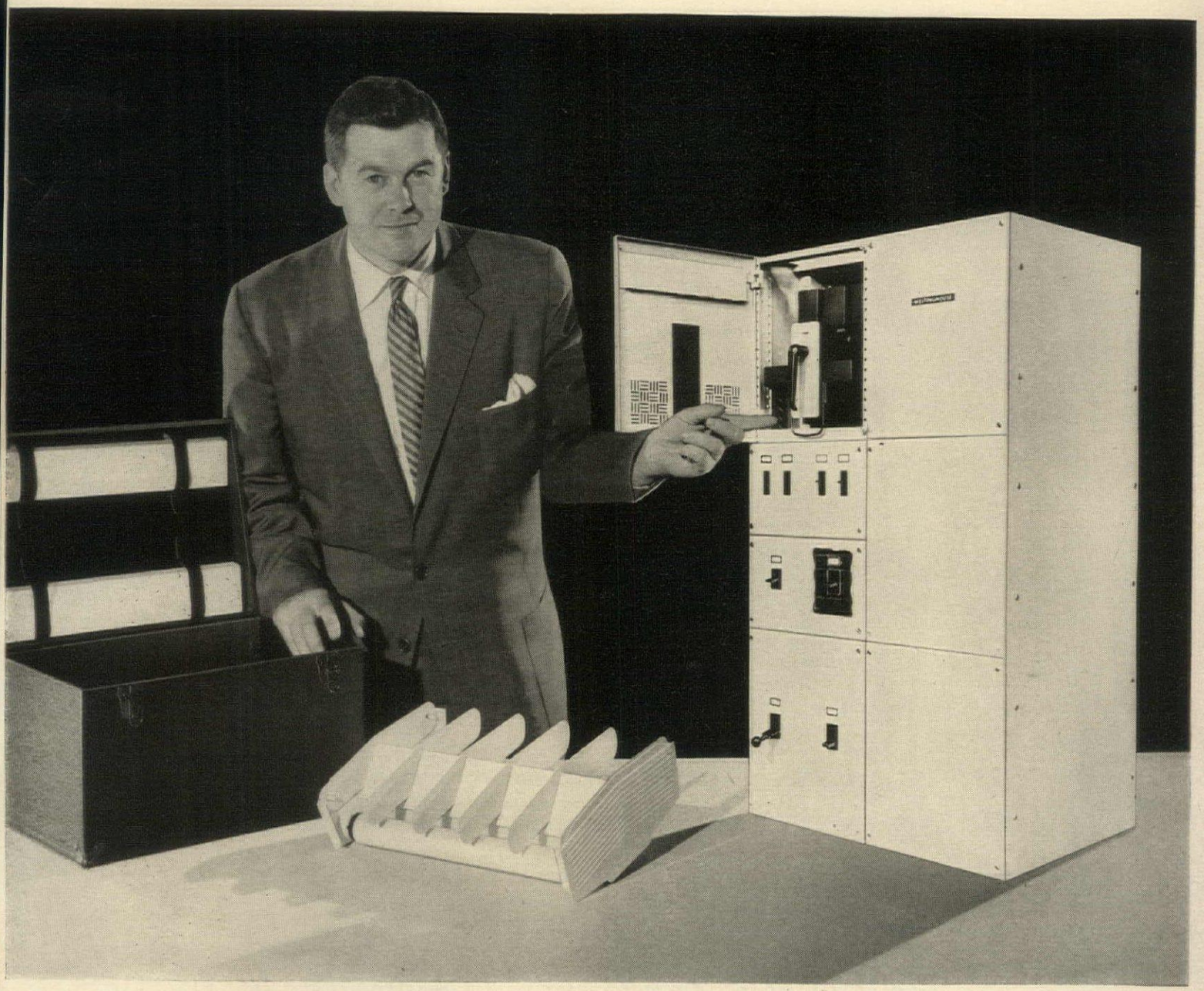
The most obvious method of obtaining more street room is the laying out of additional new or widened streets. But this is neither simple nor expedient in our downtown areas and involves tremendous costs in land acquisition as well as subsequent tax losses to the city. Traffic congestion usually occurs where realty values are high. The cost of acquisition will be prohibitive if added street space must be created by condemning property right at the point where the need for relief from congestion is the greatest.

It sometimes happens that the developer of a large project, involving more than one block, is willing to give the city strips along the outside of his project in return for obtaining the use of closed streets within the project. An example of this is Stuyvesant Town in New York. Yet new construction is frequently contemplated on a sizable plot fronting on a busy street that needs widening but where the size of the project does not permit setting back the entire building. The alternatives are to have the city acquire land at great cost or to allow traffic congestion to increase. This would not be necessary if the simple expedient were followed of recessing the sidewalk within the property line, under the upper stories, and widening the vehicular paving by the width of the previous sidewalk. Such recessed or arcaded sidewalks offer a number of advantages and the time to use them.

It may be argued that the arcading principle will deprive the first-floor stores of light and thus lower their value. The contrary seems to be true. Most stores are artificially illuminated regardless of whether the store front opens on an uncovered street in the conventional manner or whether the sidewalks are covered.

* For the latest such project, Chicago's Congress St., see AF, Dec. '54—ED.

continued on p. 188



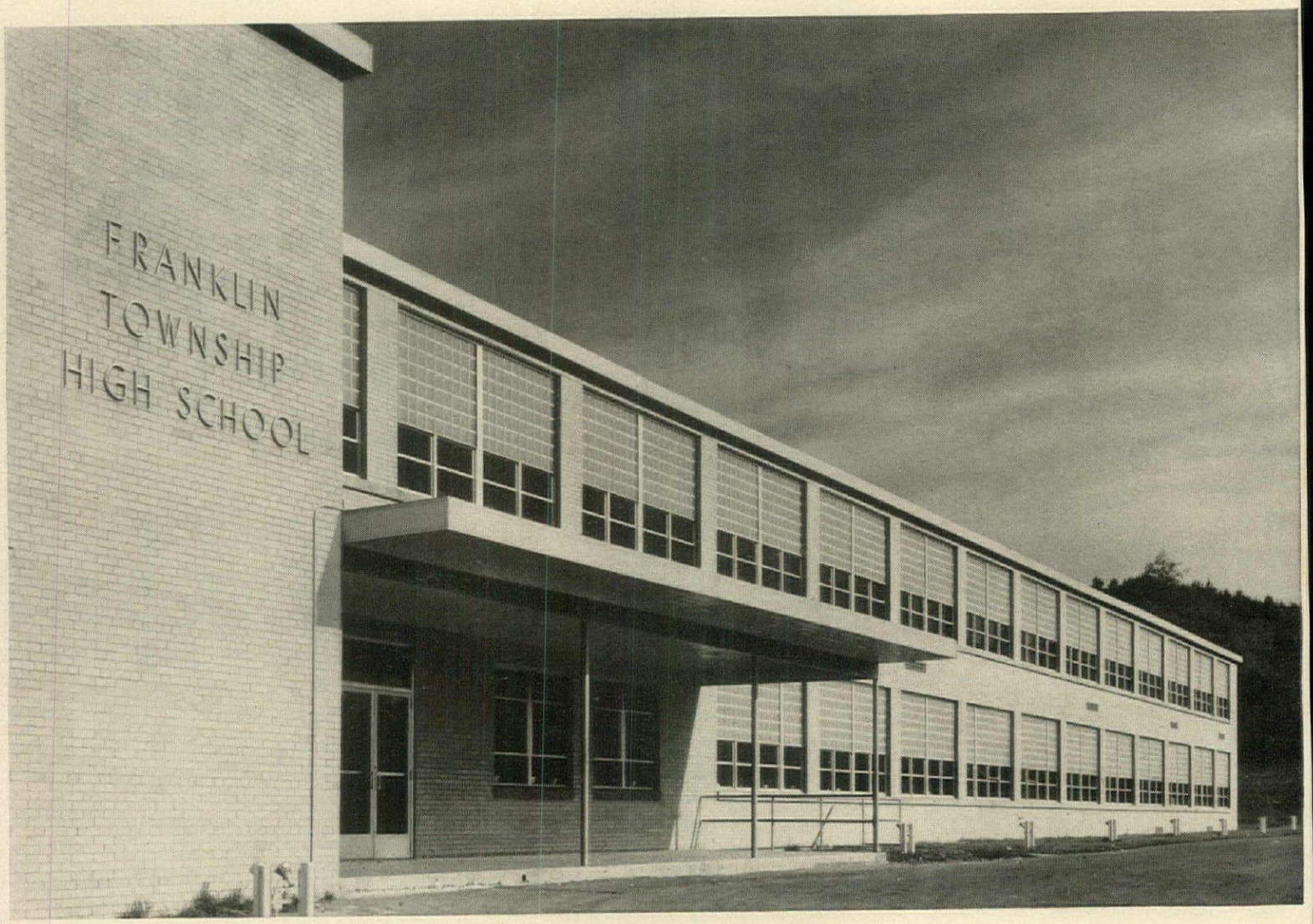
WHATEVER YOUR ELECTRICAL PROBLEM, WE ARE READY TO SERVE YOU

This man is the construction sales engineer in your nearby Westinghouse office. He's an electrical specialist.

His job is to help you solve electrical problems on the kind of projects you handle. In fact, from preliminary design through electrical system planning . . . from product demonstrations through operational proof . . . he and his team of Westinghouse engineers will work with you. DP-5019-A

CHECK THE EXAMPLES
ON THE FOLLOWING PAGES . . . →

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



Franklin Township High School, Newlonsburg, Pennsylvania.

LIGHTING TAILORED TO SCHOOL ACTIVITIES SOLVES THE PROBLEM OF VARIED CLASSROOM NEEDS

Low ceiling heights . . . and a need to match seeing conditions to academic programs. These made controlled lighting a basic consideration here.

The answer: individual lighting systems—each matched to a specific, functional requirement.

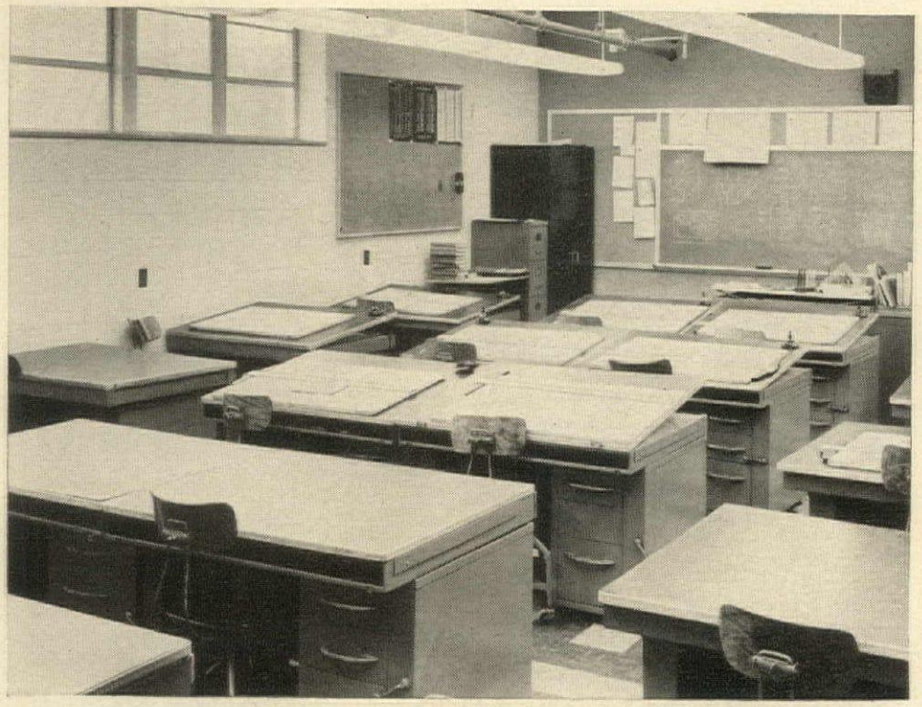
In the mechanical drawing department, for example, the Westinghouse LC fluorescent luminaire was selected. A direct-indirect type, it provides high illumination in all parts of the room . . . gives a diffused, efficiently utilized light.

Further, in the manual training rooms, where good lighting is also a factor, FPC fluorescent luminaires were installed. They are designed for general area illumination and deliver a maximum light output. Their rugged construction makes them particularly suitable for this area.

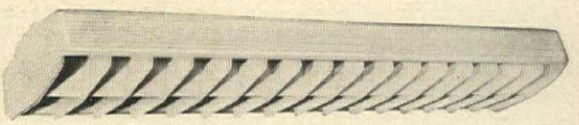
Whatever the school lighting problem, the Westinghouse construction and lighting sales engineers stand ready to help you solve it. DP-5019-B

YOU CAN BE SURE...IF IT'S

Westinghouse

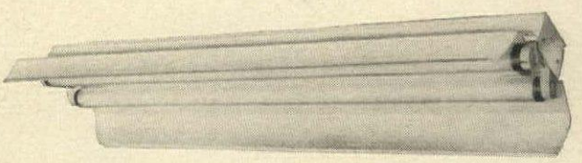


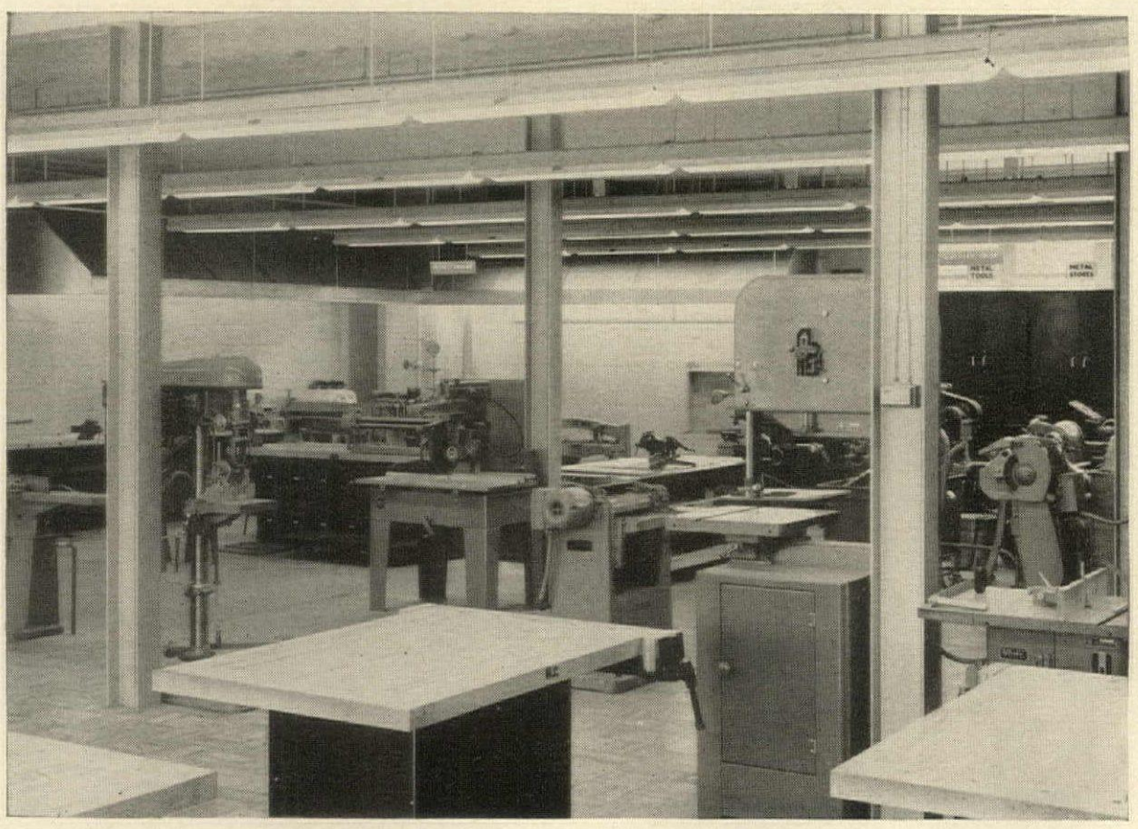
LC Fluorescent Luminaire, a direct-indirect type, provides the proper illumination levels required in the mechanical drawing department, and other classroom areas.



FPC Fluorescent Luminaire delivers maximum light output in the manual training areas, giving quality lighting with few shadows . . . resulting in better workmanship.

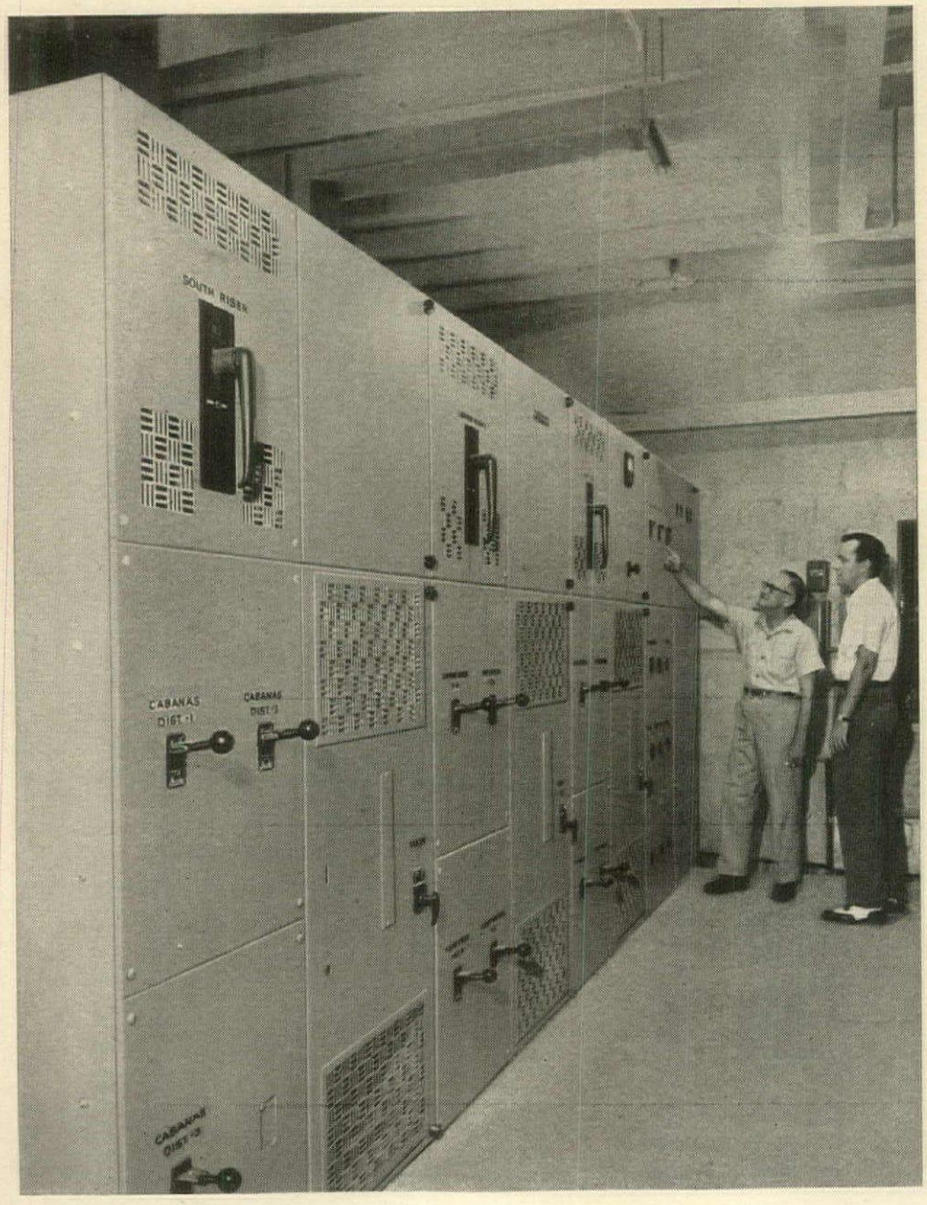
DP-5019-C





Fontainebleau Hotel, Miami Beach, Florida. *Architects:* Morris Lapidus & Associates, Miami Beach. *Consulting Engineers:* Sasnett & Bennett Engineering Co., Miami. *General Contractor:* Taylor Construction Co., Miami. *Electrical Contractor:* Max Belin Electric Co., Miami.

ELECTRICAL EQUIPMENT, MATCHED WITH THE FINEST IN HOTEL CONVENIENCE, ASSURES RELIABLE POWER SERVICE



Since many of its guest services are electrically operated, the new 15-million-dollar Fontainebleau Hotel demands completely reliable power distribution.

Called during the planning stages, Westinghouse engineers helped select an electrical system that virtually assures continuous service. The base: two Westinghouse building-type switchboards—providing circuit breaker protection for the entire system.

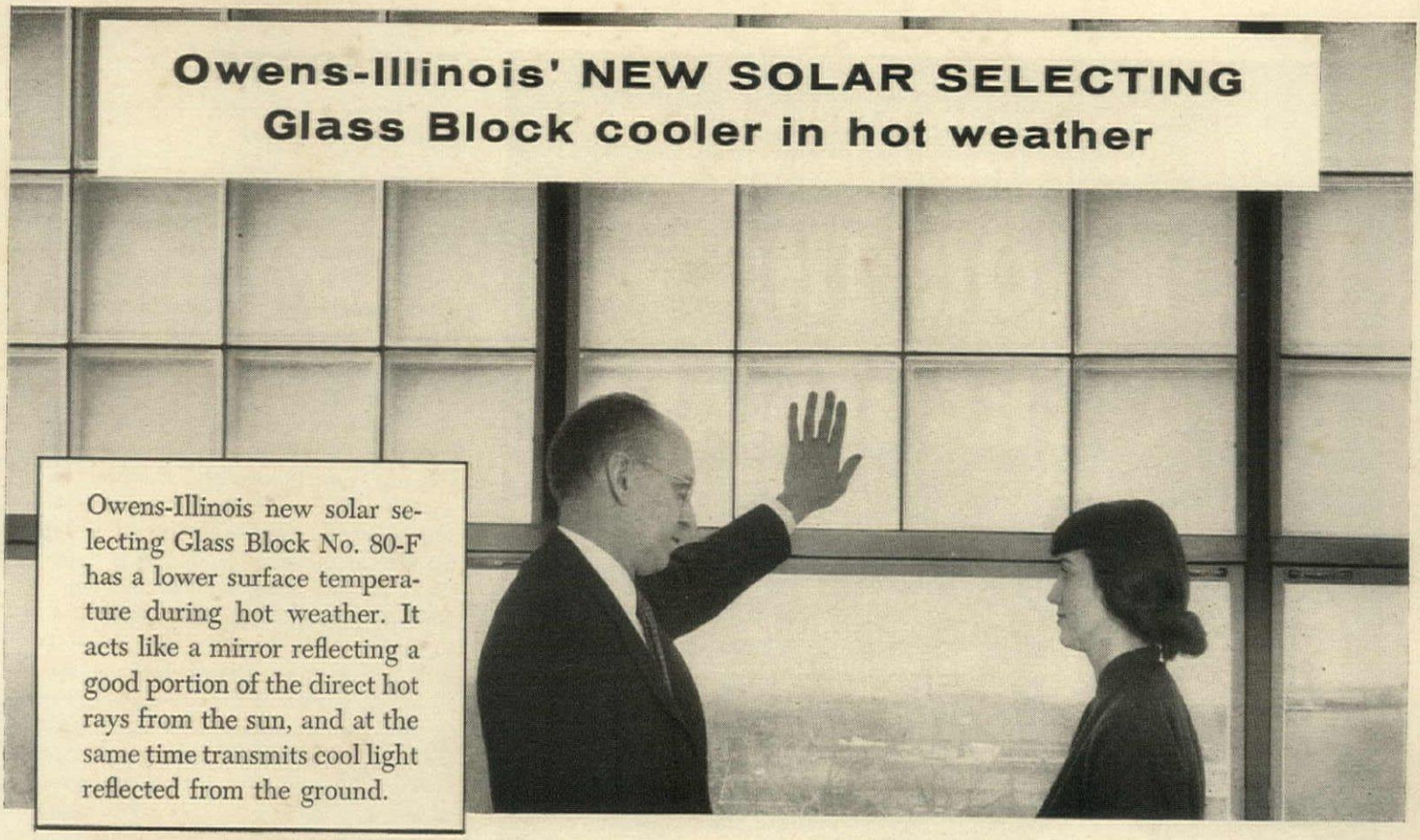
In case of electrical interruptions, both switchboards permit quick restoration of service. A flip of the breaker handle does it.

Why not call your Westinghouse construction sales engineer to help you solve similar problems? DP-5019-F

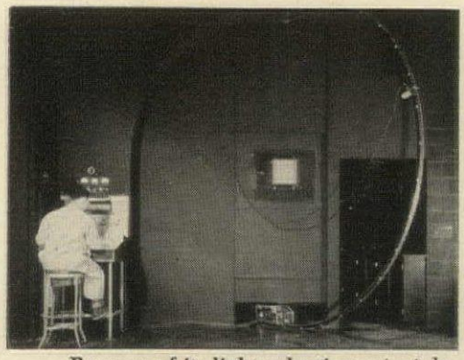
YOU CAN BE **SURE**...IF IT'S

Westinghouse

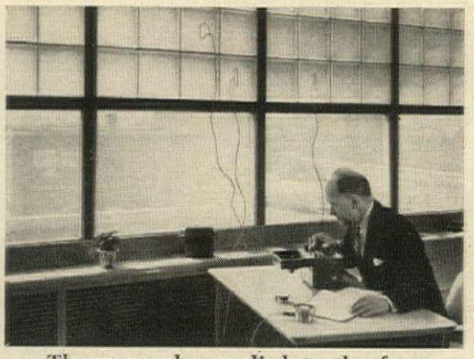
Owens-Illinois' NEW SOLAR SELECTING Glass Block cooler in hot weather



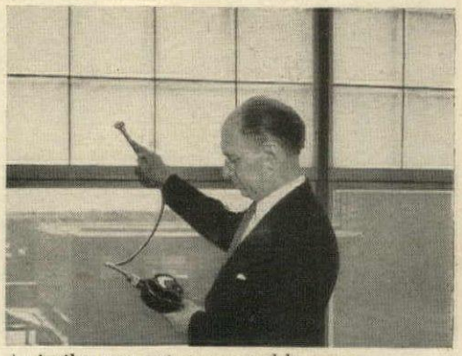
Owens-Illinois new solar selecting Glass Block No. 80-F has a lower surface temperature during hot weather. It acts like a mirror reflecting a good portion of the direct hot rays from the sun, and at the same time transmits cool light reflected from the ground.



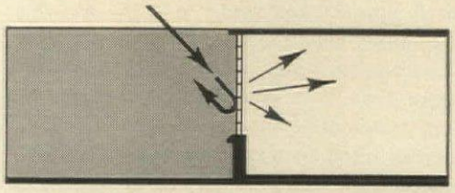
Because of its light-selecting principles this new block has a much lower surface brightness than other glass block. Maximum surface brightness as measured at the Daylighting Laboratory is less than 1400 foot-lamberts.



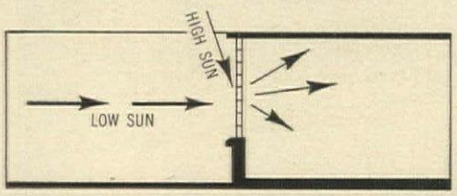
Thermocouples applied to the face of the 80-F block during hot weather (outside temperature 90°) showed that the roomside surface temperature was 14 degrees less than a conventional type light-directing block.



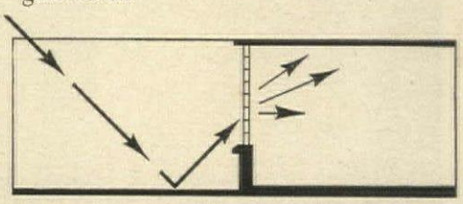
A similar test using a portable pyrometer confirmed the findings of the test using thermocouples by showing the same 14 degrees lower temperature on the roomside surface of the 80-F glass block.



Rejects hot summer sun—This diagram shows how the 80-F block reflects a major portion of the light from the sun at the critical 45° angle thus reducing brightness and solar heat transmission during hot weather.



Uniform light transmission—Prismatic design is selective and controls the amount of light transmitted from the various sun positions, thereby providing more uniform light transmission all day long.



Transmits ground-reflected light—This diagram shows how the 80-F transmits the cool light reflected from the ground. This feature is especially important when the sun is not on the fenestration.

Complete information available

Send for the free, technical bulletin that gives the details. Just write "No. 480F" on your letterhead and mail to Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-9, Box 1035, Toledo 1, Ohio.

OWENS-ILLINOIS GLASS BLOCK
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

EXCERPTS

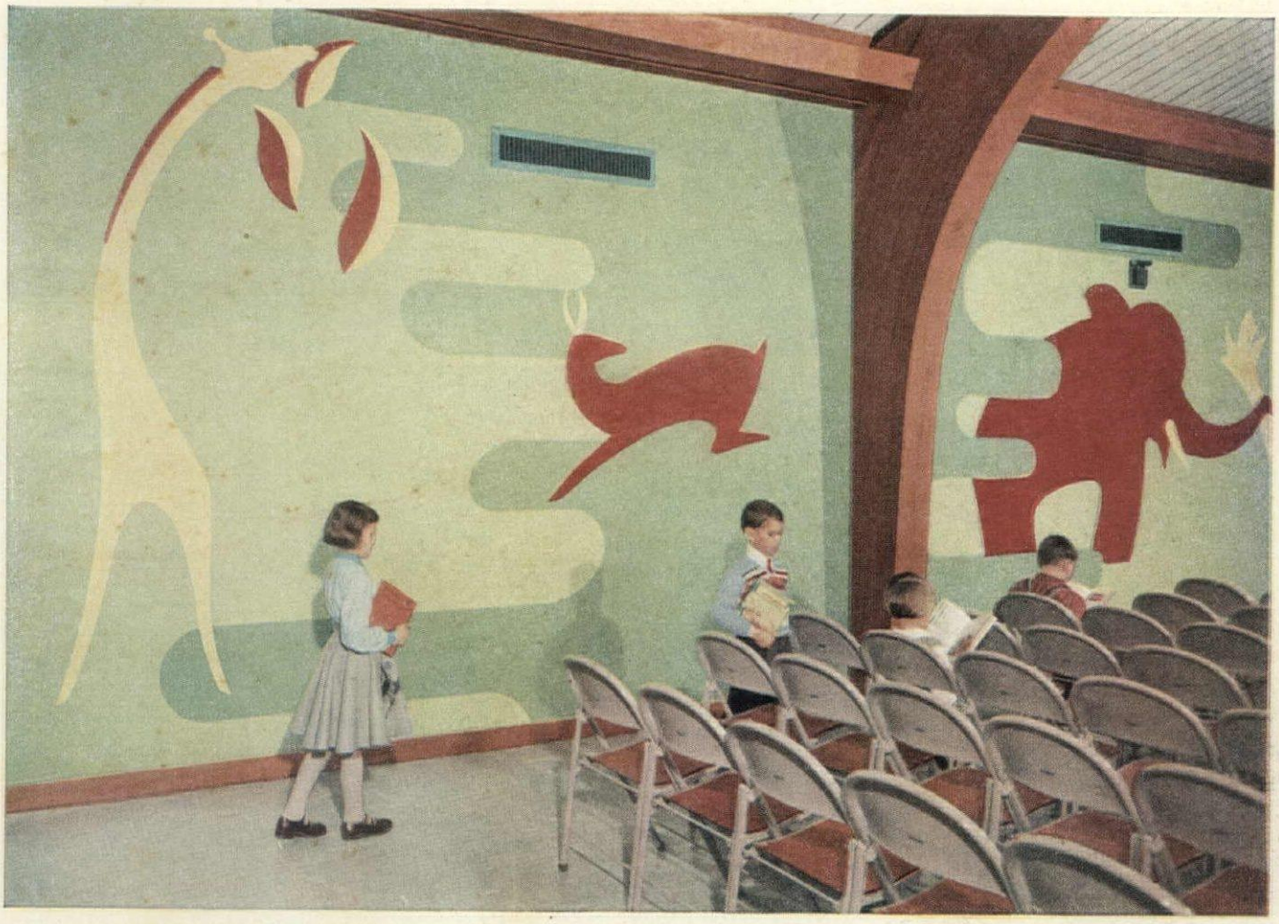
Continued from p. 182

With provision for attractive and well-controlled advertising and display cases within the arcades, the rental value of the store frontage could probably be increased.

It may further be argued that valuable income would be lost by "sacrificing" to public use part of the land inside the building line, thus having a smaller net floor area for rental purposes. However, the total rentable floor area is reduced *on the first floor only;* and even then it is only the *rear* of the store depth that is "sacrificed," not the front, because the store is "shoved back," so to speak. Basements and all floors above the first floor would be built out to the existing building line. Moreover, instead of the city's taking title to the land necessary for a legal street widening (in which case, the owner, after receiving the sale price, permanently gives up any income from the area taken, multiplied by the number of stories above and below the street floor), it leases the rights, only, to a relatively small proportion of the first floor, only. The owner can continue to derive an income from all other floors, as well as gain the probably added value of the recessed ground floor stores created by the covered sidewalk or arcade. With increased width of the roadway that would result, traffic relief would be obtained by either new curbside parking space or an additional moving lane.

We have to solve the complex problems of downtown areas in a number of ways. No single solution can have a general application. New, distinctive and convenient shopping facilities in "prime" established retail locations that would naturally attract smart shops and smart shoppers must nowadays compete with the modern structures built for the convenience of the suburban motorist in outlying districts. Here, then, is a chance for the enterprising, imaginative investor to create sound, paying retail centers while helping relieve, almost as a side product, one of the city's greatest headaches at little cost.

Complex problems call for imaginative solutions. It is time to consider other than purely conventional approaches to both the retail shopping and the traffic problems. Where a method can be applied that benefits the private investor, the city and the general public alike, small-scale planning of individual plots on a short-term, conventional basis is no longer in order even in built-up, existing parts of a city. Long-range investment in fees and leaseholds calls for long-range thinking, planning and designing, and offers a challenge to the landowner and the city.



↑ Colorful patterns with "Kalistron" wall covering are a feature of the **Allen Road School,** North Syracuse, N. Y.

← Five years' service for wainscote covering has left no disfiguring marks. "Kalistron," a specially processed KRENE sheeting, by **Kalistron Division of U. S. Plywood Corp.,** N. Y. 36, N. Y.

A PLUS...in beauty, service, economy

MADE OF BAKELITE®

Krene®

®REGISTERED TRADE-MARKS OF UCC

Here is wall covering with beauty as you like it... bright and gay for colorful school walls...cheerfully restful for hospital corridor wainscoting.

It is superior in durability because it is made of KRENE. The smooth surface of this extra-quality material is tough and flexible to stand up to hard use without wear and cracking. And KRENE resists acids, alkalies, alcohol, grease, oil, cleaners. Soil wipes from the surface...easily, quickly.

Whatever the room, wherever the building, specify wall covering and upholstery made of KRENE. You will assure rich beauty, and dollar-protecting service and ease of maintenance.

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.

ELECTRIFLOOR

. . . because this structural floor

1.

1. The Travelers Insurance Co., Hartford, Connecticut
   Architect: Voorhees, Walker, Foley & Smith
   Contractor: George A. Fuller Co.
   Header Duct: National Electric Products Corp.
2. Dept. Property & Supplies Office Building General State Authority, Harrisburg, Pennsylvania
   Architect: Lacy, Atherton & Davis
   Contractor: Ritter Bros.
   Header Duct: Walker Brothers of Conshohocken
3. State Office Building, Pittsburgh, Pennsylvania
   Architect: Altenhof & Bown
   Structural Engineer: George Levinson
   Electrical Engineer: Carl Long
   Contractor: Navarro Corp.
   Header Duct: National Electric Products Corp.
4. Central Office Building, Dept. of Employment Sacramento, California
   Architect: California State Dept. of Public Works, Division of Architecture
   Contractor: George A. Fuller Co.
   Header Duct: National Electric Products Corp.
5. General Telephone Co., Santa Monica, California
   Architect: Albert C. Martin & Assoc.
   Contractor: George A. Fuller Co.
   Header Duct: National Electric Products Corp.
6. General Mitchell Field Airport Terminal Milwaukee, Wisconsin
   Architect: Milwaukee County Architects' Office
   Contractor: Milwaukee County Construction Dept.
   Header Duct: National Electric Products Corp.

2.

4.

5.

CHOSEN FOR THESE MODERN BUILDINGS

system has unlimited electrical availability built right in!

The architects and owners of these buildings had an eye to the future when they chose Fenestra* Electrifloor†. They knew—as you do—that it's next to impossible to predict the future electrical requirements of any building. So, they specified this unique cellular steel structural floor system that makes it possible to install electrical, telephone or communication outlets in any or every square foot of floor space—*any time*. That makes it easy to move desks and partitions without the trouble and expense of tearing up walls and floors for new wiring.

With Electrifloor you also save money on construction costs, because it's the structural subfloor of your building and the electrical raceway system all in one. The great strength and light weight of the cellular steel panels reduce foundation and structural steel costs, and speed up construction. As soon as a few panels are laid and interlocked on each floor, they form a flat, smooth working platform and material storage space. Scaffolding and form work costs are practically eliminated.

Investigate Electrifloor now for your next building. To utilize all its advantages, you should design the building around it. Fenestra's nationwide sales organization is ready to assist you. Write Detroit Steel Products Co., Dept. AF-9, 2296 East Grand Blvd., Detroit 11, Mich.

*Trademark
†®

Fenestra / **ELECTRIFLOOR**

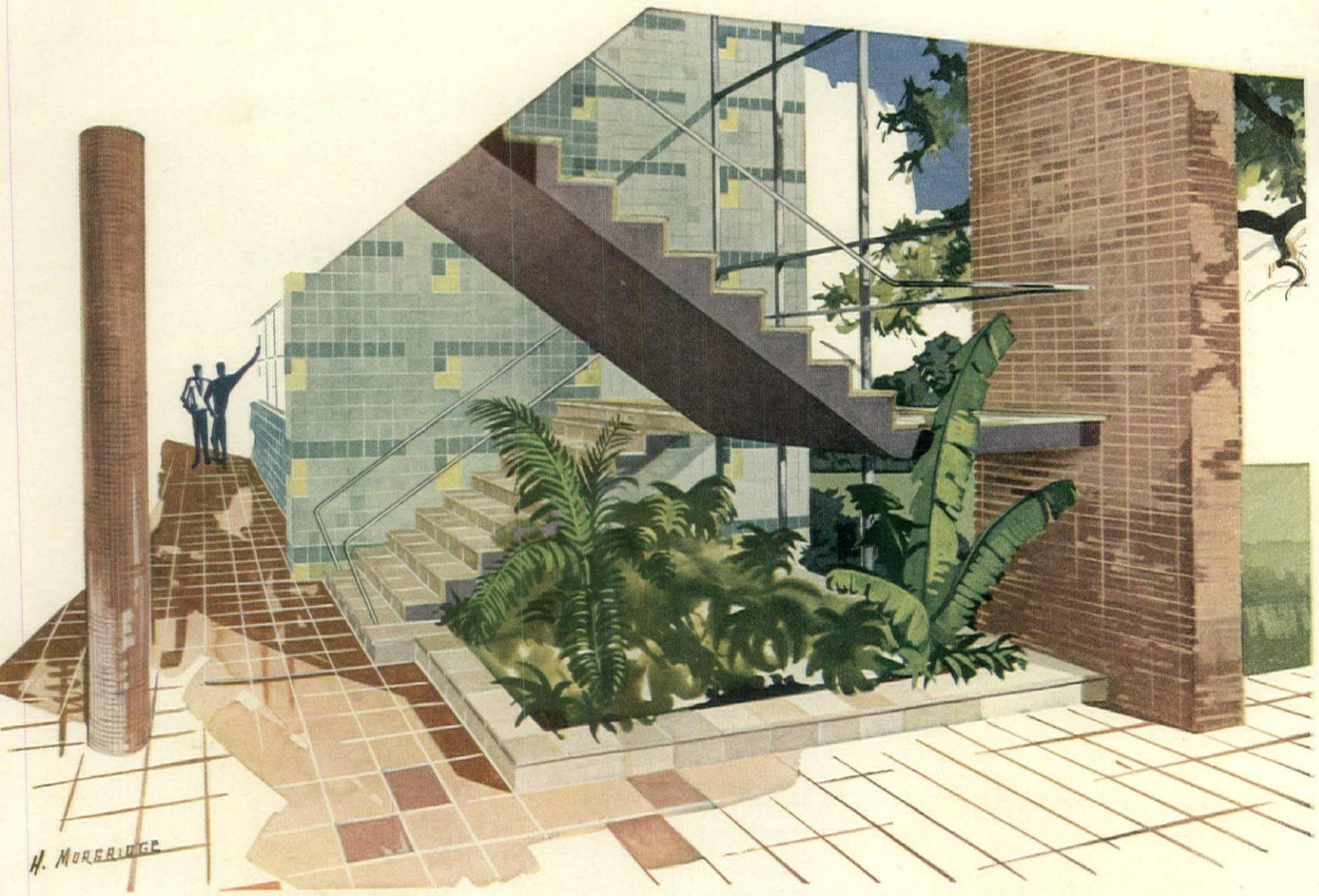
TODAY'S FLOOR WITH A FUTURE...*UNLIMITED*

3.

Exclusive Features of ELECTRIFLOOR

- Flat plate design allows 4" handholes in header ducts for easiest access to wire-carrying cells.
- Capacity of cells is 2½ to 3 times greater than most other cellular floors, protecting against dangerous crowding of wires.
- Flat, smooth surface saves concrete fill and provides utmost economy in preparation for the finished floor.
- Any depth Electrifloor panel can be designed as a lateral diaphragm for resistance to wind, bomb shock and seismic loads.
- Greater strength with lighter dead weight gives unusual structural design economy.

6.



Design for a school corridor and stair well by Marsh, Smith & Powell, Architects.

"Clay Tile Meets All Tests: Quality, Permanence & Design."

MARSH, SMITH & POWELL

per HP

West Coast architects Marsh, Smith & Powell found clay tile a good collaborator to work with in their design for a modern school corridor with stair well. This rendering shows how clay tile performs a permanent double service of function and design.

The important check points: low-upkeep tile floors to take generations of student traffic—glazed tile walls that keep maintenance down and good appearances up for decades—tile treads and risers which absorb footsteps unmarred for years, and ceramic mosaics on the corridor columns which offer a striking treatment that is maintenance-free.

When you approach your next school project, keep clay tile in mind. It's the ideal high traffic, low maintenance floor covering. It gives you and your clients a permanent solution for easily-cleaned, decorative walls that never need replacement. And it is flexible enough to give you unique, custom designs with standard units.

So be sure to check today's range of clay tile colors, shapes and types—the widest of any modern building material. When it is a clay tile installation, it never fades, burns, stains, scratches or needs refinishing or redecorating —all the cost is figured in at the start!

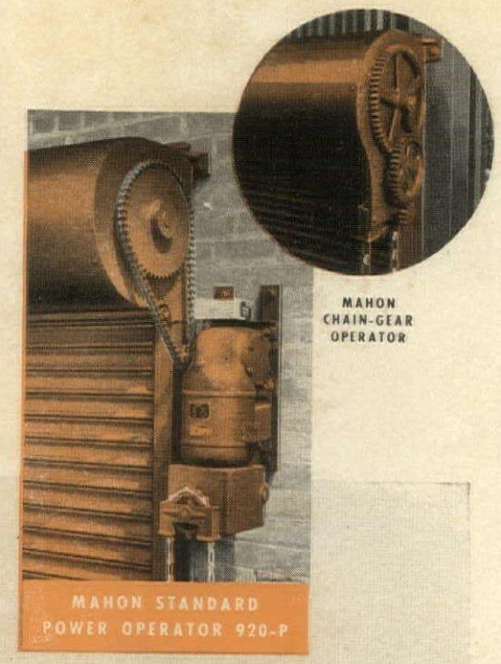
The Modern Style is GENUINE CLAY tile

TILE COUNCIL OF AMERICA, Room 3401, 10 East 40th St., N.Y. 16, N.Y. or Room 433, 727 W. 7th St., Los Angeles, Calif.

PARTICIPATING COMPANIES: American Encaustic Tiling Co. • Architectural Tiling Co., Inc. • Atlantic Tile Mfg. Co. B. Mifflin Hood Co. • Cambridge Tile Mfg. Co. • Carlyle Tile Co. • General Tile Co. • Gladding, McBean & Co. • Jordan Tile Mfg. Co. Mosaic Tile Company • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pomona Tile Mfg. Co. • Robertson Mfg. Co. Royal Tile Manufacturing Co. • Sparta Ceramic Co. • Summitville Tiles, Inc. • United States Quarry Tile Co. • Winburn Tile Mfg. Co.

