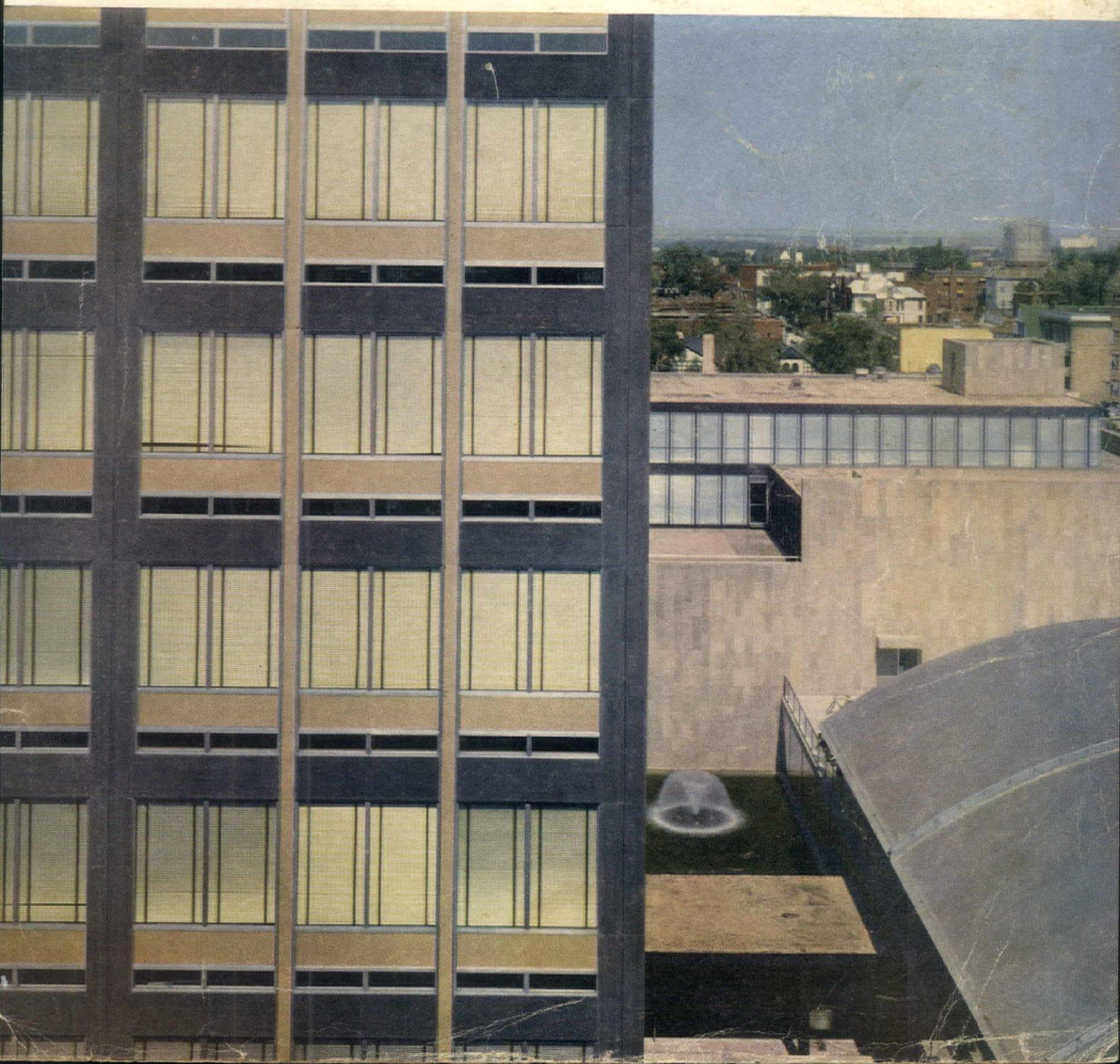
architectural FORUM

the magazine of building

NOVEMBER 1955

Architecture in America: Part III—the manufacturer's role (p. 116) . . . . Chicago's new apartments—an appraisal by architect, builder, and realtor (p. 140) . . . . Zeckendorf's Mile High Center in Denver (below & p. 128)



Plumbing Fixtures by

RICHMOND

711 THIRD AVENUE
NEW YORK CITY

OWNER—William Kaufman

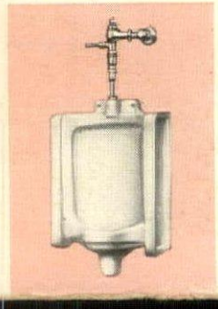
ARCHITECT—William Lescaze

BUILDER—Diesel Construction Co.

PLUMBING CONTRACTOR—Wachtel Plumbing Co., Inc.

PLUMBING WHOLESALER—Glauber, Inc.

RICHMOND FIXTURES FOR 711 THIRD AVENUE



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

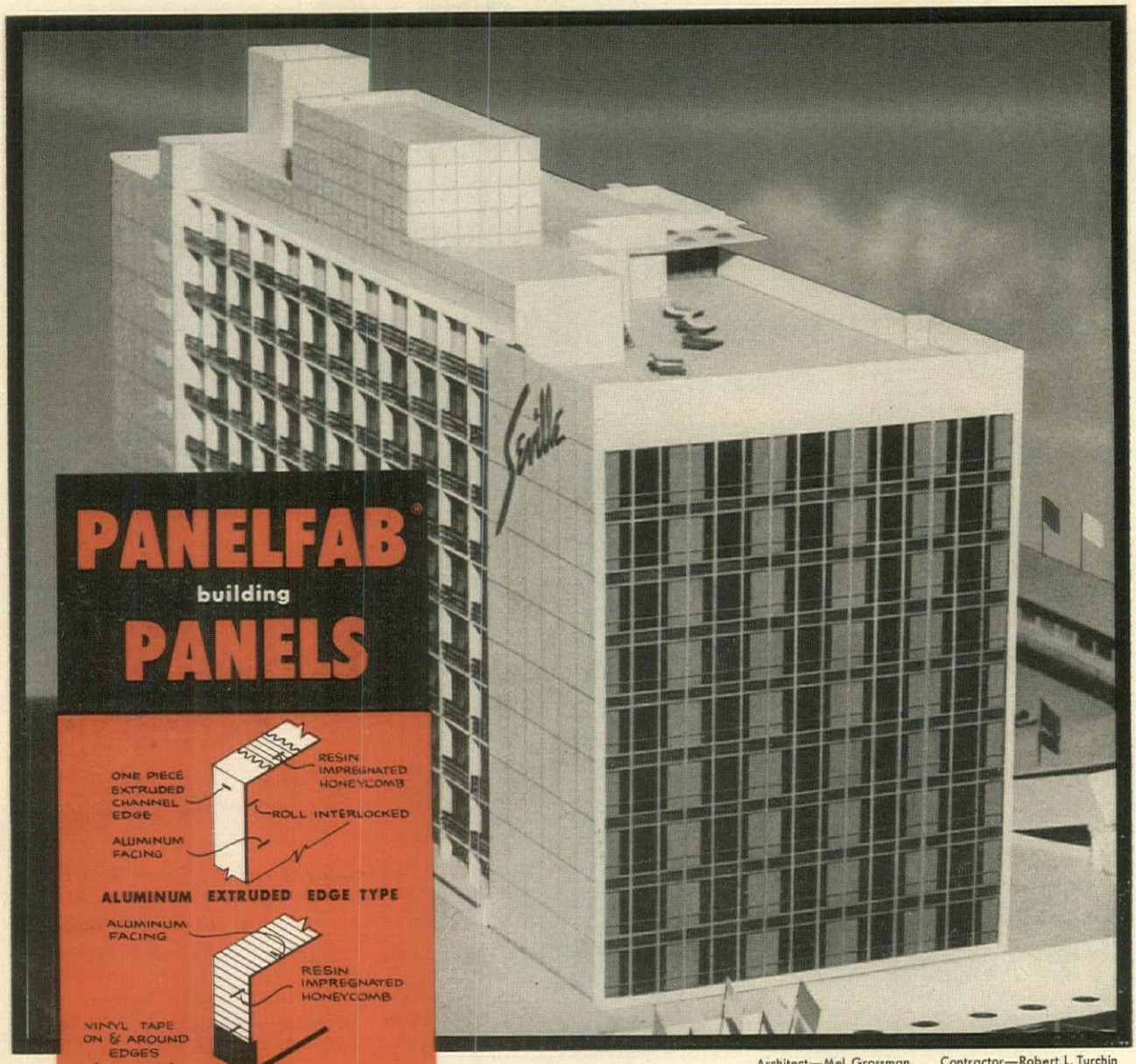
architectural **FORUM**
the magazine of building

NOVEMBER 1955

Cover: Mile High Center
Architect: I. M. Pei
Photo: © Ezra Stoller

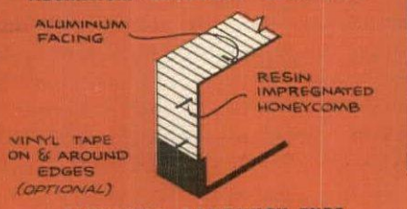
VOLUME 103, NUMBER 5

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

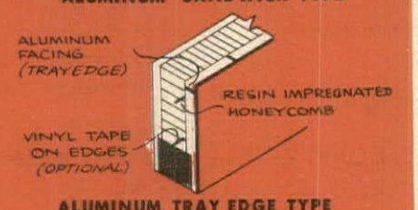


PANELFAB® building PANELS

ALUMINUM EXTRUDED EDGE TYPE

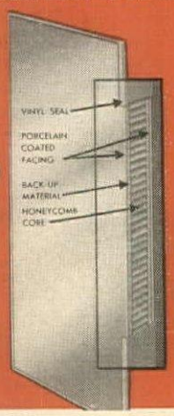


ALUMINUM SANDWICH TYPE



ALUMINUM TRAY EDGE TYPE

PORCELAIN PANELS (IN 8 TYPES)



Architect—Mel Grossman Contractor—Robert L. Turchin

1956 HOTEL OF THE YEAR!

Last year it was the fabulous Fontainebleau . . . this year it's the magnificent Seville. A great new hotel each season has become almost a habit for booming Miami Beach.

Exciting new design and time-and-money-saving construction methods keynote the Florida building success story. Panelfab Products, pioneers in metal-faced honeycomb core panels, are proud to play an important part in the development of new Florida techniques for application throughout the nation.

Write today for new catalogs with full details and prices.

PANELFAB® PRODUCTS, INC.

2000 N.E. 146th STREET, N. MIAMI, FLORIDA

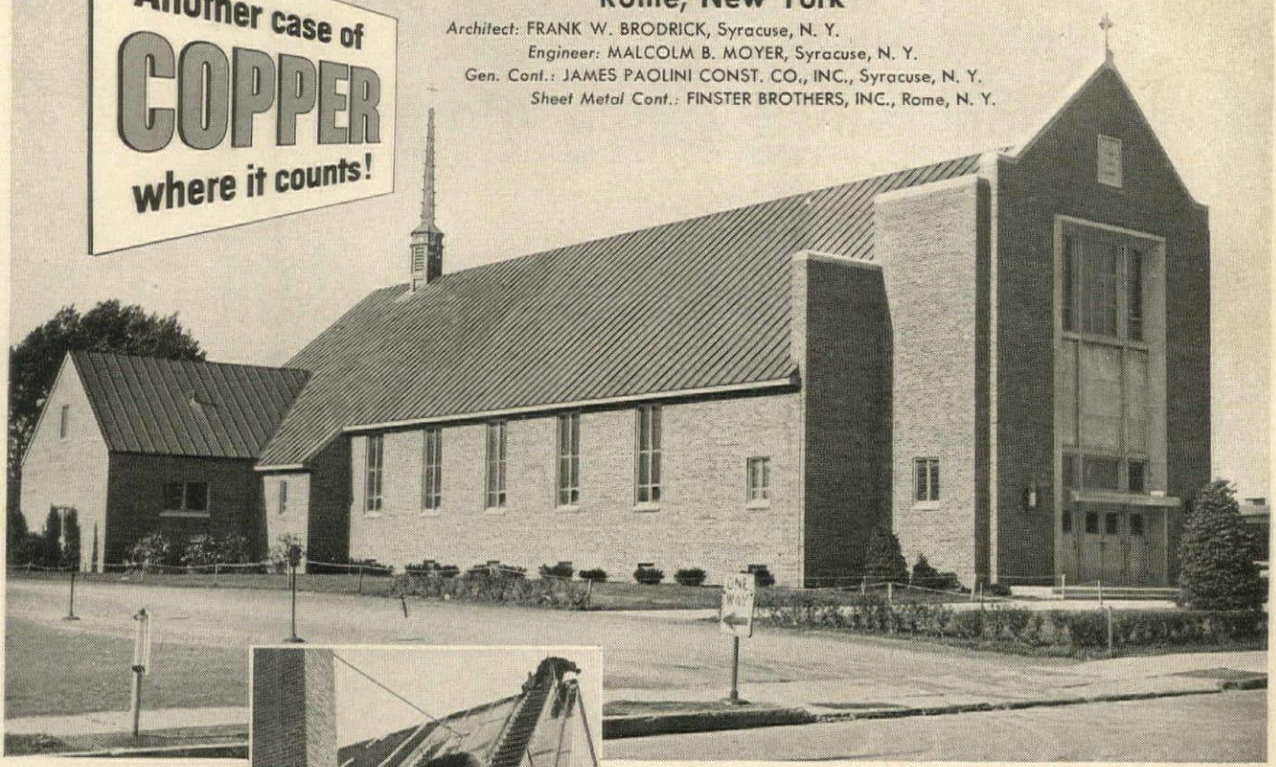
Panelfab aluminum panels are available up to 4 x 18 feet, in 1 to 4 inch thicknesses, with "U" values to .16; Panelfab porcelain panels up to 4 by 10 feet, in 1 to 2¼ inch thicknesses (weight per square foot from 4.80 to 7.80 lbs.), with "U" values to .16; and Panelfab aluminum doors in standard sizes.

Another case of **COPPER** where it counts!

ST. JOHN the BAPTIST CHURCH

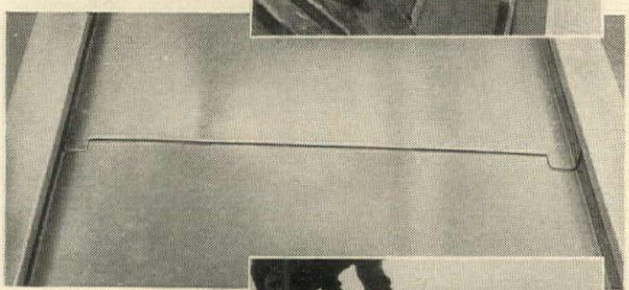
Rome, New York

Architect: FRANK W. BRODRICK, Syracuse, N. Y.
Engineer: MALCOLM B. MOYER, Syracuse, N. Y.
Gen. Cont.: JAMES PAOLINI CONST. CO., INC., Syracuse, N. Y.
Sheet Metal Cont.: FINSTER BROTHERS, INC., Rome, N. Y.

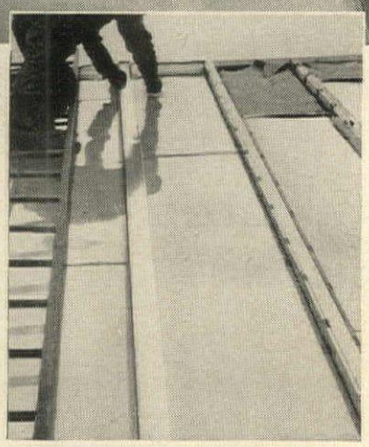


22,780 LBS. OF REVERE 20 OUNCE Cold Rolled Sheet Copper was used for the batten seam roof, valleys and covering on fleche.

(below) **CLOSE-UP** shows loose lock cross seam—constructed as recommended in Revere's 110-Page booklet, "COPPER AND COMMON SENSE." Do you have a copy?



(Right) **HOW BATTEN LOOKS** before capping. Note that cleats are nailed to the *sides* of the batten. This is done to prevent future trouble, as the wind blowing over a roof causes an up-lift on the roofing pans. If the batten was nailed on the top, the nails would be subjected to a straight upward pull. Nails placed on the side of the batten are subjected to a shearing action that does not tend to loosen the nails. Two nails are always advisable for maximum security.



• Since the first cathedrals of the Old World were built centuries ago, copper has been the favored metal for roofs, ornamental work, flashing, gutters and leaders. With the passing of the years other metals have appeared on the horizon. None has been able to match all of the outstanding construction characteristics of copper.

That's one of the big reasons architects and builders continue to use copper . . . it has proved itself many times over! It is the "centuries-tested" metal. Other reasons are: Copper is flexible design-wise . . . is as much at home in the most modern office building as it is in traditional church design. It is easily worked and soldered, requiring no special tools, and is ideal for prefabrication. Copper cannot rust, rot or deteriorate.

REVERE COPPER NOW MARKED WITH GAUGE AND TEMPER

An additional advantage of specifying Revere Copper is that all standard Revere Sheet, Strip and Roll Copper is marked with the gauge and temper with water-soluble ink. Ask your distributor about it. And if you have technical problems involving the application of Revere Copper, consult our Technical Advisory Service.

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

You see things more clearly through L·O·F Parallel-O-Plate Glass than through any other glass made in America!

L·O·F Parallel-O-Plate Glass is *twin-ground* for a visual quality that cannot be matched by *ordinary* plate glass ground one side at a time. It is the only *twin-ground* plate glass made in America. *Yet, in most localities, it costs no more than regular plate glass!*

Insist on Parallel-O-Plate Glass for your windows. And make sure any mirrors you buy are made of Parallel-O-Plate.

Parallel-O-Plate Glass is available from Libbey·Owens·Ford Distributors and Dealers. You'll find their names under "Glass" in yellow pages of phone books.

For complete information on this remarkable glass, write Dept. 88115, Libbey·Owens·Ford Glass Company, Toledo 3, Ohio.

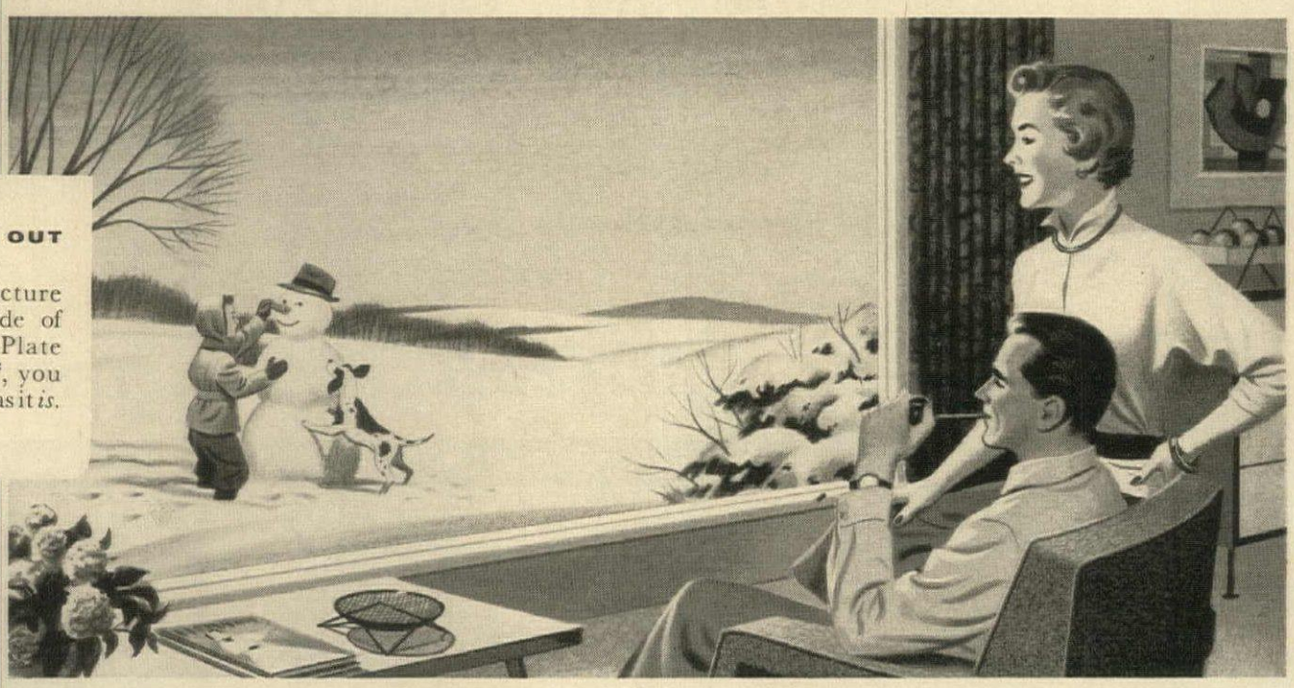
LOOK FOR THIS LABEL

L·O·F Parallel-O-Plate Glass

Finest plate glass made in America... only by **LIBBEY·OWENS·FORD** *a Great Name in Glass*

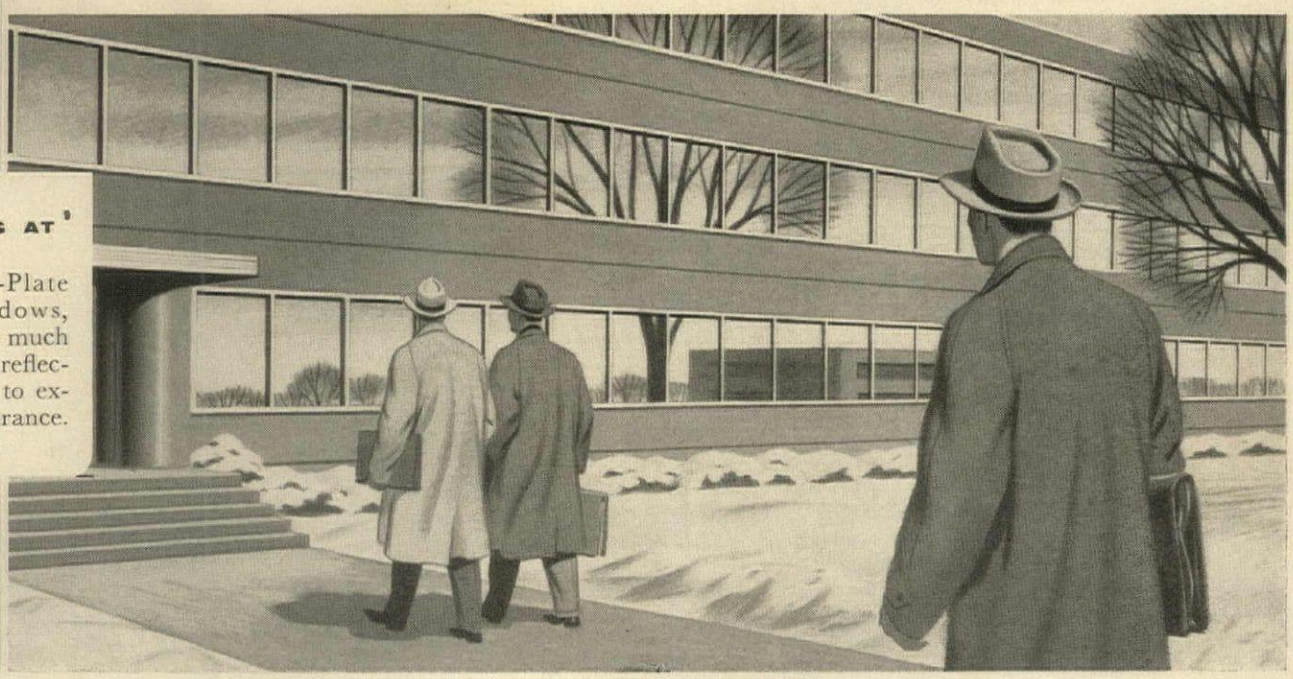
LOOKING IN

through the clear Parallel-O-Plate Glass in a store-front, you hardly know the glass is there.



LOOKING OUT

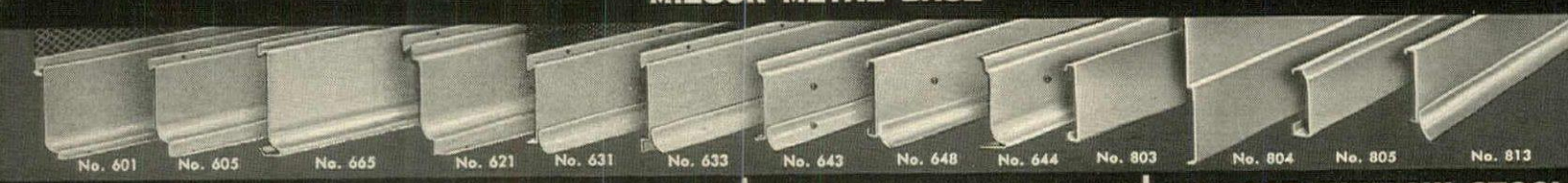
of your picture window made of Parallel-O-Plate *Thermopane**, you see the scene as it *is*.



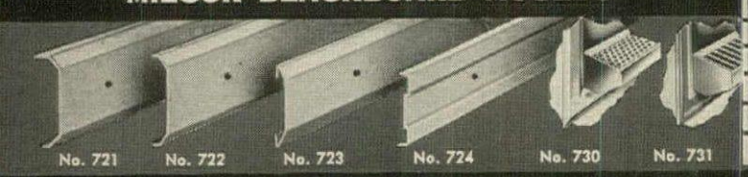
LOOKING AT

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

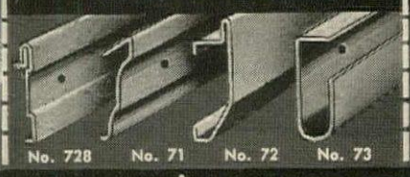
MILCOR METAL BASE



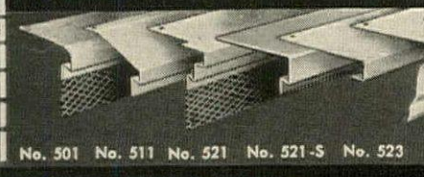
MILCOR BLACKBOARD MOULDS



PICTURE MOULD

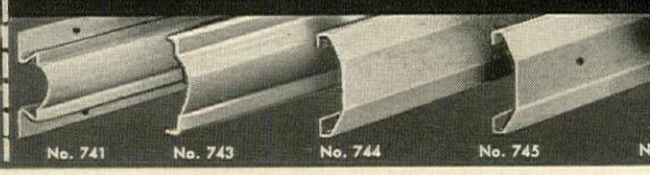


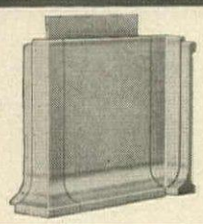
MILCOR WINDOW STOOL

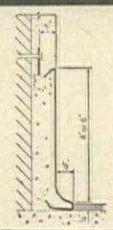


MILCOR COVE MOULDS

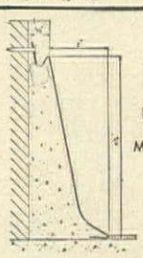
MILCOR CHAIR RAILS



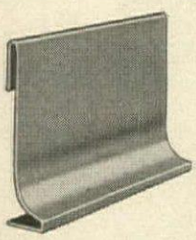


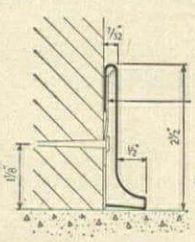


No. 605
Flush
Base



No. 625
Splayed
Metal Base





No. 677-S
Clip-on
Metal Base

THERE IS A MILCOR METAL TRIM PRODUCT FOR EVERY EXPOSED INTERIOR DETAIL

IT'S easy to select the proper metal trim for your specifications when you work with the Milcor Metal Trim line.

You can choose from an adequate selection of designs and sizes in metal base, window stools, cove moulds, picture moulds, chair rails and blackboard moulds. You have the choice of plastered-in or removable types.

Furthermore, any Milcor Metal Trim item can be obtained with Milcor Insulmat Sound-Deadener which insulates against sound transmission — important in schools, libraries, hospitals and offices.

Milcor Metal Trim is made of steel. It resists wear, resists fire, and can't warp, shrink or rot. It is economical to install, easy to clean and maintain.

Refer to the Milcor catalog in Sweet's or write for Milcor Catalog No. 102.

MILCOR® METAL TRIM

INLAND STEEL PRODUCTS COMPANY

4069 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

T-102

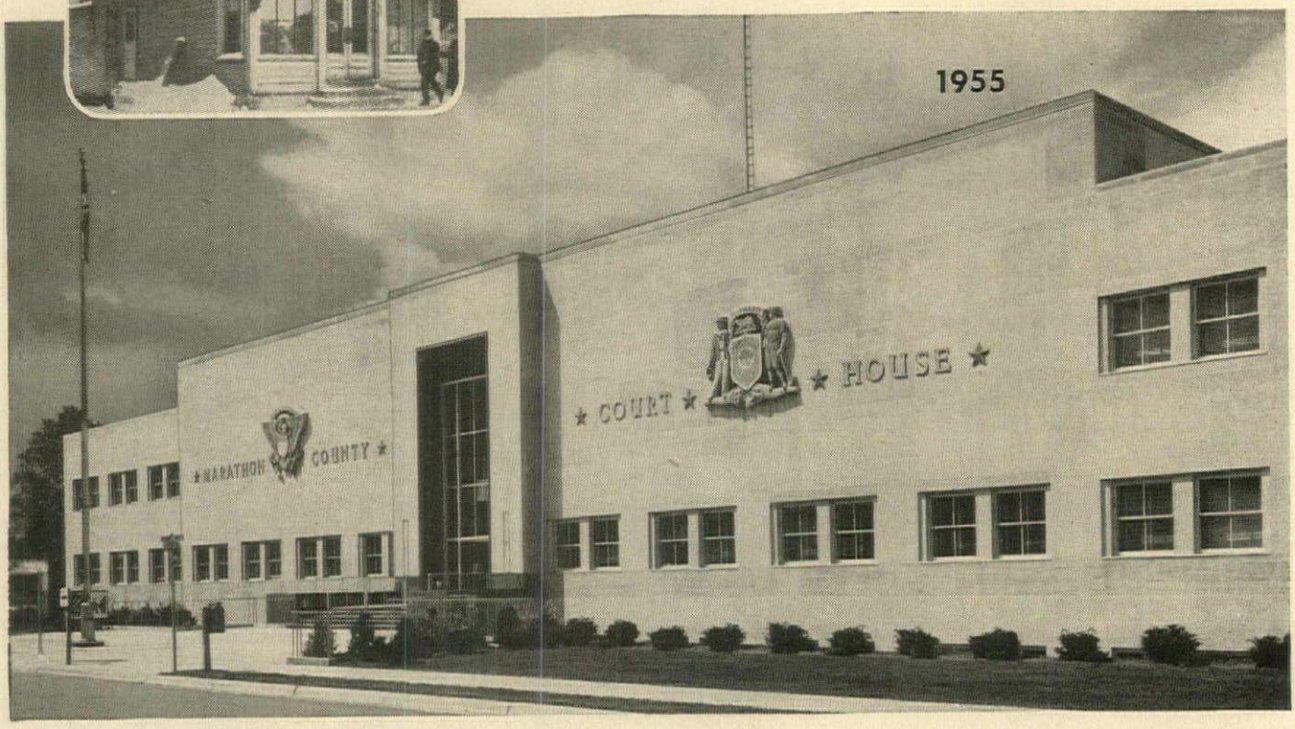
BALTIMORE 5, MD., 5300 Pulaski Highway — BUFFALO 11, N. Y., 64 Rapin Street — CHICAGO 9, ILLINOIS, 4301 South Western Blvd. — CINCINNATI 25, OHIO, 3240 Spring Grove Ave. — CLEVELAND 14, OHIO, 1541 E. 38th St. — DETROIT 2, MICH., 690 Amsterdam Ave. — KANSAS CITY 41, MO., P. O. Box 918 — LOS ANGELES 58, CALIF., 4807 E. 49th Street—NEW YORK 17, N. Y., 230 Park Ave.—ST. LOUIS 10, MO., 4215 Clayton Ave.

Milcor Metal Trim forms the stool, jamb, and head sections of the window in this four-bed room in the New Carney Hospital, Boston, Mass.
Architects — Maginnis & Walsh & Kennedy, Boston, Mass.
General Contractors — Walsh Brothers, Cambridge, Mass.
Metal Trim Contractors — Dillaby Fireproofing Co., Cambridge, Mass.

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

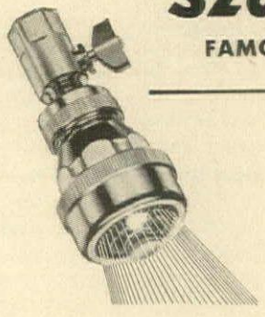
MARATHON COUNTY COURTHOUSE • WAUSAU, WISCONSIN

CHILDS & SMITH, *architects & engineers*
STEENBERG CONSTRUCTION CO., *general contractor*
R. WENZEL & COMPANY, *plumbing contractor*
J. J. KOEPSELL COMPANY, *plumbing wholesaler*
KOHLER CO., *plumbing fixtures*



BEYOND THESE PORTALS—SERVICE PLUS

• Five times since 1850 exciting news has come from Wausau, Wisconsin—countyseat of Marathon County. Preceded by four county office buildings, beginning with a simple one-room structure, the doors to the new 2-million dollar courthouse were officially opened early this year. Located on a beautifully terraced and landscaped site, it was built of Indiana Limestone, Marathon County Red Granite, Face Brick and Glazed Tile. It houses 21 departments having a total of 106 rooms—all planned for maximum efficiency—and 6 large capacity vaults to preserve irreplaceable records. In heating, lighting, acoustical treatment and other equipment, including provision for air conditioning, the building is deserving of ultramodern rating. Throughout the courthouse are evidences of a striving for the "plus" that assures superior service to the public and best facilities for employees. Here, as in thousands of other fine buildings, are SLOAN *Flush* VALVES, famous everywhere for efficiency, durability, economy.



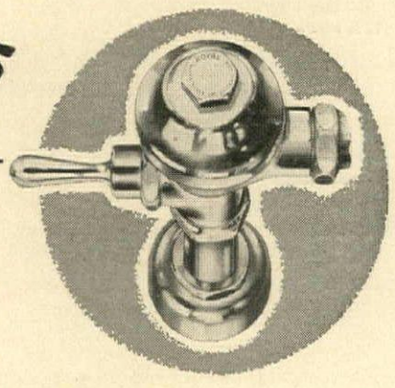
SLOAN *Flush* VALVES

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



NAHRO convention: unrest grows over renewal program procedural snarls

Frustration over Washington administration of all aspects of the federal public housing and urban renewal and rehabilitation program was the predominant feeling at last month's convention of the National Association of Housing and Redevelopment Officials in Cleveland.

In contrast to the let's-wait-and-see attitude of last year's convention toward the urban renewal program, the conviction was growing among local public housing and renewal officials that complicated rules and procedures of three federal agencies—FHA, HHFA, URA—and increasing domination by a fourth—PHA—were keeping the government's highly publicized renewal campaign from getting off dead center.

Most NAHRO leaders did not doubt the administration's intentions, but were simply convinced there was too much red tape. The feeling of frustration was reflected in panel discussions on renewal and was formalized in some resolutions.

Three of the resolutions amounted to a NAHRO definition of trouble spots in the program. They called for:

- A more realistic attitude toward private builders' profits in urban redevelopment and rehabilitation. The housing act of 1954 allows a maximum of 10% profit. NAHRO felt the profit should not be held down by administrative ruling, and registered its objection to allowing a smaller profit percentage on big projects than on small ones. Intent of the resolution was to make government-sponsored renewal projects competitive with private building ventures for investors' money.

- Reversal of an "accelerating trend" toward federal domination of local public housing programs. NAHRO members have become increasingly rankled by use of a new, stiffer annual contributions contract. This, said NAHRO, ties a local office to PHA regulations; then the local office finds that PHA rewrites its rule book. Toughening of the contracts to increase federal authority, said NAHRO, "contravenes the spirit and intent" of the Taft-Ellender-Wagner Act that set up PHA. Local officials who are also handling renewal and redevelopment projects feared that if PHA wins the battle for domination of local programs, HHFA's division of slum clearance and URA will get tougher and tougher to deal with.

- Yearly construction of public housing units amounting to 10% of the number of private dwelling units constructed. If starts this year total 1.3 million, NAHRO would like to see Congress ask for 130,000 public housing units in 1956. Net effect is just about the same as NAHRO's yearly plea for 135,000 units.

Overreaching PHA. Walter B. Mills, Jr., retiring president, addressing the organization's business meeting, had harsh words for PHA: "the federal agency . . . usurps the local responsibility by issuing directives, manual releases and requirements that take away all local initiative and responsibility of action . . . the legislation (T-E-W) says that the federal government's role shall be limited to financial assistance and advice—but not domination . . . the federal agency is more concerned about writing regulations than about serving the people."

Washington run-around. Confusion over top level urban renewal procedures was evident as local officials badgered federal experts and each other with questions at renewal panel discussions. Again and again local agency members commented on the difficulty of trying to work up projects to conform with the federal rules, and the frustration in trying to get plans adjusted and approved by HHFA, FHA and URA. At one peculiarly Orwellian session several hundred local officials clustered before a raised platform on which sat half a dozen top federal experts, clad in dark gray suits. The federal men coolly dispensed their rules and procedures. They talked of top-level cooperation among URA, FHA and HHFA, of passing municipal applications and plans back and forth, until one local official with, perhaps, a redevelopment project or two being passed around, jumped up and said: "We don't care what FHA tells HHFA, or HHFA tells URA. Please, fellas, just tell us, and tell us once."

Reiman Service

SIPPRELL

Next day a voice from the top offered soothing, if somewhat contradictory advice. Urban Renewal Commissioner James W. Follin told the conventioneers: "Get going as soon as possible on each of your program phases. Don't wait for all the answers. You can develop answers as you go."

North Harlem deal set-up. Some of the answers were indeed being worked out. North Harlem, the first big Title I project of eight in New York City to receive an FHA Sec. 220 commitment, was dissected for the local officials, and the anatomy of the deal looked very much like mortgaging out.

Big New York redevelopers have been holding their breath for three years, waiting for a favorable deal. With the first one made—and the others said to be due soon—the local renewal officials at the NAHRO convention began to see how they might entice reluctant sponsors.

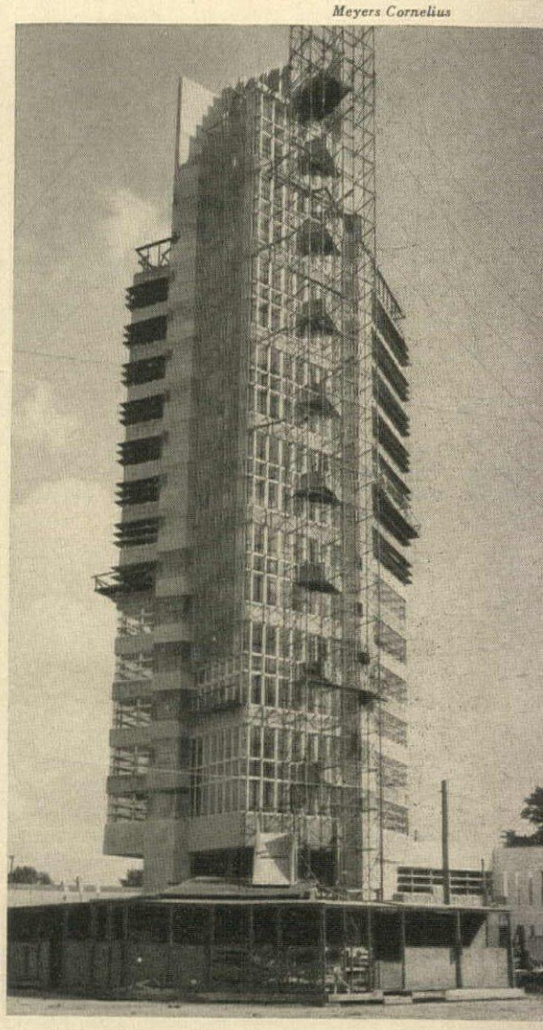
The North Harlem sponsor, it was said, was able to borrow his supposed "equity" from the mortgagee on non-negotiable notes, payable out of early earnings of the big middle-income rental project. Builder's fee: 7%. Density was adjusted from 357 persons per acre to 417—because FHA agreed with the sponsor that the land cost (including tenant relocation and slum demolition) had been too high.

"Frankly," one of the Washington experts told the NAHRO delegates, "The problem was to work out a setup *acceptable to the sponsor*, so he would go ahead."

Cole defends renewal. The convention gave moderate applause to HHFAdministrator Albert Cole who talked of the promise of urban renewal. He criticized communities

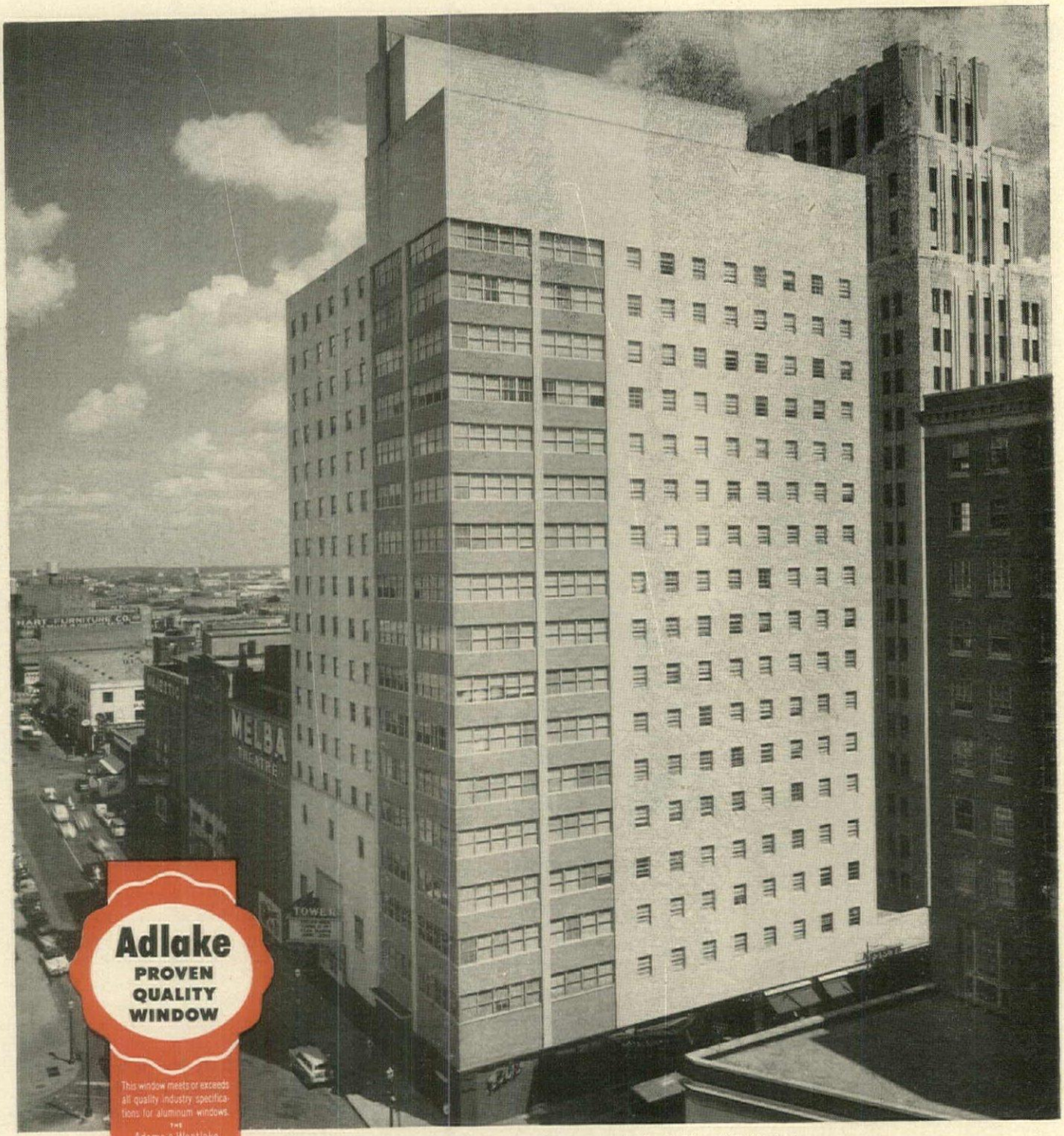
continued on p. 12

Meyers Cornelius



Wright's prairie "skyscraper" for Price nears completion

Almost two years abuilding, delayed partly by strikes that held up steel, the celebrated Price Tower in Bartlesville, Okla., designed by Frank Lloyd Wright, was almost finished last month. The exterior of the tall, dramatic, beige and bluish-green copper building, with gold-tinted windows (AF, May '53) was already a scenic landmark of the Southwest. In the "Wall Street Journal" the H. C. Price Co. was advertising a limited amount of space available Jan. 1 in the prestige office-apartment structure. But it would not disclose rentals except to prospective tenants, nor identify those already leasing. The Price firm will use about one-third of the main building; Public Service of Oklahoma will occupy a low two-story northeast wing.



Corrigan Tower Building, Dallas, Texas. Architect: Wyatt C. Hedrick
General Contractor: J. W. Bateson Construction Co. Equipped with Adlake Double Hung Aluminum Window

Another Adlake aluminum window installation

Adlake — 98th year of serving the transportation, building and control industries

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*)

The Adams & Westlake Company

ELKHART, INDIANA • Chicago • New York • Established 1857

Smartest buy—three ways!

1. IMPROVE ROOM APPEARANCE

Modine Convectors replace unsightly radiators . . . lend smooth, classic-modern appeal to every room. And they're finished to "take" paints that match any decor. Also, Modines retain "new look" for years because of special bonderizing process.

2. INCREASE OCCUPANT COMFORT

Modine Convectors assure gentle circulation of warm air. There are no drafts, no hot spots near the convector, no cold spots in the far corners. And, because they are individually controlled, they can easily be set to suit the occupant's express wishes.

3. SAVE THE BUYER MONEY

Considering the many advantages they offer, Modines are remarkably low priced. And—they offer years of efficient, inexpensive heating at nominal cost for maintenance. Each Modine, regardless of its price bracket, is craftsman built with quality materials.

R-1289

For complete details, contact the Modine representative listed in the classified phone book or write Modine Mfg. Co., 1507 DeKoven Ave., Racine, Wis.

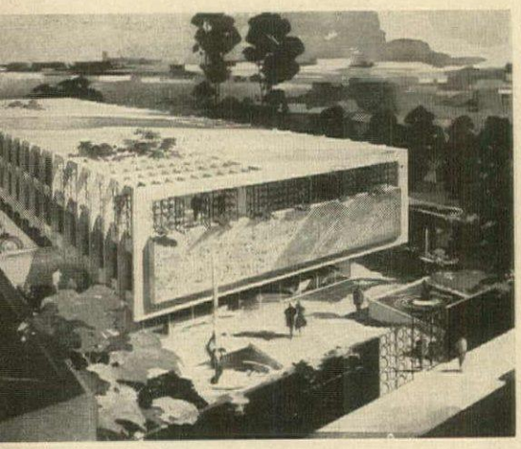
Modine
CONVECTOR RADIATION

that looked upon public housing as "something apart and separate from urban renewal—apparently without realizing that the new public housing operation of today is tomorrow's slum or blighted neighborhood unless the entire area is systematically decontaminated."

Later Cole told FORUM he viewed public housing mainly as relocation housing for families displaced by slum clearance. "But Sec. 220, 221 and rehabilitation will take care of most of those displaced," he said. A year ago, he told the press at the NAHRO convention that the then new Congressional requirement that further public housing could be approved only if intended for persons displaced by government action was "too limited." Then he thought this might cause "unnecessary restrictions" in helping people in slums that are not being cleared, but who deserve help in obtaining better housing.

Cole denied the administration has delayed the urban renewal program unnecessarily. "Anyone who would examine the evidence honestly would find urban renewal is working," he said. "Rehabilitation and renewal will in two or three years far exceed what low-income housing could do."

New president (1955-56) is Robert D. Sipprell, executive director of the Buffalo municipal housing authority. Slight, quiet Sipprell, 43, has been with the Buffalo authority (4,500 housing units in operation, 2,300 more scheduled) for 17 years.



Hilton headquarters designed for Italian villa atmosphere

This three-story $400,000 world headquarters for Hilton Hotels Corp. about to be erected in Beverly Hills, Calif. from Pereira & Luckman plans is intended "to express the warmth and character of an Italian villa set in a sunken garden," according to Hotelman Conrad N. Hilton. Just inside its 10' black garden wall will be two fountain pools containing Italian sculpture pieces. The lobby floor will be white terrazzo with a set of black marble fins at the end. The third floor will have a large reception lobby, offices for top corporation officers, a board room and Hilton's private office. The last two will have outdoor patios covered with top and side grillage (front left). The two upper floors, encased in a series of broad concrete fins, will be cantilevered on all four sides.

Rains committee begins probing urban renewal, 'delays' on Sec. 220 loans

HHFA's urban renewal program and FHA's apartment insurance mortgage activities were early starters last month as issues in the 1956 national elections. To construction industry observers the political undertones were clear and strong when the housing subcommittee of the House banking and currency committee, starting out on a national probing tour, held a three-day hearing in New York.

Subcommittee chairman was Rep. Albert Rains (D, Ala.). At a prehearing press conference he explained that all federal housing legislation expires next year. The committee intends to study "the whole field of housing," so it can complete a comprehensive report early next year covering all phases of federal housing action that ought to be expanded, eliminated or revised when the laws come up for re-enactment.

Typical of most congressional hearings, little that went into the record gave anyone or any program approbation. There was little doubt the committee's final report would furnish considerable material for Democratic platform writers and campaigners next year to support a theme: the housing agencies goofed on almost everything during the past four years; our party should be put in charge again to straighten out everything.

Critical of credit curbs. At NAHB's National Housing Center dedication just before committee hearings began, Rains said the recent FHA and VA mortgage tightening might trigger an economic slump, and the administration had "failed to consider the chain reaction" these curbs might set off in reducing employment.

At his New York press conference Rains said his hearings would try to discover why FHA's Sec. 213 cooperative and Sec. 220 urban renewal mortgage programs were "sad and bitter disappointments." He said he felt quite sure the first Sec. 220 commitment ever issued (13 months after the program became law) was approved by the New York FHA office only because the housing committee was about to start its probe. But the committee could not afford to visit every city just to spur local FHA officials to action, he added. Until questioned, he made no reference to the liberalization adopted by Congress only last August, which now allows Sec. 220 mortgages at 90% of "replacement" cost instead of "valuation"—a factor that made builders rather than the FHA the laggards in expediting any commitment application until two months ago.

RAINS

Bad for US, good for N.Y.? Democratic-appointed New York State Housing Commissioner Joseph P. McMurray catalogued ten builder complaints against FHA processing procedures on Sec. 220 apartment applications. One of them: "FHA allowances for overhead, profit and architectural fees are inadequate and unrealistic. Until recently the builder was allowed 5% for overhead and profit, 2% for architectural fees. . . . Recently this was revised to 7½ for overhead and profit, but architects fees reduced to 1½%." But a little later, describing a new state and city loan, and local tax abatement, program being developed in New York state under McMurray's supervision, he reported this would probably be set up with "a reasonable limitation of 5½ to 7½% for builder's profit."

In its own reply to the committee answering McMurray, the New York FHA office called his builders' profit remarks "incorrect." Fees and overhead are calculated on size of project, it said, and range from 5 to 10% for profit, 1 to 3% for overhead, and 1 to 3% for architect fees. The builder's profit allowance on the first $6.4 million Sec. 220 commitment issued on the so-called North Harlem project (see details on builder's financing setup for this project in NAHRO convention story, p. 9) reportedly was 7%.

FHA now "realistic" on 608 sales; losses, $4.6 million

Cautious Washington FHA officials gave a broad definition last month of their stepped-up program for getting rid of the distressed Sec. 608 apartment buildings they have acquired—at latest count 156 developments.

Their policy is now "realistic liquidation without heedless dumping." This means sales as expeditiously as possible in which FHA will take its losses if necessary. But it will not unload at prices out of line with current local values, if there is a reasonable prospect of obtaining a better price without undue waiting, or if there is any prospect of a local price decline or market change that might only require FHA to take the property back a second time from its new owner before long.

Under this policy FHA has now disposed of 66 properties, has sales contracts awaiting closing on ten more. Last year it bailed out from 43 projects, since Jan. 1 another 18. Total losses on liquidated projects have risen from $2.3 million last Jan. 31 to $4.6 million. Offsetting this, however, reserves on all other Title VI rental and war emergency sale housing totaled $183 million on June 30.

Of the 80 projects still on its hands, four were offered for sale in recent months but drew no bids. These were in Shreveport, La.; Junction City, Kan.; Jackson, Miss., and Springdale, Ark. Five others are now being advertised with bid closing dates this month or next.

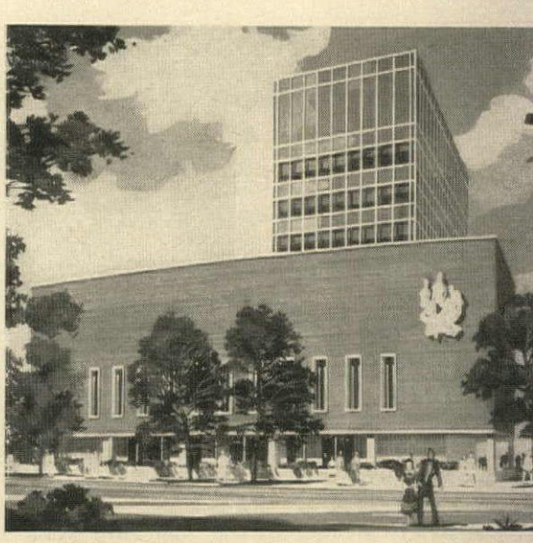
AGC survey predicts higher prices, but bids unchanged

Competition may be rough, labor and material prices rising, but members of the Associated General Contractors of America have no fears about an adequate volume of building to keep them engaged during the next six months. In a national telegraphic survey of officers and chapters for the mid-year board meeting in Minneapolis a month ago, 85% reported they expected as much or more building through February as during the past six months. The breakdown on building volume expectations: an increase, 52%; no change, 33%; decrease, 15%.

On material, 70% expected a "good" supply picture, except possibly for delays or scarcities on structural steel and cement; 74% anticipated higher material prices.

On construction bid prices, 20% said they anticipated increases, 54% "no change," and 26% predicted decreases (combined number expecting "no change" or decreases, 74%). In this connection Vice President Frank J. Rooney, of Miami, and building division Chairman James W. Cawdrey, of Seattle, both reported declining profit margins among builders. "In this record year," said Rooney, "the competition is the worst ever, and the bidding is brutal." Said Cawdrey: "The profit margin is as low as I have seen in 20 years."

Rooney was nominated for AGC president for 1956, and Lester C. Rogers of Chicago for vice president. Rooney's building firm has erected many hotels, stores, office buildings and commercial structures in Miami and southern Florida. He is a former building division chairman. Rogers heads Bates & Rogers Construction Corp.



LOEB STUDENT CENTER FOR N.Y.U.

Colleges rush to apply for 2 3/4% loans under greatly liberalized HHFA program

Smart colleges soon discovered the attraction for them in the housing act amendment signed by the President Aug. 11: Cut-rate HHFA loans for as long as 50 years not only for student and faculty housing, but also dining halls, cafeterias, student unions and other related facilities.

Previously colleges could borrow from HHFA for up to 40 years at 3¼%, provided they could not obtain private financing for housing for 3½% or less. The amendments eliminated the requirement to accept private financing at any rate at all, and set the maximum HHFA rate at no more than 2¾% or ¼% more than the Treasury would charge HHFA for funds for the program, whichever is higher.

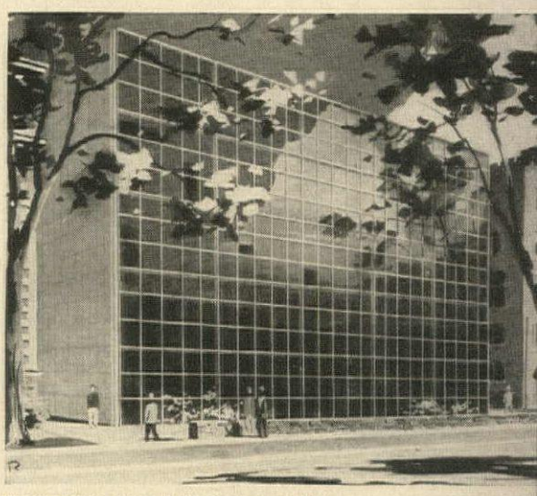
Somewhat embarrassed to be seriously undercutting normal money market rates, HHFA accepted 46 applications for loans in the July to September quarter, most of them filed after the new law became effective. These ranged from $84,000 sought by Carbon College in Price, Utah, to $5.9 million requested by Syracuse University. In addition, HHFA last month renegotiated 72 loans totaling $49 million for 2¾%, in place of rates ranging from 3.01 to 3.5%, covering the full amount of all loans not fully disbursed before the new rules became effective.

Needs set at $3 billion. The vastly liberalized law also upped the total authorization for this program from $300 million to $500 million, which John C. Hazeltine, director of the program as head of HHFA's bureau of community facilities, estimated would last two years. Under the old and new programs, 190 applications totaling $139 million were approved from 1950 through Sept. 30; reservations were outstanding on 76 more totaling $66 million. Hazeltine figures the nation's colleges need housing in the neighborhood of $3 billion in the next few years. Other observers note that Congress, having authorized up to one-sixth of this amount on subsidized interest rates, would find it difficult to cut off the program at only $500 million or insist on sharply stiffer terms for later borrowers.

The marked advantage given colleges by the new law is indicated by the fact that 30-year public works construction loans by the same HHFA bureau to cities and other public bodies cost 3¾% if secured by general obligation bonds, 4¼% if secured by revenue bonds or other types of obligations.

Opposed by administration. Relieving it of some of its embarrassment, the administration did not approve the liberalization amendments. When signing the law President Eisenhower agreed that college housing was desirable, but commented that the interest rate reduction would "curtail, if not completely eliminate, the availability of private investment" in this field. Author of the change was Senate banking and currency committee Chairman J. W. Fulbright (D, Ark.). HHFA is trying to divert at least part of this financing to the private investment field; it will allow borrowers to offer as a "package" the first 15 years of serial bonds for these loans (at the full 2¾% interest rate), rather than the first 20 years, as previously.

Wide range of design. In describing the program last spring, Hazeltine suggested to college executives that they try to match the achievements of Utah Agricultural College, which borrowed for facilities that averaged $1,250 a bed, the University of Maryland, $1,750, and Cornell University, $2,400. But the program puts no ceilings on unit costs; approved applications have ranged from $5,000 a bed, for a $1.5 million Yeshiva University dormitory in New York, to $10,000 each for quarters for 40 married students and 40 faculty members in ten apartment buildings to be erected in Kingston by Rhode Island University.



ELECTRICAL LABORATORY FOR YALE

Yale Engineering School, NYU announce modern buildings

An all-glass wall five stories high and 100′ wide is planned for an addition to Yale's Dunham Electrical Laboratory. Architects: former AIA President Douglas W. Orr, of New Haven, and Paul Schweikher, chairman of the university's department of architecture. A national committee of 1,000 Yale alumni started a campaign last month to raise $2 million for the engineering school, including $1.5 million for the Dunham lab addition. Last month the university also dedicated a new Orr-Schweikher designed physics-biology laboratory. This likewise is five stories high, has two special "cold rooms" and 20 "constant temperature" rooms for research projects, as well as flexible, modular floor layouts to provide up to 200 separate rooms or offices.

At New York University, Chancellor Henry T. Heald announced a gift of $1 million from the Adeline and Carl M. Loeb Foundation toward a $3 million student center, which will be started next spring, fronting on Washington Square (see cut). To be designed by Harrison & Abramovitz and called the Loeb Student Center, it will have a 1,000-seat auditorium, restaurant, lounges, recreation facilities, activity rooms, offices and multipurpose space for student events.

NEWS *continued on p. 16*

LUXURY plus UTILITY

for every type of installation

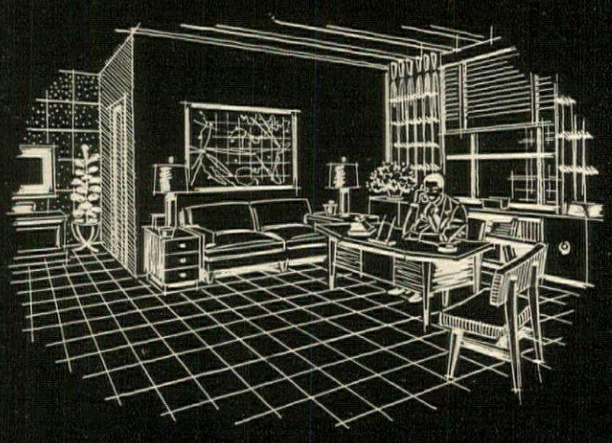
For unparalleled luxury, combined with utility and durability, no rubber tile flooring comes up to the standards set by Wright. In fact, many Wright floors installed over thirty years ago are as beautiful and serviceable today as they were then.

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.

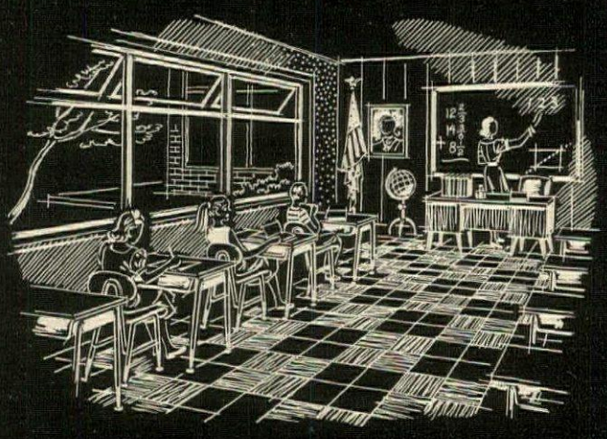
...All in all, a perfect luxury-plus-utility flooring that you can select with confidence.

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. W6-11 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

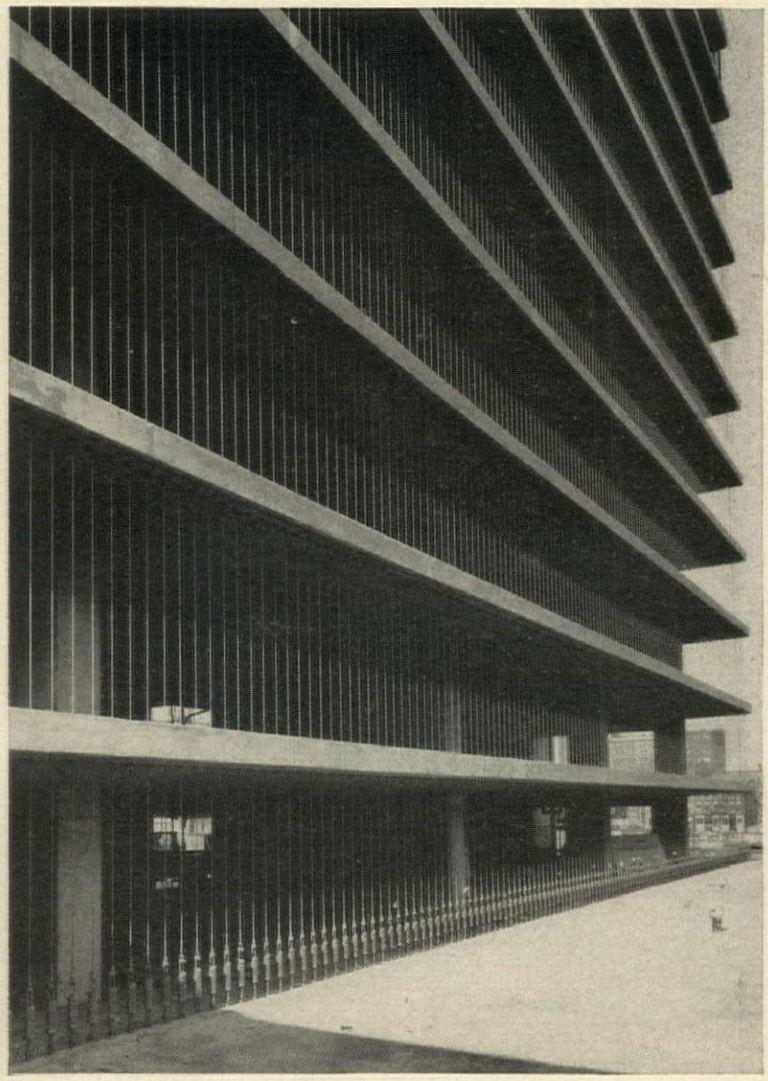
WA3

New Chicago Parking Garage

Designed for Permanence

with American Welded Wire Fabric

FUNCTIONAL, yet strikingly good looking, Chicago's New Municipal Parking Garage Number One was designed by Shaw-Metz-Dolio, Chicago architects. The concrete floors and roof are reinforced with American Welded Wire Fabric, which meets ASTM Specifications A 185-53T, adds strength, durability, and crack resistance.



PAN AND SLAB construction was used for the roof of the garage. Three inches of reinforced concrete were poured over 10-inch-deep pans. American Welded Wire Fabric—style 6 x 12 - 5/5—helps the slab withstand shrinkage and temperature stresses.

100 FEET BELOW, on the ground floor, more American Welded Wire Fabric is used. Style 6 x 6 - 4/4 in an eight-inch slab gives the floor strength to last and to stay attractive under heavy daily automobile traffic. Specify American Welded Wire Fabric Reinforcement for *your* concrete.

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

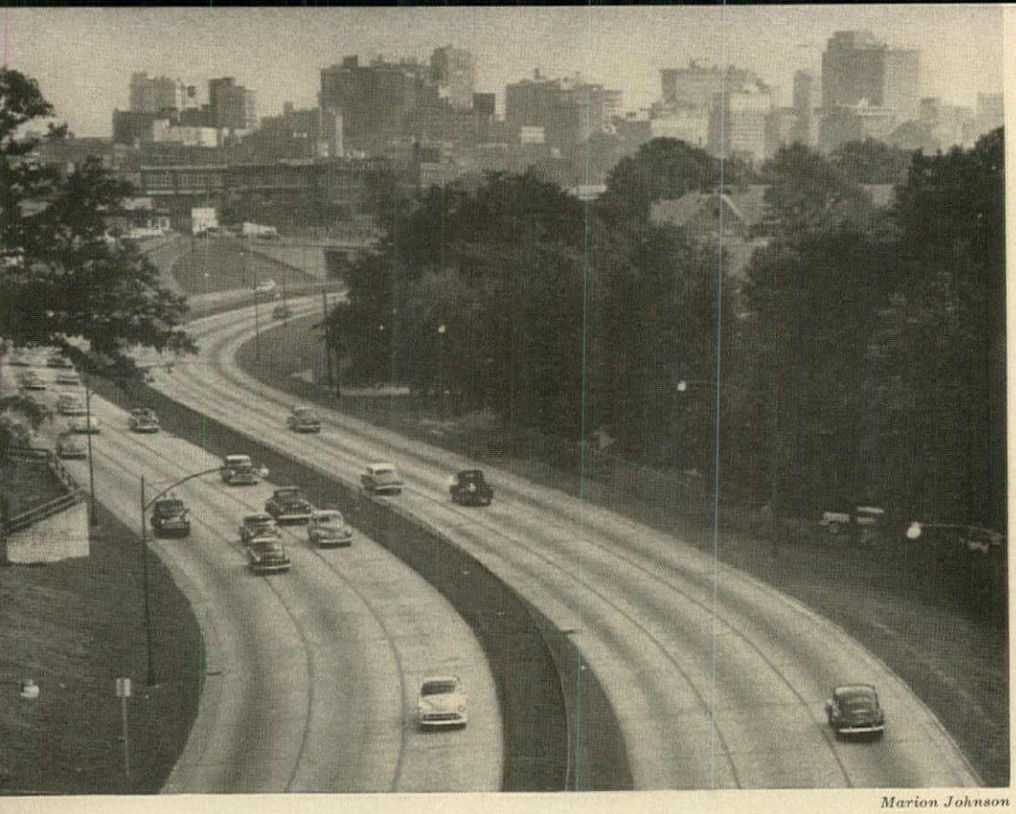
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

EVERY TYPE OF REINFORCED CONCRETE CONSTRUCTION NEEDS

USS AMERICAN WELDED WIRE FABRIC

UNITED STATES STEEL



Marion Johnson

NORTHERN EXPRESSWAY is used by more than 50,000 autos daily. Two-mile connector into heart of downtown will be finished in 1958.

RENEWING OUR CITIES:

Thirty years ago a Harvard business school dean said: "Atlanta is likely to become the center of the first metropolitan region in the South."

Atlanta has, and no one knows it better than its own citizens. The city and its suburbs have followed—in a more spectacular way than most American cities—the pattern of urban explosion that has characterized postwar America.

Some figures and facts about Atlanta:

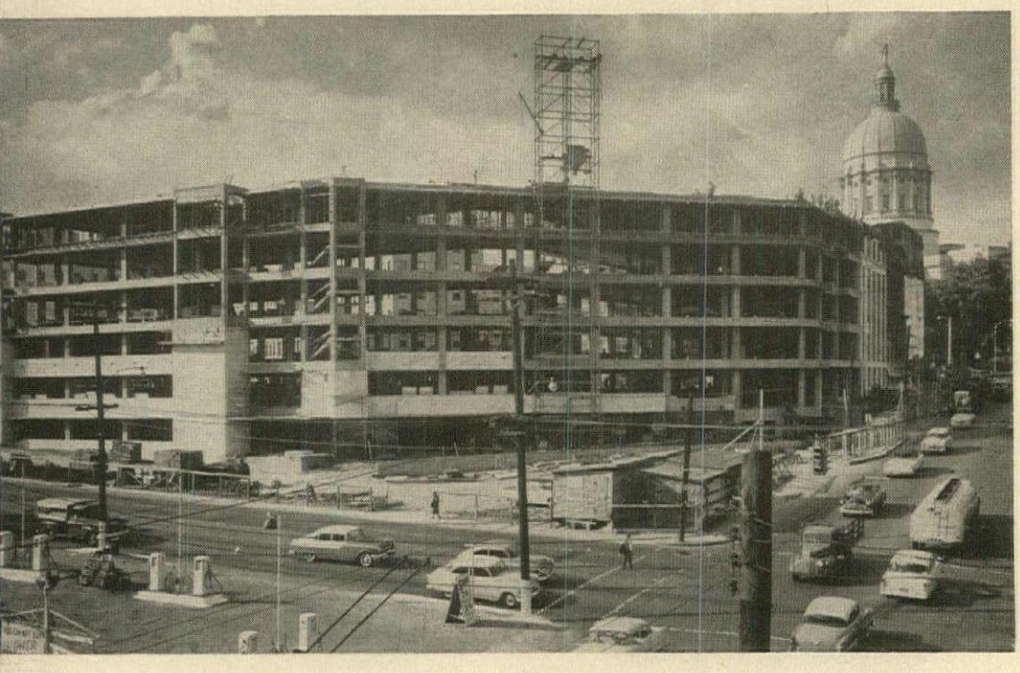
▸ Population of the federally designated three-county "metropolitan area" last April was 813,632, according to an updating of the 1950 US census by the Atlanta Metropolitan Planning Commission. This was 21% more than the 671,797 population of 1950. Growth is accelerating; the gain in the past five years equaled that from 1940 to 1950. If the present rate continues—and few Atlantians think it will slow down—the million-person mark may be reached by 1960, certainly by 1965.

▸ According to the planning commission, 47,495 housing units have been built in the past five years to handle the area's great gain in residents.

▸ Since World War II, metropolitan Atlanta has doubled its industrial output, wholesale and retail sales, bank clearings, postal receipts, telephones, automobiles, commercial air traffic, gas and electric meters, property values, manufacturing plants and number of employed persons—nearly all of the measures of urban pace.

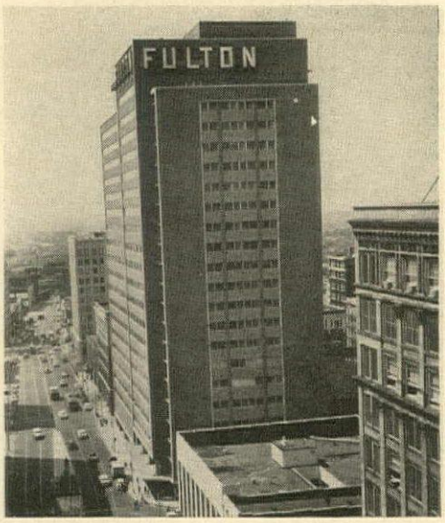
▸ Atlanta has 857 more industrial plants than it had in 1946, adding 30,698 new jobs paying a total of $88 million annually. More than 14 million sq. ft. of manufacturing space were added since 1946.

▸ Within the city itself building permits have been soaring year after year. In 1953 the totaled $80.9 million. Last year they



CAPITOL HILL DEVELOPMENT includes this new $2.5 million State Highway Building. Total state buildings program here: $10 million.

Charles Pugh



DOWTOWN PROGRESS in rejuvenation is symbolized by $7.5 million Fulton National Bank building. Architect: Wyatt C. Hedrick Co., Dallas.

Marion Johnson

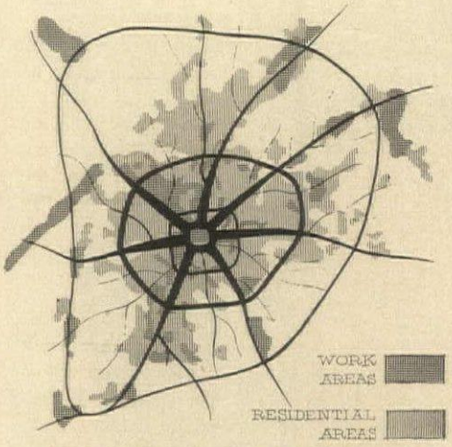
GRADY MEMORIAL HOSPITAL, on eastern edge of downtown area, will cost $22 million, be one of the South's biggest medical centers. Architects-Engineers: Robert & Co. Assocs.

Atlanta faces up to tasks

City and county officials work together on metropolitan area problems; transit system passenger loss trend is reversed

Marion Johnson

MAYOR HARTSFIELD



RING-AND-RADIAL TRAFFIC SCHEME

set a new record: $87.5 million. A month ago the 1955 tally already was $66 million.

▸ Most metropolitan Atlanta growth has been suburban, but the city has expanded too. In 1952 annexation of 82 square miles became effective, just about doubling the city's area, and adding about 100,000 persons to its 1952 population of 331,314.

No fear of problems. Growth has its problems, as most cities have discovered. Far from being overwhelmed by its troubles—mainly traffic congestion and the spreading of slums—Atlanta has decided to meet them squarely and to welcome new ones. There is a feeling among Atlanta leaders that the city is on the verge of greatness, that its difficulties have been caught at midpoint in their development, while there is still some time to do something about them.

In the biggest civic effort since the city was rebuilt after General William Tecumsah Sherman destroyed it by fire during the Civil War, Atlanta has planned and launched a number of major programs to keep the city growing strong and vigorously.

For whom the horn blows. Atlanta's street pattern, until a recent flutter of expressway construction, was about as unsuited to modern traffic as that of any American city. Streets followed ridges haphazardly, radiating from downtown like the twisted spokes of a dilapidated wheel. In 1945, a survey showed, an average of 101,463 motor vehicles entered the downtown section daily; this year the average was 189,355. Traffic was jammed in 1945; today it is almost stopped, approaching New York City standards. The Metropolitan Planning Commission estimates that congestion costs Atlanta $65 million a year.

Relief is on the way, however. Thirteen miles of a north-south expressway have been completed, and five more miles are under contract, financed by city, county, state and federal funds. Maximum efficiency from the freeway will be reached in about three years, when a downtown connector section—an expensive 2-mi. link with traffic interchanges—is completed. East-west expressways are being planned.

City parking postponed. Traffic's companion problem, parking, is far from solved in Atlanta. Private parking operators have staved off municipal action, and have built more than 5,279 off-street spaces since World War II. They have five new projects for more than 2,000 cars either under construction or in planning. But the need appears insatiable. On-street parking is being reduced, and eventually will be eliminated, to ease traffic congestion; off-street parking simply has not kept pace.

Transit in transition. The Atlanta Transit System was caught in the squeeze of declining business and increased automobile use, an old story in most American cities. A state senate study committee recommended service improvements and fast nonstop buses to whisk commuters to and from downtown and suburban parking lots. The transit system adopted the plan, and last month the system's downward curve in passenger traffic turned upward for the first time since the war.

Attack on blight. In 1947, partly as a result of campaigning by the Atlanta *Constitution*, Alderman John A. White, a veteran slum fighter, was able to push through a slum clearance ordinance. Actually this was little more than a program based on enforcement of building, sanitation and nuisance laws. However, White says the program caused rehabilitation, to minimum standards, of 18,000 slum dwellings and the demolition of another 2,000.

The Atlanta Housing Authority estimates that another 2,000 slum units were demolished to make way for expressways and new buildings since World War II. During the same period 2,000 low-rent public housing units—in which racial segregation has been maintained—have been built. Five hundred more are under construction. Total cost: $20 million. Added to 5,000 units built earlier, this will give the city a total of 7,500 public housing units.

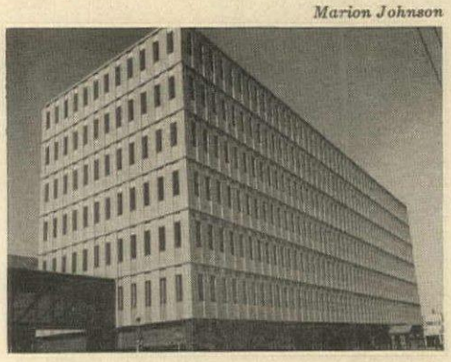
But in spite of these rehabilitation and public housing programs, the planning commission has designated about 22% of Atlanta's housing as substandard, most of it ringing the downtown business area.

Slow in Title I. Atlanta has not previously used federal aid for Title I slum clearance and redevelopment because of an adverse Georgia Supreme Court decision in 1953 which declared the state's redevelopment law unconstitutional. Last year the constitution was amended to meet the court's objections, and this year enabling laws were passed by the legislature. Now, needled by the *Constitution*, the board of Aldermen is considering three Title I projects.

Mayor William B. Hartfield, at first doubtful of the political popularity of ur-

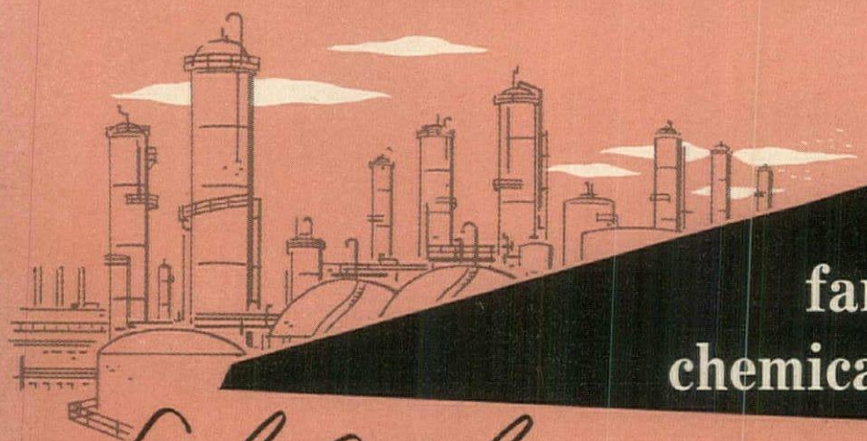
continued on p. 20

Marion Johnson



PROFESSIONAL BUILDING for Georgia Baptist Hospital (top) was designed by Stevens & Wilkinson, architects-engineers. Blue porcelain office building (r) was designed by Alexander & Rothchild for Builder Ben J. Massell.

GEORGIA TECH has started construction of this circular Alexander Memorial Field House designed by Aeck & Associates, architects.



Producers of famous POLYSAR chemical rubber...

find modern metlwal movable partitions

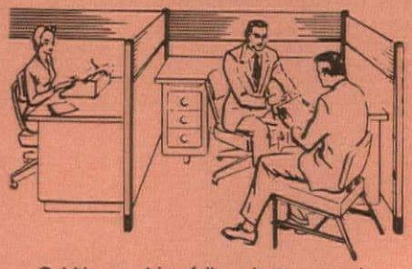
adaptable...economical

At Polymer Corporation Limited, Sarnia, Canada, standard *metlwal* movable partitions meet the completely different floor-plan needs of three major departments. Such tailored efficiency, for each quiet, tasteful office, was possible at low cost, because of *metlwal's* flexibility. *Metlwal* movable partitions are designed for quick, permanent installation, yet permit overnight floor-plan changes. Their attractive, lifetime finishes—in wood-grain or decorator colors—won't crack or craze. Whether used in new or modernized buildings, *metlwals* reflect *quality* in every detail!

Architect: Gordon S. Adamson, Toronto
General Contractor: Foundation Company of Canada, Toronto
Sub-Contractor: James F. Gillanders Company Limited, Toronto

Now... metlwal jr

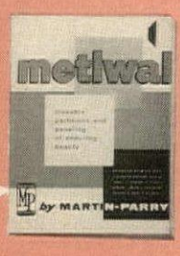
FREE-STANDING PARTITIONS AT LOW COST



Quickly provides fully private or semi-private offices. Also a distinctive space divider. Easily installed—and changed. Write for brochure.

PROOF OF EXTRA QUIET AND PRIVACY —WITH metlwal

Complete test results on sound transmission loss—made by an independent research organization—are available to you. They prove the advantages of *metlwal's* exclusive double-wall, double-insulated construction. Write for your copy.



MARTIN PARRY MP PRODUCTS

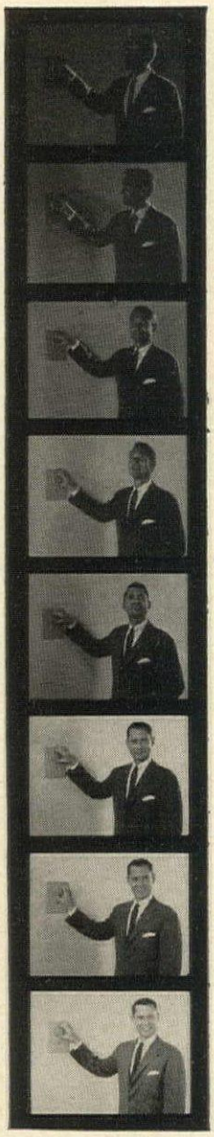
MARTIN-PARRY CORPORATION
SINCE 1878
BOX 964, TOLEDO 1, OHIO
IN CANADA: MARTIN-PARRY (CANADA) LTD. 82 DUNDAS STREET LONDON, ONTARIO

THIS IS IT... the revolutionary new autotransformer-type light control!

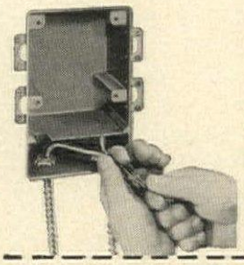
NEW

LUXTROL

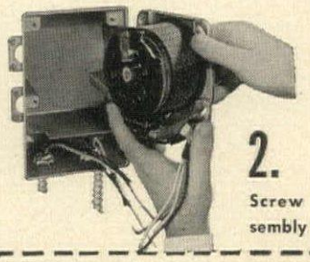
LIGHT CONTROL



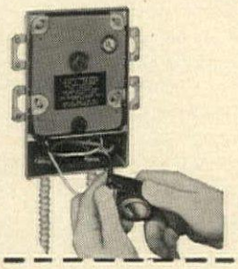
easy to install as an ordinary wallswitch...



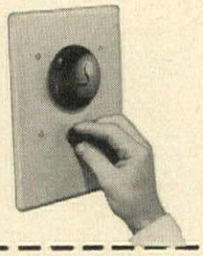
1. Attach wallbox to studs... feed input and output load BX through knockouts.



2. Screw control assembly to wallbox.



3. Connect circuit leads to color-identified control leads.



4. Screw on face plate, attach dial, insert fuse... and new LUXTROL is ready for operation!

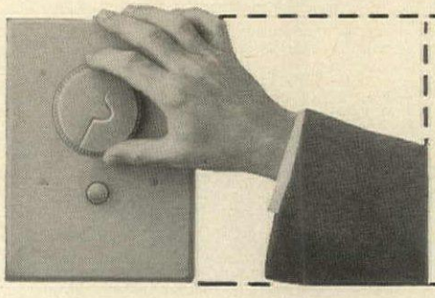
Here's the new light control that's making the wallswitch obsolete—not only in homes but in non-residential applications, too!

LUXTROL Light Control is an entirely new idea in modern interior lighting. It's an *autotransformer-type* light control. It produces at the turn of a dial any level of light from dark to full-bright... the *perfect* level of light for every occasion, every purpose.

LUXTROL is a soundly engineered, compact unit with brush and winding in constant contact. It has both fuse and thermal overload protection. It controls not only incandescent lighting but fluorescent and cold-cathode as well. It operates smoothly, silently, safely... is approved by Underwriters' Laboratories.

And most important to *you*, LUXTROL requires no complex wiring. It replaces ordinary wallswitches, *is just as easy to install!*

See new LUXTROL for yourself. Mail the coupon. We'll send you full descriptive literature and give you the name of the nearest distributor.



THE SUPERIOR ELECTRIC COMPANY
7115 Demers Ave., Bristol, Conn.

Please send me full technical data on new LUXTROL Light Control.

NAME_____

STREET_____

CITY_____ ZONE____ STATE_____

ban redevelopment, now favors moving ahead in the first three areas.

Other actions to meet urban growth:

Water. Since World War II, the city's water department has spent $1 million a year on capital improvements, another $1.5 million to extend mains to serve an average of 10,000 more persons a year.

Schools. The city and its component counties have spent heavily trying to keep up with the increasing school enrollments. For example, the city alone spent $26 million on school construction last year.

Hospitals. In the past decade two big new hospitals have been built, additions have been made to two others, and a third new one is under construction. Biggest of the new hospitals is the $22 million Grady Memorial. The US public Health Service plans a big communicable disease center.

Airport. About $5 million has been spent since the war on runways, taxiways, high-intensity lighting and navigational aids at the busy (242 scheduled flights daily) municipal airport. Another $8 million has been proposed for a new passenger terminal and more parking and loading space.

The planners. Supplementing and advising local planning and zoning boards is the Metropolitan Planning Commission, set up in 1947 and supported by the governments of Atlanta's component counties, Fulton and DeKalb. The hard-headed, well-staffed commission has kept well within the bounds of realistic planning in its "Now—for Tomorrow" program. Because the plan is an orderly projection of the realities of the growth that already has occurred in the metropolitan area, most Atlanta observers give it a good chance of being followed closely as a guide to future development of subdivisions, schools, factories, parks, trucking terminals and streets.

Planners hold largest convention, probe metropolitan government, traffic ills

Growing pains of big and little cities everywhere, and more and more complex metropolitan areas everywhere, caused a record migration to Montreal for the combined convention of the American Society of Planning Officials and the Community Planning Assn. of Canada.

This late September meeting turned out to be the biggest community planning conference ever held in North America. Instead of the 1,000 delegates who were anticipated, 1,300 earnest city planners, architects, engineers, traffic specialists, clergymen, harbor experts and government officials registered, some coming from as far as Israel and Japan.

Metropolitan government? Daily the realization becomes more widespread that many problems today transcend town or city boundaries, and are area or regional problems. Observed a Kansas City *Star* editorial last month: "Breaking down or crossing arbitrary city and county barriers presents one of the great civic challenges of the second half of this century."

At the ASPO convention there was a panel discussion of the question "Can Metropolitan Government Work?" Two Canadians said emphatically, yes. Fred G. Gardiner, chairman of the two-year-old Council of the Municipality of Metropolitan Toronto declared: "The Toronto experiment (AF, Dec. '53) has proved it is a practical and feasible form of government. Not only will a metropolitan form of government work but it is probably the only answer to the problem of supplying metropolitan cities with the metropolitan services they require."

Dr. Keith Callard, McGill University political scientist, declared: "The sanctity of municipal boundaries must go" if burgeoning cities are to provide adequate services. "Otherwise the rich municipalities will get richer and the poor get poorer." Because rich municipalities cannot be expected to surrender their favored positions voluntarily, he added, provincial or state governments will have to step in to make the necessary structural changes. "It's no good saying democracy begins at the local level if democracy does not produce there. The province, or the state, with a wider sphere of responsibility, must take a hand."

[A week later at a Regional Plan Assn. conference in New York the governors of New York, New Jersey and Connecticut agreed on the need for tristate metropolitan area planning, but differed on the steps that should be taken to make it a reality. While favoring planning, New York Governor Harriman rejected the idea for the organization of a single supergovernment for the area.]

More income, more traffic. During a discussion of the traffic snarl Gordon B. Sharpe, US Commerce Dept. highway transport research engineer, spotlighted the problem by pointing out that the US now has 9 million more cars than families and is in a growing trend to "two-car families."

F. Stuart Chapin Jr., of North Carolina University, proposed improved methods of gauging the future traffic flow to and from downtown employment centers.

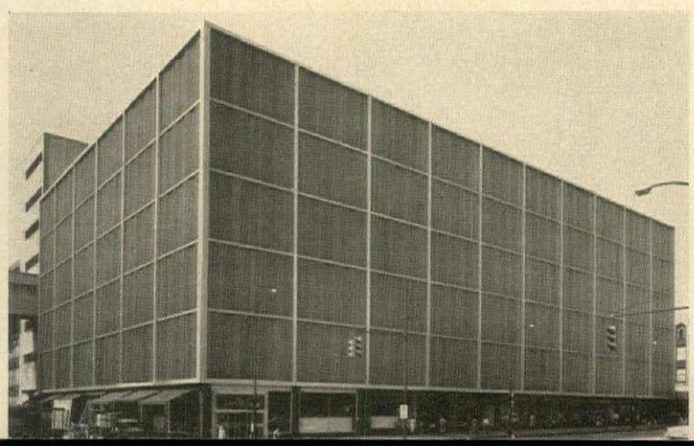
F. Houston Wynn, New Haven consulting engineer, reported on studies that show urban residents prefer to use their own autos instead of public transportation if

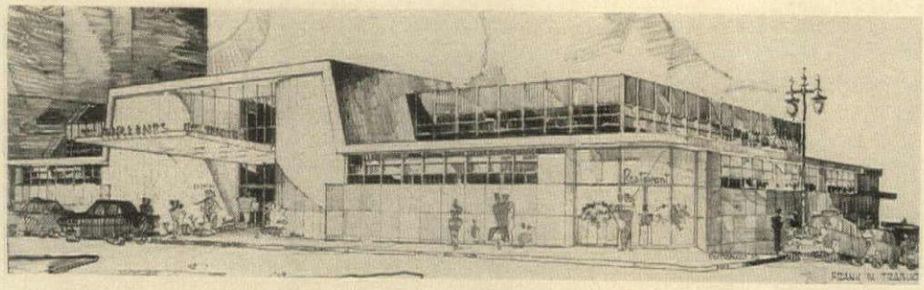
Decorative aluminum front screens Richmond department store's old, odd façades

As part of a $2.5 million expansion and modernization program particularly intended to demonstrate its faith in central downtown shopping areas, Thalhimers department store, in Richmond, has donned a sleek aluminum coat so its block full of odd-size, odd-height, odd-age buildings now looks like one large, impressive modern structure. Said store President William B. Thalhimer Jr. last month at ceremonies marking completion of the modernization project: "Contrary to the current trends toward expansion through suburban stores, we feel that the urban population is still the life blood of the city, and the downtown area provides the most complete shopping center, since it caters to both urban and suburban customers."

Thalhimers and the Reynolds Metals Co. developed the idea for the store's new aluminum jacket; the design was handled by Copeland, Novak & Associates, New York architects. Each 24′-wide rectangular unit of the lightweight cover consists of a broad sawtooth arrangement of interlocking, fluted gray aluminum panels 3′ wide and about 16′ high. These panels and the thin, satin finish horizontal mullions are extruded aluminum. The vertical mullions are of formed aluminum sheets. Installed cost was about $3.50 psf.

As part of the modernization program, the smaller buildings on the corner (see cut) were torn down and replaced with an 80,000 sq. ft. addition that raised the store's total floor area to 430,000 sq. ft. Extensive interior remodeling included installation of a new restaurant and a large expansion of the quality department.





San Francisco finally will get central airlines terminal

In 1946, San Francisco's City Planning Commission recommended a central airlines bus terminal for the downtown area. Up to 1953 nothing happened, so that year, to force the airlines to action, the city barred airport buses from Union Square, where most lines maintained separate ticket and check-in offices. This summer principal lines finally agreed on plans for a central terminal at the southeast corner of O'Farrell and Taylor Sts., opposite the NBC building, where they have been operating a temporary central terminal. The new single-story and basement $750,000 structure was designed by San Francisco Architect F. W. Trabucco and Lewis H. Hurlbut. It will have about 40,000 sq. ft. of floor area, 248' of counters, lounge, restaurant and a covered concourse in the rear to handle seven busses at a time. Exterior facing will be ceramic tile veneer, with steel and aluminum trim.

parking facilities are adequate. Wynn noted that in most cities low income and high density go hand in hand, with density decreasing and income increasing with greater distance from the central business district. Car ownership also increases with income and distance. His point: there is increasing evidence of auto ownership "saturation" on the fringes of cities, and the approach of this saturation closer and closer to the business districts.

Renewal and politics. At another session, Executive Director Martin A. Meyerson of the American Council to Improve Our Neighborhoods (ACTION), said many cities hesitate to push urban renewal programs because they are loaded with political dynamite. One trouble, he said, is that it "is hard for an honest mayor or other elected officials to have to trade a loss of votes and a loss of campaign funds for successful enforcement of a housing code." Another headache: "People just don't like to be displaced, and they show their resentment at the polls."

Award for Clarence Stein. Architect Clarence S. Stein, planner for Radburn, N.J., Baldwin Hills Village, near Los Angeles, several Greenbelt towns and more recently Kitimat, British Columbia, was given the 1955 ASPO award. His citation in part:

"Pioneering toward new towns for America, Clarence Stein profoundly influenced community living. His ideas and experiments in the planning of urban environment, and in planning and housing economics, have rendered an inestimable service not only to his contemporaries but to future generations.

"The new forms in community building that he demonstrated in the twenties and thirties were based on principles of esthetics, spaciousness, safety, neighborliness and convenience that have since become accepted elements in urban design.

"ASPO gratefully acknowledged a debt to a man whose creativeness established precedents not only for the planning world, but for a new plan for living."

Lab director predicts glass to rival structural steel

Within ten years glass should be available with twice its present tensile strength, and within a generation its strength should rival that of structural steel, according to Oscar G. Burch, vice president for engineering and research for Owens-Illinois Glass Co.

In the last ten years O-I spent $60 million on engineering and research for new uses for glass. Last month 500 members of its research staff were settling down in their new 200,000 sq. ft. technical center in Toledo (see cut), which cost $5.5 million including equipment. During the dedication program, Burch observed that glass is only about one-third as heavy as steel, and as made today has a tensile strength of about 10,000 psi. But laboratory scientists have prepared glass fibers with a tensile strength of 900,000 psi, twice that of the strongest steel wire, he reported.

The secret to producing high tensile strength glass commercially lies in two things, said Burch: the bulk structure or disposition of its interior atoms, and its surface discontinuities or irregularities. O-I and other large companies, he disclosed, are already intensively studying these factors, using X-ray and neutron diffraction, infrared transmission and nuclear radiation. "We have learned that we can influence structure by thermal history and environment. When we learn to harness and control it, glass will really come into its own as a structural material."

In the insulation field, Burch announced a new O-I hydrous silicate pipe covering for the oil refining, chemical and power industries that can withstand heat to 1,800° F, compared with present material good to 1,200°. It will be produced in thicknesses and diameters for pipe sizes from ½ to 39", he said, and also could be adapted as a substitute for concrete insulation over structural steel.

SIDELIGHTS

Russians veer to Wright

The delegation of Russian housing administrators triumphantly touring the US under NAHB auspices stopped at Taliesin to consult briefly with Frank Lloyd Wright last month. When they reached Madison, Wis., Delegate A. V. Vlasov, head of the Soviet Academy of Architecture, said of Wright, through an interpreter: "He has developed a special type of architecture. For that he has the wonder and respect of all Russian architects. He is known because of his strong individualism." Later, Wright said Vlasov had arranged for translation of three of Wright's books into Russian, and had invited him to send an exhibit of his work to Russia. Commented Wright: "I deplore their politics. But, then, I deplore most of our own."

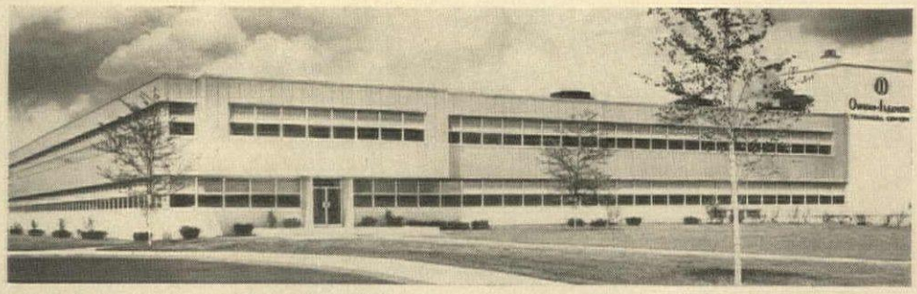
Designers redesign name

As the Society of Industrial Designers began its annual meeting and design conference in Washington last month, President Peter Muller-Munk announced the society had voted to change its name to American Society of Industrial Designers. New president elected during the conference: Arthur N. Becvar, 43, manager of industrial design for GE's major appliance division in Louisville, Ky.

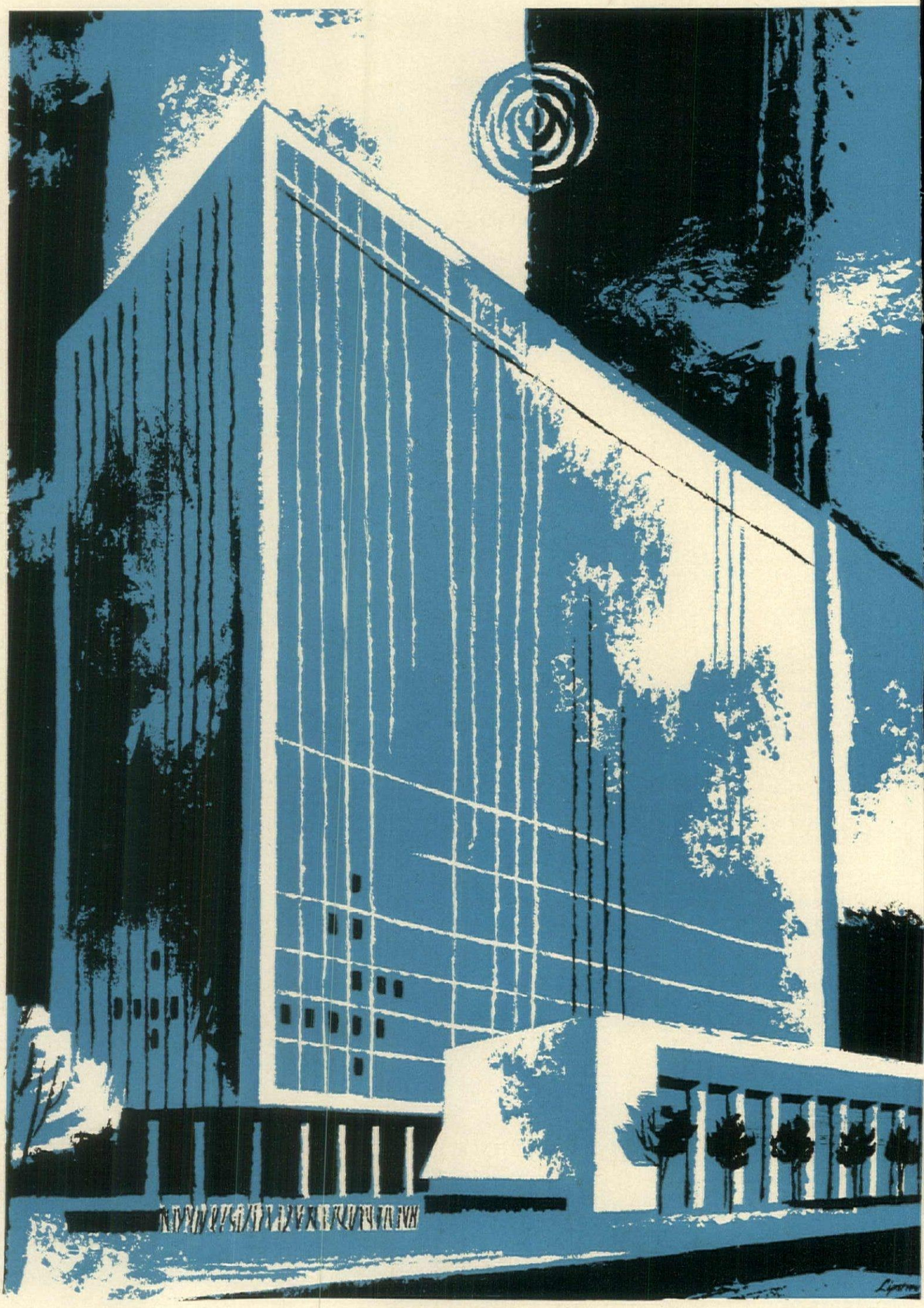
Prefab churches, motels

At the dedication of its large Tyler, Tex., plant last month, President James R. Price disclosed the creation by National Homes Corp. of a new nonresidential and special projects division to study production of prefab churches, motels and even shopping centers. Architect Charles M. Goodman,

continued on p. 25



NEW TECHNICAL CENTER FOR OWENS-ILLINOIS DESIGNED BY HOLABIRD & ROOT & BURGEE



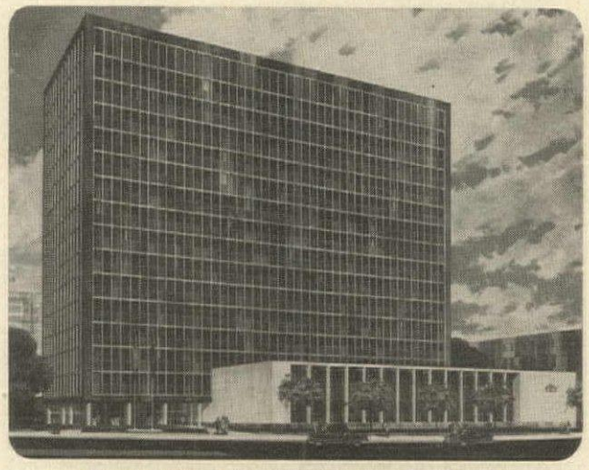
Universal Corporation Engineers, Fabricates, and Erects Colored Alcoa Aluminum Facade for

PENNSYLVANIA STATE OFFICE BUILDING

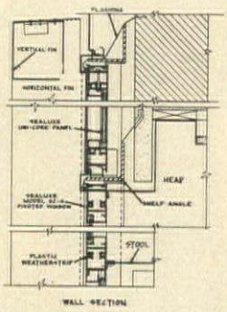
The new Pennsylvania State Office Building adds an outstanding example of Alcoa Architectural Colors to the Pittsburgh redevelopment scene. Universal Corporation, subcontractor for the aluminum and glass facade, is well qualified for this exacting task.

One of the oldest completely integrated fabricators and erectors of aluminum curtain walls, Universal has used Alcoa® Aluminum in many multistoried buildings. Sealuxe products used in the State Office Building are mullions, Model 92-A reversible windows, interior mullion covers, horizontal fins, soffits and coping.

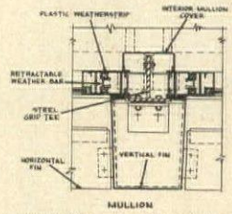
For complete information on aluminum curtain walls, Alcoa Architectural Colors, and qualified architectural metals fabricators, contact your local Alcoa sales office. Or write: ALUMINUM COMPANY OF AMERICA, 1887-L Alcoa Building, Pittsburgh 19, Pennsylvania.



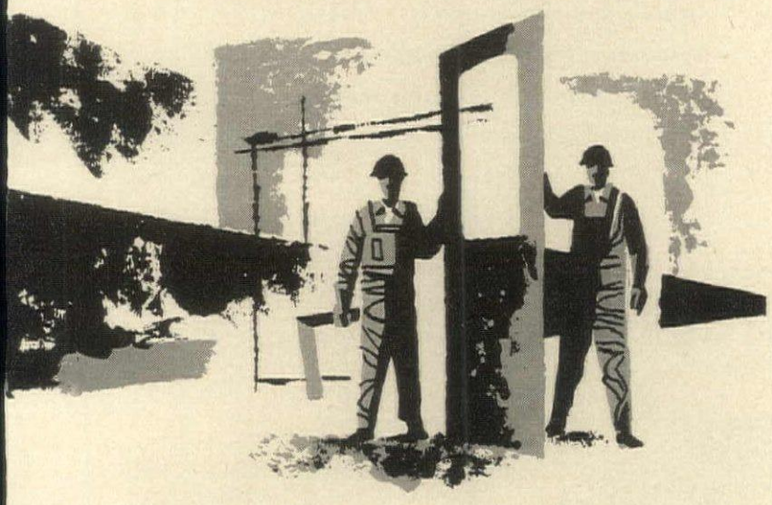
PENNSYLVANIA STATE OFFICE BUILDING, Pittsburgh, Pa. ARCHITECTS: Altenhof & Bown, A.I.A., Pittsburgh, Pa. ALUMINUM CONTRACTOR: Universal Corporation, Dallas, Texas.



WALL SECTION: Lightweight window wall is a lift-in facade section. Combines window and spandrel panel of Alcoa Aluminum in a floor-to-floor unit. Panels are finished in Alcoa Architectural Blue No. 3020, No. 1 Coarse Bark pattern.



MULLIONS: Alcoa satin-finished extruded aluminum. Other Sealuxe products used in building are Model 92-A reversible windows, interior mullion covers, horizontal fins, soffits and coping.



Your Guide to Aluminum Value

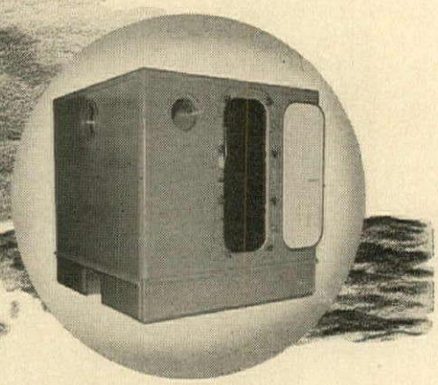
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

©ACOA

AIRCOMB DECKHOUSE SAVES TOPSIDE WEIGHT AT SEA

Now in use is a unique sea cabin made of Douglas Aircomb faced with fibreglass laminate. Because Aircomb gives 17 times more insulation than an equal thickness of concrete and is 16 times more rigid than an equal weight of steel, its use saves two thirds of the normal topside weight of the sea cabin. Douglas Aircomb can be faced with fibreglass to make strong, lightweight hulls for boats. A similar lamination makes molds, jigs and other plastic tools lighter and less expensive. In more and more varied applications, Douglas Aircomb is helping to expand markets by reducing transportation and handling cost. Plan to see Aircomb's display at the World Plastics Show. It may suggest competitive opportunities for you.



This seaworthy 2000 lb. replacement for a conventional 6000 lb. sea cabin proves Aircomb's exceptional strength and environmental qualities.

FOR ITS WEIGHT THE STRONGEST MATERIAL MADE

Aircomb is a honeycomb core of Kraft paper impregnated with a phenolic resin. A patented machine process and rigid quality controls insure uniform cell structure that give it consistent over-all strength and integrity against heat, cold or dampness. Can be sandwiched between wood, plywood, aluminum, magnesium, steel, paper, glass laminates, masonite, porcelain enameled sheets, marble, concrete, and other materials. It is shipped pre-cut in any thickness up to 6" and is guaranteed by Douglas to have uniform strength and rigidity.

AIRCOMB
TRADE MARK

DOUGLAS AIRCOMB PRODUCT

A PRODUCT OF
DOUGLAS AIRCRAFT COMPANY, INC.
SANTA MONICA, CALIFORNIA

who designed National Homes' new prefab schools, will be in charge of planning. Builder Wallace Johnson has taken the National Homes distributorship in Memphis, and was reported interested in adapting its prefab houses for use in his expanding Holiday Inn motel chain. Each motel would use about 50 prefab house units.

Lease-purchase deal ceilings

Lease-purchase financing adaptations scored a new high. In Chicago, Luminous Ceilings, Inc. announced it had instituted a plan for modernizing older buildings by the installation of complete acoustic-luminous ceilings on lease-purchase deals that would allow owners to charge off the entire cost over a five-year period as maintenance expenses before income taxes. To qualify for this advantage, the building owner would make a five-year "rental" and maintenance agreement with the lighting firm. If purchased outright, the same modernization would have to be treated as a capital improvement and be paid for with earnings after taxes, and probably subject to a much longer amortization period.

Promotion outlays tallied

After a survey of 64 manufacturers of building materials, the Producers Council found there was apparently no relation and "little consistency" among them in preparing advertising and sales promotion budgets. Average spending was 2.8% of sales, but ranged all the way from 0.5% to 7.5% of sales.

Architect advertising: panel approves 'group' action; not sure on publicity

At the California Council of Architects' convention in Santa Barbara last month, the session that drew the largest audience was a lively 2½-hour discussion by a panel of leading architects, advertising and public relations experts—"Should Architects Advertise?" Council Secretary and Panel Moderator Cornelius Deasy of Los Angeles said the subject would have been taboo 20 years ago, but was programmed now "because of an increasing amount of controversy and confusion about advertising and public relations in the profession."

Two subparts of the question arose repeatedly without being resolved. One was whether the AIA ethics code should be revised to permit members to advertise, in view of the fact some competitors not subject to such restriction advertise freely? The second was whether individual public relations programs are a form of paid advertising (or very different in principle from it) and should also be banned by the ethics code?

Consensus of the panel seemed to be that advertising by individuals would tend to lower the profession toward the level of the most blatant used-car hawkers, but chapter or "group advertising" could enhance the profession's reputation and boost its collective business. Specific comments by panelists:

Charles Luckman, of Pereira & Luckman—"The problem involves public relations, not advertising. The public assumes architects can design, make working drawings, write specifications, supervise construction. But no one assumes an architect can stay within a prescribed budget! Most bad publicity comes from our failures in this regard. Architects do not have a legal responsibility, but we do have a moral responsibility. . . . If we continue in failing to exercise our moral responsibility [in this regard] before long we will be involved in legal responsibilities. . . . The FTC controls and restrains advertisers to the use of basic truths. The product must be as good as a claim. Architects must be in the same position, with reference to costs and budgets. Group advertising by AIA chapters could establish a platform for individual architects by telling what they do and how they do it. Even if they wanted to, architects are not yet ready for individual advertising."

William Wurster, dean of the University of California School of Architecture—Architecture is a social art, a personal service where there can be no guarantee of results. Advertising would bring architecture close to "Gargantua"—the immense problem of industrialization, socialization, social loneliness. It would open a Pandora's box that would speed the process of bigger things growing bigger and smaller things disappearing. The savor of individual practice would be lost. Architecture must be one profession that remains individual.

John Lyon Reid, San Francisco architect—The services of the architect are not intelligently understood by the public for whom he works. A public relations effort to create an atmosphere of understanding, and sustain an appreciation for the things good architecture can contribute to our life, would be desirable. A program based on personalities, or aimed at glorifying the individual, would be of questionable taste, of doubtful value to the profession, and should be shunned.

Walter Mergronigle, AIA public relations counsel—Individual advertising is not the way to sell architectural services. It would not benefit the individual, and it would be very unfair. The AIA ethics code allows group advertising in the professional and public interest.

Herman C. Light, Los Angeles architect—The question is really whether the profession should continue to advertise, and how? Almost all architects advertise now, some by dress or appearance, others by hiring public relations counsel to produce "news releases." A "controlled" form of professional advertising should be permitted to combat competitors who are free to advertise. But group advertising probably would help only architects who are already well known.

J. P. Cohn, San Francisco advertising executive—"If I were offered the best architectual firm in the country as a client, I wouldn't touch it with tongs. . . . The question should be 'Can Architects Advertise?' There doesn't seem to be any way to find out whom they would hope to reach, who the prospects are. Until this is determined, it is not certain that architects could advertise."

William Latta, Los Angeles public relations executive—"Paid advertising is as important to the professional future of the ethical architect as it is to the manufacturer and distributor of other essentials. . . . Lack of public understanding of the important role of the architect can only result in gradual lessening of appreciation of his service [and less use of his services]. . . . There is sound reasoning to bar the doctor or lawyer from advertising. The doctor, playing upon natural fears, might create a demand for his services where no actual need exists. The lawyer, by glib persuasion, might conceivably lure a client into filing an unnecessary action. How is the architects' case against advertising expressed in similar terms of public interest? There is no similarity. Prohibition of advertising by architects serves no useful purpose—it protects no one—it denies all except the most popular an opportunity to justify the importance of a profession and to explain the public need it satisfies."

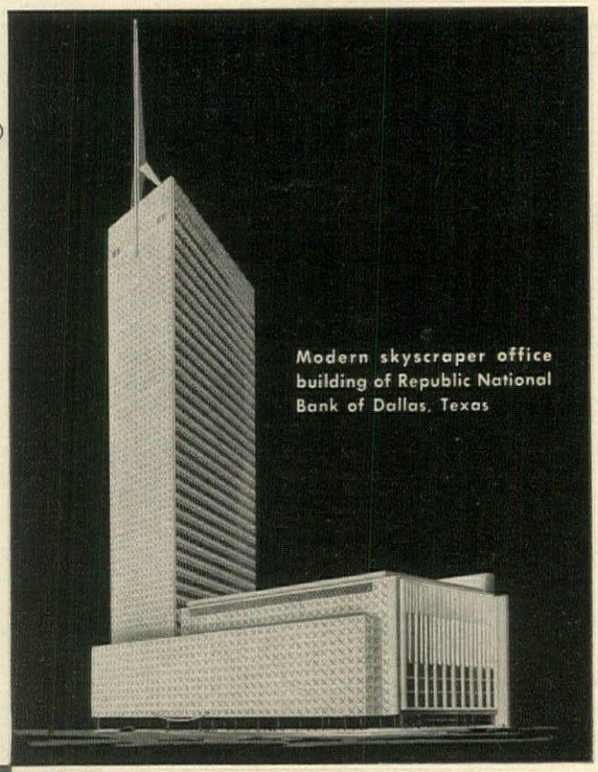
for news about PEOPLE—*p. 29*

PANEL ON ARCHITECTS' ADVERTISING (L TO R): MERGRONIGLE, WURSTER, LATTA, LUCKMAN, DEASY, COHN, REID, LIGHT

Vincent J. Mandese

NIBROC®

cabinets and towels bring efficiency, convenience, fine appearance to new bank building



Modern skyscraper office building of Republic National Bank of Dallas, Texas

Why did the Republic National Bank of Dallas choose Nibroc Recessed Combination Dispensers and Waste Receptacles—and Nibroc Towels—for the washrooms of its magnificent new building? To provide employees and customers alike the best in washroom service, to make towels convenient for users, to provide easily accessible receptacles, to save floor space, and to enhance washroom appearance.

First wet strength towel—and still the finest—Nibroc Towels are super-absorbent, strong, sanitary, soft textured. They speed washroom traffic . . . stop waste because *one* towel dries both hands.

Architects specify Nibroc Multifold Cabinets widely—they hold 50% more, require less servicing, cut maintenance costs. Available in 3 models—wall, floor, and recessed. Wall cabinets in durable white enamel (with or without mirror) and easy-to-clean chromium plate or stainless steel.

For utmost, trouble-free service, the new, improved recessed dispenser with waste receptacle loads faster, holds far more towels for heavy traffic. 22-gauge stainless steel in stunning design. Dispenser and waste receptacle come separately if desired for staggered installation.

Choose the best—Nibroc Towels and Cabinets! See "Nibroc" in your classified directory for name of your distributor, or write Dept. NU-11, our Boston office.

BROWN COMPANY—Berlin, N. H.

General Sales Office: 150 Causeway St., Boston 14, Mass.

THE NEWEST CONCEPT IN SUNLIGHT CONTROL

Facilities for quantity production of LURA-LITE panels at our Havre de Grace plant.

LURA-LITE* LOUVERED PANELS

LURA-LITE panels are formed sheets of Plexiglas† combining opaque and light transmitting louvers in one continuous surface. Each panel is flanged for easy weather tight installation.

LURA-LITE panels . . .

- Distribute sunlight evenly to all parts of any large room or production area improving work or study conditions.
- Reduce solar heat gain by reflecting a high portion of the direct sunlight striking the window area.
- Are available in standard sizes or can be custom-made to fit any type and size window.
- Last a lifetime, always stay attractive.

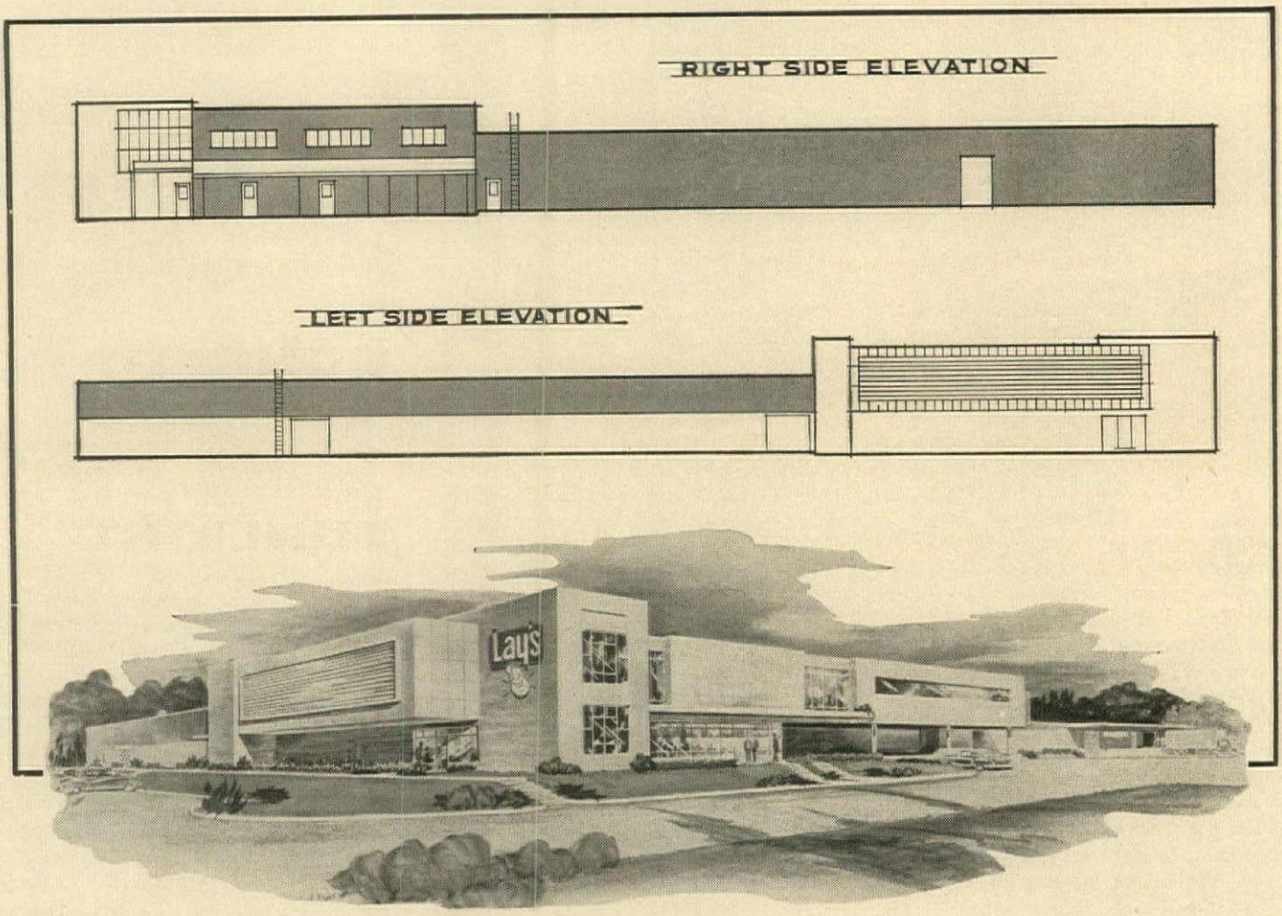
WRITE FOR BULLETIN GIVING STANDARD SIZES, TECHNICAL DETAILS, AND OTHER INFORMATION.

*Trade mark of Luria-Cournand, Inc.
†Trade mark of Rohm & Haas Co., Phila., Pa.

LURIA-COURNAND, INC.

HAVRE DE GRACE, MARYLAND

Specialists in the Design, Engineering, and Fabrication of Plastics and Bonded Materials.



Project: Lay Potato Chip Co. plant, Chamblee, Ga. Architect: Locatell, Inc., Atlanta. General Contractor and Owner: J. A. Jones Construction Company, Atlanta. Processor: Overly Manufacturing Company, Greensburg, Pa. Process Engineering: Douglas McBean, Inc., Rochester, N.Y. Siding Subcontractor: American Steel Band Co., Building Products Div., Pittsburgh, Pa.

Aluminum, Alodized with Architectural Alodine®, needs no painting, retains its finish for life

This modern food processing plant in Chamblee, Ga., has decorative aluminum panels of deep green. Their Alodized finish will retain its new look for life. That's because this revolutionary new chemical process converts aluminum surfaces to an amorphous phosphate. And because it produces a finish that adds years to the already long life of aluminum. Colors range from gray green to a deep green resembling the patina of copper.

Alodizing with Architectural Alodine offers two other advantages, too. It reduces the reflectivity of untreated aluminum by 30% or more. It is much less expensive to use than the more complex anodizing process—takes less time, requires smaller, simpler and less costly equipment.

Since the use of Alodized Architectural Aluminum is spreading rapidly—in the construction of industrial plants, commercial buildings and dwellings—you will want complete information about its possibilities. Write for data—of course without obligation. Or see our literature in Sweet's Architectural File.

Specify Alodized Architectural Aluminum for greatest protection and least maintenance

AMERICAN CHEMICAL PAINT COMPANY, Ambler 23, Pa.

DETROIT, MICHIGAN NILES, CALIFORNIA WINDSOR, ONTARIO

CHEMICALS ACP PROCESSES

PEOPLE

Bertoia mural returned to new Dallas library after dispute; John Riley joins Ibec Corp.; Hans Knoll killed in auto crash

NAMED: New York City's much-in-demand municipal construction expert and development director for the NYC Housing Authority, **John P. Riley,** as vice president and chief engineer of the Rockefeller interests' Ibec Housing Corp. Riley previously was the housing authority's chief engineer, and on a two-year leave of absence, 1951-'53, effectively reorganized the city's school construction program (AF, Apr. '55); simultaneously was engineer member of an advisory committee on reorganization of the Air Force construction program. He will take his new post Jan. 1. **Paul Lester Wiener, Jose Luis Sert** and **Paul Schultz,** partners of Town Planning Associates, of New York, as chief consultants to a new Cuban National Planning Commission and the Minister of Public Works, with responsibility for drafting regional and master plans for Havana and other cities; **John W. James,** research vice president of McDonnell & Miller, Inc., of Chicago, nominated as president of ASH & A-CE.

RILEY

Yale University reorganized its arts division, changing the name of its School of Fine Arts to the School of Architecture and Design, which will cover architecture, city planning, painting, sculpture and the graphic arts, coordinated with undergraduate instruction in these fields in Yale College and the School of Engineering. Fine Arts dean, **Charles H. Sawyer,** will be dean of the new architecture and design school, with Professors **Paul Schweikher** and **Josef Albers** holding chairmanships in architecture and design.

In its September article on the Berlin conference hall to be donated to Germany by the US, FORUM inadvertently called it a special project of **Mrs. Allen D. Dulles.** But this was a case of mistaken identity. The credit belonged to Mrs. Dulles' sister-in-law, **Eleanor Lansing Dulles,** sister of the OSS director and the Secretary of State. Miss Dulles is now special assistant to the State Dept.'s director of German affairs. In a long government career in both the US and abroad, she was finance division chief of the Social Security Board, 1936 to '42; a US delegate to the Bretton Woods talks, and financial attache in Vienna, 1945 to '49.

DULLES

Dallas Morning News

BERTOIA AND DALLAS LIBRARY METAL MURAL

On a prededication inspection of Dallas' new $2.5 million library last June, Mayor **R. L. Thornton** and his councilmen reacted violently when the came upon a 10′ x 24′ metal screen mural by Sculptor **Harry Bertoia.** It was similar to ones Bertoia had made for the Manufacturers Trust all-glass bank in New York (AF, Dec. '54), for General Motors' new Technical Center in Detroit and for the new MIT Chapel in Cambridge. Unimpressed by its $8,700 price, Thornton scornfully commented: "It looks to me just like a bunch of junk painted up. It looks like a cheap welding job."

In the ensuing controversy, as council members objected to "paying taxpayers' money for such a thing," Library Architect **George Leighton Dahl,** designer of such other major Texas structures as the Neiman-Marcus and Titche-Goettinger stores in Dallas, and 20-odd University of Texas buildings, paid for the mural himself and transferred it to his home. More militant art lovers were not satisfied with this compromise, however. Seventy-nine raised a fund to repurchase the mural from Dahl and donate it to the library, the city council having agreed to accept it provided no public funds were spent, and the library board having approved the original sketch.

Last month the dangling mural was put up again in the new library for all Dallasans to see, but not before the local AIA chapter, in an executive committee statement issued by President **Roscoe DeWitt,** had registered its opposition to the way the issue was compromised. "If the object is not a worthy creative work it should not be placed in the library at all," said the statement. "If it is acceptable as an ornament to the building, if it is permitted to occupy the place for which it was designed, it should be paid for by the city, and neither the architect, nor one, nor a group of private citizens should be called upon, or even permitted, to pay the cost.

While in Cuba on a business trip, Designer **Hans G. Knoll,** 41, pioneer in the creation and production of contemporary furniture and textiles, was killed by a wild truck hitting his parked car on Oct. 8. Born in Stuttgart, Knoll came to the US in 1937, established a furniture company in New York in 1938, and formed Knoll Associates in 1946. This soon grew into a world-wide organization with three factories, eight offices and showrooms in the largest US cities, other offices and factories in Belgium, Canada, Cuba, France, Germany, Switzerland, Sweden. It will now be directed by (Mrs.) Florence S. Knoll, who was planning director for the organization.

KNOLL

Knoll received admiration as a design statesman and affection as a friend from the many top designers whose individual authorship of furniture and textiles was acknowledged in promotion. Among them: Mies van der Rohe, Eero Saarinen, Isamu Noguchi, Harry Bertoia, Le Corbusier in France, Finland's Ilamari Taapiovara, Italy's Franco Albini. He was also behind the scenes the leading spirit in catalyzing such creative events as the US State Dept.'s modern foreign building program.

Comments on his untimely passing:

"He made a lasting cultural contribution to America . . . achieved world-wide influence bringing the best of modern design into institutional, commercial, public buildings."—Eero and Aline Saarinen.