Rolling Steel Doors

Manually, Mechanically, or Electrically Operated



MAHON CHAIN-GEAR OPERATOR

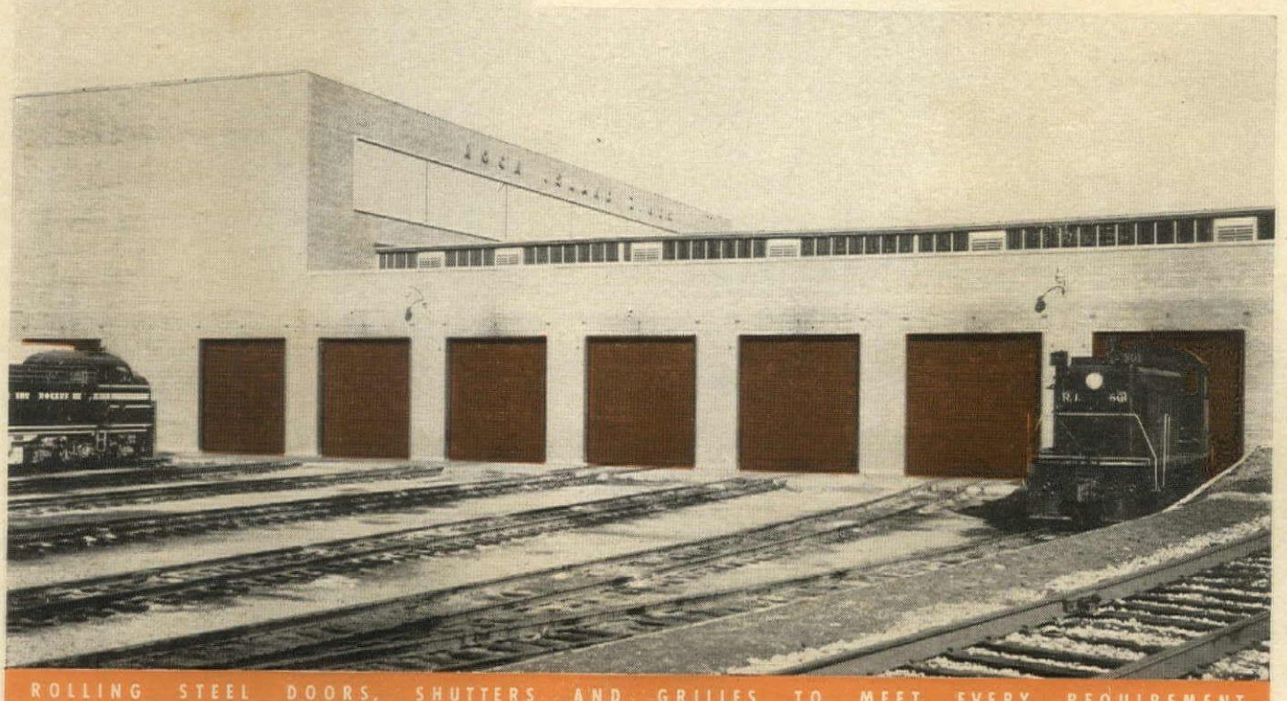
MAHON STANDARD POWER OPERATOR 920-P

For maximum protection, permanence, long life, and convenient, timesaving operation, most people, today, choose a good, power-operated rolling steel door. No other type of door can match their compactness in operation . . . the vertical roll-up action of the door curtain occupies no usable space either inside or outside the opening—and, there are no overhead tracks or other obstructions to interfere with material stacking or crane handling adjacent to door openings. A quick-opening, quick-closing Mahon power-operated Rolling Steel Door will save valuable time and valuable space in any type of opening. In addition, Mahon Rolling Steel Doors are permanent—their all-metal construction assures a lifetime of trouble-free service, and provides maximum protection against intrusion or fire . . . they require less maintenance, too, because, when the door is open, the interlocking steel curtain is rolled up above the opening safe from damage. When you select a Rolling Steel Door, check specifications carefully . . . you will find extra-value features in Mahon doors—for instance, the galvanized steel strip, from which the interlocking curtain slats are rolled, is Bonderized and dip-coated with synthetic enamel which is baked on at 350° F. prior to roll-forming. You will find other important Mahon features in both design and materials that add up to a greater over-all value. See Sweet's Files for complete information, or write for Mahon Catalog G-56.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

Sales Engineering Offices in New York and Chicago • Representatives in Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs and Partitions; Permanent Floor Forms, and Electrified Cel-Beam Floor Systems.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Eight Mahon Power Operated Rolling Steel Doors installed in track openings of a Diesel locomotive service shop. In addition to these, five Mahon Automatic Underwriters' Labeled Rolling Steel Fire Doors are installed in openings of interior walls. Rock Island Lines, Archts. and Engrs., S. N. Nielsen Co., Gen. Contrs.

MAHON

BOOKS

EXPERIENCE IN URBAN REAL ESTATE INVESTMENT. By Leo Grebler. Published by Columbia University Press, New York, N.Y. 277 pp. 6¼" x 9½". $9

The question of why equities in income-producing real estate have greater appeal as short-term speculation than as long-term investment receives a vigorously documented answer in this report of one of the research projects being carried on by Columbia University's Institute for Urban Land Use and Housing Studies.

The answer is that since the twenties, by whatever measure one may choose, the net yield on income property has shown up very poorly against that on such available alternative investments as bonds and mortgages. This answer actually is strongly weighted in a way favorable to realty investment, since the study, being confined to cases for which continuous record for at least a 20-year period were available (the average was 28 years), excludes those where experience was so bad as to end in foreclosure, as well as those where short-time owners may have been able to milk a quick return.

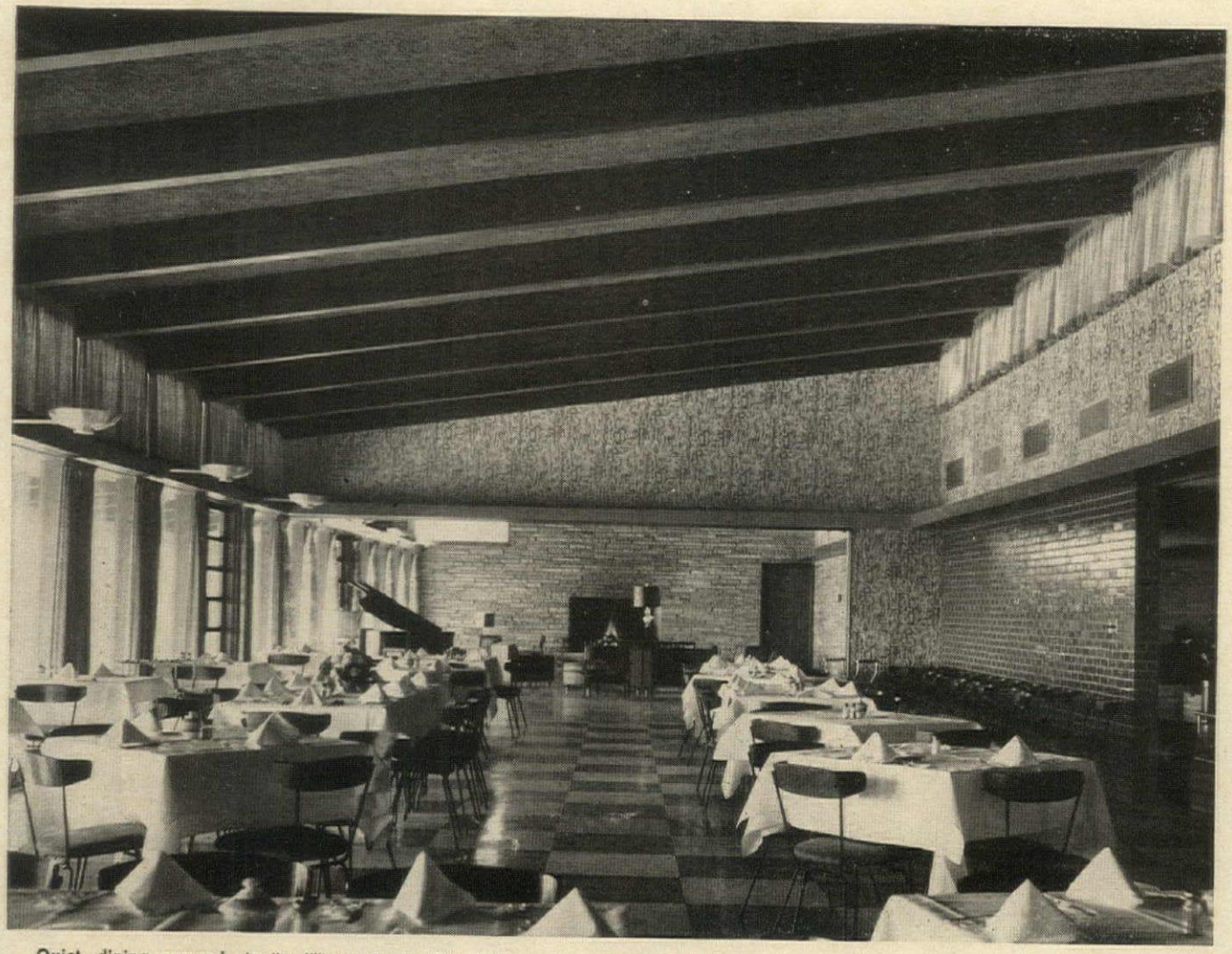
The first study of its kind, Dr. Grebler's work is of interest not only because of its results but also because of the methods that he has developed for obtaining and evaluating information in this area of investment, which, though comprising about one half the wealth of the nation, is virtually unexplored. The survey covers a well-diversified sample of 581 properties—office buildings, elevator and walk-up apartments, boarding houses and single-family houses for rent. All the properties are located in New York City, a fact, however, that probably would influence the results less than might be expected, because of the heavy weight that New York necessarily would have in any broader survey.

Present illusions about real estate investment stem from the predepression era, indeed a golden age, in which net income quadrupled in a 30-year period (1900 to 1929). The depression brought a drastic curtailment of earnings, and neither war nor postwar boom, through 1950, could bring net income (income after operating expense and taxes but before debt service and depreciation) within 50% of previous levels. Nonresidential properties, it may be noted, showed up better than residential.

These—the best results—apply only to the oldest properties in the sample, those acquired before the late twenties. For those acquired at predepression peaks, the investment results are too pathetic for sensitive readers. Since 1950, the terminal date of the review, some further advance may have been made, but the chances are that properties that felt the full blow of depression, only to be hit while they were still down by rent control, are now being so overwhelmed by the onrush of technology that they cannot fully share in the recovery.

"There is a real question," the survey concludes, "as to whether yield differentials during the past 20 to 25 years have been large enough to attract an adequate volume of responsible, long-term equity capital into the development and operation of income-producing real estate. The importance of this question in respect to the future flow of private capital funds into this sector of the economy, and to the sound growth and management of the nation's urban resources, can hardly be exaggerated. The construction boom during the postwar period has been fed by an impressive amount of mortgage lending. In spite of the entry of some financial

continued on p. 200



Quiet dining assured. In the Hillcrest Country Club, Oklahoma City, Oklahoma, sound is kept under control by a ceiling of Sprayed "Limpet" Asbestos. Architects: Hudgins-Thompson-Ball & Associates. General Contractor: E. V. Cox Construction Co. Acoustical Contractor: Acoustical Products Co. All are Oklahoma City firms.

Clients get less noise, more heat when you specify

Sprayed "Limpet" Asbestos

In dining room or courtroom, hospital, office or plant, Sprayed "Limpet" Asbestos does four big jobs—produces results that make really satisfied clients.

1. It controls sound two ways. The insulation's surface yields with sound waves, reduces their intensity. And the sound waves themselves are trapped and dissipated by being absorbed in the millions of Sprayed "Limpet" Asbestos pores.
2. It saves heating expenses. Applied on thin, single-layer roofs, it has produced savings as high as 50%.
3. It controls condensation. Water vapor is absorbed—surfaces are left free from moisture. There's no "sweating" effect.
4. It's highly fire-resistant. Under tests by recognized laboratories, its fire resistance was rated up to four hours.

Ideal for irregular surfaces. As this material is sprayed on, it makes no difference how uneven or curved the surface is. No cutting, fitting, clipping or nailing is needed.

Easily spray-painted. Sprayed "Limpet" Asbestos forms an evenly textured, seamless blanket that's a perfect base for decorative painting.

Informative folder available. For complete details on this remarkable product, see our Sprayed "Limpet" Asbestos folder in your *Sweet's Architectural File*, or write to us.

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

K&M best in asbestos®


Lipstrew

Flour City Ornamental Iron Co.

Specifies Alcoa Aluminum

FROM TOP TO BOTTOM

The nation's newest aluminum-faced office building rises twenty-four stories above South Main Street, Houston, Texas.

The twenty-one hundred aluminum panels that sheathe the new Texas National Bank Building came from Minneapolis, Minn. There, the Flour City Ornamental Iron Co. fabricated the 4'3" x 13'0" panels, the store fronts, canopy fascia, flagpoles, louvers, windows, and roof copings. Alcoa® Aluminum specified for all items.

Flour City, one of the nation's oldest, largest, and most experienced architectural metal fabricators, contributed its talents and skills in the designing, engineering, production, and erection of the Republic National Bank Building, Dallas, Texas; the Mayo Clinic Diagnostic Building, Rochester, Minnesota; and many other aluminum-clad buildings. Alcoa Aluminum specified for all projects.

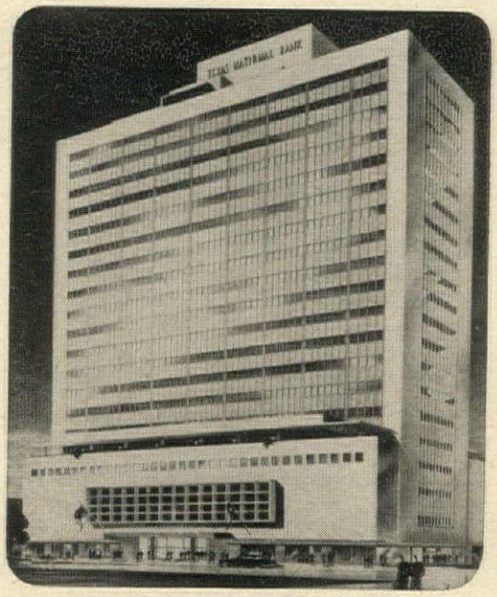
For complete information on Alcoa Aluminum and its building applications, from store fronts to roof copings, call your local Alcoa sales office. Or write: ALUMINUM COMPANY OF AMERICA, 1887-J Alcoa Building, Pittsburgh 19, Pennsylvania.

YOUR GUIDE TO ALUMINUM VALUE

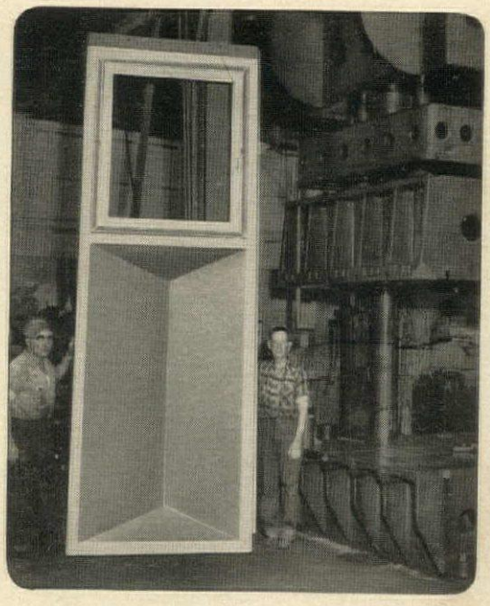
ALCOA® ALUMINUM

ALUMINUM COMPANY OF AMERICA

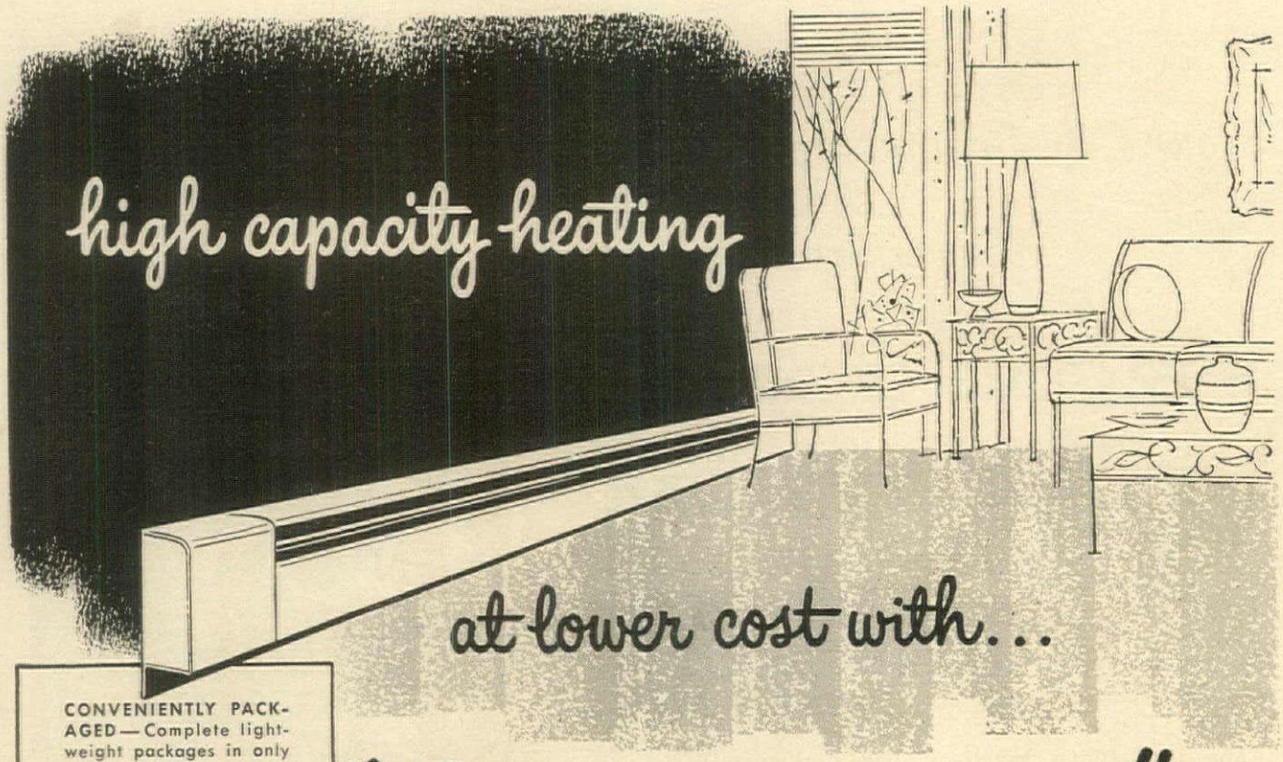
©ACOA



Texas National Bank Building, Houston, Texas. *Architect:* Kenneth Franzheim, A.I.A., Houston, Texas. *General Contractor:* Manhattan Construction Co., Houston, Texas. *Aluminum Contractor:* Flour City Ornamental Iron Co., Minneapolis, Minn.



Over 2,100 panels were formed on a 750-ton hydraulic press in Flour City's shop. Complete design and erection services as well as fabricating facilities make Flour City an integrated aluminum contractor.



CONVENIENTLY PACKAGED—Complete lightweight packages in only two lengths are easy to stock . . . easy to handle on the job.

SIMPLE TO INSTALL—All components perfectly fitted . . . many simply snap in place. Dampers or air splitter optional.

"Perimaheat"

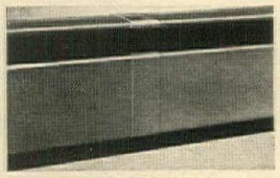
Baseboard Convectors

Advanced *Perimaheat* Baseboard design produces high efficiency heating, the result of more than 28 years of YOUNG specialized heat transfer engineering and experience.

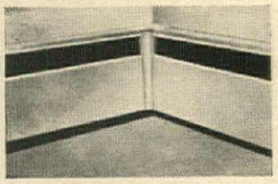
Perimaheat heating elements feature aluminum fins mechanically bonded to copper tubes to form a double-walled continuous metal heat transfer surface that produces maximum heating efficiency. Cushion strip and free-hanging elements eliminate contraction and expansion noises. Smooth, attractive *Perimaheat* Cabinets are easy to keep clean.

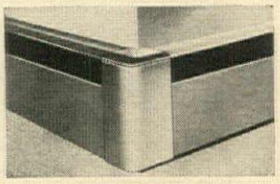
For further *Perimaheat* details, see your Young Representative listed in the yellow pages of your telephone directory, or mail coupon below.

Perimaheat is a Young Radiator Company Trade Mark.


JOINT COVER


RIGHT OR LEFT-HAND END CAPS


INSIDE CORNER


OUTSIDE CORNER

The Young Radiator Company is a member of the Convector Manufacturers Association and subscribes to the engineering standards of that association.

CMA

mail coupon for full details

YOUNG RADIATOR COMPANY
Dept. J-605 Racine, Wisconsin
Please send me free *Perimaheat* Baseboard Catalog.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

Young RADIATOR COMPANY

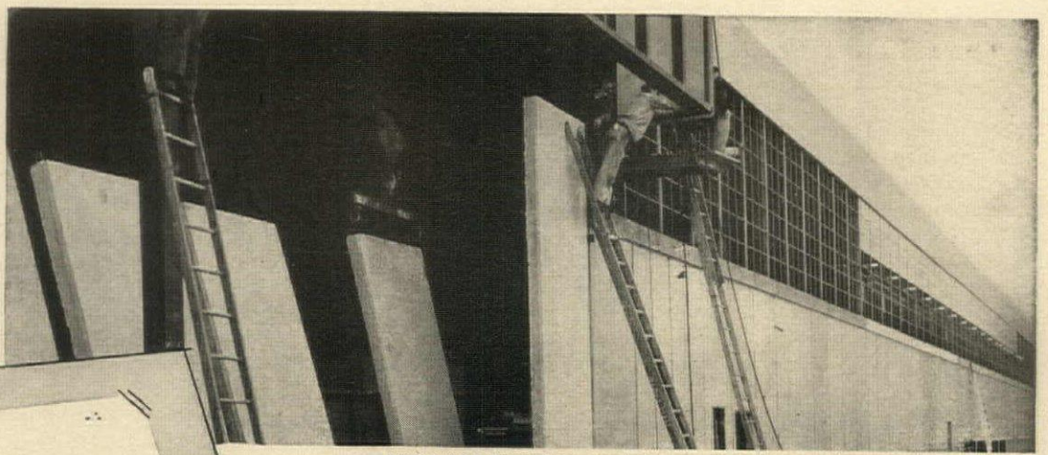
RACINE, WISCONSIN

Creative HEAT TRANSFER ENGINEERS FOR INDUSTRY

Heat Transfer Products for Automotive, Aviation and Industrial Applications.

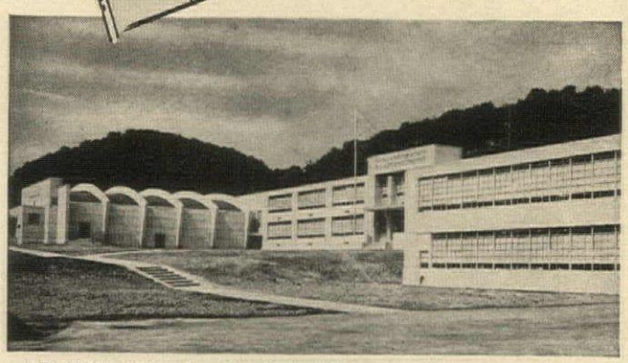
Heating, Cooling, Air Conditioning Products for Home and Industry.

Executive Office: Racine, Wisconsin, Plants at Racine, Wisconsin, Mattoon, Illinois

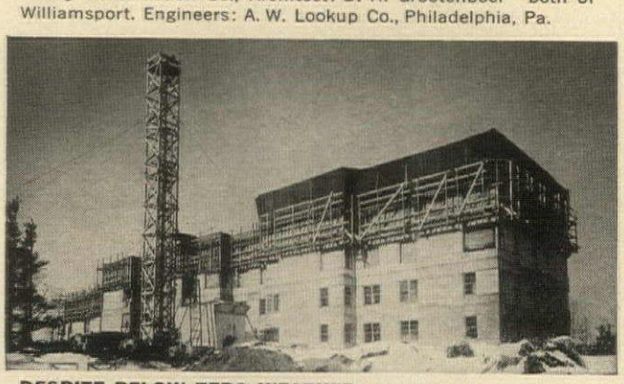


JOB-CAST PANELS speed construction on warehouse, Milwaukee, Wisc. Contr.: Steel-Crete Constr. Co.; designed by V. K. Boynton—both of Milwaukee.

WHY MODERN DESIGN CALLS FOR DURAPLASTIC*



ARCHITECTURAL CONCRETE serves as both structural material and facing at high school, Williamsport, Pa. Contractor: Lundy Construction Co.; Architect: D. H. Grootenboer—both of Williamsport. Engineers: A. W. Lookup Co., Philadelphia, Pa.



DESPITE BELOW-ZERO WEATHER, concrete made with Atlas Duraplastic Cement stays plastic and workable at apartment building, Duluth, Minn. Contractor-Owner: W. C. Smith, Inc.; Architect: A. Reinhold Melander—both of Duluth.

More and more of today's requirements for clean, functional design are being met by concrete construction. And where *better* concrete is important, you'll often find it's made with Atlas Duraplastic air-entraining portland cement.

There's a reason. Duraplastic-made mixes are more workable, more cohesive . . . place better in forms and around reinforcement. Duraplastic Cement makes concrete with greater plasticity. Result: a more uniform concrete to place.

Atlas Duraplastic Cement requires less mixing water for a given slump . . . reduces water gain and segregation and, therefore, minimizes sand streaking and rock pockets. Result: a more uniform concrete *in* place.

Duraplastic-made concrete adds to concrete durability by fortifying it against the effects of freezing-thawing weather. It is superior for both structural and exposed surfaces.

Yet Duraplastic costs no more than regular cement, requires no unusual changes in procedure. Complies with ASTM and Federal Specifications. For descriptive booklet, 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.*

**"Duraplastic" is the registered trade-mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.*

AF-D-171

ATLAS® **DURAPLASTIC**

AIR-ENTRAINING PORTLAND CEMENT

Makes Better Concrete at No Extra Cost

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

BOOKS

Continued from p. 194

and other institutions into equity ownership, however, most of the new income-producing real estate in American cities seems to have been constructed, as it was in previous booms, by groups having thin equities and short-term investment motivations. It is perhaps significant that the ratio of new rental housing construction to total housebuilding activity has been much lower during the postwar years than during earlier comparable periods, and that about 80% of the new rental housing that was produced was financed with FHA-insured loans involving only nominal, if any, investment of cash funds by the sponsors."

This is a question that is being ducked by federal and local government and by mortgagees alike. It will have to be answered before real estate equity becomes attractive to equity investors. Dr. Grebler's study, by bringing the question so vividly into focus, may materially contribute to its solution.—Miles Colean.

ARCHITECTURE IN THE AGE OF REASON. By Emil Kaufmann. Published by Harvard University Press, Cambridge, Mass. 293 pp. 6¾" x 10". Illus. $10

Says Joseph Hudnut in the foreword: "This is a timely and rewarding book: timely because it brings into focus, at a moment when our architecture is submerged under an excess of dogma, the humane and searching thought of the eighteenth century, and rewarding because it clarifies with new insight the engaging art of humanism. The author has made the period lying between the Renaissance and our own day his special field. He writes with distinction and vitality.

"I do not know of any work in which one could find a more complete and illuminating account of that idea, *harmonious integration*, which for three hundred years haunted the minds of European architects."

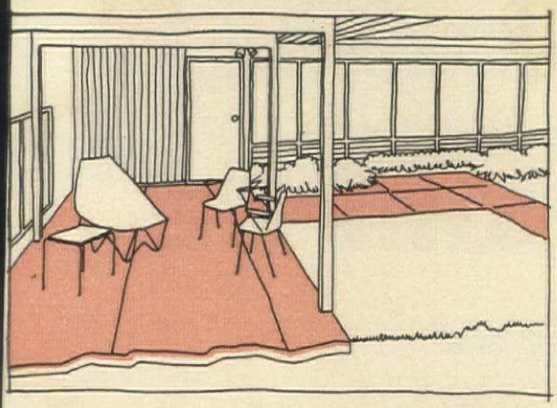
THE ARCHITECTURE OF JAPAN. By Arthur Drexler. Published by The Museum of Modern Art, 11 W. 53rd St., New York, N.Y. 286 pp. 7½" x 10¼". Illus. $6.50

Beautifully illustrated and ably written, this book deals with the relevance of traditional Japanese architecture to modern Western building, as well as the development of Japanese architecture from pit dwellings to contemporary buildings. A 25-page supplement on the Japanese house shown at the Museum of Modern Art during the summers of 1954 and 1955 is included. The three main sections are devoted to the environment and religious beliefs that have influenced Japanese art, traditional principles of structure and design, and buildings the Japanese themselves consider masterpieces. The extraordinary selection of photographs which Mr. Drexler has coordinated with his text reveals the continuing vitality of Japan's architectural heritage.

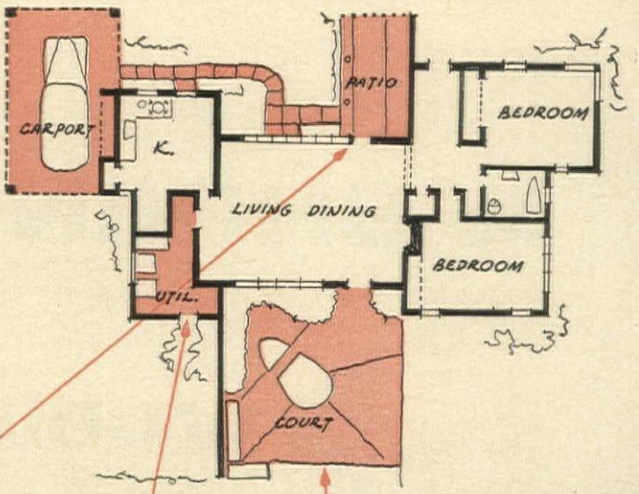
The author is Curator of the Museum of Modern Art's Department of Architecture and Design.

EXHIBITION STANDS. By Robert Gutmann and Alexander Koch. Published by Alexander Koch, Stuttgart, Germany. 248 pp. 8½" x 12". Illus.

A handsome presentation of the most exciting kind of architecture with text and captions in three colors and three languages—including English.

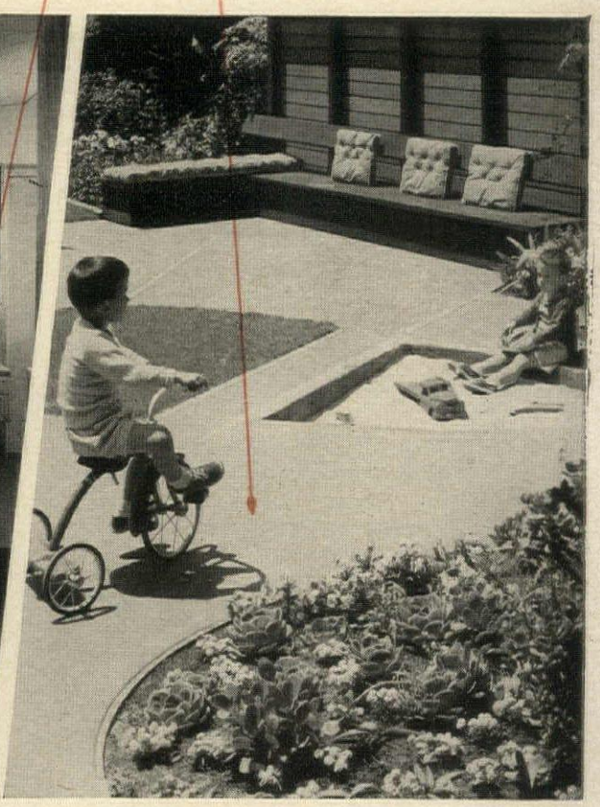


Fused color. *Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.*



Nat'l Homes Corp. photo

J. Shulman photo



E. Braun photo

Beautify concrete floors

Colorundum floors give luxury appearance and extra wear resistance at low cost

Here's a simple and economical solution to the problem of exposed or uncarpeted areas of drab, colorless concrete. It's called Colorundum. And the fused-color concrete floor it provides lends a dramatic and practical accent to patios, walkways, and service floors. Colorundum cuts air conditioning costs, too, because its color properties keep sunlit areas substantially cooler than ordinary concrete. Yet its cost is just a fraction of that of tile floors.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.

Subsidiary of Sun *Chemical Corp.*

A. C. Horn Co., Inc.

Dept. H11-916, Long Island City 1, N. Y.

Please send me complete information on Colorundum.

*Name*_____ *Title*_____

*Firm*_____

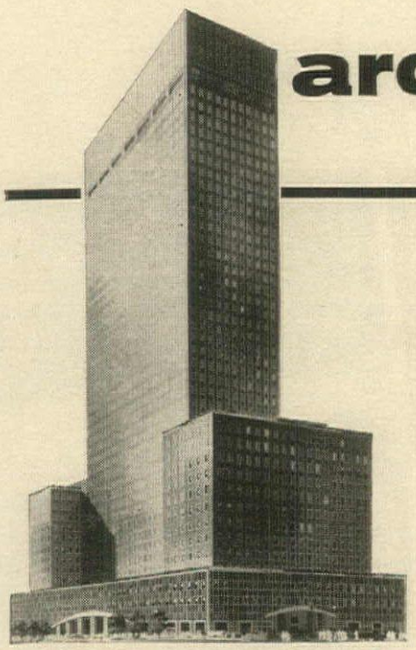
*Address*_____

*City*_____ *Zone*____ *State*_____

DIVISIONS OF SUN CHEMICAL CORPORATION

HORN • **HUDSON** • **WILLEY** (paint, maintenance and construction materials, industrial coatings) • **WARWICK** (textile and industrial chemicals, waxes) • **RUTHERFORD** (lithographic equipment) **SUN SUPPLY** (lithographic supplies) • **GENERAL PRINTING INK** (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • **MORRILL** (news inks) • and **ELECTRO-TECHNICAL PRODUCTS** (coatings and plastics)

A SHINING EXAMPLE of a new architectural frontier



The pioneering spirit of American architecture is reflected in the shining stainless steel splendor of the Socony Mobil Building. Over 7,000 panels, 3,200 of which include stainless steel-framed windows, provide a permanently weatherproof, inherently fire-resistant surface. Harrison and Abramovitz, architects; John B. Peterkin, associate. Turner Construction Company, general contractor. Edwards and Hjorth, structural engineers. Jaros Baum and Bolles, mechanical engineers. Edward A. Ashley, electrical engineer.

It's the new Socony Mobil Building now being erected in New York City. When completed, it will be the world's largest metal-clad office building . . . a full forty-two stories of gleaming stainless steel walls and stainless steel windows.

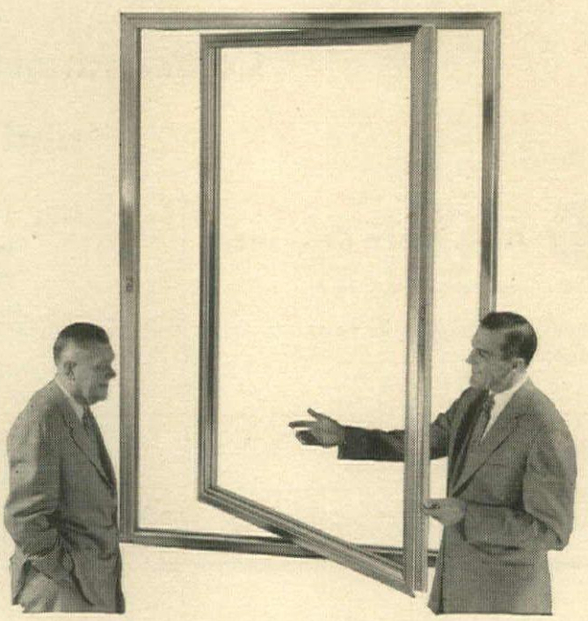
Over the years, stainless steel has been the ideal complement to other building materials. It harmonizes beautifully with glass, brick, stone and all other materials of construction. In addition, stainless offers unique advantages of its own.

For example, the beauty of stainless steel is enduring. It stubbornly resists rust and corrosion . . . requires minimum maintenance in architectural applications. That's important for hard-to-service areas such as roof drainage items, flashing, parapet caps, domes, gravel stops and ornamental trim.

Stainless is invaluable in applications where strength is required but bulk is forbidden. Its high strength-to-weight ratio along with high corrosion-resistance permit you to use thinner, lighter sections in complete safety. That's one reason for the Socony Mobil walls. It's a primary consideration in such applications as curtain wall construction, marquees and sunshades, pier covers and spandrels, entrances and lobbies.

With stainless, there's no need for weekly "polish up the brightwork" expense. It stays bright and attractive for life. And, whether you specify it for beauty, strength, long life or low maintenance, you automatically get all its other "bonus" advantages. Stainless sparks design ideas. Republic will help you develop them in ENDURO Stainless Steel. The coupon will bring you design data.

New Truscon stainless steel reversible windows will provide important savings to the owners of the Socony Mobil Building. By rotating a full 360°, windows can be cleaned entirely from the inside . . . in half the time, at half the cost. Either side has excellent weathering properties. In addition, this window has been proved 80 times more resistant to air leakage than allowable industry standards . . . resulting in appreciable fuel and air conditioning savings.



REPUBLIC STEEL CORPORATION
3108 East 45th Street,
Cleveland 27, Ohio

REPUBLIC STEEL

Please send me more information on:
☐ ENDURO® Stainless Steel for Architectural Applications
☐ Truscon® Stainless Steel Reversible Windows

Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State_____
K-9021

Maximum speed and ease of installation were designed into each panel making up the Socony Mobil Building's stainless steel walls. Engineered and fabricated to assure a perfect fit, the resulting surface will be water- and wind-tight, yet allow structure to "breathe." Its lustrous beauty will endure indefinitely. The stainless steel is supplied by Republic and other leading producers.

TRUSCON
MARK OF MERIT
PRODUCTS

REPUBLIC STEEL

REPUBLIC
STEEL

World's Widest Range of Standard Steels and Steel Products

Economically applied on heating and cooling ducts,

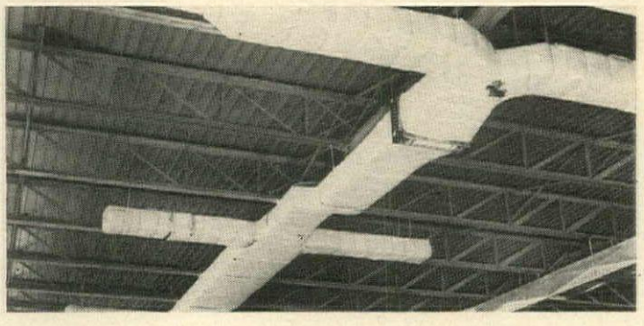
L·O·F Super·Fine reduces heat transfer, increases cooling efficiency

Applying L·O·F Super·Fine at the Northwood Shopping Center. The high tensile strength of the glass fiber blankets permits them to be pulled between the duct and wall without tearing.

Architect Louis A. Redstone, and Allan G. Agree, associate architect, specified ½-pound, 1-inch L·O·F Super·Fine to insulate concealed combination heating and cooling ducts at the new Northwood Shopping Center, Royal Oak, Michigan. Low thermal conductivity, and speed and ease of application were important considerations.

You get high insulating efficiency when you specify L·O·F Super·Fine. Its fine glass fibers form millions of dead air cells, which effectively reduce heat loss or gain. And Super·Fine keeps its insulating efficiency indefinitely. Inorganic glass fibers will not support combustion, absorb moisture, rot or decay.

You get lower application costs with L·O·F Super·Fine. The lightweight blankets are pleasant to handle, cut easily with an ordinary knife. Application is fast, with no precision measuring or fitting required. Super·Fine's strong resilient blankets readily fill irregular and hard-to-reach places.



A large section of heating and cooling ducts insulated with L·O·F Super·Fine. Ducts were coated with adhesive, then wrapped around with Super·Fine and secured with light-gauge wire.

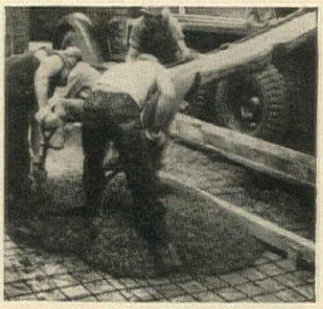
L·O·F GLASS FIBERS

L·O·F GLASS FIBERS COMPANY
TOLEDO 1, OHIO

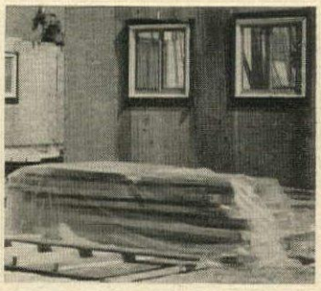
Makers of glass fibers by the exclusive "Electronic-Extrusion" process

SEND FOR FREE FOLDER giving performance data and specifications on L·O·F Super·Fine duct wrap and liner. Write: L·O·F Glass Fibers Company, Department 60-95, 1810 Madison Avenue, Toledo 1, Ohio.

Master merchandiser Joe Eichler features Visqueen® film Moisture Barrier in his California homes



VISQUEEN film is the best moisture barrier under concrete slabs or floors



VISQUEEN film protects lumber, finished mill work, fixtures—any material subject to water.

No water damage to equipment when you protect with VISQUEEN film.

Acknowledged leader in merchant building, now constructing more than 3,000 homes in 5 California cities, Joseph L. Eichler finds in VISQUEEN film another plus value that helps him sell better living to California home-seekers.

"Our customers never see the VISQUEEN film moisture barrier in our walls," he says, "but when we tell them how it will prevent decay within the studwall, cracking and peeling of paint and other moisture-generated ills, they know we are finding one more way to give more for their money."

important! *VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. Only VISQUEEN, produced by process of U. S. Patents No. 2461975 and 2632206, has the benefit of research and resources of The VISKING Corporation.*

look for this name on the selvage!

VisQueen®

For complete details, clip this coupon and attach to your letterhead.

VisQueen® film . . . a product of

THE VISKING CORPORATION, Box AL9-1410

Plastics Division, Terre Haute, Indiana

World's largest producers of polyethylene sheeting and tubing

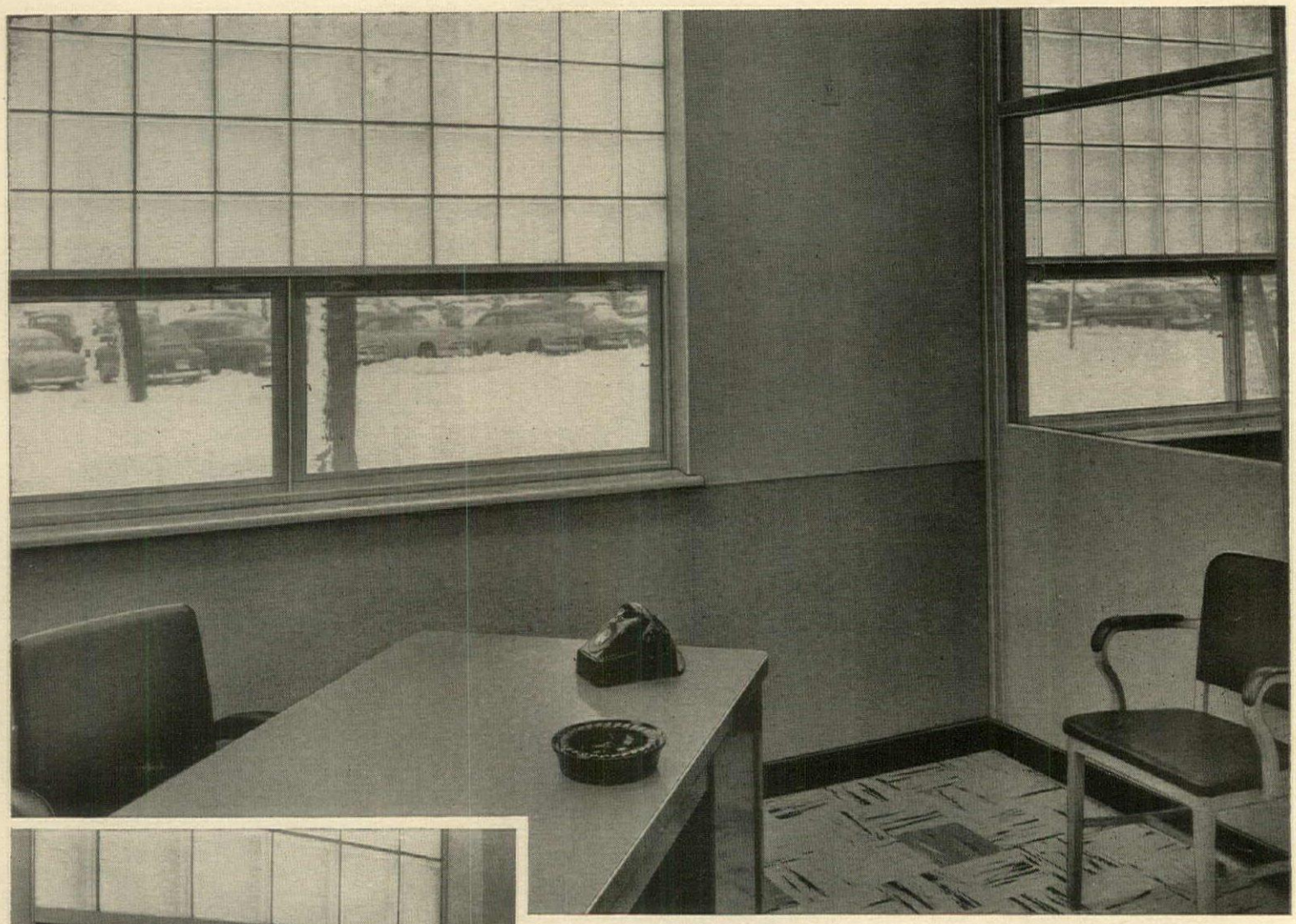
In Canada: VISKING Limited • Lindsay, Ontario

In England: British VISQUEEN Limited • Stevenage

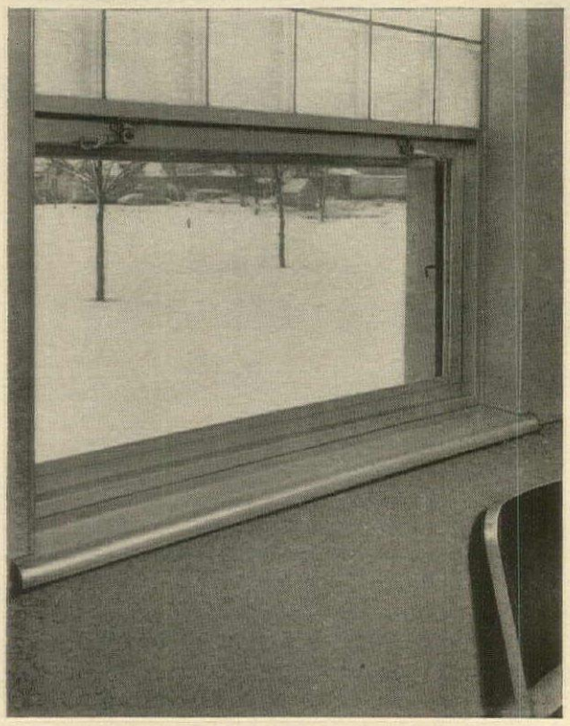
Name_____

Title_____

Products_____



A special-design application in a midwestern plant office. Upper wall is Consoweld 10 in Dusty Green Echo. Wainscoting is Gray Holiday, with Twin-Trim moulding. Movable partitions are faced with Consoweld wood grain in Harvest Brown Birch. Baseboard is a ⅜" thick strip of Consoweld, available on special order. Desk top is Consoweld Gray Echo. Wall materials are applied directly over cement block.