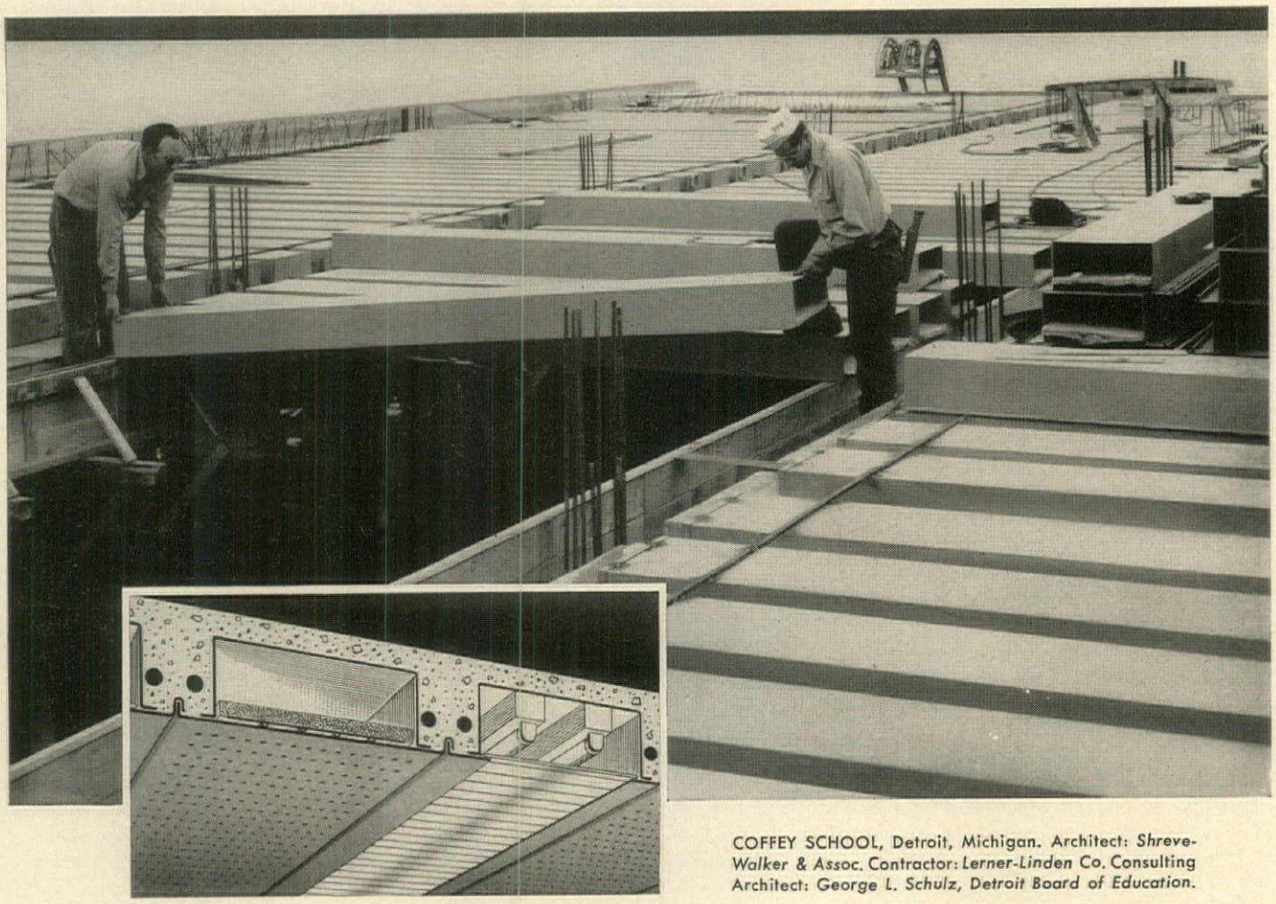
"It was Knoll's taste, standards, choice of designers, energy and ability, that gave the leadership necessary for the success of the entire modern movement in American furniture."—Philip Johnson.

"A leader in new designs, new techniques of manufacture and in designed service to architects for their new created spaces."—Louis I. Kahn.

"He pioneered new forms with fresh, brilliant colors, with airy spaces. All modern architects will miss him."—William Lescaze.

OTHER OBITUARIES: Rear Admiral **John Richard Perry,** 56, chief of the Bureau of Yards and Docks since 1953 and organizer of the Navy's Seabees (Construction Battalions) in World War II, Sept. 25 in Washington; Major General **Philip B. Fleming,** 67, former head of the Federal Works Agency and supervisor of the White House renovations for President Truman, Oct. 6 in Washington; **Ernest Payson Goodrich,** 81, former president of the American Institute of Consulting Engineers, former director of the American Institute of Planning, Oct. 7 in Brooklyn, N.Y.

for news about TRENDS—*p. 32*



COFFEY SCHOOL, Detroit, Michigan. Architect: *Shreve-Walker & Assoc.* Contractor: *Lerner-Linden Co.* Consulting Architect: *George L. Schulz, Detroit Board of Education.*

NEW WAY TO BUILD SCHOOLS . . . FASTER!

Fenestra TROFFER-ACOUSTICAL Panels combine concrete joist forms, built-in acoustical ceilings and recessed lighting troffers

Now you can have better-looking, better-lighted classrooms with fireproof construction and save both time and money. The NEW Fenestra* Troffer-Acoustical Panels—TAC Panels, for short—are designed to wrap up 3 expensive building materials in *one* economical, quickly erected building unit. They permit you to have acoustical treatment and recessed lighting—features that usually require extra time and labor—*built right in the structure itself!*

Here's how it works. As you can see in the photo above, the TAC Panels—either for troffer lighting or metal pan acoustical ceilings—are long-span units. Placed in position on the formwork for the main beams, they provide the forms for the concrete joists and floor slabs. Temporary supports at mid-span while pouring concrete are *all* the additional shoring required. After the concrete is cured, the panels *stay in place* and function as the finished ceiling—complete with built-in acoustical treatment—and as lighting troffers. Only painting and lighting fixture installation are needed to complete the room.

And TAC Panel ceilings are easier to maintain year after year. They can be washed or repainted as often as needed, without affecting the acoustical treatment. There is no hanging ceiling or "stuck on" acoustical material to be damaged or replaced.

Even if your plans are now on the drawing board, they can easily be adapted to use Fenestra TAC Panels. Ask your architect to investigate this new building method, now, or write for a copy of *Fenestra TAC Panel System* that gives you complete details. Detroit Steel Products Co., Dept. AF-11, 2296 E. Grand Blvd., Detroit 11, Michigan.

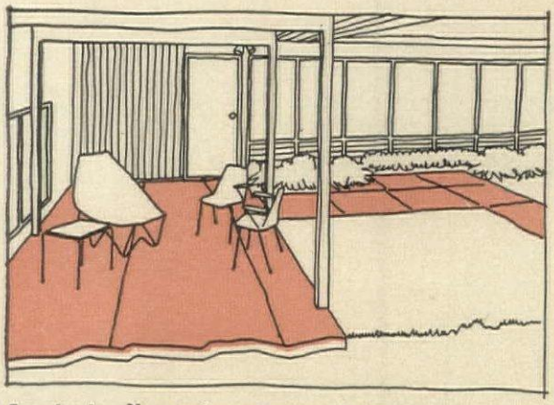
*Trademark

Fenestra TAC **TROFFER-ACOUSTICAL BUILDING PANELS**

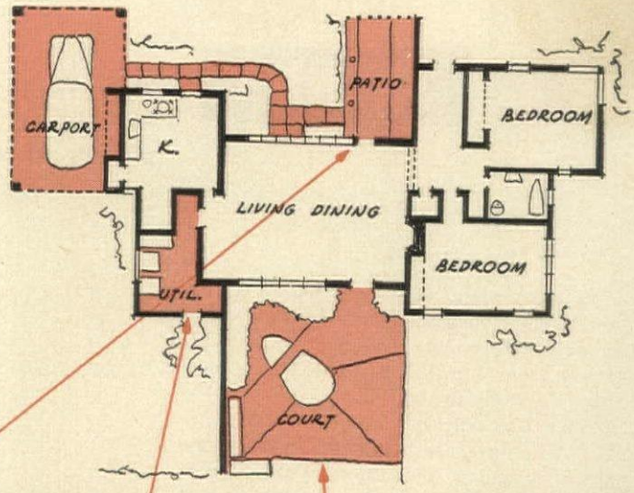
Patents applied for

Architectural, Residential and Industrial Windows • Metal Building Panels
Electrifloor† • Roof Deck • Hollow Metal Swing and Slide Doors

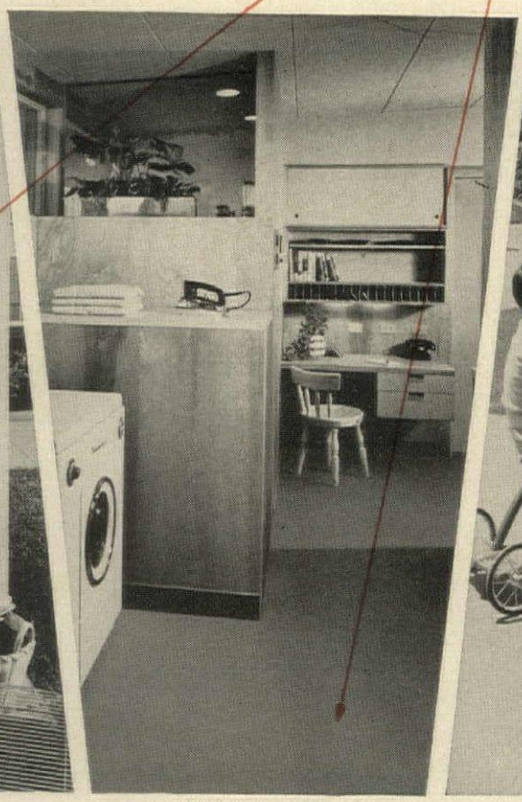
†®



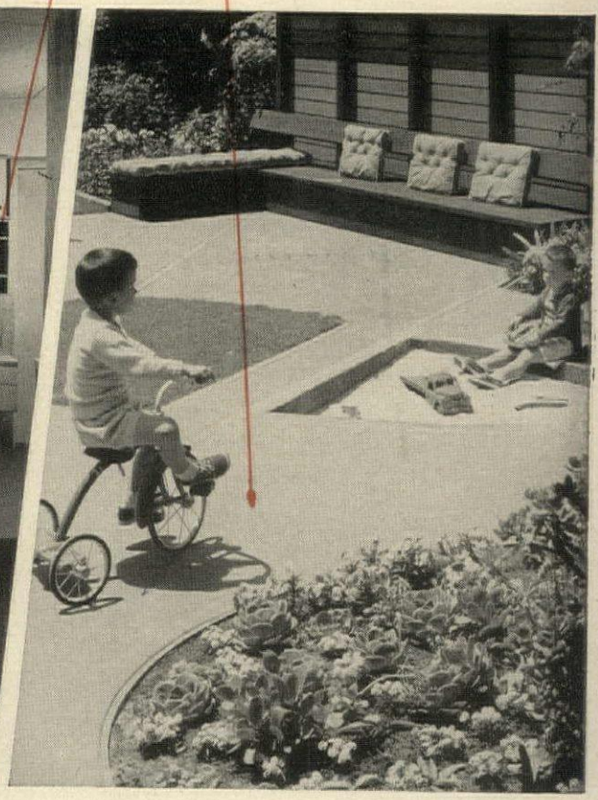
Fused color. *Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.*



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. H11-1116, 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)

TRENDS

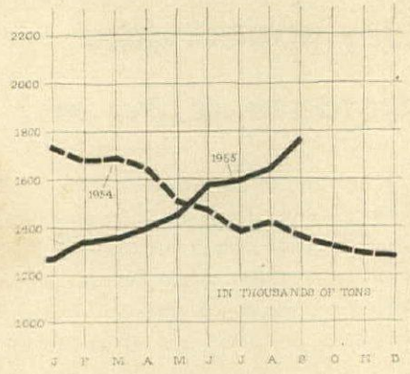
Government study says big construction volume sent material prices up more than average, 21.5% vs. 12.9%, since 1950

Wholesale prices advanced more sharply for building materials than for most other commodities during the five and a half years from Jan. '50 to June '55, according to a study in the Commerce and Labor Dept.'s *Construction Review* for September. While average prices for all commodities (including building supplies) rose 12.9% in this period, the average for all building materials advanced 21.5%.

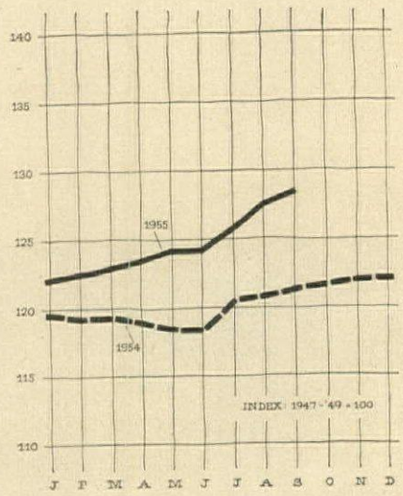
This study attributes the greater increase in building materials costs to "sustained demand" created by the huge postwar construction boom. Discounting minor effects from recent FHA and VA regulations temporarily tightening residential mortgage credit, it forecasts continued heavy demand for new construction of all types, and therefore "continuing pressure" on materials prices.

Changes in price indexes for selected materials included in the study:

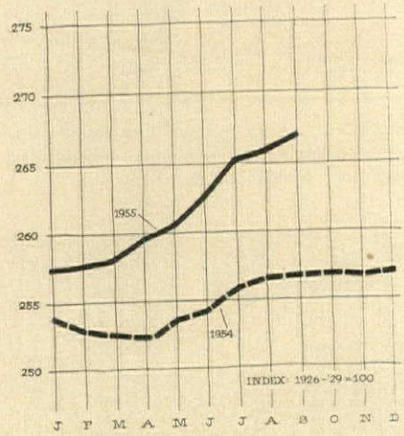
	(1947-49 equals 100) Jan. '50	June '55	Increase
All building materials	102.1	124.1	21.5%
All lumber, wood products	100.8	123.6	22.6
Douglas fir	95.0	131.9	38.8
Millwork	108.1	128.3	18.7
Softwood plywood	102.1	110.5	8.2
All heating equipment	101.8	113.5	11.5
Boilers, radiators	106.3	132.0	24.2
Water heaters	105.2	107.4	2.1
Metal sash	102.8	133.2	29.6
Building wire	77.5	118.6	53.0
Steel structural shapes	120.4	146.2	21.4
Cement	106.6	131.6	23.5
Concrete block	101.4	112.0	10.5
Asphalt roofing	101.7	106.7	4.9
Brick	106.6	124.2	16.5
Window glass	103.9	138.8	33.6



STRUCTURAL STEEL unfilled orders on Sept. 1 rose to 1,775,000 tons, highest since Dec. '53, when they were 1,800,000 tons. New orders in August totaled 311,453 tons, the fourth consecutive month they exceeded 300,000 tons, reported the American Institute of Steel Construction. Total orders for this year's first eight months were 2,333,000 tons, 37% higher than the same period in 1954.

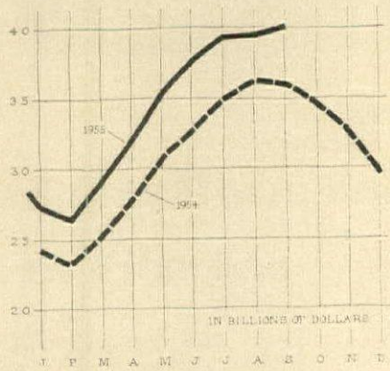


BUILDING MATERIALS PRICES advanced another 0.7% from August to September, when they reached 128.4 on the BLS average wholesale price index. (This was 3.4% above the June index of 124.1 used in the five-year prices study reported in the adjoining column.) The September increase was caused mainly by advances of 0.5 index points for lumber, 0.4 points for plywood, 1.7 points for heating equipment, and 0.7 points for concrete and for structural clay products.



BUILDING COSTS for nonresidential structures continued their uptrend from August to September, when they reached 266.7, compared with 265.8 a month earlier, on the national index of E. H. Boeckh & Associates. For six months, March to September, the Boeckh index rose 3.3%. This was in line with a 3% average increase in the same period in 122 cities recorded by the Dow Service. Locally, however, Dow reported cost declines of 4% in Miami, 2% in Houston, 1% in Los Angeles and Tulsa, and increases as high as 15% in El Paso, 8% in Boise, 6% in Memphis.

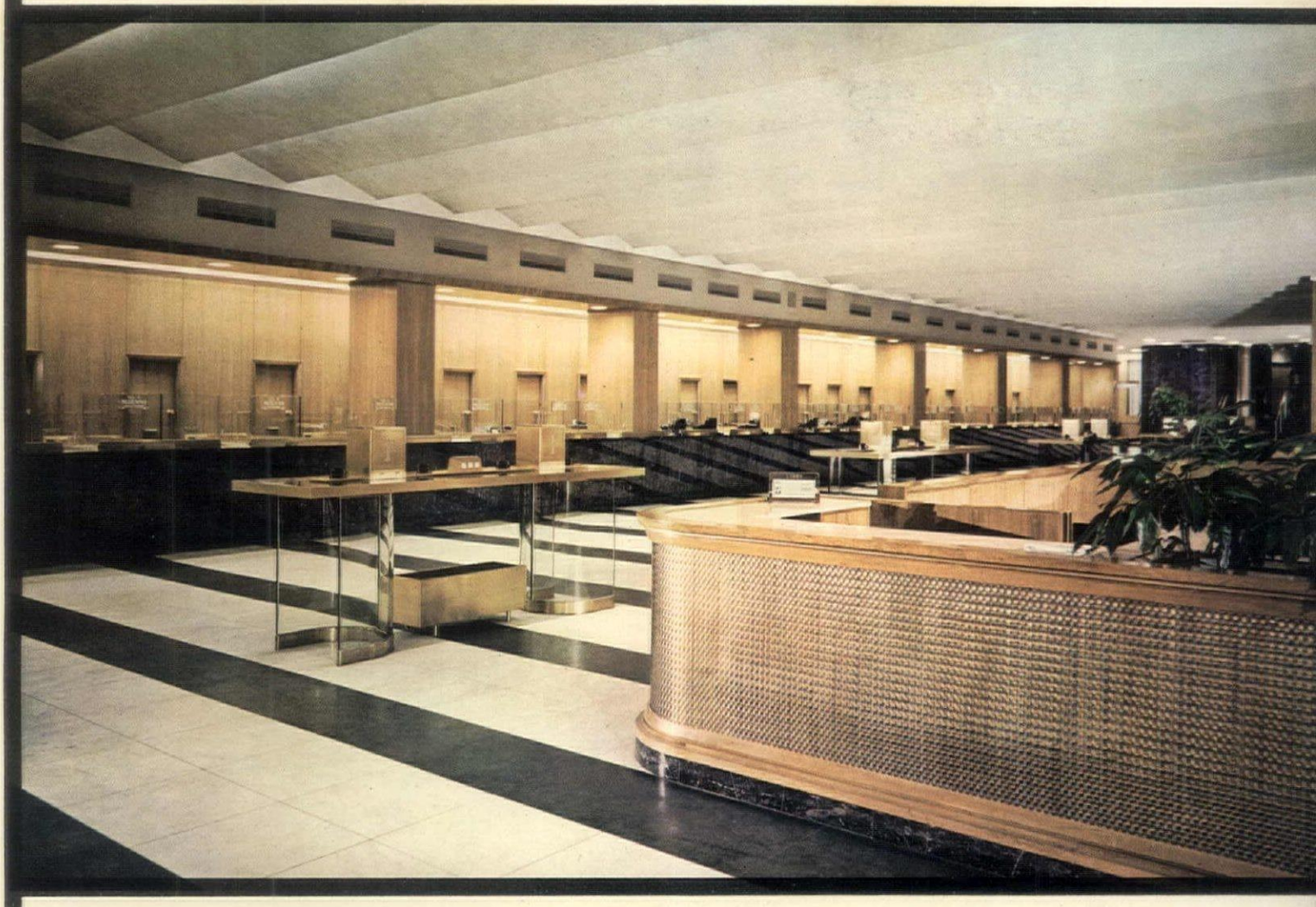
Record September building outlays pass $4 billion mark



TOTAL CONSTRUCTION expenditures reached the $4 billion mark in September for the first time in history. Among new monthly records in separate categories, outlays for commercial construction went over $300 million for the first time, private industrial and church building hit peaks of $210 million and $70 million, respectively. Within the commercial category, September spending for stores, restaurants and garages totaled $207 million, for the first nine months of this year was 48% ahead of the same period last year. Declining seasonally, nonfarm housing starts dropped to 113,000 in September, a seasonally adjusted rate of 1,230 000 annually.

(millions of dollars)	Sept. '55	First nine months 1955	1954	%±
PRIVATE BUILDING				
Residential (nonfarm)	1,467	11,973	9,624	+24
Nonresidential*	717	5,507	4,580	+20
Industrial	210	1,724	1,498	+15
Commercial	308	2,175	1,615	+35
Offices lofts; warehouses	101	805	692	+16
Stores; restaurants garages	207	1,370	923	+48
Religious	70	539	418	+29
Educational	44	366	387	—5
Hospital; institutions	31	265	250	+6
Public utilities	425	3,326	3,203	+4
*PRIVATE TOTAL	2,758	22,046	18,727	+18
PUBLIC BUILDING				
Residential	21	196	269	—27
Nonresidential	395	3,339	3,534	—6
Industrial	61	640	1,195	—46
Educational	231	1,871	1,575	+19
Hospital; institutions	29	265	281	—6
Military	128	949	746	+27
Highways	495	2,925	2,827	+3
Sewer; water	102	823	734	+12
*PUBLIC TOTAL	1,243	9,013	8,926	+1
*GRAND TOTAL	4,001	31,059	27,653	+12

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



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.*

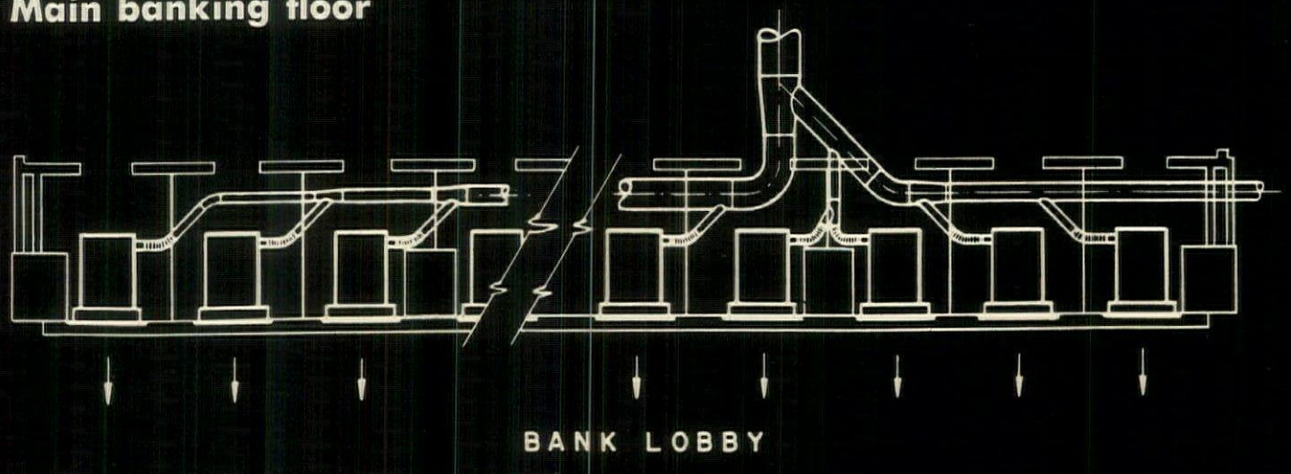
The All-Air High Velocity system also provides draftless comfort throughout the bank as well as in the second floor executive offices (shown at left). *See next page for detail.*

Architect: George L. Dahl

Consulting Engineer:
Landauer, Guerrero & Shafer

Contractor:
C. Wallace Plumbing Co.

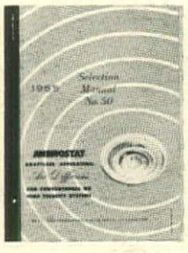
Main banking floor



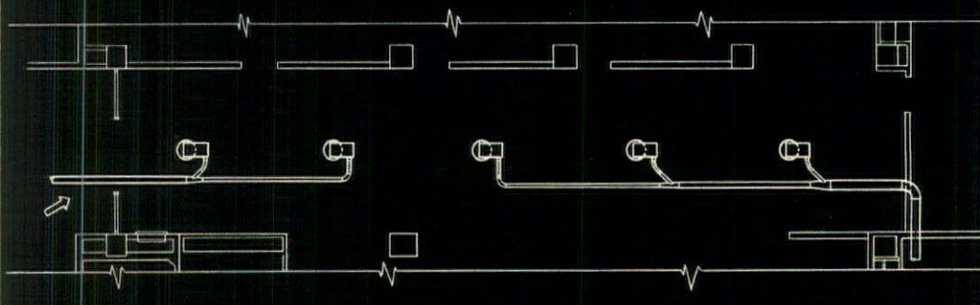
Sketch of photograph on preceding page shows the installation of twenty-four Anemostat 36-inch HPSL-100 High Velocity units, each supplying 200 cfm. A total of 4800 cfm is delivered to the main banking floor.

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**

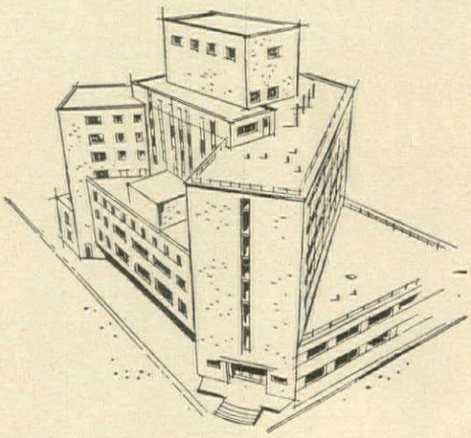
ANEMOSTAT CORPORATION OF AMERICA

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

REPRESENTATIVES IN PRINCIPAL CITIES

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

V-shaped for maximum light, sound conditioned for comfort



HOSPITAL FOR SPECIAL SURGERY, New York City, N. Y.

Architects: *Rogers & Butler*

General Contractor:
Vermilya-Brown Co., Inc.

Acoustical Contractor:
William J. Scully Acoustics Corp.

Architect Rogers designed the new Hospital for Special Surgery for a site with only one open exposure—toward New York's East River. Existing buildings blocked light from all other directions. To expose as many rooms as possible to natural light, and the river view, the building was designed in the shape of a broad "V". As a result, patients in both wings benefit from a bright, cheerful atmosphere.

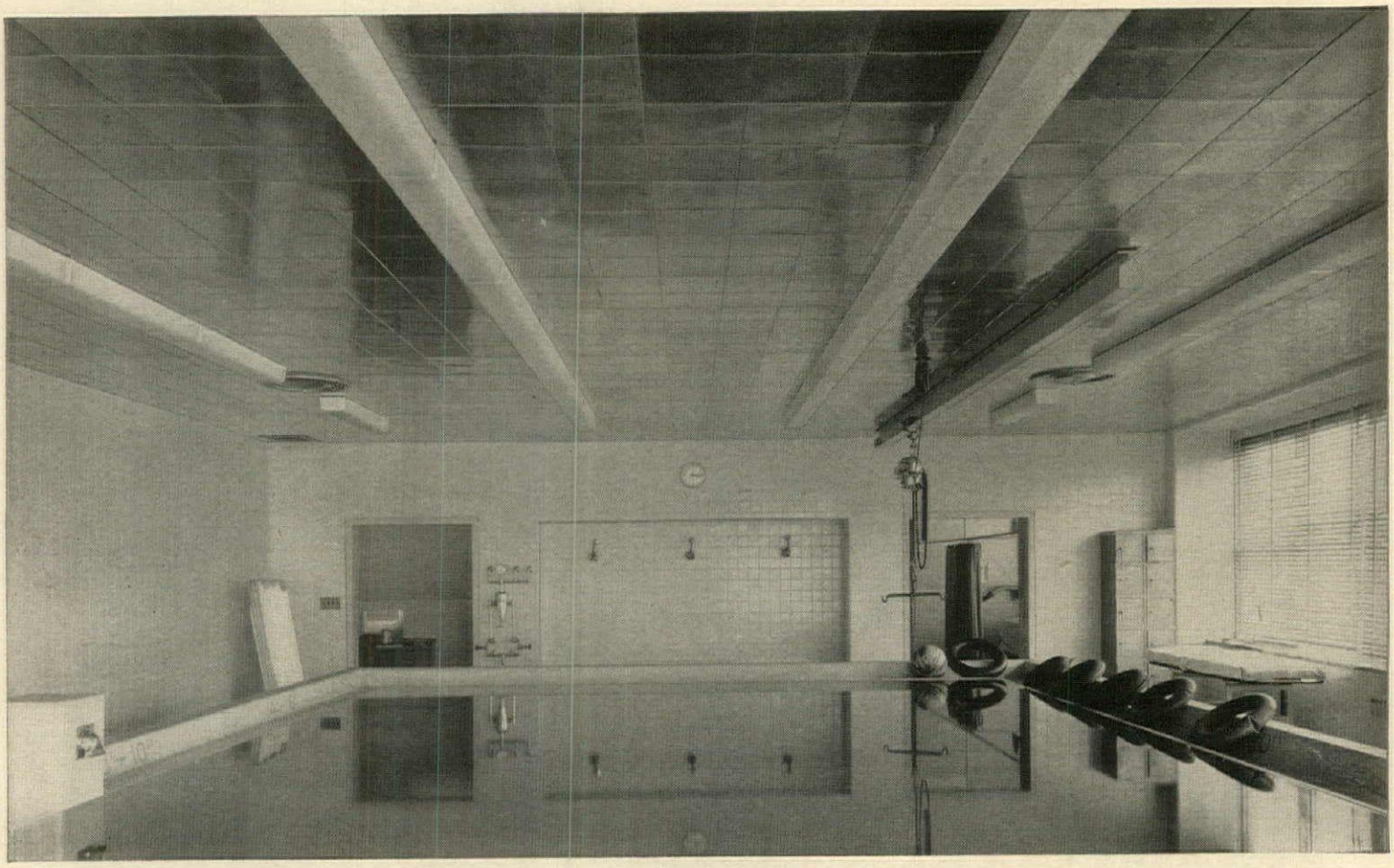
Another aid to patients' comfort is the extensive use of Armstrong acoustical ceilings. To help provide quiet, beauty, and extra fire safety throughout the hospital's twenty floors, the architect selected ceilings of Armstrong Travertone* and Arrestone.

Travertone's combination of noise-absorbing efficiency, handsome appearance, and incombustibility made it a logical choice for corridors, nurses' stations, offices, clinic, cafeteria, and patients' lounges. Its high acoustical efficiency soaks up as much as 80% of the noise that strikes its surface. Travertone's handsomely fissured, white-painted surface also adds beauty to the décor, and its mineral wool composition meets the most rigid fire-safety codes.

Devoted exclusively to orthopedics, this hospital puts its hydrotherapy department to great use. Due to high moisture conditions in the pool room, the architect selected an acoustical ceiling of Armstrong aluminum Arrestone—a rustproof metal-pan type material. In addition to providing moisture resistance, Arrestone is unusually high in acoustical efficiency, absorbing 85% of distracting noise that strikes it.

See your Armstrong Acoustical Contractor for full details on Travertone, Arrestone, and Armstrong's other sound-conditioning materials. For your free copy of the booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4211 Rooney Street, Lancaster, Penna.

* TRADE-MARK



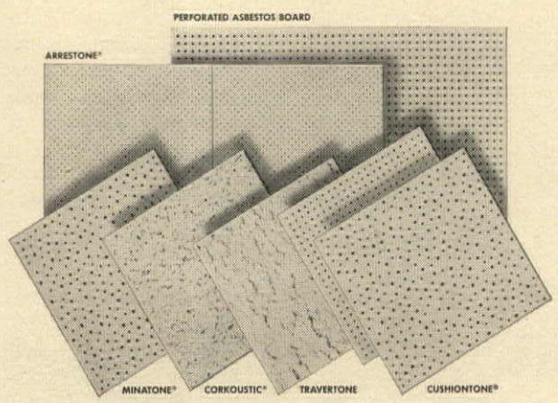
Moisture can't damage the Armstrong Arrestone ceiling in this therapeutic pool room. The bare mill finish of the aluminum pan is rustproof, and moisture has no harmful effect on the mineral wool pad backing. Arrestone is also easy to clean. It's incombustible, too.

Concentration is aided during conference room discussions by this Travertone ceiling. It soaks up distracting sounds before they become noise. The attractive appearance of Travertone contributes to the pleasant atmosphere of the carefully styled room. And the ceiling will stay smart looking and clean for years with an occasional washing.

Noise from busy nurses' stations won't spread to patients' rooms. The ringing of telephones, rattling of carts and bottles are absorbed by the Travertone ceiling before they can build into disturbing racket. Easy to clean, Travertone can be washed or repainted without noticeably affecting its efficiency.

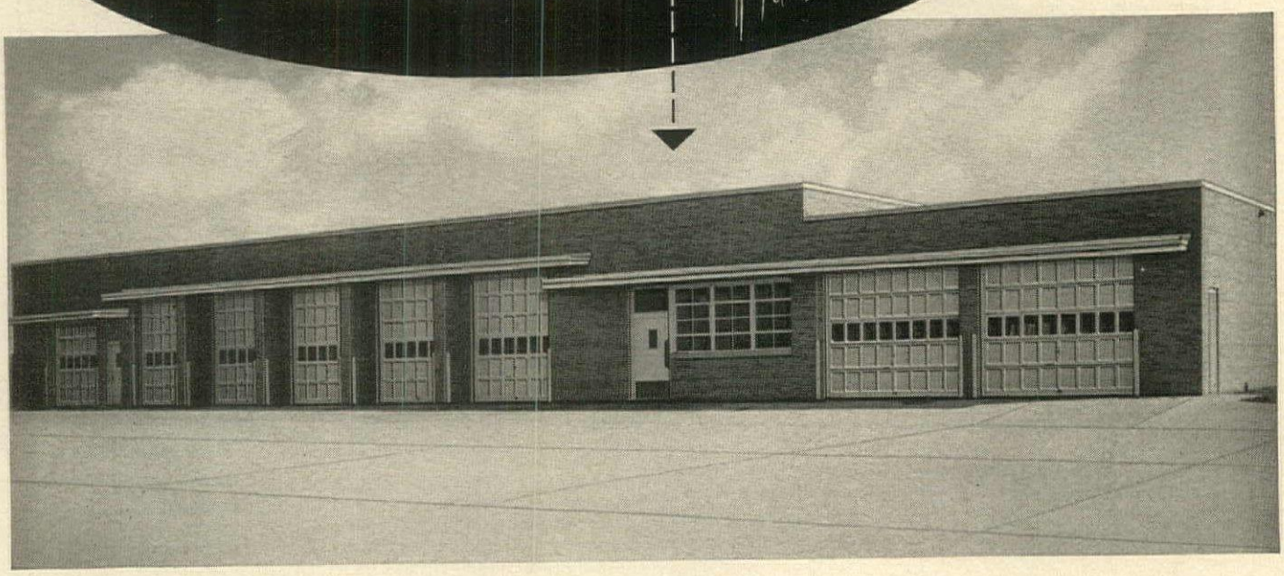
Made of fireproof mineral wool, Travertone is rated incombustible and acts as an effective fire-stop. It can be quickly installed by cementing or conventional suspension systems. Easy to handle, Travertone can be scored and cut to fit around ceiling fixtures.

Plenty of light, as well as quiet, is found in the patients' lounge. In addition to absorbing noise, Travertone's two-coat white paint finish provides high light reflection, without annoying glare.



Armstrong ACOUSTICAL MATERIALS

these "commercials" bear repetition



These "commercials" are rugged Ro-Way overhead type doors. And they especially prove their inherent mettle on multiple installations.

Many doors usually mean heavy traffic. Repeated daily wear and tear. But Ro-Way doors stand up. They're precision-made from selected west coast lumber and heavy-gauge, Parkerized steel hardware. Have mortise and tenon joints, water-proof glued *and* steel-pinned. That's why Ro-Ways give year after year of smooth, quiet, dependable service.

Design-wise, too . . . Ro-Ways bear repetition. Side by side they satisfy your creative urge with clean, uncluttered lines. Yet you can freely express your ideas within the practical limitations of even modest budgets.

Logical conclusion: You can repeat "Ro-Way" in your specifications . . . and satisfy *all* your clients *every* time.

ALSO—a complete line of Ro-Way overhead type doors for 1- and 2-car residential garages. All available with standard or individualized decorative panels. Write for free literature.

FREE ARCHITECT'S MANUAL. Complete details, specifications, drawings, etc., on Ro-Way's entire line. Especially helpful in selecting just the right door. Your letterhead request brings you Manual 55 promptly. No obligation, of course.

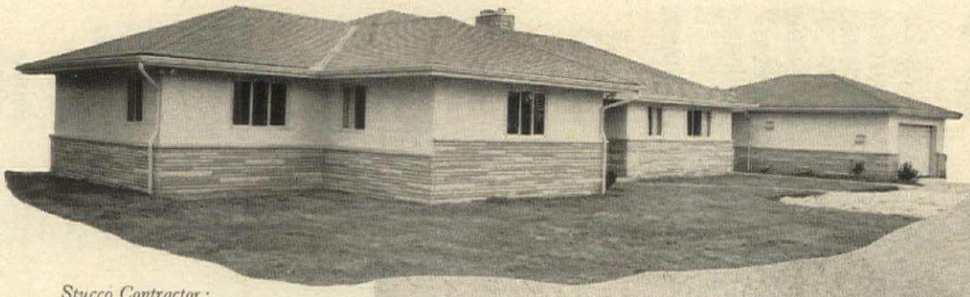
ROWE MANUFACTURING CO., 956 Holton St., Galesburg, Illinois

SEE OUR CATALOG IN SWEET'S

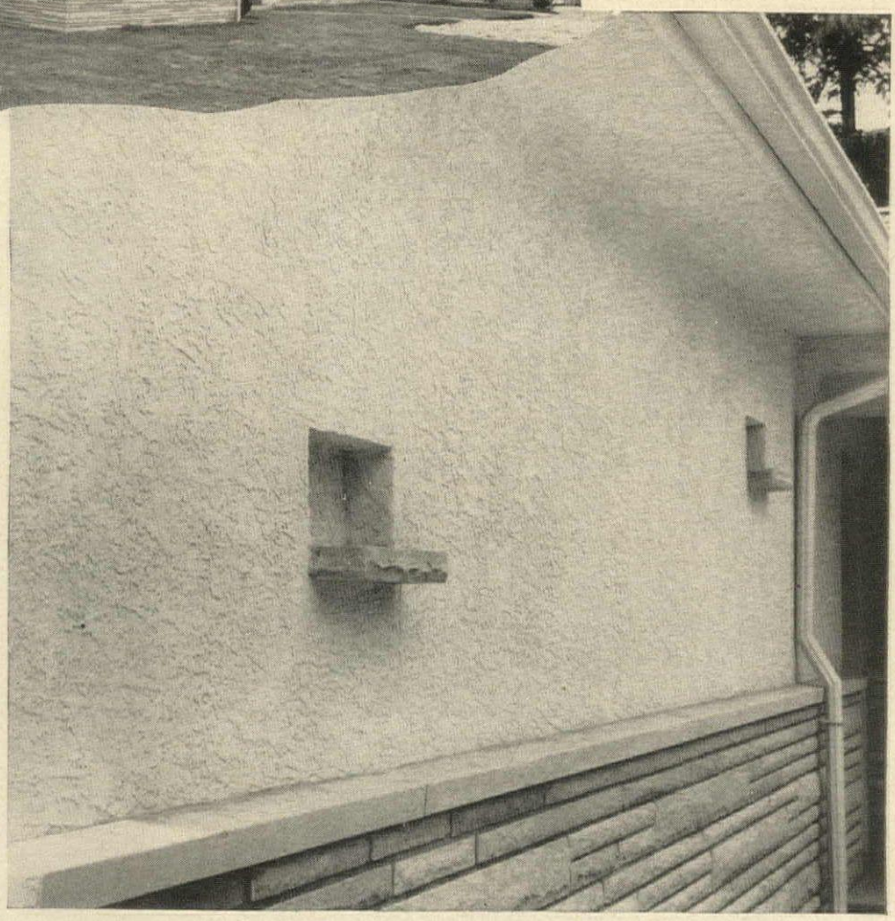
Nationwide sales and installation service. See your classified telephone directory for nearest Ro-Way distributor.

Rō-Way
OVERHEAD TYPE DOORS

there's a Rō-Way for every Doorway!



Stucco Contractor:
Gabe Reitter, Columbus, Ohio.



The enduring attraction of stucco

Specify stucco . . . for crisp, clean appearance that lasts for years . . . for a bright, modern look that increases sales appeal . . . for design freedom, low upkeep and long-lasting customer satisfaction. And for *better* stucco, specify Atlas White Cement.

Unaffected by either sun or snow, stucco made with Atlas White Cement stays fresh and new-looking year after year. Atlas White's true and uniform white adds brilliance to white stucco . . . provides a fine white base for delicate tints and hues.

For any stucco job, whether you use a factory-prepared mix or your own, you'll get *consistent* high quality and *uniform* performance when you specify Atlas White Cement. Available in Regular, Waterproofed or Duraplastic* air-entraining. For more information, see SWEET's Catalog, section 12g/Un and 3d/Un, or write:

UNIVERSAL ATLAS CEMENT COMPANY
UNITED STATES STEEL (USS) 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-S-82

Atlas® White Cement

For beauty and utility · For terrazzo, paint, slabs, stucco

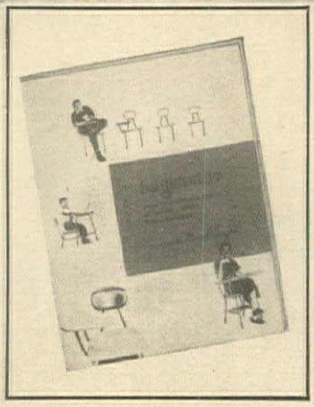
UNITED STATES STEEL HOUR—Televised alternate Wednesdays

IT'S HERE! This remarkable new

Makes classrooms light and cheerful,

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-12. 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.

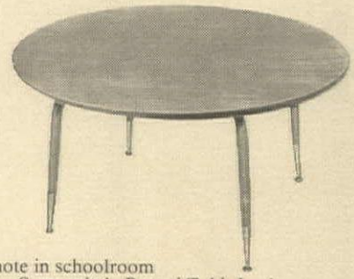
4 Paint-Box Colors make classrooms bright and fun to work in! Tested on school officials in 30 states, the colors mix or match harmoniously, blend with every wall color!

Shaped for Tomorrow! The gracefully curved contours are posture-designed to build healthy bodies, make attention less tiring, learning more fun!

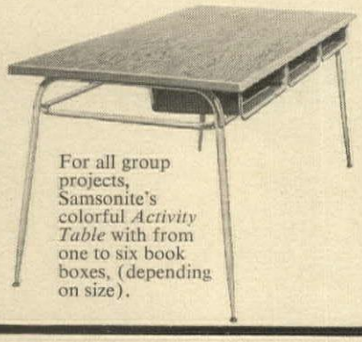
Miracle of Mobility! Mix these units, move them room to room, with never a conflict in color or contour.

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 *Round Table* lends an informal, non-institutional look to the classroom!



For all group projects, Samsonite's colorful *Activity Table* with from one to six book boxes, (depending on size).

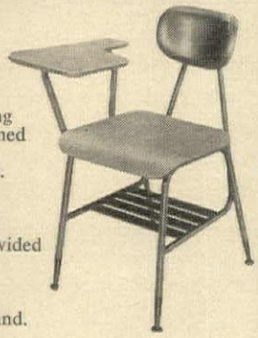
Samsonite's colorful *Lift-Lid Desk* is noiseless, slam-proof, tamper-proof. Fingers can't be caught between lid and book box.

Newness of line, brilliance of color, keynote Samsonite's *Teacher's Desk*. Maximum work and storage space! (Available in either single or double pedestal styles.)

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.



Tablet-Arm Chair with generous writing surface positioned for natural writing posture. Sturdy tubular steel supports. Easy slide-in, slide-out is provided by lines and curve of tablet arm. Right or left hand.

Plenty of leg room and storage space! The Samsonite *Shelf Desk* brings modern color, graceful lines to the classroom.

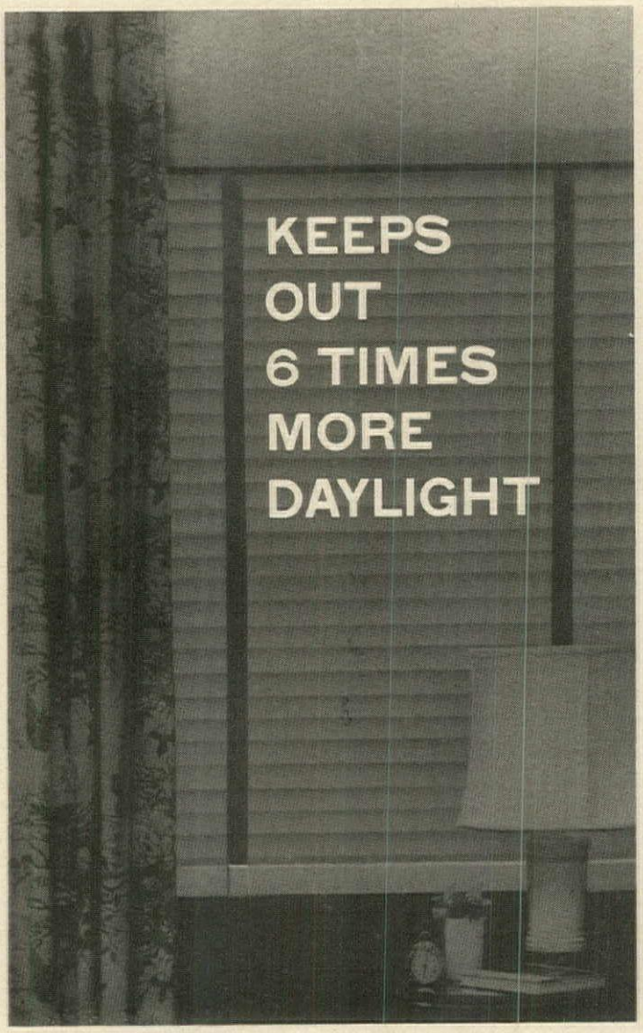
folding tables and chairs for every institutional use!

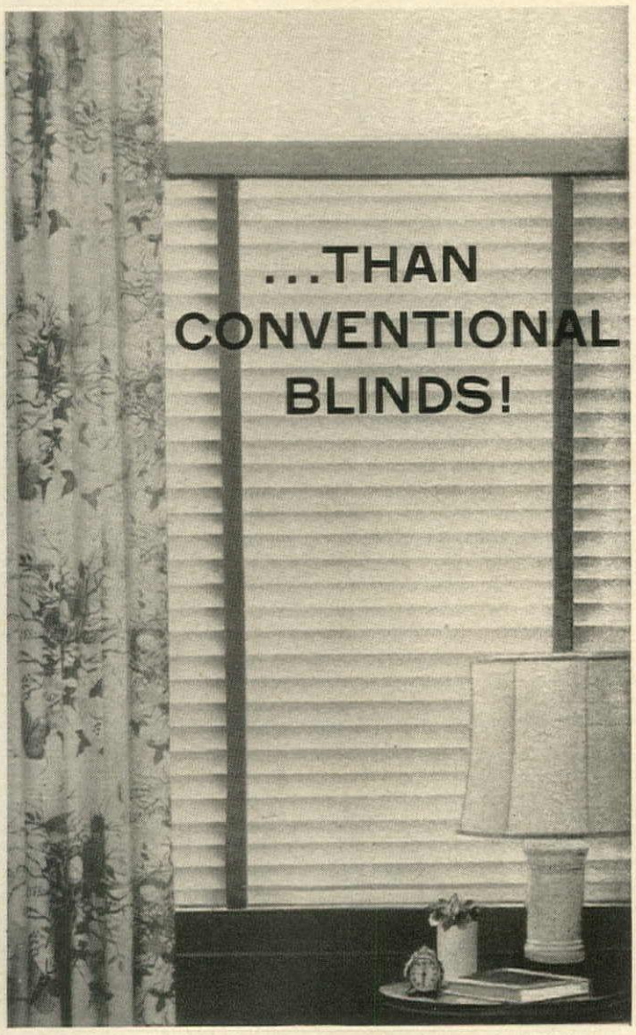
...the Classroom Furniture that's **STRONGEST...LASTS LONGEST!**

*Design and structural patents pending

SHWAYDER BROS., INC., CLASSROOM FURNITURE DIVISION, Dept. Q-12, Detroit 29, Mich. Also makers of famous Samsonite Luggage and Card Tables and Chairs for the Home.

New *Flexalum*® TWI-NIGHTER® blind

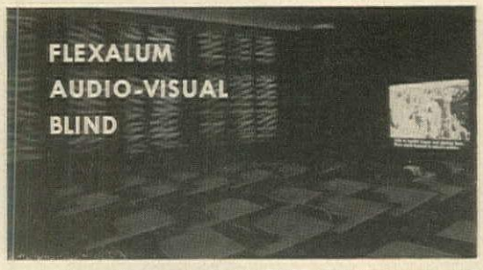




GIVES COMPLETE LIGHT CONTROL, PRIVACY AND VENTILATION AT NO EXTRA COST!

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.

Flexalum

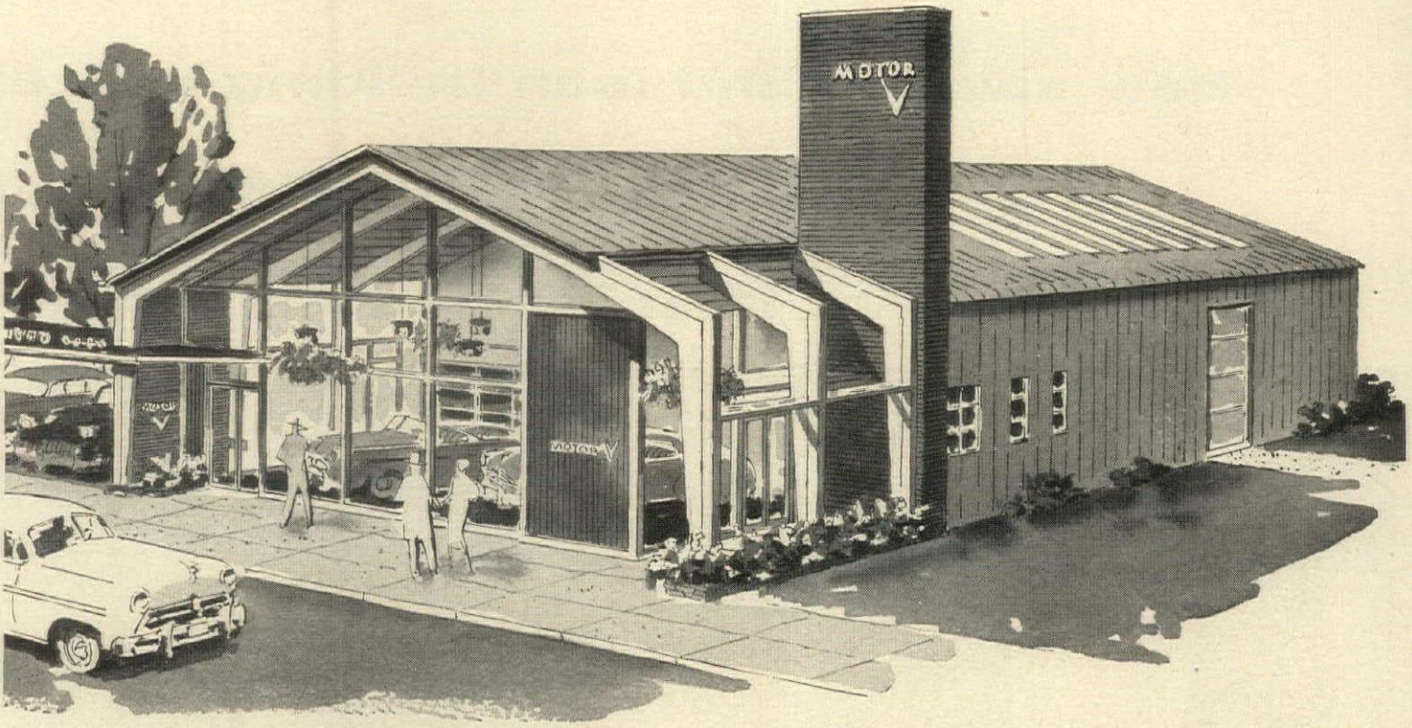
FLEXALUM VENETIAN BLINDS

FLEXALUM ALUMINUM AWNINGS

FLEXALUM DRAW DRAPERIES

FLEXALUM AUDIO-VISUAL BLINDS

*Complete 20-page report of tests conducted by U. S. Testing Company sent on request. Write to: Hunter Douglas Corp., Dept. 85, 150 Broadway, New York 38, N. Y. (In Canada: Hunter Douglas Ltd., Dept. 85C, 9500 St. Lawrence Blvd., Montreal, Que.)



Imagination...

and a **BUTLER**

steel building

BUTLER STEEL PRODUCTS

Manufacturers of Oil Equipment • Steel Buildings • Farm Equipment
Dry Cleaners Equipment • Special Products
Factories located at Kansas City, Mo. • Galesburg, Ill. • Minneapolis, Minn.
Richmond, Calif. • Birmingham, Ala. • Houston, Texas

A modified Butler steel building is not basically different from the United Nations building, or any other example of practical, modern architecture. The structure of the building is steel. Imagination and architectural inventiveness have transformed the cold, skeletal steel framework into a structure of grace and beauty—and permanence.

This is an age of steel—an age when buildings are rightfully expected to have *more* stability, *greater* adaptability, *longer* life than they did in an era of wood, brick and mortar. This is an age of get-your-money's-worth. It is an age for which low-cost, quickly-erected, easily-modified, readily-expanded Butler steel buildings are made to order.

If you would like more information about Butler steel buildings, write to the Butler office nearest you. Ask for the Butler Architect's Brochure—A.I.A. file number 14i. For prompt reply, address office nearest you.

BUTLER MANUFACTURING COMPANY
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

Low-cost office building shows striking modification with brick, glass and paneling. Large areas of glass are possible with no weakening of building, because entire weight is on Butler's rigid-frame.

Spacious clear-span interior of Butler steel building, handsomely and economically modified, provides post-free space for greatest usability, convenient arrangement of office equipment.

New savings and loan building utilizes

. . . to heighten

. . . accent its modernism

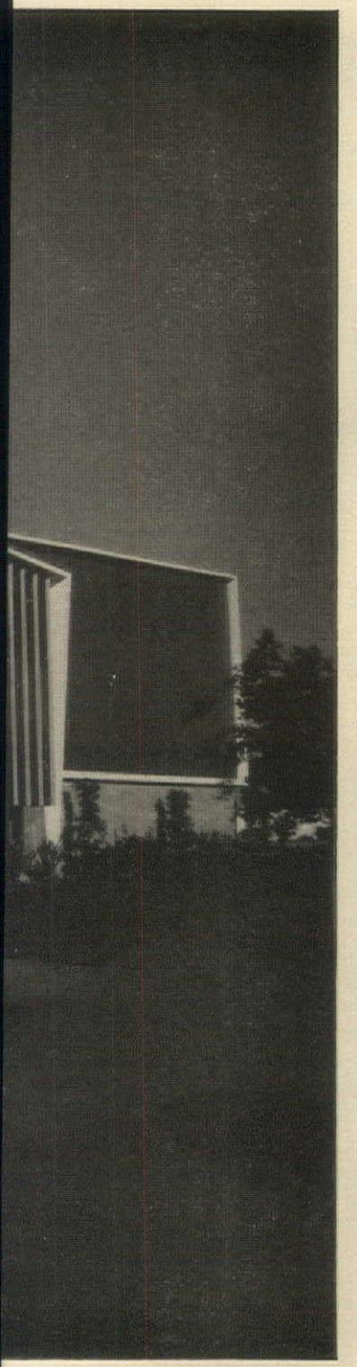
Bordering the picturesque harbor in Newport Beach, California, the Newport Balboa Savings and Loan Association is an outstanding example of progressive modernism in businesses of this kind. Its harbor setting called for broad expanses of Pittsburgh's Solex® Heat-Absorbing Glass, thus opening the building to its scenic surroundings and, at the same time, offering to the occupants all the comfort that is provided by this heat- and glare-reducing green-tinted glass. Architects: Bank Building and Equipment Corporation of America, St. Louis, Mo.

Design it better with **PITTSBURGH GLASS**

PITTSBURGH materials

its architectural appeal

. . . bring it practical advantages



Pittsburgh's Pittcomatic® . . . "the nation's finest automatic door opener" . . . operates the Herculite® Doors at the entrance to the building, as well as on the side entrances. With the Pittcomatic Hinge, doors open automatically—at the lightest touch and with complete safety.

Here is a view of the employees' cafeteria, located on the second floor of the building, facing the harbor. This entire west wall is glazed with Solex, which makes it possible to take full advantage of the natural beauty of the outdoors while keeping room interiors cooler and glare at a minimum.

Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 6a, 15d, 20, 12e, 15a.

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

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Here's the only tool you need for all stud fastenings

New Double-Duty

REMINGTON STUD DRIVER

Sets both ¼" and ⅜" studs in steel or concrete—in seconds!

Light-, medium- or heavy-duty fastening, the new Model 455 Remington Stud Driver speeds the job. It sets *two* different size studs... up to 6 studs per minute, either size . . . and offers new possibilities in anchoring conduit clips, steel frames, wood forms and many other fixtures.

Powerful 22 and 32 caliber cartridges drive ¼" and ⅜" studs *solidly* into steel or concrete. For special medium-duty work, the smaller cartridge is used with the larger stud. Result: the greatest flexibility ever in a cartridge-powered tool! Just clip coupon for details.

"If It's Remington—It's Right!"

Remington DUPONT

MAIL THIS COUPON TODAY

Industrial Sales Division
Remington Arms Co., Inc., Bridgeport 2, Conn.

Please send me your free booklet which shows where and how to use the cost-saving Remington Stud Driver fastening method.

*Name*_____ *Position*_____

*Firm*_____

*Address*_____

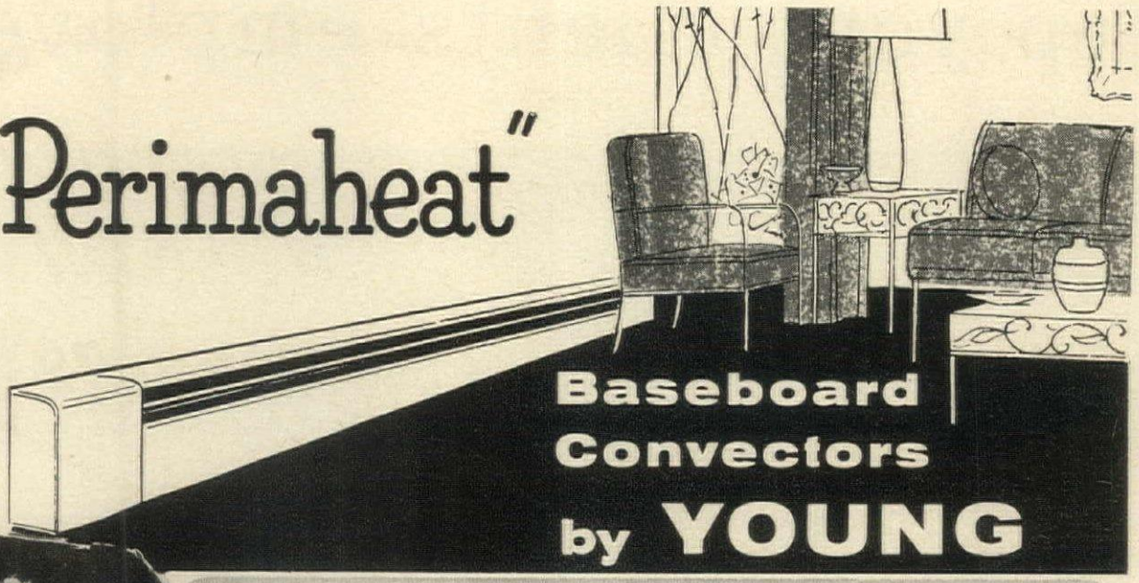
*City*_____ *State*_____

AF-11

Only 90 seconds to change barrels

Easy change from one stud size to the other right on the job!

"Perimaheat"



Baseboard Convectors by YOUNG

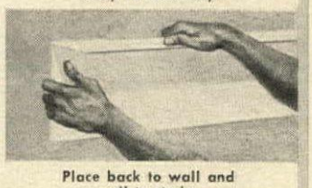
easy to stock... easy to install—

Just 2 Convenient Sizes To Stock—
Six and eight foot sections. *Perimaheat* packages are clearly labeled on the ends for easy identification, and require a minimum of stacking space.

Flat lightweight packages. Wood blocks with round cutouts retain tube at ends of packages, and hold element and cabinet in positive position during all stages of handling.

Sturdy, lightweight packages are easy to inventory.

One-piece back and top make for easy installation . . . eliminate air leakage and streaking. Simply pierce back at stud locations and nail.



Place back to wall and nail to studs.

Install hanger wires and slip in heating element. Make pipe connection, snap-on front cover, joint covers, end caps. Damper or splitter (optional) snap-in place at any time.

Snap-on front cover, joint covers, corners and end caps.

Jobbers find compact *PERIMAHEAT* Baseboard packages easy to handle, easy to stock. Heating contractors prefer the simplified installation created by perfectly fitting parts and *PERIMAHEAT* snap-on features.

PERIMAHEAT is manufactured by Young Radiator Company, specialists in heat transfer for over 28 years. This combination of compact packaging, simplified installation and the manufacturer's reputation for quality heating products creates product demand.

Mail coupon today for complete *PERIMAHEAT* Baseboard details . . . or see the Young Representative listed in the yellow pages of your telephone directory.

Perimaheat is a Young Radiator Company trademark.

Please Mail "Perimaheat" DETAILS

YOUNG RADIATOR COMPANY
Dept. L-605 • Racine, Wisconsin
Send me free Young Radiator Company *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

Keep your clients' employees

free from "Jungle Jangle!"

Step up the efficiency of offices you plan with metal, movable VMP MOBILWALLS

Don't let noise, confusion and unchanneled traffic take their toll in the productivity of offices you plan. Eliminate "Jungle Gym" distractions right from the start by including VMP MOBILWALLS in your blueprints.

Smartly styled, easily installed VMP MOBILWALLS partition offices into livable working areas, give your clients' employees productive privacy —increase work output as much as 30%, according to recent *ratio-delay studies.** You can simplify many of your design problems with VMP MOBILWALLS. Because they're much lighter than plaster and tile walls, they permit the use of lighter, less costly supporting members in new construction. You can provide for heavier electrical requirements with MOBILWALLS because wiring raceways are built in and easily accessible. Metal VMP MOBILWALLS far surpass tile and plaster walls in thermal insulating properties and sound attenuation characteristics.

**Ratio-delay studies* accurately rate office efficiency before and after installation of VMP MOBILWALLS. Typical studies are available on request.

PRODUCTIVE PRIVACY is provided by VMP MOBILWALLS in any office or plant. They can be moved easily anywhere, any time, to suit floor plan changes. Surfaces never chip, warp, or crack—wash clean with soap and water. Colors are scientifically selected to produce a pleasant working atmosphere.

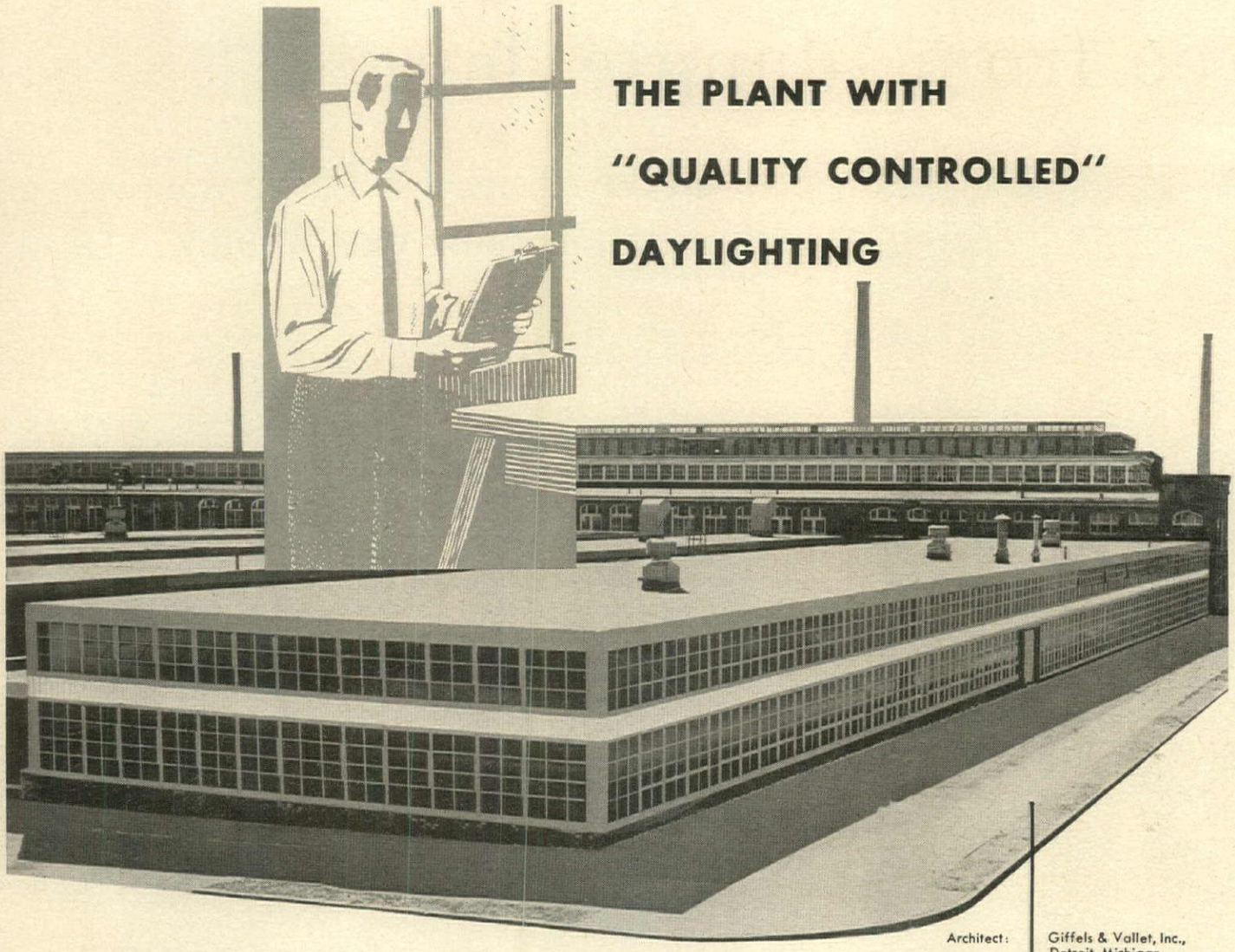
SPEEDY INSTALLATION by skilled crews, working out of nearby warehouses, saves your time and your clients' money. VMP sales representatives and factory engineers work with you, help you design more productivity and livability into offices, and industrial plants.

Better check into VMP MOBILWALLS today. Write to Dept. AF11 for complete, illustrated literature.

Virginia Metal Products, inc.

ORANGE, VIRGINIA

Subsidiary of Chesapeake Industries, Inc.



THE PLANT WITH "QUALITY CONTROLLED" DAYLIGHTING

Architect:	Giffels & Vallet, Inc., Detroit, Michigan
General Contractor:	Olson & Appleby, New Bedford, Mass.
Glazing Contractor:	Guido Plate Glass Service, New Bedford, Mass.

14,000 Sq. Ft. of Coolite Glass filter unwanted factors out of "Raw Sunlight" in New Acushnet Process Company Rubber Products Plant

Rigid quality controls for every operation help the Acushnet Process Company, rubber products plant, maintain high standards and uniformity in the rubber parts and products it produces for a widely diversified market. Good daylighting is essential to provide the working conditions that promote efficiency and morale; so Coolite, Heat Absorbing and Glare Reducing glass, was installed to flood this new building with copious quantities of softly-tinted, glareless daylight.

Workers see better, feel better, work better under Coolite . . . and Coolite keeps interiors comfortably cool, for it absorbs up to 50% of unwanted solar heat rays. Coolite "quality controls" daylight for better illumination without undue heat.

Specify Coolite for your new construction and modernization projects. Its attractive blue-green color enhances any structure . . . minimizes necessity for unsightly blinds, painted windows or make-shift screens. See your Mississippi Distributor.

Translucent, light diffusing figured and wired glass by Mississippi for better daylighting is available in a wide variety of patterns and surface finishes, all "visioneered" to distribute light to best advantage.

Send for free catalog. Address Dept. 6.

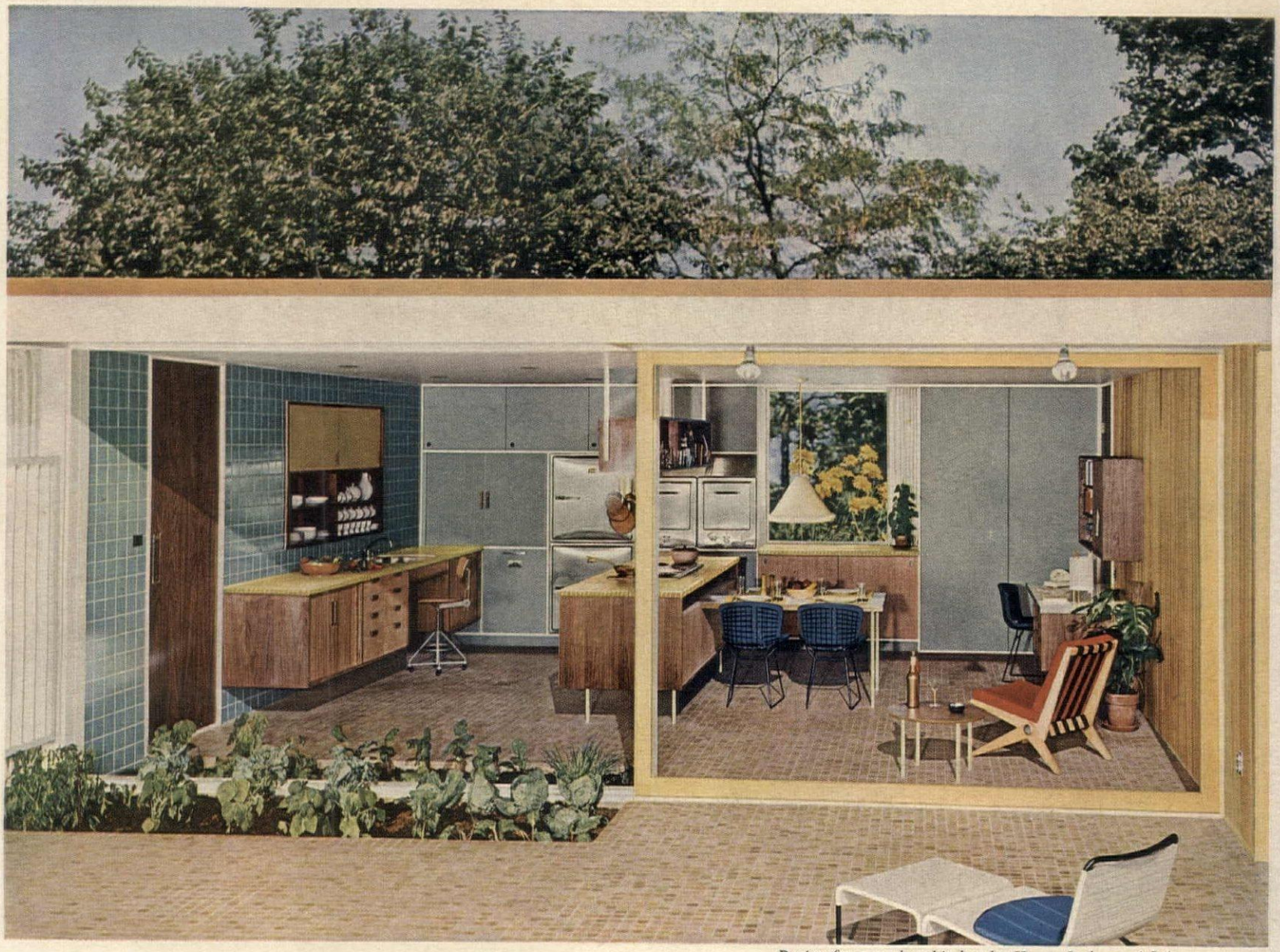
MISSISSIPPI Glass COMPANY

88 ANGELICA ST. NEW YORK • CHICAGO

SAINT LOUIS 7, MO. FULLERTON, CALIFORNIA

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

see our catalog in S or write for copy



Design for a modern kitchen by Huson Jackson, A.I.A.

"CERAMIC TILE MAKES THE DIFFERENCE... EASY TO WORK WITH...RELAXING TO LIVE WITH..."

Huson Jackson

To help create a warm functional kitchen, Architect Huson Jackson used ceramic tile . . . and captured this rare combination for work-free convenience and relaxed living.

The semi-separation of the breakfast area—to the right of the ceramic tiled cooking island—affords a pleasant place for eating and relaxation. In the kitchen section an aqua tone ceramic tile wall from floor to ceiling keynotes an easily cleaned, colorful work center. The tiled counter tops and drainboards guarantee lifelong service and economy because ceramic tile won't burn, scratch or stain.

To answer the rugged demands of family living, a ceramic tile floor is used throughout—linking kitchen and outdoor patio into a single attractive living space when the sliding window wall is open. Specify a ceramic tile floor and you give your client an easily cleaned floor that lasts the life of his home.

Ceramic tile helps you offer your clients unique benefits: custom designs from standard tiles, minimum maintenance and lifetime economy. This is true whether you specialize in residential, commercial or institutional projects. You choose from a broad range of colors, surface textures and sizes. And don't forget to explore the savings made possible by adhesive installations. This type of installation is ideal for many dry wall surfaces.

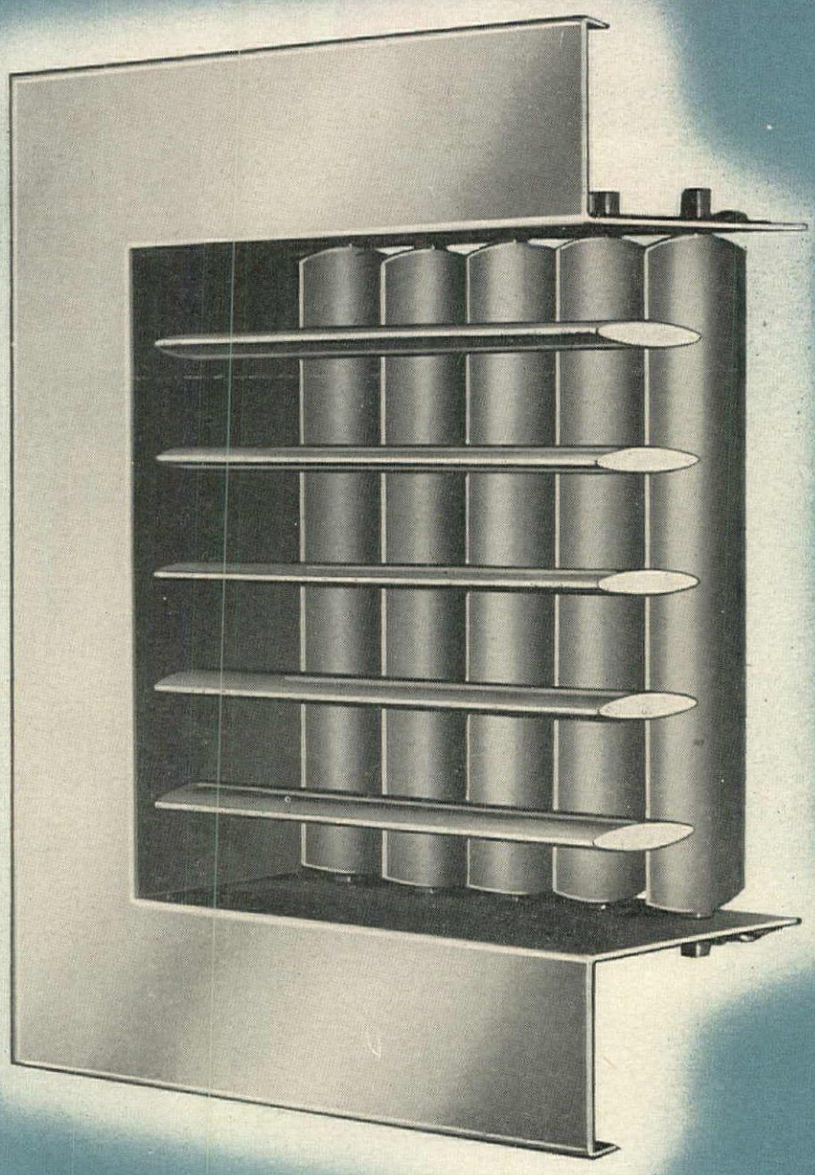
The Modern Style is CERAMIC tile

TILE COUNCIL OF AMERICA, Room 3401, 10 East 40th St., N. Y. 16, N. Y. or Room 933, 727 W. 7th St., Los Angeles, Calif.

PARTICIPATING COMPANIES: American Encaustic Tiling Co. • Architectural Tiling Co., Inc. • Atlantic Tile Mfg. Co. Cambridge Tile Mfg. Co. • Carlyle Tile Co. • General Tile Co. • Gladding, McBean & Co. • Jordan Tile Mfg. Co. • Mosaic Tile Co. Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pomona Tile Mfg. Co. • Ridgeway Tile Co. • Robertson Mfg. Co. Royal Tile Manufacturing Co. • Sparta Ceramic Co. • Summitville Tiles, Inc. • United States Ceramic Tile Co. • Windburn Tile Mfg. Co.

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

Photograph courtesy **Mastic Tile Corporation of America,** Joliet, Ill., Long Beach, Calif., Newburgh, N. Y.

Points to Remember

ABOUT FLOORING MADE OF BAKELITE BRAND *VINYL RESINS*

STYLING: There is an unusually wide selection of colors and patterns to satisfy client's wishes.

BEAUTY: From pastels to deep tones, colors are bright and *stay* bright . . . because of luster-enhancing transparent resins and exceptional cleanability.

LOW MAINTENANCE: Oils, grease, foods, and other soiling agents can accumulate only *on* the surface. That's because of the impervious nature of flooring made of BAKELITE Brand Vinyl Resins. Naturally, therefore, cleaning is very easy.

PERMANENCE: Because of the toughness of the resins, the flooring resists scuffs, scars, and wear for years longer.

REMEMBER: you can assure greater beauty with longer-lasting economy by specifying flooring "Made of BAKELITE Vinyl Resins."

BAKELITE BRAND Vinyl Resins

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.

The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

Sister publication of TIME, LIFE and FORTUNE, and one of America's handsomest magazines in any field, ARCHITECTURAL FORUM is a gift you can take genuine pride in giving.

So if only the best is good enough for you or your firm to give this Christmas to friends, colleagues, clients or customers in big building, use the order form facing this page. Mail it today. Low Christmas gift rates now in effect.

architectural **FORUM**

the magazine of building

DATES

National Electrical Contractors' Assn., annual convention and first National Electrical Exposition, **Oct. 31–Nov. 2,** Waldorf Astoria Hotel, New York City.

National Paint, Varnish and Lacquer Assn., annual convention, **Oct. 30–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.

Structural Clay Products Institute, annual convention, **Oct. 31–Nov. 2,** Greenbrier Hotel, White Sulphur Springs, W. Va.

AIA, regional convention, Texas Society of Architects, **Nov. 2-4,** Shamrock Hotel, Houston.

National Assn. of Real Estate Boards, annual convention, **Nov. 6-10,** Hotel Commodore, New York City.

National Lumber Manufacturers Assn., annual board meeting, **Nov. 14-16,** Shoreham Hotel, Washington.

Florida Assn. of Architects, AIA, annual convention, **Nov. 16-20,** Princess Issena Hotel, Daytona Beach.

Conference on survival of US industry in atomic warfare, sponsored by Armour Research Foundation, **Nov. 17,** Illinois Institute of Technology, Chicago.

American Municipal Assn., annual conference, **Nov. 27-30,** McAllister Hotel, Miami.

American Institute of Steel Construction, annual convention, **Nov. 20–Dec. 1,** Boca Raton Club and Hotel, Boca Raton, Fla.

Air Conditioning and Refrigeration Institute, industrial equipment exposition, **Nov. 28–Dec. 1,** Municipal Auditorium, Atlantic City.

American Society of Refrigerating Engineers, annual meeting, **Dec. 1-3,** Hotel Traymore, Atlantic City.

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

Nuclear Engineering and Science Congress, coordinated for ASME, ASCE and other sponsoring groups by the Engineers Joint Council, **Dec. 12-16,** Public Auditorium, Cleveland. Program will include papers on reactor design and construction, effects of radiation on structural materials, concurrent Atomic Exposition, **Dec. 10-16,** sponsored by American Institute of Chemical Engineers.

American Society of Heating and Air-Conditioning Engineers, annual meeting, **Jan. 23-25,** Sheraton-Gibson Hotel, Cincinnati.

Plant Maintenance and Engineering Show, Jan. 23-26, Convention Hall, Philadelphia.

"Modular Measure was praised at a Washington Conference sponsored by AIA, Producers' Council, General Contractors of America and others . . . speakers reported that this standardized method of dimensioning makes estimating easier and more exact, speeds operations, saves materials and cuts labor costs."

USF

modular *measure*
steel doors
and frames

fit each other
fit modern building materials
fit finest surroundings

Precision engineered and manufactured to high accuracy standards unmatched in the industry.

FEATURED IN *Personalized Coronados* BY UNITED STATES STEEL HOMES INC.

USF ® SDI STEEL DOOR INSTITUTE

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.

Where water must be heated or cooled ...and circulated quietly, specify

Hydro-Flo* **products**

Rotary International Building, Evanston, Illinois, employs B&G Universal Pumps and Heat Exchangers in the combination heating and cooling system.

Architects: **Maher & McGrew, Evanston, Ill.**...Construction Engineers: **Neiler, Rich & Bladen, Chicago**...Heating & Air Conditioning: **C. W. Johnson, Inc., Chicago**... Plumbing: **O'Callaghan Bros., Chicago.**

The trend to water as both the heating and cooling medium in modern buildings establishes a positive requirement which must be met by the circulating equipment. *Quiet operation of the pumps is all essential!*

The B&G Universal Pump is specifically designed and built to meet this prime requirement of liquid heating and cooling systems. It is not an ordinary commercial centrifugal pump! No special vibration eliminators or flexible connections to the piping are needed...noise and vibration have been engineered out! *You have to touch a B&G Universal to tell if it is running!*

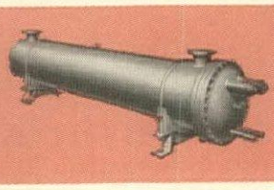
In the building illustrated above, B&G Universal Pumps are used to circulate all water, including that in the chiller and cooling tower circuits. The same piping system is used to circulate hot water in winter and cooled water in summer. Convectors with adjustable speed fans act as room distributing units. Water for the heating system is heated with steam in a B&G Type "SU" Heat Exchanger.

BELL & GOSSETT COMPANY

Dept. EC-62, Morton Grove, Illinois

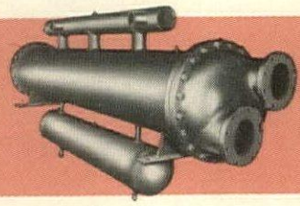
Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, W. Toronto, Canada

*Reg. U.S. Pat. Off.



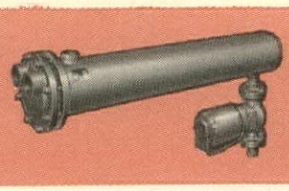
B&G Evaporators

Unique design prevents oil trapping in the head passes. Easy to install and insulate. Built to ASME Code.



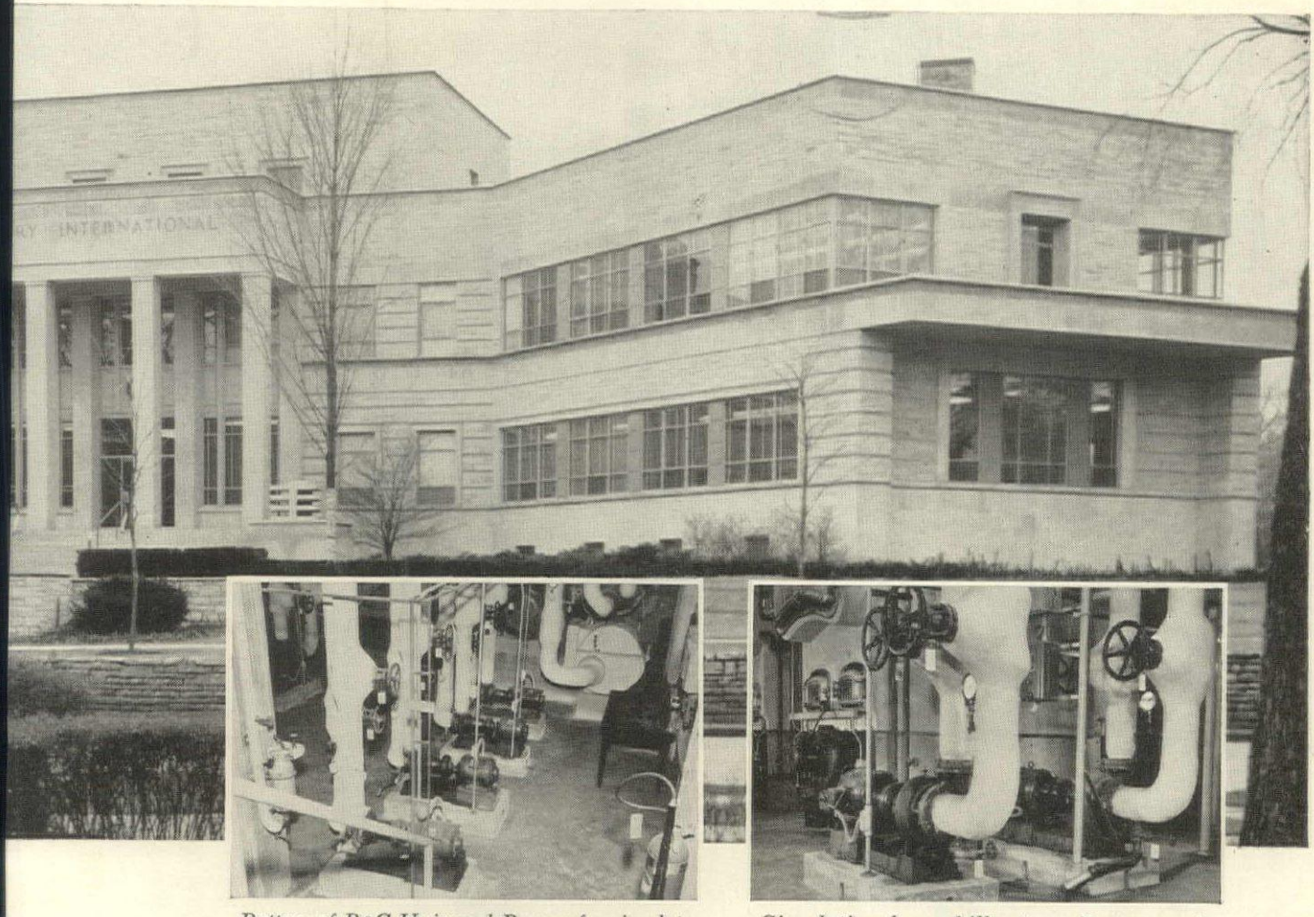
B&G Condensers

Time-tested design and rugged construction assure top performance over a long service life. ASME Code constructed—certified by Hartford.



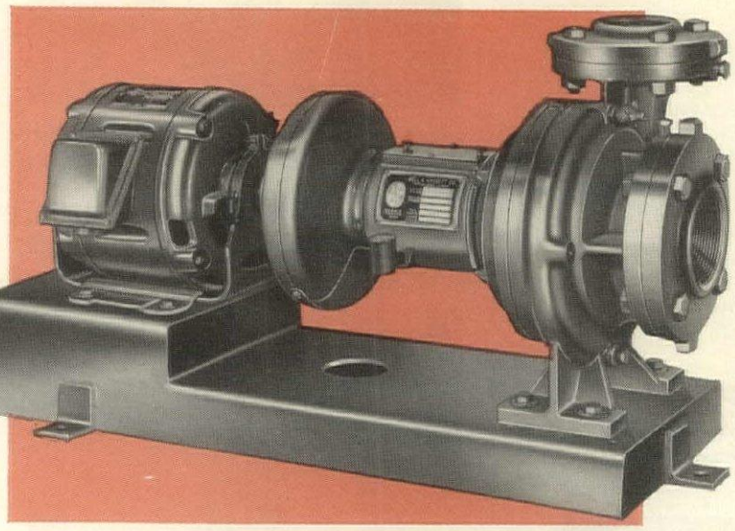
B&G Type "WU" Heat Exchangers

Boiler water is pumped through the "WU", greatly increasing capacity and permitting close control of service water temperature. Reduces material and labor—no tank needed.



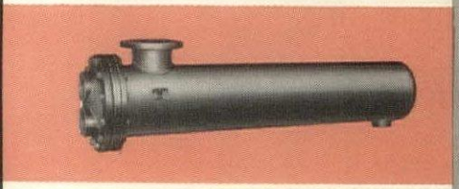
Battery of B&G Universal Pumps for circulating hot and cooled water through system.

Circulation from chiller to cooling tower is handled by B&G Universal Pumps.



For quiet operation... the B&G Universal Pump

In every detail, the B&G Universal Pump is designed for *silent, vibrationless* operation. The motor is specially constructed, tested and *hand-picked* for quietness. Sleeve bearings in both pump and motor . . . suspension in ring-type rubber mountings and flexible spring couplers, all contribute to quiet operation. Other features include the leakproof "Remite" Seal, oil lubrication and hydraulically balanced impeller. The removable bearing frame permits servicing without breaking pipe connections—*all the advantages of split case design!*
Send the coupon for complete data.



B&G Type "SU" Heat Exchanger
For steam to water heat transfer. Generous heat transfer surface heats water instantly as required. Wide capacity range meets all water heating requirements.

BELL & GOSSETT COMPANY, Dept. EC-62, Morton Grove, Ill.

Please send literature as checked—

☐ Universal Pumps ☐ Evaporators ☐ Condensers
☐ "SU" Heat Exchangers ☐ "WU" Heat Exchangers

NAME.....

ADDRESS.....

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

(RELIGIOUS ART)

B. Moosbrugger

It was inevitable that someone would accuse Le Corbusier of an irreligious attitude in the new chapel of Notre-Dame-du-Haut he designed for the French Dominicans (above and AF, Sept. '55). Another accusation we have heard is that Corbu was guilty of structural exhibitionism. Well, perhaps, but if so, he has good religious precedent for it, in the lovely bonnets worn by the French

Sisters of Charity. These graceful cantilevers in cloth, called *cornettes*, were worn commonly in the 14th Century in Europe, by both men and women. *Cornette's* architectural definition: "a roof poured full circle into tension like a horn."

LIFE—D. Scherman

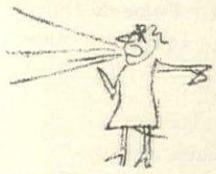
(ALL FOR ALL)

E. C. Lecker, Ellwood Irish and Sun Chien Hsiao of the Unistrut Corp. recently inspected a school in Michigan which, like a few others throughout the country, has replaced conventional partitions between classrooms with low visual barriers, "space dividers," which do not reach all the way

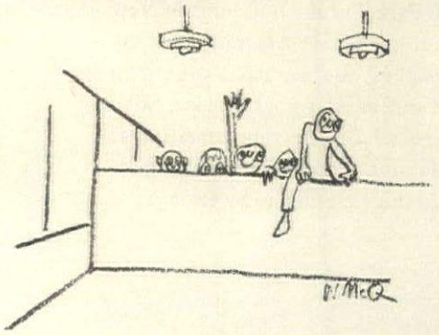
PARENTHESES)

to the ceiling. They liked it, and the children liked it; the teachers were not so sure. Part of the inspectors' report:

". . . [we] observed the classrooms and talked with the second- and third-grade teachers. Their most severe criticism was the lack of sound control. The level of the noise in the classroom was quite high. The teachers felt this imposed too much of a limitation on the teaching program. However, they agreed the sound problem did not seem to affect the children in any way. The second-grade teacher offered that the results of achievements tests at the end of the year were better than she had expected



even though she had many times felt she'd been talking and had not been heard. One of her pupils one day remarked that she knew how to spell all the words the adjacent third-grade pupils had been learning. The second-grade teacher also felt when she received the present first-grade class for



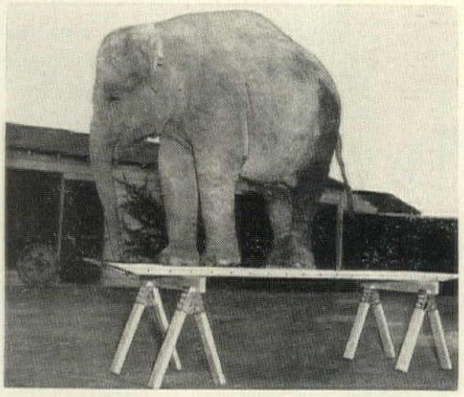
instruction next year the change would be less noticed by the pupils than in the individual classroom scheme . . ."

(NATURE)

Sooner or later, if you manufacture something strong, you have an elephant stand on it to demonstrate this. There are professional elephants who do nothing else. To wit, three recent press releases:

"New York, N. Y. . . . If you want to prove the structural strength of a product, place a 3,300-lb. elephant atop of it. That's what Climate Control, Inc., of Sarasota, Fla., did with the 'Monostructure' panel which they use for both roofs and walls in their prefabricated houses.

"What made this stunt unique is the fact that this plywood-faced panel has a paper honeycomb core. Union Bag & Paper Corp., who makes the honeycomb, reports that the concentrated load of the elephant caused only a very small deflection, with full recovery.



"Hollywood, Calif. . . . Sawhorses assembled in a matter of seconds using the new Chesney "Speed Clamps" are so sturdy they can support tremendous loads of dead weight. In a recent demonstration two such sawhorses easily supported the tonnage of a full-grown elephant.

"St. Louis, Mo. . . . HOLD IT! Hundreds of pounds of prancing elephant, yet ¾" plywood does hold it. That's because plywood is many wood panels, with grain of alternating sheets criss-crossed for added strength! Panels are bonded permanently together with Monsanto adhesives. Douglas fir plywood offers all of wood's warmth and beauty, is twice as strong as lumber but no heavier. Easy to saw, finish, paint."

After a hard day before the cameras, Mr. Barrymore relaxes.

($$$)

Like opera singers, baseball players, meatpackers, and dance teams, some architects and engineers have consultant business managers, whose purpose is to see that they play their cards right, not paying

everything out in taxes—instead piling up something for a rainy decade. One method that many of these experts favor is some kind of incorporation.

Speaking before the Wisconsin Architects Assn. early this year, Edward T. Bardwell, an Equitable Life Assurance agent, indicated a way of gleaning the benefits of incorporation even in those states which, strictly speaking, prohibit it.

" . . . It is quite a simple matter to accept the job as an individual architect; allow the corporation to do all the drawings and technical work; and have the corporation bill you for all services rendered and thereby circumvent a possible adverse situation . . . . Perhaps the greatest opponent you will have is your own personal stigma based on the time-worn theory that the professions should not be incorporated. This theory, I fear, has long since outlived its usefulness.

"Perhaps the best way to understand the effect of taxation and its application to the partnership versus the corporation is to set up a typical situation. Let us assume that we have a partnership with two partners, each having a 50% interest; the partnership employs ten other people. It has a net earned income, including the partnership drawing accounts, of $70,000 per year. The effect on the two partners would be . . .:

"PARTNERS A & B

Annual income		*$35,000*
Federal tax	*10,760*	
State tax	*1,937*	
Soc. sec. tax	*84*	
Self-emp. tax	*60*	*(average)*
Total tax		*12,841*
Net income		*22,159*

continued on p. 66

aluminum

CURTAIN WALLS

by GENERAL BRONZE

selected for Houston's first all-aluminum building

The SECOND NATIONAL BANK BUILDING, now being completed at Houston, Texas is another of America's outstanding buildings with aluminum curtain walls and aluminum windows by General Bronze. This new, 24-story building will not only be Houston's largest and most modern building but will also be its first all-aluminum building.

As the pioneer in aluminum curtain wall construction and the foremost fabricator of fine aluminum windows, General Bronze has a world of practical experience to offer architects. This experience, gained from such well-known jobs as the Alcoa Building in Pittsburgh, the U.N. Building, Lever House, 99 and 460 Park Avenue Buildings in New York City, The Equitable Life Assurance Society Building in Milwaukee, the Texaco Building in New Orleans and others is at your service. Why not call in the General Bronze representative as you plan new buildings. He can be of real assistance to you. Our catalogs are filed in Sweet's.

● **SECOND NATIONAL BANK BLDG.,**
Houston, Texas
Architect: Kenneth Franzheim
Contractor: W. S. Bellows Constr. Co.

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.

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.....

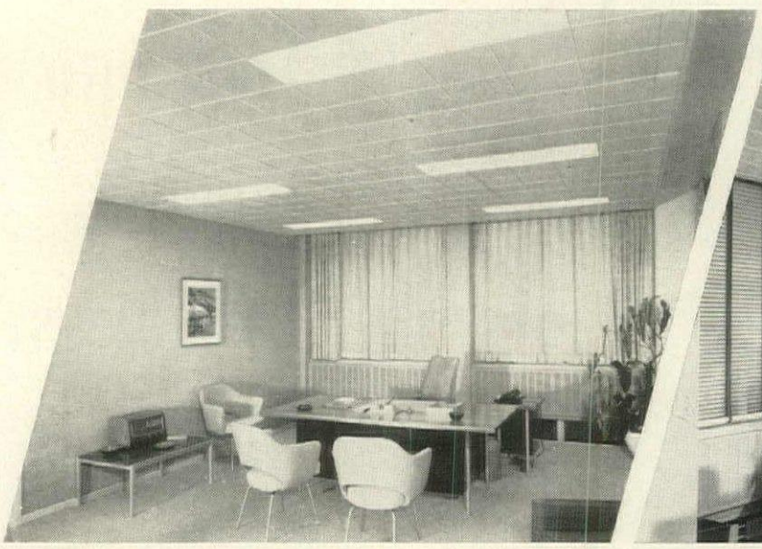
Address.....

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

30 miles of Acoustimetal Ceilings hide utilities at Mile High Center

23-STORY MILE HIGH CENTER BUILDING IN DENVER, COLORADO

Gold Bond Acoustical Contractor: Reeves-Ryan & Co., Denver, Colorado;
Co-Developers: George A. Fuller Co., New York; Webb & Knapp, Inc., New York;
Designers: Webb & Knapp, Architectural Division;
Architects: Kahn & Jacobs, New York;
Associate Architect: G. Meredith Musick, Denver, Colorado.



Modern acoustical treatment gives this executive office a ceiling that always keeps its smart, clean appearance.

The Acoustimetal panels that form the ceiling of this modern reception room instantly snap out for fast servicing of utilities.

Wherever Gold Bond Acoustimetal is specified, you're adding these seven important benefits to your building designs:

1. **ACCESSIBILITY**—Lightweight Acoustimetal panels snap in and out easily and quickly for simple servicing of ducts, wiring, piping and other overhead utilities.

2. **FIRE SAFETY**—Each perforated metal panel is fireproof, adding extra safety to any building you design.

3. **EASY MAINTENANCE**—Washing is simple... panels are wiped clean with a damp sponge or cloth.

4. **GOOD LOOKS**—Acoustimetal's handsome white baked enamel finish lends a quiet, dignified appearance wherever you install it.

5. **REDECORATE**—Acoustimetal may be repainted for variation of color schemes, without affecting sound absorption efficiency.

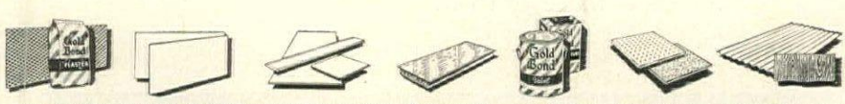
6. **FAST INSTALLATION**—Often, it takes only a *single day* to put up a complete Gold Bond Acoustimetal ceiling.

7. **EXCELLENT ACOUSTICS**—Acoustimetal, when backed with fireproof Acoustipads, assures a noise reduction coefficient in the .80 to .90 range.

On a big job like Mile High, or on any other job, Gold Bond keeps you on schedule from delivery of materials to finished ceiling. Include a good looking Acoustimetal ceiling in your designs. For full details on Gold Bond Acoustimetal and other Gold Bond Acoustical products, refer to your Sweet's Catalog, or write to Acoustical Division, Dept. AF-115.

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Build better with Gold Bond®



LATH, PLASTER AND LIME | GYPSUM BOARD PRODUCTS | INSULATION BOARDS PLANKS AND TILES | ROCK WOOL INSULATION | PAINTS AND TEXTURES | ACOUSTICAL TILES | ASBESTOS ROOFING AND SIDING

. . ACOUSTICAL PRODUCTS

BRIGHTEN DARK CORNERS AND NEAR-WALL AREAS WITH

INCANDESCENT

SWIVEL-SHADE Bracket

INDIRECTABRAC

UPorDOWN-LITE Bracket

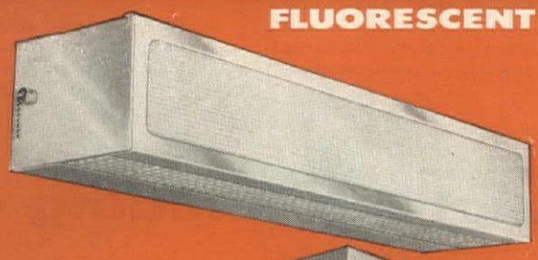
BED-LIGHT Bracket

GUTH BRACKETS
(YOU NAME IT . . . WE MAKE IT!)

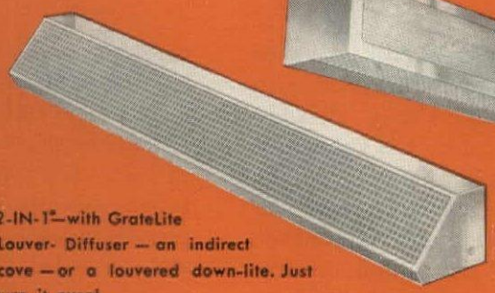
APPLICATIONS GALORE!

. . . in barber shops; fitting rooms; over hospital beds, chalk boards, mirrors; for desks near walls; along ceiling beams . . . and many other spots that are difficult to light efficiently with conventional fixtures.

FLUORESCENT

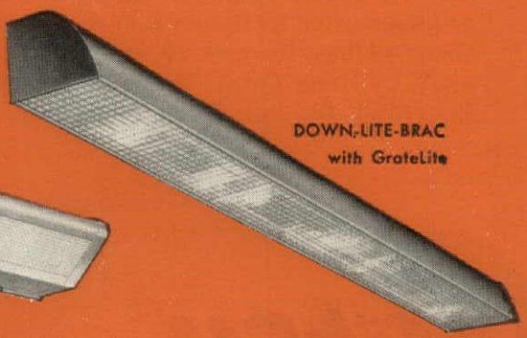


20 WATT HALF-PEERLITE * with GrateLite** Louver-Diffuser — center reflector — up and down light

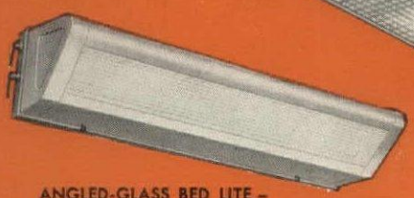


2-IN-1*—with GrateLite Louver- Diffuser — an indirect cove — or a louvered down-lite. Just turn it over!

HALF-PEERLITE*— one or two lights



DOWN-LITE-BRAC with GrateLite



ANGLED-GLASS BED LITE — 2-20W — up and down light

Guth

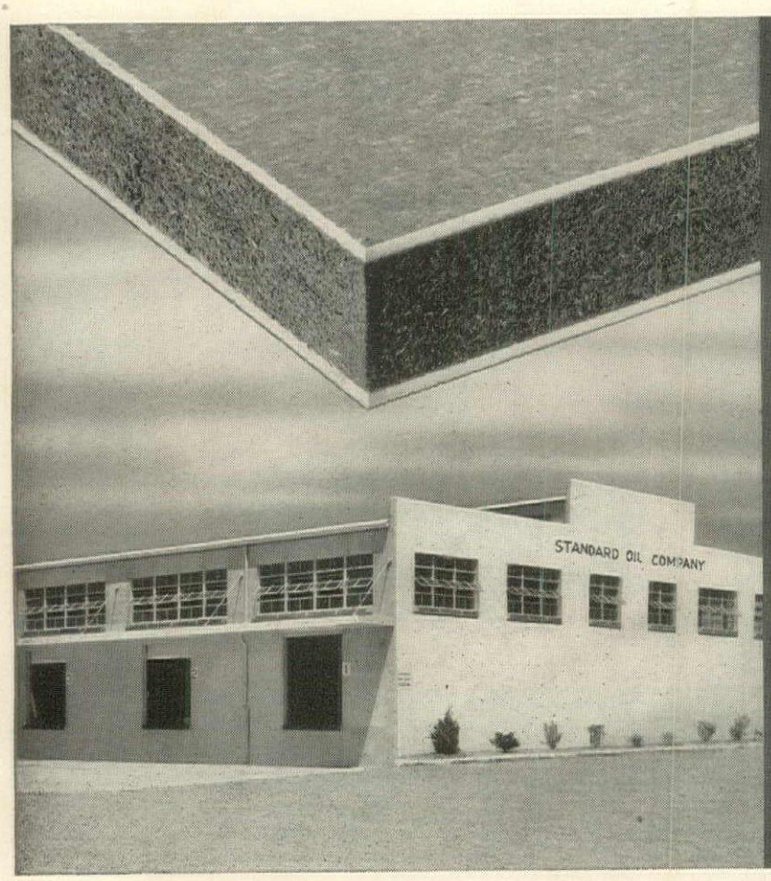
TRUSTED NAME IN LIGHTING SINCE 1902

WRITE ON YOUR LETTERHEAD FOR BULLETIN 929-E TODAY.

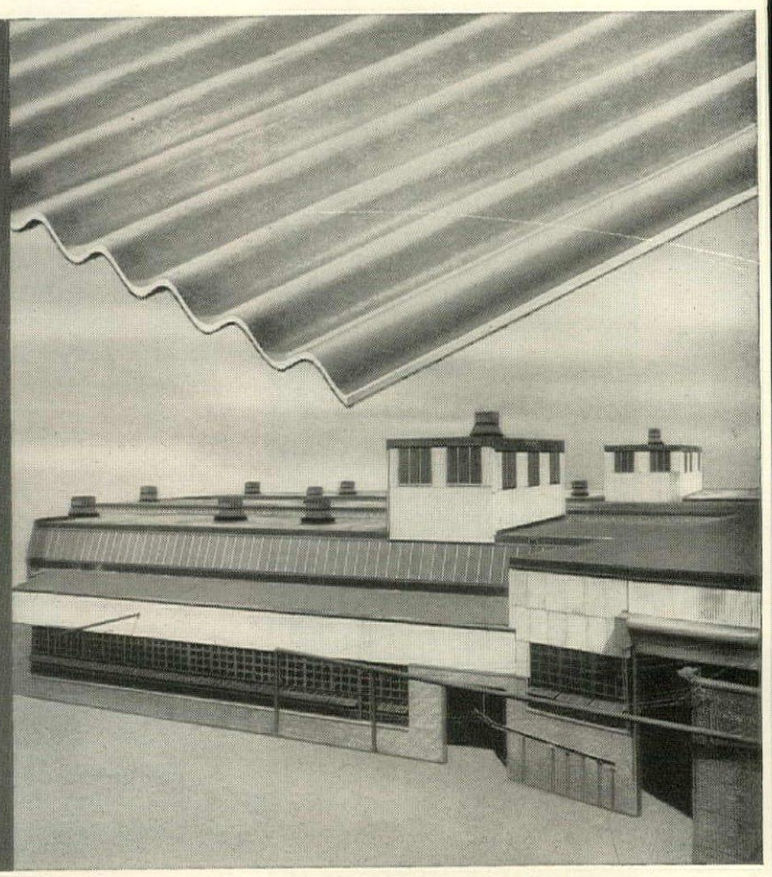
THE EDWIN F. GUTH CO. • ST. LOUIS 3, MO.

* Trademark Registered

** Trademark Registered U. S. & Can. Pats. Pend.



One material — Carey Thermo-Bord structural insulation panels —does work of three at this Standard Oil Co. (Ky.) warehouse. Combines roof deck, insulation and interior ceiling finish.



Ease and speed of erecting exterior sidewalls of **Careystone Corrugated** helped Superior Foundry Company, Cleveland, Ohio build new 60,000 sq. ft. plant in six weeks — economically!

2 ways out of the building cost squeeze

You can help solve your clients' cost problems in new construction and modernization with Careystone Corrugated and Carey Thermo-Bord. Careystone Corrugated has numerous advantages for exterior sidewalls and roofing. It is economical in cost; easy to apply over wood or steel framing; strong and rigid. Made of asbestos and cement, it is maintenance-free . . . won't burn, rust, rot, corrode. No painting or preservative treatment is ever needed.

Great savings in material and labor can be made by using Carey Thermo-Bord 4′ x 12′ Structural Insulating Panels for roof deck construction. Thermo-Bord combines structural deck, insulation and interior ceiling finish in one rigid unit. And its light weight means lighter-weight structural members can be used to gain *more* dollar savings. Made by bonding tough asbestos-cement board to a specially processed insulation core, Thermo-Bord is also recommended for low-cost insulated outside walls and partitions.

Get the facts on these Carey cost-savers. Write for free descriptive literature today. Or, ask your Carey Industrial Sales Engineer to pay you a visit. Address Dep't. AF-12.

Carey

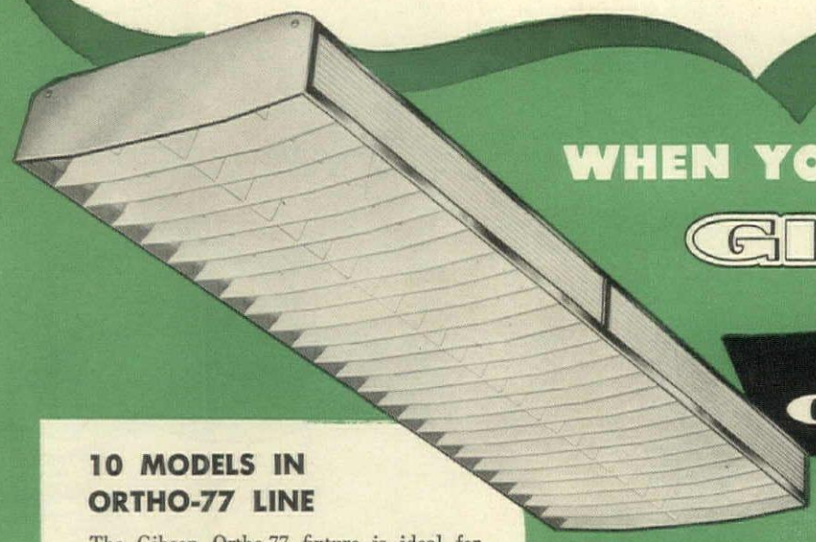
The Philip Carey Mfg. Company

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

Serving Industry, Farm & Home since 1873 . . .

Flat Asbestos-Cement Sheets • Built-up Roofing • Bonded Roofs • Super-Light 85% Magnesia Insulation • Careyduct • Asphalt Plank • Asphalt Paints and Coatings • Fiberflex Glass Roof System

ARCHITECTS: YOU CAN PLAN BETTER LIGHTING WITHIN PRICE LIMITS OF LOW-COST SYSTEMS



WHEN YOU CHOOSE THE GIBSON ortho-77®

WITH THE EXCLUSIVE UNI-RACE*

10 MODELS IN ORTHO-77 LINE

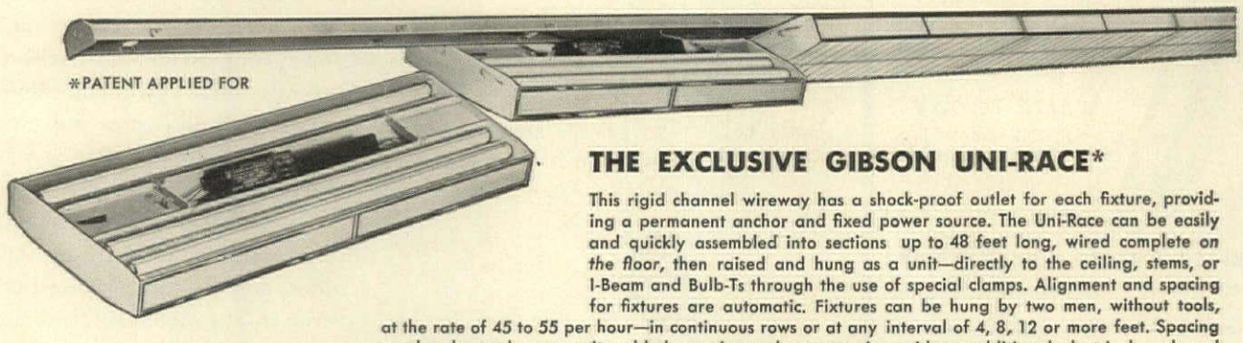
The Gibson Ortho-77 fixture is ideal for office, stores and school lighting. Superbly constructed, durably finished. Beautifully designed. Highly efficient. ETL approved components. UL approved. Union made. Gibson quality throughout.

Rule-of-thumb shows that fixtures represent about 50% of the total cost of a lighting system. The other 50% goes for installation and materials. That is why Gibson designed its ORTHO fixtures and exclusive UNI-RACE.

Because the UNI-RACE is so simple and quickly assembled *on the floor* . . . and because GIBSON ORTHO fixtures can be installed so fast . . . actual savings in labor and materials on installation are as high as 50%.

This means that better lighting is possible within the limits of low-cost installations and restricted budgets.

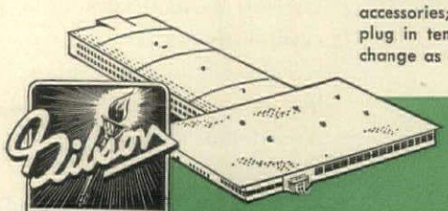
Get full details and specifications on the ORTHO-77 and UNI-RACE from your Gibson representative, or write direct.



*PATENT APPLIED FOR

THE EXCLUSIVE GIBSON UNI-RACE*

This rigid channel wireway has a shock-proof outlet for each fixture, providing a permanent anchor and fixed power source. The Uni-Race can be easily and quickly assembled into sections up to 48 feet long, wired complete on *the floor*, then raised and hung as a unit—directly to the ceiling, stems, or I-Beam and Bulb-Ts through the use of special clamps. Alignment and spacing for fixtures are automatic. Fixtures can be hung by two men, without tools, at the rate of 45 to 55 per hour—in continuous rows or at any interval of 4, 8, 12 or more feet. Spacing can be changed, more units added, repairs made at any time without additional electrical work and without interrupting service to other fixtures on the circuit. The Uni-Race saves on conduit, receptacles, accessories; eliminates aligning extras. It can be shipped in *advance of fixtures* and outlets used to plug in temporary lighting during final construction and painting. Ortho-77 fixtures are as easy to change as a light bulb—anyone can do it, no tools or special skills needed.



GIBSON Manufacturing Co.

1919 Piedmont Circle, N.E., EMerson-2591, Atlanta 5, Georgia

PARENTHESES

continued from p. 59

"(We have assumed each is filing joint return with two children.)

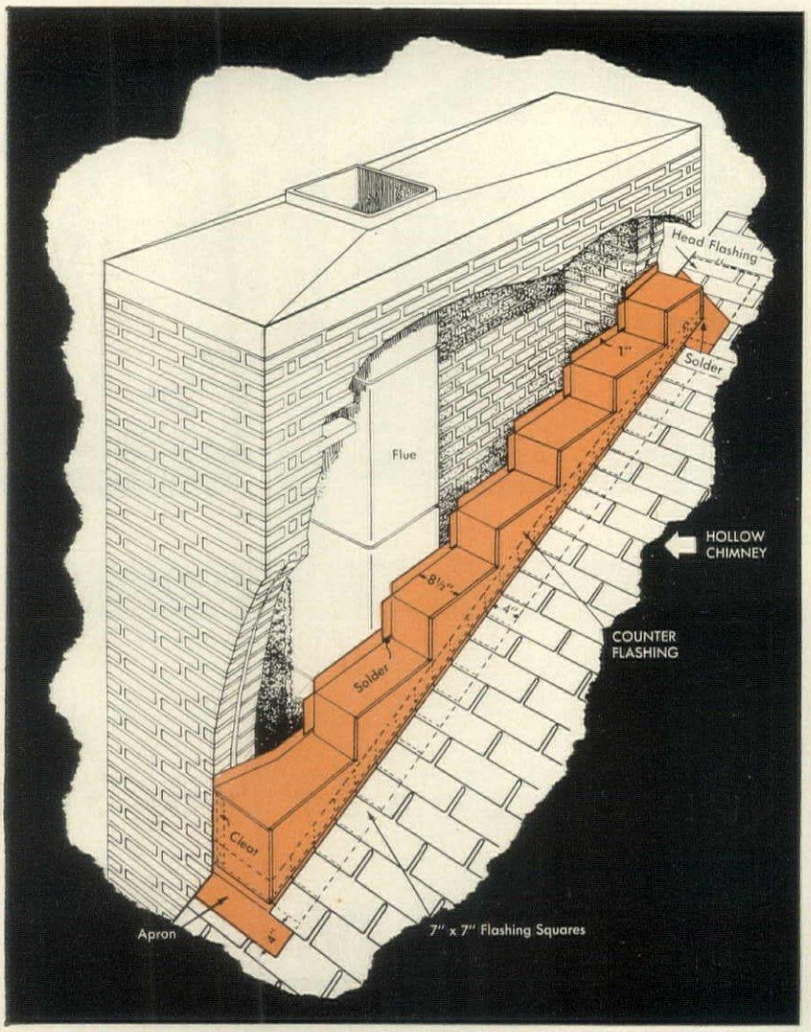
"The same situation on a corporation basis with same net profit, but having a qualified pension plan to syphon off $15,000 a year of the profit of which two thirds is going to the two stockholders:

PARTNERS A & B		
Annual income		*$27,500*
Federal tax	*6,300*	
State tax	*1,445*	
Soc. sec. tax	*42*	
Total tax		*7,787*
Net income		*$19,713*
Pension contribution		*5,000*
Total tax-free value Received from corporation		*24,713"*

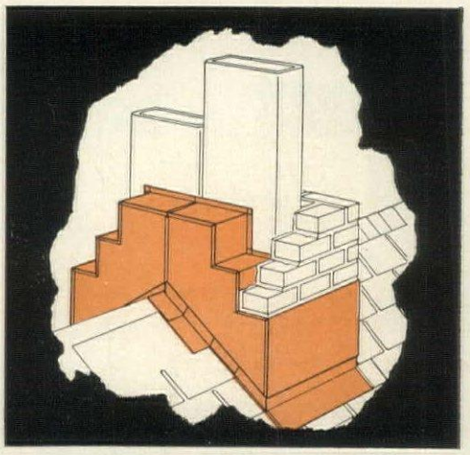
But subsequent suggestions in Congress may permit professionals and other unincorporated businessmen to plow a portion of their profits into a pension fund. And for more immediate tax relief, Representative Thomas B. Curtis (R) of Missouri, a member of the House Ways and Means committee, introduced a motion in the closing days of this year's session which should elate anyone whose income fluctuates widely from year to year, as some architects' reputedly do. Representative Curtis' idea is to permit the taxpayer who, in one year makes 150% of what he has made the previous five years, to spread the bonanza over the whole six-year tax period. It is expected that the Bureau of Internal Revenue will take a dim, penurious view of this, but Congressman Curtis, as a member of the powerful Ways and Means Committee, should be able to get his proposal good consideration, if well supported. He should

have a battery of T-squares behind him.

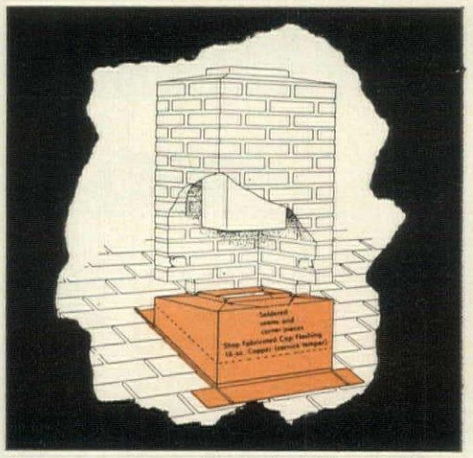
continued on p. 70



CHIMNEY OF ARCHITECTURAL DESIGN—Through-to-flue counter flashing, turned up 1" at flue, installed over base flashing at 7" x 7" squares.



CHIMNEY AT RIDGE—Flashing consists of apron at lower edge of chimney, soldered returns at corners, flashing squares leafed between shingles. Cap flashing set to form counter flashing.



CHIMNEY IN SLOPE—Single flue 8½" x 13". Base flashing formed as flange with 4" apron overlapping shingles; 12"-wide head flashing; 4"-wide flashing flange at sides of chimney.

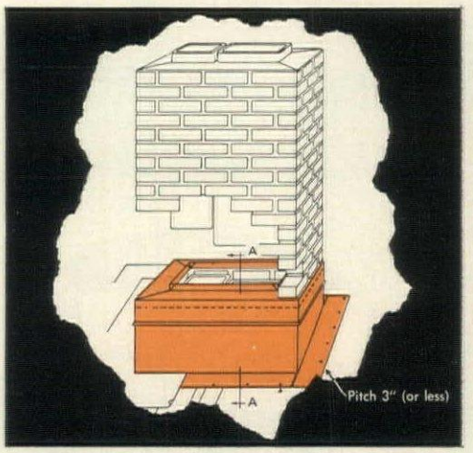
Stop leaks before they start with Anaconda through-to-flue copper flashing

Faulty chimney flashing probably causes more trouble and repair expense than any other detail in roof construction. Leaks often appear soon after completion, and tempers flare. The owner and contractors wrangle over who is to blame.

Protect your clients and your reputation by making sure of two things: first, use the right flashing design and second, specify the right metal.

The through-to-flue flashing designs indicated in drawings on this page will prevent all water, including that which has been absorbed by the masonry, from seeping downward into the interior of the building.

Copper by Anaconda combines advantages offered by no other commonly used flashing material. It is, of course, rust-proof. It is not affected by mortar. It is easily soldered, assuring you that the flashing you design will have permanently tight joints. 5554



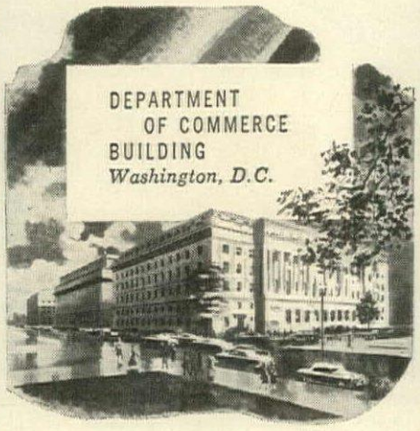
CHIMNEY IN FLAT ROOF—Base flashing must be *water-tight*, soldered at all joints. Counter flashing carried through masonry, turned up 1" at outer surface of flue.

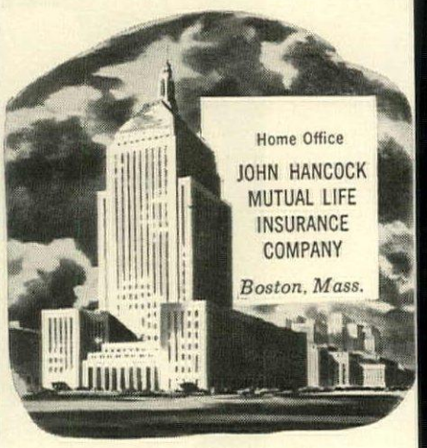
FREE FILE OF DETAIL DRAWINGS—Designs developed by Anaconda building specialists to provide maximum protection of building against weather, with most economical use of sheet copper. Entire series of drawings printed *on individual 8½" x 11" sheets for quick-reference filing.* For FREE portfolios, address: *The American Brass Company, Waterbury 20, Connecticut.*

for better sheet metal work use

ANACONDA®

SHEET COPPER





FROM COAST TO COAST.

RAYMOND

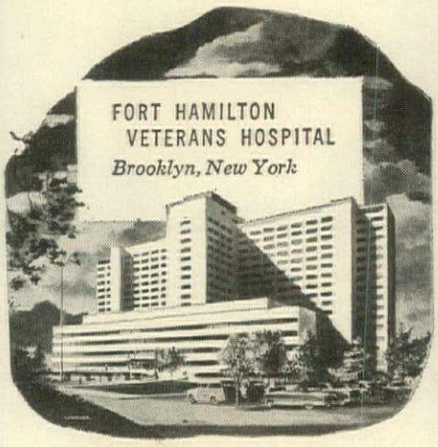
THE SCOPE OF RAYMOND'S ACTIVITIES

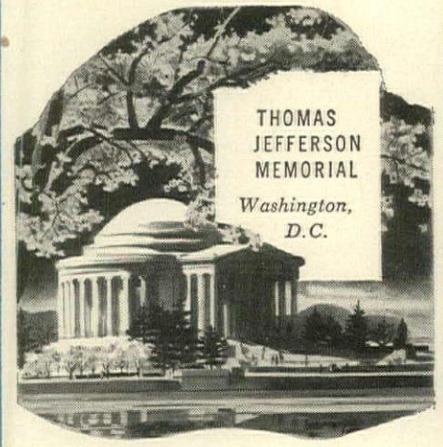
IN THIS COUNTRY

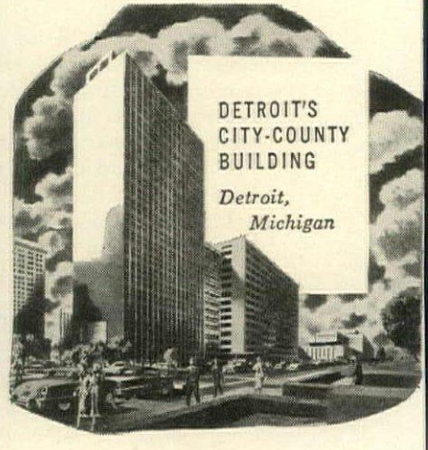
Foundations . . . Marine Structures . . . Heavy Construction . . . Soil Investigations.

OUTSIDE THE UNITED STATES

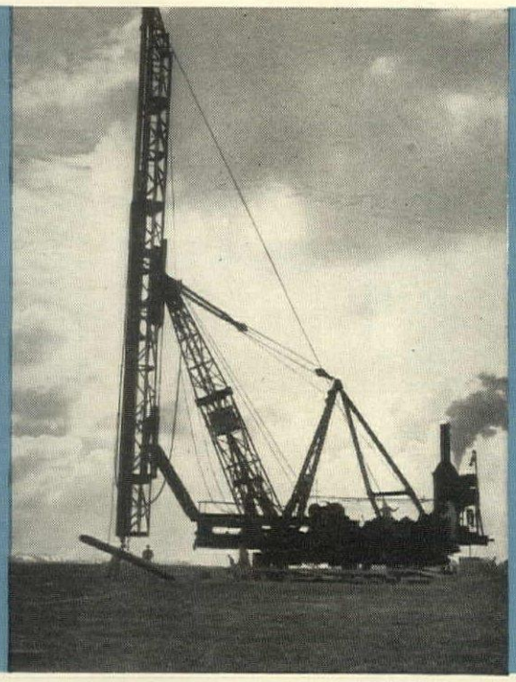
Complete service for all types of construction.







Here are a few of the structures that rest on Raymond foundations. These buildings represent an impressive testimony to the over half a century of confidence placed in us by the architects, engineers, contractors and business executives of this country.



If you're contemplating any type of construction—large or small, we'll be happy to discuss your foundation problems with you.