Window detail: the sill is post-formed of Consoweld Dusty Rose Irish Linen, made to order for this application.

How **Consoweld** can be used for specially designed interiors

Consoweld is a melamine-surfaced plastic laminate available in 46 patterns, color-tuned by Color Research Institute of America.

Exceptionally fine effects can be achieved with planned applications of Consoweld to walls, desks, tables, and counter tops. Consoweld comes in two thicknesses—the standard Consoweld 6—1-16″, for shop-fabricated tops; and Consoweld 10—1-10″—for on-the-job application. It may be applied directly over cement blocks, gypsum lath, or sheathing-grade plywood. Consoweld Twin-Trim matched mouldings provide large areas of unbroken color. Get complete details and data file folder—mail the coupon or write.

CONSOWELD®

the nation's finest plastic surfacing

...good for a colorful lifetime

Consoweld Corporation,
Wisconsin Rapids, Wisconsin

AF-95

Please send me free data file folder and name of nearest distributor.

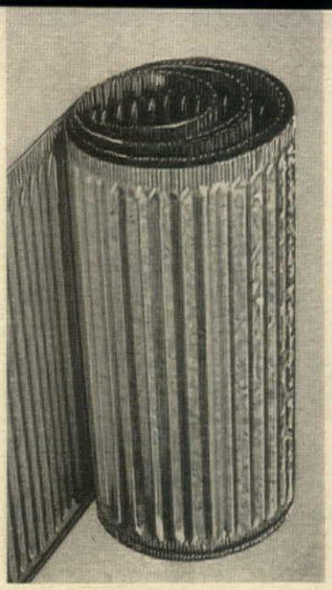
Name .....

Company .....

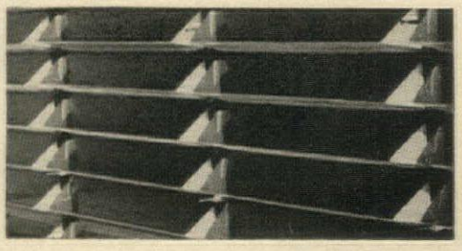
Address .....

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

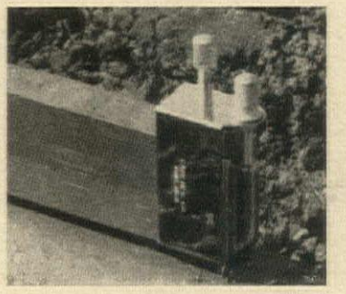
PRODUCTS



Roll of roof reduces lap (218)

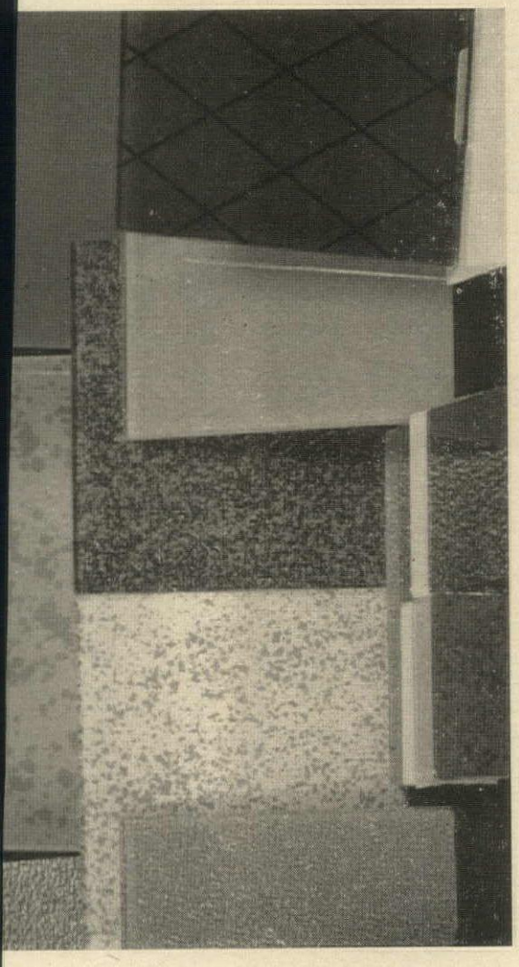


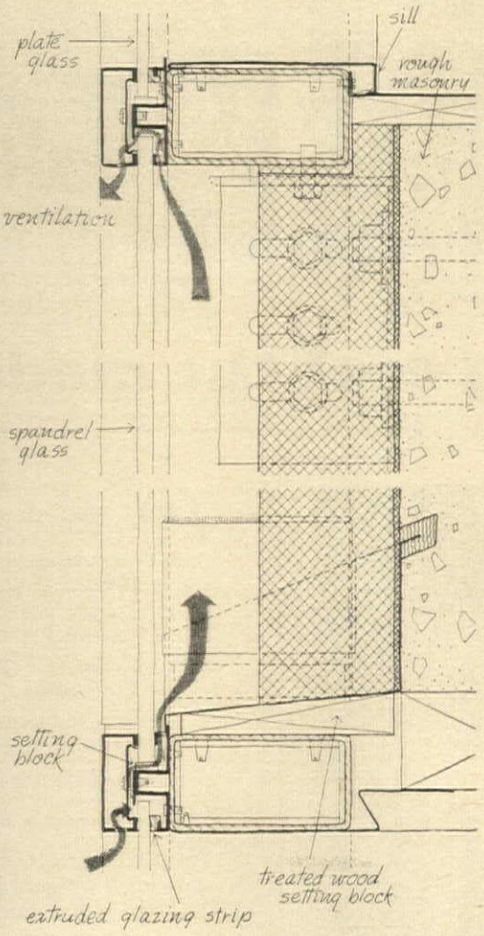
Some sun in, some sun out (p. 224)



Angles read off the level (236)

Plate glass is fired with colored ceramic on back for spandrel covers





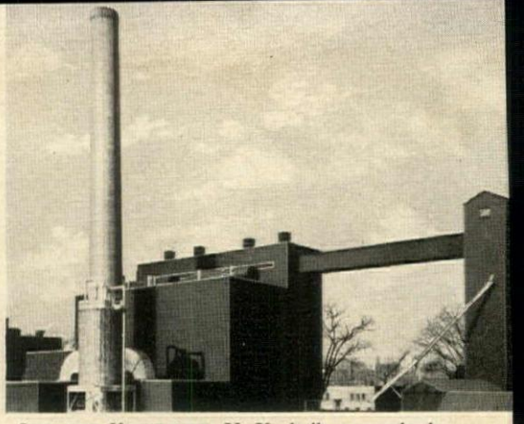
When glass spandrels were chosen for Lever House (AF, June '52), Architects Skidmore, Owings & Merrill specified opaque coatings sprayed on the undersurface to get the exact dark green tone they wanted without yielding the weather and grit resistance and fresh-from-a-bath look of the exposed glass skin. A year later and three blocks west, Architect Philip Johnson decided on a translucent gray glass for part of the skin treatment on the Museum of Modern Art annex. The ceramic coating technique developed by Pittsburgh Plate for that job led to the new construction material introduced last month as a stock item: *Spandrelite*, a glass cladding produced in ground and pebbled textures as well as polished plate, in limitless colors. The technique for applying the ceramics is as basic as that for decorating dinnerware and, as ancient enameled glass relics attest, can be regarded as permanent. One indirect but architecturally welcome outcome of the process is that the quick shot of heat (5 to 12 min. at about 1,500° F.) necessary to fuse the vitreous

continued on p. 212

As easily mounted as glazing, colored glass spandrels are set in standard extruded framing. Members are designed so that no structural loads are transmitted to curtain facing.

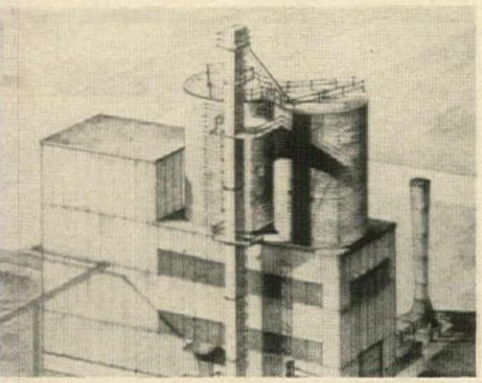
DUPONT'S Barksdale, Wis. Works saves $7,000 a year with new automatic combustion controls.

HUDSON MOTORS' modernized plant in Detroit saves $480,000 a year—cuts powerhouse labor 27%.



SYRACUSE UNIVERSITY, N. Y., built a completely new unit for maximum economy and dependability.

For efficiency... for economy...



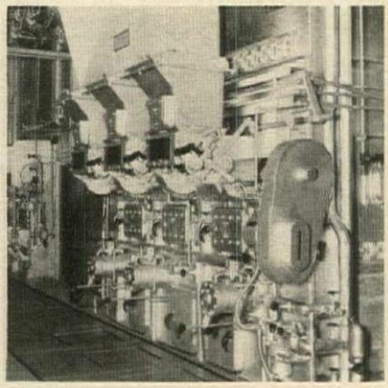
AT STAUFFER CHEMICAL'S new plant in Louisville, Ky., total cost of steam is only 60¢ per 1,000 lbs.

Coal costs 29.6% less than next cheapest fuel at ADDRESSOGRAPH-MULTIGRAPH'S plant in Cleveland.

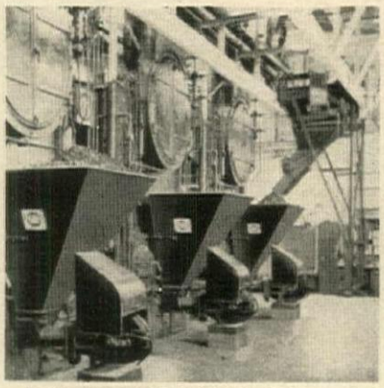
MOTOR PRODUCTS CORP. of Detroit, Michigan, saves $54,000 a year with modernized installation.

more and more firms

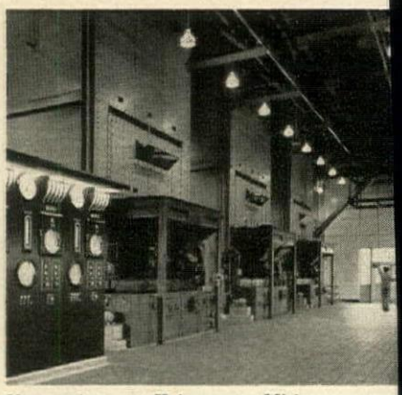
Burning coal the modern way saves PENNSYLVANIA RAILROAD'S, Ft. Wayne, Ind. terminal $33,000 a year.



Efficient new equipment reduces labor and improves performance records for LIGGETT & MYERS at Richmond, Va.



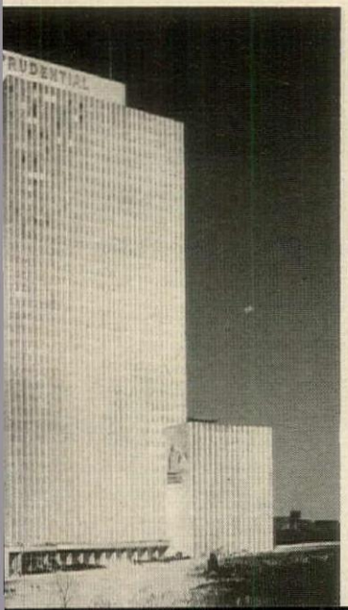
At LAKEWOOD HOSPITAL, in Lakewood, Ohio, new automatic coal burning facilities cut fuel costs 22%.



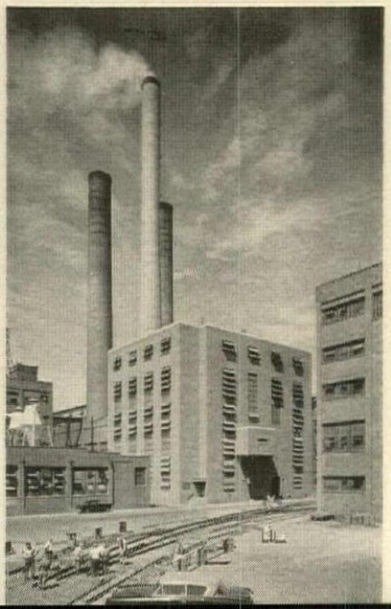
UPJOHN'S new Kalamazoo, Mich. plant is clean and efficient with no dust or smoke nuisances.

are burning coal the modern way

Chicago's ultra-modern PRUDENTIAL BUILDING has fully automatic coal handling and burning system.



GOODYEAR saves $3,000 a day with new coal-burning installation at Akron, Ohio.



facts you should know about coal

- In most industrial areas, bituminous coal is the lowest-cost fuel available.
- Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar.
- Automatic coal and ash handling systems can cut your labor cost to a minimum.
- Coal is the safest fuel to store and use. No dust or smoke problems when coal is burned with modern equipment.
- Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION
Southern Building, Washington 5, D. C.

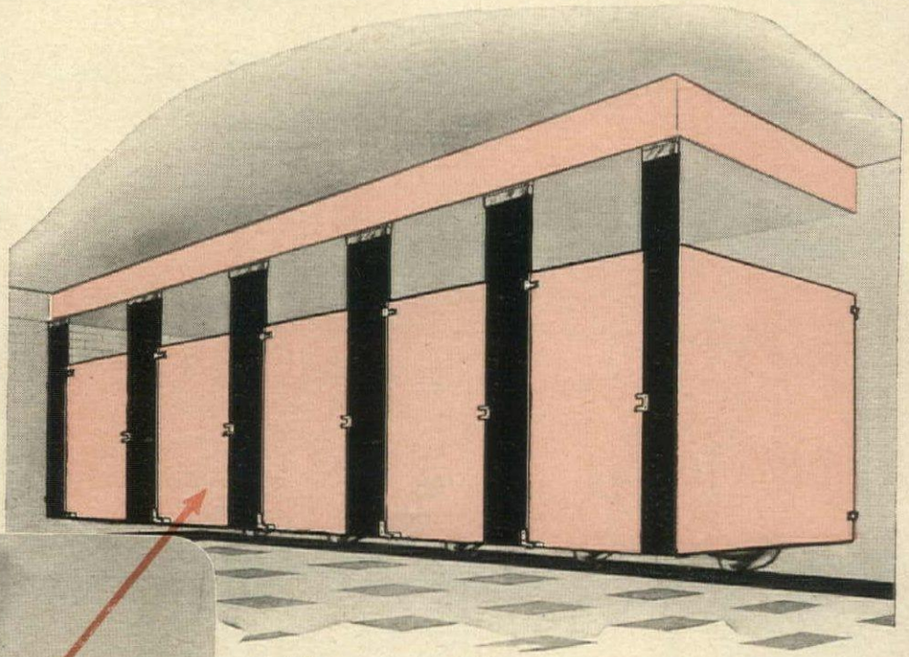
No. 3
OF A SERIES

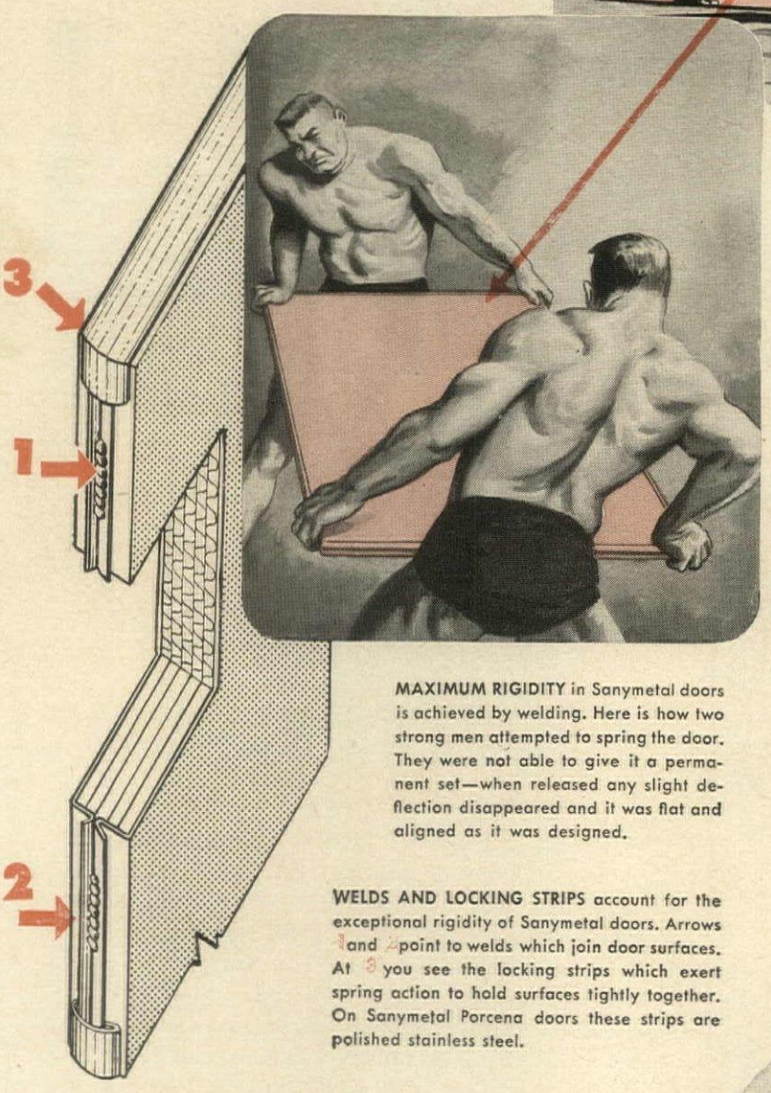
WHAT TO LOOK FOR IN QUALITY TOILET COMPARTMENT CONSTRUCTION

One of many major differences that give you your money's worth in satisfactory service!

Doors WELDED so rigid...

THAT WRESTLERS CAN'T SPRING THEM!





MAXIMUM RIGIDITY in Sanymetal doors is achieved by welding. Here is how two strong men attempted to spring the door. They were not able to give it a permanent set—when released any slight deflection disappeared and it was flat and aligned as it was designed.

WELDS AND LOCKING STRIPS account for the exceptional rigidity of Sanymetal doors. Arrows 1 and 2 point to welds which join door surfaces. At 3 you see the locking strips which exert spring action to hold surfaces tightly together. On Sanymetal Porcena doors these strips are polished stainless steel.

MANY quality construction features found in *all* Sanymetal Toilet Compartments mean longer satisfactory service. These features result from Sanymetal's 41 years' experience manufacturing compartments. Be sure you get this quality.

A feature you should notice is *rigidity* produced by *welding* at the edges to join the compartment door surfaces. This makes the door a rigid structural unit. The edges are then further reinforced and the door made stronger with a formed locking strip welded, ground and finished at the corners. Strong men cannot intentionally spring this door without use of heavy tools, an abuse more severe than extremely heavy service.

Welded, rigid doors are one of many special features you get at no extra cost on all Sanymetal Toilet Compartments. Ask your Sanymetal Representative about all these features available as standard from Sanymetal at no extra cost.

See Sweet's or send for Catalog 92, describing all Sanymetal Compartments. If you wish, we will mail other advertisements of this series on quality construction details.

This long-life feature is **STANDARD** *at no extra cost on all types of Sanymetal Compartments.*

THE
Sanymetal®
PRODUCTS COMPANY, INC.
1687 URBANA ROAD, CLEVELAND 12, OHIO

MITCHELL lights this modern office

MITCHELL LIGHTS ANOTHER OFFICE

All-Steel Equipment Inc.
Aurora, Illinois

Architect: Johnson & Johnson, Chicago, Illinois

Electrical Contractor: Michels Electric, Aurora, Illinois

INSTALLATION: MITCHELL "UNI-FLOW" Fluorescent Troffer Lighting with metal louver shielding (30°/30° visual cutoff). An average of 50 footcandles is maintained.

The new MITCHELL UNI-FLOW fluorescent troffers offer the most complete, versatile, uniform stock line of fine quality recessed units ever made. Every detail of design and construction has been precisely planned to make each MITCHELL UNI-FLOW installation a perfect job, both functionally and architecturally. The All-Steel Equipment, Inc. installation is a typical example of the superior results attained by MITCHELL UNI-FLOW Troffer Lighting.

F. A. SAAF, Chief Engineer

As Chief Engineer of All-Steel Equipment Inc., famous makers of quality office files and furniture, Mr. Saaf has carefully selected the most efficient equipment for this ultra-modern plant.

"For our office lighting," Mr. Saaf states, "we had two objectives in mind: first, a high level of uniform, glare-free illumination, and second, a smooth-flowing, attractive installation. Both of these requirements were met fully by the MITCHELL 'UNI-FLOW' Troffer Lighting we selected."

for better office lighting,

SPECIFY MITCHELL

Write for complete details on MITCHELL office and other commercial lighting

MITCHELL MANUFACTURING COMPANY

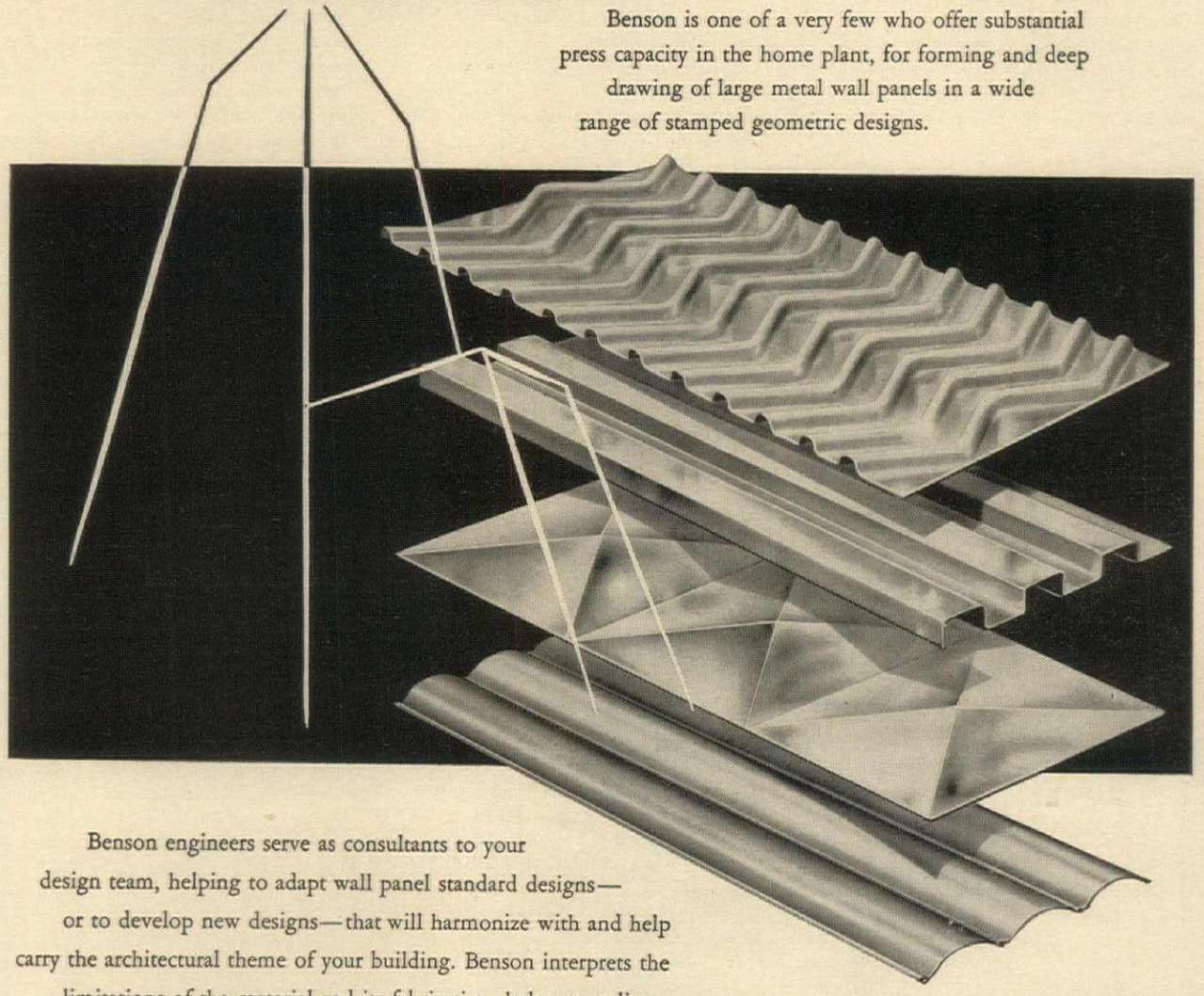
2525 Clybourn Ave., Chicago 14, Ill., Dept. 13-J

In Canada: Mitchell Mfg. Co., Ltd., 19 Waterman Ave., Toronto

BENSON Metal Wall Systems

are tailored to your designs

Benson is one of a very few who offer substantial press capacity in the home plant, for forming and deep drawing of large metal wall panels in a wide range of stamped geometric designs.



Benson engineers serve as consultants to your design team, helping to adapt wall panel standard designs—or to develop new designs—that will harmonize with and help carry the architectural theme of your building. Benson interprets the limitations of the material and its fabrication, helps to realize the full possibilities of this modern wall system.

The Benson metal wall system includes exterior and interior wall panels, extruded aluminum windows, doors, and entrances. Our experience in the fabrication of metals to minute tolerances goes back almost 50 years.

mailed promptly on request

New Benson AIA File No. 17A, design and specification suggestions for metal wall systems.

SINCE 1907

Architectural Division **BENSON MANUFACTURING CO.**

18TH & AGNES · KANSAS CITY, MISSOURI

LOS ANGELES · NEW YORK

BENSON

B

PRODUCTS

Continued from p. 207

enamel to the ¼" glass base makes it about twice as shock resistant as ¼" regular plate (but not so rugged as heat-tempered glass which is cooked longer and quick-cooled). *Spandrelite* now is supplied in sizes up to 4′ x 7′ and, on order, will be made in 6′ x 9′ panels. To narrow down the rainbow of colors possible to a few standard tones, Pittsburgh polled architects before selecting eight opaque shades, ranging from grayed yellow and coral to coffee black. Any special color, metallic, iridescent or pattern combination of shades —even a trademark or insignia—can be fired onto the plate glass base with the vitreous material. Cost of the new facing, roughly twice that of uncolored plate glass, is said to be competitive with porcelain enamel steel and aluminum.

In conjunction with the sparkling new cladding, the firm's Pittco division is extruding special framing for mounting *Spandrelite* panels as well as see-through glazing in continuous mullions for buildings of any height. The Pittco members are produced in aluminum, stainless and bronze in high shine and matte finishes. Even the largest lights of the heat-strengthened *Spandrelite* available, 6′ x 9′, can withstand wind velocities of 100 mph. The sheets must be properly framed, however, as pure curtains so that no structural loads are transmitted to the glass, especially over small areas via bolts or screw heads. Expansion joints must be provided on both horizontal and vertical members at least every 21′. Cost of a complete *Spandrelite* curtain wall, including Pittco framing, colored glass panels and clear plate glazing, is about $8 to $10 per sq. ft., in place.

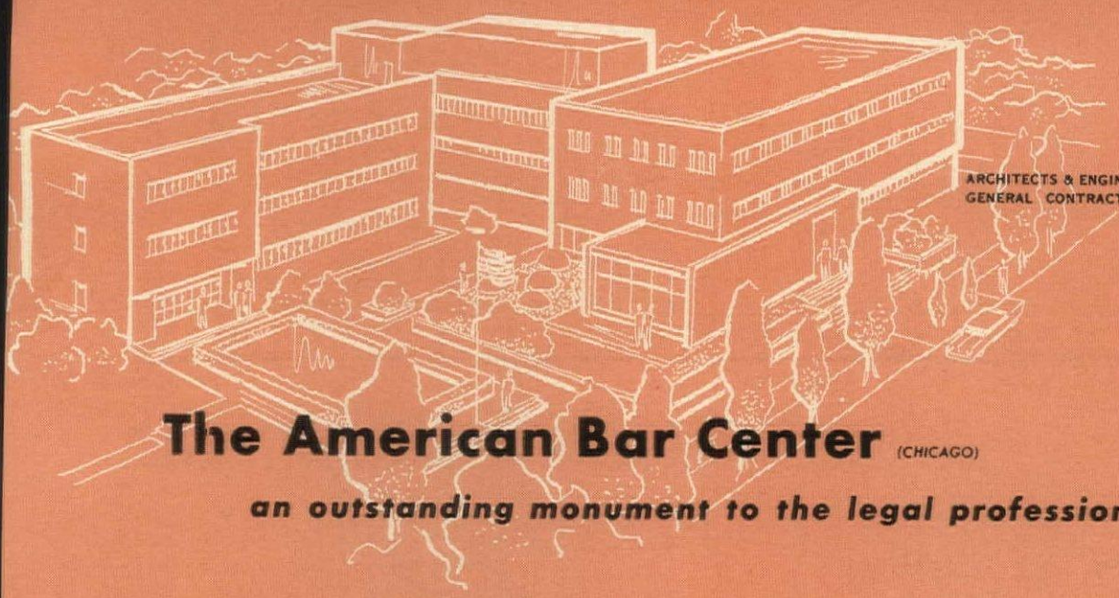
Manufacturer: Pittsburgh Plate Glass Co., Gateway Center, Pittsburgh 22, Pa.

T&G PLYWOOD SHEETS take studs and joists in stride

Making a moot point of exact location of wall studs, floor or roof joists, Vancouver's tongued and grooved plywood sheathing halves application time and cuts material loss considerably. The big wood units, available in standard widths of 2′ and 4′ and lengths up to 16′, can be nailed up with complete disregard for relation between panel joints and framing members, yet are reported to create a wall stronger than a single solid sheet. Odd pieces cut off at ends of walls or floors can be reused elsewhere. The plywood panels have ½"-deep grooves on one side and end, and ½"-wide three-ply tongues on the other end and/or side, depending on type of use. Panel lands (i.e., edges on each side of the groove) are two-ply; both tongue and lands are rounded to ease assembly.

To determine strength and stiffness of the edge-and-end-jointed five-ply sheathing, extensive concentrated load tests were made on panel edges and corner joints as well as centers on a group of six sheets laid across a 6′ x 12′ platform with 2" x 6" joists spaced 16" or 48" apart so that all three courses of panels had end joints at mid span. Results of the tests gave evidence that the ¾" sheathing is strong enough for roofing on 4′ spans, provided each panel is nailed to at least two supports. Minimum strength value exceeds 1,000 lb. and there is not enough deflection and joint slip to cause damage to finish roof. The ⅝" T&G plywood proved adequate for subflooring on 16" spans—even under a nonstructural finish flooring such as resilient tile. The sheathing's minimum strength at the corner joint, 785 lb., is far greater that any load that might be applied in ordinary construction. (An 82-gal. water heater, for instance, develops three

continued on p. 218



ARCHITECTS & ENGINEERS: HOLABIRD & ROOT & BURGEE
GENERAL CONTRACTOR: TURNER CONSTRUCTION CO.

The American Bar Center (CHICAGO)

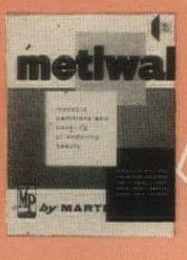
an outstanding monument to the legal profession

uses metlwal for...

office mobility...
permanent economy

The new American Bar Center, already winner of two professional awards, uses functional Martin-Parry Metlwal partitions throughout. They provide a distinguished interior finish of wood-grained, baked enamel for a life-time of enduring beauty. Metlwals are fast to erect . . . easily moved overnight for a new office arrangement. Investigate this modern Metlwal way to divide space and save money . . . in either new construction or modernization.

for executive and general offices
• commercial and public buildings
• hotels • hospitals • theaters
• schools • stores • laboratories
• factories • banks • all interiors

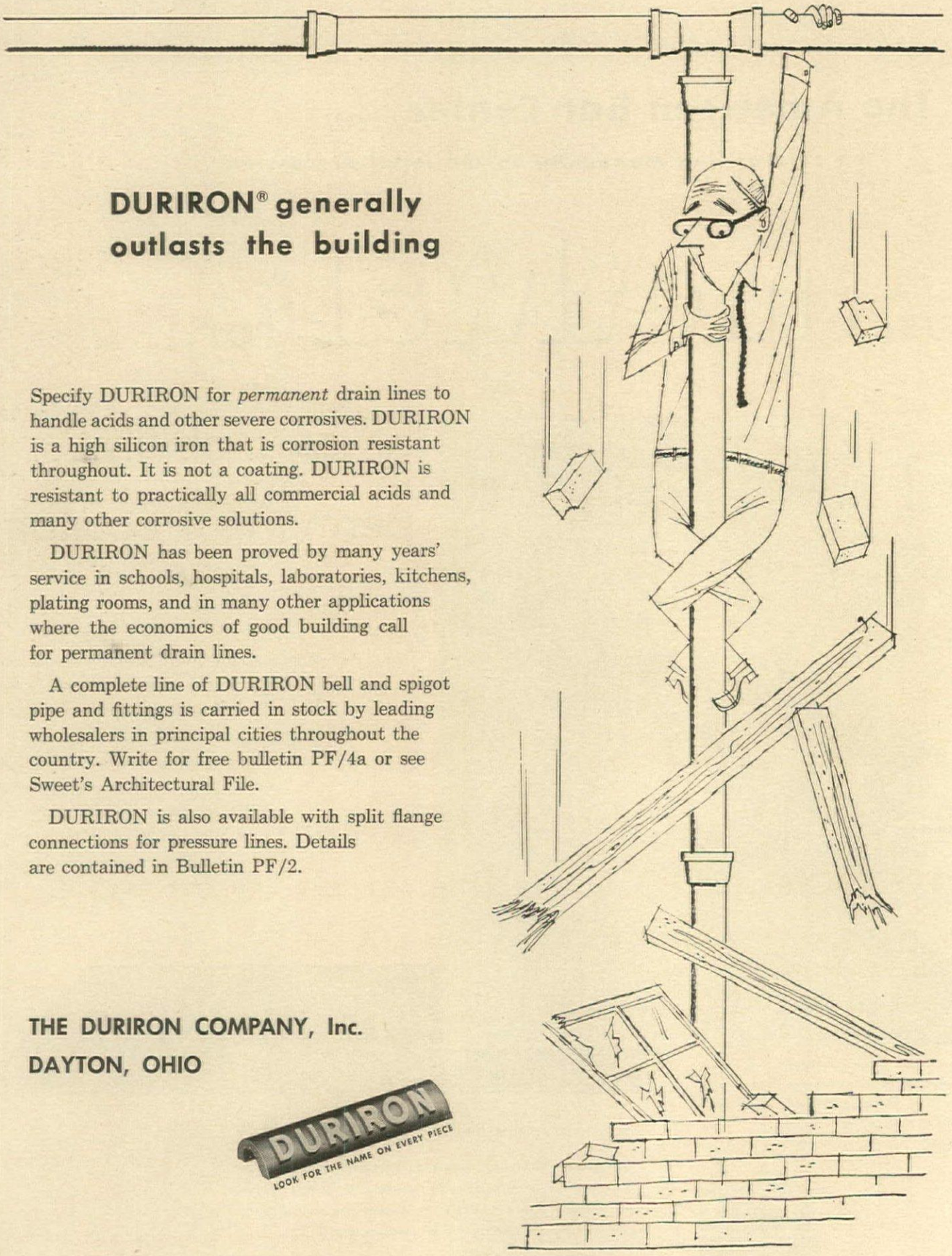


Metlwal means *EXTRA QUIET and PRIVACY*

The exclusive double-wall, double-insulated construction of Metlwal partitions insures maximum noise reduction. For complete sound transmission loss data—made by an independent research organization—write for your copy of the research report.

MARTIN-PARRY CORPORATION
SINCE 1880
BOX 964, TOLEDO 1, OHIO
IN CANADA: MARTIN-PARRY (CANADA) LTD., 82 DUNDAS ST., LONDON, ONTARIO

Duriron Acid Resisting Drain Pipe



DURIRON® generally outlasts the building

Specify DURIRON for *permanent* drain lines to handle acids and other severe corrosives. DURIRON is a high silicon iron that is corrosion resistant throughout. It is not a coating. DURIRON is resistant to practically all commercial acids and many other corrosive solutions.

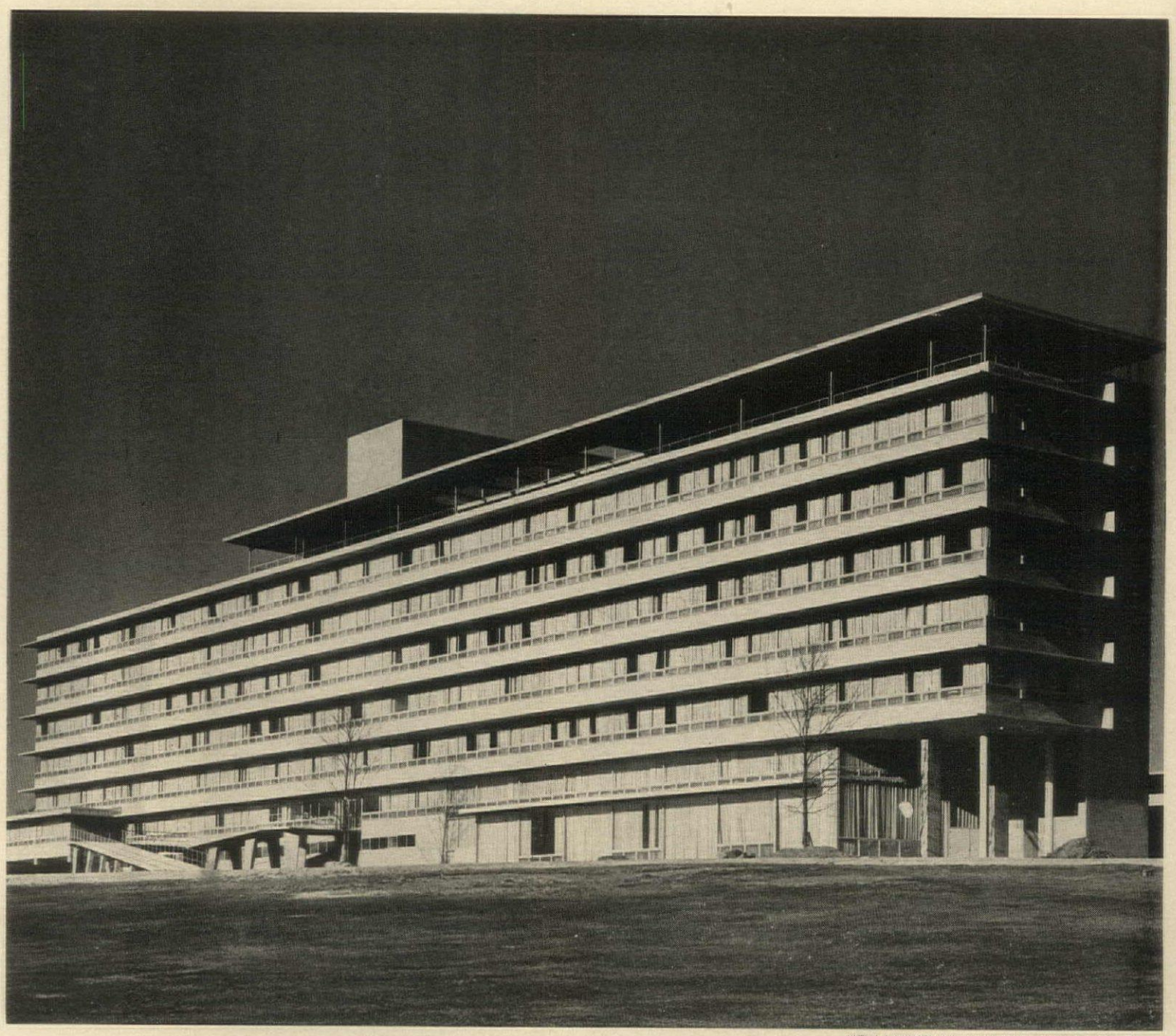
DURIRON has been proved by many years' service in schools, hospitals, laboratories, kitchens, plating rooms, and in many other applications where the economics of good building call for permanent drain lines.

A complete line of DURIRON bell and spigot pipe and fittings is carried in stock by leading wholesalers in principal cities throughout the country. Write for free bulletin PF/4a or see Sweet's Architectural File.

DURIRON is also available with split flange connections for pressure lines. Details are contained in Bulletin PF/2.

THE DURIRON COMPANY, Inc.
DAYTON, OHIO

DURIRON
LOOK FOR THE NAME ON EVERY PIECE



NEW LANKENAU HOSPITAL, Philadelphia, Pa.

$10,000,000 Lifeline on the Main Line

The people of greater Philadelphia take their health seriously. In the past ten years they have spent more than fifty million dollars in developing hospital facilities to cope with rising population trends. One of their most impressive achievements in this field has been the $10,000,000 new Lankenau Hospital pictured above. In terms of conception, design and construction, it is without doubt one of the greatest institutions of its kind in America.

We are proud to say that the people who planned the building of this superb hospital chose to protect it with a Barrett Roof. This wise decision follows a precedent established by generations of leading architects who have consistently preferred Barrett Roofs for the protection of America's most important public, commercial and industrial buildings.

BARRETT DIVISION, Allied Chemical & Dye Corporation, 40 Rector St., N. Y. 6, N. Y.; 205 W. Wacker Drive, Chicago 6, Ill.; 36th St. & Grays Ferry Ave., Philadelphia 46, Pa.; 1327 Erie St., Birmingham 8, Ala.; Melrose Building, Houston 2, Texas.

Allied Chemical

BETTER SCHOOLS BUILD BETTER COMMUNITIES

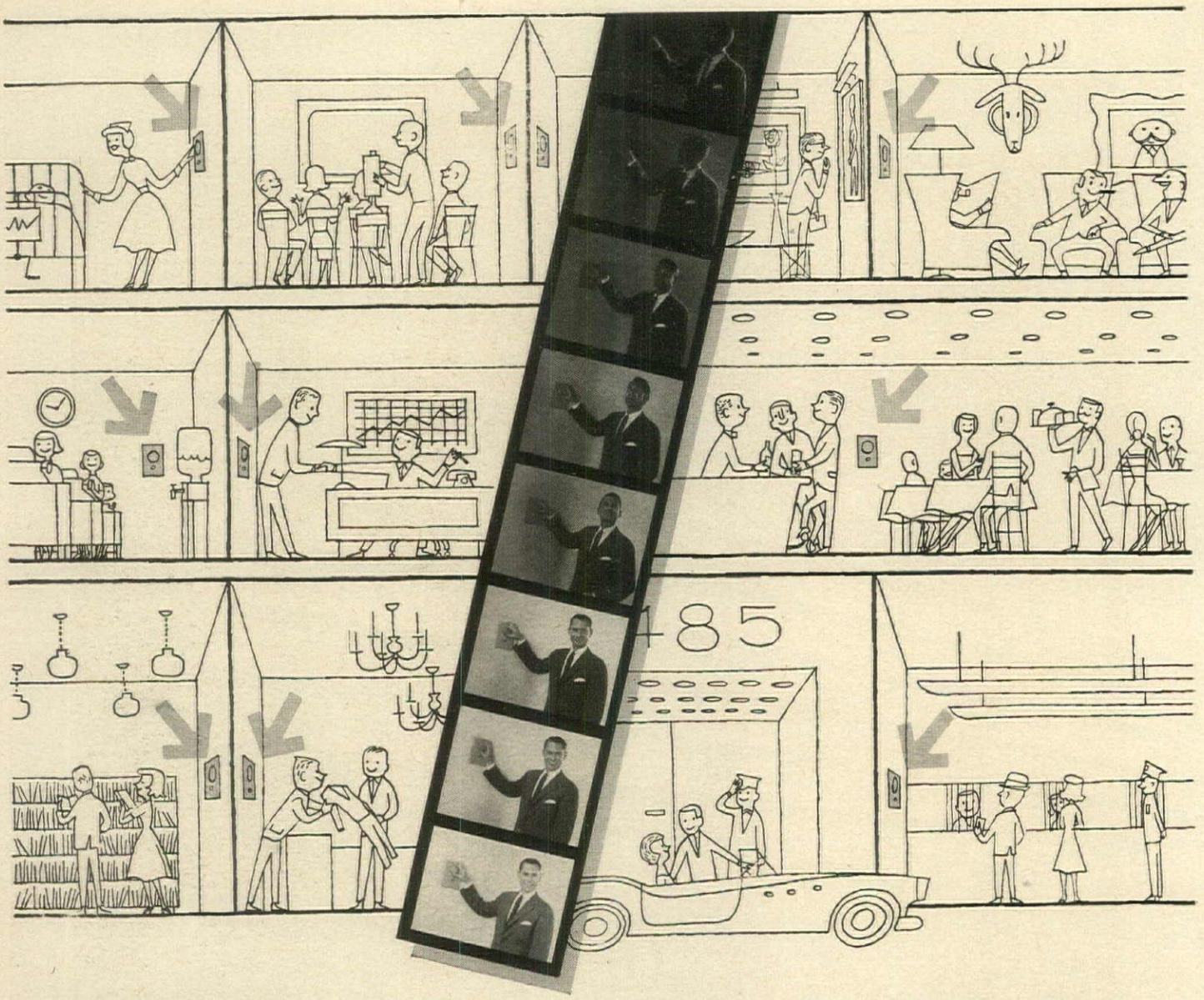
ARCHITECT: Vincent G. Kling
ROOFER: Warren-Ehret Co.
GENERAL CONTRACTOR:
Wark & Co. All of Philadelphia

Barrett Specification Roofs ®

THE MOST IMPORTANT ROOFS ARE

BARRETT ROOFS

OVER 100 YEARS OF EXPERIENCE



HERE AT LAST... for those long-neglected applications...