. THE FINEST STRUCTURES REST ON

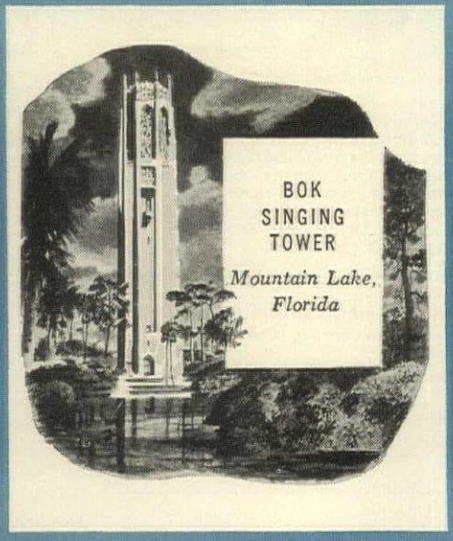
FOUNDATIONS

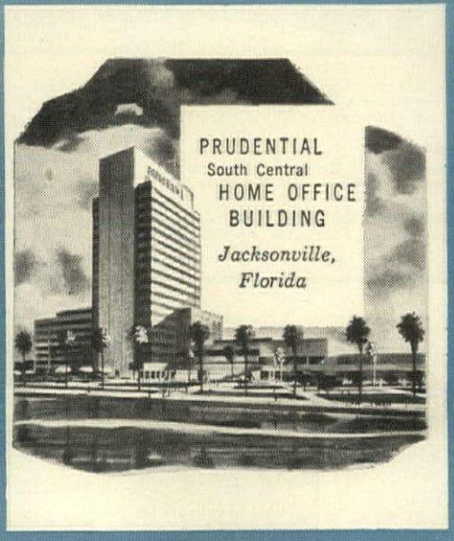
RAYMOND CONCRETE PILE CO.

AROUND THE WORLD · FOUNDED 1897 ·

140 Cedar Street, New York 6, N. Y.

BRANCH OFFICES in Principal Cities of the United States, Canada, Central and South America

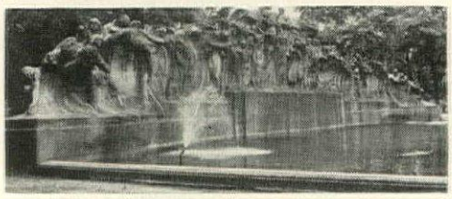




PARENTHESES

continued from p. 66

(TIME)

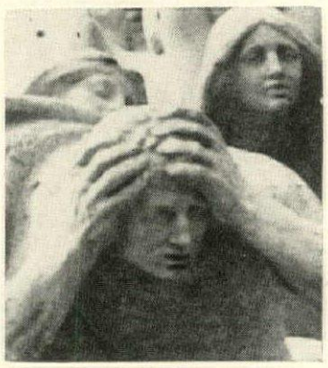


When Sculptor Lorado Taft executed the "Fountain of Time" to stand at the end of the midway in Washington Park, Chicago, 32 years ago, his inspiration for the group of melancholy figures was drawn from lines by the English poet, Austin Dobson:

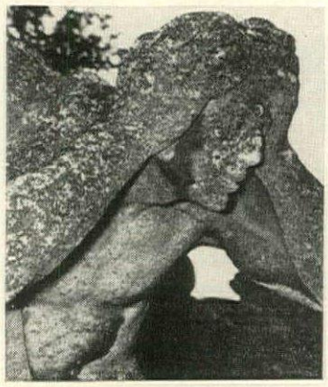
"Time goes, you say—ah no:
Alas. Time stays, we go."

According to the Chicago *Daily News*, Taft wanted his enormous 120'-long creation to weather quickly, attaining "a rich soft tone which stone acquires only after generations of exposure." So instead of marble he used a new process, casting the sculpture in a softer concrete composition made in part from Potomac River pebbles.

Here is a detail of one of the figures in 1922, perhaps about to say "Time goes, you say? My God!"



His worn, worried expression was authentic. Below is a recent closeup of the same figure, only 32 years old, but like the rest of the statuary, sadly pitted and crumbled.



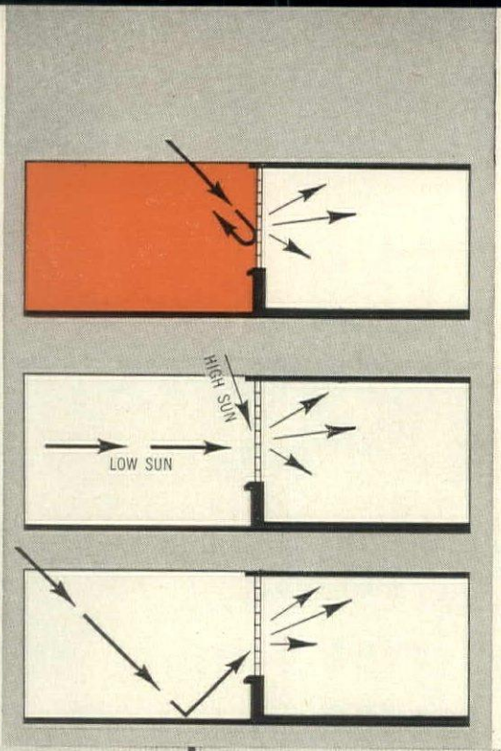
Alas. Time stayed, he weathered.

—W. McQ.

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 various sun positions, thereby providing 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.



OWENS-ILLINOIS' NEW SOLAR-SELECTING GLASS BLOCK No. 80-F COOLER IN HOT WEATHER

Solar heat input is greatly reduced. In a test during hot weather—when the outside temperature was 90°—the room side surface temperature was 14 degrees less than that of a conventional type light-directing glass block.

Owens-Illinois' new solar-selecting Glass Block No. 80-F is superior to earlier light-directing glass block because:

1. **It has a surface brightness less than half that of earlier types.**
2. **It transmits less solar heat and has a lower inside surface temperature during hot weather.**
3. **It is an efficient transmitter of ground-reflected light.**

Illumination surveys show that maximum illumination on vertical surfaces occurs when the sun is at an altitude near 45°. It is this sun altitude position which produces maximum solar heat and brightness conditions on vertical windows or panels. Prisms within the 80-F block are designed to reflect a major portion of this maximum illumination.

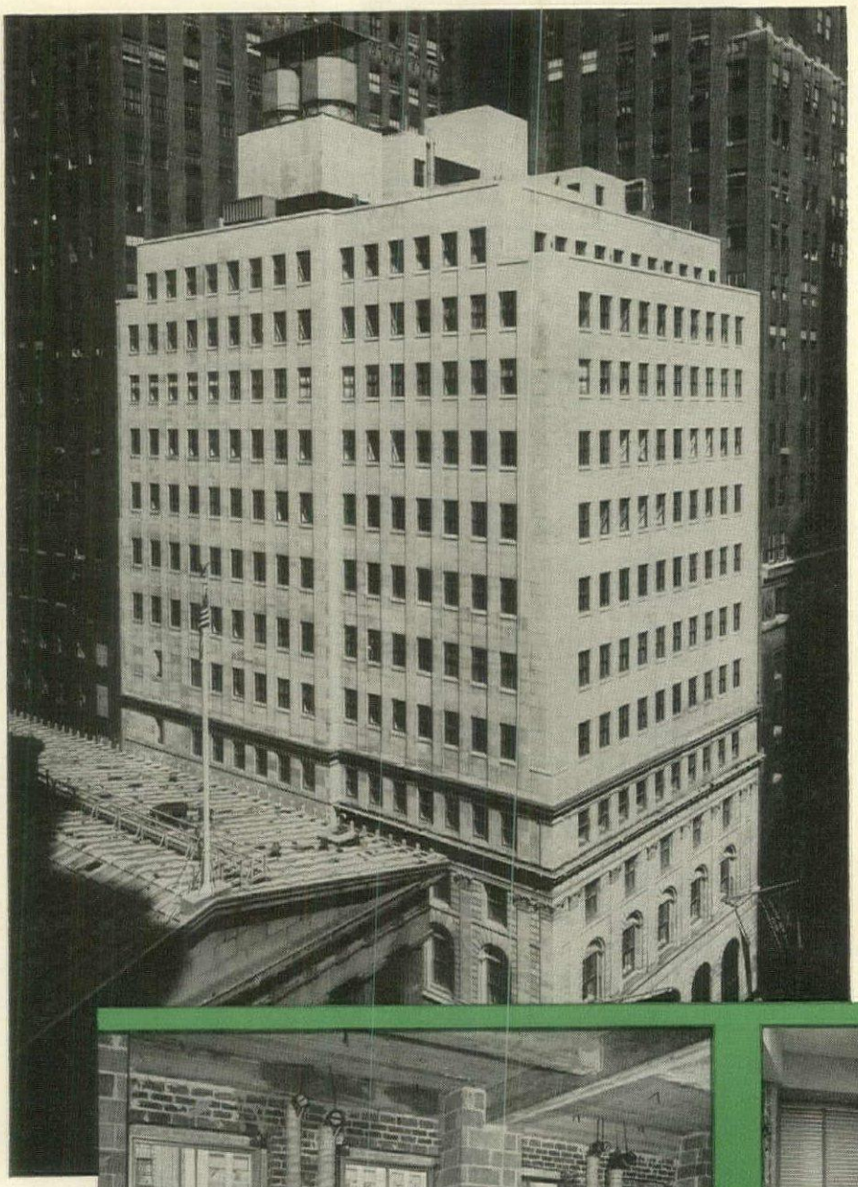
For non-sun exposure, a companion block, the No. 80, is recommended. This block is identical to the 80-F, except that it does not have a fiber glass screen. Therefore, it transmits a higher percentage of light.

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, Department AF-11, Box 1035, Toledo 1, Ohio.

OWENS-ILLINOIS GLASS BLOCK
AN (O) PRODUCT

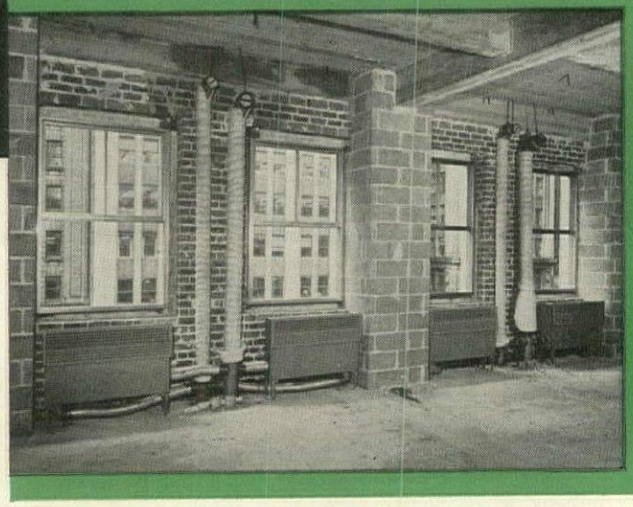
OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

TUTTLE High



Seaman's Bank for Savings . . . First entire building in New York City to use *double duct mixing plenum high pressure system* features complete flexibility of heating/cooling zone control.

Architects: *Halsey, McCormack & Helmer*
Consulting Engineer: *Edward E. Ashley*
General Contractor: *William L. Crow Construction Co.*
Air Conditioning Contractor: *Alvord & Swift*



Photograph taken during construction of Seaman's Bank for Savings showing installation of Tuttle & Bailey Type MPW Double Duct Mixing Plenum Wall Units.

Typical view of a general office area in Seaman's Bank for Savings showing how Tuttle & Bailey Type MPW Units blend with modern architectural design and decorative scheme.

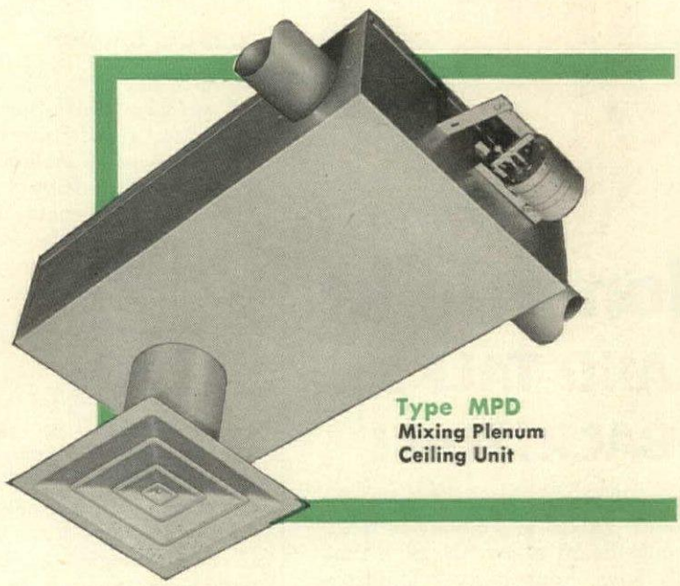
ENGINEERED PRODUCTS FOR AIR CONDITIONING,

& BAILEY
Pressure Units

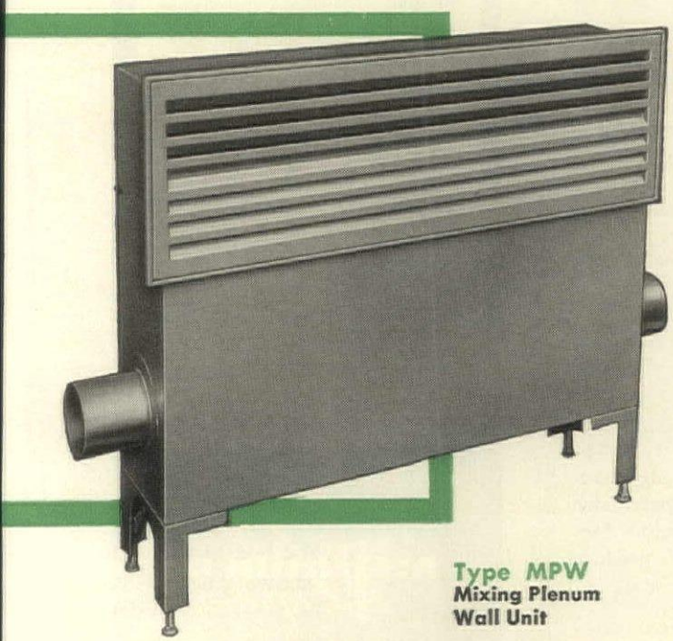
give SEAMAN'S BANK for SAVINGS
indoor weather that satisfies everybody!

IN THIS modern twelve-story addition to Manhattan's financial district, Tuttle & Bailey High Pressure Units will provide efficient, economical year-around heating and cooling comfort . . . Type MPW Wall Units are located under all windows throughout the building, in banking areas and private offices . . . Type MPD Ceiling Units are installed in the dining areas.

Operating on an all-air system, these double duct units mix and discharge varying proportions of heated and cooled air to provide a constant volume at the exact temperature desired in individual areas. This flexibility means one area can be heated while another is cooled regardless of time of day or season.



Type MPD
Mixing Plenum
Ceiling Unit



Type MPW
Mixing Plenum
Wall Unit

Savings in overall building and installation costs were effected by the use of conduit risers and branches which reduced floor-to-floor dimensions . . . a single primary equipment room resulted in more useable space . . . and the need for supplementary equipment required for the operation of other types of systems was eliminated. In addition, utilization of 100% outside air for cooling when temperature permits will save the cost of operating compressors, pumps, and cooling tower during such periods.

For complete information on the advantages of a high pressure air distribution system in new construction — or for remodeling — get in touch with your nearest Tuttle & Bailey Representative or write for Catalog No. 109 and Bulletin No. 110.

TUTTLE & BAILEY INC
NEW BRITAIN, CONN.

VENTILATING AND HEATING

LETTERS

*Moosbrugger—*LIFE

CORBU'S CHURCH

Forum:

Regarding Notre-Dame-du-Haut (AF, Sept. '55), architecture may be sculpture if it functions as architecture first. Corbu showed us this admirably at Marseille.

But now he has contradicted himself. The chapel cannot be explained away as further development; it is a very personal hunk of sculpture. It functions as architecture afterward.

R. P. HARLOW
Cambridge, Mass.

Forum:

At first glance, your layout on "Corbu Builds a Church" carries the viewer back to Holland and its wooden shoes. The depth of LeCorbusier's perception is immense, I suppose, and he can see beauty in his type of church design that eludes the common man. For atmosphere in worship, give me the old Gothic, as awkward as it is to many. Perhaps the newest chapel of Notre-Dame-du-Haut "is as remarkable as its lofty site," as your well-done story says, but it seems that a windmill might be more apropos in such surroundings than a church. Your story does not convince me that here is a chapel conducive to reverent worship by pilgrims.

LESLIE G. ELMES, *managing editor*
Episcopal Churchnews
Richmond, Va.

WINDOW WALLS

Forum:

Your analysis of air conditioning and the impact of fenestration (AF, July '55) is an excellent and thoughtful study clearly showing that arbitrary and doctrinaire solutions are not proper, that many factors will, if thoughtfully applied, produce varied solutions.

MAX ABRAMOVITZ
Harrison & Abramovitz, architects
New York, N.Y.

Forum:

One of the most interesting articles I have read in FORUM is "What's Next in Window Walls?" This gives considerable

continued on p. 78

GOLD COAST CHERRY

a *Beautiful* buy....

... any way you look at it!

SURE, it's beautiful to look at . . . in grain and figure, in warm, light, *modern* color. Glamorous rotary-cut Gold Coast Cherry is the *new* beauty star in flush doors.

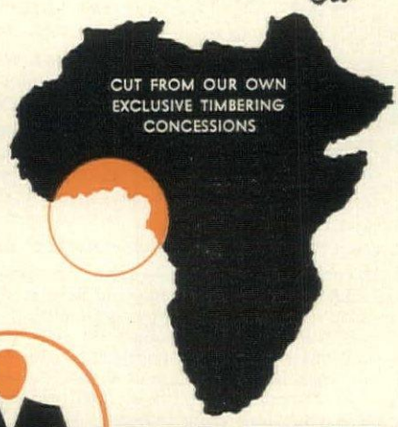
More good news! Gold Coast Cherry cuts finishing costs: its beautiful color makes stain unnecessary — its smooth, close texture requires no filler.

Price? *Actually lower than many domestic hardwoods!*

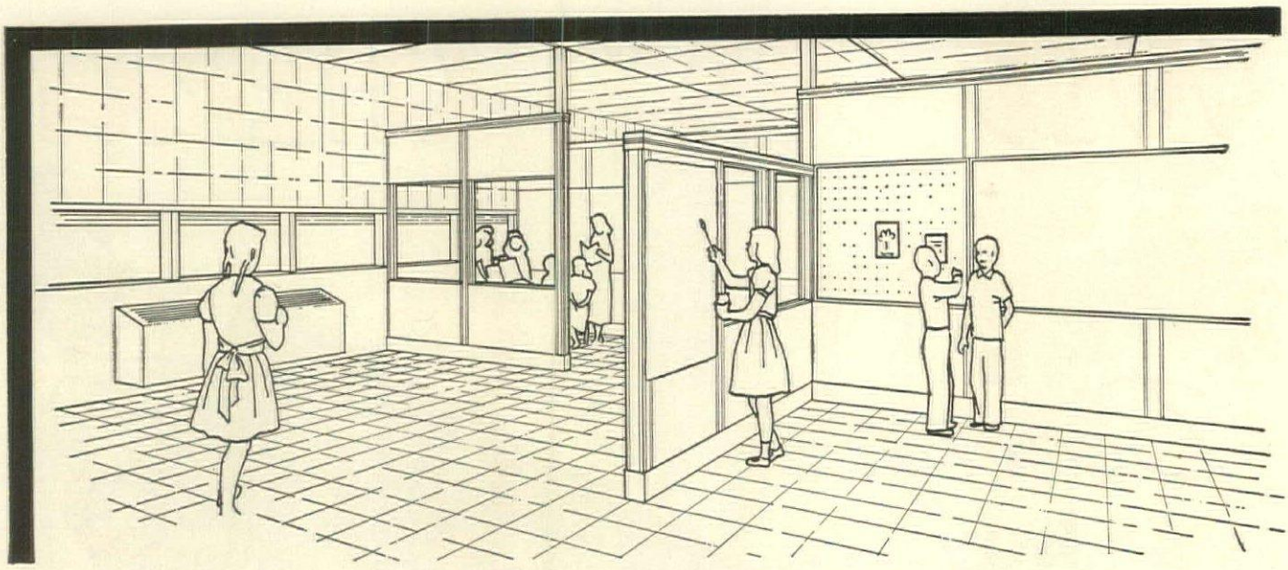
That's Mengel rotary-cut Gold Coast Cherry — eye-appeal, *buy*-appeal — any way you look at it.

See for yourself: order an inspection lot from your distributor. Why not phone or write him . . . *this very profitable minute?*

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

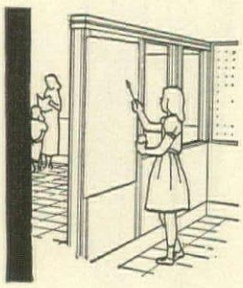


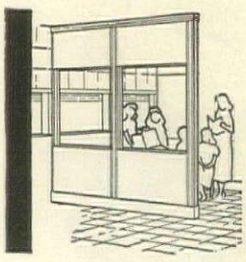
MENGEL *Flush* **DOORS**



a new dimension in school design with **Movable Hauserman Interiors**

To architects, school board members, teachers and maintenance personnel, Movable HAUSERMAN Steel Interiors provide economical, efficient and easily-maintained school interiors for the life of the building. These outstanding features of HAUSERMAN Interiors assure completely functional, yet clean, fresh, modern school rooms year after year.





COMPLETE FLEXIBILITY—Provides the means of keeping pace with changing space requirements as the crest of student population moves from primary levels through secondary and into advanced levels. Available in various widths, HAUSERMAN panels can be fitted to most modular plans permitting interiors to be rearranged without changing heating, lighting and ventilating systems. HAUSERMAN design also makes wiring easily accessible for adding or relocating outlets.

EARLIER OCCUPANCY—HAUSERMAN skilled erection crews, available throughout the country on short notice, assure fast, clean and expert installation. Completion time is speeded because with HAUSERMAN Interiors there's no waiting for plaster and paint to dry, little cleanup needed, and lay-in wiring facilities and accessories are built in.

SOUND-CONDITIONED SPACE DIVISION—A standard Movable HAUSERMAN Wall (2¾" thick) will stop more sound than a 5½" thick tile-and-plaster wall. And special HAUSERMAN acoustical ceilings may be specified for particularly noisy areas.

VERTICAL TEACHING SURFACES—Movable HAUSERMAN Interiors, fitted with special hooks, hangers and magnetic thumbtacks present boundless possibilities for display areas. HAUSERMAN accessories also include chalk boards, peg boards, bookcases, shelves and closets to provide "working walls."

FIRE SAFETY—Only steel- and mineral-wool insulation—both totally incombustible materials—are used in the fabrication of HAUSERMAN Interiors.

LOW MAINTENANCE COST—An exclusive, lifetime, baked-enamel finish requires only routine soap-and-water washing to maintain its "fresh from the factory" look. HAUSERMAN Interiors never require repainting.

INTEGRATED ENGINEERING SERVICE—HAUSERMAN engineers work closely with the architectural team to provide detailed working drawings. Further, with Movable HAUSERMAN Interiors, field supervision is cut to a minimum because there is just one source of supply eliminating the need to coordinate the activities of several trades.

FLEXIBILITY IN THE COORDINATED CLASSROOM

An objective, comprehensive report prepared by Darell Boyd Harmon and Associates for The E. F. Hauserman Company is available for you. The subject of school interior flexibility and its impact on psychological and physical environment of children is discussed and the solution to achieve permanent flexibility through application of Movable HAUSERMAN Interiors is covered. Send for your free copy today.

See the HAUSERMAN display in the Producers Council Caravan scheduled to visit these cities in November:

Washington, 3-5	**Boston, 20-23**
Philadelphia, 8-11	**Newark, 27-29**
New York, 14-18	**Buffalo, 30-Dec. 3**

HAUSERMAN

MOVABLE INTERIORS

THE E. F. HAUSERMAN COMPANY
7157 Grant Avenue • Cleveland 5, Ohio

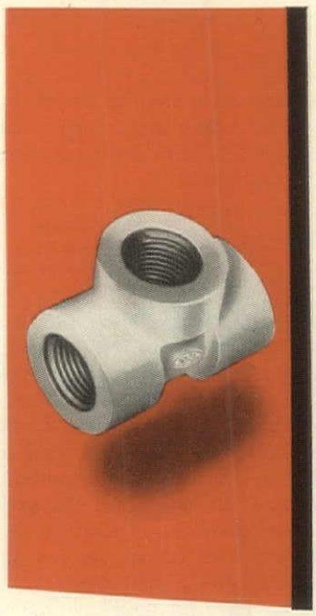
Please send your "Flexibility in the Coordinated Classroom" to:

Name _____

Company _____ *Title* _____

Address _____

City _____ *Zone* _____ *State* _____



PLASTIC

VALVES and PIPE FITTINGS

by

WALWORTH

These new corrosion-resistant valves and pipe fittings are molded of rigid polyvinyl chloride. They round out complete lines of Walworth Valves and Fittings of Steel, Stainless Steel, Bronze, Iron, and Special Alloys. A brochure explaining the complete Walworth PVC product story has been prepared for your information. Just send us your name and address. *Walworth Company, General Offices, 60 East 42nd Street, New York 17, New York.*

LETTERS

Continued from p. 74

factual data on a problem which has not had sufficient study and which is causing some concern in new building design in northern California.

JOHN S. WALSH, *director*
Commercial Sales
Pacific Gas & Electric Co.
San Francisco, Calif.

Forum:

Your article, "What Next for the Window Wall?" by Henry Wright, is a very careful piece of analysis, particularly valuable because he does not hesitate to go into many of the questions that have troubled those who are interested in this new form of construction. Beyond answering many of the questions, the article is also a provocative one, pointing the way toward new and better designs in this effort of enclosure of buildings.

While we have all been inspired by the accounts of the new buildings, it is a great comfort to see a touch of reason once more creeping in.

WALTER H. KILHAM JR.
O'Connor & Kilham, architects
New York, N.Y.

Forum:

Starting from the ideal wall which has no windows and proceeding to the Lever House which is all glass seems to be still a problem of the individual architect's design.

Your article is especially well composed and covers the subject completely. It is this type of information which helps all of us in the profession to render the client better service.

PAUL SCHELL
Schell, Deeter & Stott, architects
Pittsburgh, Pa.

MANHATTAN'S PIMPLE

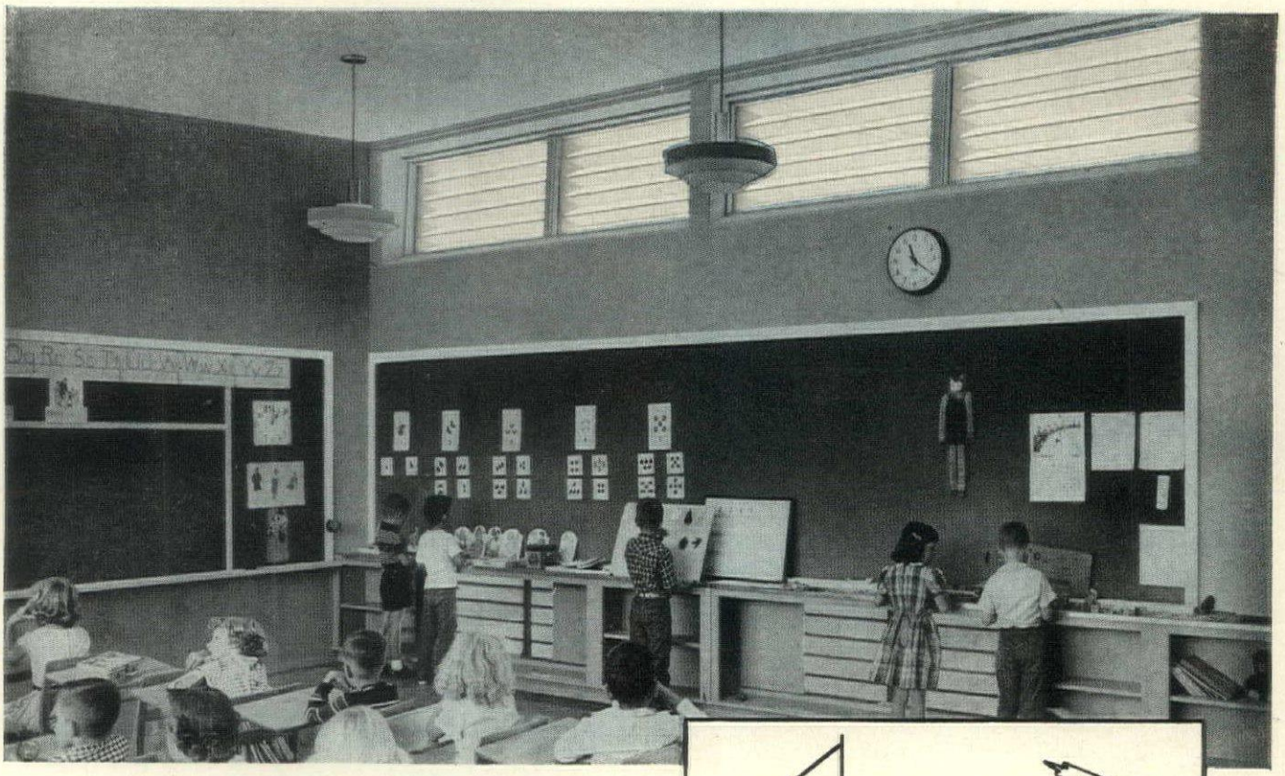
Forum:

I read with great interest your article in the August issue, "Could This Be Times Square Tomorrow?" and I was surprised to see the problem approached from a purely academic point of view. While both solutions were concerned with the existing ills prevailing on Times Square, such as congestion, lack of pedestrian space, nonexistence of "square" in its true sense, they failed to recognize the problem as one of large-scale city planning.

Times Square is just a pimple on the face of New York City, caused by malnutrition and bad blood. The solution is not an overpass—obsolete before it is even finished—nor is it an elevated level separating the pedestrians from the ground, which is the source of most of the activity and interest, but it is the solution of New York City traffic, of the parking problems and major circulation. One simply cannot take one area of the city, isolate it from the rest and find a solution. Such "cure" would be purely academic and must necessarily fail.

GEORGE A. HARTMAN
Forest Hills, N.Y.

continued on p. 82



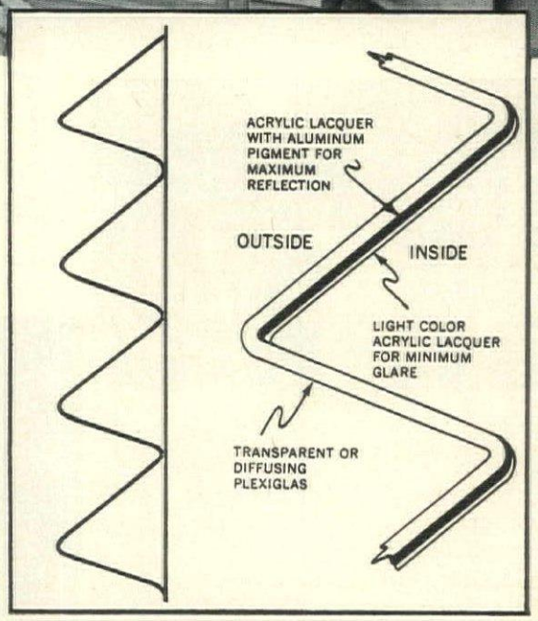
New way to control Sun Glare—

use daylight louver panels of PLEXIGLAS

Daylight Louver Panels, formed from PLEXIGLAS acrylic plastic, provide nearly optimum visual environment in daylighting systems. As shown in the cross-section drawing at the right, they combine opaque louver slats, light transmission and weather closure in one continuous surface. The design results in—

- Effective shielding from sun and sky glare.
- Improved distribution of daylight—an "indirect daylighting" system for evenly distributed diffused daylight.
- Reduction of solar heat gain inside buildings through reflection of a high proportion of direct sunlight striking the window area.

The daylight louver panel system is based on the formability, strength and weather-resistance of PLEXIGLAS, and was developed at the Daylighting Laboratory of Rohm & Haas Company. The names of suppliers of stock and custom-formed panels, and our new brochure—"Daylight Control with PLEXIGLAS"—containing data and recommendations on the use of daylight louver panels, are available on request.



Cross-section of a daylight louver panel, and close-up of one louver.

Chemicals for Industry

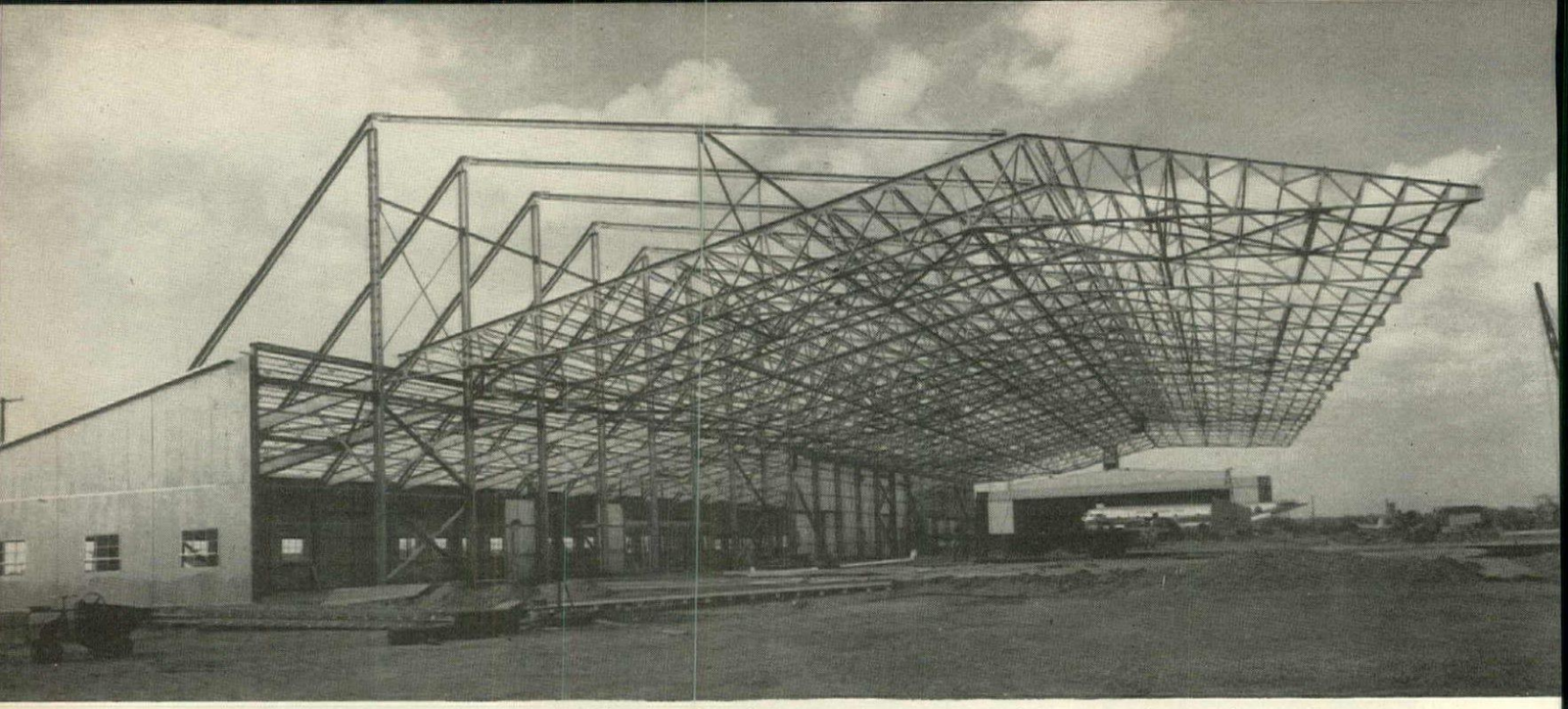
ROHM & HAAS COMPANY

Washington Square, Philadelphia 5, Pa.

Representatives in principal foreign countries

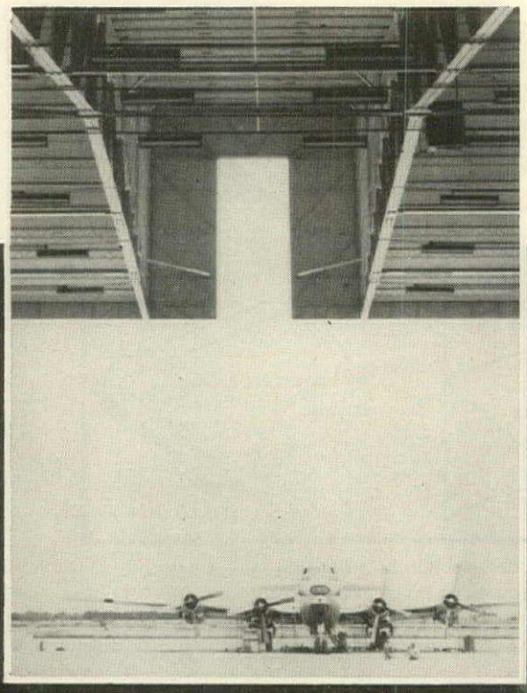
PLEXIGLAS is a trademark, Reg. U.S. Pat. Off. and in other principal countries in the Western Hemisphere.

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

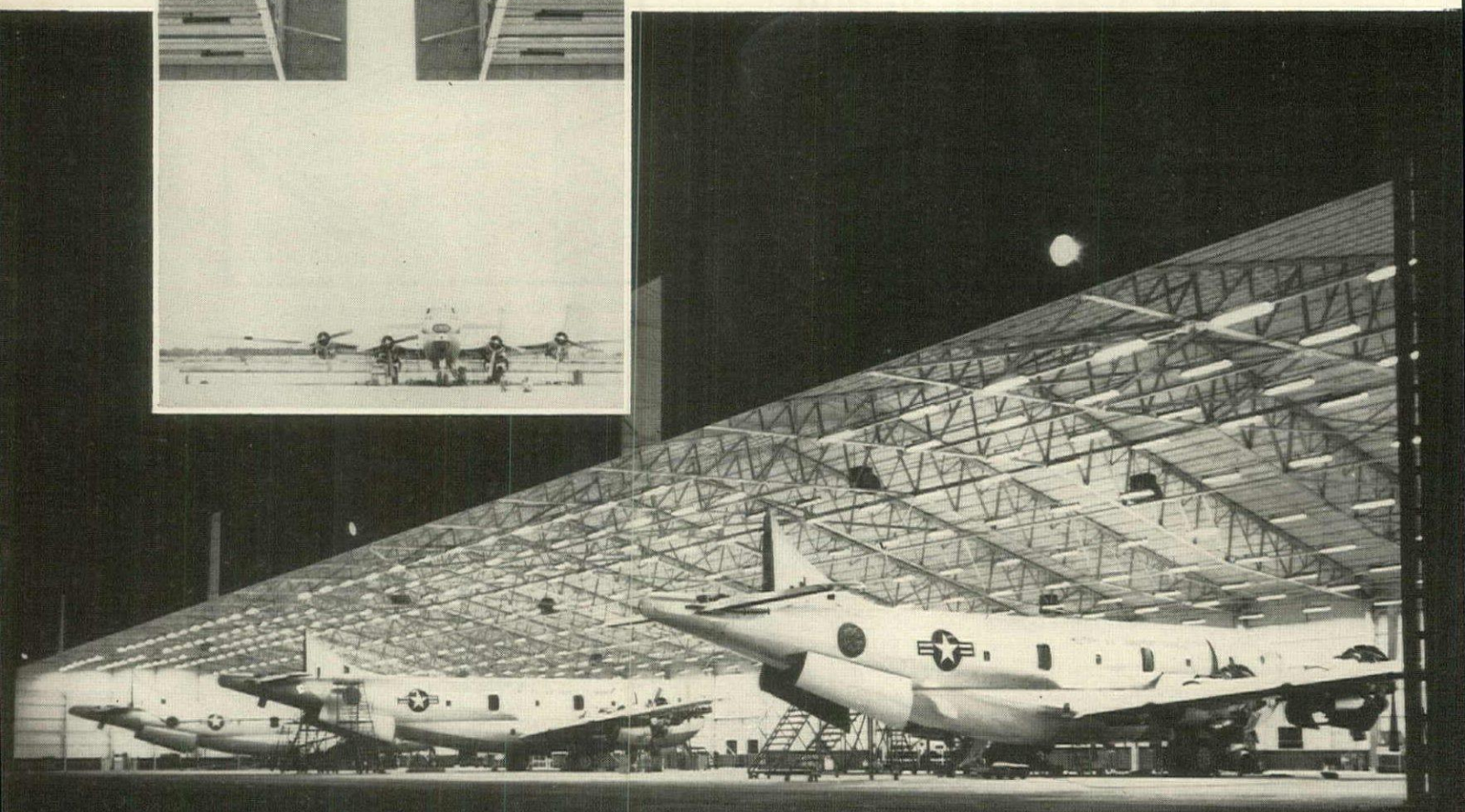


The 76-foot-long member which connects the top ridge of the cantilever to the top of the inner column is designed to act either in tension or compression—supports weight of roof loading, and withstands 30 psf uplift from wind under roof.

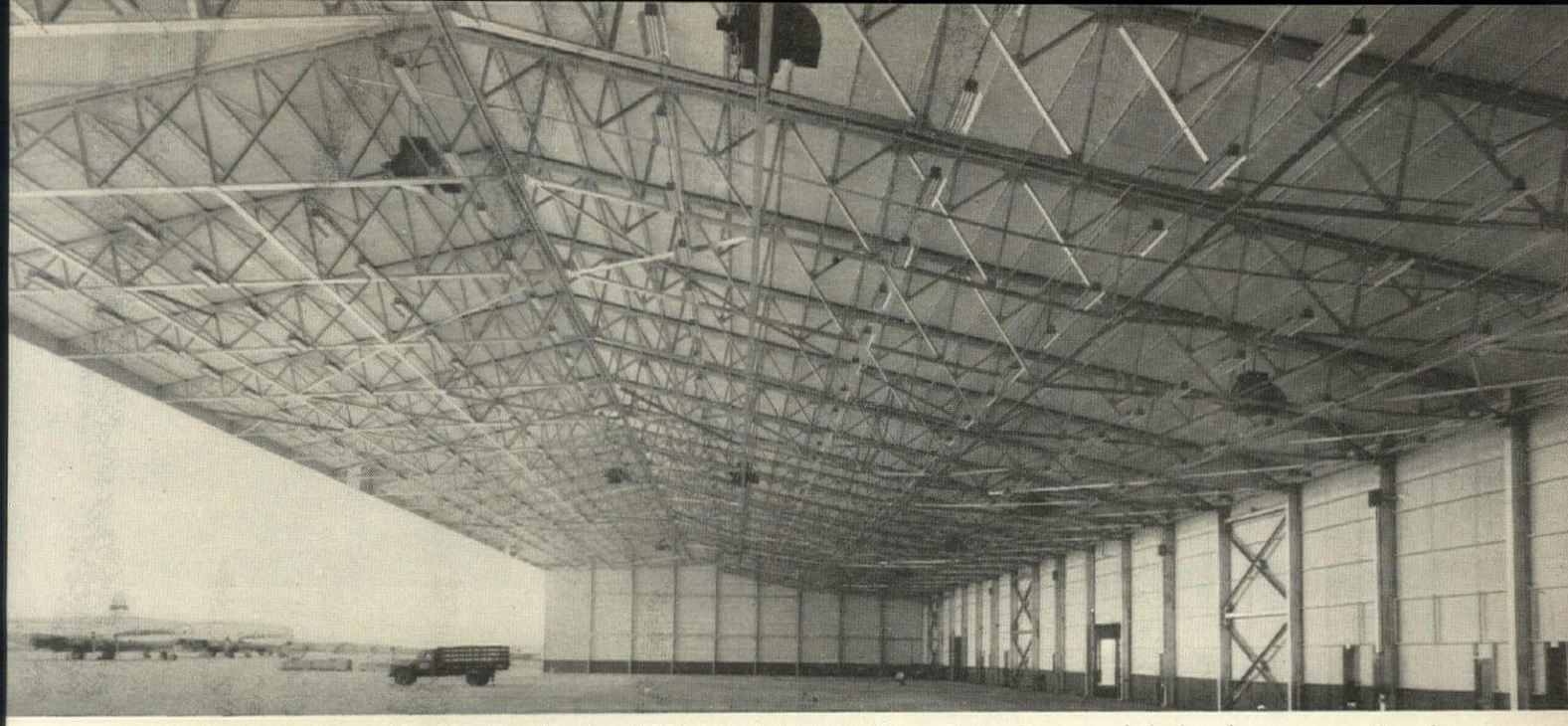
Ingenious hangar



Vertical clearance rises to 45 feet inside the three tail housings which open at the edge of the overhanging roof to admit the tails of these Boeing Stratocruisers.



The unique hangar was designed and constructed by the Erwin-Newman Co., of Houston, Texas, under their design patent No. 2,687,102.



The hangar is designed for 25 psf roof load and 15 psf horizontal wind force. Rear columns are bolted to deep concrete piers since they must withstand a pull of 14 tons per column from the weight of the cantilevered roof structure, which amounts to only 11.8 psf.

has no columns...

cantilever construction spans 120 ft. at cost of only $2.40 per sq. ft.

• The hangar area of this efficiently-designed building of Temco Aircraft Corporation at Greenville, Texas, is completely unobstructed by supporting columns. The clear area measures 120 ft. deep x 432 ft. long x 30 ft. high.

The roof is carried on 120 ft. steel truss cantilevers, connected by means of rocker joints to 56 ft. tall inner columns, which in turn are joined to 19 ft. outer columns placed 40 feet farther back. The space between the two rows of columns is conveniently used for workshops, parts storage, and offices.

The prefabricated Structural Steel framework for this hangar was bolted together in *only six working days*. The framing cost $2.40 per sq. ft. Framing and roofing cost $3.26, and the complete building including services, foundations, and 32,400 sq. ft. of concrete apron totaled $5.06 per sq. ft. Approximately 1,000 tons of Structural Steel were used in the building framework. Speedy construction was an important factor in holding down costs.

Where economy of construction is coupled with dramatic design, that's where you'll find versatile Structural Steel. Moneywise, Structural Steel is the most economical of load carrying materials. Also, it's the strongest and most versatile. It will withstand more abuse than other structural materials, effectively resisting tension, torsion, compression and shear. Once enclosed in buildings, it lasts indefinitely. No maintenance required.

Structural Steel may be riveted, bolted or welded, and may be erected in any weather in which men can work. Since steel members are fabricated indoors, weather can have no effect on the quality of workmanship. For further details, return the attached coupon.

USS STRUCTURAL STEEL

SEND FOR THIS FREE BOOK NOW

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

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 Corporation
525 William Penn Place, Room 4947
Pittsburgh 30, Pennsylvania

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

NAME .....

COMPANY .....

ADDRESS .....

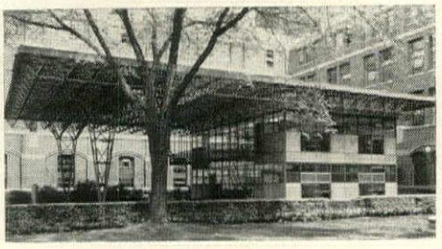
CITY ..... STATE .....

UNITED STATES STEEL

LETTERS

Continued from p. 78

WHAT PRICE DEMOUNTABILITY



Forum:

The work done on the Unistrut structural system (AF, July '55) is extremely interesting. I am particularly struck with the idea of the standard space gusset plate.

However, I am not quite sure about the usefulness of the system. The whole problem of standardization is a very vexed one.

The advantages of standardization are, of course, the reduced cost due to mass production, and the availability of components. The disadvantage is the very greatly increased weight of construction, which has to deal with much larger spans than are required in every single case and to allow for the worst possible ground which only occurs in a few instances.

Complete demountability is, of course, possible, but is it really wanted? Here in England we have had a rather interesting development in schools during the last few years which, although on a much more modest scale, seems to indicate that flexibility is not now considered so important as it was a few years ago. Immediately after the war it was an almost universal ruling that internal cross walls should be avoided in classroom blocks, so that the size and number of classrooms could be changed at will. Today this stipulation is almost completely given up, certainly for primary and secondary schools, and a number of schools are now being erected with cross wall construction, which is much cheaper.

The development suggested by Unistrut is almost exactly opposite, and very much more ambitious than any of the early schemes have been. A doubt may therefore be expressed as to whether its cost might not outweigh the advantages.

FELIX J. SAMUELY, *consulting engineer*
London, England

S. 1644

Forum:

FORUM carried in its Aug. '55 issue (pp. 21-25) a report of the Federal Construction Contract Act (S. 1644)—a measure that has been supported by the National Electrical Contractors Assn.

It is the first thoroughly objective account that we have seen in the general business press. Your correspondent and your editors did a creditable job.

GEORGE B. ROSCOE, *director of public relations*
National Electrical Contractors Assn.
Washington, D.C.

continued on p. 86

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; SACRAMENTO—H. W. Rivetts Co. **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 Acoustics 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

C-55

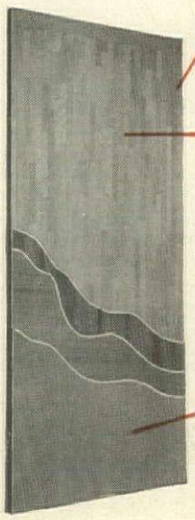
General Doors Blend Beautifully

FIRST CHRISTIAN CHURCH Designed by Thorshov & Cerny, Architects, Minneapolis

into this striking Architectural Design

In many churches across the nation employing modern ecclesiastical design—General doors have provided the versatility demanded by the architects' specifications. The doors used in this installation are General's African Ribbon Striped Mahogany solid core doors. Besides their ability to blend beautifully into this striking modern design, they are constructed to take the hard usage which doors in any public building must absorb. The heart of the General solid core door is its edge glued staggered stave lumber core construction which guarantees the greatest rigidity and stability possible.

For beauty, versatility, and service, specify General Doors on *your* next job!



MATCHING EDGE BANDS

Three-quarter inch matching hardwood edge bands on both vertical edges provide ample trim area.

EDGE-GLUED CORE BLOCKS

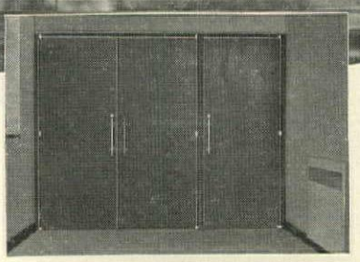
Three dimensional stability is obtained through the use of core blocks of varying length, edge-glued to each other in a staggered pattern, and to the frame, under extreme heat and pressure.

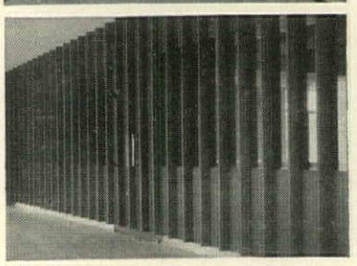
SEVEN-PLY CONSTRUCTION

Absolute flatness of surface is insured through the use of heavy 3-ply panels bonded to rigid edge-grain blocks that have been selected for uniformity, and dried evenly.

GREATER BEAUTY

The smooth, hard cabinet-maker's finish is produced by an extra sanding operation on huge belt sanders. Faster and finer finishing on the job.



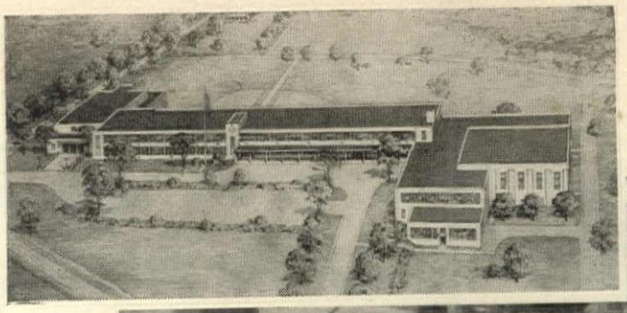


A. The three doors shown above open into the church's gymnasium. Beauty and structural strength were the requirements here.

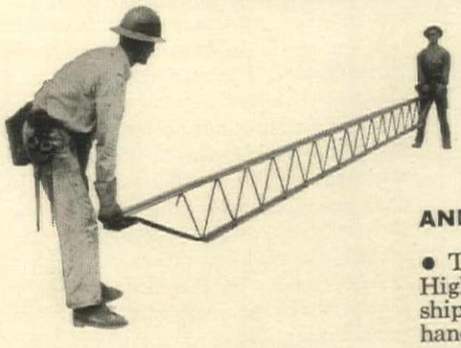
B. It's hard to find the General door in this fluted partition. Adaptability to design was the problem in this instance.

OVER 50 YEARS IN HARDWOOD PLYWOOD

GENERAL PLYWOOD
CORPORATION
LOUISVILLE, KENTUCKY



Richland Junior-Senior High School, Richland Township, Allegheny County, Pa.
Architects: Joseph Hoover, and Franklin, Douden & Associates.
General Contractor: Rea Construction Company



AmBridge Standard and Long Span Steel Joists are prefabricated and delivered to the job ready for immediate use.

*

Their light weight means less deadload—permits economy in structural supports.

*

Easily erected in any kind of weather.

"On this large school
New-Design Steel Joists saved us time and money

AND WE GOT STRONGER, SAFER, MORE MODERN BUILDINGS, TOO!"

• The new Richland Junior-Senior High School plant in Richland Township, Allegheny County, Pa., is as handsome and modern as you'll find anywhere.

Built solidly on and around a strong frame of structural steel, fabricated and erected by American Bridge, it bids fair to become a model for similar light occupancy structures.

Contributing to the strength and safety of the buildings are AmBridge steel joists, which are used throughout for all roof and floor supports.

105 tons of new-design AmBridge standard steel joists, and accessories, and 60 tons of AmBridge long span steel joists and accessories were used for the roof supports of the 72′ x 154′ auditorium; for the floor and roof supports of the 61′ x 325′ classroom area; and for the roof supports of the 120′ x 124′ gymnasium.

In the words of the contractor: "On this large school, these new-design AmBridge steel joists saved us time and money, and we got stronger, safer, more modern buildings, too."

For further information about the time-and-labor saving advantages of new-design AmBridge steel joists, contact the nearest sales office, or write.

FREE BOOKLET FOR YOU: If you design or build light occupancy structures, this free booklet points the way to faster, simpler, better, more profitable construction. It is the only complete steel joists catalog with design information for spans up to 120′ which you can use to improve your construction methods . . . and make more profit out of future jobs. ***WRITE FOR YOUR FREE COPY!***

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
HOUSTON · LOS ANGELES · MEMPHIS · MINNEAPOLIS · NEW YORK · ORANGE · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ROANOKE · ST. LOUIS · SAN FRANCISCO · TRENTON
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

AMBRIDGE STEEL JOISTS

USS TRADE MARK

UNITED STATES STEEL

LETTERS

Continued from p. 82

INDUSTRY EDUCATION

Forum:

Your editorial in the August issue expresses what needs to be said to architects all over the country.

Too many engaged in building regard the building as an end in itself rather than a tool for the use and service of those occupying the building when completed.

I regret to note that the conference on industry-wide education called by the AIA did not invite the National Association of Building Owners & Managers. I believe they could offer information on many matters which would be of value in the design and construction of commercial buildings.

JOSEPH R. BEHAN, *manager*
Building Department
Central National Bank
Cleveland, Ohio

Forum:

With great interest I have read your article on unified education for the total process of building. This is water for my mill. You will remember my "Appraisal of the Architect as a Master Builder" (AF, May '52). Such a general educational plan, as you suggest, could bring the urgently necessary integration of the building field. In your list of services to be integrated, I missed skilled labor. The problem of educating the workmen properly for building does belong, in my opinion, to the whole scheme though certainly the main teaching will be in the field. I have found that also the architect should at least get a whiff of the manual process of building and have that made part of his education. In Harvard I made it a requirement that every student, before he got a degree, had to give evidence that for at least three or four months in the summer he had been with a contractor, acting as the assistant to the clerk of the works or to the supervisor.

WALTER GROPIUS, *architect*
The Architects Collaborative
Cambridge, Mass.

GLASS PRICES

Forum:

In the April FORUM an article and chart using 1947-'49 as a base left an impression that glass prices have increased substantially since 1947 as compared with prices of other building materials. Your article and chart do not tell the whole story, and for this reason may be misleading.

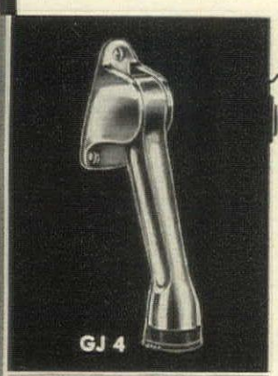
An index of prices using 1935 as a base shows that building materials increased 55%, window glass 20% and plate glass 15% during the period from 1935 to 1946 (before price controls were removed). From 1935 to 1954, building material prices increased 166%, window glass 112% and plate glass 84%.

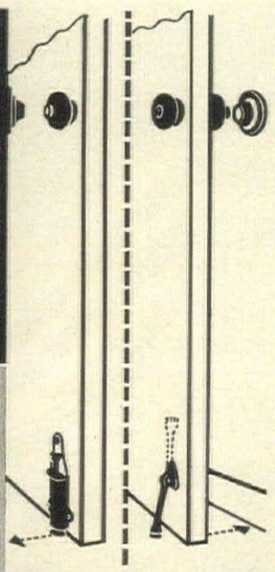
Another index using 1946 as the base

continued on p. 90

solve your interior door control problems with GLYNN·JOHNSON quality-proven hardware

...designed and built for the hard, continuous usage of public buildings





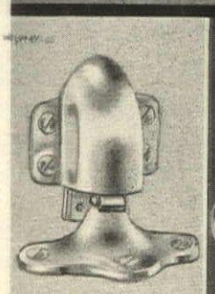
suggestion no. 1:

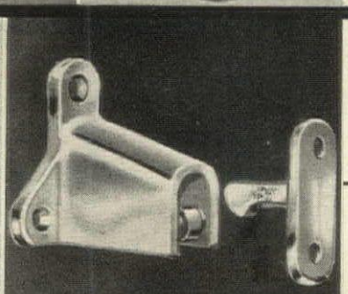
Foot operated door holders with TAMPER PROOF concave knob bumper

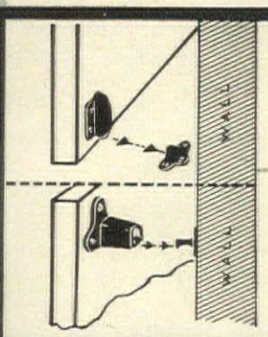
GJ 1153 (aluminum) and GJ 1154 (bronze or brass) plunger action door holders. Contact and spring release by foot. Exceptionally durable. Available in all finishes. "Sure hold" rubber shoe.

GJ 4 lever action door holder. Highest quality bronze in various sizes and finishes. For lower budgets, GJ 44 and GJ 444. All have "sure hold" rubber shoe.

GJ WB 60 concave knob bumper. Cannot be removed by unauthorized persons. Truly TAMPER PROOF. For wood screw, machine screw or expansion shield mounting. Quality bronze, brass or aluminum.





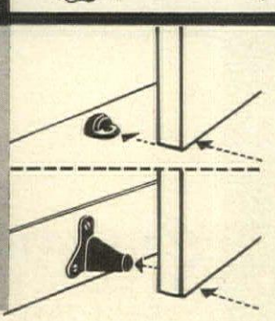


suggestion no. 3:

Door bumper only

GJ FB 13 floor installed dome type. Used to stop doors before reaching wall. Shallow, rounded top. GJ FB 14 for doors passing over thresholds.

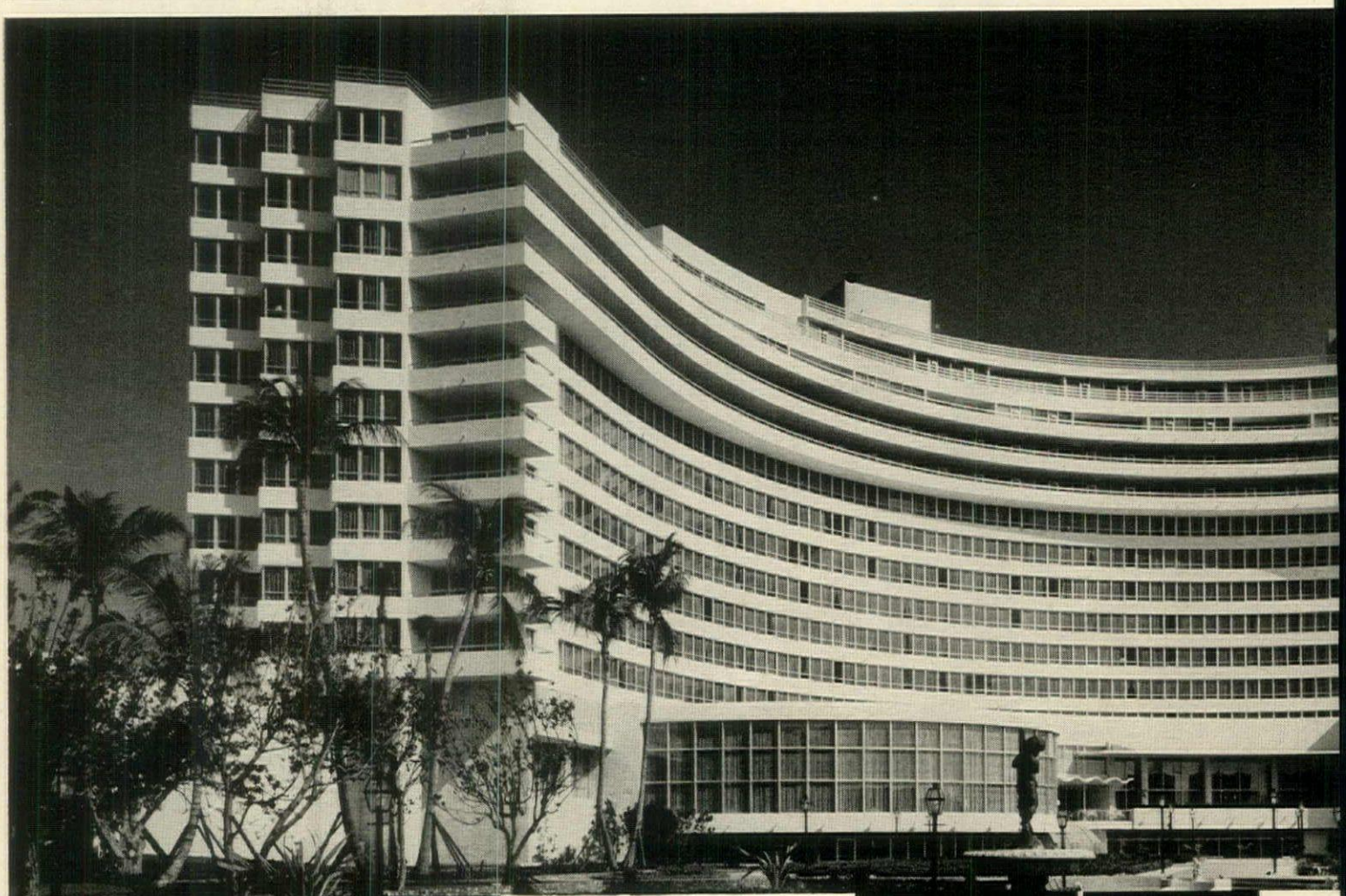
GJ WB 35 extended wall type bumper with sloping top. Installed to meet top or bottom of door. Quality bronze, brass or aluminum.



When you specify GJ you specify quality

GLYNN•JOHNSON CORPORATION
4422 n. ravenswood ave. • chicago 40, illinois

"We Saved Almost REINFORCED



Fontainebleau Hotel
Miami Beach, Florida

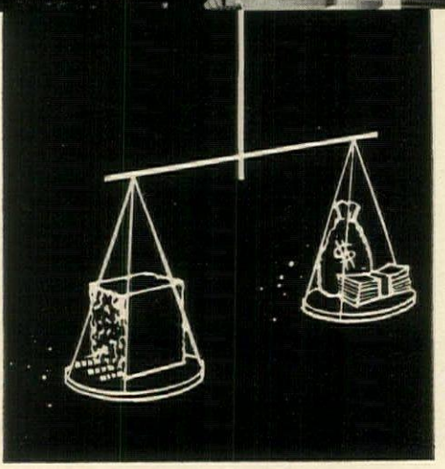
Morris Lapidus, Architect
Miami Beach, Florida

Oboler & Clarke, Structural Engineers
Miami Beach, Florida

Taylor Construction Company
General Contractor
Miami Beach, Florida

Compare . . .