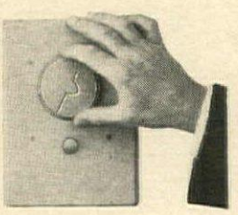
CONTROLLED LIGHT AT THE TURN OF A DIAL!

Here at last — for hotels, churches, schools, restaurants, offices, stores, homes — is a light control that makes sense. Gone are "on-off" switches. Gone is old-fashioned "all-or-nothing" lighting. New LUXTROL gives you, at the turn of a dial, **any level of light from dark to full-bright** — for a whole new dimension in modern lighting design. Supremely functional, yet with unlimited decorative possibilities, LUXTROL meets a long standing need in lighting layouts of virtually every type. LUXTROL is economically priced... requires no complex wiring... is approved by Underwriters' Laboratories. It controls not only incandescent lighting but fluorescent and cold cathode, too. LUXTROL is not a rheostat. It is a soundly engineered autotransformer-type control. **Arrange a LUXTROL demonstration.** Simply mail in the coupon. We'll send you the name of the nearest distributor plus full design data.

new

LUXTROL

light control



THE **SUPERIOR ELECTRIC** COMPANY
7095 Demers Avenue, Bristol, Conn.

Please send me full design data on new LUXTROL Light Control.

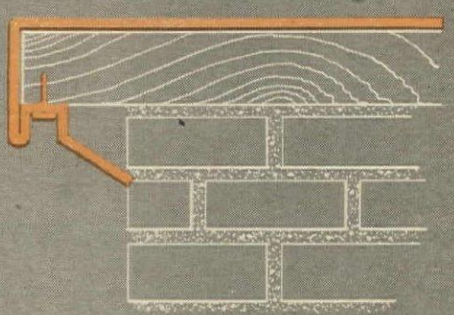
NAME_____

STREET_____

CITY_____ **ZONE**____ **STATE**_____

HOW WOULD YOU DO IT?

. . . this way?

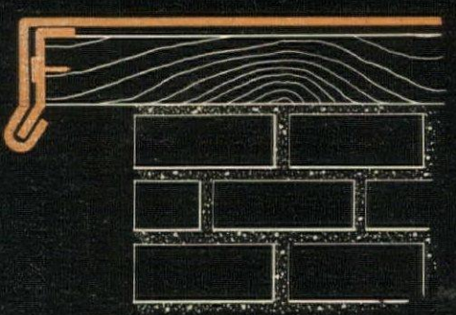


COPING COVER DETAIL
Fig 1

Fig. 1 detail illustrates a method of securing a metal coping cover to a wood plank on top of a masonry wall. The metal is fastened to the underside of the plank with copper nails spaced 12″ apart on both sides of the wall. The metal coping cover is made from 8′-0″ long sheets. The sheets are joined by locked and soldered seams except at every 32′-0″ a 2″ wide mastic-filled loose lock seam is installed.

In the Fig. 2 detail both side edges of the plank edge strips are secured by copper nails. The metal coping cover is hooked over the edge strips to form a ¾″ loose lock seam as shown. The metal coping cover is made from 8′-0″ long sheets and all sheets are joined by locked and soldered seams except at every 32′-0″ a 2″ wide mastic-filled loose lock *joint* is installed.

.. or this way?



COPING COVER DETAIL
Fig 2

When the metal is secured to the plank as shown in Fig. 1, movement is restricted which will cause the metal coping to wave and buckle. The nails will in time become loose so the nail heads will protrude ¼″ or more from the metal. The soldered cross seams may also crack because of the restriction of movement. When each sheet is firmly secured along both side edges the loose lock mastic-filled seam will not function as an expansion joint. Continuous edge strips should be attached to the side edges of the plank as shown in Fig. 2 to provide a track over which the covering can slide.

Accumulated expansion and contraction movement can then be transferred to the loose lock expansion joint.

We do not wish to presume to tell you how to design your structures or dictate their construction. For there are many satisfactory methods of installing gutters, leaders, roofs, flashing, coping covers, etc., which, of necessity, change with the design and type of construction and materials used. The purpose of this advertisement is to point out the methods of installation that have been proved by many years of use, and backed by more than a century and a half of experience in working with copper, to be the most satisfactory techniques. You will find these methods in Revere's 110 page brochure, "COPPER AND COMMON SENSE." Send for a copy today. And remember: Revere has a staff of specialists known as Technical Advisors, whose experience qualifies them to render valuable service and advice regarding the use of metals in the building field. Feel free to consult with them at all times regarding the use of Revere Copper; you incur no obligation. Revere Technical Advisors may be contacted through the Revere Office nearest you.

REVERE
COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.

• • •

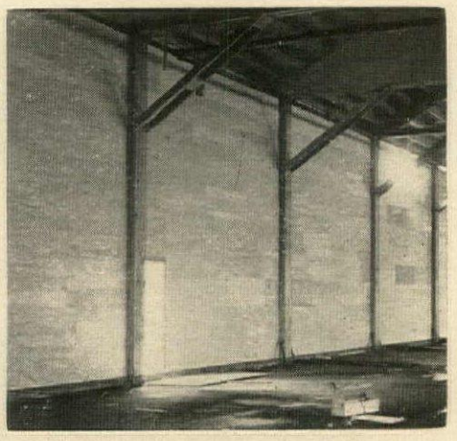
Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere

PRODUCTS

Continued from p. 212

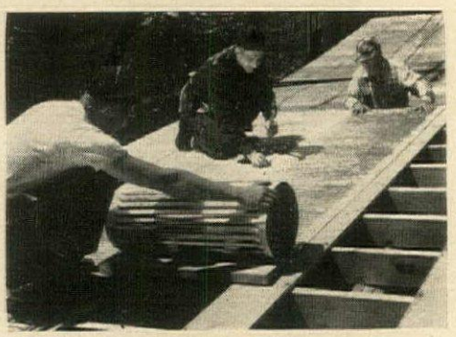
concentrated loads of about 420 lb. over an area of 2 sq. in.). For side-wall use, where little resistance to concentrated or flexural loads would be required, the ½" is adequately strong; and end-and-edge jointing of ½" panels would be permissible on roofing over 16" spans where concentrated loads would be distributed over a larger area—such as a 4" disc. Prices on the T&G ⅝" plywood range 17½¢ to 18¢ per sq. ft. in the Northwest; about 7¢ higher in the East.

Manufacturer: Vancouver Plywood Co., Vancouver, Wash.



ROLLS OF CORRUGATED STEEL save labor and material on roofing laps

Requiring one side lap every 31', *Ceco's* easy-to-handle rolls of cross-corrugated steel promise to save up to 25% on metal roofing as well as costly man hours consumed in jointing. The new 30"-wide galvanized zinc-coated material is unrolled



like composition roofing and fastened every 6" with lead head nails. Rigid enough to span roof boards 28½" o.c., it needs no solid deck sheathing beneath. Edges of the steel sheeting are crimped so that the larger corrugations do not have to be nested in application. Useful also as siding, the spooled steel has a strip of factory-applied adhesive along the edge laid at top of each course to waterproof joints. Price per 30" x 31' roll (coverage: 75 sq. ft.) runs from $10 to $13.50 or 13¢ to 18¢ per sq. ft., depending on location.

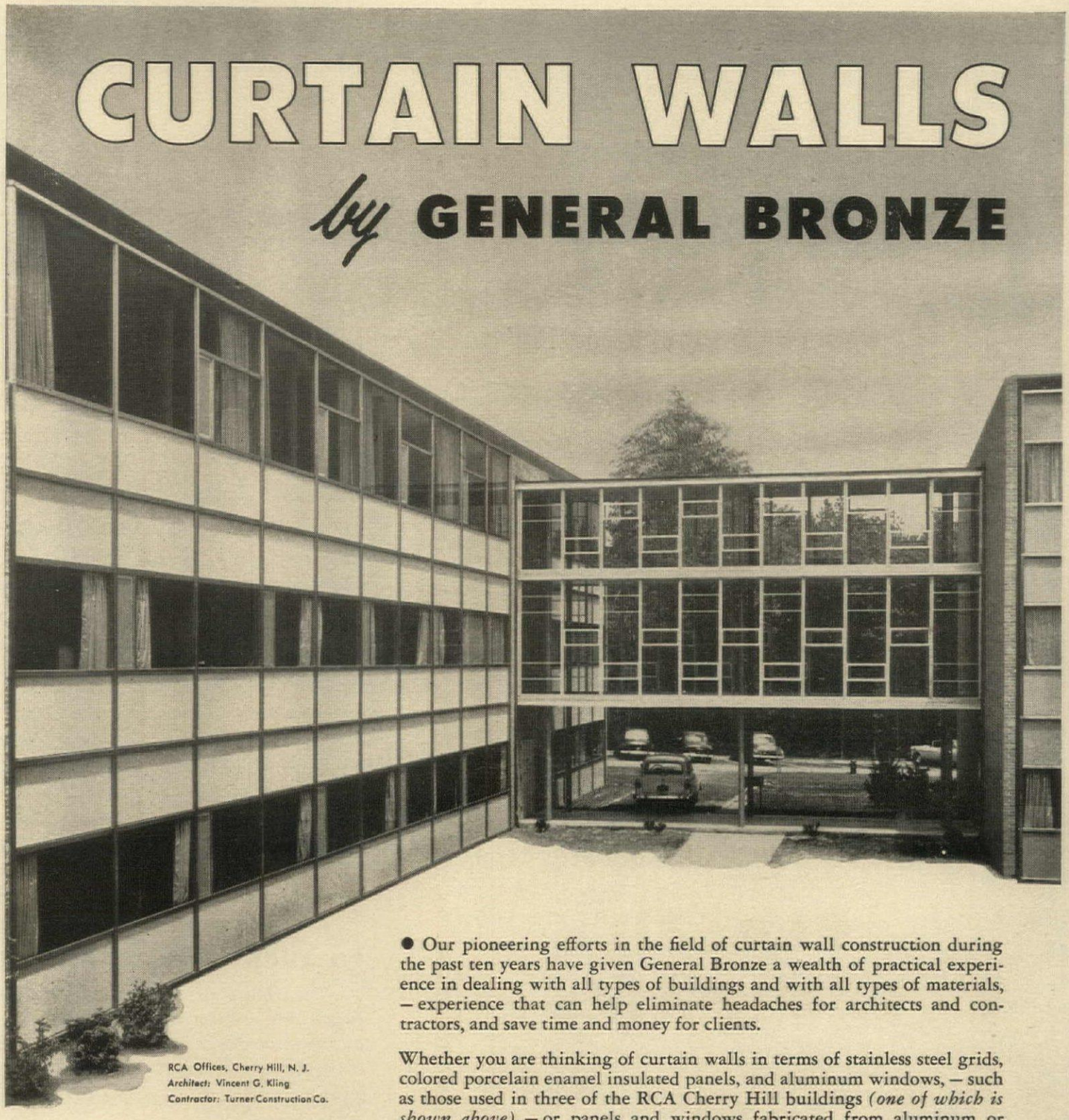
Manufacturer: Ceco Steel Products Corp., 5601 W. 26th St., Chicago 50, Ill.

ACRYLIC PAINT is fast drying, flexible coat for masonry

Two coats of flat finish *Durasite Acrylic* can be applied to concrete, stucco, asbestos cement or aggregate block on the same day without shifting scaffolding or ladders. Quick drying is but one of the qualities boasted by this new emulsion of a plastic resin, already renowned in formed-sheet skylights and siding for its weather re-

continued on p. 222

CURTAIN WALLS *by* GENERAL BRONZE



RCA Offices, Cherry Hill, N. J.
Architect: Vincent G. Kling
Contractor: Turner Construction Co.

● Our pioneering efforts in the field of curtain wall construction during the past ten years have given General Bronze a wealth of practical experience in dealing with all types of buildings and with all types of materials, – experience that can help eliminate headaches for architects and contractors, and save time and money for clients.

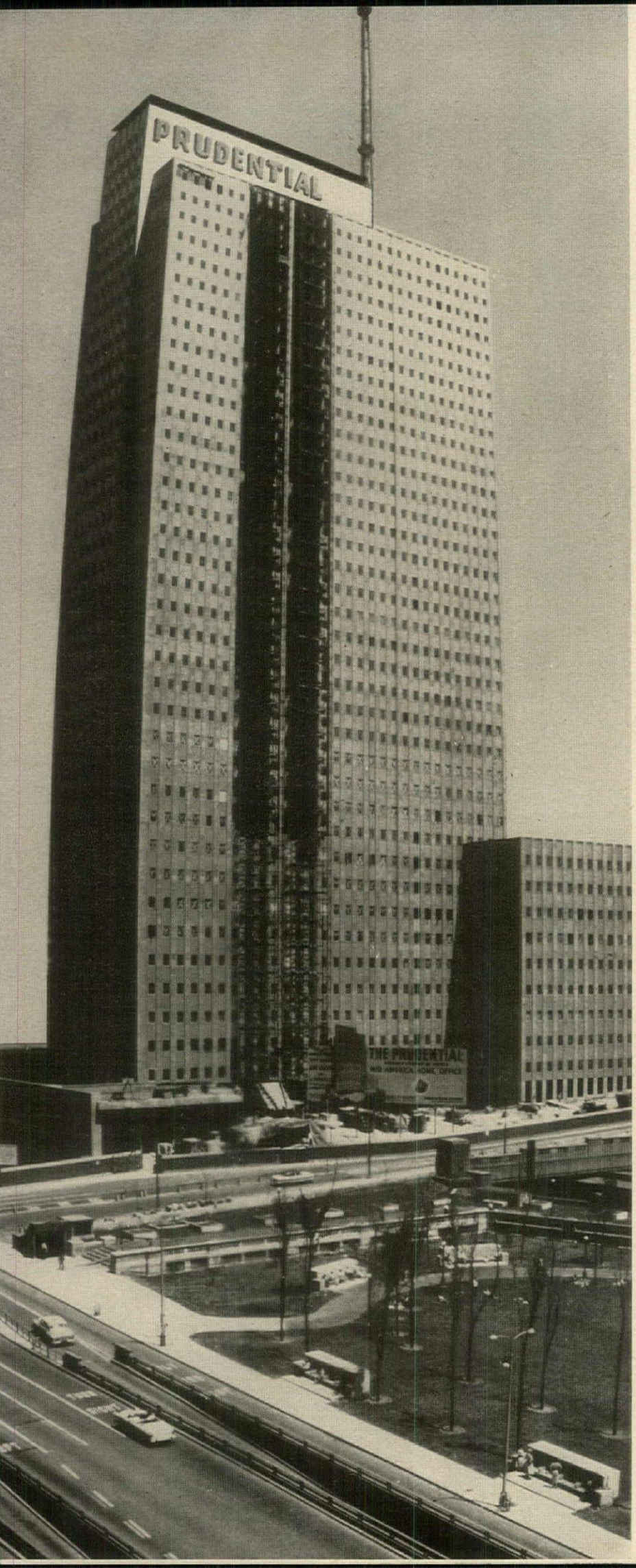
Whether you are thinking of curtain walls in terms of stainless steel grids, colored porcelain enamel insulated panels, and aluminum windows, – such as those used in three of the RCA Cherry Hill buildings *(one of which is shown above),* – or panels and windows fabricated from aluminum or bronze, we offer you the benefit of our many years' experience in designing, engineering, fabricating and erection of curtain walls and windows.

As you plan new buildings, why not call in the General Bronze representative for consultation. He is anxious to be of service to you when your problems pertain to windows, spandrels, curtain walls and architectural metal work. Our catalogs are filed in Sweet's.

QUALITY APPROVED (TYPE)
A.W.M.A. Quality Specifications—Materials, Construction, Strength of sections and Air infiltration requirements—confirmed by Pittsburgh Testing Laboratory
MEMBER—ALUMINUM WINDOW MANUFACTURERS ASSOCIATION

GENERAL BRONZE CORPORATION • GARDEN CITY, N. Y.

PERMATITE DIVISION—Custom-built Windows, Architectural Metal Work and Revolving Doors. **ALWINTITE DIVISION**—Stock-size Aluminum Windows
BRACH MFG. CO. DIVISION—Multel, T. V., Radio and Electronic Equipment. **STEEL WELDMENTS, INC. DIVISION**—Custom fabrication in steel and iron.



Special panoramic photograph of the Prudential Building, Chicago, made during late stages of construction. Courtesy Chicago Tribune.

Classic

To sound the praises of everyone concerned with bringing this modern structure into being would merely be a repetition of the obvious . . . The same is true of Day-Brite—the classic line of light.

It is enough to say that Day-Brite troffers are already installed—in lobbies, corridors, general and private offices, escalator and stair wells. Occupants are in, enjoying a high degree of visual comfort.

Architects-Engineers: *Naess and Murphy, Chicago.*

General Contractors: *George A. Fuller Co., New York.*

Electrical Contractors:
Fischbach, Moore and Morrissey, Inc.
J. Livingston and Co.
Emerson-Comstock Co., Inc.
Co-venturers, Chicago.

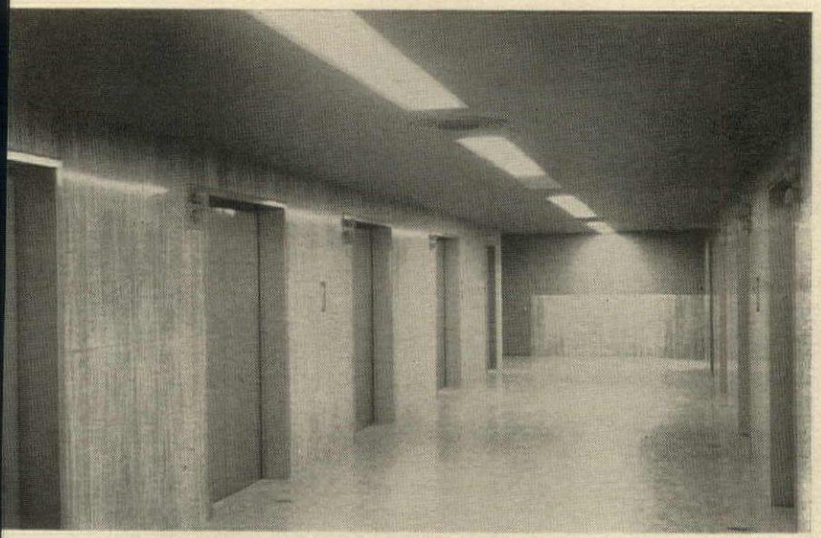
TO ARCHITECTS, ENGINEERS

. . . The Day-Brite "classic line of light" is complete and lends itself to any type of architectural design, treatment and type of construction.

Before you specify, SEE, EXAMINE and COMPARE Day-Brite with any other fixture. Look at the fixtures, not just the pictures. Your Day-Brite representative is always at your service—his specialized lighting experience will prove valuable.

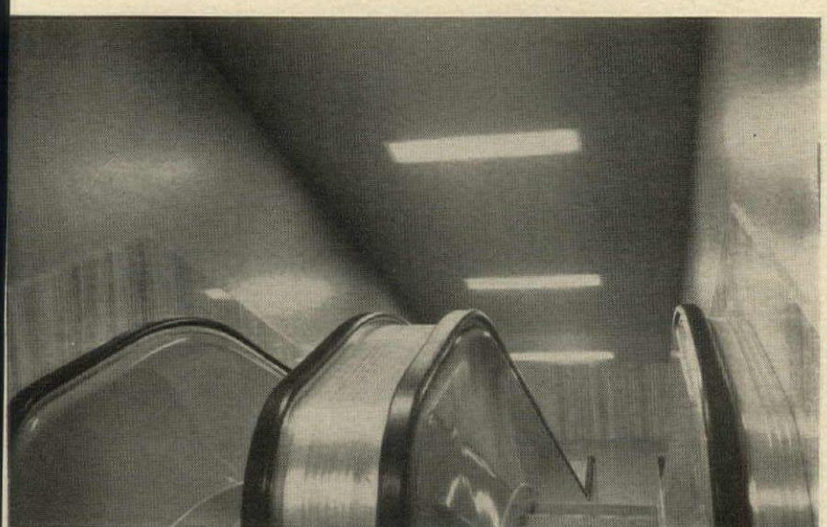
NATION'S LARGEST

Example of Day-Brite Lighting



GOING UP, GOING DOWN—the corridor path of elevator passengers is safely and decoratively illuminated by Day-Brite troffers mounted in plaster ceilings.

MILES OF FILES contain names and records of thousands of policy-holders. Day-Brite troffers in ceilings supply abundant comfortable light; making seeing tasks easier.



A CLEAR PATH OF SAFETY for escalator and stair passengers is provided by these Day-Brite troffers, mounted at right angles to the line of passenger travel.

HIGH ILLUMINATION LEVELS on desk tops and adjacent work areas are uniformly distributed throughout these huge general offices.

Call your Day-Brite lighting representative

"DECIDEDLY BETTER"
DAY-BRITE®
Lighting Fixtures

Day-Brite Lighting, Inc.
5471 Bulwer Ave.,
St. Louis 7, Missouri.

In Canada: Amalgamated Electric Corp., Ltd.
Toronto 6, Ontario.

5508

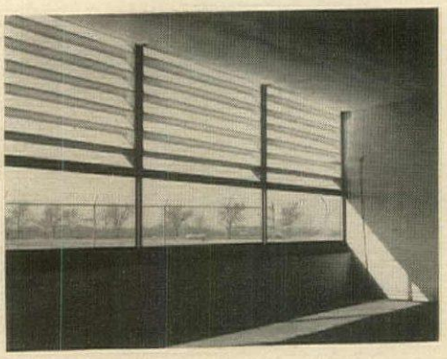
MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT

PRODUCTS

Continued from p. 218

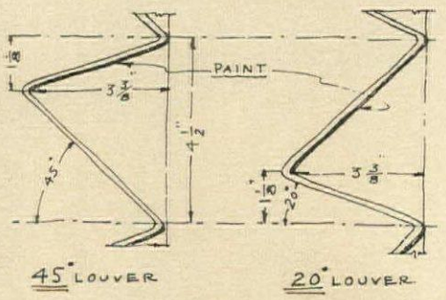
sistance and durability. Produced in a wide range of pastel and deep tones, *Durasite Acrylic* is said to have excellent color retention, flow and leveling characteristics. Its flexibility makes it resistant to cracking as the masonry it covers expands or contracts. Price: $7.11 a gallon.

Manufacturer: Wesco Waterpaint Co., Div. of National Gypsum Co., 742 Grayson St., Berkeley 10, Calif.

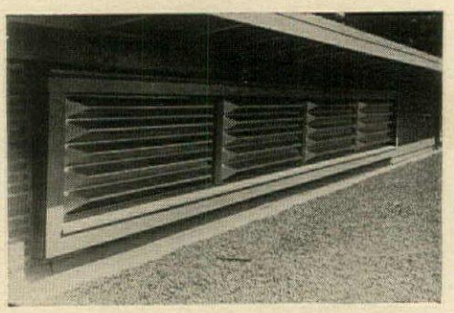


PLASTIC WINDOW pleated and painted to control sun's ray

Quietly and confidently, Rohm and Haas's Research Architect Edward Linforth churns out significant building products of *Plexiglas.* The first luminous ceiling of the translucent acrylic was, in fact, set up by Linforth over his own desk in the Bristol plant 12 years ago. Latest product of his experimental department is the *Daylight Louver Panel,* a schoolroom glazing unit that is light-selective. Vacuum formed with deep angles 45° or 20° for different



elevations (and with flat flanges all around for easy installation) the plastic window works somewhat like a permanent Venetian blind or giant piece of light-directing glass block. The underside of each fin is painted with reflective acrylic lacquer to throw back unwanted glare before it can get into the classroom, thereby substantially reducing solar heat gain and air-conditioning load. Normally used with the fins horizontal, the plastic panels may be installed with the fins vertical to screen off an objectionable view. In clerestory installations for classrooms, the panels' effectiveness is increased by placing white gravel on the adjoining roof top. *Daylight Louver Panels* are being molded at present in translucent and clear *Plexiglas* by Luria Cournand, Inc. of Havre de Grace, Md., in 39¼" x 37½" sizes so they will fit into Truscon's standard classroom window frame. Price per pair of *Louver Panels* is under $52. The fabricator is also making a 33⅛" high x 37½" unit priced at $23. Another molder, By-Products Corp. of Bladensburg, Md., is also preparing to produce the panels.



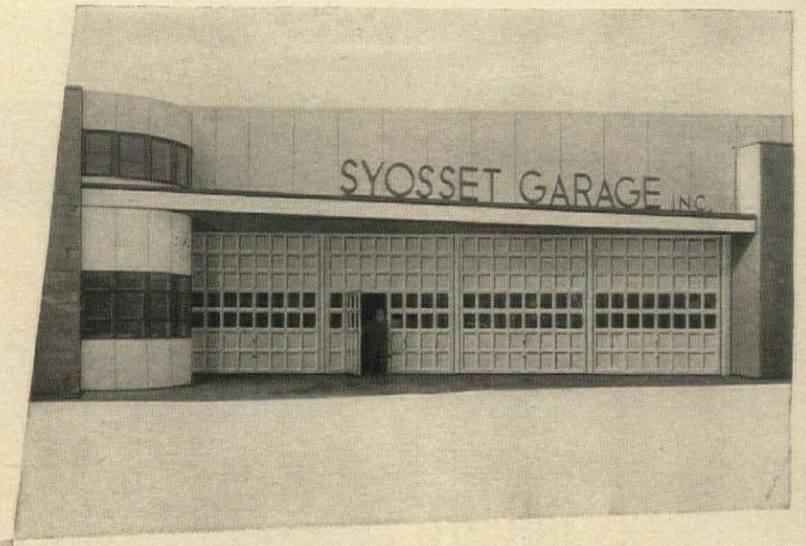
Manufacturer: (of *Plexiglas* acrylic resin) Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.

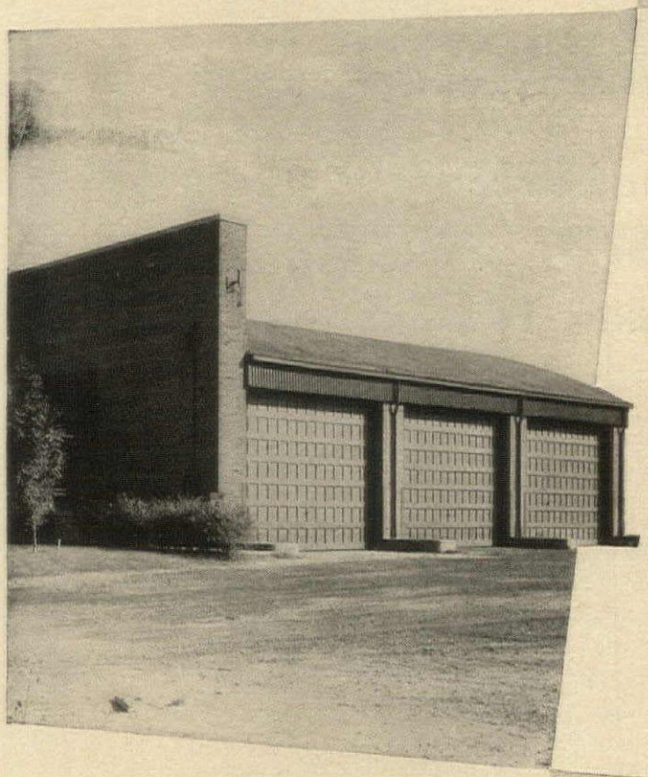
continued on p. 230

Performance

THAT BACKS YOU UP

...NEVER LETS YOU DOWN





When all's said and done, it's *performance* that counts in overhead type doors for commercial and industrial applications. And that's exactly what you can count on with Ro-Way Overhead Type Doors

The smooth, easy, dependable performance that results from properly engineered design, exclusive features, top quality materials, rugged construction, and fine workmanship throughout.

For instance—Taper-Tite track and Seal-A-Matic hinges that snug the door against side and head jambs for weather-tight closure; specially designed, friction-reducing track and ball bearing Double-Thick tread steel rollers to assure smooth, quiet, easy-up, easy-down operation; Power-Metered springs individually balanced to the weight of each door for freer, easier door travel.

Selected west coast lumber and heavy gauge hardware.

And rugged construction to take the daily ups and downs in stride. Mortise and tenon joints both glued and steel doweled; muntins, rails and stiles precision squared for precision fit; sections rabbeted for weather-tight joints; millwork both drum and hand sanded for finest finish; hardware both Parkerized and painted for maximum rust prevention.

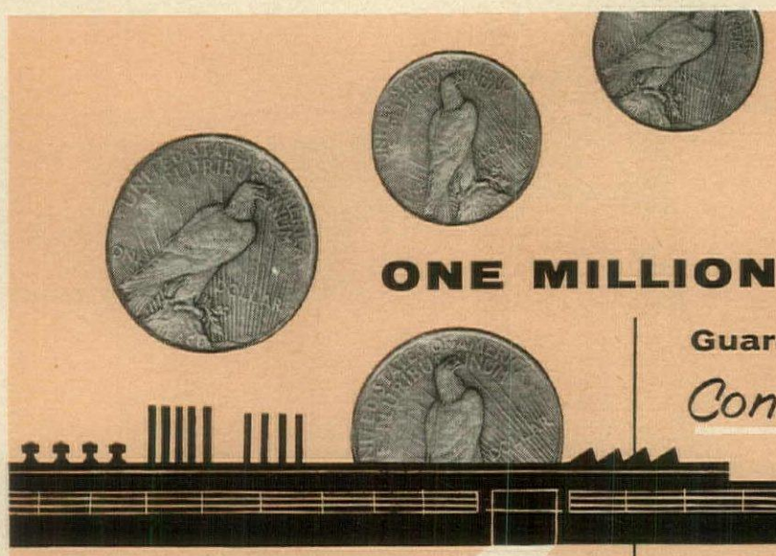
It all adds up to performance that backs *you* up, never lets you down. Specify Ro-Way — and get what you want and need.

ROWE MANUFACTURING CO. · 950 Holton St., Galesburg, Ill.

there's a Rō-Way for every Doorway

Nationwide sales and installation service. See your classified telephone directory for nearest Ro-Way distributor

SEE OUR CATALOG IN SWEET'S

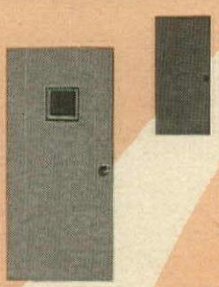


ONE MILLION DOLLARS

Guarantees

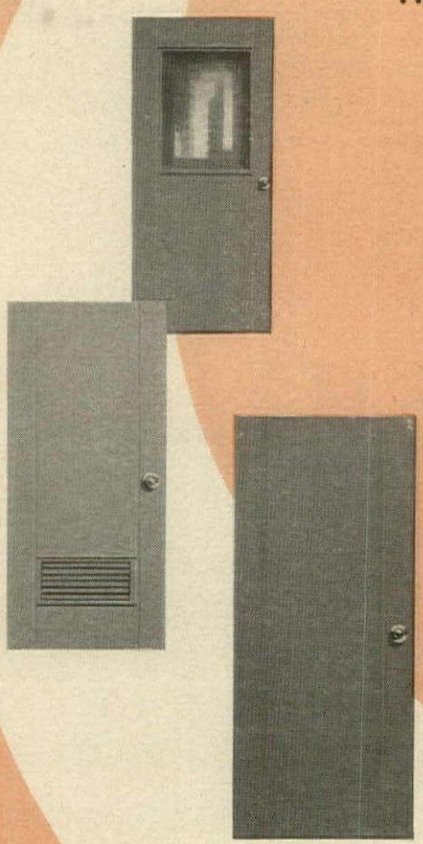
Constant Precision...

in **USF STEEL DOORS and FRAMES**



MODULAR

...fit each other...fit all building materials

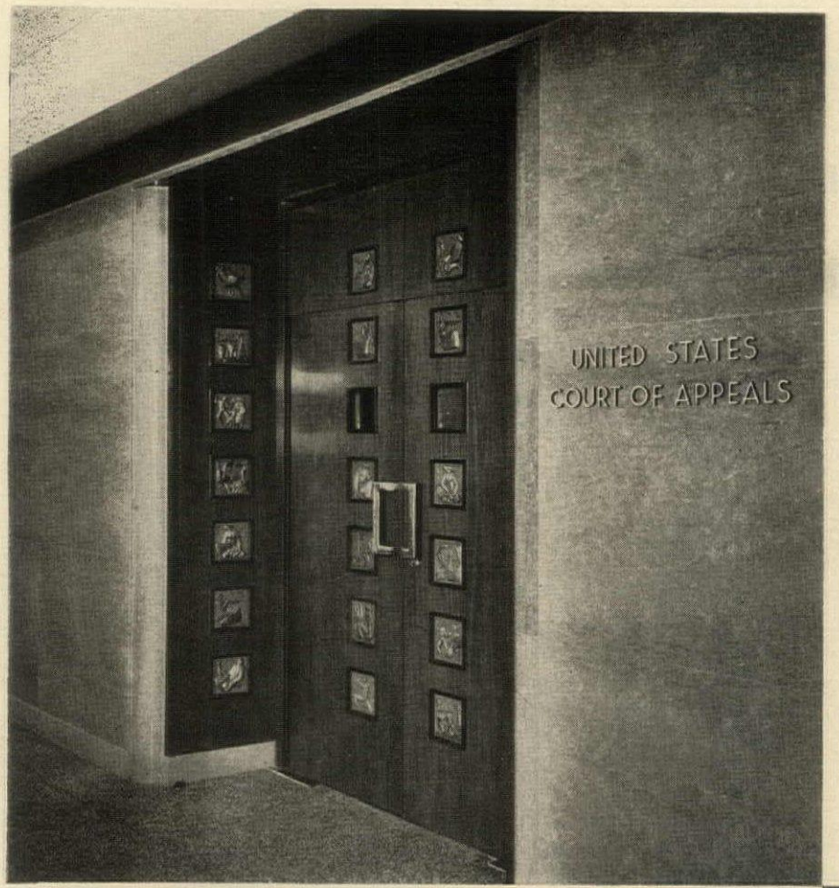


Protect yourself against varying "fit" and quality by specifying USF Modular metal doors and frames that fit each other and fit all modular building materials.

USF Doors and Frames are *engineered* to an exact standard and produced on a million dollars worth of precision equipment that guarantees constant accuracy and quality.

UNITED STEEL FABRICATORS,
INCORPORATED
Wooster, Ohio

Representatives: **Cleveland, New York, Washington, D.C., Amarillo, Tex., Minneapolis, Seattle, Shreveport, La., Butte, Mont., Buffalo, St. Louis, Toledo, Wilmington, Del., St. Petersburg, Fla., Tucson, Denver, Manchester, N.H., Mobile, Madison, Wis., Chicago.**



United States Court House,
Washington, D.C.
Justement, Elam & Darby, Architects

marble

can be used generously even if your budget is restricted...

Writes Architect Louis Justement: "There are few materials as satisfactory to the architect as marble.

"In the new United States Court House in Washington the total cost of the marble work was less than **3.5%** of the cost of the building – in spite of the fact that marble walls were used in all main corridors, all elevator lobbies, portions of wall in back of bench of all courtrooms as well as many individual purposes throughout the building."

For more complete data on the basic economy of marble write:

MARBLE INSTITUTE OF AMERICA, INC.

108 FORSTER AVENUE, MOUNT VERNON, NEW YORK

Ultra-modern Sears retail store shows how you can provide

Indoor weather to satisfy your most progressive client

Specify Honeywell Customized Temperature Control—most important comfort feature any building can have

Comfortable shopping atmosphere for customers, efficient working conditions for employees—these are of vital concern in the retail stores of Sears, Roebuck and Company's world-wide merchandising organization.

Small wonder, then, that a Honeywell Customized Temperature Control installation was specified for the new, completely air conditioned Sears store in Oklahoma City. For this is the truly *modern* way to ensure ideal indoor weather, no matter how varied a building's functions may be.

"Customized" is the key word here. Because it means that a Honeywell Customized Temperature Control installation is designed to fit the needs of the building and its occupants—in heating and cooling, in ventilating and humidity control.

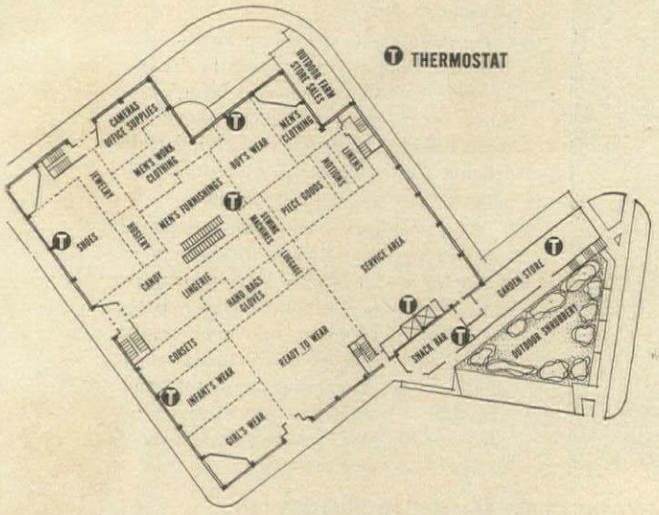
Only Honeywell can provide true "customized" control. Because only Honeywell manufactures all three types of controls—pneumatic, electric and electronic.

The comfort story of the new Sears store is told briefly by the floor plan and picture captions. The *techniques* used, applied to your specific problems of occupancy, use and exposure, can help you to provide your most progressive clients with the kind of ideal indoor weather they need.

Individual temperature control is an important benefit enjoyed by occupants of Sears' executive offices. Adjustments may be made quickly to meet exact personal requirements. The result is an environment of ideal comfort that encourages maximum efficiency—an advantage made possible *economically* by the Honeywell Customized Temperature Control installation.

Few walls are visible in Sears' main shopping areas. Large open spaces create one temperature control problem; customers, in numbers that vary from hour to hour and day to day, create another. Both are solved by the Honeywell Customized Temperature Control installation, with its accurate thermostats that respond quickly to occupancy variations.

Thirteen zones, each precisely controlled by Honeywell thermostats, are employed in heating and cooling Sears' Oklahoma City store. Plan detail below shows ground floor thermostat locations. Strategically placed, they compensate for changing factors of occupancy and exposure so that comfort levels are held constant. Called for here was a comfort control installation as advanced as the building itself: Honeywell Customized Temperature Control.



Architects-Engineers: Sorey, Hill & Sorey; J. E. Redden, Chief Architect, Sears, Roebuck & Co.; General Contractors: Manhattan Construction Co.; Mechanical Contractor: W. A. Landers Co.

For comfortable, more productive temperature in new or existing buildings —of any size—specify Honeywell Customized Temperature Control

Whether it's a store, factory, hospital, bank—any building of any size, new or existing—Honeywell Customized Temperature Control can help solve your clients' problems of heating, ventilating, air conditioning and industrial control. At the same time you can give them more comfort, more efficiency, more economy.

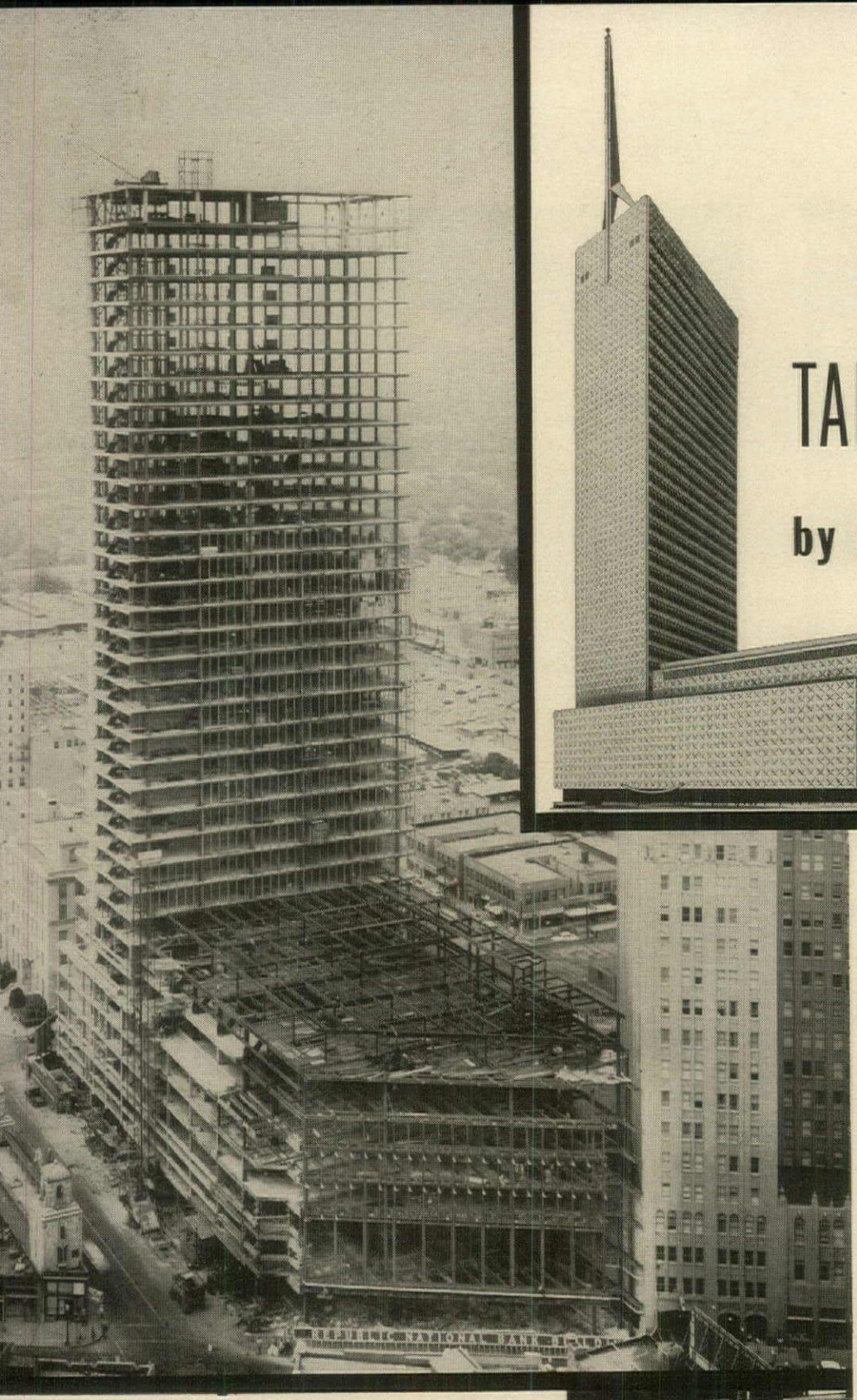
For full details on Honeywell Customized Temperature Control, and the economical Periodic Maintenance Plan, call your local Honeywell office. Or write Honeywell, Dept. MB-9-132, Minneapolis 8, Minnesota.

MINNEAPOLIS **Honeywell**

Customized Temperature Control

H HONEYWELL

112 offices across the nation



Southwest's TALLEST Building

by AMERICAN BRIDGE

Republic National Bank Building, Dallas, Texas

Architects: Harrison & Abramovitz; Gill & Harrell

Structural Engineers: Edwards & Hjorth

Structural Steel Fabrication and Erection: American Bridge

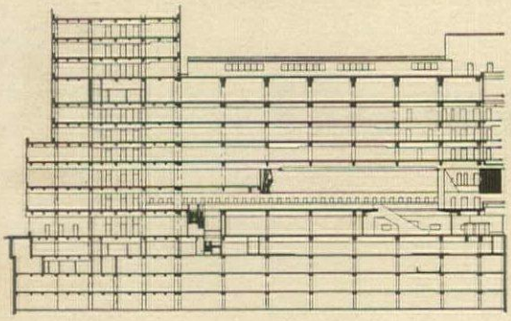
DEEP IN THE HEART OF TEXAS, looming high and handsome above an imposing skyline, the new 36-story home of the Republic National Bank of Dallas is the Southwest's tallest building.

Covering more than an acre of land in the center of the thriving metropolis, this $25,000,000 building stands as another everlasting example of the strength and versatility of steel construction. 14,000 tons of structural steel went into its gigantic riveted frame—all of which was fabricated and erected by AMERICAN BRIDGE.

One of the interesting applications of the steel frame construction is the use of huge trusses in the bank wing's top story from which the floors above the main banking room are suspended, thus freeing the expansive, two-story main banking room of interior columns.

Your architect or consulting engineer can be relied upon to specify the type of construction best suited to your project. And AMERICAN BRIDGE has the experience, the equipment and technically skilled personnel to handle all types of steel construction with economy and dispatch – any time, anywhere. Our nearest office welcomes an opportunity to figure on your next job.

Right: Trusses on top floor of banking wing from which floors below are hung to free main banking room of columns. **Below:** cross section of banking wing showing 4-level underground parking floors and 2-story main banking room above ground floor.



AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.

Contracting Offices in: AMBRIDGE · ATLANTA · BALTIMORE · BIRMINGHAM · BOSTON · CHICAGO · CINCINNATI · CLEVELAND DALLAS · DENVER · DETROIT · ELMIRA · GARY · MEMPHIS · MINNEAPOLIS · NEW YORK · PHILADELPHIA · PITTSBURGH PORTLAND, ORE. · ROANOKE · ST. LOUIS · SAN FRANCISCO · TRENTON · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

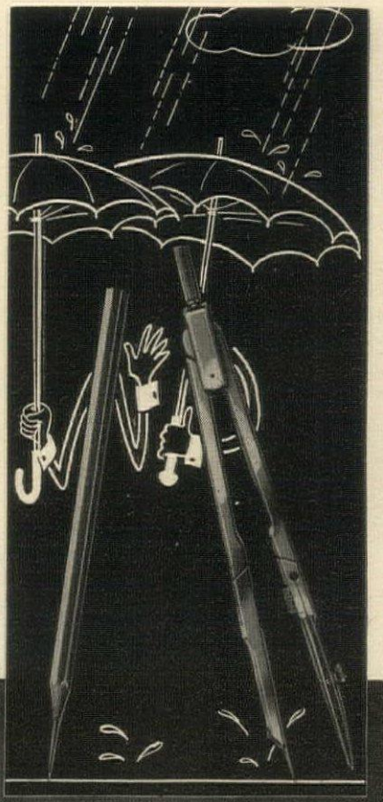
AMERICAN BRIDGE

USS

5-68

UNITED STATES STEEL

Do glass block panels LEAK?



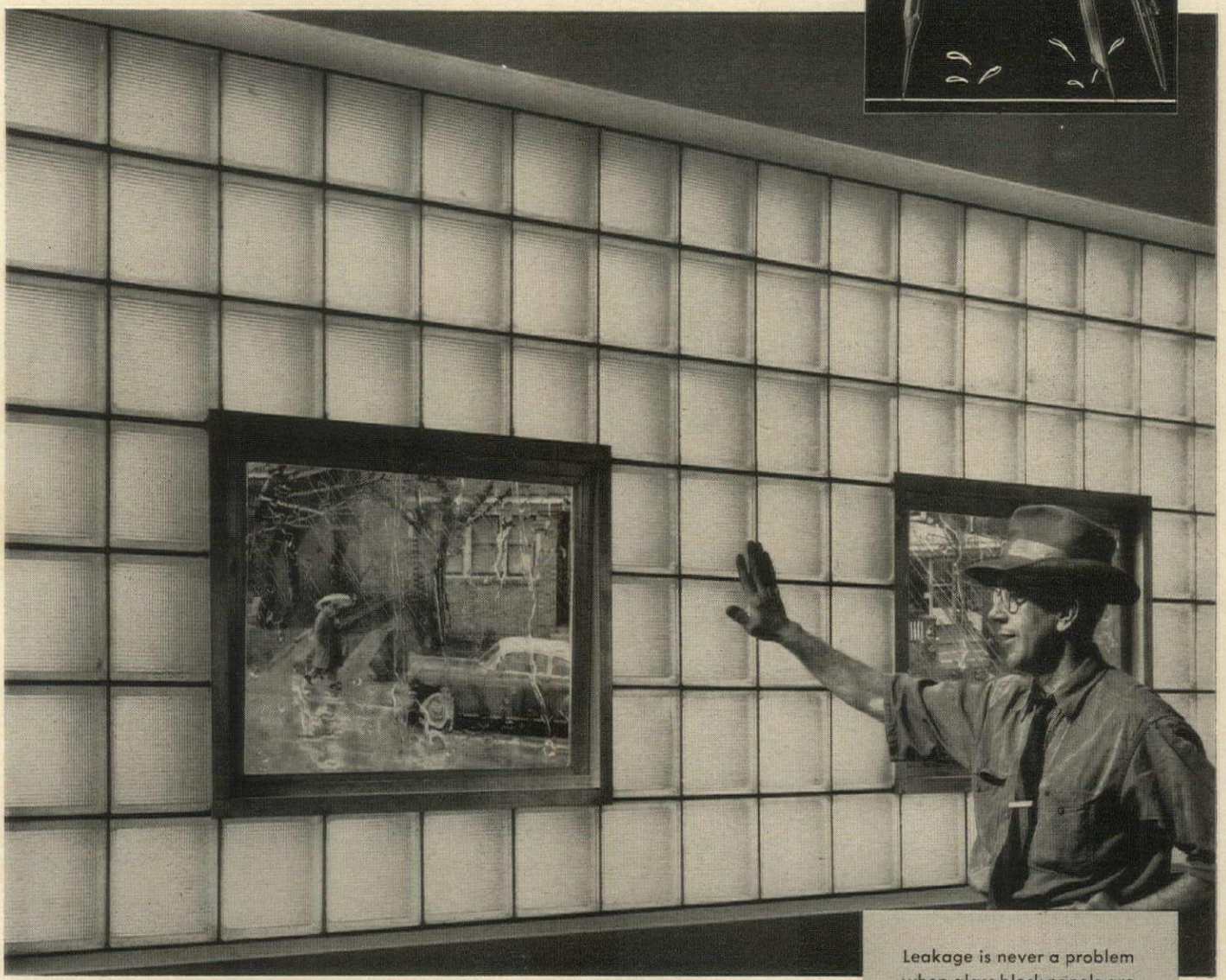
We've seen glass block panels that leaked. In a driving rainstorm, the water would trickle down the wall and puddle the floor.

But it wasn't the fault of the glass blocks.

For many years, Pittsburgh Corning Corporation has maintained an educational program for masons to prove the point that glass blocks are *not bricks*. When laying bricks, for example, it is customary to furrow the mortar joint. But a *solid* bed of mortar is desirable for glass blocks (or for *any thin* masonry wall). Furrowing creates small voids that admit water.

Almost every case of leakage we have ever checked has shown improper installation, poor masonry work. Many masons have been installing PC Glass Blocks for 15 years without a single case of leakage.

You can be sure of watertight panels if you always employ a first class mason contractor. To be extra sure, have him check with your PC representative as to proper installation methods.



Leakage is never a problem when glass block panels are properly installed. A first class mason contractor is your best assurance of a trouble-free, leak-proof installation.

PC Glass Blocks

PITTSBURGH PC CORNING ®

Pittsburgh Corning Corporation, Pittsburgh 22, Pa. • *In Canada: 57 Bloor St. W., Toronto, Ontario*

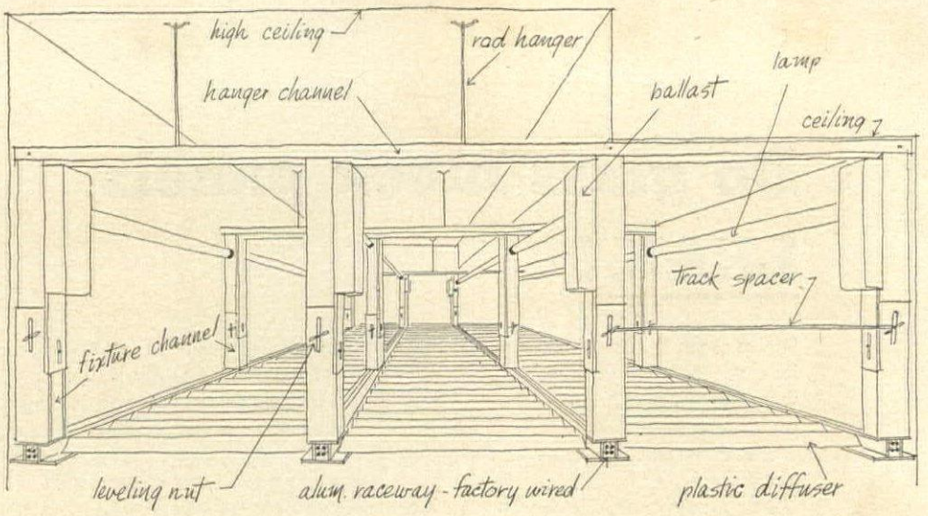
ALSO SKYTROL® AND FOAMGLAS®

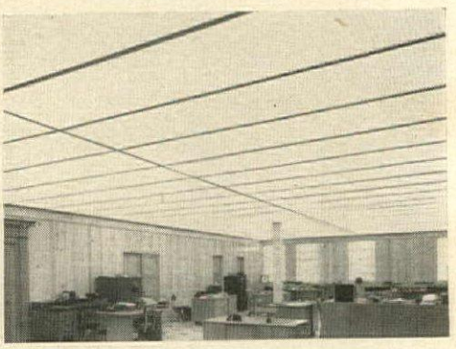
PRODUCTS

Continued from p. 224

LIGHT CEILING factory wired with framing members as raceways

Hung ceilings are sometimes the cause of jurisdictional labor disputes. But *Electra-Luminous* has been planned as strictly a one-trade system and as such should delight not only the electrical contractor—who is the only one qualified to handle it—but the building owner who benefits from the completely packaged, prewired system by saving 100% in installation labor time. Taken at face value, the new ceiling looks just like its *Luminous* forbearer with continuous strips of corrugated plastic mounted on 2"-wide aluminum supports. Instead of the usual *I* channels, however, the extrusions are formed with ducts to carry wiring, and hollows in vertical members also are used as raceways.





Self-aligning and self-spacing, *Electra Luminous* is assembled with one third the components of comparable systems, according to its manufacturer. The entire system, adaptable to small room or city-block-size office, is planned as an electrical package. The carrying members are fastened to or suspended from the true ceiling or slab. On the top half of each vertical raceway are sets of sockets for banks of one, two or three 8' lamps (depending on foot-candle requirements) which are mounted over each 8' track section. Ballasts are set on verticals level with the socket banks. Where ceiling space is limited, the system is furnished with the ballast placed horizontally for an overall depth of 12" to 14". The ceiling is leveled by telescoping the bottom half of each vertical raceway into the upper part, and precut spacer bars between the tracks are locked in place by the leveling wing nut to keep the ceiling rigid and perfectly aligned. The electrician who puts in *Electra Luminous* connects the necessary wires according to diagrams color-stenciled on the raceways. Price, about $1.50 to $2 per sq. ft. fully installed, is reported to be about 50¢ less than comparable ceiling lighting layouts.

Manufacturer: Luminous Ceilings, Inc., 2500 W. North Ave., Chicago 47, Ill.

continued on p. 236

Simplified Open Expanse *design*

—key to neater, more sanitary rest rooms

With a minimum of simple maintenance, the room above will look just as neat and clean twenty or more years from now as you see it here. Its modern appearance is virtually *ageless!* For the durable, easy-to-keep-clean wall-type plumbing fixtures by American-Standard will retain their smooth, spotless good-looks many extra years. And the expansive fixture-free floor permits quick, easy cleaning of the room—from wall to wall.

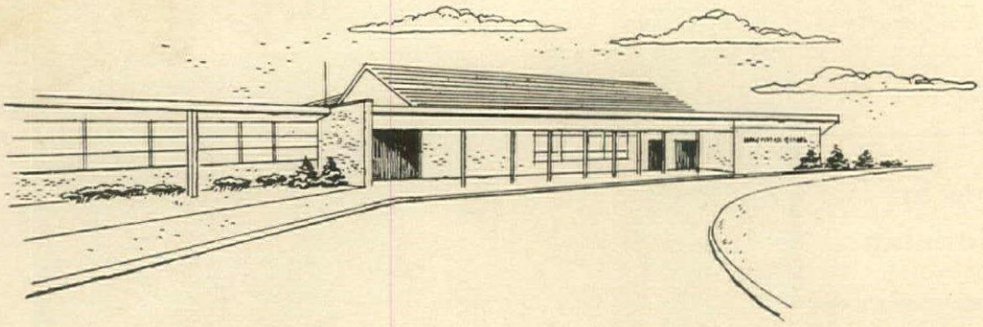
But improved sanitation, lower maintenance, and an always up-to-date look are not the only advantages of using American-Standard wall-type plumbing fixtures. Especially when you specify that they be installed and supported on the Zurn System. This combination of superbly designed fixtures and rigid supporting fittings, which are engineered to relieve the wall of all the stress, also makes for easy, time-saving installation.

If you would like to know more about American-Standard wall-type plumbing fixtures and the Zurn System, we will be pleased to send you two booklets which contain interesting information on these essential products. Just ask for the American-Standard "Better Rest Room Guide" and the Zurn booklet, "You Can Build It For Less A New Way."

Plumbing and Heating Division
American Radiator & Standard Sanitary Corporation, Pittsburgh, Pa.
J. A. Zurn Mfg. Co. (Plumbing Division), Erie, Pennsylvania

AMERICAN-Standard
off-the-floor fixtures
installed with and supported by the
ZURN **system®**
give you these important benefits—
- **insured sanitation**
- **simplified maintenance**
- **modern appearance**

ZURN



HAWTHORN SCHOOL,

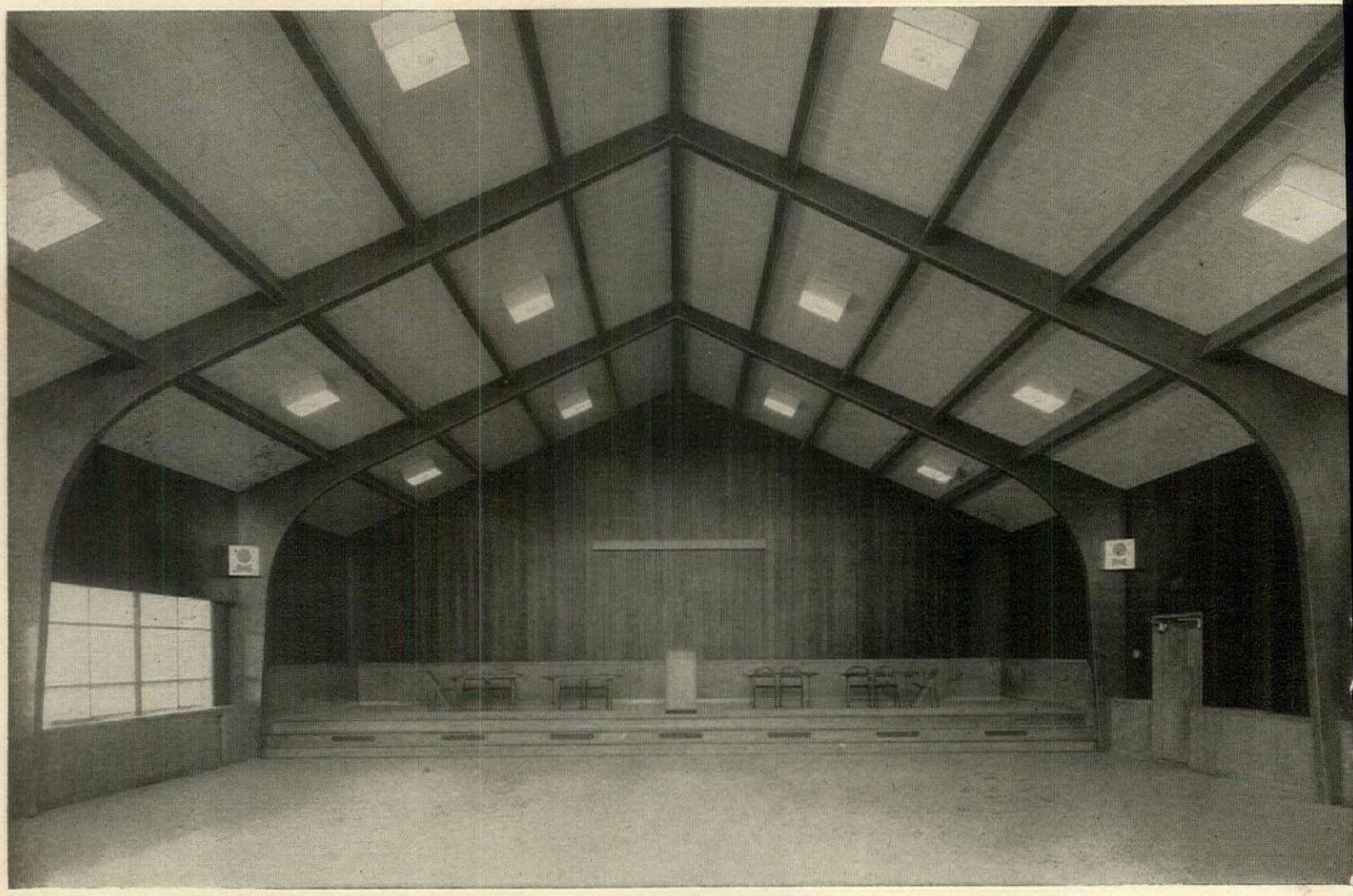
Massapequa Park, New York

Architect:
George J. Dippel

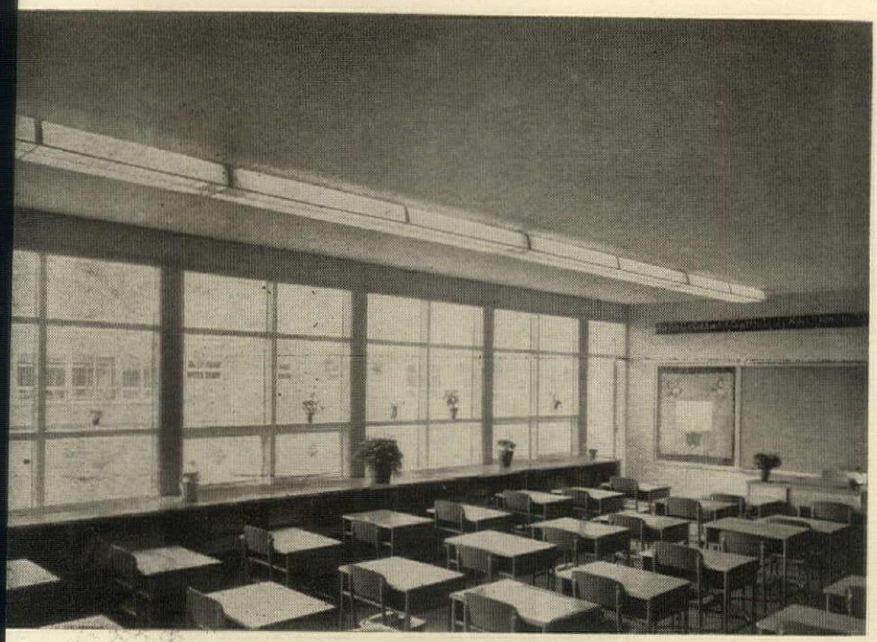
General Contractor:
Joseph Bisceglia & Sons, Inc.

Acoustical Contractor:
Donaldson Acoustics Co.

Acoustical Material:
Cushiontone Full Random



Fast installation is one of the many advantages that makes Cushiontone a natural choice when large areas must be sound conditioned economically. Cushiontone goes up easily by conventional nailing, stapling, cementing, or mechanical suspension methods.



Maintenance is easy, for Cushiontone can be washed or repainted whenever desired without losing its acoustical effectiveness. Cushiontone's two-coat, white latex paint finish has high light reflectivity—helps diffuse light evenly without glare.

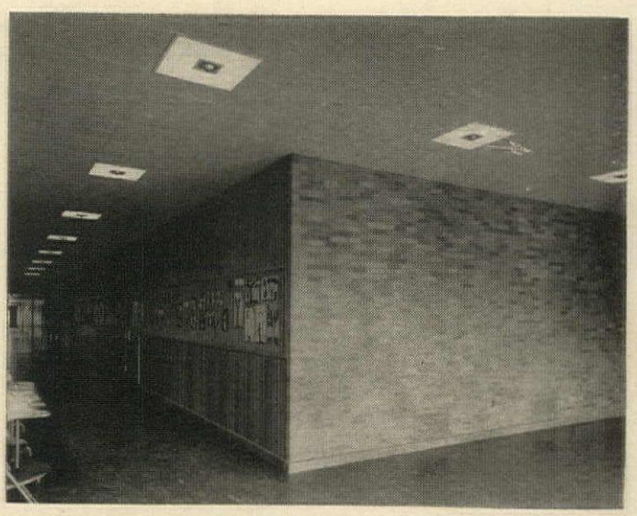
Sound conditioning adds distinctive atmosphere to "budget" school

Although limited by a tight budget, the architect for the new Hawthorn School in Massapequa Park, N. Y., has given it both modern, functional facilities and a non-institutional atmosphere.

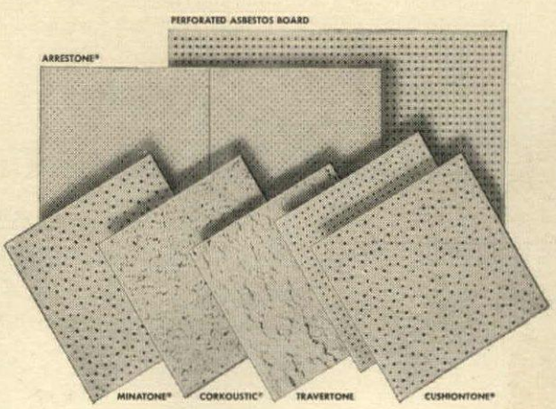
To keep building costs down, architect Dippel made effective use of brick veneer and frame construction. Low fire insurance rates were obtained by using fire walls to separate the school into small sections.

Noise-absorbing ceilings of Armstrong Cushiontone® give the school all the benefits of quiet at a remarkably low cost. A perforated wood fiber material, Cushiontone soaks up as much as 75% of the noise that strikes it. Its exclusive Full Random pattern of holes and extra narrow bevels practically eliminate the old-fashioned tiled ceiling effect. And the Cushiontone in the lobby has been repainted a bright yellow to add inviting warmth to the colorful school décor.

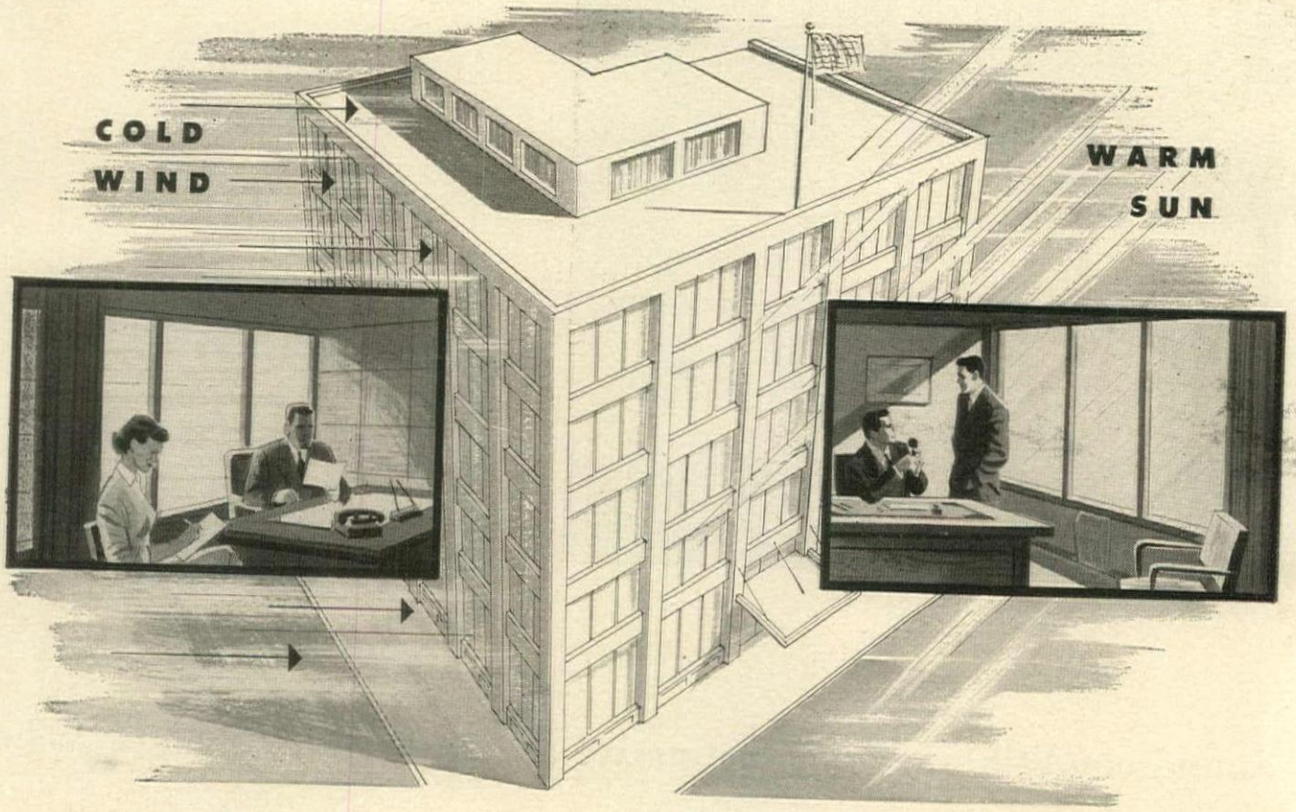
Get full information on Cushiontone and the complete line of Armstrong sound-conditioning materials from your Armstrong acoustical contractor. With a wide range of special product features to select from, you'll find one of these materials best meets the requirements of every job. For your free copy of the new 1955 edition of "Armstrong Acoustical Materials," write Armstrong Cork Company, 4209 Rooney Street, Lancaster, Pennsylvania.



An efficient noise muffler, as well as an attractive ceiling material, Cushiontone absorbs up to 75% of the sounds that strike it. Noise, bouncing off the hard-surfaced walls and floors, has no chance to build up to disturbing levels.



Armstrong ACOUSTICAL MATERIALS



No Heating Problem

Iron Fireman SelecTemp Heating adjusts automatically to heat loss or gain in *each individual room or office*

A thermostat in every room
When every room is a separate heating zone, a lot of problems that a conventional system can't touch are solved automatically.

Each room takes care of its own heat loss or gain, no matter how much conditions may vary in different parts of a building.

Occupants may have any temperature they choose simply by setting the thermostat in their own room or office. They use only the amount of heat they need. No space is overheated. Nor is there any wasteful heating of unoccupied space. Temperature can be reduced in any unused room, and restored to comfort level within a few minutes when needed.

Ideal for motels, hotels, apartment houses and hospitals. Every guest and tenant has his own idea of heating comfort, and is usually vocal about it. SelecTemp heating has eliminated a lot of headaches for building managers, besides making tenants happy.

Iron Fireman SelecTemp heating is especially valuable for hospitals, where it is often desirable to control room temperatures according to individual needs of patients.

Send for descriptive booklet
Iron Fireman SelecTemp heating is fully described in a booklet specially prepared for architects and builders, containing all necessary specifications. Use coupon below.

SELECTEMP HIGHLIGHTS

THERMOSTAT IN EVERY ROOM. Temperatures can be varied in every room to fit the "activity plan" and personal preference of the occupants.

MODULATED HEAT. Air circulation is continuous. Both temperature and volume of air are automatically modulated, as required to offset heat loss from room.

FILTERED, CIRCULATED AIR. Individual room air circulation prevents transmission of odors or bacteria from other rooms. Air is cleaned by a spun glass filter in each room unit. Filtered outside air can be introduced if desired.

BOILER LOCATION. Boiler can be placed in any desired location, with proper distribution of heat to every room. Year-around domestic hot water coils available. Fuels: Gas, oil or coal.

LOW POWER COST. No electricity required to operate circulating fans. Nonelectric thermostats.

LOW INITIAL COST. Easily installed in either new or old construction. Small soft copper tubing (¾ inch I.D.) carries steam to individual room heater units. Return lines are ⅛ inch. Substantial savings in installation costs.

LOW FUEL COST. Temperature easily reduced in unused rooms. Overheating is eliminated.

AUTOMATICALLY BALANCED. No special adjustments of dampers, valves or orifices required to balance heating system. Each unit continuously regulates heat needed for each room. Automatically compensates for external heat sources such as fireplace or solar heat, without affecting temperatures of other rooms.

Iron Fireman®
SelecTemp®
MODULATING ZONE HEATING

Send for free booklet . . .

IRON FIREMAN MANUFACTURING CO.
3078 West 106th Street, Cleveland 11, Ohio.
In Canada, write to 80 Ward Street, Toronto, Ontario.

Please send literature on Iron Fireman SelecTemp heating.

Name_____

Address_____

City_____ State_____

Plant and offices of O. E. McIntyre, Inc., Westbury, Long Island. Architects: Marcel Breuer and William W. Loudsberg, New York City. Contractor: Brown & Matthews, Inc., New York City. Windows: Lupton Steel Architectural Projected.

windows and walls—now both by Lupton

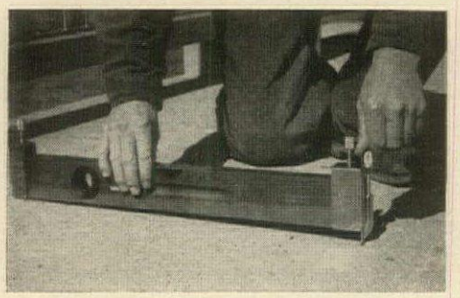
Lupton's fifty years' experience in designing and manufacturing metal windows forms the background for the successful, new Lupton Curtain-Wall System. Prefabricated modular panels — with panel color, texture and fenestration as specified by the architect — are made *and* installed by Lupton. The result is a faster, more efficient way to enclose a building, with direct savings in construction time and labor costs. Information is yours for the asking. Write for the "Lupton Simplified Curtain-Wall System". When it's windows alone you want, see the complete line of Lupton steel and aluminum windows in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.
Main Office and Plant: 700 E. Godfrey Avenue, Phila. 24, Pa.
New York Office: 51 E. 42nd Street, New York 17, N. Y.
West Coast Office: 672 S. Lafayette Park Place, Los Angeles 57, Calif.
Stockton Office and Warehouse: 1441 Fremont Street, Stockton, Calif.
Sales Offices and Representatives in other principal cities

LUPTON
METAL WINDOWS AND CURTAIN-WALLS

PRODUCTS

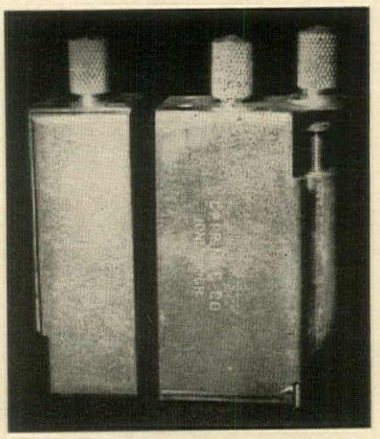
Continued from p. 230

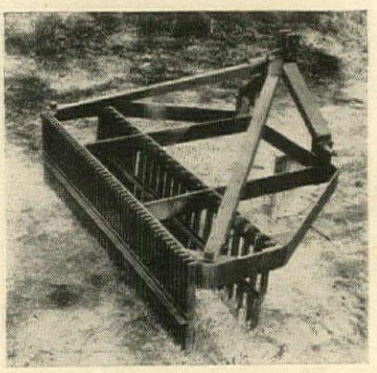


GRADIENT DEVICE lets level gauge right slant for pipe or landscape

The two-piece *Gradient Level Attachment* measures pitch or fall of a pipe line or ground contour with the precision of a surveyor's transit. Made of 16-ga. plated steel, the inexpensive device ($4.95 retail) is about as complicated to interpret as the ordinary level it is fitted onto. Its two pieces are clamped on both ends of any length level in a few seconds, transforming it to an accurate inclinometer for establishing and checking slope in grading, pipe laying and ditching operations. One turn of the dial indicates a pitch of ½" in 10' per foot of level. So, to figure a 1" fall per 10' of sewer line with a 4' level, the dial is turned eight times—each turn equaling ⅛" fall in 10'. The level is then placed on the drainage line and the tile adjusted until the bubble hits the level mark. Other applications for the *Gradient Attachment:* construction of driveways and roads, installations of conveyors and laying of steam lines.

Manufacturer: Carr Manufacturing Co., Ionia, Mich.





BIG RAKE grades and levels ground, clears debris

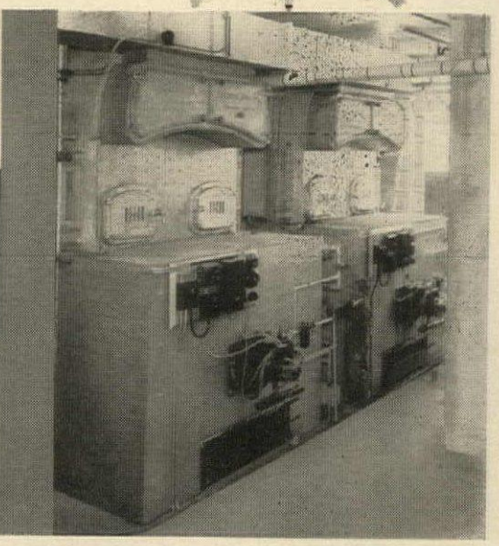
Designed by Landscape Engineer Roland Wurster, the *Pulver Rake* tractor attachment can be pushed, pulled, lifted or lowered to level or grade or loose dirt fill at any angle. Maintaining an accuracy within 2" even when handled by an inexpert operator, the unusual earth-working tool considerably reduces the cost of hand-raking of sub- or topsoil. Its 5'-6" steel comb has 23 front fangs which cut and pulverize offset by a second row of 50 teeth which drag and spread such materials as crushed stone, slag, sand, gravel or cinders. It can be used to spread 5 cu. yd. of loose dirt over a 75'-wide lot in a few minutes, and so should be a practical implement for terracing and finish grading of school grounds, drives, athletic fields. Quite maneuverable in confined areas, and useful in clean-up work, the *Pulver Rake* will

continued on p. 242

Wherever Disaster Strikes...

The beautiful Hospital San Carlos, Bogota, Colombia, one of the finest in South America, is equipped with Kewanee Boilers.

Architect: Cuellar, Serrano, Gomez & Co. Ltd.; Consulting Architect: Smith, Erickson & Garden; Engineer: Cuellar, Serrano, Gomez & Co. Ltd.



Two No. 588, 125 lb. Kewanee Boilers installed in the Hospital San Carlos in Bogota, Colombia. They assure power expansion when needed—an important factor when the lives of patients are at stake.

HOSPITALS THE WORLD OVER DEPEND ON

KEWANEE reserve plus rated boilers

WITH 50% EXTRA POWER

WHEN steam power may mean life or death to hospital patients . . .

WHEN emergencies demand maximum temperature, split-second sterilization of instruments . . .

WHEN unfailing power is needed to bring light to the delicate techniques of modern surgery . . .

WHEN the operating rooms of hospitals are theatres of extreme urgency . . .

That is when Kewanee Reserve Plus Rated Boilers become a necessity—because they have the reserve power for additional capacity requirements.

With a rating plan based on the commercial code of the Steel Boiler Institute, Kewanee Boilers certify 50% or more extra built-in power. This extra power assures the ability to treat more sufferers when epidemics or disaster strike. Modern hospitals must have the foresight to prepare for major disasters such as earthquakes, tornadoes, fires and accidents which bring masses of emergency cases to the operating rooms.

Kewanee Boilers, rated on nominal capacity with built-in reserve, can take care of expanding loads created through disaster. They offer "cruising speed" operation which means savings on fuel and repairs. Choose Kewanee and be prepared if disaster strikes.

KEWANEE BOILERS

KEWANEE-ROSS CORPORATION, Kewanee, Illinois
Division of American Radiator & Standard Sanitary Corporation
Serving home and industry - American Standard - American Blower
Church Seats & Wall Tile - Detroit Controls - Kewanee Boilers
Ross Exchangers - Sunbeam Air Conditioners

You can depend on KEWANEE engineering

Wakefield Geometrics offers a plane of light which can be integrated with the mechanical equipment. This ceiling is an adaptation of Wakefield Sigma, evolved by Wakefield's Architects' Development Department to meet the architect's requirements. Wakefield welcomes the opportunity to modify Wakefield Geometrics to satisfy your need. Write for Catalog 55. Case Study Four in a Series.

The Wakefield Company, Vermilion, Ohio
Wakefield Lighting Limited, London, Ont.

ARCHITECTS: EERO SAARINEN AND ASSOCIATES • SMITH, HINCHMAN & GRYLLS, INC.

Air conditioning existing buildings may be easier than you think...

It's as simple as this, with Modine Airditioners*

1. Individual units replace radiators in each room to be air conditioned. Hot water from your present boiler is piped to each unit for heating. Cold water from a central chiller is supplied through the same piping for summer cooling. A small motor (1/30 to 1/12 hp) operates two quiet fans in each AIRditioner to provide refreshingly cooled or heated air circulation. There are no expensive ducts to install. Here is low-cost, year-round comfort for new or existing office and apartment buildings, hotels or motels, hospitals or homes.

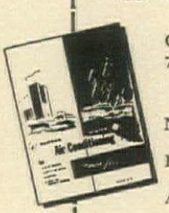
2. Operating flexibility cuts costs. With Modine AIRditioners, room occupants control their own temperatures. Units are operated only when and where they are needed. No need to air condition an entire building to provide comfort only in occupied rooms.

3. Types and sizes for every application. AIRditioners are offered in console (illustrated), concealed, built-in overhead and exposed ceiling models . . . in sizes to meet your remodeling or new construction requirements. All units are furnished with quiet, slow-speed motors (1050 rpm top speed) having built-in thermal overload protection as a standard safety feature.

*Trademark

Want to know more?

Consult the classified section of the phone book for your Modine representative. Contact him or mail the handy coupon for illustrated booklet.



MODINE MFG. CO.
1507 DeKoven Avenue, Racine, Wisconsin

Gentlemen: Please send me a free copy of Bulletin 745-D, describing Modine AIRditioners.

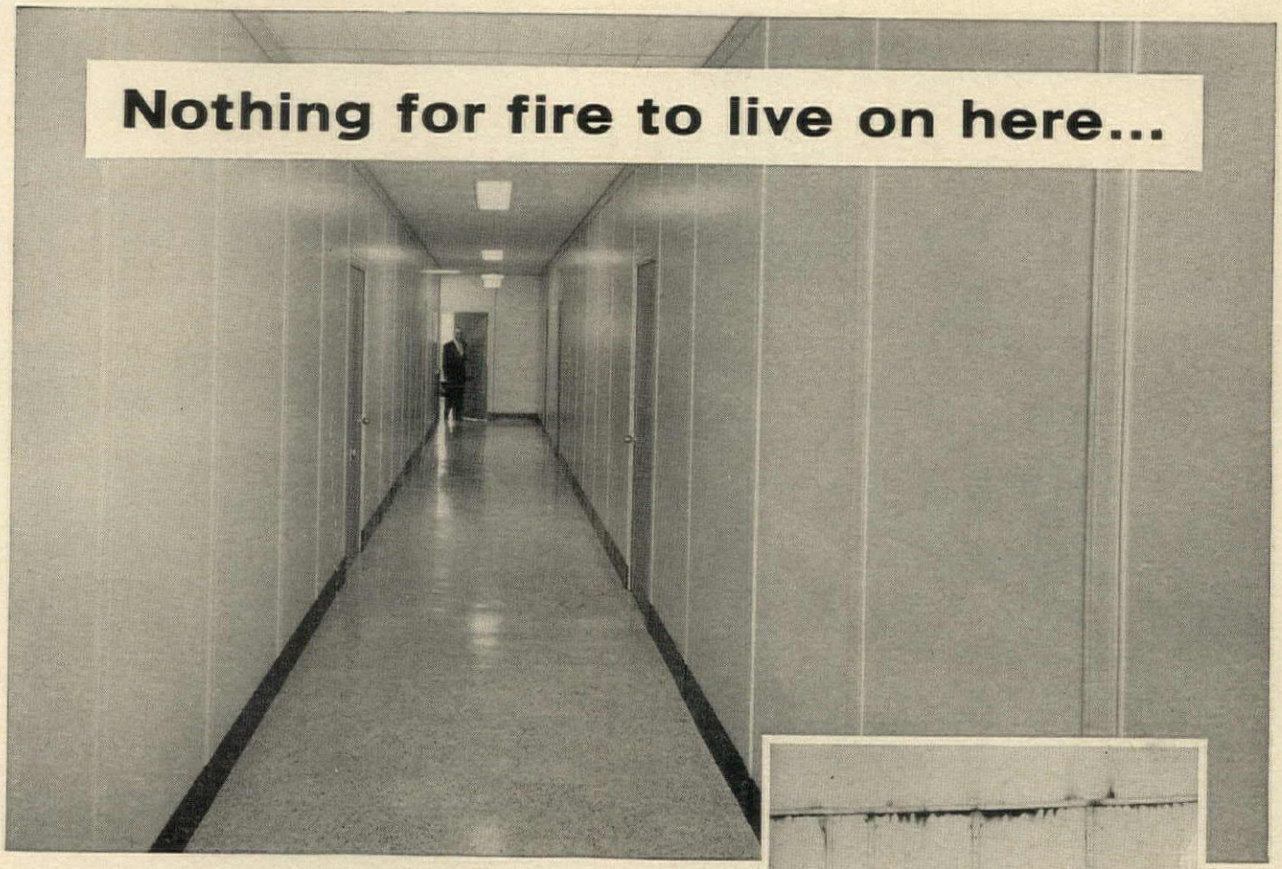
Name .....

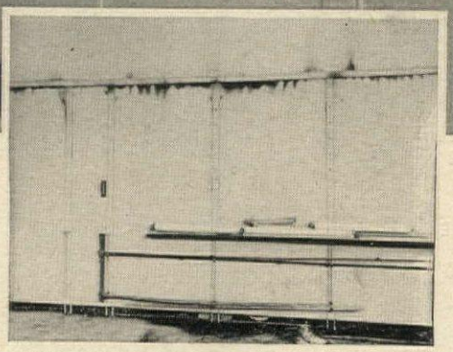
Firm .....

Address .....

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

A-1283





...because Hauserman Movable Steel Interiors are

INCOMBUSTIBLE

Lessons learned from actual fires confirm the results of exhaustive laboratory tests that prove Hauserman *Movable* Walls are extremely effective in containing the origin of fire as well as its damaging, costly smoke and fumes. Only steel and mineral wool insulation . . . totally incombustible materials . . . are used in fabricating Hauserman Walls.

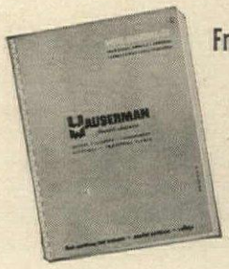
Hauserman
Movable Interiors

Provide Earlier Occupancy • Fire Resistance • Sound Control • Utility Access
In Offices • Laboratories • Hospitals • Industrial Plants

When specifying interior walls and wainscot, consider these Hauserman advantages that provide superior fire safety in addition to all the other advantages of *Movable* Steel Interiors:

1. **Subdivision of space breaks up and minimizes fire, smoke and fume areas.**
2. **Hauserman's baked-on, factory-applied finish will not burn or give off fumes.**
3. **Hauserman Walls remain intact under fire and water exposure . . . do not break up under impact of fire hose stream.**
4. **Hauserman Walls do not require the addition of combustible materials for installation.**

For complete facts on Hauserman Interiors call your nearby Hauserman representative. You will find his name listed on back cover of the free Data Manual 55 offered below.



Free Data Manual 55 Wins Architects' Award

Recognized for value to architects in design and specifications work, this 100-page guide was awarded *The Certificate of Exceptional Merit* in 7th Annual Building Products Literature Competition co-sponsored by A.I.A. and Producers' Council. Contains complete technical details on all types of Hauserman *Movable* Interiors. Send for your copy today!

THE E. F. HAUSERMAN COMPANY
7156 Grant Avenue • Cleveland 5, Ohio

Please send your new Data Manual 55 to:

Name _____

Company _____

Street _____

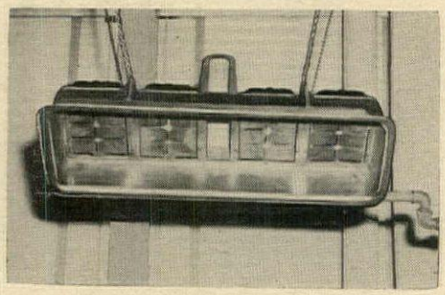
City _____ *Zone* _____ *State* _____

PRODUCTS

Continued from p. 236

remove weeds, rubbles and large stones. Outfitted with an accessory plate, it does winter duty as a snow plow. The *Pulver Rake* can be attached in minutes to any tractor that provides a three-point hydraulic hookup. The 5'-6" model pictured (p. 236) retails at $250.

Manufacturer: O & S Bearing Manufacturer Co., 777 W. Eight Mile Rd., Whitmore Lake, Mich.



GAS HEATER throws warm blanket over cold workmen, wet masonry

Casting comforting warmth up, down or sideways through cold air, Perfection's portable *Infra Rayhead* radiant heater operates on any kind of gas—manufactured, natural or LP. In addition to its use on construction jobs for drying paint, lumber, plaster and keeping workmen

warm, and outdoor heating applications in sports arenas and drive-ins, the units are practical for permanent installation on walls or ceiling in high-bay factories and semi-closed warehouses where central systems are either impractical or ineffective. Licensed by the manufacturer under German patents, the unique heaters have ceramic catalyst burners which reach surface temperatures of 1,600° F. and emit high concentrations of infrared rays in wave lengths reported to be the most natural physiologically. A self-contained portable *Infra Rayhead* with 48,000 Btu capacity, directs heat over an area 100 sq. ft., and will burn up to 150 hours on one 100-lb. gas cylinder. It sells for $152, including wheeled mounting and safety shut-off. The same unit, nonportable, is about 100. The larger unit (pictured above left) for industrial buildings can deliver 96,000 Btus.