YOU'LL SAVE WITH
REINFORCED CONCRETE



Six Months with CONCRETE"—

—says Mr. M. Lapidus, architect for the magnificent Fontainebleau Resort Hotel in Miami Beach, Florida, and added:

- ". . . it was possible to start erection . . . as soon as plans were sufficiently advanced . . ."
- ". . . reinforced concrete also gave us elegance, lightness, and grace throughout the entire complex structure . . ."
- ". . . lower budget estimates with reinforced concrete throughout"
- ". . . concrete and reinforcing steel were immediately available . . . there was never a question of delivery of any special framing and materials . . ."
- ". . . reinforced concrete proved to be the most flexible medium"

There are many reasons why an architect chooses reinforced concrete. But none is more important than those that mean *savings in time.* In the case of the Fontainebleau Hotel, reinforced concrete permitted construction to begin before the structural drawings were finished. The months saved with reinforced concrete resulted in earlier occupancy, providing extra rental income that could amount to many thousands of dollars. Furthermore, reinforced concrete offered a lower over-all cost, rugged strength, rigidity, and flexibility of design found in no other method of construction. On your next job . . . design for reinforced concrete!

CONCRETE REINFORCING STEEL INSTITUTE CRSI FOUNDED 1924

CONCRETE REINFORCING STEEL INSTITUTE 38 S. Dearborn St., Chicago 3, Ill.

LETTERS

Continued from p. 86

shows that window glass prices increased approximately the same as other building materials with plate glass prices increasing at a substantially lower rate.

The index charted by FORUM, using 1947-'49 as the base, tends to show plate and window glass prices at a disadvantage for the reason that other building materials had advanced more rapidly during the year 1946 and also during the first part of the base period.

Thus you can see that depending upon the base period selected, entirely different results appear. It is our feeling that the index using 1935 as a base presents a fairer picture because it compares prices over a longer period of time.

In discussing glass price increases your article stated: "Manufacturers cited no special causes such as an exceptional rise in labor costs or the price of their raw materials." However, using the base period 1947-'49 labor costs have increased 63%, soda ash (one of the basic raw materials of glass) has increased 43%, while plate and window glass prices have increased some 32-33%.

P. A. KETCHUM, *assistant to the president*
Pittsburgh Plate Glass Co.
Pittsburgh, Pa.

• FORUM's chart was based on data from the Bureau of Labor Statistics, which uses 1947-'49 as the basis for all its statistical series.—ED.

FIRE!

Forum:

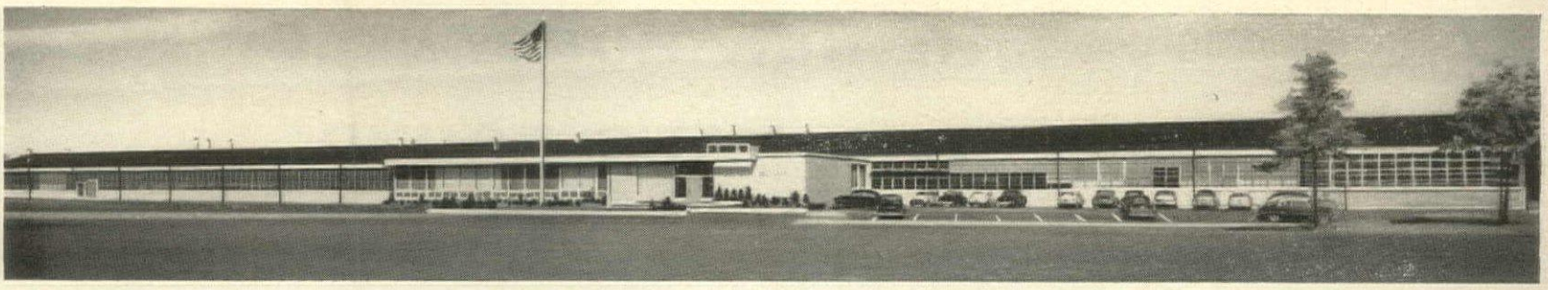
Your organization should be commended for your excellent presentation of fire protection (AF, Aug. '55). However, I believe that roof venting has been overemphasized.

The means of controlling the spread of fire should be listed in order of their importance. Complete automatic sprinkler protection is the primary means. This is a time-proven method which is not hindered by heat or smoke density. Adequate first-aid firefighting equipment should of course be provided along with the sprinklers.

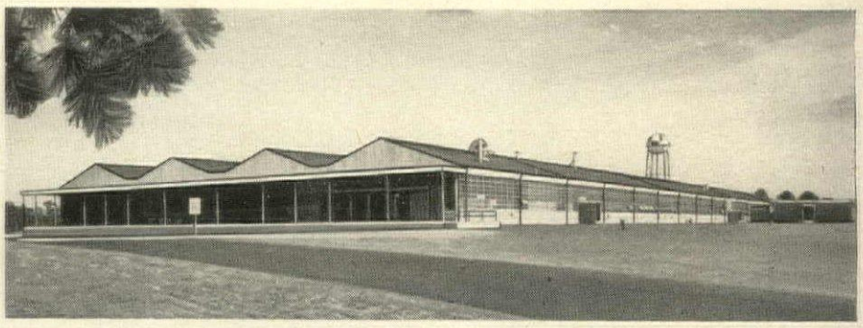
Next in importance is area subdivision to prevent the spread of fire in case of sprinkler impairment or depletion of the water supply. The only proven method for this subdivision is by story-height fire walls. In spite of the needs of production lines, when the potential fire hazard and loss in production are recognized by management, arrangements can frequently be made for full-height walls with properly protected openings. When not possible, draft curtains and roof venting are the only alternative. We know of no research or tests which have conclusively shown that the combination of draft curtains and roof vents, although recognized as effective to a degree, is the equivalent of a fire barrier or have established proper venting ratios to reasonably assure a minimum of fire spread. The recent tests by the Factory Mutual Laboratory on draft curtains and roof vents showed they had merit but the tests were not of suf-

continued on p. 94

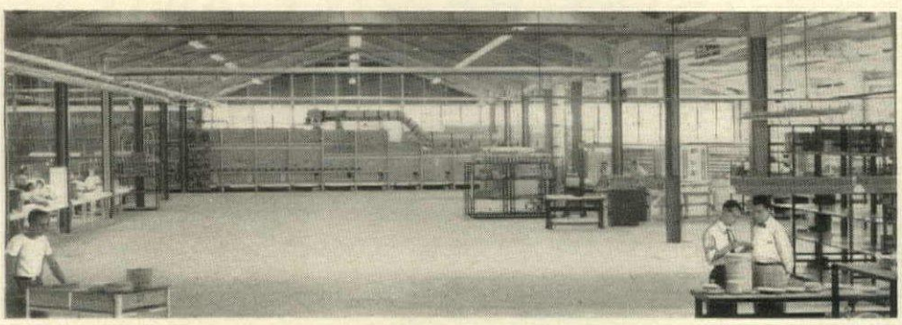
"The Client saved $150,000," says Architect Everett...



"Plus 3 valuable months of construction time...



when we designed around LURIA STEEL FRAMES"



Building for Lenox, Inc., makers of fine china • Architect: H. F. Everett & Assoc., Allentown, Pa. • Contractor: Ole Hanson & Sons, Inc., Pleasantville, N. J.

More and more—Architects are combining the creative scope of CUSTOM DESIGNING with the HIGH SPEED and LOW COST of LURIA STANDARDIZED STRUCTURES

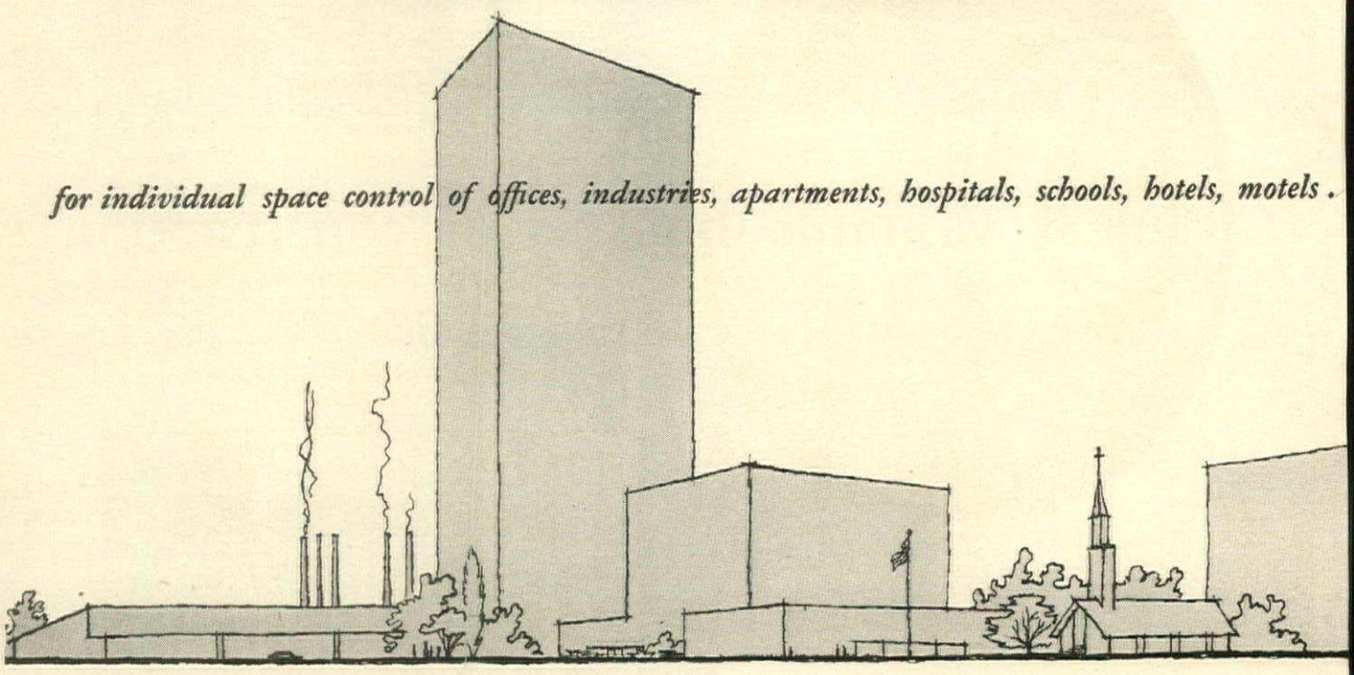
Because the Luria "System of Standardization" permits practically unlimited freedom of building design and architectural treatment . . . because Luria provides the topnotch engineering, thus providing the architect more creative time . . . because designing around Luria standard structures results in substantial client savings—America's leading architects are investigating, then specifying "LURIA."

LURIA ENGINEERING Company

511 FIFTH AVENUE, NEW YORK 17, NEW YORK • *Plant:* BETHLEHEM, PA. *District Offices:* ATLANTA, PHILADELPHIA, BOSTON, CHICAGO, WASHINGTON, D. C.

THE NEW HONEYWELL PNEUMATIC ROUND

for individual space control of offices, industries, apartments, hospitals, schools, hotels, motels.



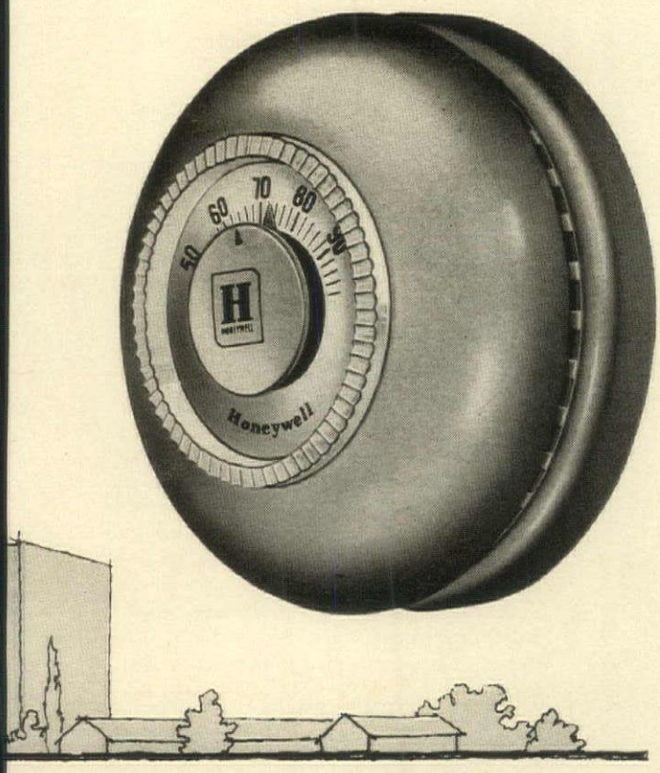
NEW THERMOSTAT BEAUTY AND EFFICIENCY–EASIER INSTALLATION

HERE'S the first completely new pneumatic thermostat since 1939. And one that blends beautifully into the contemporary interiors of modern commercial architecture. Henry Dreyfuss, world-famous industrial designer, was design consultant.

The Honeywell Pneumatic Round is as easy to use as it is pleasing to look at. But its most revolutionary features are not on the outside—but inside the removable metal case. New concepts and materials provide extraordinary sensitivity, precise modulation and instant response. So you get ideal comfort no matter what the building conditions or outside temperature might be. Eight major engineering improvements facilitate installation and maintenance. Yet the Pneumatic Round is rugged enough to withstand shock and tampering.

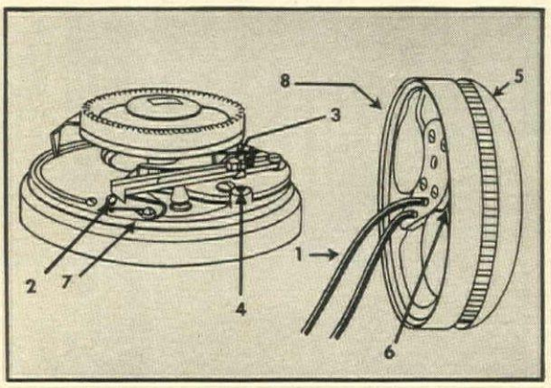
It's easy and it's inexpensive to replace old-fashioned thermostats with the Pneumatic Round when you modernize or decorate.

For present and proposed commercial buildings, for individual apartment or office temperature control, Honeywell's new Pneumatic Round offers the utmost in comfort, convenience and beauty—at the same price as ordinary pneumatic thermostats.



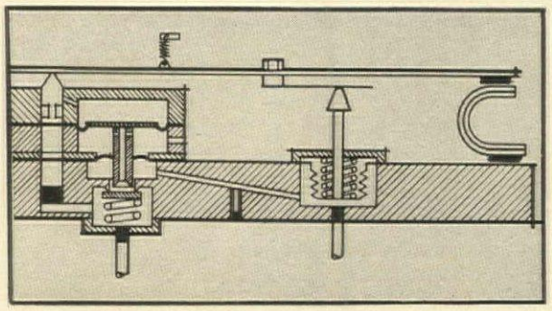
So beautiful, so easy to decorate

The simplicity and beauty of the new Pneumatic Round complement all modern interiors. The bronze-colored metal cover may be lifted off and painted to blend with the color of walls or furnishings. Setting and reading are simplified by one easy-to-read scale which serves both the thermometer and the setting indicator. Adjustable stops inside allow your client to limit the temperature range or lock the desired setting in place if he wishes.



So mechanically superior in detail

1. New flexible plug-in tubes will not crimp or collapse.
2. Quick calibration by simply turning screw with screwdriver.
3. Easily adjusted throttling range.
4. Simple plug-in gauge easily tests branch line air pressure.
5. Bronze-colored cover may be lifted off and painted to blend with walls.
6. Tight filter keeps air clean.
7. Simpler construction with fewer parts.
8. Flush or surface mounting. For modernization, a special adaptor plate covers hole left by old thermostat.



So precise and sensitive

The Pneumatic Round borrows the force-balance principle from precision industrial instruments to provide an automatic self-check on every change in the signal. It introduces a tiny new low-mass bimetal element so sensitive that it responds almost instantly to temperature changes. The result is the most precise modulation, the fastest response of any pneumatic thermostat on the market. And this means efficient working and living temperatures.

MINNEAPOLIS
Honeywell

First in Controls

112 offices across the nation

LETTERS

Continued from p. 90

ficient scope to develop standards for their use.

The third factor is the reduction of combustibles.

J. A. WILSON, *engineer*
Factory Mutual Engineering Division
Norwood, Mass.

Forum:

. . . We are pleased to see it.

E. W. FOWLER, *director of codes and standards*
National Board of Fire Underwriters
New York, N.Y.

Forum:

The article is well prepared and should be helpful in pointing the way to better fire protection for warehouses and industrial plants.

It is unfortunate that ". . . water damage of building contents, a major factor in fire losses . . ." has been linked with automatic sprinkler protection The fact remains that automatic sprinklers, in relation to their effectiveness in controlling fires, cause less water damage than hose streams. And it must be realized also that without some water damage the fire damage is usually total.

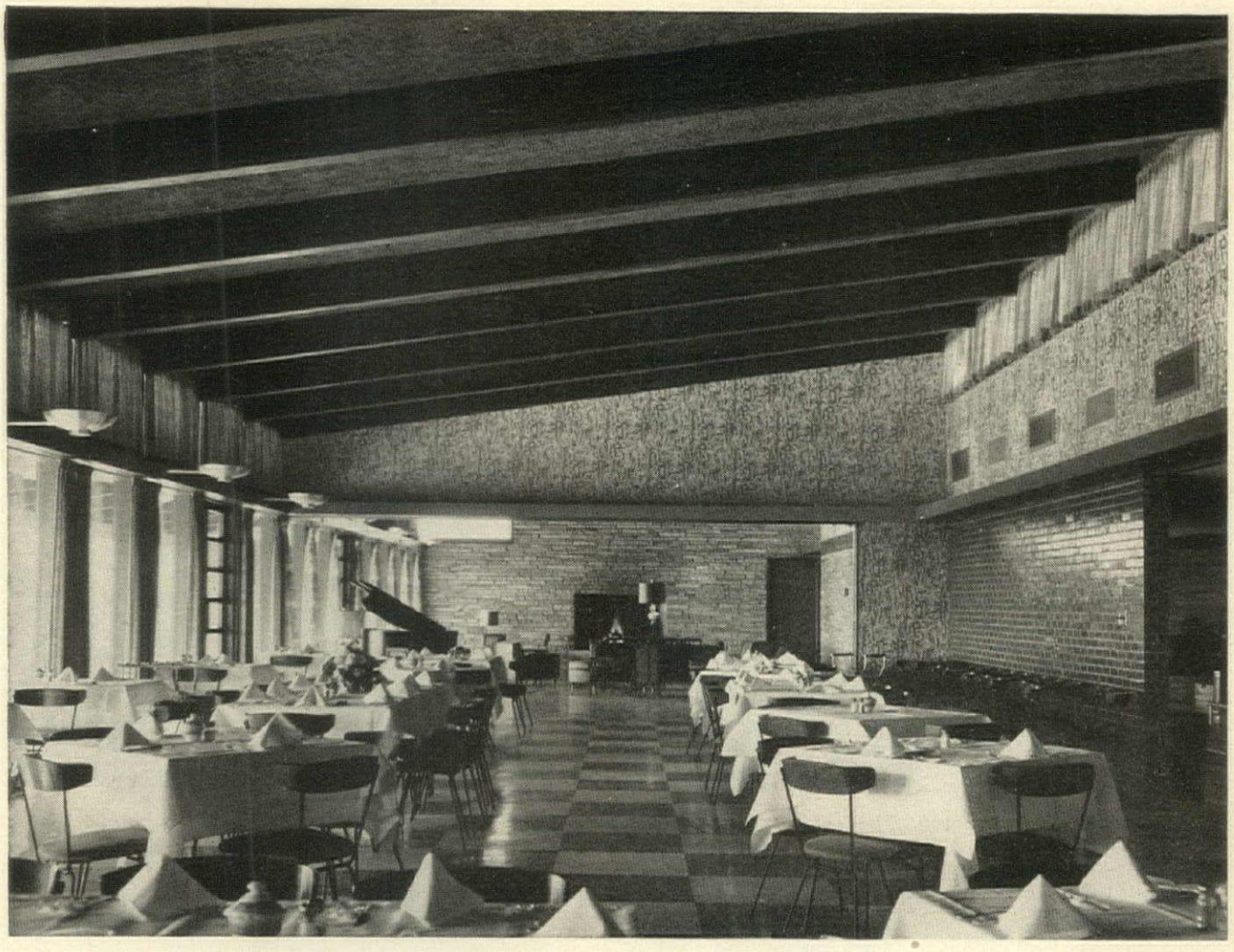
The blow torch test, such as that shown in the article, can be deceptive. Relatively few of the so-called fire retardant paints offer protection comparable with their cost. Those giving a thick vesicular coat when subjected to heat are doubtless the more effective ones.

In mentioning fibrous insulating and acoustic boards you have not differentiated between the noncombustible and combustible varieties. The latter can contribute to rapid spread of fire and the "flameproofed" varieties should certainly be considered with due caution "where the fire hazard is critical."

NOLAN D. MITCHELL, *consultant*
Washington, D.C.

continued on p. 99

• In its fire prevention article FORUM pointed to a picture of a 700,000 sq. ft. precast deck (above) as an example of poor planning for fire control—not because the deck was made of concrete, which is widely known as a fireproofing material, but because the huge roof was apparently unvented. FORUM is as red-faced to learn that its example was ill-chosen as it is happy to learn that this record-breaking expanse of precast concrete roof is vented as an aid to fire protection. The continuous vent appears as a broad line at the left of the picture.—ED.



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.

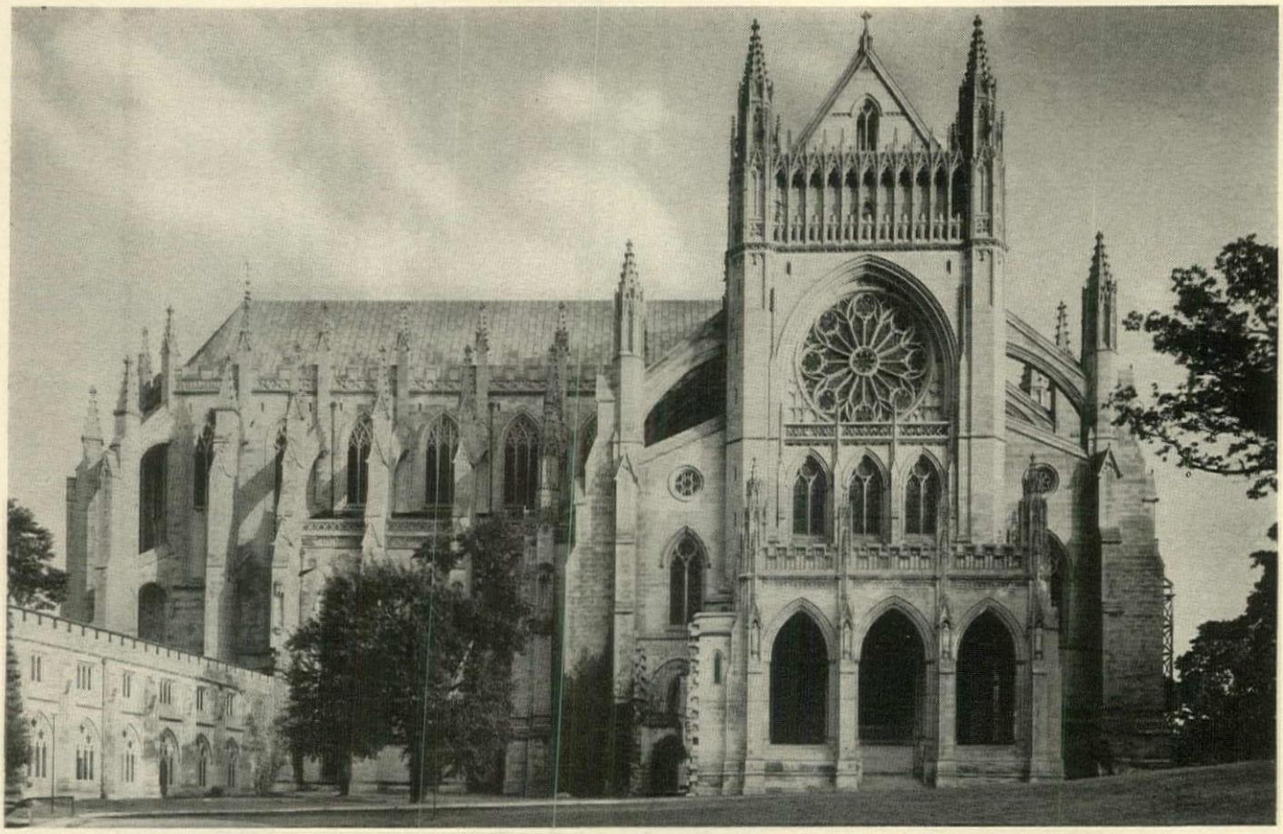
Ideal for irregular surfaces. As this material is sprayed on, it makes no difference how uneven or curved the surface is. No cutting, fitting, clipping or nailing is needed.

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®



Classic Gothic beauty. The foundation stone of the National Cathedral of St. Peter and St. Paul, Washington, D. C., was laid in 1907. Construction has been going on ever since. When completed, the great structure will be the world's sixth largest cathedral. Architect: **Philip Hubert Frohman.** General contractor: **George A. Fuller Company.** Monel roofing contractor: **J. Edward Linck Sheet Metal Works, Washington.**

On world's sixth largest cathedral:

Monel...for trouble-free roofing

This is Washington Cathedral... a picture in stone and Monel*.

Almost fifty years in building . . . yet not quite half completed. *Obviously, what becomes part of this beautiful Gothic structure must be as impervious as possible to the ravages of time and weather.*

That's why Monel nickel-copper alloy was specified in 1941 for the permanent roofs and drainage systems. For flat, standing and batten seam roofing . . . for flashings and gutters.

45,000 pounds of Monel Roofing Sheet already applied . . .

The reasons behind its choice? Monel sheet is stronger and tougher than structural steel. It cannot rust. Wear and abrasion, or extremes of heat and cold, do not faze it. Monel is truly a "life-of-the-building" roofing metal!

Write Monel nickel-copper alloy into your specifications for all types of buildings. Factories. Schools. Laboratories. Churches. Institutions.

And send for our illustrated booklet, "One Metal Roof." It contains full information on various roofing problems, and indicates the metal properties needed to solve them. Also includes data and service records on Monel Roofing Sheet, and many building photographs. Write for a copy today.

*Registered Trademark

The INTERNATIONAL NICKEL COMPANY, Inc.
67 Wall Street New York 5, N. Y.

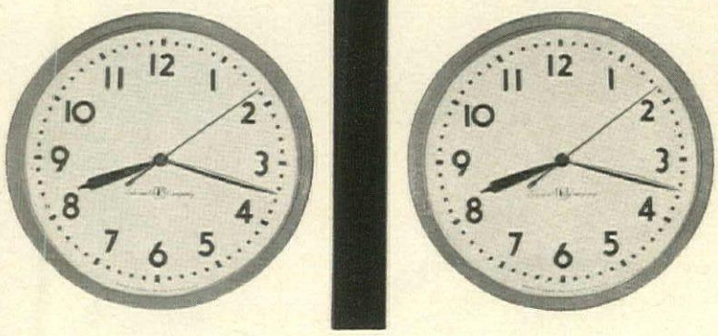
Easy to work. Installing Monel batten seam roof on a chapel of Washington Cathedral. Monel nickel-copper alloy is as easy to work as other roofing metals.

INCO NICKEL ALLOYS

50 YEARS OF *Nickel Alloy Progress* PIONEERED BY MONEL 1905 - 1955

Monel Roofing ..."*for the life of the building*"

Architects,
engineers,
school administrators
ask:
"are
master
clocks
necessary?"



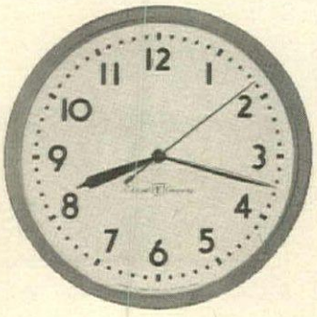
If clocks tend to coast, get out of step with each other,
you need a constant source of correction. You need a master clock.

If you use the Edwards Synchromatic Clock System, you do *not* need to rely on a master clock. Here's why: Every clock in the Edwards system is on the same circuit, receiving its power directly from the ever accurate central station. There can't be any difference between clocks while operating. There's no need for a master clock with its hourly correction.

If power fails, the Telechron motor stops instantly — the light weight rotor can't coast. When power returns all clocks start simultaneously. And here's an important advantage... the Edwards Synchromatic control will automatically correct all clocks immediately — no matter how long the power was off. No waiting for the next hour — and sometimes several hours. You have *constant* accuracy with an Edwards Synchromatic System.

A flick of the switch on the central control is all that's necessary to adjust for changes in time.

These are only a few of the advantages available — for more information about Edwards Clock & Program Systems write Dept. MH-11.



Synchromatic Clock Systems

EDWARDS *Company, Inc.*
Norwalk, Conn.
In Canada, Owen Sound, Ont.

LETTERS

Continued from p. 94

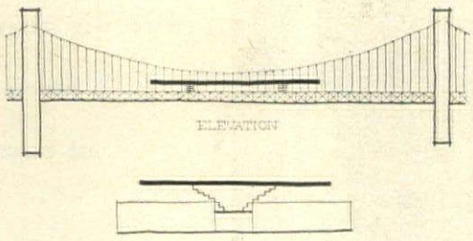
BROOKLYN BRIDGE

Forum:

Thank you for your article "What Happened to the Brooklyn Bridge" in the April FORUM (also AF, Aug. '55). We humans are too often foolish in allowing our lovely views to be obliterated. Usually it is by undergrowth along our highways. On Brooklyn Bridge by thoughtless renovations—and the view used to be grand. Let's get it back; here is how:

Erect, on the present structure, a new hollow, square sightseeing platform. This platform to be accessible by steps from the present footwalk. To be located above the present electric wires and lights, over the traffic lanes, but below the Roebling structural cables—near enough to the extreme bridge sides so as to have a good sightline of the panorama (see sketches below). Cost? Insignificant!

GREGORY COOPER, *architect and engineer*
Wayland, Mass.



• But, the bridge does not look like that—Roebling's cables come down to the bottom chord of the floor truss. Hence Reader Cooper's platform would project above the bridge structure and seriously detract from its beauty.—ED.

PHILADELPHIA'S REDEVELOPMENT

Forum:

Your article on Philadelphia's Redevelopment (AF, July '55) is a magnificent report, not only in its content but in its presentation.

I would like to get 50 copies of this report in order to bring it to the attention of the leaders of our community herein Richmond in the hope that some, if not all, of the farsightedness in what Philadelphia is doing might stir them.

Congratulations on the consistent high level of your campaign on urban redevelopment.

WILLIAM WISE BOXLEY, *president*
Everett Waddey Co.
Richmond, Va.

FORUM:

Congratulations for having captured in your exciting article the real meaning of Philadelphia's renaissance.

ROBERT T. MCCRACKEN, *president*
ROBERT T. MCCRACKEN, *chairman*
Executive Committee
Greater Philadelphia Movement
Philadelphia, Pa.

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

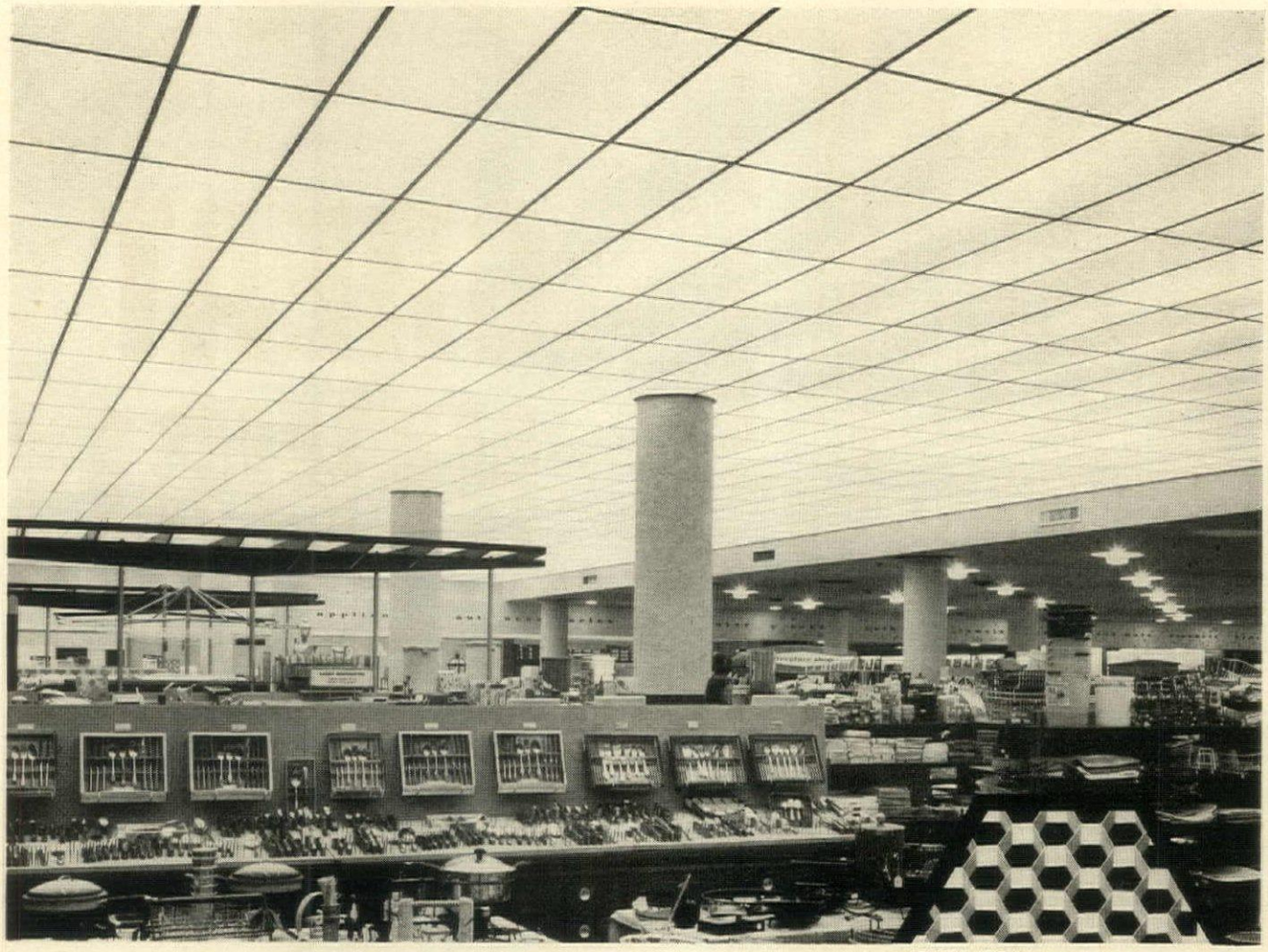
First in the moderate-cost field with:Truss-embossed hinges top and bottom; rigid "Multi-V" construction assures pantograph action throughout. Cornice, nylon trolley wheels, metal hardware, textured vinyl fabric. Specify for homes, institutions, hotels, apartments, schools, industrial or commercial projects. 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

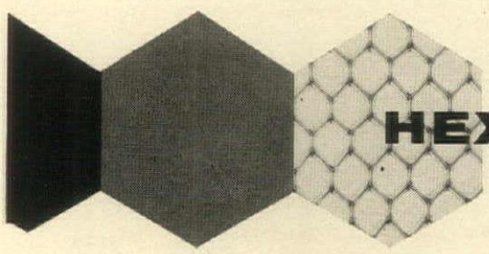


HONEYLITE (shown above actual size) installation is simple, inexpensive. For full ceilings, aluminum T-bars are used to suspend HONEYLITE panels below lighting units. HONEYLITE is also ideal for use in troffer diffusers and recessed lighting fixtures.

Gimbels builds for the future with HONEYLITE*®

For beauty, for life-long economy of operation, and for **sales**—Gimbels has installed **HONEYLITE** luminous ceilings throughout its new Cheltenham, Philadelphia store. In the luxuriant, shadow-free light of a **HONEYLITE** ceiling, merchandise moves **faster** because it looks **better.**

But there's more to **HONEYLITE** than meets the eye! Its thousands of hexagonal, aluminum honeycomb cells break up sound so effectively that a **HONEYLITE** ceiling has a **noise reduction coefficient of .46!** This means a luminous ceiling of uninterrupted beauty—a ceiling that minimizes the need for separate acoustical installations that add to cost and detract from appearance. Before you build or redecorate, find out more about **HONEYLITE,** the UL approved, all-metal ceiling that transmits light with 95%-plus efficiency. . . permits free circulation of air around lighting units . . . leaves sprinkler heads unblocked for immediate operation in case of fire. Additional information upon request.



* HONEYLITE LIGHT-DIFFUSING ACOUSTICAL ALUMINUM HONEYCOMB CEILINGS ARE A DEVELOPMENT OF

HEXCEL® PRODUCTS INC.

DEPT. A. 951-61ST STREET
OAKLAND 8. CALIFORNIA

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.

ADVERTISING CORRESPONDENCE should be addressed to the advertising director, ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y.

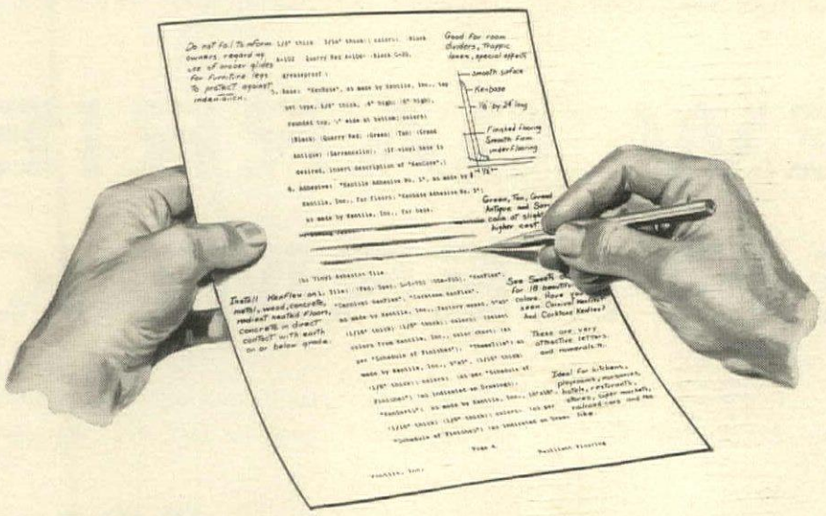
TIME INC. also publishes TIME, LIFE, FORTUNE, SPORTS ILLUSTRATED and HOUSE & HOME. Chairman, Maurice T. Moore; President, Roy E. Larsen; Executive Vice President for Publishing, Howard Black; Executive Vice President and Treasurer, Charles L. Stillman; Vice President and Secretary, D. W. Brumbaugh; Vice 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

KENTILE introduces...

AN ENTIRELY NEW CONCEPT IN A SPECIFICATION GUIDE

Saves You Time, Trouble, Typing and Temper!



Just mark off section or paragraphs you need, editing to suit the requirements of the particular problem at hand. Then . . . give to your typist. That's all! Lots quicker and more efficient than the old way.

At last, guide specifications that take into consideration the time and practical problems of the specifier. The new Kentile Specification Guide! 16 pages of specification data printed on one side of expendable paper so that you can modify and edit sections and paragraphs according to your requirements. Covers the full line of Kentile resilient floors, wall bases, and the like—with appropriate Federal Specifications numbers where applicable. And more! Informal marginal notes and comments which advise you on composition, care, colors, and the like — as if a Kentile technician were present with you!

Let Kentile send you as many copies as you can use — without charge or obligation. And use 'em — you can always send to Kentile for more! Fill and mail coupon today.

America's largest manufacturer of resilient floor tiles

KENTILE, INC.

Kentile, Inc. – Sales Promotion Dept.
58 2nd Avenue – Brooklyn 15, N. Y.

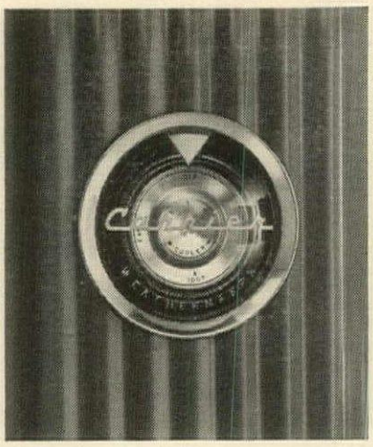
Please send_____copy(ies) of the new Kentile Specifications Guide.

Name_____

Firm_____

Address_____

City_____ Zone___ State_____

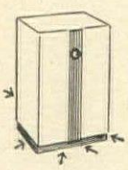


New Golden Aerodial. It's 22-karat gold-plated and beautiful . . . the focal point and control center of the new Weathermaker. Lucite dome hinges over main control, thermostat knob and reset button.

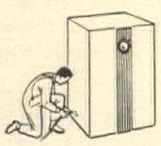
the all-new, all-around air conditioner designed for lower installation costs!

NEW CARRIER WEATHERMAKER

Here's the first self-contained air conditioner that you can apply to a variety of plans without increasing installation costs. Check these exclusive new features designed for fast, neat, low-cost installation:

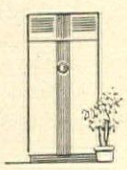


ADAPTABLE five-way air return. Where plan calls for ductwork, air returns through bottom or back of unit. Or matching return air intake base can be added so air returns at front or sides.

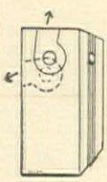


PRE-WIRED electrical center. Unit is pre-wired at the factory. All connections are made in one outlet box on left side of unit. Accessories can be wired to special terminal block eliminating complicated internal electrical work.

EXCLUSIVE solid front panel. No return air openings mar its appearance. You can locate furniture directly in front of unit without danger of dirt or drafts. Snap locks release panel.



EXTRA-LARGE add-on plenum. Matching plenum is easily mounted for installations not requiring ductwork. Hinged grille panel is counterbalanced for easy access. Full directional control of air flow.



ALTERNATE fan discharge. L-shaped fan platform easily inverted for rear discharge where headroom is low. This saves costly alteration of the cabinet. Saves space and ductwork, too.

BUILT-IN PROVISION for heating coil. Unit need not be altered to add matching heating coil inside the unit. Coils use steam or hot water to heat same area cooled by unit. Can be thermostatically controlled.

New Styling Concept

New Carrier Weathermaker looks equally handsome with or without its plenum. Its clean lines and iridescent baked-enamel finish harmonize with any interior.

WANT COMPLETE DETAILS AND SPECIFICATIONS? We'll be glad to see that you get all the information you want on the new Weathermaker. Just call your local Carrier Dealer or Distributor. Or mail the coupon at the right.

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

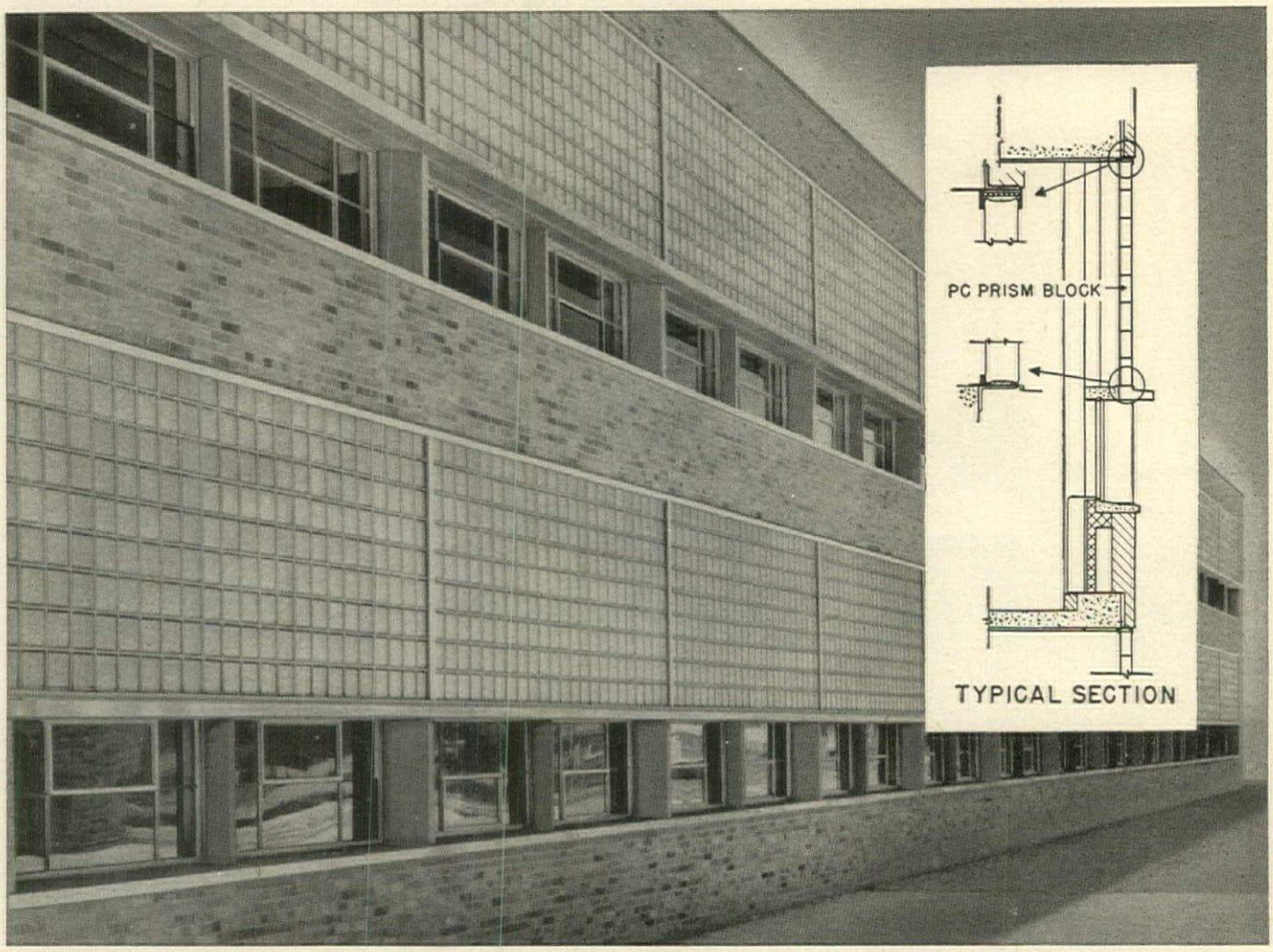
I'm interested in the application possibilities of the new Weathermaker. Please send me complete details and specifications.

Name_____

Firm_____

Address_____

City_____ Zone_____ State_____



Edward Everett Elementary School, Detroit, Mich.

Architect: Giffels & Vallet, Inc., L. Rossetti, Associated Engineers and Architects, Detroit.

freedom of design with PC Glass Blocks

Any building material, improperly used, can create a dull and uninspired result, whether it be brick, stone or glass blocks. The essential ingredient in any design is the imagination of the architect. And, in the case of glass blocks, this need be the *only* limiting factor.

You don't have to protect a glass block panel against sunlight and the weather—and thereby spoil the function and appearance. You don't have to clutter the facade with overhangs – functional glass blocks have built in daylighting control. Your client will not be concerned with maintenance problems—glass blocks require no maintenance.

The school building in the picture is an interesting example of imaginative design. Notice the neat flush panels of PC Glass Blocks. Then notice the deeply recessed vision strips that are self-shading for high sun angles. The total effect is striking!

In the last few years, the PC Glass Block line has been expanded until you can now choose a block for every conceivable application. You can think in terms of either 8″ or 12″ functional blocks, including the new Suntrol Blocks for high brightness areas. Why not think seriously about using this versatile product when planning your next project? See our catalog in Sweet's or write Pittsburgh Corning Corporation, Dept. AC-115, One Gateway Center, Pittsburgh 22, Pa. *In Canada: 57 Bloor St. W., Toronto, Ontario.*

PC Glass Blocks

PITTSBURGH PC CORNING®

ALSO SKYTROL® AND FOAMGLAS®

BELLUSCHI AND SKIDMORE, OWINGS & MERRILL, ARCHITECTS.

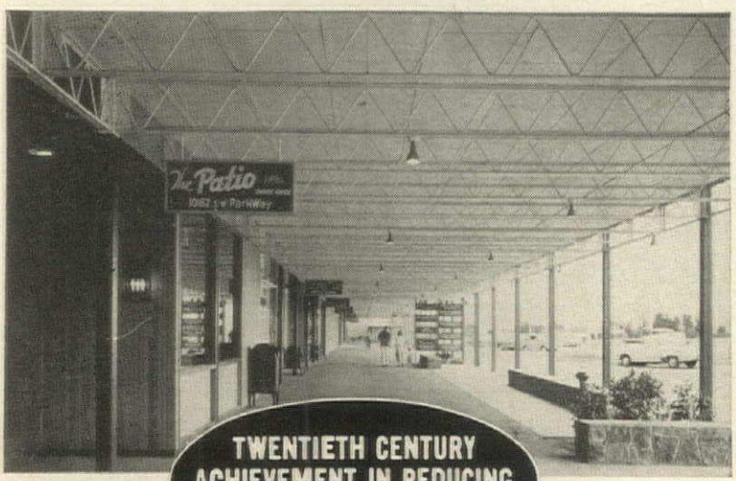
HENRY M. MASON, CONTRACTOR.

CEDAR HILLS SHOPPING CENTER, PORTLAND, ORE.

SO SWIFT IS THE PACE OF PROGRESS

V-LOK Steel Framing

BROUGHT AN IMMEDIATE ARCHITECT AND BUILDER RESPONSE

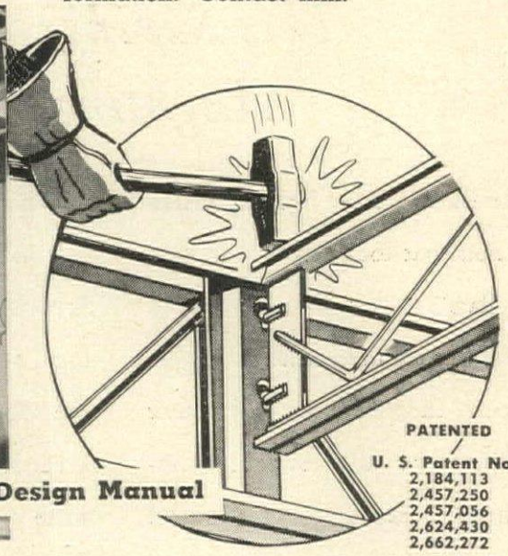


TWENTIETH CENTURY ACHIEVEMENT IN REDUCING CONSTRUCTION TIME

The driven joint — the V-LOK method of assembling an entire steel frame in days instead of weeks IS PROGRESS — unparalleled in Steel Construction.

To have the frame up and the roof covering the entire operation in a matter of days, puts occupancy months ahead of ordinary methods.

There's a Macomber Representative near you to give you complete information. Contact him.



PATENTED

U. S. Patent Nos.
2,184,113
2,457,250
2,457,056
2,624,430
2,662,272

Write for Architects' and Engineers' Design Manual

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

This Savings Bank SAVES on ...Lighting by **LITECONTROL!**

Here's a recessed lighting installation that looks like "a million dollars" — yet it's *economical* to buy, install and maintain! Doors open independently of outer frames for handy servicing. Holophane lenses efficiently control and distribute all possible light — from lamp bulbs to the working area. Lenses are easy to keep clean and will be in style a long time.

Wherever "things look better" . . . in stores, offices and banks, LITECONTROL fixtures are providing "More Light and Looks for the Money." See your local LITECONTROL representative or write us for his name.

INSTALLATION: Beneficial Saving Fund Society, Philadelphia, Penna.

ENGINEER: George T. Anderson, Philadelphia Electric Company

ELECTRICAL CONTRACTOR: Joseph S. Miller, Philadelphia, Penna.

FIXTURES: Litecontrol No. 12FVS — 300 Watt recessed lens boxes

CEILING HEIGHT: 10′ 0″

SPACING: 9′ 0″ on centers, Public Area; 7′ 0″ on centers, Work Area

FINISHES: Walls, light green. Ceiling, matt white

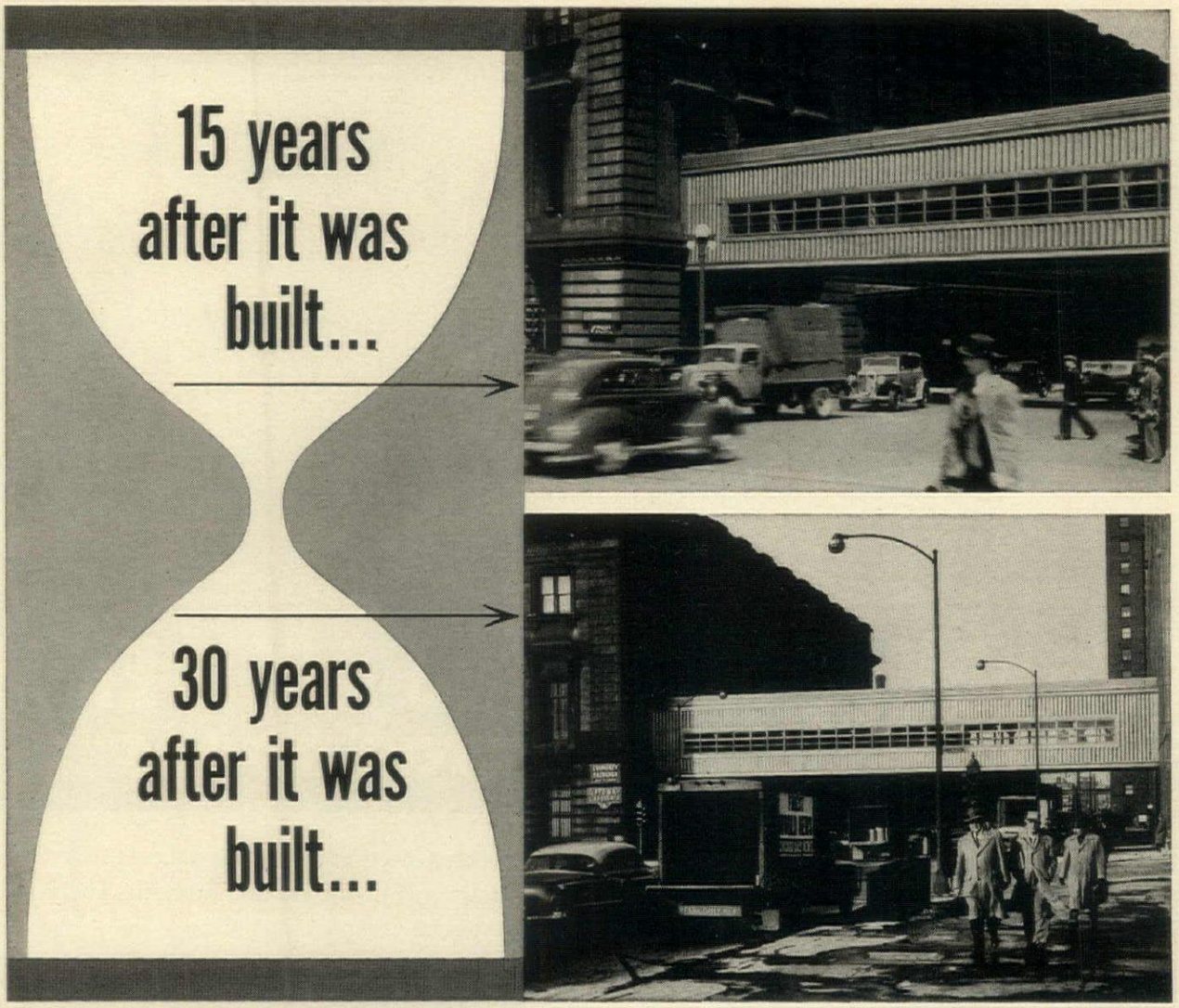
INTENSITY: On counter deal plate, 57-60 footcandles
Teller's counter, 58 footcandles
General area, 48 footcandles

LITECONTROL *Fixtures*

KEEP UPKEEP DOWN

LITECONTROL CORPORATION. 36 Pleasant Street, Watertown 72, Massachusetts

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS



This STAINLESS "Covered Bridge" is *EVER-NEW*

"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. A1A File No. 26D.
3. "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Write for Details

Address Dept. B-71

The top photograph of the AL Stainless Steel-surfaced concourse that connects the Chicago Daily News building with the North Western station was taken about 1939-40. The lower picture was made early in 1955. There's no discernible change.

Another 30 years—50 years—100 . . . the bridge's stainless shell will still be just as good as new. No one knows *how long* AL Stainless actually will last, but it could be for centuries, if required. And all the time it requires no particular maintenance, no painting or refinishing—just occasional washing to remove the grime that isn't carried away naturally by wind and rain.

No other architectural metal can match stainless steel in these properties. Not one can last as long, cost as little to maintain, and prove as economical in the long run.

● Use AL Stainless in *your* projects, for maximum service and lasting beauty, both in exteriors and interiors. Ask us for any help you need. ***Allegheny Ludlum Steel Corp., Oliver Bldg., Pittsburgh 22, Pa.***

W&D 5654

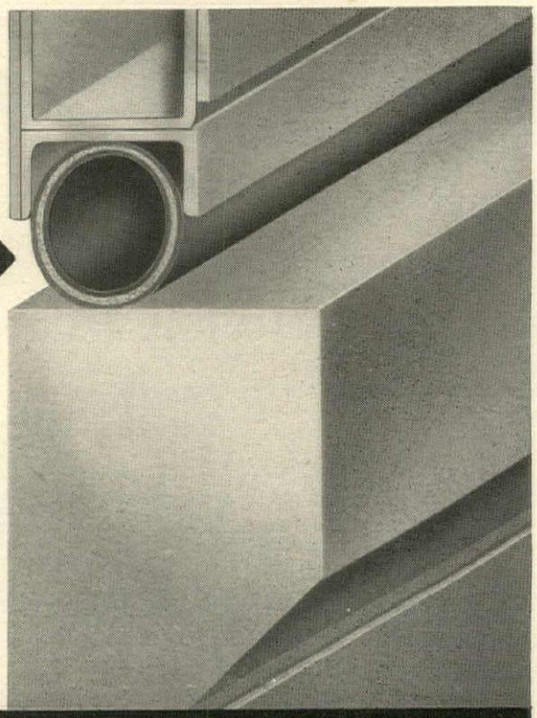
For Stainless Steel in ALL Forms—call

Allegheny Ludlum

Warehouse stocks carried by all Ryerson Steel plants

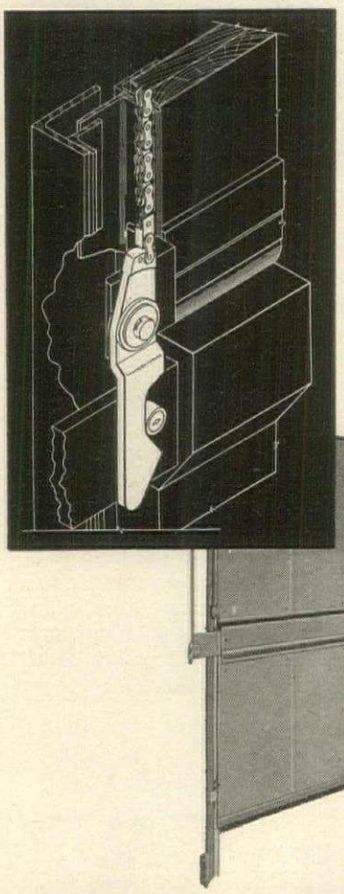
AL® STAINLESS STEEL

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

MATICO Confetti®

PAT. PEND.

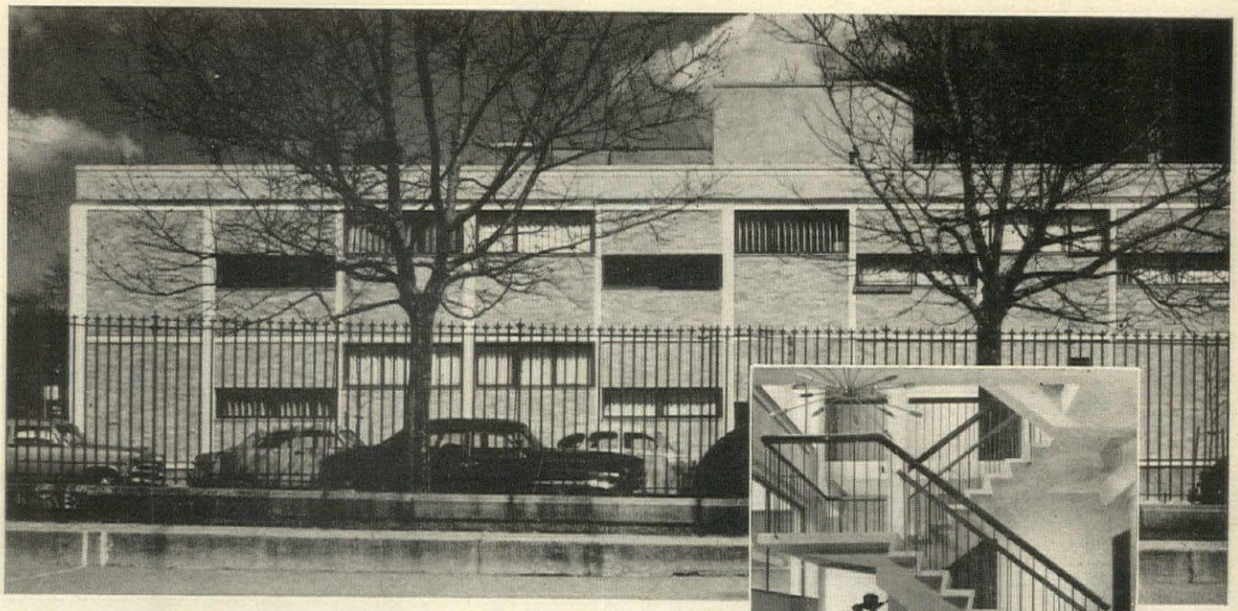
meets every hospital flooring need
— with the rare "plus" of cheerful styling

Upper Manhattan Medical Group, Health Insurance Plan Clinic New York, N. Y.

Associated Architects: George Nemeny, Abraham W. Geller, Basil Yurchenco

General Contractor: Adson Builders, Inc.

Flooring Contractor: Sidney Fenster, Inc.



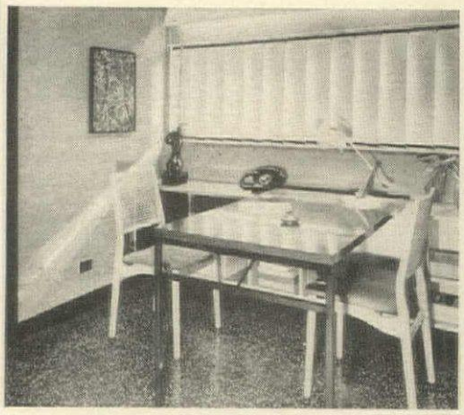
Widely acclaimed, New York's Upper Manhattan Medical Group Clinic integrates the highest standards of architecture, function and decor in an ideal union . . . in which MATICO Confetti tile is an essential specified element.

In these light and lifting circulation areas the Confetti floor of white with black mottle contributes to the air of buoyancy and lightness. Even under heavy traffic conditions Confetti's bright colors last and last.

It's easy to see why more and more architects are specifying MATICO Confetti Tile Flooring for hospital projects.

Basically, it's because Confetti satisfies every need, every rigid requirement of the modern hospital. First, it is sanitary, durable and quietly resilient. But more than that, it is also fire-resistant and low in cost for both installation and maintenance. And, in addition to all these utility values, Confetti's gay dots-of-color styling lends new charm and cheer where past custom dictated hygienic coldness.

— Good reasons, all, why you can specify Confetti tile flooring not only with confidence, but with justifiable enthusiasm, in your next hospital project as well as other types of projects.



In consultation rooms for doctors and patients Confetti was specified also — this time in black with white mottle. (In addition, Confetti is also available in nine other color combinations).

Architects planned the pharmacy as a "display piece" near the Clinic's entrance, where it can be seen through a wall of glass. Here, too, Confetti in white with black mottle was specified.

In this intimate waiting room, the decor is one of colorful furnishings, restful lighting and more of MATICO'S airy, bright Confetti flooring.

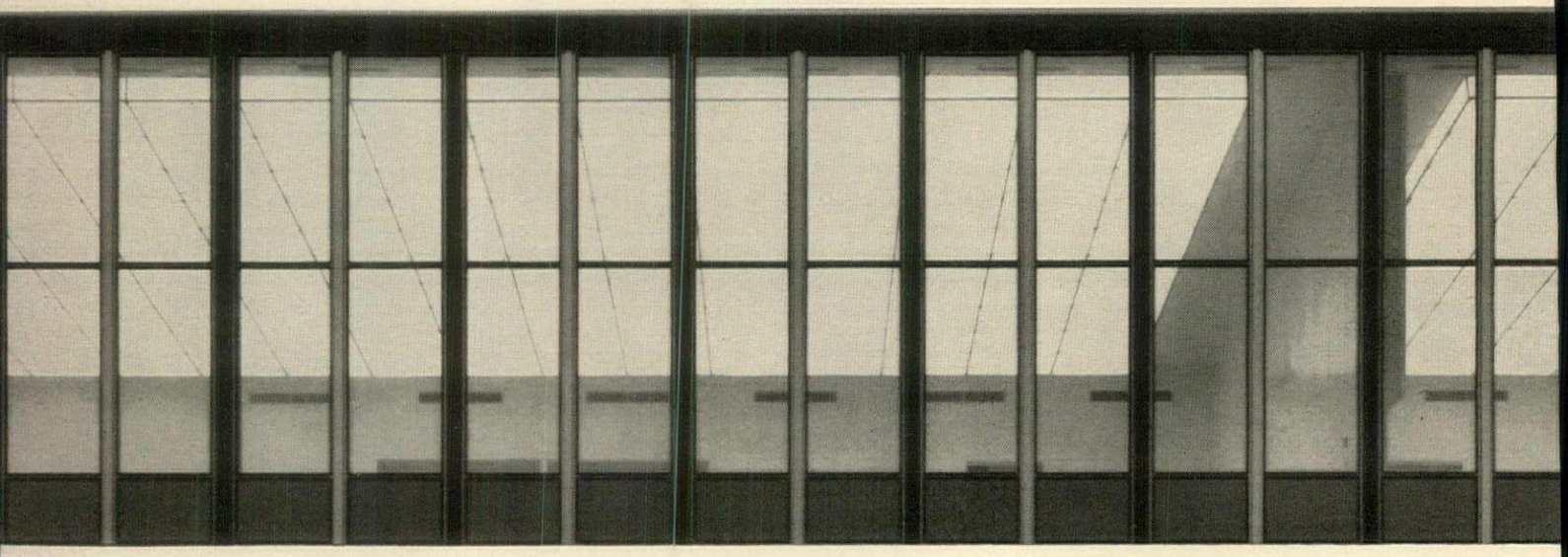
MASTIC TILE CORPORATION OF AMERICA

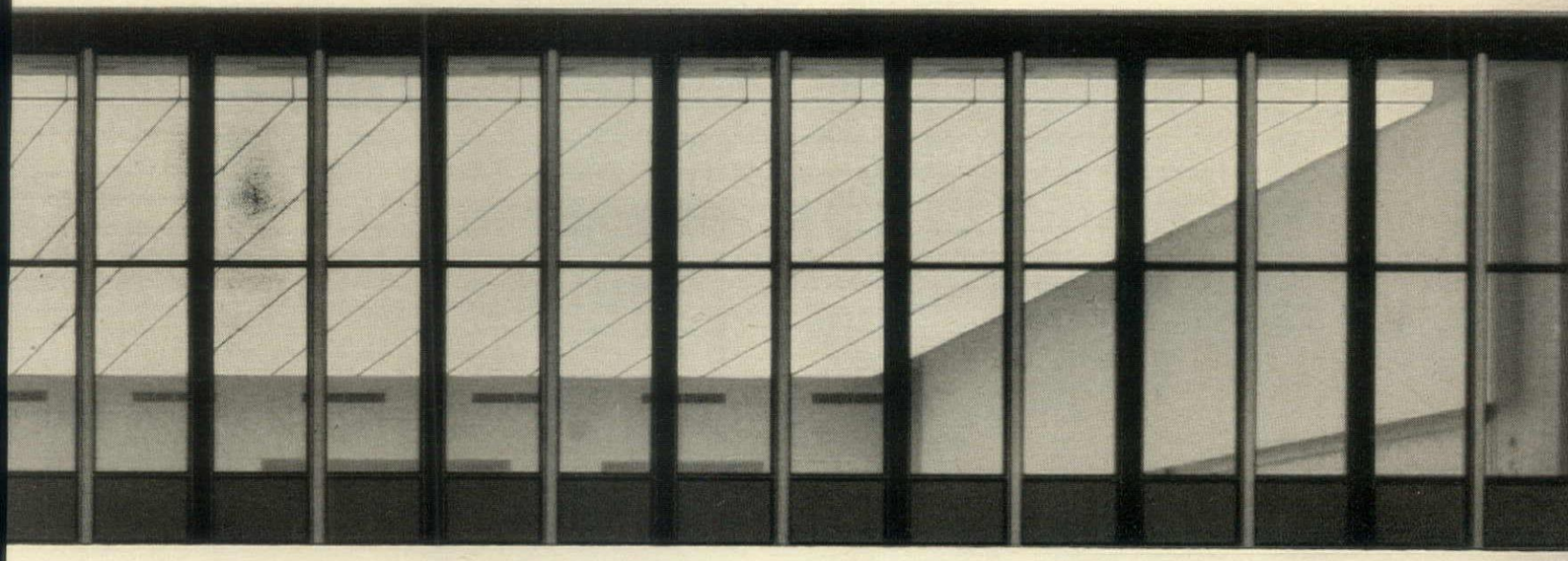
Houston, Tex. • Long Beach, Calif. • Joliet, Ill. • Newburgh, N. Y.

Confetti • Aristoflex • Parquetry • Maticork • Asphalt Tile • Rubber Tile • Vinyl Tile • Cork Tile • Plastic Wall Tile

QUALITY CONTROLLED MATICO PRODUCTS Guaranteed by Good Housekeeping

5A515





The plane of light seen from the outside of this building is a good example of Wakefield Geometrics in action. Here is a critical appraisal area where optimum viewing conditions are obtained by sloping the ceiling at a 6° angle from window to back wall. This ceiling is an adaptation of Wakefield Sigma. Our Architects' Development Department is prepared to modify Wakefield Geometrics to meet your special needs. Write for your copy of Catalog Number 55. Case Study Five in a Series.

The Wakefield Company, Vermilion, Ohio
Wakefield Lighting Limited, London, Ont.

Specify **STEELCASE** . . .

whenever you want to make a good office . . . a little better

Building fine furniture for the office has been the honored task of Steelcase for 44 years. By featuring furniture which is a combination of functional design, space-saving engineering and outstanding beauty, Steelcase has compiled a Library of Famous Users which, as a cross-section of successful American business, is unsurpassed in the entire industry. As a matter of fact, whenever *more than price* is a factor . . . when quality, efficiency, convenience and styling are of major importance . . . *Steelcase is consistently first choice.*

May we help?

Our complete Office Planning Layout Service can relieve you of many details surrounding proper office furniture layout. Merely write Department K. Also available . . . a factual, beautifully illustrated reference file. Ask for "Sunshine Styling".

1955 Steelcase installations include major offices for
Caterpillar Tractor Co. • Ford Motor Company • General Mills
Jewel Tea Company • Lumbermens Mutual Casualty Company

STEELCASE INC

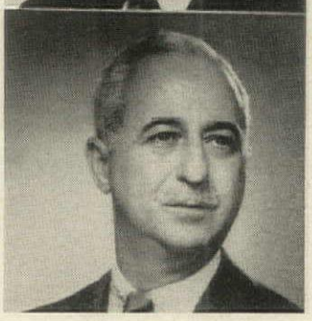
GRAND RAPIDS, MICHIGAN

Authorized dealers in principal cities throughout the country

In Canada • CANADIAN STEELCASE COMPANY, LTD. • Toronto

architectural **FORUM**
the magazine of building

Men behind the blueprints in this month's FORUM



ARCHITECT: I. M. Pei has dedicated himself to raising the design standards of speculative building. For this purpose he could not have allied himself with a more receptive, more productive client: he works exclusively for Realty Tycoon William Zeckendorf, one of the industry's biggest thinkers and one of architecture's most active patrons. The latest product of their imaginative teamwork is the striking cluster of commercial buildings in Denver known as Mile High Center (p. 128).

CLIENT: Frank H. Neely (top left) and Richard H. Rich both joined up in 1924 with an Atlanta institution, Rich's, Inc., the great department store of Richard's Uncle Walter. Smart people said that the company's then-new store was in the wrong place, too far from Atlanta's newer uptown shopping section. But standing pat where they were, the vigorous new heads of Rich's attracted Atlanta to them, plus the shopping of a large surrounding area. When they decided to build a branch store in Knoxville, Tenn. they picked another out-of-the-way site and formed a team of architects and consultants to devise a building that would draw the crowds (p. 152). By now, respect is given the unorthodox planning of these two men whose indefatigable work in civic affairs and whose habit of guiding educational, eleemosynary, and hospital organizations puts them close to people.

LIGHTING CONSULTANT: Abe Feder is best known for his stage lighting successes on Broadway (his biggest: Sonja Henie's Ice Review; his latest: "Inherit the Wind"), but he has also had an important part in lighting many buildings. His biggest: the UN headquarters in New York; his latest, Rich's Department Store in Knoxville. At Rich's he used theatrical techniques to focus the city's attention on the store's off-beat location and to spotlight its colorful walls of glazed brick and porcelain enamel steel. To maintain a lively interest in the architect's use of new materials, Feder put tinted filters in his spots by which he can change the building's colors at the flick of a switch.

ARCHITECTURE IN AMERICA—PART III

Another in a series of articles
exploring where architecture stands in America
and what is happening to change its future

THE MANUFACTURER'S ROLE

Chemistry has changed his materials, technology has revolutionized his production, but his complicated distribution system is still based on hydra-headed customers hard to reach, hard to align

Prepared by FORUM's editors with the aid of Jerry Tallmer

Granite helped build the great halls of Egypt; brick shaped the ziggurat cities of the Euphrates; colored glazed tile flashed back the sun from the later Persian masonry domes; marble cast shadows from the Hellenic sun of the Parthenon; concrete held together the vaults of Roman baths; and French sandstone accepted the intricate carving of figures of saints fronting the cathedrals. It is impossible to think of an architecture without its characteristic materials, whose manufacturer is in the most intimate way a participant in design.

In many ways the building industry manufacturer resembles other manufacturers, but there are important differences as to his basic materials. A building producer is habitually most conservative in choosing them. Yet even he is no longer content with the simple and the natural, and increasingly he "designs" his basic materials to specifications, producing synthetic ones. When a British scientist asks "what single molecular structure would best serve all the purposes of a wall," he puts the modern attitude in its radical form. That is the way chemical technology works, no matter what industry it works for. We shall see that this transformation, coming belatedly in the building field, is not without major friction (p. 119).

When it comes to the actual fabrication (i.e., preassembly) of building parts, differences between building and other industries—especially our typical mass production consumer industries—stand forth.

First, this is because the building enterprise is so big and complex that no single manufacturer produces large buildings complete. Not even the "package builders" who take an order for a complete chemical plant dominate their suppliers of parts the way General Motors first dominated and finally absorbed makers of batteries, magnetos, motors, wheels, transmissions. At a time when buildings themselves are ever more complex and have to be closely integrated, the manufacturer is still part of a federation, not a combine; he fits in his piece with pieces by other independent producers, each of whom makes what pleases him and in his own good time.

Second, each building enterprise is separate and individual. One might say simply that this is a "capital goods" industry; but it is not so reducible to mass production principles as some of these have been. For example, in Diesel locomotives, General Motors was able some years ago to effect a radical simplication—and cost reduction—by insisting that every railroad buy the identical model, no modifications allowed. At one stroke this put traditional steam locomotives out of business and the railroads on their feet. GM could do this because the locomotive, intricate in its make-up, was nonetheless simple in purpose. Buildings are complicated in *both.*

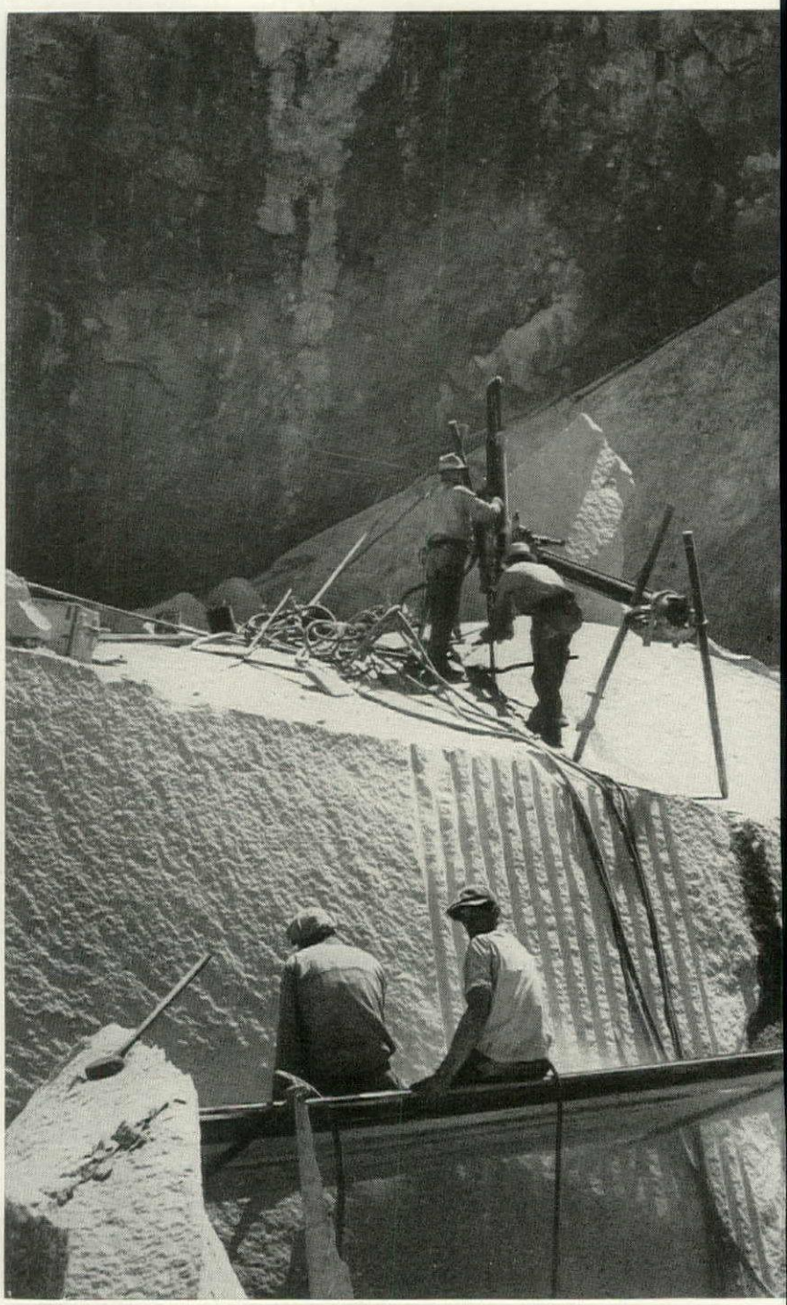
Third, the building project is complicated still further by esthetics and emotion. In other objects that they use, most people are content to choose within a limited range of up-to-date styles and models; but the places they live and work in are deeply personal, and architecture is an art.

Fourth, and equally obvious, the final assembly line

Strip mill, at US Steel's new Fairless plant, illustrates the newer type of "synthetic" material represented by metals and plastics. But building uses only 16% of steel output.

*Photo opp.: Andreas Feininger—*LIFE

Natori—Black Star



Marble being quarried at Danby, Vt. Traditional materials producers have tended to go along with traditional architecture; but marble has begun to adapt itself to the future too.

Walker Evans

Clay kilns in Midvale, Ohio turn out sewer pipe. In their basic processes these industries go back into time immemorial. They have a close responsible knowledge of architectural problems.

for the building product is not in the shop but under the sky, scattered among thousands of different sites. Not only is the final assembly out of the manufacturer's control, but it is beset by whole armies of local barons. Each citadel he seeks to conquer has its own client, architect, engineer and lender, who at least join in wanting a building; but on top of that each site has also its own code authorities, labor bosses and building inspectors who hold pistols to his head, throw sand in his gears, and make him load his product with useless baggage.

The basic materials war

Among suppliers of building's basic materials, a definite evolution is on the way, as we have said, from simple, natural, traditional materials toward complex synthetic materials man-designed and man-made. At the moment this divides producers into two parties, "traditional" and "modern," with a hot rivalry between the two. The traditional ones are mainly the quarrymen and kiln masters whose materials our story started off with. One strong characteristic is that these producers belong to the building industry all alone and by itself. (Nobody uses a brick for anything but building.) Their intimate contact with building goes back in some cases literally millions of years. A safe working knowledge of good construction is in their bones, along with some historical inkling of what architecture is all about. They care about building, it is their whole job.

The current battle over materials to be used in the Air Academy has brought to light other important characteristics of these producers. The reason masonry interests were able to make so strong a *political* maneuver was partly that they and their trade unions—numerous in membership and votes—work hand in glove. Fascinatingly enough, they were not content with arguments based on costs: they stood forth boldly for the idea of *traditional architectural style.* (In such a style the use of their materials would be assured.)

In this contest many were surprised that the rivals of traditional masonry, the suppliers of the modern synthetic materials of steel and glass, remained so silent; but reasons are not hard to find. One is that bulk producers using complicated processes of heat and chemistry have to be, by nature, "Mr. Big"—and Mr. Big must always proceed politically with great care. The other reason reaches deeper: these producers do not belong to the building industry alone. Building takes only 16% of the output of steel.* As recently as 1939 giant Alcoa sent to building only 8% of its aluminum—signficantly the proportion had risen close to 25% by 1955. Plastics serve every conceivable industry beside building (acknowledgedly building's share is growing fast).

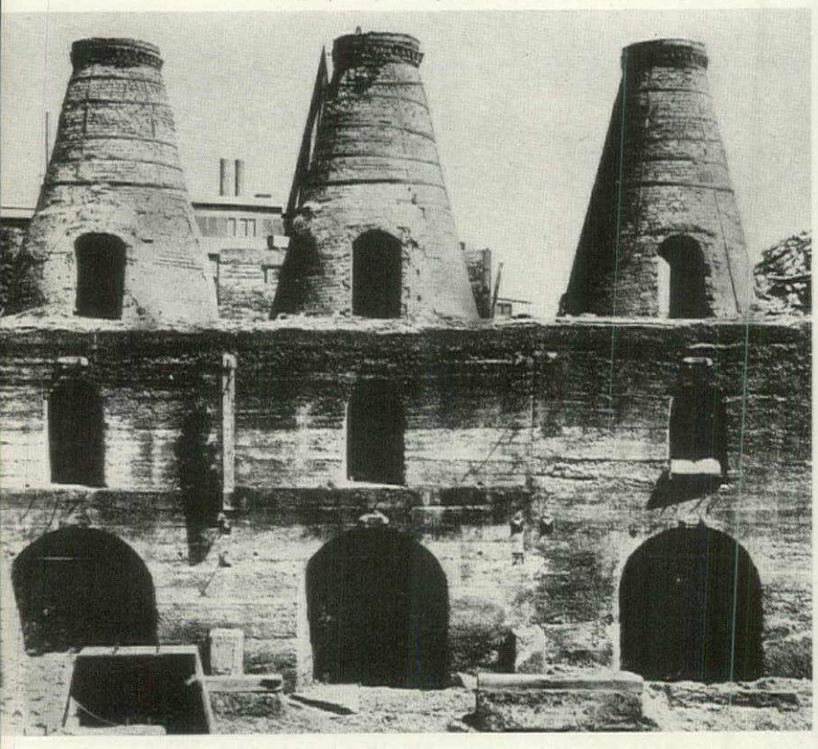
An anecdote illustrates the difference in psychology involved. Glass-loving Architect Mies van der Rohe tells how he had long been hounding plate glass manufacturers for a product more closely tailored to certain building requirements. Finally this year a big maker talked with Mies about a metal-infused gray colored plate that would retard heat (and sky glare, too) far more than any plate made today. But, said the maker, "Where do we go from here? Your 38-story building will take just two days' production." The architect cracked back, "Must I solve your marketing problems, too?" Nonetheless, this manufacturer's problem is real for, believe it or not, even though this is the "glass architecture" age, the proportion of current plate glass output that goes into building is not more than 10%. Some 70% goes into mass-produced cars. Consequently for building to command the same interest, the same research, the same participation from such a multi-industry supplier as mass industries receive, the powers of a Mies would have to be multiplied many, many times. There is no sign that the architectural profession, the only group whose design interest goes all across the board, has yet dreamed of organizing itself to exercise such influence.

The fact that the new synthetic materials are not so organically tied in with building helps to account also for one of the characteristics of modern architecture most often criticized: its tendency to get prematurely shabby. Where modern materials are used in modern design there is lacking that traditional wisdom about a structure which must stand against heat and cold, sun, storm, sleet and snow. Relying on theory and calculation, and with frequent change, the architect and his materials producer must somehow put *more* care, more planning, into the result—and, one must add, more heart.

Returning to the traditional basic materials of building, chiefly masonry, even there the conservative attitude now controls only one wing; for another wing has decided to move with, not against, the age. They want to serve modern architecture and not only traditional. So the marble producers have begun to promote their own "thin curtain wall" and the Structural Clay Products Institute has its new research under Robert Taylor devising new, lighter structural products more quickly assembled and with less labor. Even cut stone may well come to be put together, in the shop, in major panels like prefabricated concrete. The point is not that nature's own built-in furnaces may prove to be pretty good and cheap after all (stone is naturally

* 15.7% to be exact, according to Standard & Poor's.

*Photos: (below) courtesy Portland Cement Assn.; (right) J. R. Eyerman—*LIFE



Cement, as old as Rome and as modern as tomorrow, was first made as "Portland" cement in dome kilns (left) of David O. Saylor in Coplay, Pa., in 1871. Modern rotary kilns in California are longer than football field. "Today even natural materials must be handled like synthetic ones."

fused by heat and pressure as the structural bones of the earth itself) but that *every* basic material of building must increasingly be shaped and constituted to meet *performance* specifications, thought out in advance. Even "natural" materials must be handled like synthetic ones.

The situation of the makers of parts

So much for the building industry's basic supplies. What now about manufacturers who make building parts out of these, parts like wall and floor coverings, or doors and windows, or air conditioners, or lighting systems?

In three important ways these manufacturers are in a situation that goes against prevailing trends among those US mass industries that are pointed exclusively to consumers. First, although the building industry is very big—it produces roughly $25 billion annually in manufactured elements—the individual corporate units are *not* among the nation's largest. Second, against the trend toward elimination and consolidation of corporate units elsewhere building manufacturers are rapidly on the increase. And third, their profit margin is not growing, but slowly decreasing.

Despite the magnitude of building as a whole, the size of individual building manufacturers shows up as medium on such lists as FORTUNE's "The 500 Largest US Corporations." As one might expect, only the big suppliers of basic materials and those whose equipment, like refrigerators or bathtubs, goes largely into the consumer market, come in the front rank, among the first 100: US Steel, GE, DuPont, Westinghouse, Union Carbide, Alcoa, Pittsburgh Plate Glass. As we have said, they supply materials in abundance to the American builder but they supply other industries, too. Of the two connected in the first instance with the business of building, Owens-Illinois Glass is No. 89, American Radiator Standard & Sanitary is exactly No. 100. (The criteria: 1954 dollar volume of sales.)

This is all comprehensible; for, counting out makers of materials or equipment for the consumer market —paints, floor and wall coverings, plumbing goods, kitchen equipment and the like—a building parts manufacturer is a specialist and his manufacturing runs are often short.

The multiplication in producers reflects the obvious fact that building is getting more complex, has more different kinds of things to make, more different kinds of users to please, more special demands to meet. William Gillett, president of Detroit Steel Products,* once counted up all the metal windows listed in manufacturers' catalogues. Gillett's count: 651 varieties—or something in the neighborhood of 1,500 if one allows for deviations in size and detail.

The third fact about the manufacture of building materials and parts will perhaps come as something of a surprise. During this, the greatest boom in its history, its profit margins have gone almost steadily down. Again the source is Mr. Gillett, who has assembled the relevant figures of 50 typical firms for the years 1950 to '54 inclusive. Their collective profit margins declined without a break from 8.48% in 1950 to 5.48% in 1953, then rallied just a trifle to reach 6.05% in 1954. A reasonable assumption is that the mounting wages of the period, the greater complexity of carrying on under mounting numbers of rules and regulations, put a premium on production in big quantity and long runs, under simplified methods of selling and moving goods, whereas it has put a penalty on the opposite. And these advantages the manufacturer in the building field simply did not have.

The complex distribution pattern

High among his troubles is a distribution-and-sales pattern of almost medieval complexity; but the blame for this cannot be placed solely on the manufacturer. He usually has to sell to eight different kinds of people in a row, only one of whom actually lays down the cash. The eight kinds: clients, code officials, architects, engineers and other technicians (lighting, acoustics), contractors, subcontractors, dealers—and even labor organizers. Within each bracket there are further subdivisions. Thus "client" may include all of the members of a school or hospital board, and a few of the friends and relatives of same, not to mention miscellaneous politicos in the middle distance. Architects may include specifications writers, engineers and consultants. Subcontractors may include anything from soup to nuts.

The result is the kind of highly organized chaos that may best perhaps be defined by example. Here, in brief, are a few specific samples of individual distribution systems, some revered, some detested, by those who live by them:

Company A (roofings and sidings): 14 sales districts in US, some 400 salesmen all in all. Each man has from 50 to 500 accounts; that means company probably has over 100,000 total outlets. These are jobbers, applicators, dealers—but dealers are for most part merely small lumber yards and the like. Sometimes a dealer will order big lots in endeavor to jump to jobber status and get lower wholesale price. This usually starts price war. Home office has new architectural department to work directly with builders and architects.

Company B (structural steel): Normal distribution is direct to contractor, at least on larger jobs. But in Texas, Los Angeles, and throughout the South it is handled through distributors and dealers. "In fact—" long pause —"it's all mixed up." And what if whole thing could be wiped out overnight, for a fresh start? "That would be . . . ideal. But it would only get back to the same mess all over again."

Company C (plate glass): "In our business *we* are the manufacturer, the contact man, the middle man, the retail man, though we do also have three or four big jobbers who sell to glass and glazing contractors. We police what they do very closely, and won't book an order which gives a hint of coming misuse."

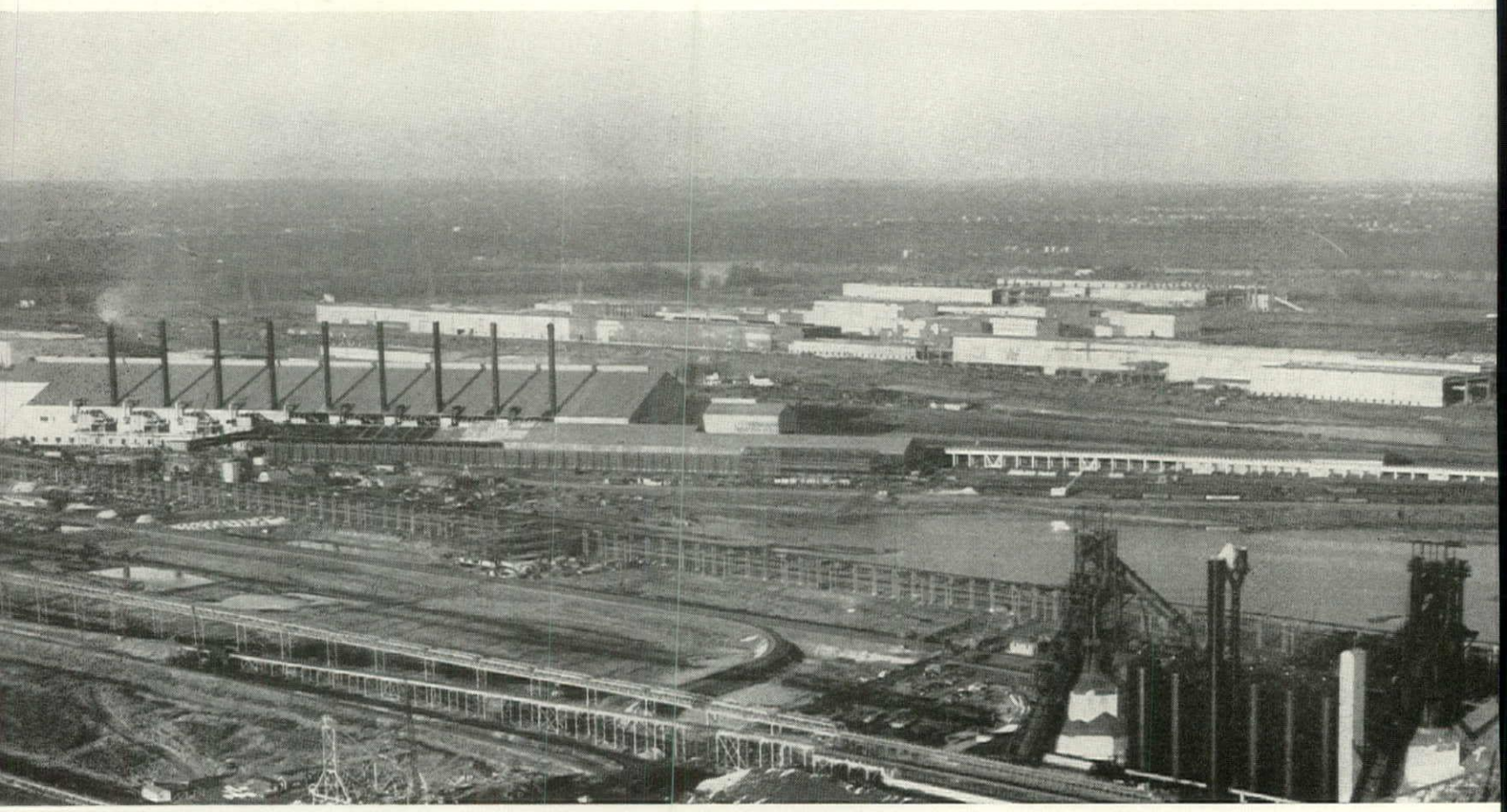
Company D (plastic ceilings): Deals exclusively through electrical wholesalers. Huge muddle. What about wiping it all out, etc.? "Wait a minute, let me think." Very long pause. Finally: "No, I wouldn't. The system is fundamentally sound. The function of the distributor in the electrical line is to stock the product. But he can't do that with plastic ceilings, so instead he helps to install it—and in outlying territories, to sell it. In the outlying territories we couldn't live without him. We've built our New York branch, however, around the concept of selling to architects. In Chicago, on the other hand, we sell more to the consumers."

Company E (air conditioning): Has five major distribution departments—one for equipment less than 100 tons, one for 100 tons and up, one for special products ("they're searching to see what they *can* get into"), a marine division, and a division just to handle a few huge national accounts. The small stuff all goes through dealers, the rest is sold in any of three different ways.

1. F.O.B. to building contractor, who installs equipment for himself.
2. "Installed-equipment basis" — company furnishes equipment, installs it on request.
3. "Installed complete"—company acts as subcontractor to contractor on whole deal. Is doing less and less of this as contractors become educated to newer equipment.

For the people at the design end of things—skipping

* And current President of Producers' Council.



*Peter Stackpole—*LIFE

all those in between—materials distribution is an impenetrable jungle waiting for a bulldozer that will probably never come. If you do not believe it is that much of a jungle, ask any ten manufacturers just how much they know about where their product is actually going, at the far end, and how it is being used. Eight out of ten will grin and tell you they frankly do not know; and the other two will say: "Of course we know—I mean on the *large* orders."

Before going on to the next problem of the manufacturer, the problem of his research, it may be well to pause and mention that the "chaos" of the industry is not without compensations, for those seeking excellence in design. A fine disorderly freedom has at least prevented what critics have called "premature standardization." It means that an owner or architect dissatisfied with the product of his habitual supplier can shop around, specify something else: he is not bound, like the automobile maker, to his own subsidiaries. Disliking household hardware a designer can find ready and waiting for him something in a hospital line; air conditioning has been transferred to buildings from ships; stock millwork can be supplanted with custom details.

The problem of research

The condition is not so happy in research, where a splintered industry faces a comprehensive problem that is unusually complex.

Because building and architecture are so intensely human in aim, smart manufacturing always has a dual research assignment. On top of the usual research on materials and methods that any industry gets into, the building manufacturer must find out important things about people—about their eyes and ears and skin pores, for example, not to mention anything more. And the plain fact is that the financial burden of such research falls in the end on manufacturers. So GE for example carries on its great research establishment at Nela Park, where Matthew Luckiesh presided for years as one of the authorities on human seeing. On questions of hearing, luckily building shares the interests of the telephone industry and the results of its Bell Laboratories. Where heating and cooling and ventilating has been studied by the Pierce Foundation, support has come heavily from manufacturers like American Radiator.

Unhappily this leaves unmatched by any single manufacturer's interest some of the most searching and basic problems in the field. Biggest example: the greatest "luxury" of architecture, as Henry Luce has said, is space—and indeed space is architecture's basic commodity; yet nobody is trying to subsidize that Einstein of psychology who will tell us how it is that we *apprehend* space. For lack of sound knowledge on this apparently so simple matter architecture is floundering, and thousands of architects fall back on the eloquence of a 1914 writer, Geoffrey Scott, whose *Architecture of Humanism* was based on hypotheses of Wundt and other turn-of-the-century scientists. Today these hypotheses are largely untenable. Before such fundamental questions can be truly researched the building industry as a whole must get together; to get together it must have a leader; the only

Fairless plant belongs to one of the building industry's most important suppliers, US Steel. Yet interestingly enough the architectural ideal in the US has not penetrated far enough for independent architects to be employed in connection with the planning of such colossi on the landscape. Architects have always been employed on the latest in England, Germany.

possible leader is a revitalized architectural profession, because it alone has an interest in the whole field.

For a manufacturer to grasp the importance to himself of mere space, of sheer "emptiness," will of course require some sophistication; but with a little time and effort the architects should be able to make clear that space awareness means as much to building as combustion means to producers of motor fuels. After that, the building industry may look for allies among other industries similarly interested, as it has found allies among the communication industries in the field of sound and illumination.

Another whole field of research applies to working standards. Some 120 organizations have developed these; 278 commercial laboratories and 86 universities or colleges issue reports on materials and products under various kinds of testing, and manufacturers are tightly dependent on the outcome. In this field the *procedures* are of course set up by the American Society for Testing Materials and manufacturers have recourse to the US Bureau of Standards in addition to the private testing labs such as Armour Institute's acoustical labs at Riverside, Illinois. In a brief summary the one most useful criticism that can be made of a great deal of such research is that despite the good conscience that goes into the work, the *assumptions* that underlie it are sheer balderdash. This is because so much relates to mere performance under codes—codes that in themselves are the result of political compromise. In the case of fire codes, for example, such patently arbitrary tests as "two-hour" or "four-hour" ratings would not command the respect of any scientist of standing; and the result of routine adherence to them is simply to penalize the manufacturers of lighter, more efficient, more economical new materials. (See "Codes vs. Progress," AF, Dec. '50.) In case anyone thinks this is entirely a problem of rivalries within the building industry, we must recall the fundamental fact that competition today is not carried on within industries only but between different industries, and that any industry which is costly and inefficient as a whole loses public favor and position.

Then there is yet another major field of research, research in building correlation and new invention.

It is in this field that today's quarrels between manufacturers and architects should be replaced—and often are—by closer cooperation. With some justice, today's manufacturer sees the architects as ambitious impractical fellows. "They want us to rip apart our production lines, cool our vats, stop working, every time one of them gets a brainstorm for a new product, a new shape, a new size, a new gimmick. Or to put color into something we don't know how to put color into . . . And what are we to do with the architect's new wider panel once we get it out for the one building for which he wants it? —Or *says* he wants it? A lot of risk he is taking!" To which the architect replies, "Industrialists! Why, there aren't a dozen of them who have ever taken a chance with anything in their lives! Imagination, change, progress cost *money*, and that is the one thing these guys won't let loose of. Let me tell you a secret: in this field it is I and my clients who have to do the experimenting. If I find a shortcut and the client is willing to take the risk of

paying for it and testing it in his building, the manufacturer will pick it up fast enough—provided it has been successful. And I get no royalty even if he copies it straight off my drawings, and puts it on the market."

To such bickering there have been some resplendent individual replies in the field of action, where for example Kawneer, making store fronts, enormously advanced its design and styling through a long association with several leading architects as design consultants. There have been some significant—though not resplendent—joint efforts, like the long joint enterprise of the AIA and the industry on modular coordination. And there has, above all, been one brilliant generic answer: the work, now 30 years old, of Walter Gropius in Germany at the *Bauhaus*.

The *Bauhaus* is worth reminding ourselves of, because Gropius there made a statement of radical importance to architecture and building. He sharpened the statement with which this story begins, that "the manufacturer is in the most intimate way a participant in design," by pointing out that the design of our building parts must be made *in* the factory. Architecture in an industrial age is no longer an art built on handicraft. It deals with an *assembly* of ready-made manufactured products. How the individual product has been designed determines the character of the assembly. The connection between architect and manufacturer must therefore be more intimate than ever, since architectural design must *move back into the factory*. And this in turn means that the profession must take a radically different attitude toward those of its members who work directly for and with manufacturers, sometimes as employees. These are stepchildren today, in professional societies such as the AIA, which promotes first of all the interests of the "independent, professional practitioner." Yet, if an individual, with architectural training, were looking for a fulcrum point, a place where he could most decisively influence tomorrow's architecture, he might well attach himself to an enlightened manufacturer. And in due time his own profession must honor those who do so.

In brief, more and more of the design of architecture, the architect's traditional province, has moved back from the drawing board into the factory, and back from the drawing board into the test tube. A radical disencumberment of architecture from meaningless codes and local impositions awaits a common push by architects and manufacturers. The richness of the field gives architecture a chance to stay individualized and escape the sheeplike uniformity that pervades consumer fields in mass manufacture. Yet the basic research badly needed for the field as a whole will not be done until a new kind of architectural leadership organizes and demands it—through the industry. And design will not much improve until that architect is honored who works *in* the manufacturing end of the industry. To paraphrase Le Corbusier, the manufacturing end of building can be the very seat of imagination.

Next month: THE CORPORATE CLIENT.

Architecture's new dimension:

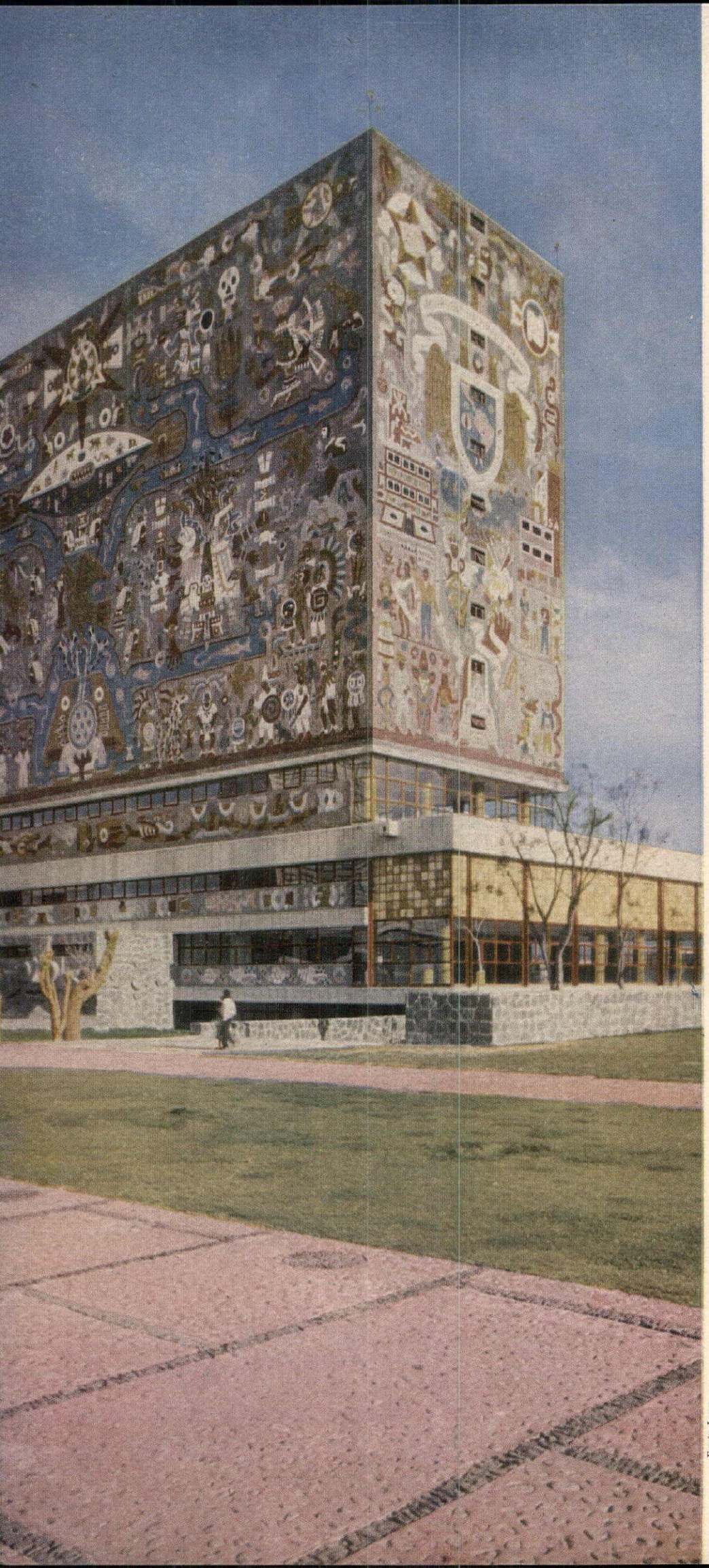
VIVID COLOR

Not since the Persians put polychrome pottery all over their palaces have the outsides of new buildings blazed with such brilliant colors. Old materials like brick are hiding their traditionally dull browns behind shiny red and blue glazes (right). Stones of many colors are reassembled in huge mosaics to cover entire building walls (p. 126). The use of colored glass in religious buildings is being revived—but on a grander scale than ever before—p. 127. With the aid of the anodizing and enameling processes, relatively new materials like aluminum and steel are colored glass in religious buildings now wearing color (p. 128).

Thanks to advances in postwar chemistry, the architect's palette is no longer limited to the dull monochromes found in natural facing materials. Today he can render his actual buildings in almost any color he can put on paper. And in a physical sense the prospect for a brighter world of tomorrow is brighter than ever.

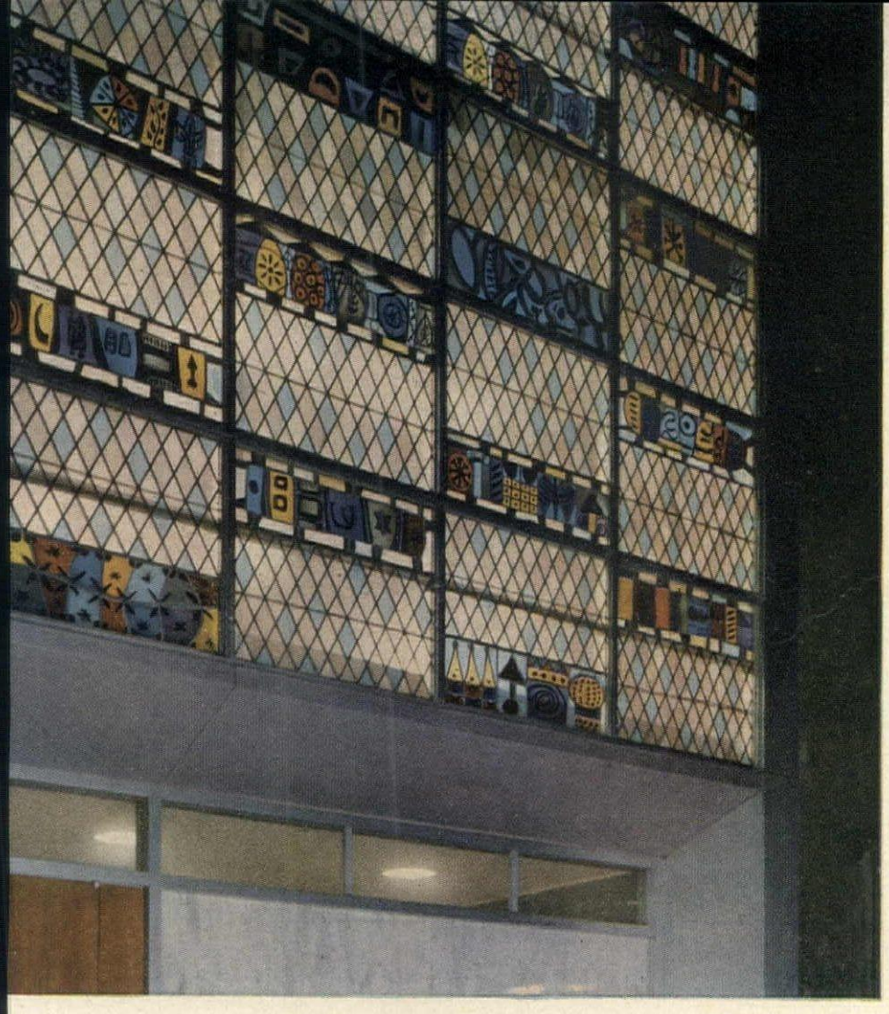
COLORED BRICK at General Motors Technical Center is nowhere seen in its usual earthy hues. Instead, ten glowing colors* brighten the end walls of the 20-odd buildings, add a lively variety to the 3,000′ sweep of the huge project. Colorfast and highly glossy, the glaze is added to common brick which is then fired for a second time. (Side walls are of porcelain enameled steel—mostly grays and tans—and green-blue heat-absorbing glass.) Architects: Saarinen, Saarinen & Associates and Smith, Hinchman & Grylls, Inc.

* Red, dark red, tangerine, orange, yellow, light blue, dark blue, gray and black.

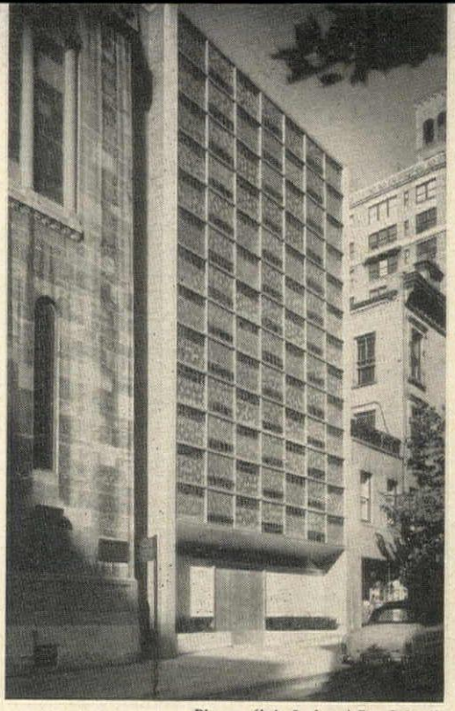


Erwin Lang

COLORED STONE, some 7½ million small pieces arranged in a huge mosaic, forms a veneer for the four windowless walls of the library stack at the new University of Mexico. The stone chips are of roughly 2″ face and are of ten colors ranging from obsidian black to marble white. (Blue, not found in stone, is supplied by pieces of glass cullet.) The colors are soft but seem to become brighter as the building ages; and their intensity steps up considerably, of course, when wetted by rain. The mosaic treatment is repeated on three other surfaces: 1) in the upper part of the big reading room window which consists of squares of translucent Tehali marble, 2) in the terrace retaining wall which is volcanic rock carved with Indian themes, and 3) in the concrete sidewalks which are enlivened with colorful stone patterns. The mural's artist is also the building's architect: Juan O'Gorman. As a result of his daring use of the stone mosaic, Mexico City today is ablaze with colorful imitations.



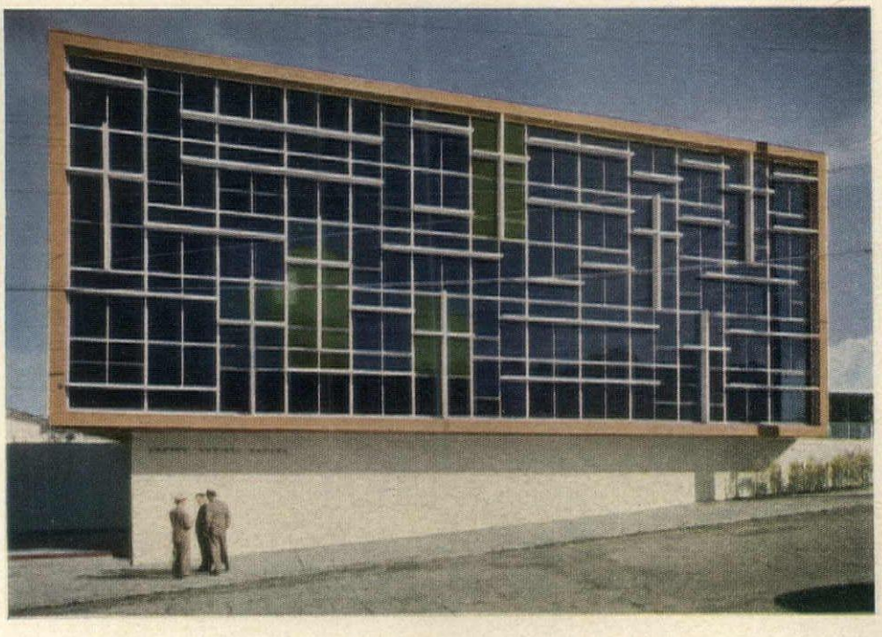
MILTON STEINBERG HOUSE, New York City
ARCHITECTS: Kelly & Gruzen and S. Robert Greenstein, associate
ARTIST: Adolph Gottlieb
CONTRACTOR: H. R. H. Construction Co.

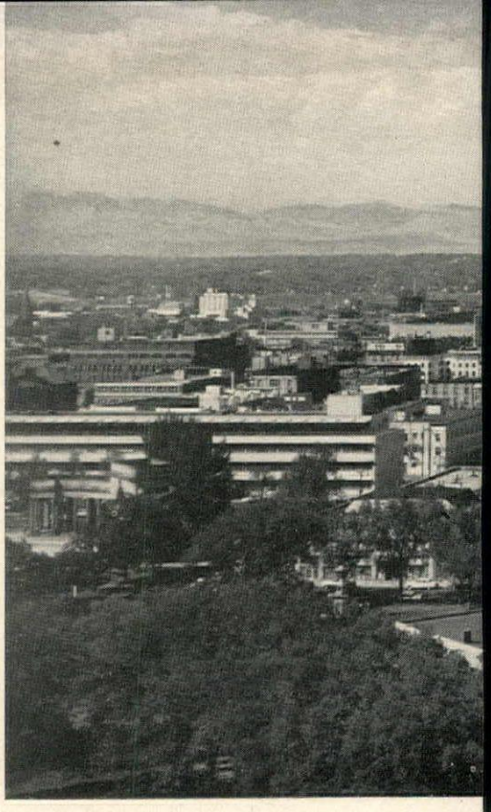


Photos: (left & above) Ben Schnall; (below l. & r.) Rondal Partridge

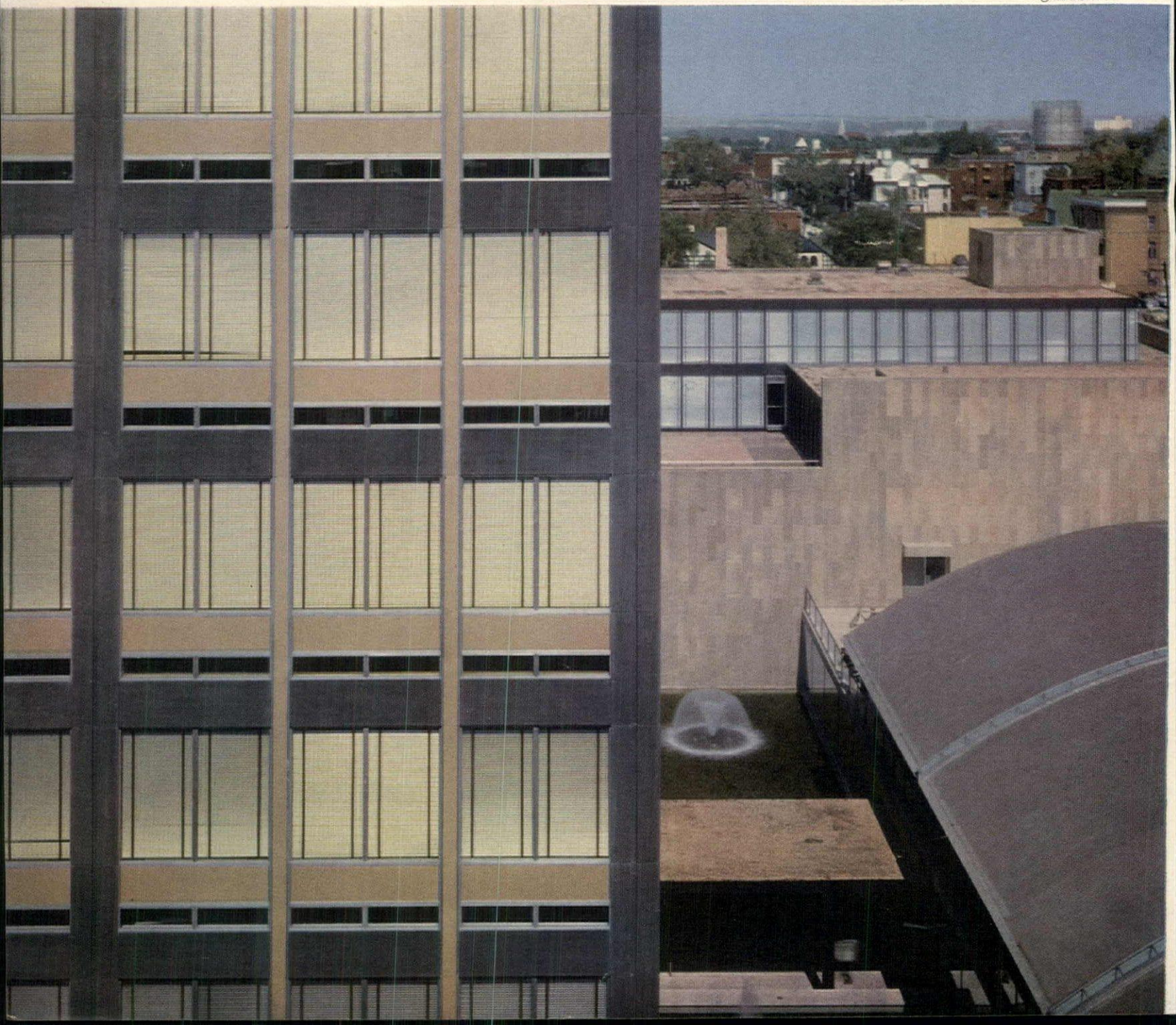
COLORED GLASS has been part of religious architecture for centuries. But whereas it was once used only for windows, it is now used for entire walls. The four upper floors of the synagogue annex above are faced with 1,300 sq. ft. of glass divided into 91 panels. One-third of the area is devoted to abstract stained glass "paintings" portraying Jewish holidays and traditions. The balance is made up of tinted diamond-shaped panes. To create the effect of an all-glass wall, spandrels and visible floor construction are reduced to the 2½" thickness of the aluminum mullions. A somewhat similar effect is obtained in the church below with large pieces of flat-hued glass. The detail at the right shows the inside of the narthex wall.

CORPUS CHRISTI CATHOLIC CHURCH, San Francisco, Calif.
ARCHITECT: Mario J. Ciampi
SCULPTOR: Elio Benvenuto
CONTRACTOR: Jacks & Irvine





COLORED METAL—dark gray anodized cast aluminum and buff porcelain enameled steel—create the interlacing pattern woven across the face of the Mile High Center's office tower. The buff-colored steel covers (and expresses) the underwindow air-conditioning units and their risers; the gray aluminum sheaths (and expresses) the building frame. To the right of the tower is the plaza and the curved roof of the transportation building; beyond them, the Center's remodeled bank building.



Floyd McCall

A new kind of office building challenges accepted standards. Its thesis: that high style and public plazas are a good long-term investment, and that businessmen will pay for them

DENVER'S MILE HIGH CENTER

The big gray and tan ribbed structure dominating Denver's growing skyline is something new in downtown architecture: a speculative office building, built at low cost and rented for profit, that looks as if it had been built for a first-class institution.

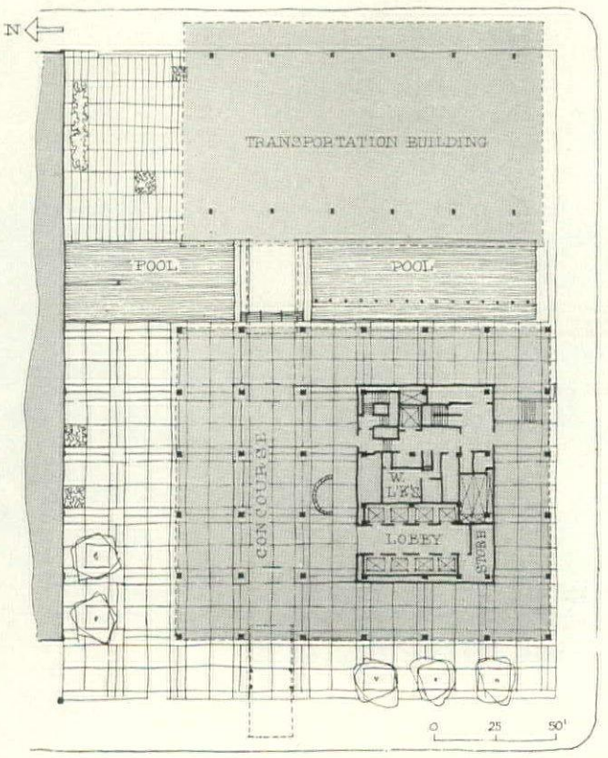
In their Mile High Center, Realtor William Zeckendorf, Architect Ieoh Ming Pei and Builders George A. Fuller & Co. have pooled talents to attack the inertia of codes, costs and conservatism that holds back much urban design. Their building has no ugly wedding-cake setbacks copied from New York, no naked party wall, no dark back side with airshaft office space. Pulled back from the street and adjacent buildings on a corner lot, it rises free and four-sided for its full 23 stories, in its own pleasant setting of fountain-pools and plazas. Around its base the owners (Zeckendorf's Webb & Knapp and the Fuller Co. each hold 42½%, other interests 15%) have given up stores, protecting their office tenants from the pasted-window disorder of average shopfronts. Instead, they have placed shops and restaurants in the basement concourse of their low adjoining building, where they still thrive. Office tenants gain prestige, and pedestrians gain the leisurely space of open arcades at street level (p. 130).

Denverites call Mile High the "New York building," built by New Yorkers charging New York rents—$6 to $6.50 against Denver's average of just over $3—and introducing year-round air conditioning to a high, dry town that "didn't need it." The building opened offically this summer; to date its 369,540 net sq. ft. are 58% occupied, largely by big companies setting up new or expanded headquarters in the Rocky Mountain Empire.

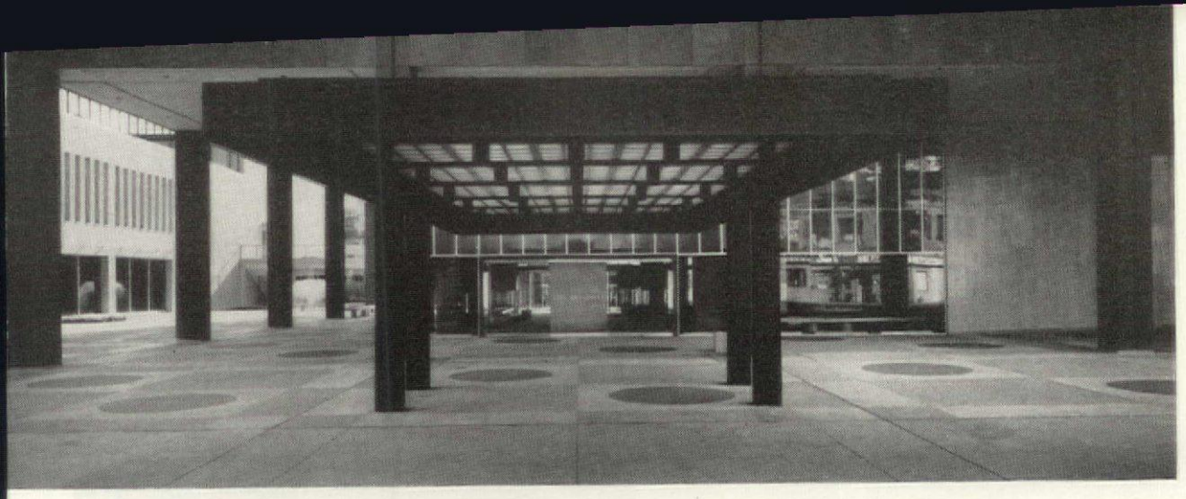
Neither Zeckendorf nor Arthur Rydstrom, Webb & Knapp's local vice president, are concerned about lack of tenants. Sixty per cent occupancy covers operating expenses, taxes and amortization, largely because the building was completed nearly $1 million under budget (Construction costs, including air conditioning, were $7.8 million: $17 per gross sq. ft. or $1.32 per gross cu. ft.).

Moreover, Denver is fast becoming the capital of a vast area rich in oil and uranium with the big added attractions of brisk, sunny climate, sports and scenery. (Even before

Eisenhower started going there it was called "the second Washington," can now boast some 30 federal agencies including the AEC and the new Air Force Academy.) Mile High, cream of the city's office space, should attract its share of the new business, especially as firms find themselves competing for personnel. Teamed with Zeckendorf's still bigger hotel, department store and transportation center planned for nearby Courthouse Square, it might even shift the whole downtown center of gravity.



Photos: © Ezra Stoller



Entrance canopy is a free-standing structure of black-painted steel, roofed with 30 glass-block toplights each 3′-2½″ x 6′-2″. Fixtures under cross members bathe entrance in a pool of light at night. Seen through arcade at left is remodeled building which forms one side of lower plaza.

ARCHITECTS: I. M. Pei & Associates; Kahn & Jacobs and G. Meredith Musick
CONSULTING ENGINEERS: Jaros, Baum & Bolles; Severud-Elstad-Krueger
CONTRACTORS: Geo. A. Fuller Co., general
Kerbey Saunders, Inc., mechanical
Fishback & Moore, electrical
FINANCING: Equitable Life Assurance Society

Woven pattern clearly expresses "gray for structure, tan for cooling"—first full articulation of both on building façade. Unlike some curtain walls, this accurately silhouettes against office lights, allows building to "read" same at night. Windows are washed from inexpensive "spider" staging seen on roof at right.