Manufacturer: Perfection Industries Inc., 7609 Platt Ave., Cleveland, Ohio.

LATEX ALKYD PAINT needs no mixing, no undercoat

Ready to use without stirring, *Luminall* washable latex alkyd paint can be brushed, sprayed or roller-applied over any inside ceiling or wall surface of masonry, wood, cement asbestos, or paper. Nonporous and nonabsorbent the coating has excellent binding and sealing properties and requires no primer or undercoat. It gives off no toxic or flammable fumes, and will dry in 20 minutes to one hour, making it a practical finish for remodeling jobs. One gal., priced at $5.35, covers up to 700 sq. ft.

Manufacturer: National Chemical & Mfg. Co., 3617 S. May St., Chicago 9, Ill.

continued on p. 248

Lord & Taylor, Bala-Cynwyd, Philadelphia Planned and Designed by Raymond Loewy Corporation

Cut your clients' floor maintenance costs in half in heavy traffic areas

In busy open planning areas you can actually cut your clients' floor maintenance costs in half. This saving is enough to pay the complete cost of the carpet, within eight years, including installation charges.

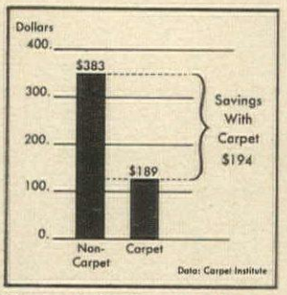
Comparisons of carpeted vs. non-carpeted floors show that carpet costs actually less than half to maintain. Comparisons show an average annual saving of $194 per 1,000 square feet in heavy traffic areas.

On top of this tremendous economy, carpet is not only better looking, it *stays* better looking. Its deep, luxurious pile is easily vacuumed – soil doesn't get ground down to mar the surface. Carpet springs back from pressure – wears hard and looks soft.

And the fact that carpet is so much more desirable to begin with makes these advantages all the more important. On top of the luxurious appearance and dignity it gives, carpet virtually eliminates floor noise, acts as a sound blotter for other noises – produces a restful, quiet atmosphere. And carpet prevents slips and skids.

For almost any interior, carpet is your logical, most economical, most beautiful choice. On your current job, consider carpet. Ask your supplier to show you the wide variety of textures, patterns and colors. Custom designs are available in many weaves and qualities to meet your specifications.

Show your clients how to cut their floor maintenance costs. Send for "Cutting Costs With Carpet," a complete report of the research on carpeted vs. non-carpeted floors. Write Dept. A5, Carpet Institute, Inc., 350 Fifth Avenue, New York 1, N. Y.

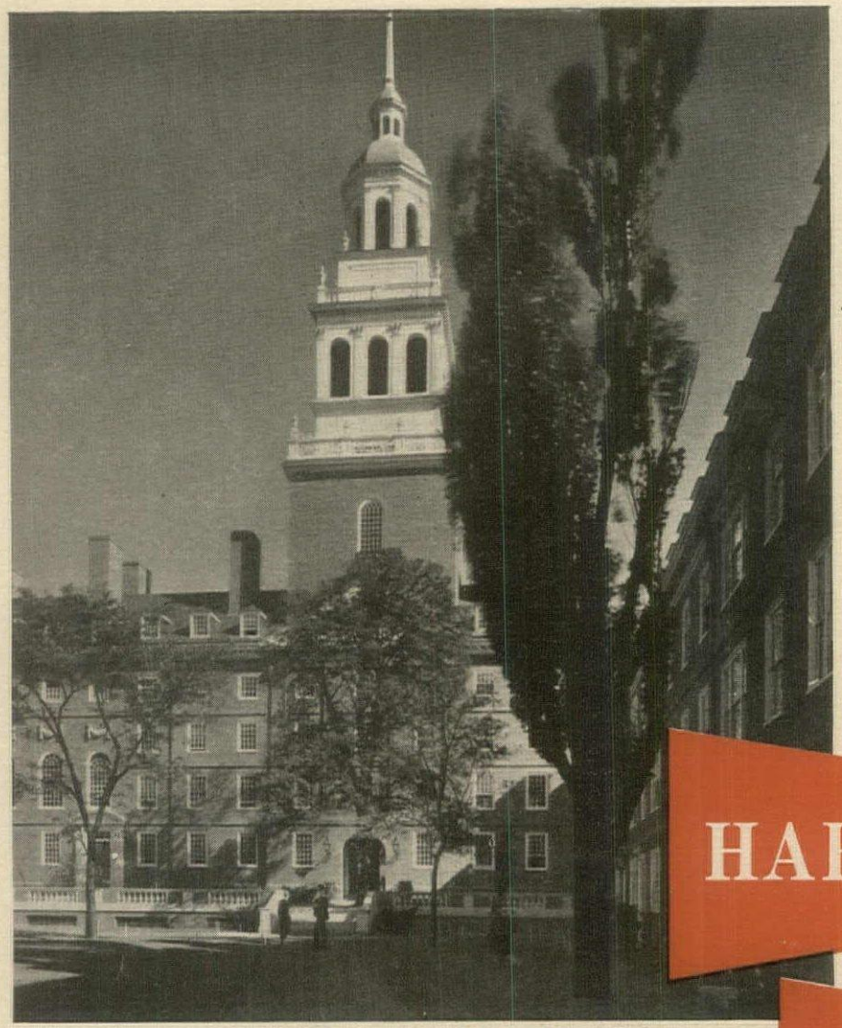


For each 1,000 square feet of floor space, carpet saves an average of $194 annually on maintenance costs in heavy traffic areas.

Specify carpet designed and made for the American way of life by these American manufacturers

Artloom • Beattie • Bigelow • Downs • Firth • Gulistan • Hardwick & Magee • Hightstown • Holmes • Karastan
Leedom • Lees • Magee • Masland • Mohawk • Nye-Wait • Philadelphia Carpet • Roxbury • Sanford • Alexander Smtih

Carpet Institute, Inc. 350 Fifth Avenue, New York 1, New York



Above: Lowell House

Architects: for Lowell House, Dunster House, McKinlock Hall, Vanderbilt Hall, Littauer Building, Gordon McKay Laboratory–SHEPLEY, BULFINCH, RICHARDSON & ABBOTT • for Aldrich Hall–PERRY, SHAW, HEPBURN, KEHOE & DEAN and McKIM, MEAD & WHITE, Associate Architects.

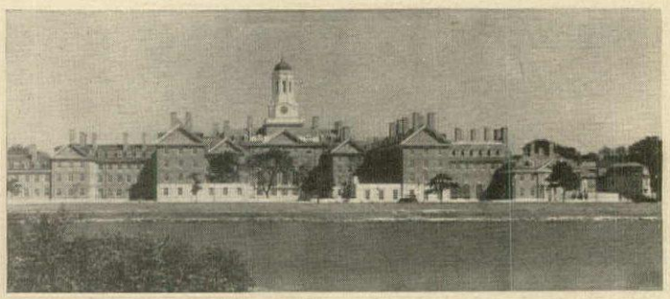
Mechanical Engineers: for Lowell House, McKinlock Hall, Vanderbilt Hall–FRENCH & HUBBARD • for Dunster House, Littauer Building–RICHARDSON & GAY • for Aldrich Hall–HAYDEN, HARDING & BUCHANAN • for Gordon McKay Laboratory–R. G. VANDERWEIL.

Heating Contractors: for Lowell House, McKinlock Hall–CLEGHORN CO. • for Dunster House–T. J. MURPHY & CO. • for Vanderbilt Hall–JAS. S. CASSEDY, INC. • for Littauer Building–V. J. KENNEALLY CO. • for Aldrich Hall–THE MERRILL CO., INC. • for Gordon McKay Laboratory–McLEAN-COUSENS & BARTON, INC.

Oldest university in the U.S.A.

HARVARD

...another distinguished user of

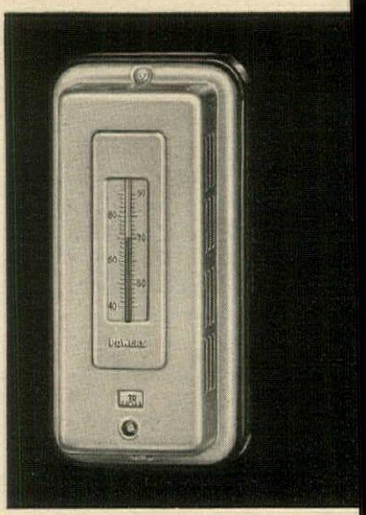


1

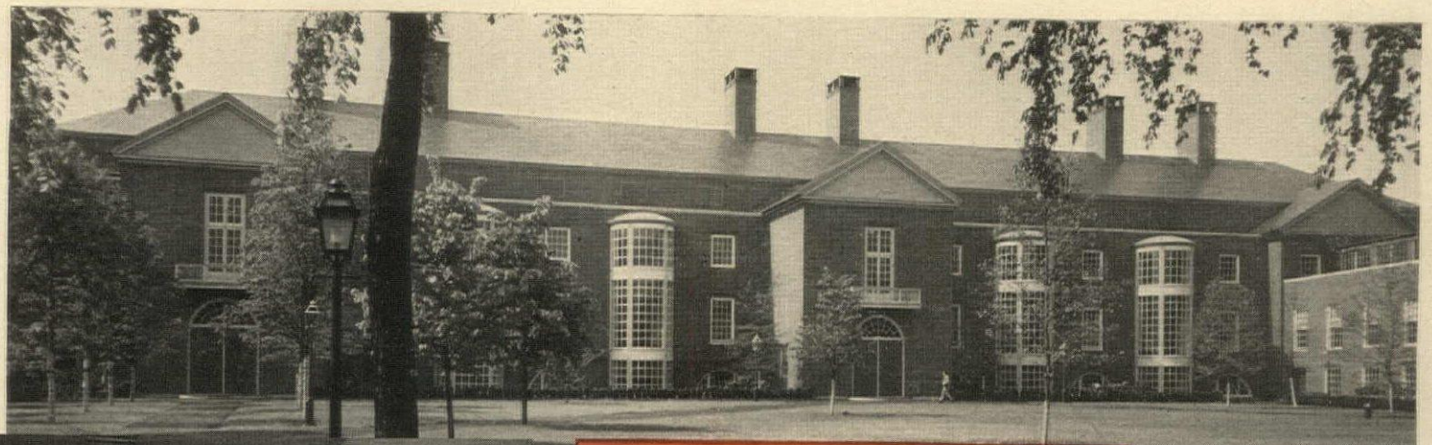
2

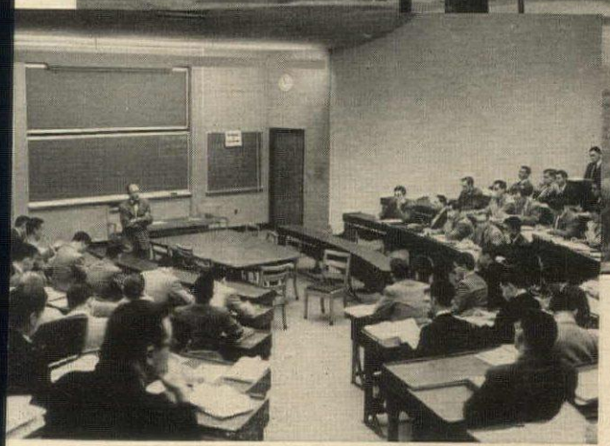
3

4



1 Dunster House, on the Charles River
2 McKinlock Hall
3 Vanderbilt Hall
4 Littauer Building





ALDRICH HALL Harvard Graduate School of Business Administration

One of the 17 unique classrooms shown at left seats 158 students; three others seat 80; and 13 accommodate 102 each. The rooms have been arranged to provide an intimate relationship between instructor and student in the give-and-take discussions by the case method generally used throughout the Harvard School of Business Administration.

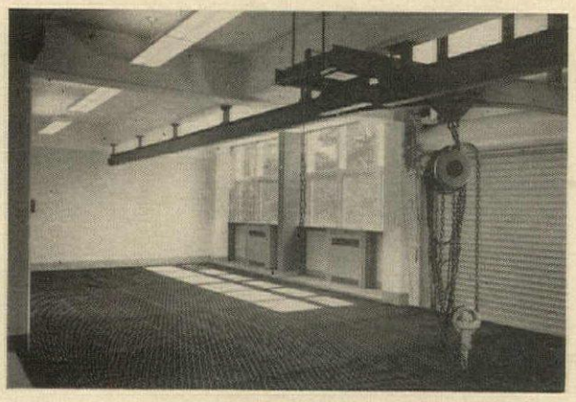
Below: GORDON McKAY LABORATORY

Interior photo shows two-story room with important features, a high door and removable intermediate floor to permit varying uses. Research in this laboratory is conducted in mechanical engineering, electronics, electrical engineering and the properties of matter.

POWERS

AUTOMATIC SYSTEMS OF

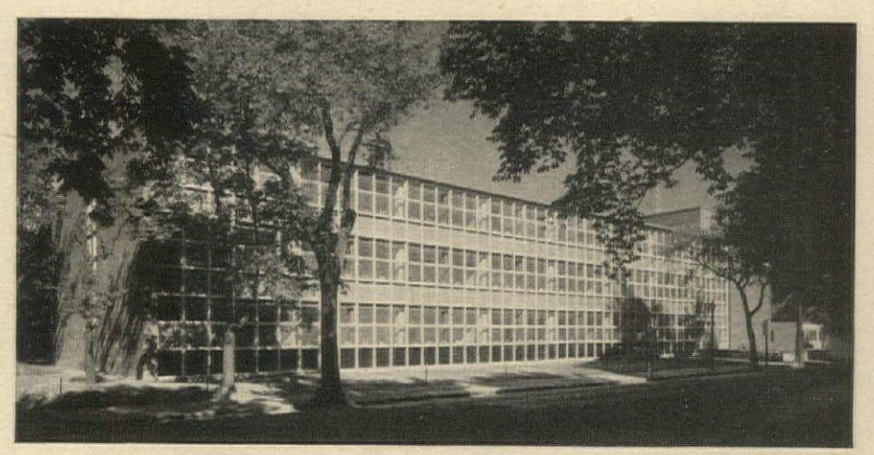
Temperature Control



On the Harvard campus are to be found some of America's most beautiful buildings. A few of them which benefit from the maximum thermal comfort and fuel savings assured by POWERS control are illustrated here.

For more than half a century POWERS control has been renowned for its matchless ability to give many years of efficient economical service. Users often report 25 to 50 years of reliable control with a minimum of repairs.

Experience gained here and in thousands of other famous buildings qualifies POWERS to help you select the most economical and efficient temperature control for your buildings. When problems of temperature control arise, call our nearest office or write us direct.



THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in 60 cities in U. S. A., Canada and Mexico*

POWERS CONTROL

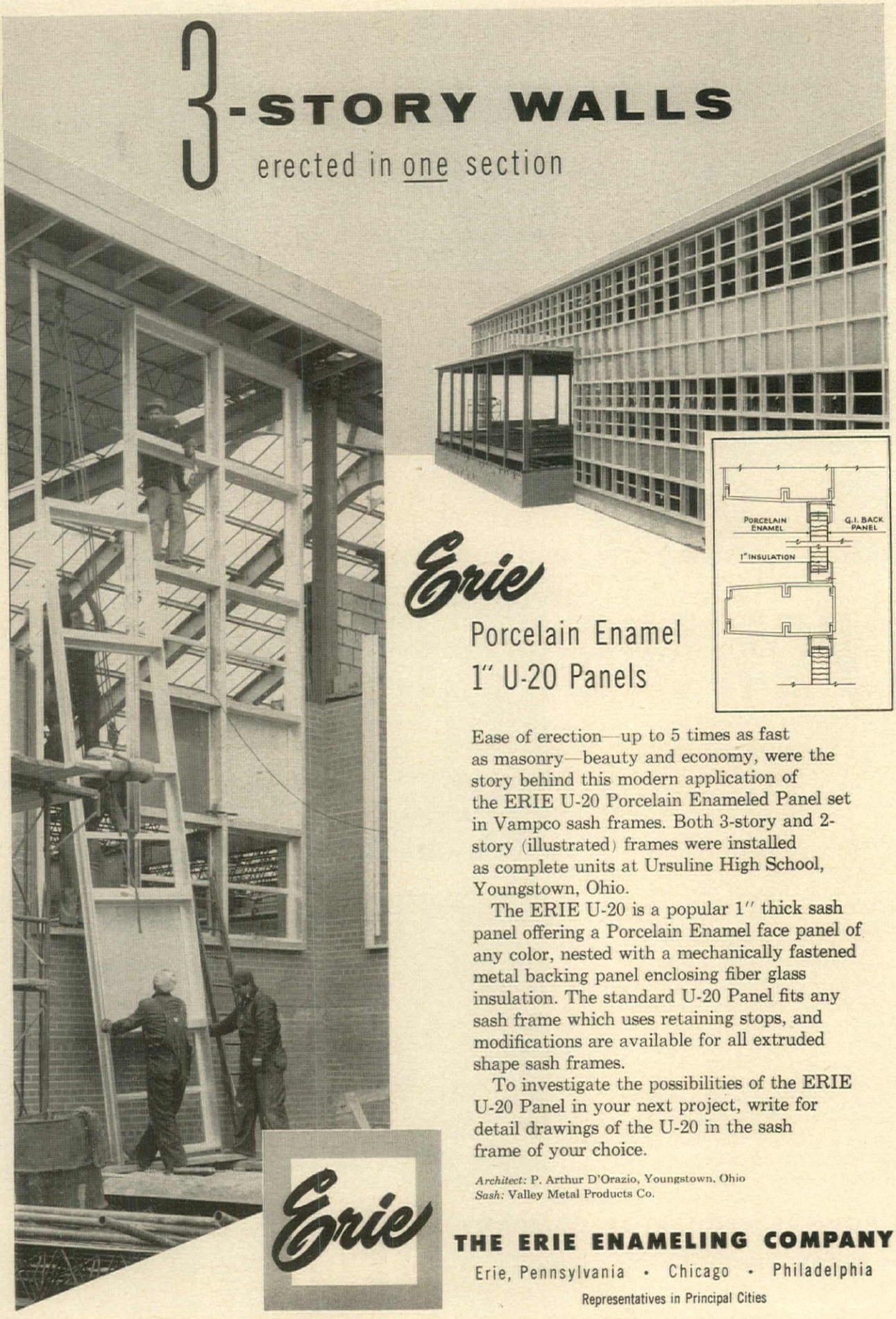
Over 60 years of Automatic

Temperature and Humidity Control

(b85)

3-STORY WALLS

erected in one section



Erie

Porcelain Enamel 1" U-20 Panels

Ease of erection—up to 5 times as fast as masonry—beauty and economy, were the story behind this modern application of the ERIE U-20 Porcelain Enameled Panel set in Vampco sash frames. Both 3-story and 2-story (illustrated) frames were installed as complete units at Ursuline High School, Youngstown, Ohio.

The ERIE U-20 is a popular 1" thick sash panel offering a Porcelain Enamel face panel of any color, nested with a mechanically fastened metal backing panel enclosing fiber glass insulation. The standard U-20 Panel fits any sash frame which uses retaining stops, and modifications are available for all extruded shape sash frames.

To investigate the possibilities of the ERIE U-20 Panel in your next project, write for detail drawings of the U-20 in the sash frame of your choice.

Architect: P. Arthur D'Orazio, Youngstown, Ohio
Sash: Valley Metal Products Co.

Erie

THE ERIE ENAMELING COMPANY

Erie, Pennsylvania • Chicago • Philadelphia

Representatives in Principal Cities

NEW!

9/16" THICKNESS

Simpson Forestone®

THE WORLD'S FIRST

FISSURED WOODFIBER ACOUSTICAL TILE

Now costs no more than 5/8" and 3/4" perforated tile

Forestone* is economical in its original 3/4" thickness. Now the new 9/16" thickness puts it in the price range of the popular types of perforated tile. Yet in either thickness Forestone has a warm textured beauty equal, or even superior, to that of luxurious fissured *mineral* tile. It is ideal for installations where beauty *and economy* are important in addition to effective sound conditioning. Note its attractive appearance in this restaurant. Its flame-resistant finish is washable and paintable.

Illustrated: 3/4" Forestone
Deseret Inn, Salt Lake City

Call the Simpson Certified Acoustical Contractor nearest you, or write Simpson Logging Co., 1010 White Bldg., Seattle 1, Washington, for full information.

* PATENT PENDING

SIMPSON CERTIFIED · USING GENUINE Simpson ACOUSTICAL PRODUCTS · ACOUSTICAL CONTRACTORS

Available only through these Simpson Acoustical Contractors

ALABAMA: BIRMINGHAM—Badham Insulation Co., Inc.; MOBILE—Stokes Inc. **ARIZONA:** PHOENIX—Fiberglas Engineering & Supply; TUCSON—Hall Insulation & Tile Co. **CALIFORNIA:** LOS ANGELES and SAN DIEGO—Coast Insulating Products; SAN FRANCISCO and FRESNO—Cramer Acoustics. **COLORADO:** DENVER—Construction Specialties Co. **CONNECTICUT:** HARTFORD and BRIDGEPORT—Wilson Construction Company. **FLORIDA:** CORAL GABLES, FORT LAUDERDALE and WEST PALM BEACH—Ray-Hof Agencies, Inc. (Div. of Giffen Industries Inc.); MIAMI—L. F. Popell Co. **GEORGIA:** ATLANTA—Anning-Johnson Co. **IDAHO:** BOISE—Fiberglas Engineering & Supply. **ILLINOIS:** CHICAGO—General Acoustics Co.; SPRINGFIELD, DECATUR and CHAMPAIGN—George S. Grimmett & Co. **INDIANA:** FORT WAYNE—The Baldus Co., Inc.; INDIANAPOLIS—E. F. Marburger & Son, Inc. **KANSAS:** WICHITA—Kelley Asbestos Products Co. **KENTUCKY:** LOUISVILLE—Atlas Plaster & Supply Co. **LOUISIANA:** SHREVEPORT — Acoustical Engineering Co. **MARYLAND:** BALTIMORE — Lloyd E. Mitchell, Inc. **MASSACHUSETTS:** BRIGHTON—Acoustical Contractors, Inc. **MICHIGAN:** DETROIT, FLINT and GRAND RAPIDS—Detroit Fiberglas Insulation Division. **MINNESOTA:** DULUTH—Flament-Hampshire Co.; MINNEAPOLIS—Dale Tile Company. **MISSISSIPPI:** JACKSON—Stokes, Inc. **MISSOURI:** ST. LOUIS—Hamilton Company, Inc. **MONTANA:** BILLINGS—Kerr & Co. **NEW JERSEY:** FAIRVIEW: Kane Acoustical Co.; KENILWORTH—Connor & Co., Inc. **NEW MEXICO:** ALBUQUERQUE—Fiberglas Engineering & Supply. **NEW YORK:** ALBANY — Davis Acoustical Corp.; BUFFALO, ROCHESTER and JAMESTOWN—Davis-Fetch & Co., Inc.; LYNBROOK, L. I.—Robert J. Harder, Inc.; NEW YORK—James A. Phillips, Inc.; STONY POINT —The Cronin Acoustical Co. **NORTH CAROLINA:** CHARLOTTE—Bost Building Equipment Co.; GREENSBORO—The Bonitz Insulation Co. **OHIO:** CINCINNATI—R. B. Brunemann and Sons, Inc., Cincinnati Floor Co.; COLUMBUS — Gatterdam Plastering Co., Reithmiller Acoustic Co.; CLEVELAND and AKRON—The Mid-West Acoustical & Supply Co. **OKLAHOMA:** OKLAHOMA CITY —Denman Floors Co., Harold C. Parker & Co., Inc.; TULSA—Midwest Marble & Tile Co. **OREGON:** PORTLAND—Emert & Zednik Co., Johnson Acoustical & Supply Co.; EUGENE—Commercial Tile Co.; SALEM—R. L. Elfstrom Co. **PENNSYLVANIA:** PHILADELPHIA—Selby, Battersby & Company; PITTSBURGH—Standard Floor Co. **SOUTH CAROLINA:** COLUMBIA—General Insulation & Acoustics, Inc. **TENNESSEE:** MEMPHIS—Alexander Marble & Tile Co.; NASHVILLE—Nelson Baird Co., Inc. **TEXAS:** CORPUS CHRISTI—Raymond Rambo Materials Company; DALLAS — Blue Diamond Company; EL PASO—Houser Resilient Floor Company; FORT WORTH—Builder's Service Co.; LUBBOCK—J. E. Delehanty; SAN ANTONIO—Rufus A. Walker Co. **UTAH:** SALT LAKE CITY—Utah Pioneer Corporation. **VIRGINIA:** NORFOLK and RICHMOND — Manson-Smith Co., Inc. **WASHINGTON:** SEATTLE — Elliott Bay Lumber Co.; SPOKANE—Fiberglas Engineering & Supply. **WASHINGTON, D. C.:** ARLINGTON—A. W. Lee, Inc. **WISCONSIN:** MILWAUKEE — Building Service, Inc. **CANADA:** VANCOUVER, B. C. and VICTORIA, B. C.—F. Drexel Company, Ltd.; EDMONTON, ALBERTA—Hancock Lumber Limited.

SIMPSON LOGGING COMPANY · SHELTON, WASHINGTON

PRODUCTS

Continued from p. 242

FOLDING BASKETBALL GOALS raised and lowered by electrical winch

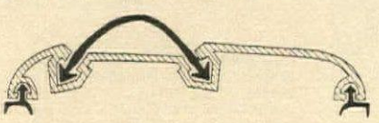
Helping put the multiuse schoolroom theory into practice, the *EZ Fold* basketball goals nestle up against the ceiling when a gymnasium is to be used as an auditorium. Constructed of heavy steel tubing, the rigid, self-locking units fold up automatically at the turn of a switch. The two practice goals

fold backward and the two backstop units, forward, raising up in about 40 seconds and coming down just as fast. One ½-hp motor wired to a reversing switch operates all four. The forward-folding goal's lifting cable is 10′ above the basket, and cannot interfere with play when in use. Prices on the backstops (based on 16′ truss spacing) including winch and cable start at $65 a unit and go up to $467, depending on beam height and type of suspension.

Manufacturer: E - Z - Fold, Inc., Spearville, Kan.

FLEXIBLE THRESHOLD hugs floor and door for air-tight seal

A predrilled anodized channel fitted with vinyl sealer strips, the *Duraflex* threshold effectively blocks silt, drafts, insects and rain water from coming in under a door or conditioned air from getting out. As the door—revolving, swinging or standard—is closed, the plastic ridge on top of the threshold meets it, depressing slightly to conform to any irregularities and creating a positive closure. Two more lengths of the non-



deteriorating plastic are compressed against the floor. Standard ¾″ high *Duraflex* allows for finished floor or rug clearance up to ⅝″ thick; and 1-⅛″ *High-Rug* permits clearance where extra thick rugs are used. Both types are 3½″ wide and come in four standard lengths from 30-¾″ to 72-¾″. Standard type runs $1.60 per lin. ft. and the *High-Rug* $1.80.

Manufacturer: Duraflex Co., 4100 N.W. 28th St., Miami 42, Fla.

continued on p. 254

dramatic
of the
adaptability
of

CUPPLES

ALUMINUM CURTAIN WALLS

PROOF

FIRST SECURITY BANK, SALT LAKE CITY, UTAH
Bank Building & Equip. Corp.,
W. G. Knoebel, Architect
Slack W. Winburn, Associate Architect

With Cupples aluminum "skin" construction, panels of aluminum, stainless steel, structural glass or any other acceptable material may be specified.

For example, in this multi-story building, horizontal and vertical mullions and double weather-stripped tubular sash are aluminum. The structural grid system on stairwells, in penthouse and in other areas, also is aluminum by Cupples. All aluminum is in alumilite finish. Spandrels are fluted porcelain in off-white or rust.

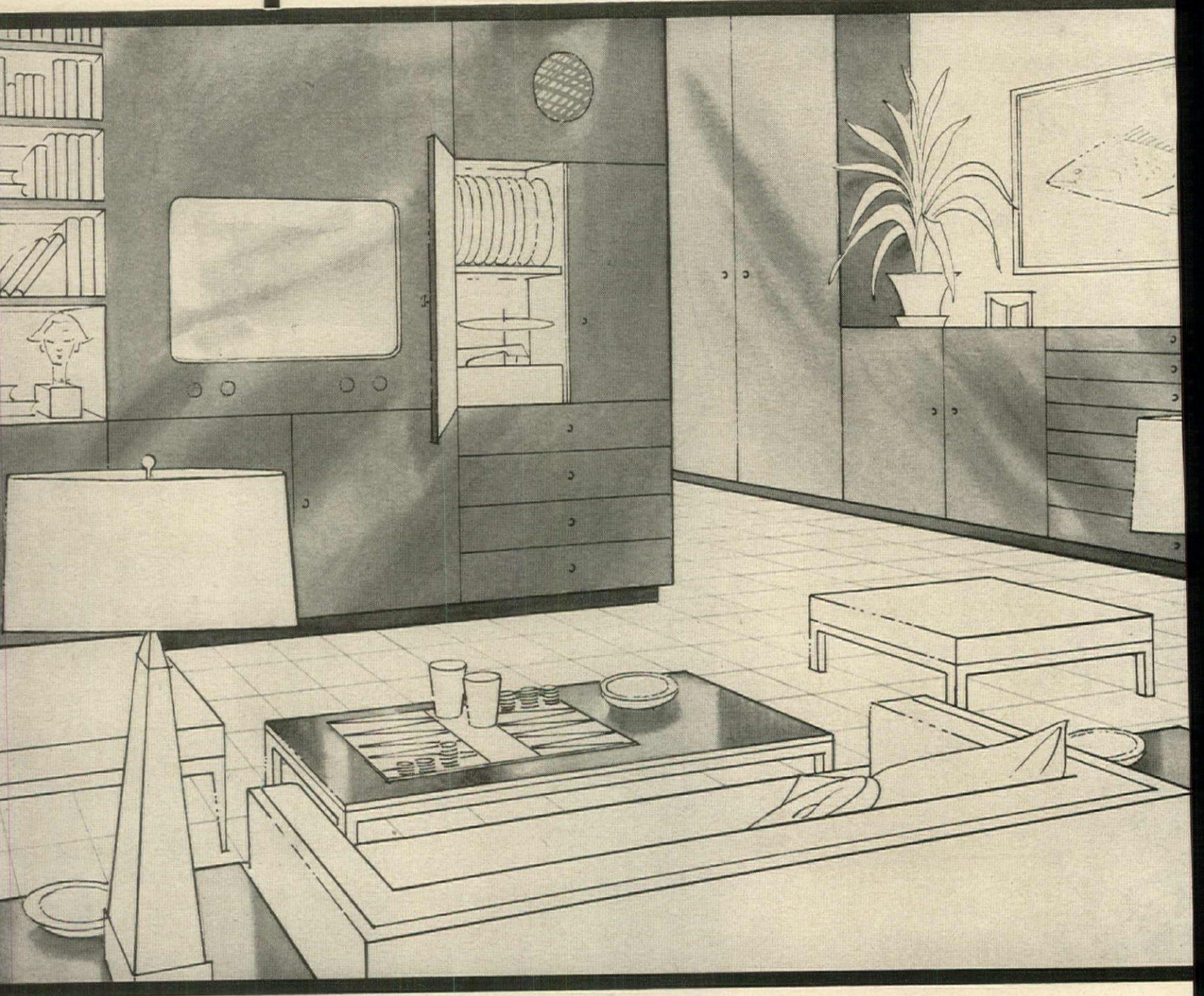
Cupples' dominance in sound, economical curtain wall design, construction and erection keeps pace with its leadership in the fabrication of aluminum windows, doors, architectural aluminum extrusions, Alumi-Coustic grid systems for suspended ceilings and special ornamental products. Our catalogs are filed in Sweet's.

Cupples

PRODUCTS CORPORATION
2650 SOUTH HANLEY ROAD • ST. LOUIS 17, MISSOURI

Preview
by Monsanto

Beauty is permanent when walls are paneled with melamine* laminated plastics



Like many another material, decorative laminates made with melamine resins got their start in the modern kitchen. Their usefulness as a durable, colorful surfacing for counter areas has made them a standard specification in millions of homes.

Today, the same material is demonstrating its versatility for a wide range of other applications. Sketched above is a television room in which melamine laminated plastics will panel walls and cabinets, also tables, etc.

The smooth, practically indestructible material will require a minimum of maintenance. It will sponge clean with a damp cloth. It will be resistant to scratching and chipping.

Melamine laminates are easily sawed to any size and cement permanently to any rigid surface. They do not swell or warp.

Lightweight sheets of these decorative laminated plastics are carried in scores of colors and patterns at most building supply stores. They are also available already glued to plywood or hard board.

**Monsanto supplies melamine and phenolic resins for decorative laminates sold under these trade names:*

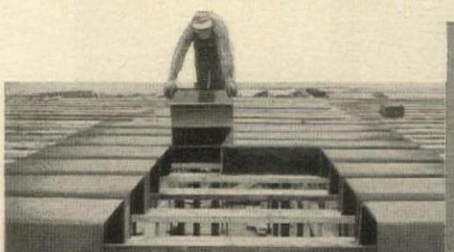
Arborite • Consoweld • Decarlite • Farlite • Fiberesin
Formica • Lamin-art • Micarta • Nevamar • Panelyte
Pionite • Plastilight • Railite • Richelain • Textolite

FOR ARCHITECTS: *A new report, "Plastics in Housing," has recently been published by the Department of Architecture of the Massachusetts Institute of Technology. The study was made possible by a grant-in-aid from the Market Development Department of the Plastics Division of Monsanto Chemical Company. Copies are available at $2.00 each. Address Monsanto Chemical Company, Dept. A-9, Springfield 2, Mass.*

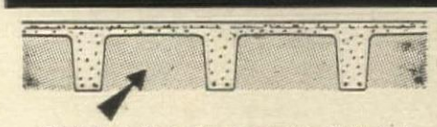
MONSANTO®

SERVING INDUSTRY . . . WHICH SERVES MANKIND

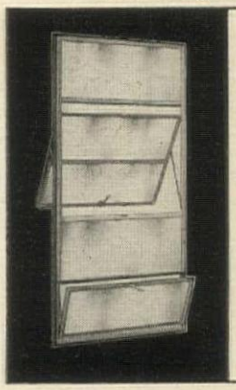
How Ceco-Meyer steelform construction cut floor weight 40%



Steelforms are quickly installed on open wood centering. Cost is reduced because the same lumber and Steelforms are re-used from floor to floor.



Shaded portions show concrete eliminated by concrete joist construction.



Ceco's rugged 1½" Intermediate Projected steel windows are made to outlast any structure. Combined weight of frame and ventilator members not less than 3.6 pounds per lineal foot.

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

CECO 1½" INTERMEDIATE WINDOWS PROVIDE BETTER DAYLIGHTING—OUTLAST ANY STRUCTURE

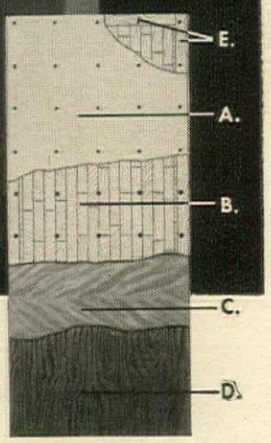
When Karl Keffer Associates, architects, designed the Charles Evans Junior High School in Ottumwa, Iowa, they faced exacting requirements:

> The structure had to provide all instructional units, plus shops, lunch room and auditorium for a minimum of 875 students . . . plus a gymnasium for a seating capacity of 4,500 . . . and this had to be done on a rigid budget.

Ceco-Meyer Steelform Construction was selected as the best way to span the 22′ to 24′ wide rooms . . . a natural choice by architects for thousands of schools. The method eliminates beams, thus allowing a flat ceiling for all rooms. Rigidity and soundproofing are provided . . . plus a saving of 40% in dead load over other types of reinforced concrete. Since Steelforms are quickly placed and removed, pouring of concrete is speeded, with weeks of construction time saved. Total cost of the Evans School was only $12.13 per sq. ft. When it came to windows, Ceco's 1½" Intermediates got the call. Heavy 1½" sections assure smooth operation and long life. Maintenance is negligible. Large glass lights provide open view . . . controlled daylighting guards pupils' eyesight. As on thousands of projects, Ceco supplied the Reinforcing Steel on schedule . . . Ceco Integrated Service brought all products to Contractors Ringland-Johnson, Inc., as needed. Result . . . a better structure . . . building budget balanced. Here is another example of Ceco performing on the Architect-Contractor-Supplier team. Ceco Product Specialists help you save through product engineering. Consult Sweet's File for address. CECO STEEL

CECO STEEL PRODUCTS CORPORATION
Offices, warehouses and fabricating plants in principal cities. General Offices: 5601 W. 26th St., Chicago 50, Ill.

Roddiscraft — *quality wood craftsmanship for over 60 years*



when it's closed . . . complete safety

x-rays can't penetrate this door!

RUNAWAY x-rays can be dangerous . . . but there's no chance for x-rays to escape through Roddiscraft's X-ray Doors. A continuous sheet of lead the full height and width of the door provides complete protection for people in adjoining rooms and hallways.

Attractive Roddiscraft X-ray Doors are made to look like the standard flush veneered doors used in modern hospitals, clinics, sanitaria and doctors' offices. The big difference is under the surface. An inner lead shield — with thickness specified by the buyer — assures adequate protection. Even the bolts inside the doors are lead covered. These doors are specially manufactured to fit your client's needs. Write for complete information today, or see our catalog in Sweet's Architectural File.

How Roddiscraft X-ray Doors provide more protection

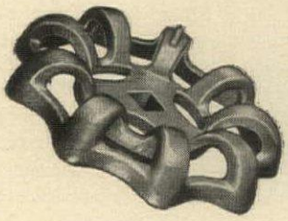
- **A.** Lead sheet — any desired thickness, bolted between two solid cores; extends to all four edges.
- **B.** Cores — low density wood blocks bonded together under heat and pressure with urea resin glue.
- **C.** Crossbandings — hardwood veneers glued with phenolic resin glue to both sides of core.
- **D.** Face veneers — selected hardwoods glued with waterproof resin glue to both sides of door and belt-sanded smooth.
- **E.** Edge strips — double thickness on top and bottom of door; side edge strips match face veneers.

Roddiscraft — one source for all your door needs

Roddis Plywood Corporation, Marshfield, Wis.
Warehouses in Principal Cities

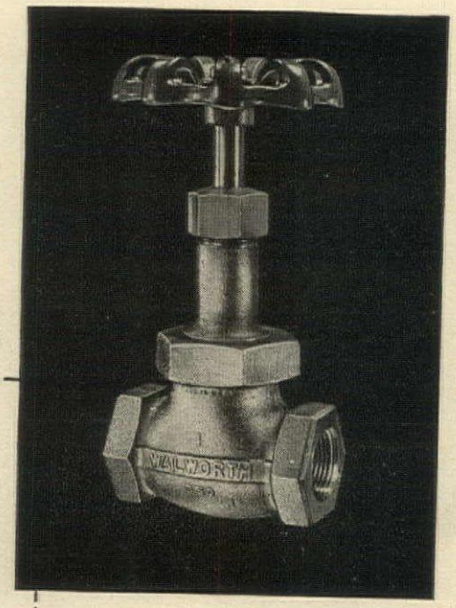
SOLID CORE | HOLLOW CORE | X-RAY | FIRE (B Label)

IDENTIFICATION DISC: An aluminum marking plate on all Walworth No. 225P's facilitates inventory control and makes reordering quick and positive.



NEWLY DESIGNED HANDWHEEL: Patented air-cooled, finger-fit handwheel affords sure grip even with greasy gloves.

IMPROVED PACKING: Molded packing of lubricated asbestos reinforced with copper wire. Suitable for practically every service. Valves can be repacked under pressure when fully opened.



take a good look at the Walworth "500 Brinell" no. 225P Globe

- the Toughest Bronze Valve Your Money Can Buy

The stainless steel, corrosion resistant seats and discs are heat treated to a hardness of 500 Brinell – hard enough to scratch glass and crush nails! The valve can be closed on sand, slag, and pipe scale without injury to the seating surfaces. "Wire drawing" is practically eliminated. All parts are accurately machined and gaged. Years of tight, positive shut-off are assured.

Available in both globe and angle types (angle type: No. 227P) in sizes ¼" to 2", this quality valve is recommended for 350 lbs. W.S.P. at 550 F, and 1000 lbs. non-shock service on cold water, oil, gas, or air.

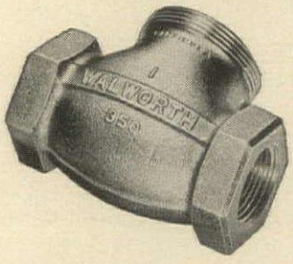
For full data on this long-life, economical Walworth Bronze Valve, see your local Walworth distributor, or write for Circular.

note these 7 Great Features

HEXAGONAL UNION BONNET CONNECTION: Union bonnet connection eliminates any chance of distortion or leakage even though valve is repeatedly taken apart and reassembled.

OVERSIZE STEM: The high-tensile strength silicon-bronze stem assures long life and protection against wear.

SEATS AND DISCS: Plug type seats and discs of stainless steel, heat-treated to 500 Brinell hardness and machined simultaneously to a mirror-like finish, with accurate tapers assures tight positive shut-off with minimum handwheel effort.



EXTRA STRONG BODY: Made of Composition M (ASTM B61) bronze. Thick walls and rugged hexes provide a high safety factor. Valves undergo hydrostatic shell test of 1,200 psi.

WALWORTH

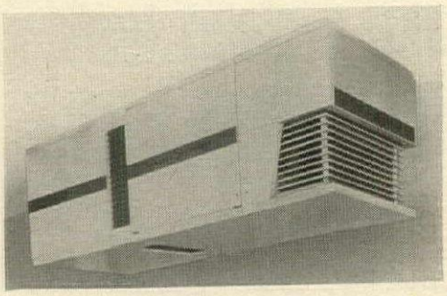
valves and fittings

60 EAST 42nd STREET, NEW YORK 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

PRODUCTS

Continued from p. 248



PACKAGED AIR CONDITIONERS hang from ceiling or sit on shelf

Finding the shortage of floor space chronic in countless commercial and industrial buildings, G.E. developed a line of horizontal packaged air conditioners that could be hung from a ceiling or mounted on a shelf. The series, which includes both water-cooled and waterless models in capacities of 3, 5 and 7½ tons, should make summer comfort practical in offices, stores, restaurants, and factories that put a premium on each inch of useable floor area.

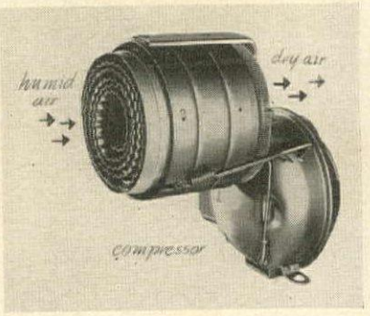
To cut sound level of the packaged units, motor, compressor and fan drive are set in resilient material, and big fan blades are used to move large air volumes quietly.

On air-cooled models, return air enters through grilles at bottom and sides of the unit. On water cooled units, air comes in at rear. Side panels snap off for servicing. An automatic control is included on both types for higher moisture removal in muggy weather. Accessories include a heating coil and three-way air distributor. Prices, about the same as floor models, range from $300 to $500 per ton of cooling, depending on particular installation requirements, and whether water-cooled or air-cooled units are selected.

Manufacturer: General Electric, Commercial and Industrial Air Conditioning Dept., Bloomfield, N.J.

LOW-PRICE DEHUMIDIFIER is unhoused but effective

Combatting rust, mildew, dripping pipes and other dampness discomforts, the *Dixie Air Dryer* can handle an enclosed space of 10,000 cu. ft.—or a room 35′ x 48′ with an 8′-high ceiling. Its bargain tag, $69.50, is the simple result of selling the dehumidifier works without a jacket for installation under store counter, table top or on apartment closet shelf. The *Dixie* also should be quite helpful on construction jobs for speed-up drying of plaster, mortar and concrete. Measuring a compact 15″ high, 14⅛″ long and 10½″ wide, the air



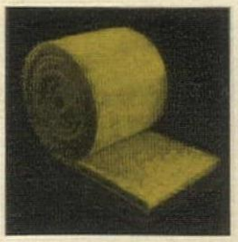
dryer consists of a ⅙th hp hermetically sealed unit. It weighs 45 lb. and operates on 110 A.C. current. As air is pulled over the refrigerated coils of its compressor, moisture condenses and is caught in a receptacle or carried off through a tube. At 90° F., 90% humidity, the air dryer removes 3 gal. of water every 24 hours, yet consumes about as much electricity as a 200-w. bulb.

Manufacturer: Adams Equipment Inc., Jackson, Mich.

continued on p. 260

How to kill three duct problems

with one insulation . . .



Thermal, acoustical and vapor barrier problems are "dead ducks" when you use ULTRALITE*, the long glass fiber insulation. Here's why: Due to its unique long glass fiber composition, ULTRALITE is the toughest, most resilient glass fiber insulation on the market, with a record of ten years of successful application. Because of this extra strength, it can be adhered to sheet metal and run through the brakes and shears at the same time the ducts are formed — without worry that it will tear, compress, or delaminate.

Ducts formed in this way are *completely insulated units,* ready to install on the job. They solve the noise problem without impairing the efficiency of the unit because ULTRALITE Duct Liner has a low air friction coefficient. The same insulation that soaks up objectionable sound also insulates the ducts against heat gain or loss. *No vapor barrier is necessary;* with the insulation on the *inside* of the duct, the duct itself becomes the vapor barrier.

Try this time-saving new method on your next job, and you'll be delighted with both cost and performance. But be sure to use ULTRALITE — the only flexible glass fiber insulation with a 10-year record of successful performance.

*Reg. U. S. Pat. Off.

NOTE

Should you continue to wrap ULTRALITE around the exterior of ducts for thermal protection, be sure to line the plenum and short supply and return ducts with ULTRALITE Duct Liner. Do so even on jobs where duct liner is not specified, and you will be well repaid, for this will make all the difference between an enthusiastic and a dissatisfied customer.

ULTRALITE is stocked locally in 57 cities. Your nearby distributor is listed in the Yellow Pages under "Gustin-Bacon Insulations."

GUSTIN-BACON *Manufacturing Company* GUSTIN gb BACON

Thermal and acoustical glass fiber insulations • Pipe couplings and fittings • Railroad gaskets and supplies

258 W. 10th ST., KANSAS CITY, MO.

OVERHEAD DOOR HOLDERS

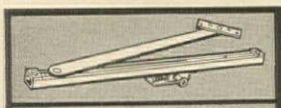
provide a cushioned stop . . .

that absorbs the shock of violent openings, avoids damage to glass, jamb, door, wall, hinges and other hardware and cuts down maintenance and repair costs.

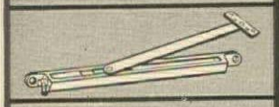
hold the door open . . .

during heavy traffic—at school dismissal, factory or office "quitting" time or when the theatre lets out. Heavy wear and tear of continuous opening and closing of the door is avoided.

Wide choice of styles to meet varying budget and installation requirements.



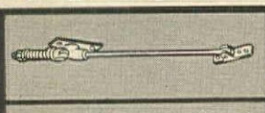
GJ 100 • 200 concealed in top rail of door. Finest for exterior and interior doors.



GJ 90 the outstanding surface type. For exterior and interior doors.

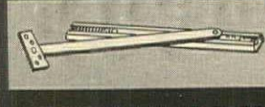
GJ ARISTOCRAT. Most "practical" for hard usage.

GJ 80 good quality for moderate cost installations.



GJ 70 for low cost installations.

GJ 300 Series—Friction type for interior doors. Concealed or Surface.



GJ 500 Series with shock absorber. Finest for interior doors.

specifying

is demanding quality

GLYNN•JOHNSON CORPORATION
4422 no. ravenswood ave. • chicago 40, illinois

Now—A **TOTALLY NEW KIND** of Built-up Roofing

Carey Fire-Chex

PERMA-TOPP ROOFING

Perma-Topp being applied over wood deck after removal of old roofing. The 1st ply has been applied and 2nd ply is being started.

Here, the 2nd ply is being completed.

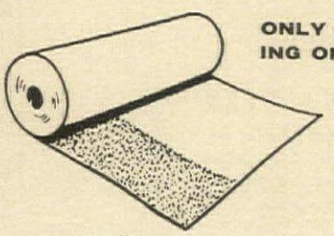
The totally **NEW** Built-up roofing that combines **BEAUTY** with greater **TOUGHNESS** and **FIRE SAFETY** than ever before possible!

No longer are you limited in your specifications to dull, drab built-up roofing for industrial and commercial installations. With Fire-Chex Perma-Topp, the saw-tooth or domed roof can be architecturally beautiful, colorful, heat-reflective! What's more, Perma-Topp lasts longer, provides greater protection against fire, weather and corrosive fumes.

Carey Fire-Chex Perma-Topp Roofing contains a patented formulation, developed after extensive laboratory and field testing. It stays tough, resilient, even through continuous exposure to sizzling temperatures (up to 185° F.) that dry out the vital oils in **ordinary** roofing causing disintegration, cracking, failure. Moreover, it has the Underwriters' Laboratories, Inc. Class B rating.

Perma-Topp's slate granule surface provides colorful beauty — with heat reflective properties when the lighter colors are specified. It never needs resurfacing, thus coating maintenance costs are eliminated . . . an economy feature your clients will appreciate. Perma-Topp will not "slide," another reason why it's ideal for saw-tooth or dome roofs. The coupon below will bring you complete specification details on Carey Fire-Chex Perma-Topp Roofing.

If you wish, a Carey Roofing Engineer will be glad to discuss the features of Perma-Topp with any member of your staff.



For the utmost in Fire-Safety, Fire-Chex Perma-Topp Roofing should be installed with the now famous Fire-Chex Vapor Barrier

ONLY CAREY FIRE-CHEX PERMA-TOPP ROOFING OFFERS ALL THESE ADVANTAGES!

- Beauty never available before
- Ability to withstand high temperatures
- Fire-Chex patented formulation
- Never needs coating
- Never needs resurfacing
- Will not slide
- Class B fire safety rating
- Three plies
- Easy to install
- Can be installed on hip and ridge roofs with less than 4" pitch

You can count on **Carey**

diversified products for industry, farm and home since 1873

The Philip Carey Mfg., Company
Lockland, Cincinnati 15, Ohio
In Canada: The Philip Carey Co., Ltd., Montreal 3, P. Q.

CLIP AND MAIL TODAY!

The Philip Carey Mfg., Company **Dept. AF-9**
Lockland, Cincinnati 15, Ohio

☐ Please send specifications and details on new **FIRE-CHEX PERMA-TOPP ROOFING.**

☐ Please have a Carey Industrial Sales Engineer call.

NAME_____

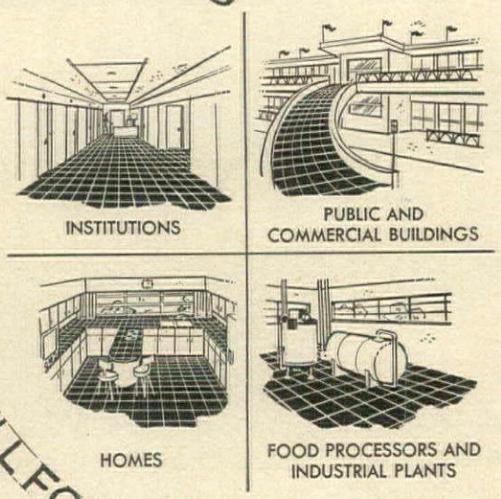
FIRM_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

SUMMITVILLE

Quarry Tile...



BEST OF ALL FOR FLOOR OR WALL

■ Summitville Quarry Tile is unsurpassed for durability and beauty.

Famous Summitville "Reds" *are* better for floors and wainscoting. They are fireproof, frostproof, acid-resistant, scratchproof and fadeproof. Summitville Quarry Tiles are created for abuse and, once properly installed, are maintenance-free for life.

These are just some of the reasons why more and more architects, engineers and sanitation experts are specifying Summitville, so when *you* specify Quarry Tile, make sure it's Summitville! Full information is yours for the asking.

NEW DATA FILE

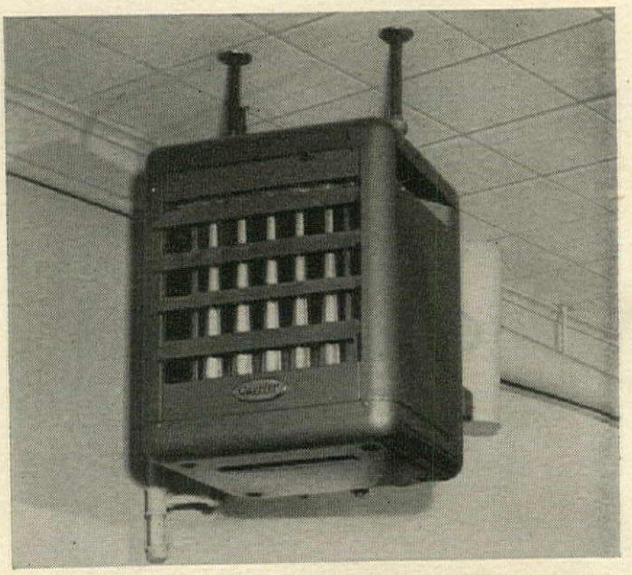
This beautifully bound book contains full information; sizes, colors and typical installation photos. Request on your letterhead.

Summitville TILES, INC.

SUMMITVILLE, OHIO

Carrier knows heating

Over fifty years of leadership in air conditioning have given Carrier unmatched experience in the control of temperature —heating as well as cooling. Yes, Carrier knows heating by experience—and all this engineering skill and leadership contributes to the superiority of Carrier Unit Heaters.



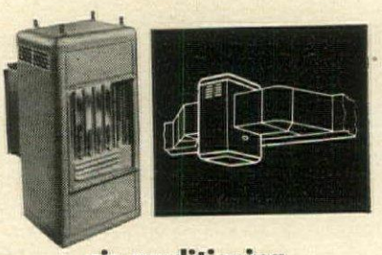
CARRIER GAS-FIRED UNIT HEATERS

begin with the outstanding midget-size Model 46T50/70, shown above. Only 23 inches high and relatively light in weight, this propeller-fan type unit heater packs a hefty 50,000 to 70,000 Btu/hr. input (according to fan-motor size). It is designed for use when both space and heating requirements are important.

And for extra-long life, only the Carrier line embodies the major advantage of 16-gauge ALUMINIZED STEEL heat exchanger. It lasts far longer than one of ordinary furnace steel of heavier gauge. The dozen or more other Carrier features are equally impressive. Six additional sizes.

Get the complete story about the full Carrier gas-fired line . . . propeller-fan and duct models ranging up to 230,000 Btu capacity. WRITE or USE COUPON for a copy of the 12-page folder on Carrier Gas-fired Unit Heaters.

Duct-type unit heaters embody all the major structural and control features of the fan-propelled model—minus fan. By-pass duct application shown here permits year-round air conditioning through the Carrier Weathermaker System. Available in seven sizes.



Carrier

air conditioning
refrigeration
industrial heating

CARRIER CORPORATION, 335 S. Geddes St., Syracuse, N. Y.
Please send me the 12-page folder on Carrier Gas-fired Unit Heaters.

*Name*_____

*Firm Name*_____

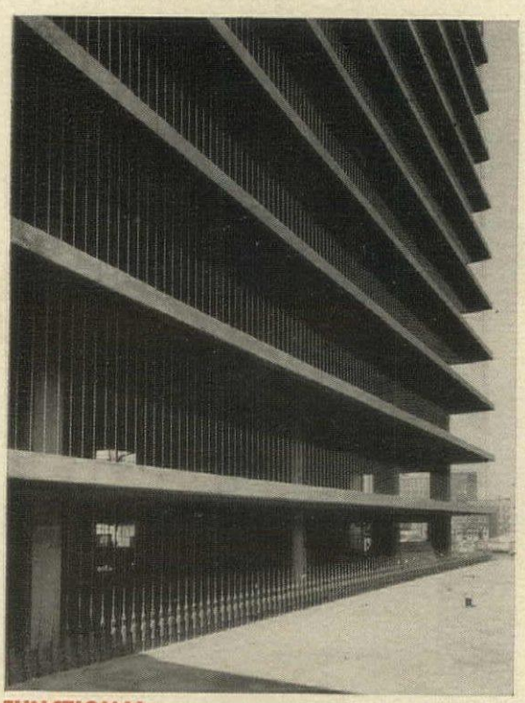
*Address*_____

New buildings

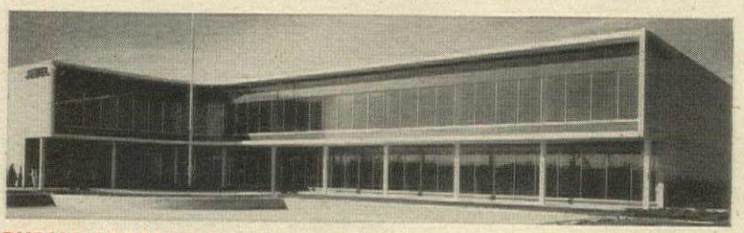
Designed for Permanence

with American Welded Wire Fabric

HIDDEN QUALITY. The real, lasting quality of a building lies hidden inside its structure. And in these new Berkshire Apartments in Lakewood, Ohio, near Cleveland, reinforced concrete structural elements are used to add permanence and reduce long-term cost. American Welded Wire Fabric is used throughout to give the concrete extra strength and resistance to cracking.



FUNCTIONAL yet strikingly good looking, this new Municipal Parking Garage in downtown Chicago, features pan and slab roof construction with American Welded Wire Fabric Reinforcement. All floors which must withstand heavy loads are also reinforced with American Fabric. Specify American Welded Wire Fabric for all your concrete.



PUBLIC APPEARANCE. Jewel Tea Company understands that buildings, even warehouses like this new one, can contribute much to the impression people form of a company. They chose attractive modern design for the building and used good-looking, durable concrete liberally. All concrete, inside and outside the building, is reinforced with American Welded Wire Fabric, which meets ASTM Specifications A 185-53T. For heavy duty construction purposes this fabric can be obtained in wire sizes up to and including ½" in diameter.

YOUR CLIENTS WILL ASK "is it Reinforced"

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS

TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

EVERY TYPE OF REINFORCED CONCRETE CONSTRUCTION NEEDS

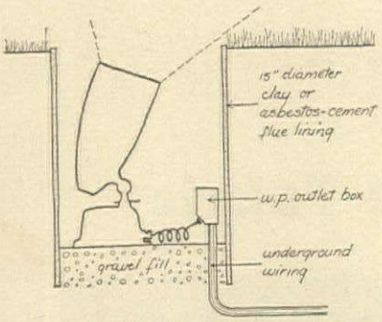
USS AMERICAN WELDED WIRE FABRIC

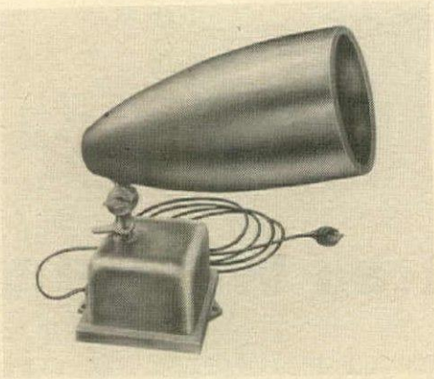
USS

UNITED STATES STEEL

PRODUCTS

Continued from p. 254





MERCURY FLOOD casts flattering moonglow on landscape

Breaking the gremlin monopoly on bottled moonlight, Lightolier is now marketing a new *Lytescape* fixture which sheds a silver soft luminescence on plants and trees. Source of the fixture's green blue illumination is a nonmagical mercury vapor lamp. Its inobtrusive smooth bullet shape reflector has full 45° cutoff to prevent disturbing glare. Completely watertight, the all-aluminum unit is open at the back to let rain, bugs and dirt wash through, and so may be placed on a lawn, fastened to a tree or building, or even set in a hole in the ground. It retails for $66.05.

Manufacturer: Lightolier, 11 E. 36th St., New York, N. Y.

TECHNICAL PUBLICATIONS

ACOUSTICS

Noise Simplified. H. H. Scott, Inc., 385 Putnam Ave., Cambridge, Mass. 18 pp.

AIR PURIFICATION

Protection from Smog. Connor Engineering Corp., Danbury, Conn. 8 pp.

CEILINGS

Flush Panel Aluminum Acoustical Ceilings. Simplex Ceiling Corp., 552 W. 52d St., New York 19, N.Y. 4 pp.

CEMENT

The Manufacture and Uses of Portland Cement. Medusa Portland Cement Co., 1000 Midland building, Cleveland 15, Ohio. 8 pp.

DISPLAY FIXTURES

Adjustable Metal Framing System for Use on Store Shelving, Wall Sections and Display Units. Unistrut Products Co., 1013 W. Washington Blvd., Chicago 7, Ill. 3 folders.

DRAFTING EQUIPMENT

Glider Blue Print Rack. Momar Industries, 4323 W. 32d St., Chicago 23, Ill. 4 pp.

ELECTRICAL EQUIPMENT

Fusible Service Entrance Equipment. GEA-6286. General Electric Co., Plainville, Conn. 16 pp.

FURNITURE

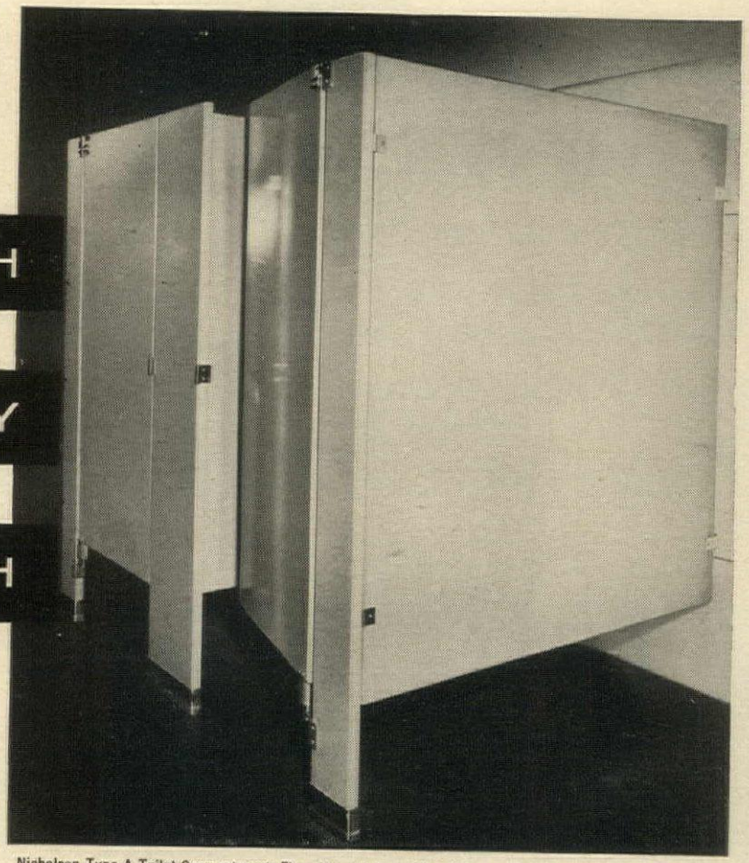
Allan Gould Designs. Allan Gould Designs,

continued on p. 266

STRENGTH

DURABILITY

FINISH



Nicholson Type A Toilet Compartment. Floor-braced. Four other types available in any of ten colors.

Nicholson Metal Partitions—

built to stand up . . . built to stand out

Toilet compartments may sometimes *look* alike—at first glance. But just check *details* and you'll see why Nicholsons' stand out. They don't merely meet specifications—they surpass them! The important Nicholson extras are what count.

- Full 20 gauge, 1" thick panels and doors—1¼" 16 gauge pilasters.
- Full 18 gauge drawn moulding—won't bend or dent in shipment and installation.
- Tops in finish—zinc chromate primer over galvanized bonderized steel; two coats of synthetic baked enamel.
- Patented sanitary floor and ceiling pilaster supports.
- Cast brass, chrome over nickel, hardware. Positive, unbreakable, adjustable gravity hinge—cam an integral part of barrel. Modern design in every detail.
- Individually packed panels—carton can be used as protective cover after installation.

Specify the compartments that will still stand out—after years of rugged use. Specify Nicholson.

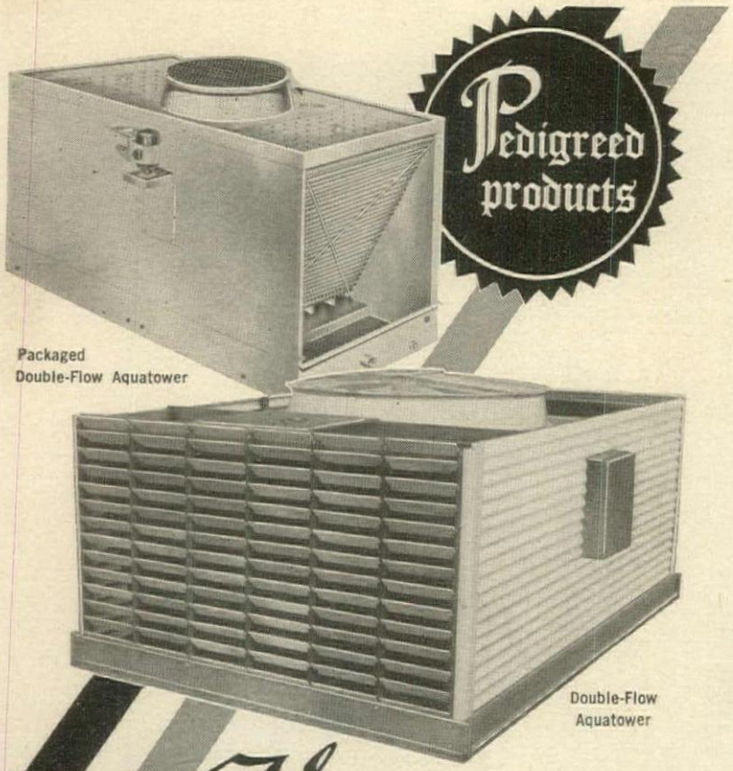
• *Available in the following types—and wide selection of colors*
Type A—floor braced • Type AC—ceiling hung • Type AR—overhead braced • Type B—flush type • Type BP—panel type

NICHOLSON

W. H. NICHOLSON and Company

METAL PARTITIONS • TRAPS • VALVES • FLOATS

14 OREGON STREET, WILKES-BARRE, PA. • SALES AND ENGINEERING OFFICES IN 58 PRINCIPAL CITIES



Marley Double-Flow* Aquatowers

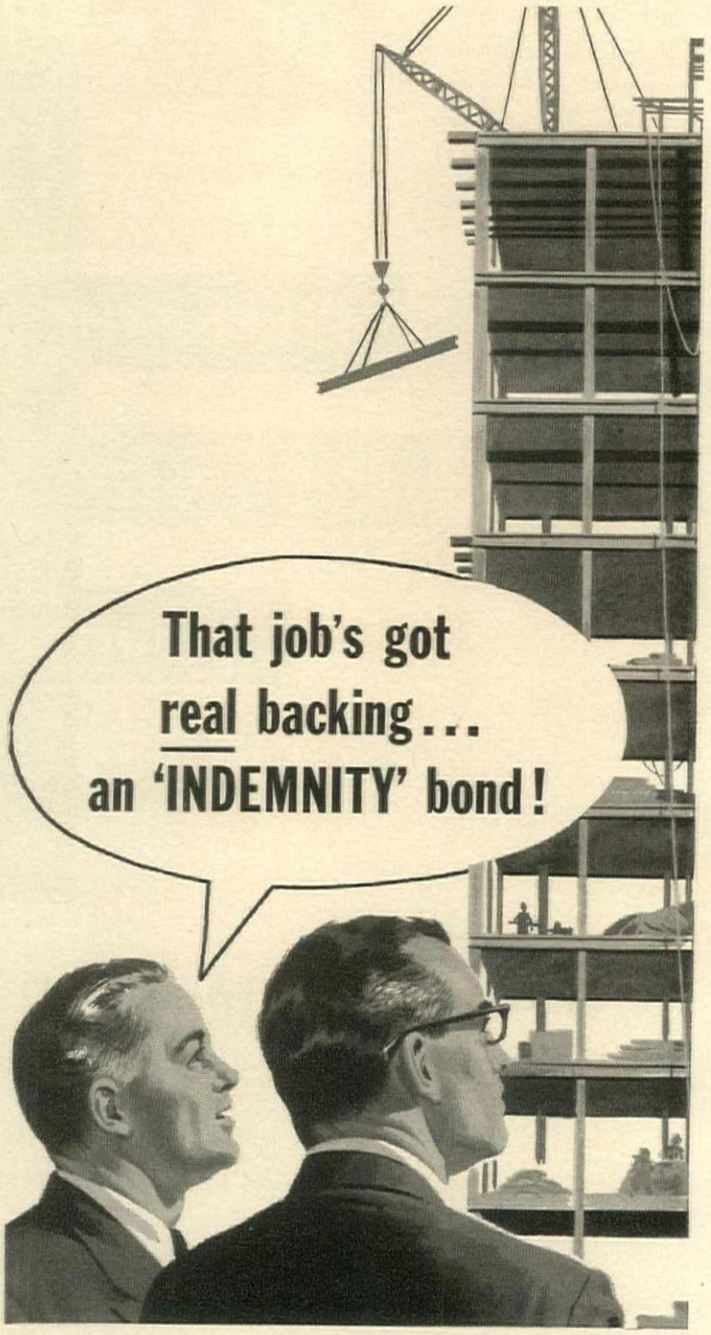
DOUBLE-FLOW AQUATOWERS have a proud heritage: they are the only cooling towers in the intermediate capacity field backed by years of selective development. Behind them stand Marley engineering and design ability and the Marley Double-Flow patents, without which no cross-flow tower can deliver full performance from every cubic foot of structure.

These towers are thoroughbreds in every characteristic. Every element is designed, manufactured and guaranteed by Marley. Included are the sturdy structure, high-performance filling and drift eliminators, and all mechanical equipment—fans and drive units. All parts are service-proved in thousands of units now in completely satisfactory operation the country over.

DOUBLE-FLOW AQUATOWERS are supplied with either asbestos cement board or steel casings for job erection. Steel cased PACKAGED DOUBLE-FLOW AQUATOWERS (60, 80 or 100 tons capacity) are shipped in three-sub-assemblies that reduce construction time from days to hours.

*Trademark Reg.

MARLEY **The Marley Company**
Kansas City, Missouri



The builder you choose has skill, integrity and responsibility. One other qualification—an INDEMNITY COMPANY bond—justifies complete confidence in him.

Indemnity Insurance Company of North America brings to a job the financial strength no builder can offer by himself. The builder with an Indemnity bond wears a special ribbon of endorsement. Indemnity's experience and financial resources are ingredients that reinforce performance—in doing the work, in meeting obligations.

When you consider a builder, consider the reputation and strength of his bond. The right company is a wonderful asset—to builder, to architect, to owner. This relationship, welded by Indemnity, is a winning combination.

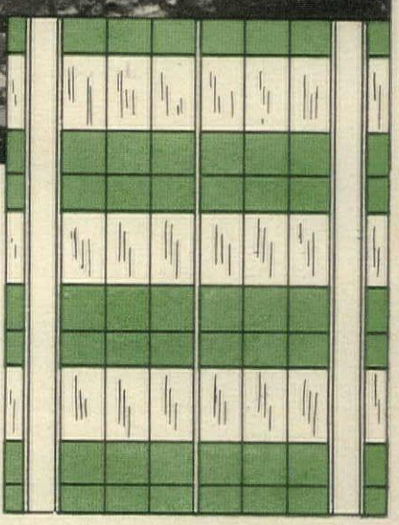
INDEMNITY INSURANCE COMPANY OF
NORTH AMERICA
One of the North America Companies which are headed by Insurance Company of North America, founded 1792

PROTECT WHAT YOU HAVE©

Philadelphia 1, Pa.

For Ford's new Central Staff Office Building . . .

Architect: Skidmore, Owings & Merrill, New York
General Builders: Bryant & Detwiler Co., Detroit

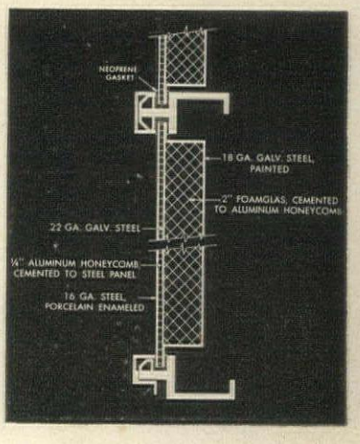


90,000 square feet of

ING-RICH PORCELPANELS®

Believed to be the largest use of porcelain enamel in a single building . . . this installation employs green-blue insulated porcelain enamel as spandrel panels below and above glass windows.

Here again in curtain wall construction porcelain enamel on steel offered the architect exceptional characteristics – including lightness in weight, space-saving properties, economy and adaptability to outstanding design effects. For details on how PORCELPANELS can be adapted to your next new or remodeled building, write our Architectural Division.



INGRAM-RICHARDSON MANUFACTURING COMPANY
BEAVER FALLS, PENNSYLVANIA

SEE OUR CATALOG IN SWEET'S

Member, Architectural Division, Porcelain Enamel Institute, Inc.

WHAT MAKES A WASHROOM?

NEW! STAINLESS STEEL *Lathurshelf*

Combination SHELF and SOAP DISPENSER

A public washroom is not complete unless it includes the conveniences for which it is intended. Two necessary conveniences are a soap dispenser and a shelf for personal articles.

LATHURSHELF provides the answer by combining in one self-contained unit a smart, practical *washroom shelf and heavy-duty soap dispenser* for use with liquid soap.

LATHURSHELF is available with single or double valves for 1 or 2 basins and can be furnished in either "lather" or "straight liquid".

SEE OUR CATALOG IN SWEETS, OR WRITE

AMERICAN DISPENSER COMPANY, Inc.
manufacturers of quality soap dispensing equipment
115 EAST 23rd ST., NEW YORK 10, N.Y. • OREGON 3-0999

The Old Colony Bank, Chicago, Ill. Architects: Graham, Anderson, Probst & White, Chicago. Furnished and installed by Kaufman & Brodt, Inc., Chicago. Alumiline Entrance Doors, Sidelights and Frame materials were used in conjunction with the Revolving Door by International.

ALUMILINE

EXTRUDED ALUMILITED ALUMINUM PRODUCTS

Specified by Leading Architects for:

HOSPITALS • SCHOOLS • RELIGIOUS BUILDINGS • BANKS
STORE FRONTS • OFFICE BUILDINGS • INDUSTRIAL PLANTS
HOUSING PROJECTS • SHOPPING CENTERS

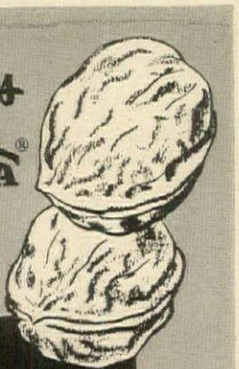
Also Furnished in the New, Non-Fading GOLD LITE

Send for 1955 Catalogs "Alumiline" Store Front Construction and "Alumiline" Entrances and Doors

see our catalog in Sweet's or write for copy

THE ALUMILINE CORPORATION
DUNNELL LANE PAWTUCKET, R. I.

Do You have samples of the New FORMICA® Flat Cut Walnuts?



At the A. I. A. Convention Formica® introduced two new flat cut walnuts, "Tawny" and "Autumn." Famous architects from all parts of the country were generous in their enthusiasm for the rich shades of a grain bold in character covering a wide area without repetition of pattern.

Beauty Bonded FORMICA® Laminated Plastic *Pays in Performance*

Guaranteed by Good Housekeeping

We'd like to send you samples . . . just write

Formica
4631 Spring Grove Ave.
Cincinnati 32, Ohio

+ hydroment

the "Plus" Factor in BETTER CONCRETE FLOORS for

+ Hardness
+ Density
+ Wearability
+ Corrosive Resistance
+ Appearance

Tested & Proved in Varied Industries for 16 years.

When you're considering concrete floors or service areas, it has been proved wise to specify HYDROMENT.

Hydroment is a cementatious hardener and densifier applied by the dust coat method when floor slabs are poured. It becomes an integral part of the concrete providing superior strength and density where it is most required—At The Surface.

Hydroment permanently beautifies and is available in seven pleasing, eye-resting colors and black—white.

Hydroment is versatile. It is resistant to corrosion of the type encountered in many industries and is, therefore eminently suitable for use in plants. It is surprisingly low in cost.

Write for Complete Details and NEW HYDROMENT BULLETINS.

4805 LEXINGTON AVE. CLEVELAND 3, OHIO

THE UPCO COMPANY

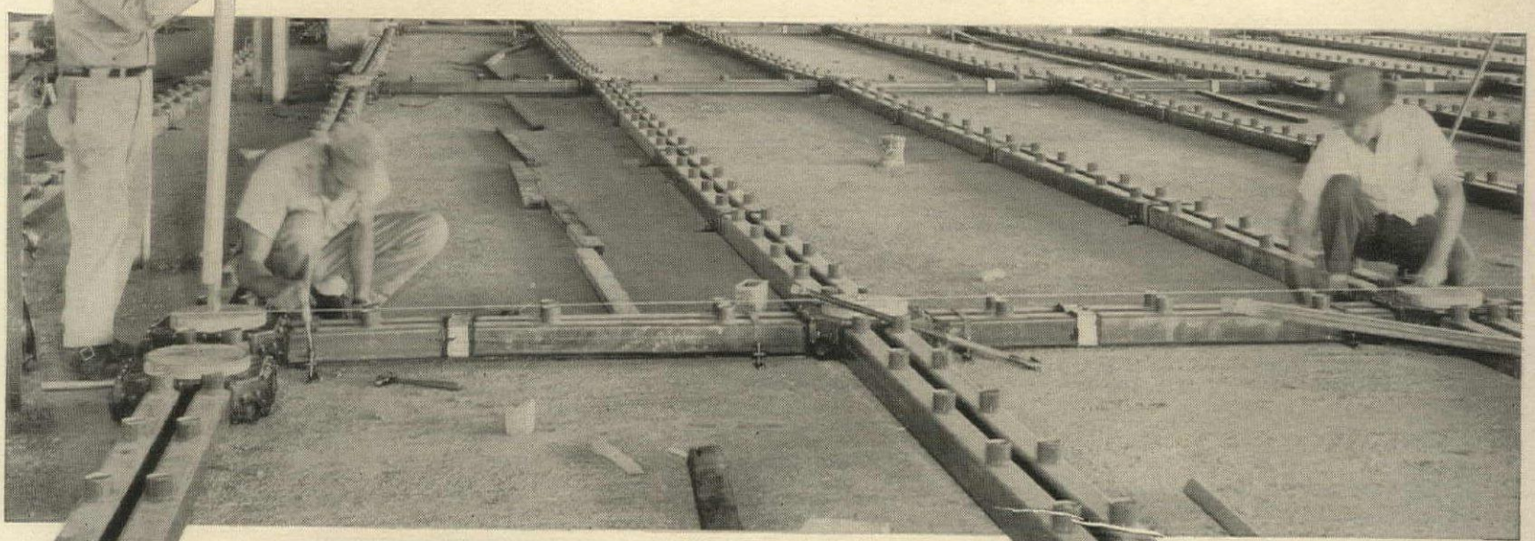
PIONEERS IN INDUSTRIAL RESEARCH SINCE 1881

When you build, take a look at

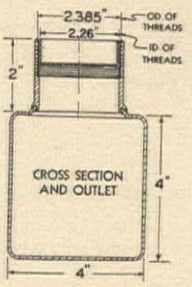
JUMBODUCT

THE HEAVY-DUTY ELECTRICAL RACEWAY THAT PROVIDES EVERY POWER REQUIREMENT IN THE FLOOR

National Electric JUMBODUCT now offers industry three times the capacity previously available plus freedom from the hazards of overhead wiring. It permits flexible, attractive, plant layouts by providing readily accessible electrical underfloor distribution at a minimum investment.



Check these JUMBODUCT features



Plenty of capacity

4″ x 4″ Cross Section—more room for wires

Efficient power distribution

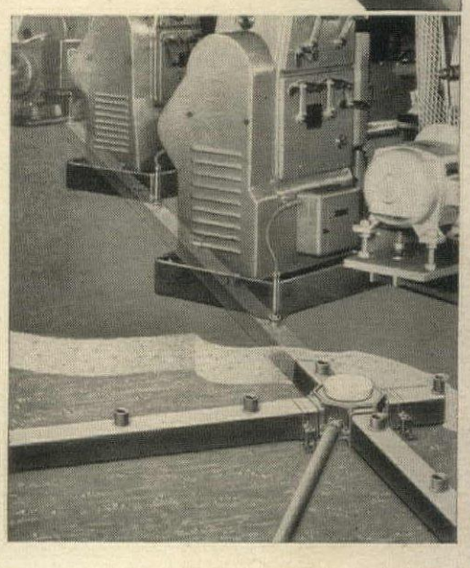
2″ pipe threaded outlets every 24″ permits exact location of equipment

Low Cost

- Easy-to-handle 10′ lengths
- Same simple installation procedure as standard Nepcoduct
- Quick access to inserts
- Investment in conductors limited to today's needs with ample space for tomorrow's additions

Safety

- Protected against corrosion by Sherardizing.
- Coated with a baked-on acid-resisting enamel.
- A completely grounded all-steel system.



Get the details on JUMBODUCT today! Write for your free copy of the engineering Data Book on NE JUMBODUCT

NATIONAL ELECTRIC PRODUCTS CORP. PITTSBURGH, PA. 50TH ANNIVERSARY 1905–1955

National Electric Products

PITTSBURGH, PA.

3 Plants • 10 Warehouses • 36 Sales Offices

PRODUCTS

Continued from p. 260

Inc., 166 Lexington Ave., New York 16, N.Y. Price list included.

Private Office-ettes for Employees. Arnot-Jamestown Div., Aetna Steel Products Corp., 730 Fifth Ave., New York 10, N.Y. Fold-out

White Mountain Office Furniture. The Maine Manufacturing Co., Nashua, N.H. 4 pp.

GLASS

Architectural Data for Glass Clad Buildings. Pittsburgh Plate Glass Co., Pittsburgh, Pa. 8 pp.

GRATING AND STAIR TREADS

Electroforged Steel Grating and Treads. Bul. 2486. Blaw-Knox Equipment Div., Blaw-Knox Co., Farmers Bank Bldg., Pittsburgh, Pa. 16 pp.

Klemp Data & Specifications Manual. Klemp Metal Grating Corp., 6605 S. Melvina Ave., Chicago 38, Ill. 16 pp.

HARDWARE

Fenestra 1⅜" Flush Metal Swing Door, Frame, Hardware Units. Detroit Steel Products Co., 3111 Griffin St., Detroit 11, Mich. Folder.

HEATING AND AIR CONDITIONING

Basic Safety Controls for Hot Water Space Heating Boilers. McDonnell & Miller, Inc., 3500 N. Spaulding Ave., Chicago 18, Ill. 8 pp.

Central-Station, Cabinet-Type Air Conditioning Units. Bul. 8127. American Blower Corp., Detroit, Mich. 20 pp.

General Util-A-Vent Ventilating Units. Bul. UVS 103. General Blower Co., Morton Grove, Ill. 20 pp.

Packaged Air Conditioning. Bul. C-1100-B64. Worthington Corp., Harrison, N.J. 8 pp.

Roof Ventilators Bul. A-112. Hartzell Propeller Fan Co., Piqua, Ohio. 12 pp.

LIGHT CONTROL

Mackin Visual Education Blinds. Mackin Venetian Blind Co., Momence, Ill. 4 pp.

Movable Shutters. Heinley Mastercraft Products, 1620 Euclid St., Santa Monica, Calif. 8 pp.

Room-Darkening Draperies. Williamsburg Drapery Co., Inc., 819 W. Chicago Ave., Chicago 22, Ill. 4 pp.

LIGHTING

Alpha 100 Lighting Catalogue Marvin Manufacturing Co., 648 South Santa Fe Ave., Los Angeles 21, Calif. 150 pp.

Lighting Fixture Guide. General Electric Co., Nela Park, Cleveland 12, Ohio. 40 pp. 50¢

MAINTENANCE

Masonry Preservation. The Tremco Manufacturing Co., 8701 Kinsman Rd., Cleveland 4, Ohio. 16 pp.

The New Spencer P118 Vacuum Cleaners. The Spencer Turbine Co., Hartford 6, Conn. 4 pp.

METALS

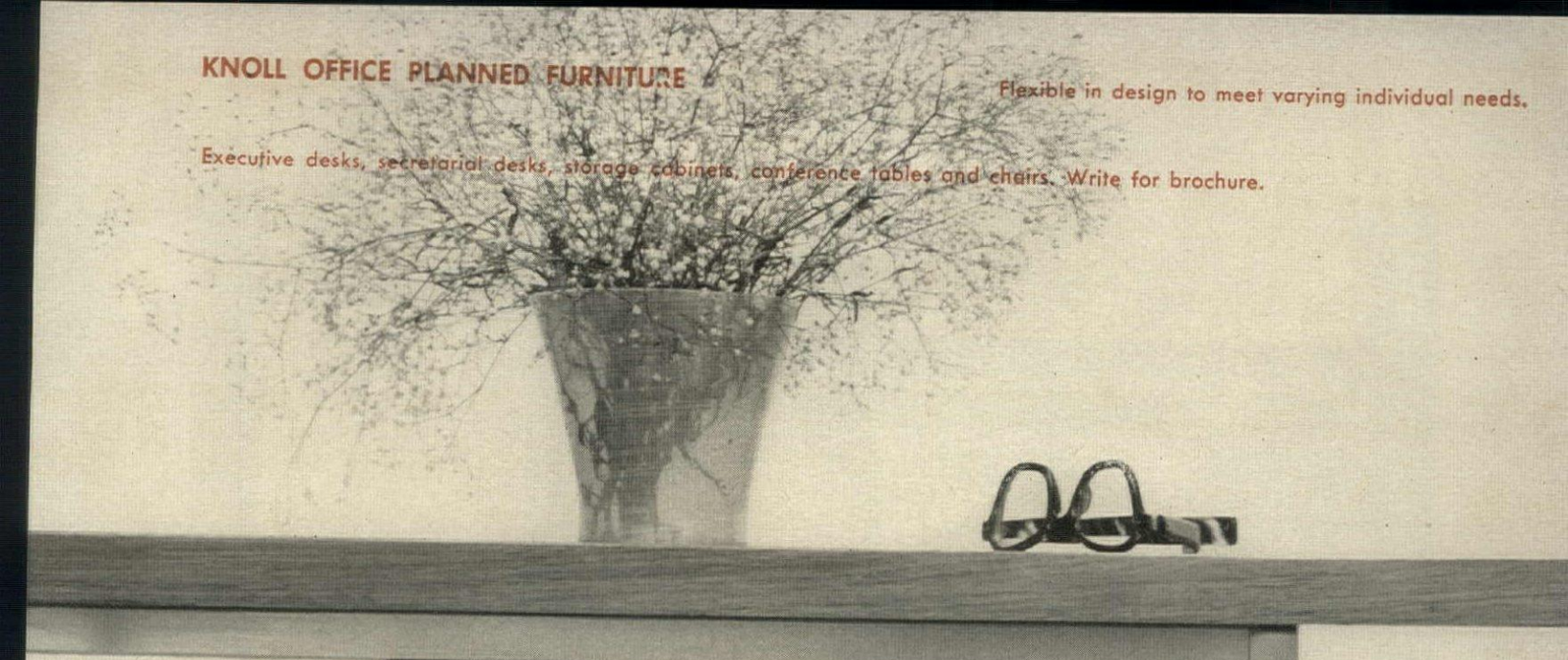
How Zinc Controls Corrosion. American Zinc Institute, 60 E. 42d St., New York 17, N.Y. 32 pp.

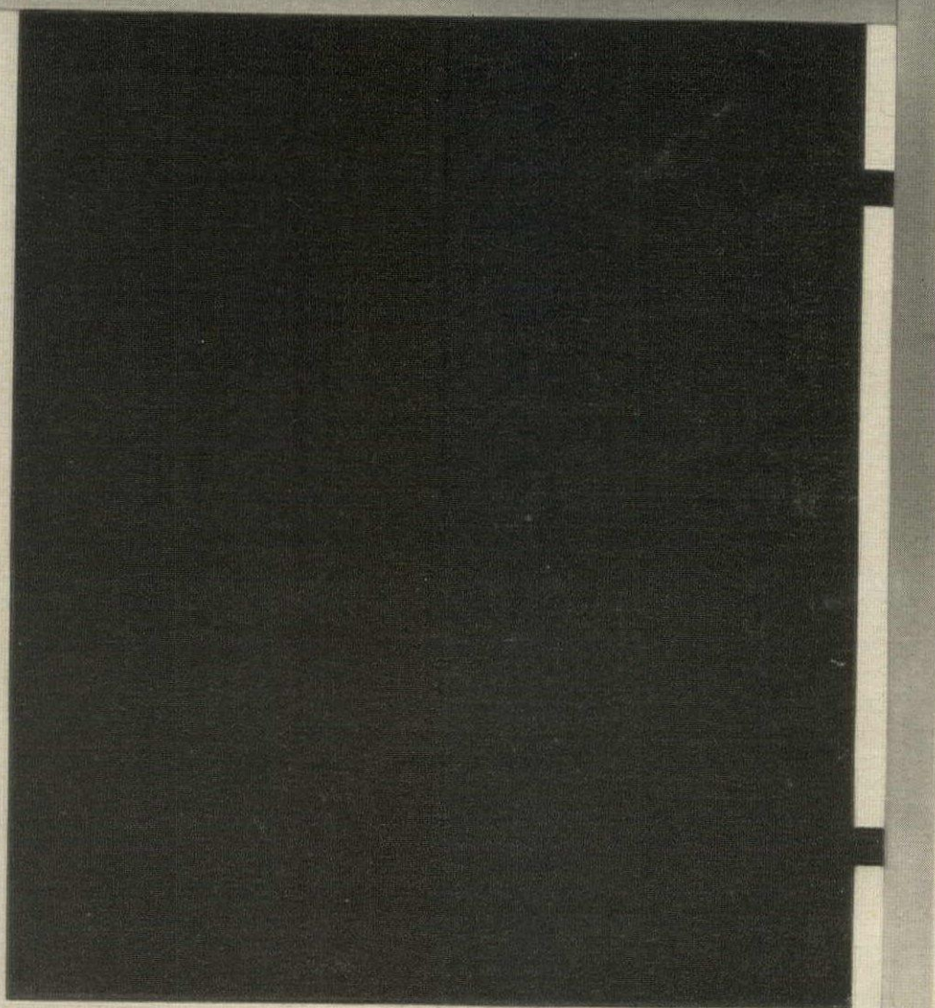
continued on p. 272

KNOLL OFFICE PLANNED FURNITURE

Flexible in design to meet varying individual needs.

Executive desks, secretarial desks, storage cabinets, conference tables and chairs. Write for brochure.





KNOLL ASSOCIATES, INC.

575 Madison Ave.

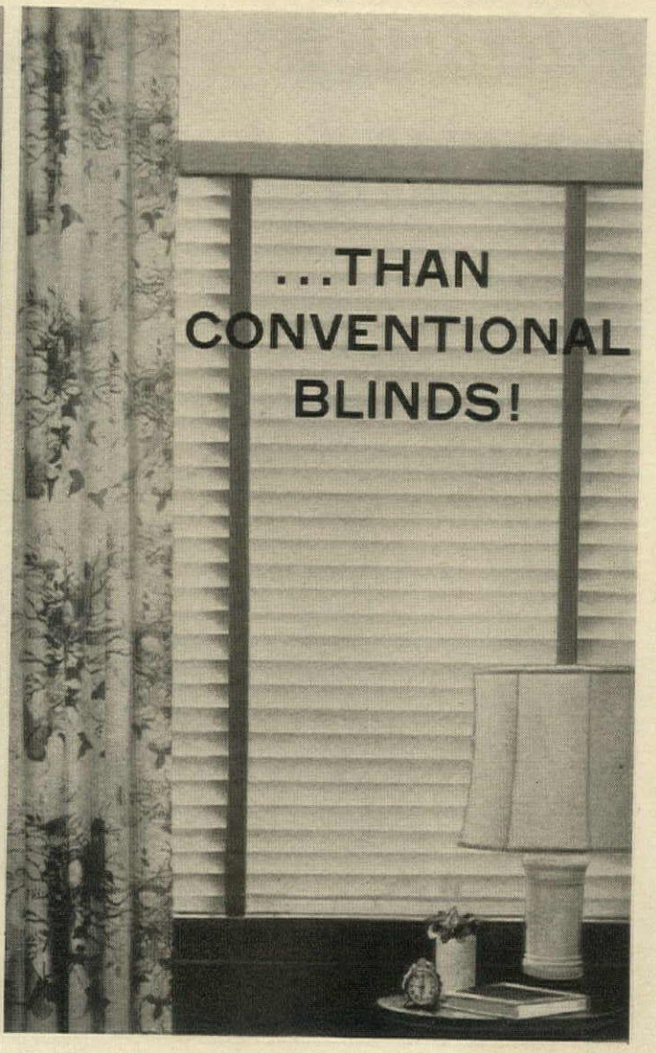
New York 22, NY

Boston, Chicago, Dallas

Detroit, Miami, Washington

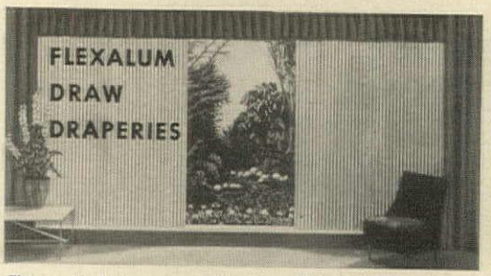
1503E executive desk, Florence Knoll design

New *Flexalum*® TWI-NIGHTER® blind

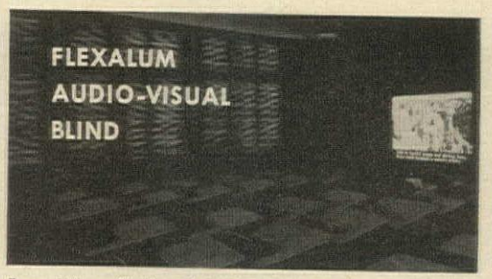


GIVES COMPLETE LIGHT CONTROL, PRIVACY AND VENTILATION AT NO EXTRA COST!

The new Flexalum Twi-Nighter blind shuts so tight, it keeps out six times more daylight than a fully-closed conventional blind, according to independent laboratory tests.* Makes rooms not just dim, but dark. In apartment houses and homes, it lets residents sleep later in the morning, helps along baby's afternoon nap, assures privacy from any angle. In hospital rooms, it is more conducive to daytime resting. Yet amazingly enough, the Flexalum Twi-Nighter costs the same as any other established leading custom-built venetian blind. Also features wipe-clean plastic tapes, snap-back aluminum slats, nylon cords, non-slip tilt control and other famous Flexalum features that mean longer life, lower maintenance costs and smoother operation.



The new look for your windows . . . with aluminum louvers that rotate. Flexalum brings you the new vertical treatment with light and air control, and exclusive longer-life, lower-maintenance-cost features. Ideal as a room divider too.



Room into auditorium, instantly! Field tests just completed by a leading independent testing laboratory show that the new Flexalum Audio-Visual Blind keeps out *30 times more* daylight than conventional blinds. Write for test report.

*Complete 20-page report of tests conducted by U. S. Testing Company sent on request. Write to: Hunter Douglas Corp., Dept. 71 , 150 Broadway, New York 38, N. Y. (In Canada: Hunter Douglas Ltd., Dept. 71C , 9500 St. Lawrence Blvd., Montreal, Que.)

Flexalum

FLEXALUM VENETIAN BLINDS

FLEXALUM ALUMINUM AWNINGS

FLEXALUM DRAW DRAPERIES

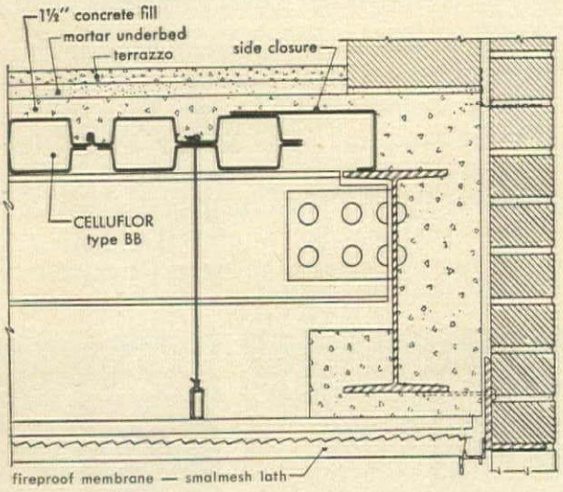
FLEXALUM AUDIO-VISUAL BLINDS

MILCOR®

METAL LATH PRODUCTS

Machine applied, lightweight-aggregate plaster may now be used in almost any type of building, bringing costs of the finest interior surfacing well within those of lesser materials.

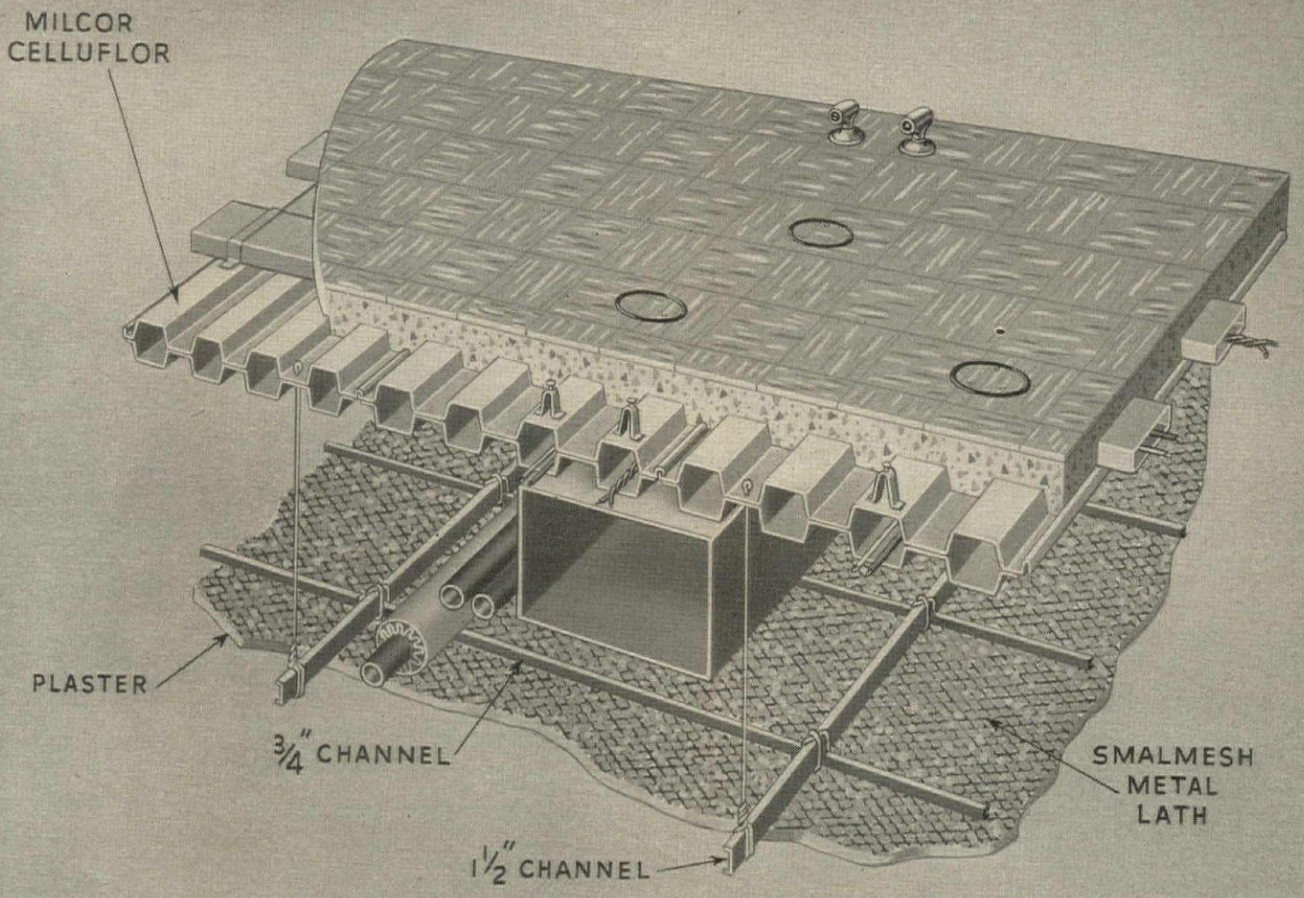
Membrane fireproofing of beams and girders is machine applied. Modern plastering machines move lightweight-aggregate plaster up to a distance of 75 feet for fast, uniform application.



Detail shows membrane fireproofing with Milcor lath suspended from Milcor CELLUFLOR.

New Methods Cut Costs in Fireproofing Cellular Steel Floors

Specify Plaster on Metal Lath for



Milcor CELLUFLOR is effectively fireproofed with a suspended plaster ceiling using Milcor Channels, Metal Lath and Accessories. This combination produces the perfect, lightweight, membrane fireproofing with high fire-resistance ratings. Write for results of fire tests. Milcor CELLUFLOR, protected by TI-CO® galvanizing, provides in-floor raceways, spaced six inches on centers for complete electrical flexibility and other service requirements.

®Reg. U. S. Pat. Off.

Machine-application of plaster to metal lath marks dramatic progress in membrane fireproofing

In recent years the use of cellular steel floors has established a new concept of electrical flexibility, as well as erection and maintenance economies in modern buildings.

Now the increasing use and acceptance of the plastering machine is proving to be another revolutionary development in the industry. The application by machine of scratch, brown and finish coats of plaster to metal lath is thoroughly practical. Savings in time and cost are substantial.

Membrane fireproofing of cellular steel floors by machine application of plaster over metal lath affords the advantages of practical fire protection in combination with important cost-reducing factors. Together these developments make one of the building industry's most interesting stories.

Write for Catalogs on Milcor Metal Lath Products and Milcor Celluflor, also for Bulletins on Membrane Fireproofing and Machine Application of Plaster.

INLAND STEEL PRODUCTS COMPANY

4031 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

Lasting Quality and Genuine Economy

Metal lath membrane fireproofing of steel columns is unequalled for simplicity and economy.

PRODUCTS

Continued from p. 266

Better Showrooms Sell Better Lighting. Lightolier, 11 E. 36th St., New York, N.Y. 12 pp.

RLM Standard Specifications for Industrial Lighting Units. RLM Standards Institute, Suite 818, 326 W. Madison St., Chicago 6, Ill. 46 pp.

MAINTENANCE

Vyniflex Patch or Resurface Floors. Flexrock Co., 3600 Q Filbert St., Philadelphia 1, Pa. 4 pp.

MATERIALS HANDLING

Modern Lifting. Globe Hoist Co., E. Mermaid Lane at Queen St., Philadelphia 18, Pa. 4 pp.

PARTITIONS

Movable Metal Walls Provide Space Control. The Mills Co., 998 Wayside Rd., Cleveland 10, Ohio. 68 pp.

PIPING

Metalbestos Gas Vent Pipe. Catalogue No. 6B. William Wallace Co., Belmont, Calif. 12 pp.

PLASTICS

Fiberglas Reinforced Molding Compounds. Owens-Corning Fiberglas Corp., 598 Madison Ave., New York 22, N.Y.

PLUMBING

Milvaco Bronze Valves. Catalogue No. B255. Milwaukee Valve Co., 2375 S. Burrell St., Milwaukee 7, Wis. 4 pp. fold-out

National Plumbing Code. The American Society of Mechanical Engineers, 29 W. 39th St., New York 18, N.Y. $3.50. 196 pp.

PROTECTIVE COATINGS

Paint Specifications. Steel Structures Painting Council, 4400 Fifth Ave., Pittsburgh 13, Pa. $1.50. 96 pp.

Paint System Specifications. Steel Structures Painting Council, 4400 Fifth Ave., Pittsburgh 13, Pa. $1.50. 76 pp.

Steel Structures Painting Manual. Vol. 2. Steel Structures Painting Council, 4400 Fifth Ave., Pittsburgh 13, Pa. $6. 300 pp.

ROOFING

Erecting Tectum Roof Decks. Tectum Division, 105 S. Sixth St., Newark, Ohio. 20 pp.

SOUND PROOFING

Sound Absorption Coefficients of Architectural Acoustical Materials. Acoustical Materials Assn., 57 E. 55th St., New York, N.Y. 30 pp.

SOUND SYSTEMS

Engineered Sound Products. Altec Lansing Corp., 161 Sixth Ave., New York 13, N.Y. 34 pp.

How Revere Copper and Brass Inc. Keeps Company-wide Control of Operations with P-A-X. Automatic Electric Sales Corp., 1033 W. Van Buren St., Chicago 7, Ill. 4 pp.

VAULTS

A Selection of Modern Architraves. The Mosler Safe Co., 320 Fifth Ave., New York 1, N.Y. 4 pp.

WELDING

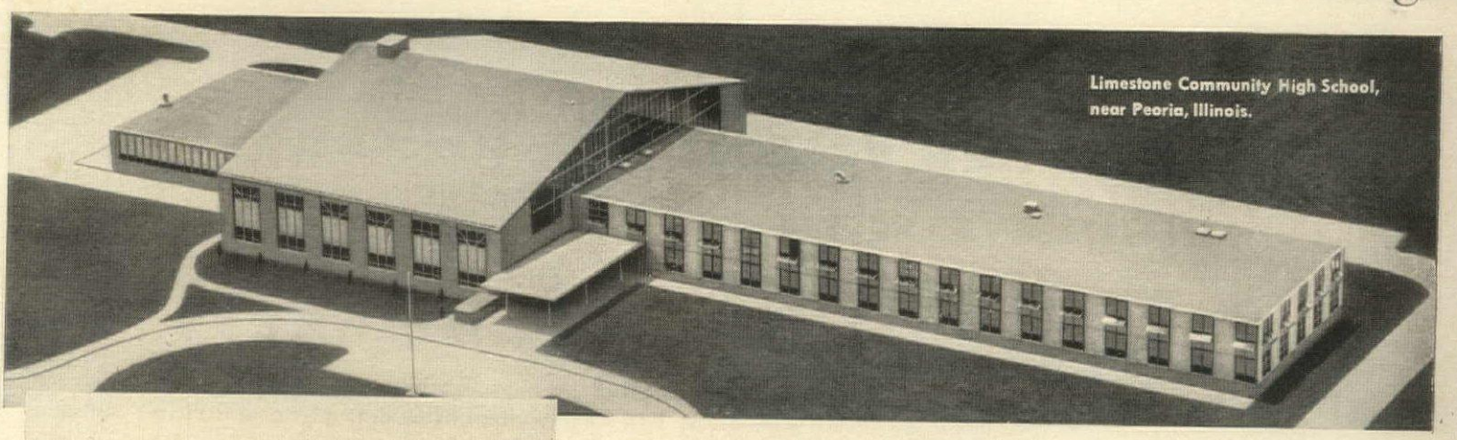
Standardized Stud Welding Design and Specification Booklet. KSM Products, Inc., Merchantville 8, N. J. 16 pp.

WINDOWS AND DOORS

How to Modernize Old Windows with PC Glass Blocks. Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh 22, Pa. 8 pp.

Solid Core Flush Doors. Brochure No. 5. Architectural Woodwork Institute, 332 S. Michigan Ave,. Chicago, Ill. 12 pp.

SCHOOL ARCHITECTURE and LURIA Steel Buildings



Limestone Community High School, near Peoria, Illinois.

Grade School, Community District Unit 213, Fancy Prairie, Illinois.

ARCHITECTS: HEWITT & BASTIAN PEORIA, ILL.

All the INDIVIDUALITY OF CUSTOM-BUILT STRUCTURES *plus* the ADAPTABILITY and ECONOMY of LURIA'S STANDARDIZATION...

More and more, Luria Standardized Steel Frames are employed in successful school architecture. By designing around and inside them, today's architects are achieving handsome, custom-designed structures at less cost... and in less time. For the *complete* Luria story, contact your nearest Luria office for a catalog or personal call.

AISC

LURIA ENGINEERING Company

511 FIFTH AVENUE, NEW YORK 17, N. Y.

Plant: BETHLEHEM, PA. • *District Offices:* ATLANTA, PHILADELPHIA, BOSTON, CHICAGO, WASHINGTON, D.C. • Dealers in Principal Cities and Canada

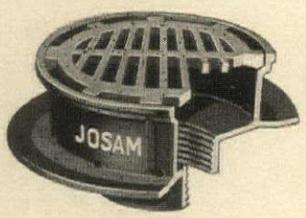
---

NOW... greatest NEW drain development in years!...

Josam

SUPER-FLO FLOOR DRAINS

(PATENTED)



Josam Series No. 7000

Designed with perimeter slots in the grate which increase free drainage area of top and permit greater flow into the drain. Waste water enters drain at the very edge of the drain top instead of flowing over the wide rim of conventional drains before it reaches grate opening. Water friction loss is greatly reduced and flow rate (GPM) into Josam SUPER-FLO Drains is greater than flow rate into standard drains of same or larger size top.

Therefore a Josam Super-Flo Drain of a smaller top size can be installed to service the same drainage condition as a larger top size standard drain.

Josam SUPER-FLO Drain with 7" top

gives the same or greater flow rate and can be used instead of a

STANDARD DRAIN with 9" top

Details and specifications for architects and engineers are available in a new 8-page booklet. Send for your copy today.

JOSAM MANUFACTURING COMPANY

DEPT. AF • MICHIGAN CITY, INDIANA

Representatives in all principal cities.

***We are collaborationists . . .**

. . . our insignia

History has proven that yesterday's dreams are today's problems and tomorrow's improved living.

MACK MOLDING Technicians offer their *"personalized collaboration"* to Architects—Consulting Engineers—Construction Men—or any professional men with problems to solve or ideas to develop.

Despite the impressive record of MOLDED PLASTICS in industry, MACK MOLDING COMPANY would be the last to imply that PLASTICS can improve any product or solve any problem. However, we do stress the availability of our *"collaborationists"* (engineers) to pass upon the desirability of using MOLDED PLASTICS in solving your problem, and to make constructive recommendations.

You possibly have a potential money maker for yourself and we hope to gain correspondingly higher production for MACK MOLDING PLASTICS components.

Yes, we at MACK MOLDING have been *"collaborating"* with people such as yourself since 1920 and believe we are qualified to render a service to you.

* American style

MACK MOLDING COMPANY

125 Main Street, Wayne, N. J.

Look into timely Loveliness... with

Stylon
CERAMIC TILE
Beautiful • Enduring • Economical

During the last decade, ceramic tile has played an increasingly important role in American architecture.

Each year, more and more residential and commercial designers have found in tile the drama, color, flexibility, and service shared by no other building material.

And, as architects have turned to tile, so they have turned to Stylon Ceramic Tile.

Why? Because Stylon offers *eighteen* lovely wall colors, and matching or contrasting floor tiles in literally thousands of imaginative combinations.

Because Stylon, with its ingenious, "Sure-Space" device, assures impeccably straight lines and uniform joints.

Because Stylon, made in three of the world's most modern plants, has set new standards in quality control, color beauty and timeless durability.

Join the thousands of architects who have looked into loveliness — with Stylon Tile.

See our insert "Harmonies in Color" in Sweets.

STYLON CORPORATION
Milford, Mass. • Florence, Ala.

Gentlemen: I am interested in the Stylon Ceramic Tile Story. Please send me complete details.

Name.....Position.....

Firm Name.....

Address.....

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

THIS COUPON BRINGS YOU NEWEST DATA ON COMPLETE SWING DOOR ENTRANCES ▶

INTERNATIONAL STEEL COMPANY
ENTRANCE DIVISION
2062 Edgar Street, Evansville 7, Indiana

Send me without obligation my personal copy of the New Standard Swing Doors Data File, No. S-156:

NAME and POSITION _____

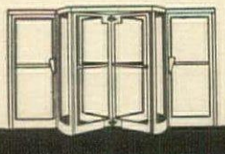
FIRM _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

"Preview" of your NEWEST PLANNING GUIDE from America's Entrance Specialists

So new it was not yet printed when this magazine went to press! So now you know why your latest handbook from International — covering the newest advances in standardization of complete swing door entrances — is illustrated here in its original layout form. You'll also know you have the most up-to-date data to aid your entrance planning, when you add this up-to-the-minute manual to your reference file. Reserve your copy of Data File No. S-156 by mailing the above coupon *now*.

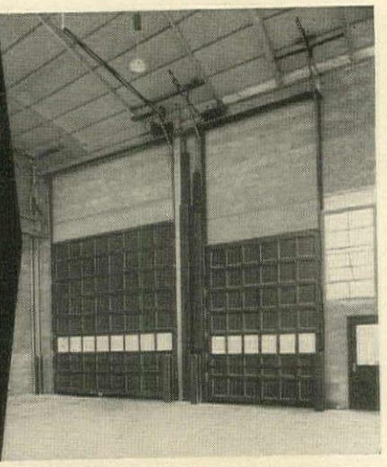


ENTRANCE DIVISION
2062 EDGAR ST., EVANSVILLE 7, IND.

INTERNATIONAL STEEL COMPANY

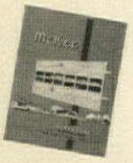
McKEE OVERDOORS for INDUSTRY

for factories and warehouses with high ceilings where overhead cranes are utilized!



Shown above is an installation of two McKee Vertical Lift Overdoors. These doors required special engineering to follow the contour of the roof, and still give clearance for the overhead crane rails.

McKee Vertical Lift Overdoors are available with either weight or spring counterbalance and can be manually or electrically operated.

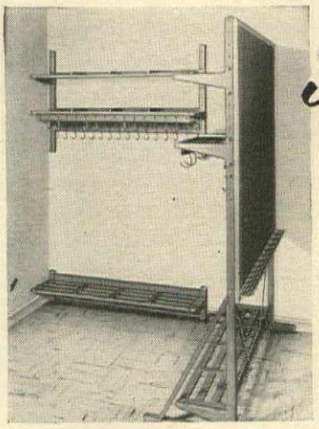


Bulletin on McKee Overdoors is yours on request.

McKEE DOOR Company

OVERDOORS McKEE TRADE MARK OPERATORS

Main Office and Factory
95 Hankes St. • Aurora, Illinois
In Canada: McKee Door of Canada, Ltd.
14 Jutland Road, Toronto, Ontario



Schooline* WARDROBE SYSTEMS

Chalkrobes*
Corkrobe*
Wallmounts*

*TRADE MARKS

A completely flexible system of large capacity, wardrobe racks with adjustable shelves (any height to accommodate different aged groups). Dual-purpose—each backed with a chalk board or a cork board, also serves as moveable screens or room dividers. Each 4 ft. unit holds 16 spaced-apart coat hangers or 24 coat hooks, and provides 2 hat shelves and an off-the-floor overshoe shelf.

Chalkrobe* as described above with 48" x 50" green composition chalk board back complete with molding and eraser tray.

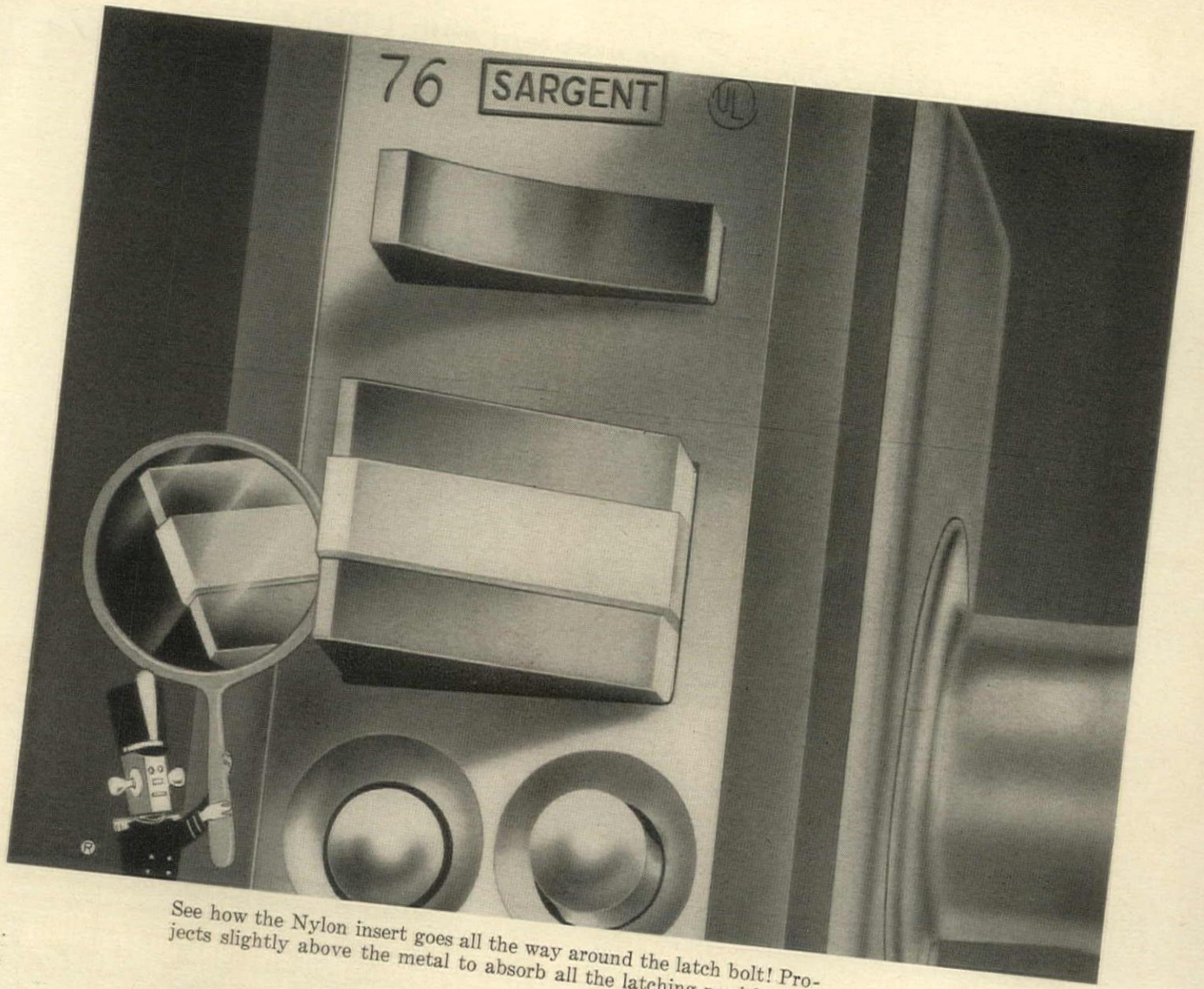
Corkrobe* as described above with 48" x 50" corkboard (pin up bulletin board) in attractive metal molding.

Wallmount* WARDROBE RACKS

Hat and Coat racks, with adjustable height shelves mount directly on wall. Also overshoe shelf Wallmounts.

Write for Bulletin SL 48

VOGEL-PETERSON CO.
1127 West 37th Street • Chicago 9, Illinois



See how the Nylon insert goes all the way around the latch bolt! Projects slightly above the metal to absorb all the latching punishment.

Now... the Perfect Latch Bolt with a MOLDED NYLON INSERT!

Gives quieter, easier operation! Shows no sign of wear even after a million closings! Yet it sells for no extra cost!

The new Sargent Latch Bolt . . . with its truly amazing Nylon insert . . . is a further improvement for the world's finest lock. The Sargent Integralock.

This Nylon insert greatly reduces friction of the latch bolt on strike areas . . . and on lock front areas, too.

It enables a door to be closed with 35% less force than a solid metal latch bolt. This reduced closing resistance permits the slowest adjustment of door closers. It makes door closing noiseless. Desirable in all buildings. Especially appreciated in hospitals.

It shows no appreciable wear after *one million* test cycles. Its smooth, self-lubricating surface prevents marring of strike plate. An important appearance feature.

This solid latch bolt with its Nylon insert has no small, complicated parts to break.

Yet with all these advantages, Sargent brings you this Nylon insert at *no extra cost!* Ask your Sargent salesman to show you the Sargent Integralock . . . with its sensational new Nylon insert . . . today. Or write Sargent direct, Dept. 8J.

SARGENT & COMPANY

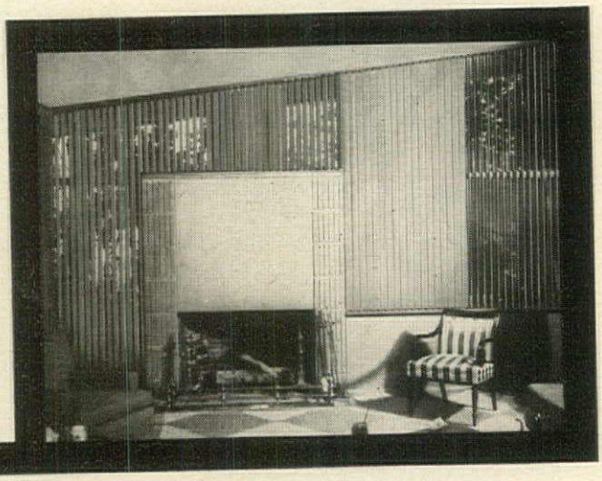
New York · NEW HAVEN, CONN. · Chicago

SARGENT of New Haven, ®

problem windows? no problem with LOUVERDRAPE

Yes, **LOUVERDRAPE** *FABRIC*
Vertical Blinds fit any window, regardless of size or shape . . . SLANTING–SLOPING–even SKYLIGHTS

Smart fabric louvers combine the richness of draperies with softness of curtains . . . control light and air. Complete selection of COLORS and TEXTURES.



WEST
Albertsons
3911 Normal
San Diego, Calif.
Capitol Venetian Blind Co.
5927 Kester
Van Nuys, Calif.
Superior Venetian Blind Co.
1533 Brooklyn Ave.
Los Angeles 33, Calif.
United Venetian Blind Co.
5430 Crenshaw Blvd.
Los Angeles, Calif.

SOUTH
Vertical Blinds Co. of Florida
165 N.E. 62 Street
Miami, Florida
Southern Products Co. (Sales Rep.)
Claiborne Towers
1700 Canal Street
New Orleans 16, La.
Williams Shade & Awning
216 South Pauline St.
Memphis, Tenn.

EAST
LeRoy Venetian Blind Co.
96-10 — 101st Ave.
Ozone Park 15, N. Y.
United Venetian Blind Co.
116 E. 25th St.
Norfolk, Virginia

MID-WEST
Midwest Vertical Blind Co. (Sales Rep.)
2038 West Chicago Ave.
Chicago 22, Illinois

CARIBBEAN & MEXICO
Verti-Lux — Casa Linda, S.A.
Ejercito Nacional 491
Mexico City
Raymond H. Saal (Sales Rep.)
323 Ochoa Bldg.
San Juan, Puerto Rico

HONOLULU, HAWAII
Building Specialties Ltd.
955 Waimanu

For complete information contact your nearest distributor,

or write: VERTICAL BLINDS CORP. OF AMERICA • 1936 PONTIUS AVE., LOS ANGELES 25, CALIF.,

LOUVER DRAPE Vertical Blinds
"FEATURING GENUINE DU PONT FABRIC

Leader in "Advanced Design" commercial food refrigeration for more than 25 years

Adequate, flexible food refrigeration facilities for RESTAURANTS, HOTELS, hospitals, schools, cafeterias, food stores, institutions

Big, new, complete Tyler line of refrigerators and freezers meets every food service requirement

- ★ Reach-In Refrigerators, stainless and enamel
- ★ Upright Freezers, stainless and enamel
- ★ Slide-Door Refrigerators, stainless and enamel
- ★ Sectional Storage Freezers
- ★ Sectional Walk-In Coolers and Freezers
- ★ Beverage Coolers, stainless and enamel
- ★ Beverage Dispensers

Food store planning assistance also available to Architects without charge or obligation.

14 Tyler Upright Freezers match and line up with 14 Tyler Reach-In Refrigerators!

TYLER

Write Tyler for complete data.

NOW IN 23c Ty SWEETS CATALOG

The BIG name in commercial food refrigeration

TYLER REFRIGERATION CORPORATION, Niles, Mich.

In Canada—write Tyler Refrigerators, 128 Avenue Road, Toronto, Ont.

Pinpoint applicator applies just the right amount of ink, where you want it. Uses up last drop. Can't spill.

New Electro-Polarized ink gives crisp clear lines and details

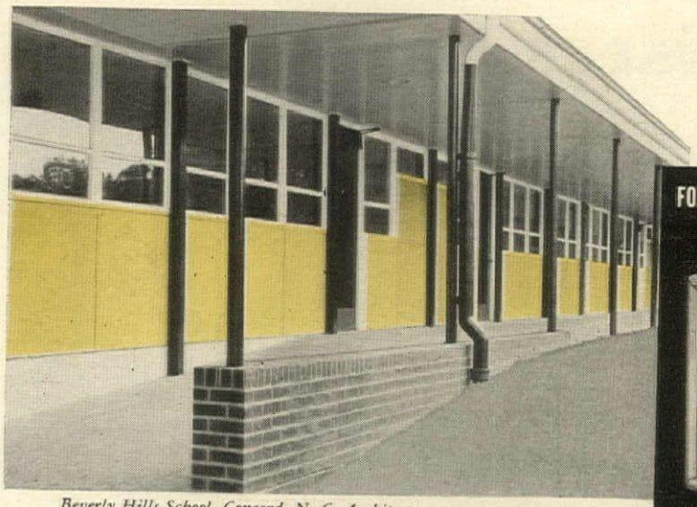
Uniform color throughout bottle because it's electro-polarized to prevent settling. No shaking necessary, Carter's ink is completely opaque, uniformly black.

Drawings or renderings won't chip, peel or crack. Get the bottle that is the applicator . . . Carter's Squeeze Bottle India Drawing Ink. — Conventional Bottles too, for brush work and dip pens.

Sold by leading Art, Blueprint, Drafting, Engineering and Stationery Suppliers

THE CARTER'S INK COMPANY

Cambridge 42, Mass.



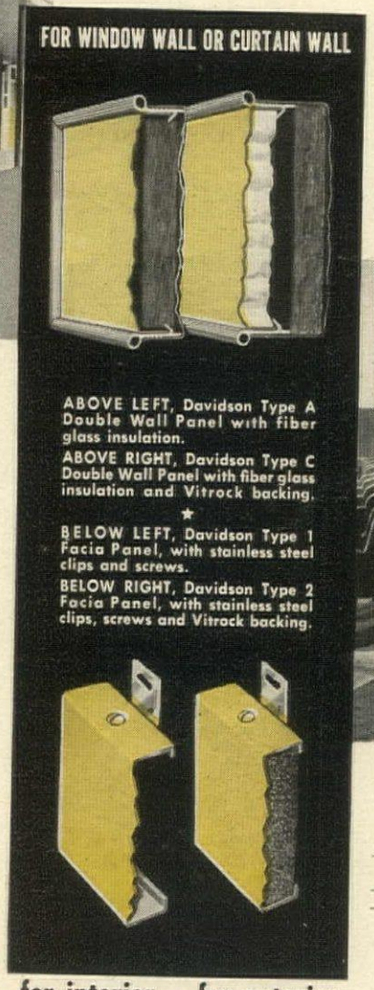
Beverly Hills School, Concord, N. C. Architect: A. G. Odell, Jr. & Assoc., Charlotte, N. C.

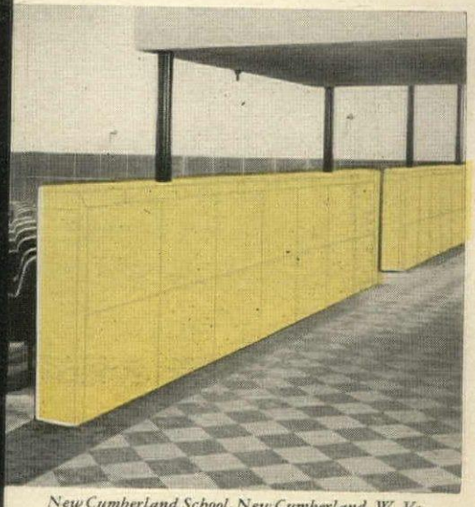
colorful

durable

flexible

practical





New Cumberland School, New Cumberland, W. Va. Architect: Ray W. Shaw, Weirton, W. Va.

Every architect can pick his *own* way of using Davidson Architectural Porcelain Panels, without restriction on size, shape, color or intended use. Davidson Panels (16 gauge steel), with porcelain fused to all exposed surfaces are made the way *you* want to specify.

Nor is there any restriction on the *way* you use Davidson Panels, as you'll see in the new Davidson 12-page file folder. Architects' details and photographs included in the folder show this adaptability.

Ask your local Davidson Franchised Distributor for a copy . . . he's listed under "Porcelain Enamel Construction" in the 'phone book . . . or write direct.

for interior . . . for exterior

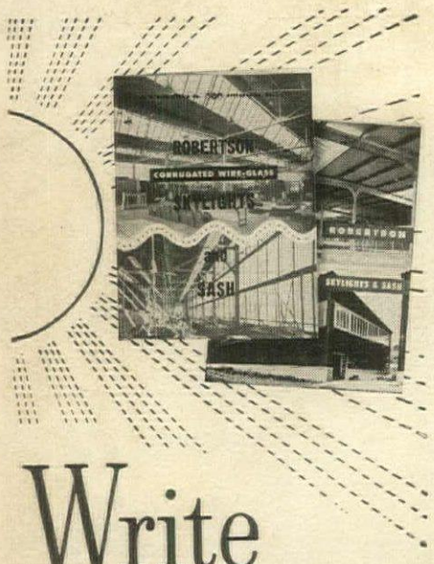
FOR CURTAIN WALL, FACIA OR MODERNIZING

Mississippi School, St. Paul, Minn. Architect: Walter Butler Co., Inc., St. Paul, Minn.

DAVIDSON ARCHITECTURAL PORCELAIN

IDEAS FOR DESIGN. *Complete architectural file on Davidson Architectural Porcelain. Write for your copy.*

Davidson ENAMEL PRODUCTS, INC. • 1105 E. Kibby Street, Lima, Ohio.



Write

for these free booklets to learn more about the science of daylight engineering

The booklets shown here concerning corrugated and flat wire-glass skylights and sash cover a subject of increasing importance in modern industrial construction—*daylight engineering*—the calculated use of free natural light. You'll find a wealth of photographs showing successfully daylighted buildings, plus structural details and specifications for application to all types of roof and wall construction. You'll see how H. H. Robertson Company establishes a "planned daylighting curve" to accurately predict the foot-candle intensity to be gained from a given skylight or sash recommendation. Write for this free literature. It should be a part of every architectural and engineering file.

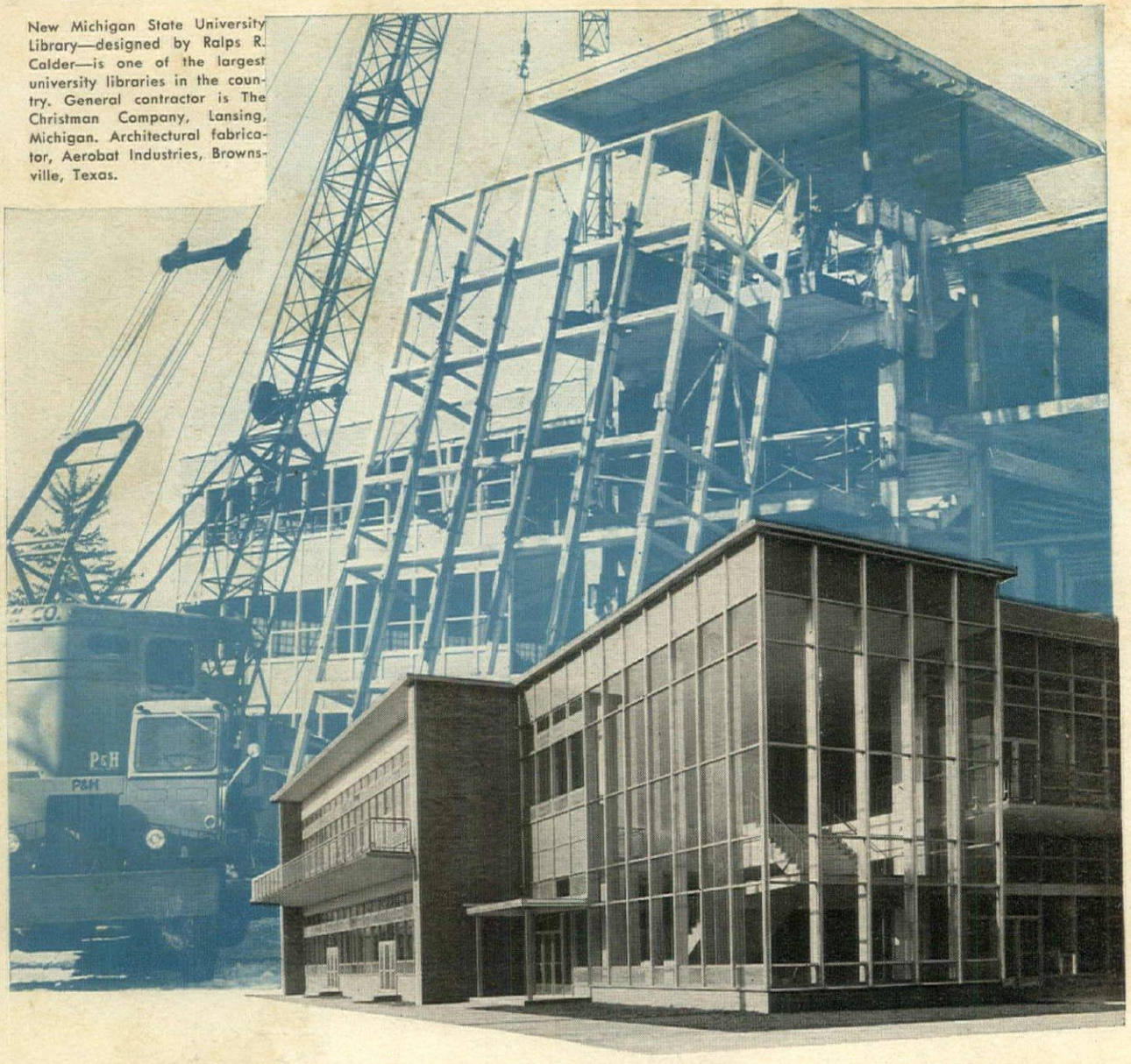
Robertson Skylights & Sash

developed and manufactured by

H. H. Robertson Company
2403 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in All Principal Cities
World-Wide Building Service

Advertisers Index:



New Michigan State University Library—designed by Ralps R. Calder—is one of the largest university libraries in the country. General contractor is The Christman Company, Lansing, Michigan. Architectural fabricator, Aerobat Industries, Brownsville, Texas.

The last word in curtain wall construction

...with *Bridgeport Aluminum Extrusions!*

4-story Thermopane windows installed as single unit in new Michigan State University Library.

Things look brighter for student study habits these days at Michigan State University, East Lansing, Michigan. Their new 1,000,000 volume library, now nearing completion, boasts one of the largest Thermopane window installations in the country.

Bridgeport supplied the extrusions for the sash in which the double-glazed panes were set. To reduce time and cost of construction, pre-cut lengths up to 40′ long were shipped by Bridgeport to East Lansing for "on-the-spot" fabrication by Aerobat Industries of Brownsville, Texas . . . another example of how Bridgeport works closely with customers in supplying their architectural aluminum requirements.

Bridgeport can help improve your fabricating methods, too. With 800,000 sq. ft. of modern, fully integrated production facilities, Bridgeport can extrude a wide variety of architectural shapes, including heavy and complex sections . . . in long lengths to exacting requirements. Our experience in special designs and working to close tolerances can help you produce an economical, practical shape.

A call to your nearest Bridgeport Sales Office will bring you helpful information and fast service on aluminum extrusions for a wide variety of architectural and industrial uses.

For the very latest in

BRIDGEPORT ALUMINUM

EXTRUSIONS, DIE AND HAND FORGINGS

Bridgeport Brass Company,
Aluminum Division, Bridgeport 2, Conn.

Offices in Principal Cities

BRASS Bridgeport CO.