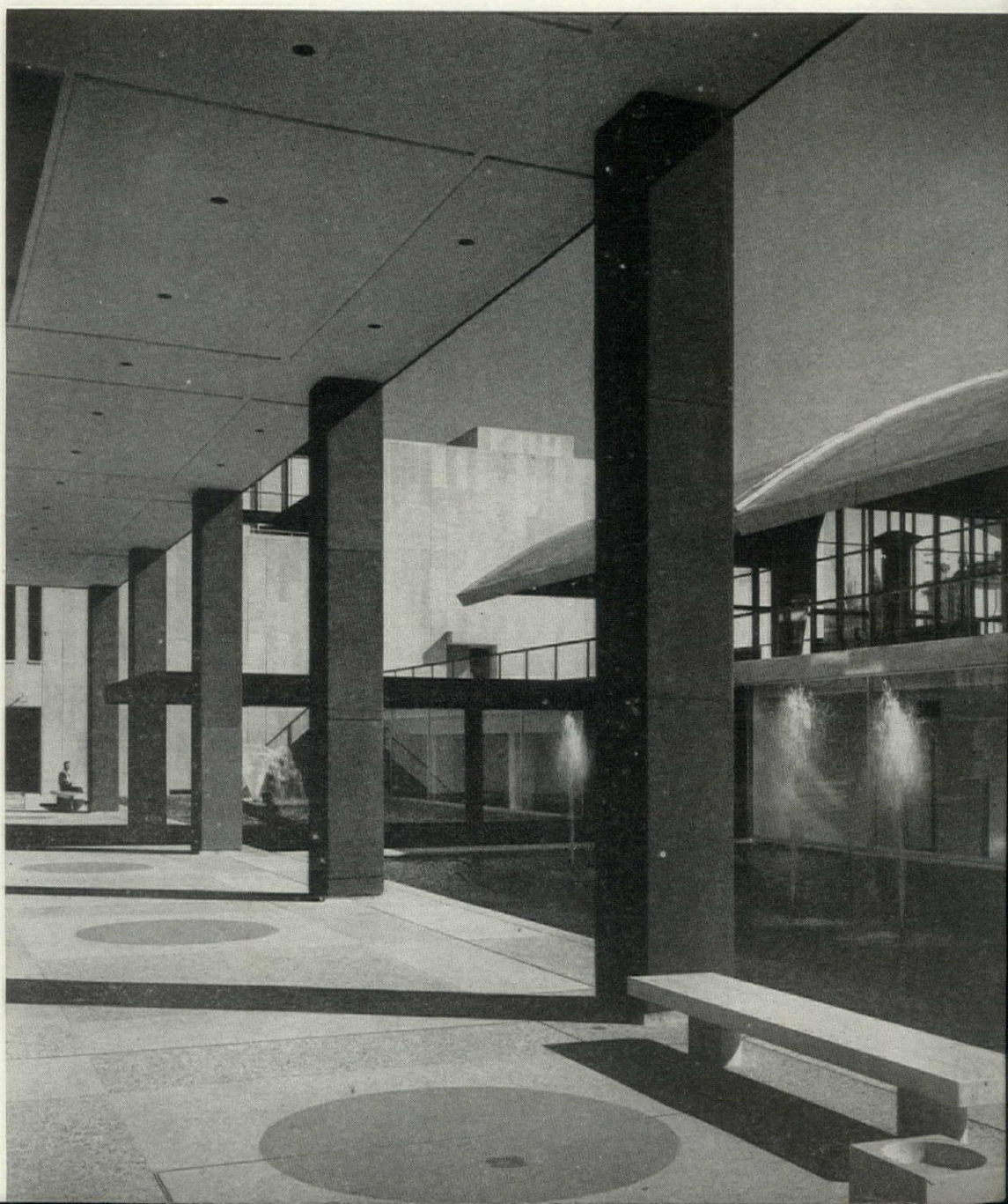
Entrance arcade, across Broadway from Denver's Brown Palace Hotel, is set well back from street behind spots of planting. Lobby is still farther back, giving wide covered place for strolling or sitting. Soft gray finish of anodized aluminum columns is set off by white of plaster ceiling, luster of travertine wall.

Mile High's plazas: the lure of sun and sparkling water

Photos: © Ezra Stoller

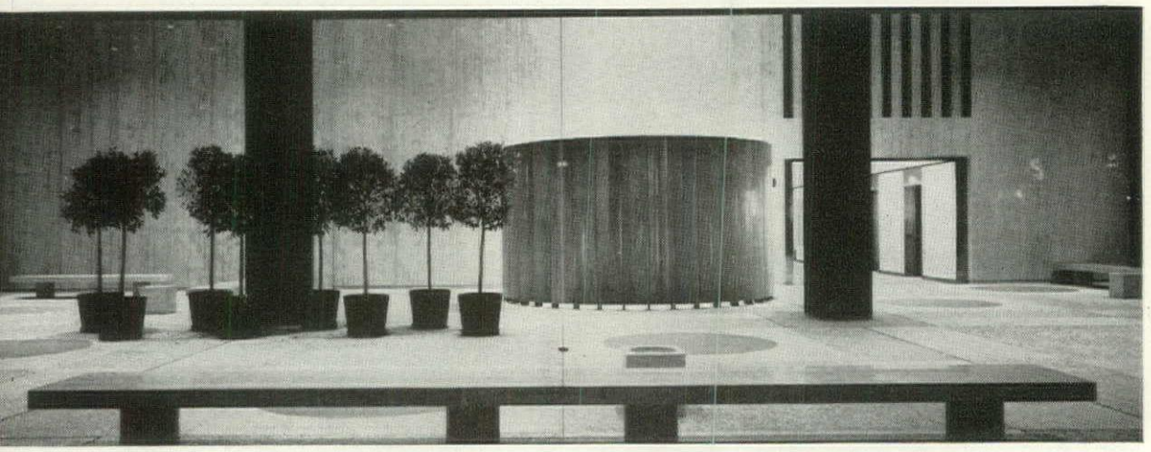
Upper plaza leads in from sidewalk between remodeled bank building and new exposition hall shown at left. Latter's curved concrete roof on bents acts as foil in both shape and materials for tall rectilinear office tower. Designed as downtown airlines terminal, it will be rented instead to business exhibitors. Terminal facilities will go in another project.

Colonnade behind main lobby is linked to restaurant opposite by covered passage depressed between two fountain pools. Seated diners can look out level with water and spray jets which are lighted from beneath at night. Paving is dense aggregate etched out with acid to give nonskid, nonreflective surface with pebbled outdoor character. Panels in two shades of buff surround red circles.



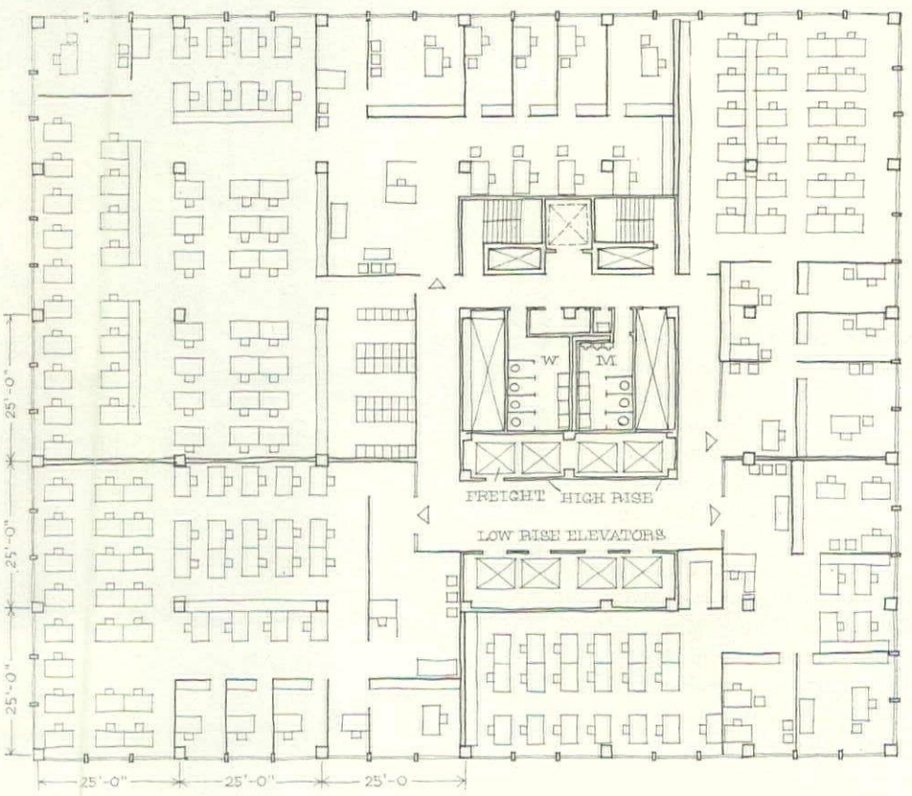
Lower plaza leads back to glassy basement housing shops entered from central passage inside; second basement has more shops, services and cafeteria. Mile High's open spaces, intended to be more than spatial setting for proud new building, are as much used as those of its bigger predecessor, Rockefeller Center. Music and fountains are kept playing until midnight for evening strollers. General atmosphere, plus some big ash receivers by benches, keeps fountains free of butts and candy wrappers.

Lobby, seen from main entrance, has office directory in sculptural, freestanding structure that catches visitor's eye immediately on entering. Arcade and lower plaza may be glimpsed through glass at far left. Upper part of lobby is enclosed with panels of blue-green, cellular glass.



Formal composition of semicircular directory, benches and potted shrubs, as seen from plaza outside. Patterned paving is carried through from exterior. At right is elevator hall with luminous ceiling (note knockout slab in typical floor plan below for a future freight elevator between stairwells).

MILE HIGH CENTER



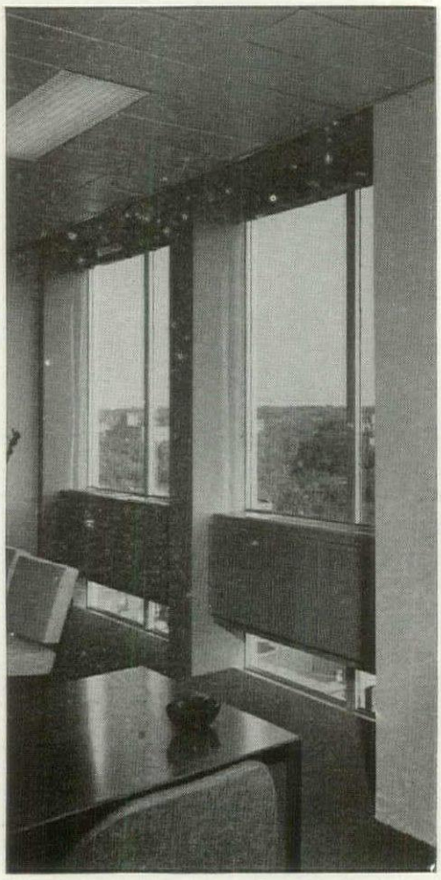
Photos: © Ezra Stoller

Floating radiators, and windows for the mice

Mile High's office floors get a lot of use out of the total square footage enclosed. Since the building is freestanding and covers less than 25% of its lot, offices can have almost equal light and air on four sides from ground to top floor, with no second-grade space and less than the usual disparity between lower and tower floors. An economically squarish plan (127′ x 152′, see left) reduced construction and maintenance of outside wall area. The core is off center so full-floor tenants can have bulk clerical space 75′ deep on one side, private executive offices and corridor along the other. On lower floors, 17,630 sq. ft. or 91% of the 19,304 sq. ft. is rentable; where one bank of elevators drops out on upper floors, net space increases to 18,050 sq. ft., or a high 93%.

All glass in Mile High is fixed for year-round air conditioning. The 12″ strip windows at floor level, double-glazed against floor drafts, give outside offices an unusual sense of space (photo above). Some tenants grumbled about "paying rent for space under the radiators"; Webb & Knapp showed them two typical small offices, one with the floor windows blanked out by a piece of cardboard, and sold the idea. (The windows do present a slight washing problem, and cleaning women have stuck vacuum cleaners through a few.)

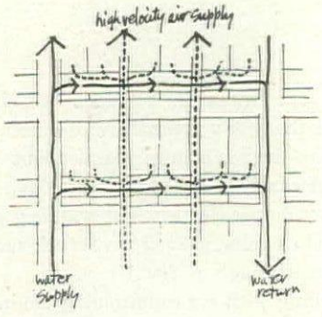
Working with air-conditioning engineers, the architects squeezed down the bulky casing around standard induction units, lifted them up off the floor and kept them flat against the windows. (Said one: "If we could have gotten them down to the size of a slim guard rail we would have been even happier.") Space more than 16′ in from the windows, and all return air, is handled from ducts in the core. In Denver's high climate, one side of the building often has to be cooled while the other is heated; the induction units have proved responsive to quick changes. Another wrinkle: a solar thermostat on the roof which anticipates the movement of the sun, turning on the cooling system on each side before the sun hits it.



Photos: © Ezra Stoller

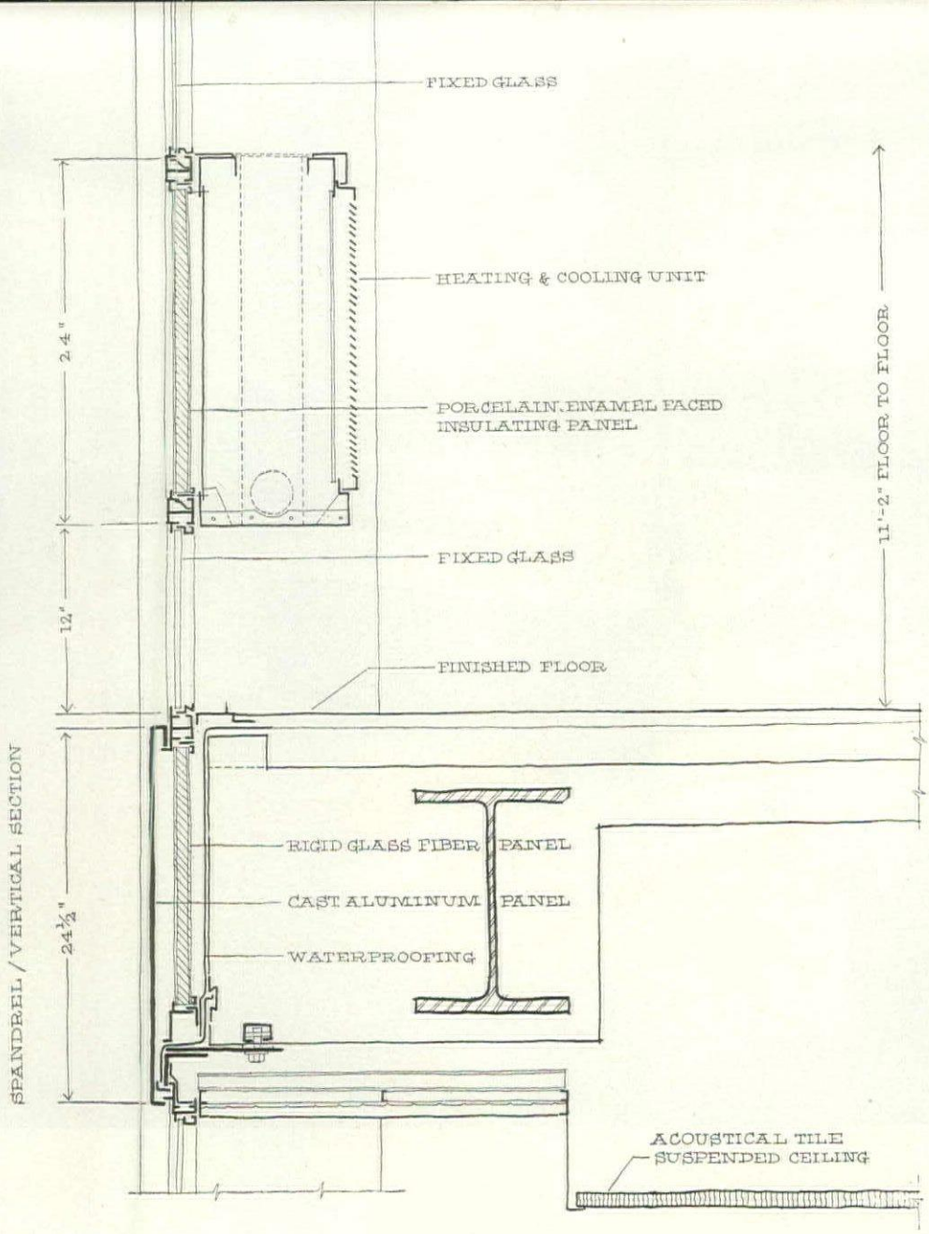
Wall details

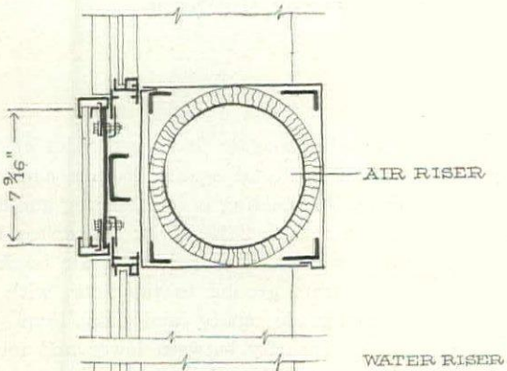
Mile High's compact window units (photo and detail, top) take high velocity air from small circular ducts in the window mullions, hot or chilled water from pipes cased in the structural columns. Cooled or warmed air is blown from slots in the front and top of the units to condition the building's exterior zone (interior zone is

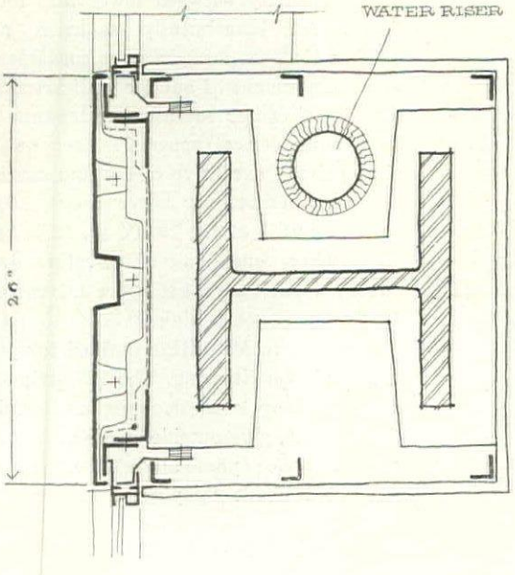


handled by ceiling diffusers). Units are faced on the exterior with 1¼"-thick sandwich panels: porcelain steel outer face, plain steel inner face to equalize expansion. Mullions are faced with similar but thinner panels.

To avoid the wavy surface of many sheet metal skins, the architects went to aluminum castings for the first time in a major building, had a castings manufacturer fabricate ¼"-thick dark anodized panels with stiffening inner ribs for their column and spandrel facing. Splotches due to uneven cooling have largely weathered out in place and the castings are now turning uniform gray.



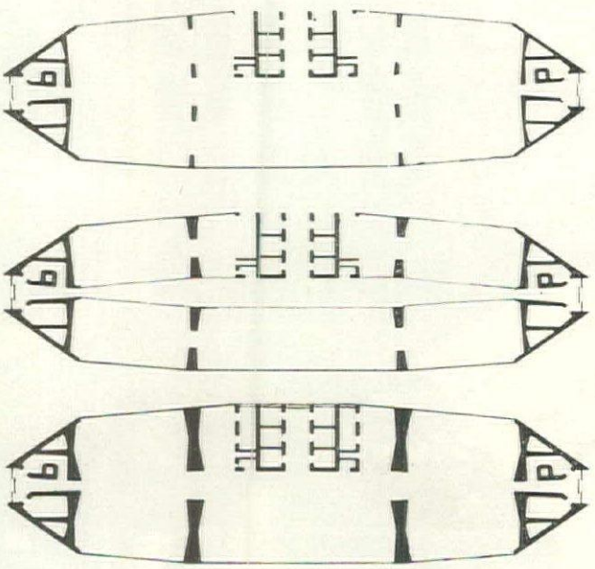




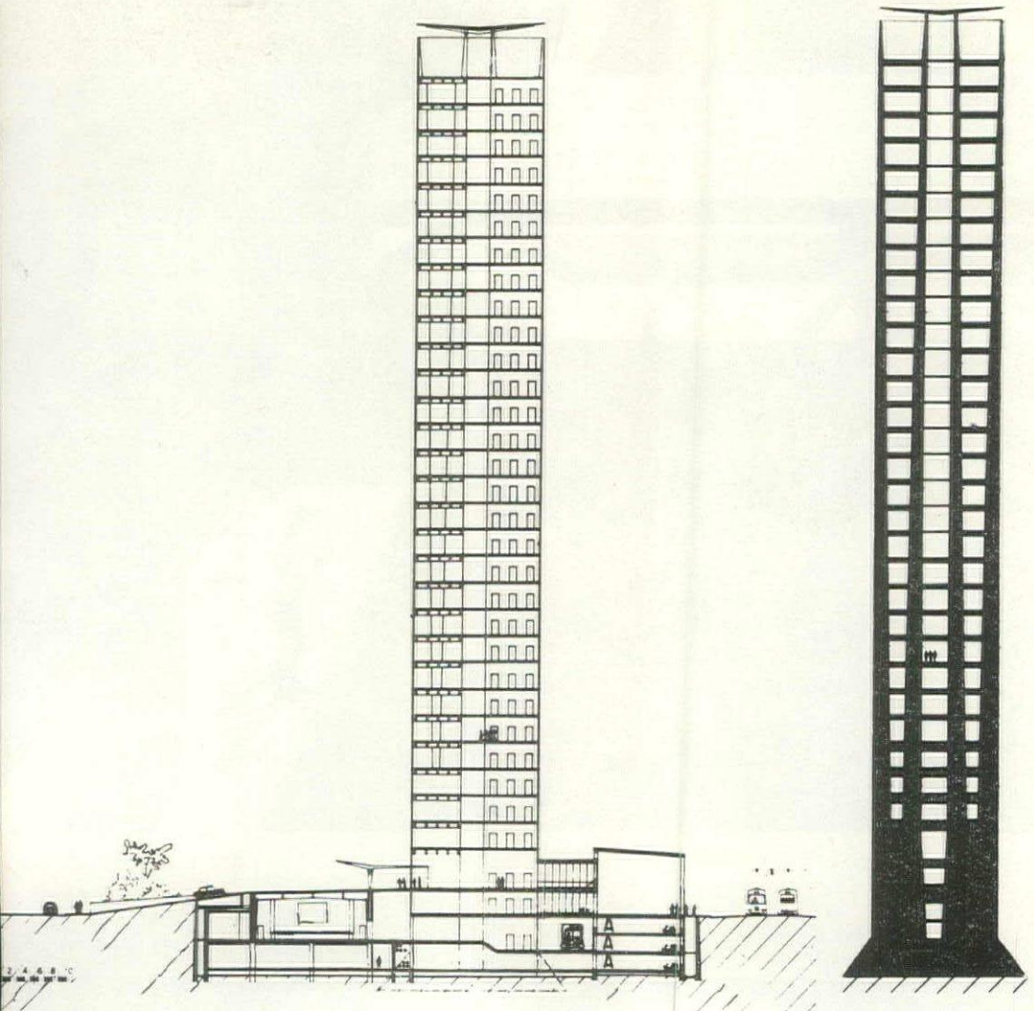
Passers-by on three sides crane to see if they can spot mountain trout darting through the long, shallow pools (which are chilled to mountain-trout temperatures, aerated by the fountains). In the background is one of Denver's bigger hotels; at far left, one of two other big rental office buildings recently built in Denver.

FREE-FLOOR CONCRETE TOWER

Office building in Milan features
columnless space inside,
a superblock redevelopment outside



Bearing walls become thinner and split into columns as building goes upward. Walls around utility rooms at ends of floors are also structural.



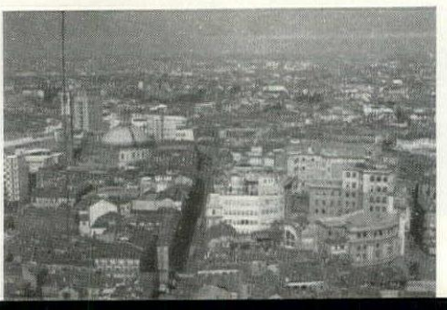
This tall slab of concrete, glass, aluminum and ceramics may amaze a good many modern Americans just as it has amazed the people of Milan. The most surprising fact about the Pirelli building is that it will be a wall-bearing structure of reinforced concrete. Six and a half feet thick at the bottom, the transverse concrete partition walls taper to become light columns less than 1′ wide on the upper floors. Architect Gio Ponti says that this is "an expression of *lightness*, an actual condition of the construction; not an expression of *force*, which is a condition of ancient construction." The tower will be built for the Pirelli Co., Italy's largest maker of tires and other rubber products.

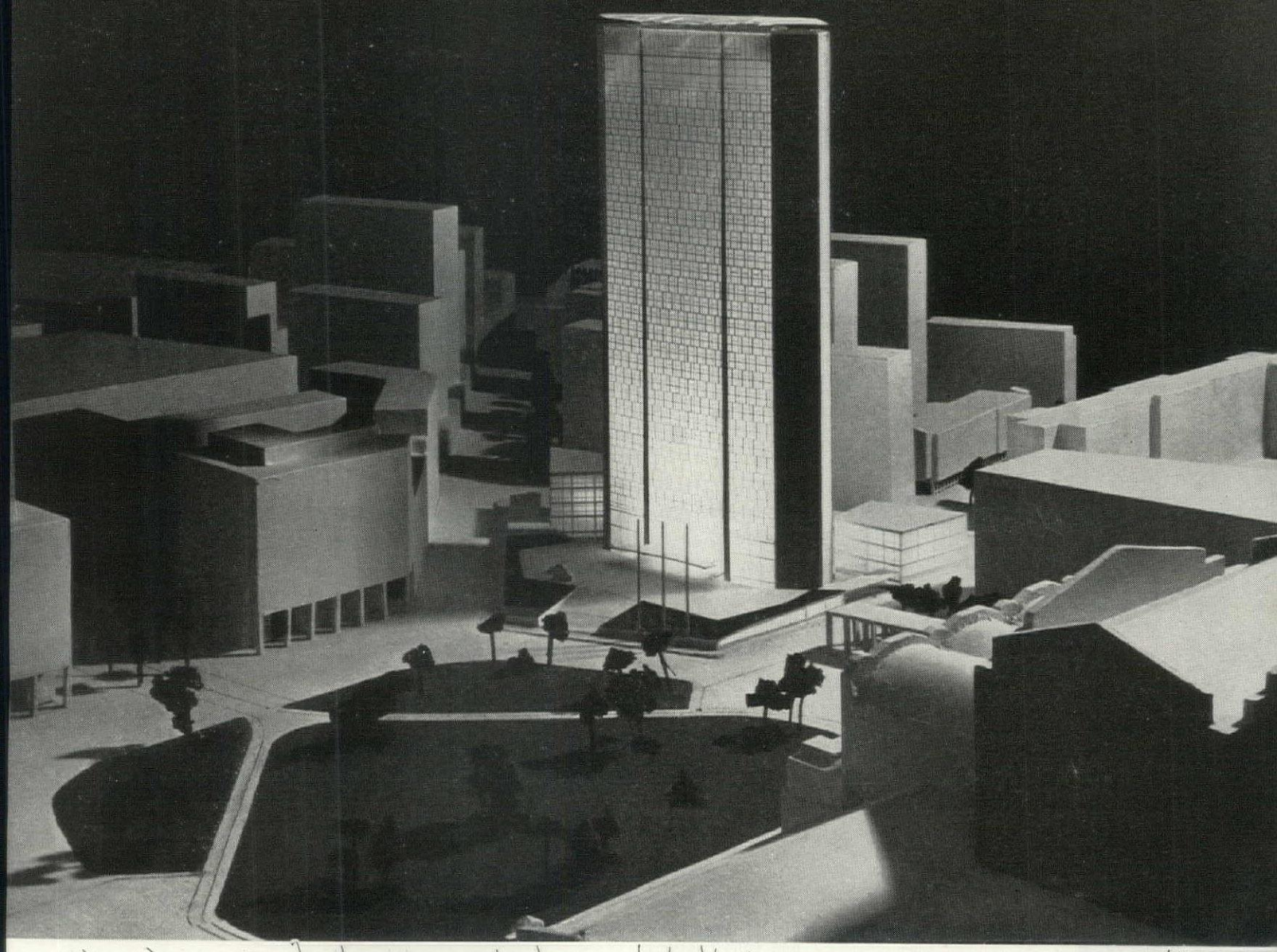
Ponti points out that it is not just high land values that have caused Pirelli to build high and have inspired a whole complex of tall buildings in Milan. The theory of building upward has been advanced a notch since the development in America of the skyscraper district. "No longer must one set tall buildings in a row, as has been done in New York, thus adding to traffic density. One must space them out to create room for parking."

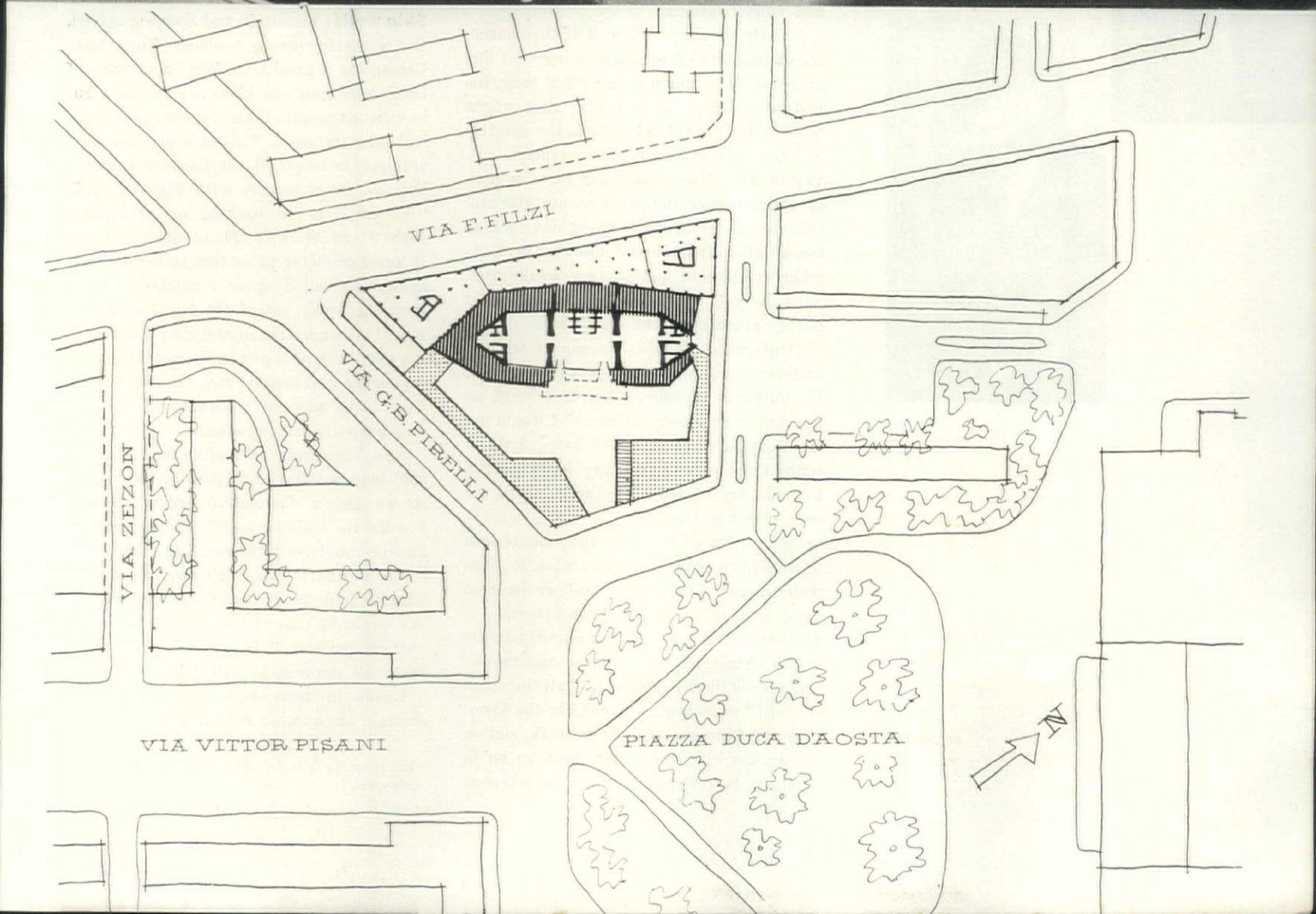
The tower covers only about 1/7th of its site; the balance is left for a private cross street and an elevated parking plaza. Under the lower building there will be parking space for cars and motor scooters.

The Pirelli building is the heart of a big urban renewal project involving 250 acres of central Milan. It is to become the "Rockefeller Center" of Europe—but it will stand against a strikingly different background. The second largest city in Italy, Milan has always worn a heavy mantle of tradition. Until recently, for instance, an unwritten law kept any building from going higher than the Madonnina, the gilded statue of the Virgin which stands atop a dome 356′ above the floor of the Milan Cathedral. But Milan's postwar industrial and business ferment has been too strong to stay mantled; Milan is the richest, busiest city in all of resurgent Italy, eager to express its material power, and already one skyscraper has been built 374′ high. The Pirelli will be 407′.

Milan's center, heavily bombed in war, is proposed site for redevelopment.






VIA F. FILZI
VIA G.B. PIRELLI
VIA ZEZON
VIA VITTOR PISANI
PIAZZA DUCA D'AOSTA
N

EIGHT CHICAGO APARTMENT

A conversational criticism by three building industry experts

The three men at the left met in Chicago last month at FORUM's request to discuss the eight Chicago apartment projects—five built, two building, one proposed—presented on the following pages.

Although Yamasaki represented the architect's point of view, Aldis the realtor's, and Spencer the builder's, all three talked informally about all facets of the buildings under consideration, proving once again that architectural design, construction and economics are an indissoluble trio. The conclusion that emerged from the conversation was this: Apartment house design is in a rather uncertain stage at present but it has vitality. It is receptive to experimentation, and more experimentation should be welcomed. Meanwhile, the time has come to start seriously solving problems that experimentation has already raised.

Plainly, no apartment house is an island. Again and again, stimulated by some point in the individual building under review, the talk veered to the apartment house as a genus or, say, the glass wall as a species.

ARCHITECT: Minoru Yamasaki
Yamasaki, Leinweber & Assoc., Detroit

BUILDER: A. L. Spencer
S. N. Nielsen Co., Chicago

REALTOR: Graham Aldis
Aldis & Co., Chicago

FORUM *staff photos*

Character proved to be one side of all apartment problems: the wall problem, the site problem, the values problem, and what might be called the Mies problem. (The huge success of Architect Mies van der Rohe's 860 Lakeshore Dr.—AF, Nov. '52—has induced an incredible rash of imitations and vulgarizations.)

Nobody thought very well of the character of imitation-Mies. Spencer does not like authentic Mies much either. "Too boxy, too institutional; no domesticity; they might be office buildings." Aldis feels the severity of line of the Mies school is overdone.

YAMASAKI: "Mies's buildings have integrity, ground space and great beauty. His contribution is tremendous. Questions such as the all-glass apartment house wall, with its inherent thermal and privacy weaknesses, must be judged in relation to the great beauty attained by the glass wall.

"Unfortunately Mies is copied without understanding him or the details that make his buildings so successful. If I were an apartment architect in Chicago I would not try to outdo Mies at Mies's game. I would concentrate instead on improving livability. I would try to make my apartments the very nicest to live in."

ALDIS: "A lot of the new apartments look to me like veterans' hospitals. Also, so often walls seem to be either blank or have so many windows you can't control them."

YAMASAKI: "We are facing an adjustment to the industrial age. I agree apartments should look like apartments. If all the north side of Chicago begins to look like the downtown of Chicago, that is poor. Variation among the kinds of things that go on in buildings is what makes our cities interesting. And there is a need for richness, a psychological need for ornament which has been ignored too much. We are too prone to do things because they are 'functional.'

"We have much more freedom today in how we can build than anybody in times gone by. We must use it."

Skin walls, Yamasaki and Spencer agreed, are a sorely vexing problem. They leak. Chicago is a good test. Wind and rain off Lake Michigan can blow not in gusts but in vicious ten-minute crescendos; then walls leak like the devil. This is a problem that will have to be solved, the discussers agreed, because we must live with the skin wall. "We can't go on backing up everything with 8" of block."* There are only two theories of water protection so far as walls are concerned, Spencer remarked: Either keep the water out of the joints or recognize that it may get in and give it a way to get out; designers and builders of skins are trying the first method and it does not work. One reason why not: skin walls do not provide properly for expansion.

Said Yamasaki: "We often try for a skin 150' long without an expansion joint. And so we get a cumulative expansion that knocks the calking out." (Some Chicago apartments have to be recalked after every three storms!) "Masonry provides an expansion joint every time there is a window. We ought to take the expansion up in the vertical mullion. It is easy when you think of it. All you need is a slipjoint."

Inside kitchens and bathrooms, oddly enough, are another reason why walls leak,

* But masonry is beginning to produce its own skin walls—Ed.

PROJECTS

said Spencer. The exhaust ventilation from these rooms is commonly not balanced by intake ventilation, and the negative pressure inside the buildings literally sucks the water in through the wall. "Sometimes you can stop the leaking by going over and opening a window in the opposite wall." The water finds its way around cement asbestos or porcelain enamel sheets, the same as around fixed glass or movable sash; the problem remains the same whatever the panel material.

It was agreed there should be more testing, possibly in wind tunnels, of total wall assemblies, not just of wall parts or materials. The idea of buildings worth millions of dollars going up without such tests is fundamentally ridiculous, Aldis pointed out.

Spencer: "God puts the water in; man must help get it out."

The plan feature most criticized was inside kitchens, not only because they aggravate the negative pressure problem, but because their ventilation ducts, unless very carefully treated, make runways of sound from one apartment to another. And unlike inside bathrooms, they are occupied for long periods of time; whether the shut-in is maid or wife, a windowless room is no place for her.

The inside kitchen was cited as an example of "cliché economy." Savings made in the perimeter wall are probably canceled out by what *proper* ventilation (including balance of negative pressure) and duct treatment add in cost.

Economy and skimping were agreed to be separate matters, and skimping was condemned as the source of endless troubles. An example cited was paring the steel, not enough to jeopardize strength but so there is just not quite enough to distribute the stresses, so the plaster cracks. Said Spencer: "Of course the builder is blamed. He is given a minimum design and then the architect and owner want perfection where it is impossible. I have to hatch the egg, but I don't put the embryo in the egg. I'll hatch it but I can't be responsible for it being a pink, blue or yellow chicken. If the architect's designs were followed, the buildings would behave very well in most respects. But the owner wants to squeeze out a last nickel from the $1.25 cubic cost. That nickel makes the trouble. He squeezes it out where people won't see it, instead of making the bathroom less showy—and that is bad."

Public ignorance of values is at the root of this trouble and many others, the three agreed. For 15 years, through depression and war, housing construction was almost at a standstill, Aldis remarked, and many people are just not aware of what a good apartment—or house—is. They have been educated mostly from advertising, which stresses gadgets. Enough space, the chief necessity, and ample space, the chief luxury, get sacrified in favor of gimmicks.

Livability values may count in the success of projects in the long run, but now they are less important than location. "You could rent an outhouse if it was on Michigan Ave."

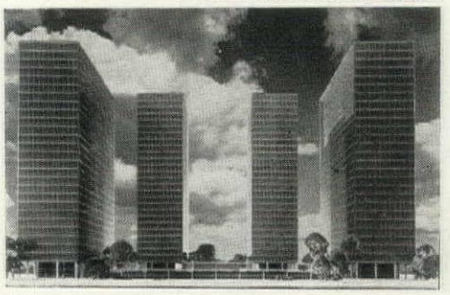
Parking brought up the question of first floor and site use. Whether to put parking within the first floor perimeter may be resolved by comparing probable income from parking and probable income from shops, Aldis pointed out. But is it good living to use the unbuilt grounds for parking cars? It was agreed that rooftop terraces are no substitute for an honest-to-goodness piece of land to look down on and that the best place for parking is out of sight—say in the basement or underground. Yamasaki, especially, felt strongly that apartment dwellers who want to come down on the ground and sit for an hour should be able to do so. "It should be a moral responsibility of the developer. Public housing has this; shouldn't the most expensive private housing have it?"

Their comment on individual projects

LAKE MEADOWS (Skidmore, Owings & Merrill, architects):

These buildings have trouble reconciling end and side walls, a common problem. "Perforations seem to be the only way to fenestrate end walls of slabs, in spite of the poor relation to the glass walls, interior or exterior." The plan (p. 143) looks well solved although the hall must be gloomy and most apartments have no cross ventilation. Balconies are really usable. Yamasaki: "They have made the same mistake we made on our St. Louis apartments by using slab buildings opposite each other. I find in our St. Louis public housing that though we have 180′ to 200′ between our slab buildings, from the lower half of the building the view is almost 100% brick and glass—no sky. This is what happens with this type of grouping although it looks so nice in site planning. Seeing sky is so important it cannot be emphasized too often, I believe."

Photos: Hedrich-Blessing

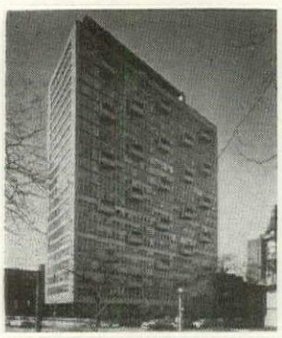


COMMONWEALTH PROMENADE and 900 Esplanade (Ludwig Mies van der Rohe, architect): Less verticality of design than Mies's existing 860 Lakeshore Dr., and perhaps not quite so pleasing because of this. Relationship between buildings at 860 Lakeshore is perhaps also more satisfying than the new group of four. Excellent use of ground space, with parking properly put underground. That feature is a fine thing for others to copy. Use of such large preassembled wall panel units (21′ x 9′) is most interesting. If these work out and if the gray tinted glass works well for sun, heat and glare control, these features will be influential on apartment building. One of the commentators felt that two Mies buildings together, or even three widely spaced as in the IIT housing, are satisfactory but that four is too concentrated a dose of such disciplined design.

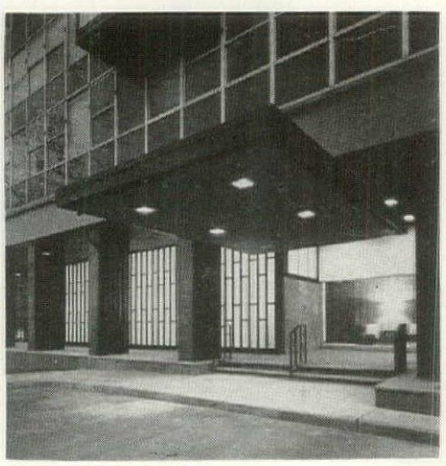
IIT HOUSING (Ludwig Mies van der Rohe, architect):

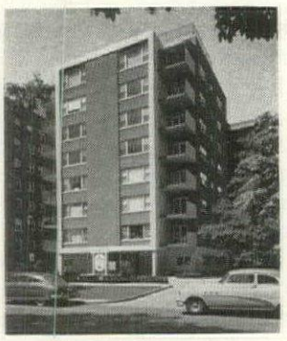
Well sited, with plenty of air and space around the buildings, and excellent plans. Fine proportions, more clarity of structure

on the exterior and the chance for more interesting interiors than those of the much earlier building in the group by other architects. But the Mies change in size of columns on the exterior, interesting as an expression of structure, can leave a poor horizontal exposure of concrete at the setbacks, said Spencer.



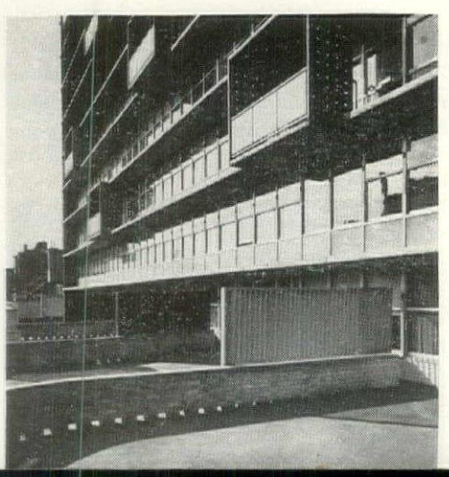
1000 LAKESHORE DR. (Sidney H. Morris & Associates, architects):
Like Lake Meadows, the difference in treatment between end and side walls shows an indecision as to whether to go to a masonry or a glass building, and the building loses integrity. There is a laudable attempt here to provide some fun in the design, but it is not very well carried through. The balconies are too small for balconies and their almost solid end walls interrupt and frustrate the view of the lake from the building's window walls. This brings up a defect in orientation too; the narrow, more closed end of the slab is oriented toward the lake. "If you believe in balconies, you should build them so they can be used. There is something wrong about considering balconies primarily as ornamentation." The first floor decoration, for instance the wall that is primarily a big lighting fixture, probably fills a need. It is not really well done, but let's have a few stunts.





THE EVANSTONIAN (Ralph Harris, architect):
Most of the windows look or will eventually look across a very narrow space at the wall of adjoining apartment buildings. Either the building is too large for the site, or the site is too small for the building. This makes the cross ventilation, very well achieved in the plan, of small purpose. "Frames are better around fine paintings than around apartment windows and walls."

PROPOSED "X" BUILDING (Bertrand Goldberg Associates, architects):
Alternating apartment floors with office floors, and renting apartment and office as a duplex is a cute idea. But it has disadvantages. The cross shape, so good for an office, is poor for apartments because tenants can look too easily into one another's windows. Optimum ceiling heights differ; 8'-6" is good for apartment ceilings; offices ought to be 11' high. Tying the size of office to the size of apartment does not necessarily fit actual needs; it makes things so inflexible for the tenant who may need to expand his office space or may need one of the larger apartments but little office room. In short, there is an artificial relationship assumed between the two spaces. Apartment houses should not look like office buildings and vice versa. This one is both—or in character, neither. The idea of never really getting away from the office when you go home is rather appalling, although it might be desirable for people whose home life is very much mixed up with business entertaining.



Nevertheless, building one such building would be a legitimate experiment. In a city of 3½ million, surely there are at least 50 people who want just such an arrangement. It should be tried. If it did not pan out, offices could easily be converted to apartments. The cost of $1.30 per cu. ft. is probably going to be the chief obstacle even though cost is justified by low maintenance.

Photos: (below) Carl Ulrich; (others) Hedrich-Blessing

320 OAKDALE (Milton M. Schwartz, architect):
Esthetically, the ledges create a strange and awkward relationship between strong horizontals and verticality. They make no sense as sun protection except on the south face. They might make some sense as glare protection. However, they make very good sense as water protection. Rain must be blown almost horizontally to pile up a head against this building side. "Rain and wind cannot abuse this wall." The lobby is nicely and simply done. "A lobby is a most baffling thing, too. When you come down to what it is, it is one man's dream. The more experimenting with lobbies, the better," said Aldis.

1. MIDDLE-INCOME REDEVELOPMENT

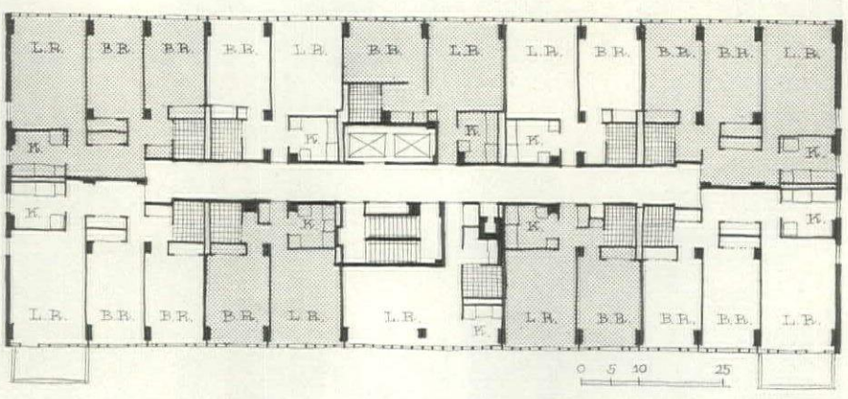
The five 12-story buildings in this group, with 595 apartments, represent the first stage of New York Life's huge South Chicago redevelopment investment. (Also completed is a neighborhood shopping center; under construction or contemplated are an additional 1,280 housing units.)

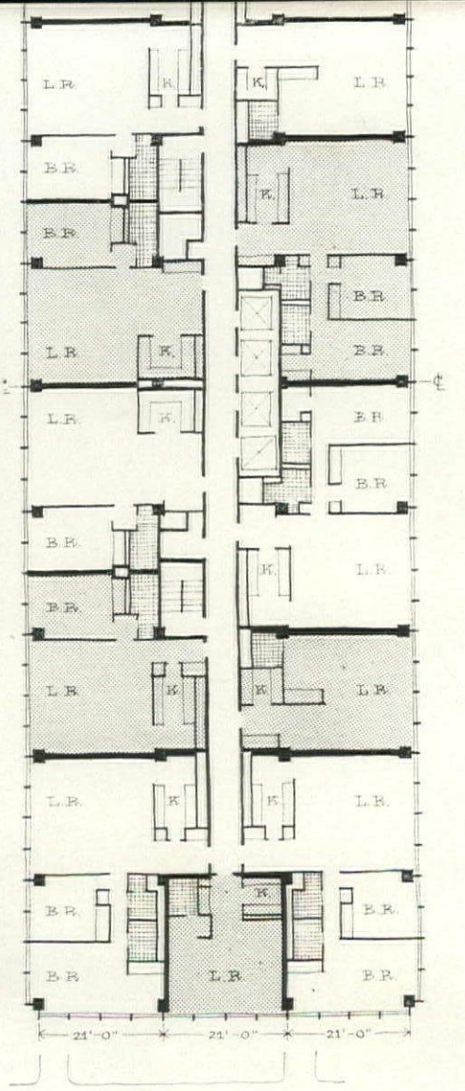
The 10.3-acre group completed (photo above) and the 55 acres of housing to come will have a density of only 119 persons per acre, a land coverage of only 9%. The site, once one of the city's worst decayed slums, was bought and cleared by the Chicago Land Commission at about $3 per sq. ft., sold at 50¢ per sq. ft. Buildings are not tax exempt. The land sale price (based on use value, not cost) together with taxability of improvements encouraged the admirable density figures.

Apartments (2 to 4½ rooms) rent for an average of $28.50 per room. The balconies on the south face have proved so popular and are so much used by tenants that two 21-story buildings now under construction on another part of the site will include balconies on both north and south faces.

The reinforced concrete structure is flat slab, permitted by the lightweight skin wall which is formed of story-high, no-maintenance, galvanized and bonderized steel frames with asbestos cement board spandrel panels. Costs will not be released until remaining residential work is complete. New York Life plans on a 4% annual return from its complete project investment.

LAKE MEADOWS, Chicago
OWNER: New York Life Insurance Co.
ARCHITECTS AND ENGINEERS:
Skidmore, Owings & Merrill
GENERAL CONTRACTOR:
Turner Construction Co. (four buildings)
S. N. Nielson Co. (one building)

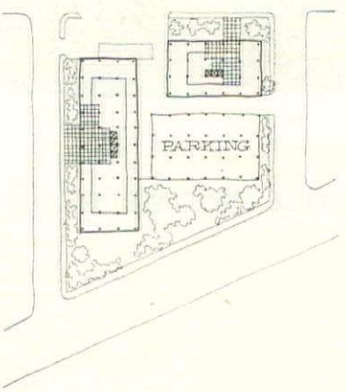




2 & 3. MIES WITH COLUMNS INSIDE

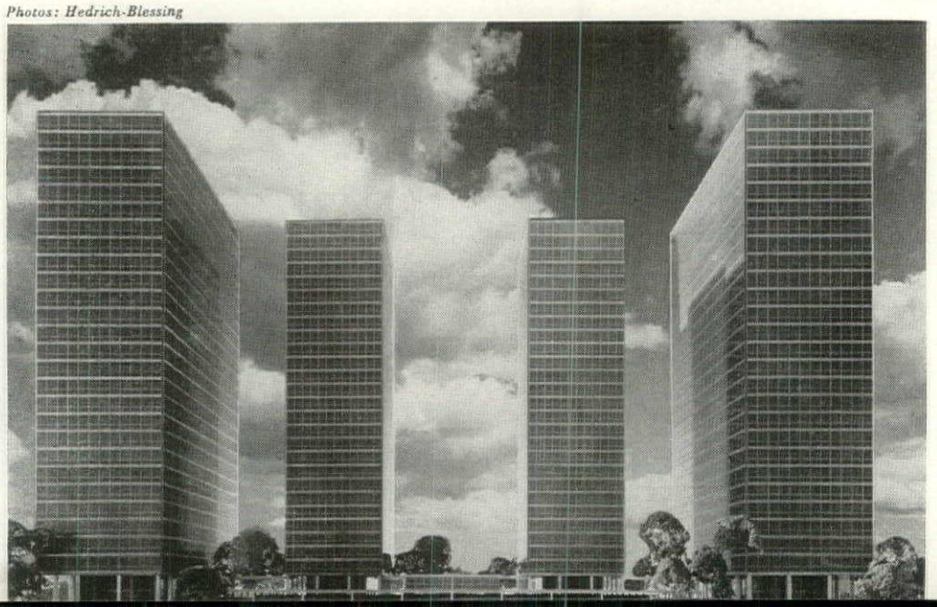
On the two largest apartment sites remaining to Chicago's "Gold Coast," the foundations are started for what will surely become two of the twentieth century's most famous apartment groups. Aside from splendidly exemplifying Mies's refinement and discipline, these towers contain startling innovations. Prefabricated aluminum skin frames are a story high, a bay wide (9′ x 21′); Developer Greenwald says they will prove the fastest and cheapest skin technique yet developed. The crystal walls will be daringly tinted gray (reputed to be the best heat retardant yet). With 28 and 29 stories, these will be the tallest flat-slab construction in the US, possibly the world.

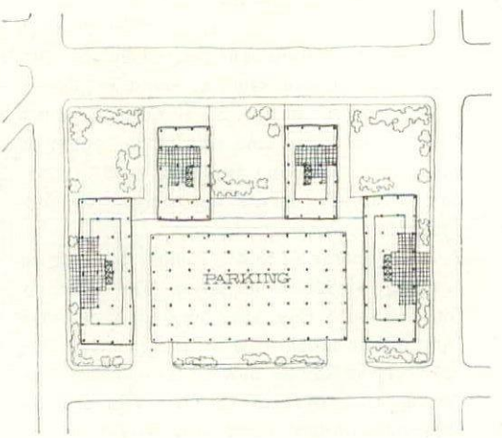
Commonwealth Promenade (below), with 750 apartments and parking for 770 cars, mostly underground on the 137,000 sq. ft. site, will have natural anodized aluminum frames. The 900 Esplanade group (above) with 533 apartments and basement parking for 400 cars, will have black aluminum. These two towers will adjoin the black steel and glass towers at 860 Lakeshore (AF Nov. '52). Unlike 860 Lakeshore, these new projects will not be cooperatives. Rentals will average $55 to $60 per room. Apartments will be air conditioned, corridors pressurized. Cost estimates (Greenwald acts as his own general contractor) are not yet available but will be low.



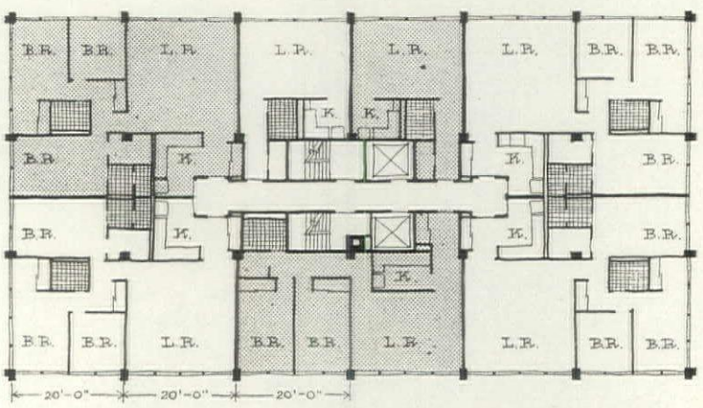
900 ESPLANADE and
COMMONWEALTH PROMENADE, Chicago
DEVELOPERS: Herbert S. Greenwald and Samuel N. Katzin
ARCHITECTS: Ludwig Mies van der Rohe
Friedman, Alschuler & Sincere

Photos: Hedrich-Blessing





4. MIES WITH COLUMNS OUTSIDE



ILLINOIS INSTITUTE OF TECHNOLOGY CAMPUS APARTMENTS, Chicago
ARCHITECTS: Ludwig Mies van der Rohe
Pace Associates
STRUCTURAL ENGINEER: Frank J. Kornacker
GENERAL CONTRACTORS: Erik A. Borg Co. (one building)
George Sollitt Construction Co. (two buildings)

With their satisfying proportions, their pleasant arrangement on the site, their rectangular (rather than thin slab) shape, their glass lobbies set behind stilts, these apartments for faculty and married college students show direct kinship to Mies's upper-bracket Lake Shore apartments (opposite). Here all these hallmarks are handled in as masterly fashion with brick masonry and exposed concrete as with the glass and metal of the Lake Shore work.

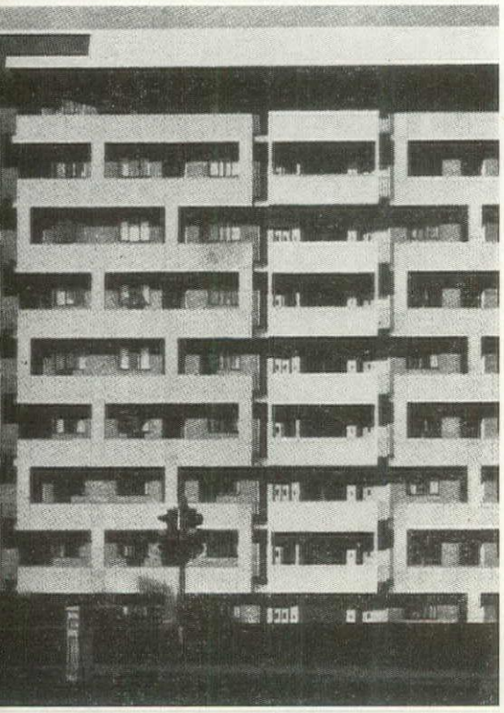
The first building of Mies's IIT housing group (left foreground) was completed two years ago, the other two (background) were finished this year. (Building at far right is 1949 apartment house by Skidmore, Owings & Merrill.)

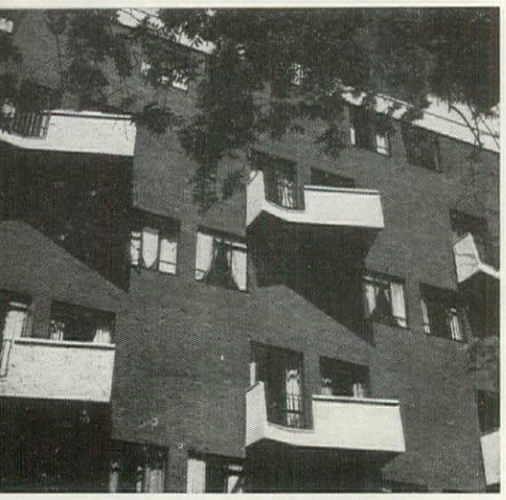
Rentals range from $75 and $80 for one room to $165 and $180 for five rooms.

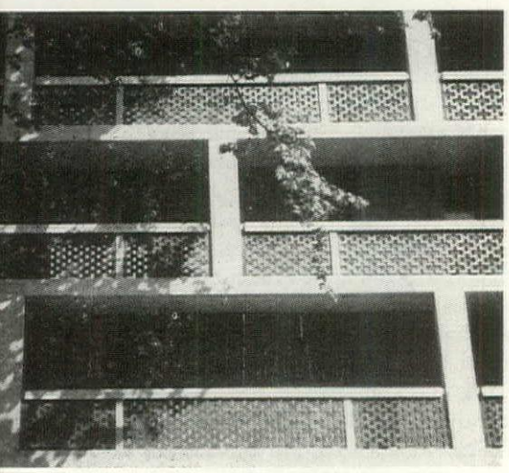
Construction is flat slab with cavity block spandrels, faced with brick inside and out. Sash is aluminum. Construction cost, including fees, averaged $13.02 per sq. ft. for the three buildings. Financing was under the HHFA college housing program.

Complaint: rectangular grid of sidewalks, which gives nice pattern from above, is aggravatingly roundabout to walk on.

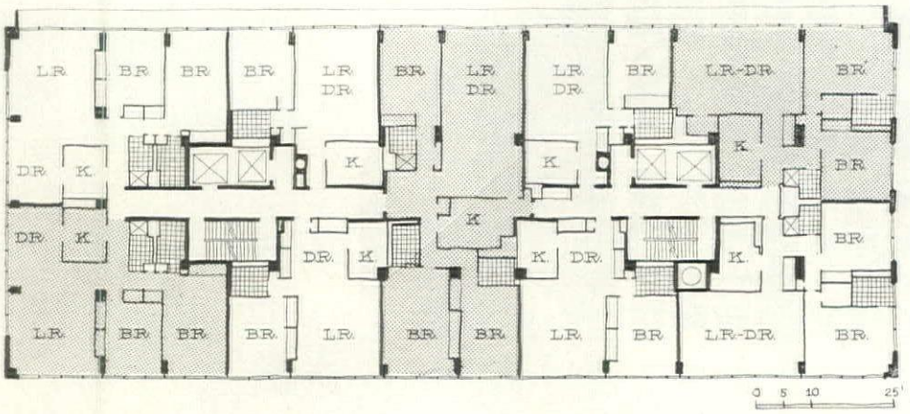
5. THIS LAKE SHORE FACADE TAKES A TRY AT







Balcony patterns in England: Three apartment blocks on a 17-acre housing estate at Paddington show variety of decorative uses of balconies that are pre-eminently useful. Theory of these façades ("a filter between inhabitants and observers") is antithesis of glass tower. Designed by Tecton.



Photos: (below & opp. p.) Hedrich-Blessing (left) courtesy The Architectural Review

A BALCONY PATTERN

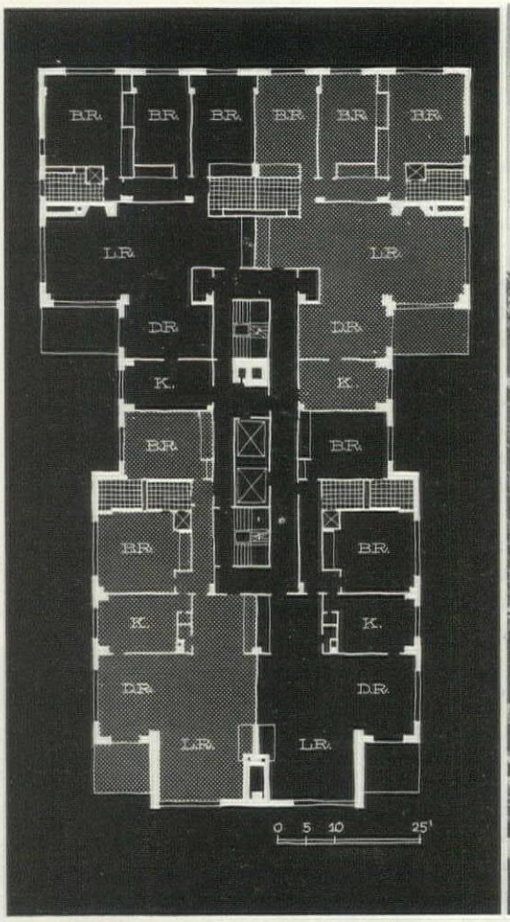
To get an unmistakable apartment house character, and incorporate decorative treatment in a façade, there is nothing like the balcony. But here, as in so much else, function and form must be wedded for success. Dinky balconies make timid decoration. Contrast, for example, the generous and forthright English examples of decorative balconies (left) with the relatively half-hearted Chicago example (opp. p., right). And now that the inevitable rash of window air-conditioning units has broken out (not shown in photo), the Chicago balcony pattern appears still weaker. This might be chalked up as a good intention that did not go far enough.

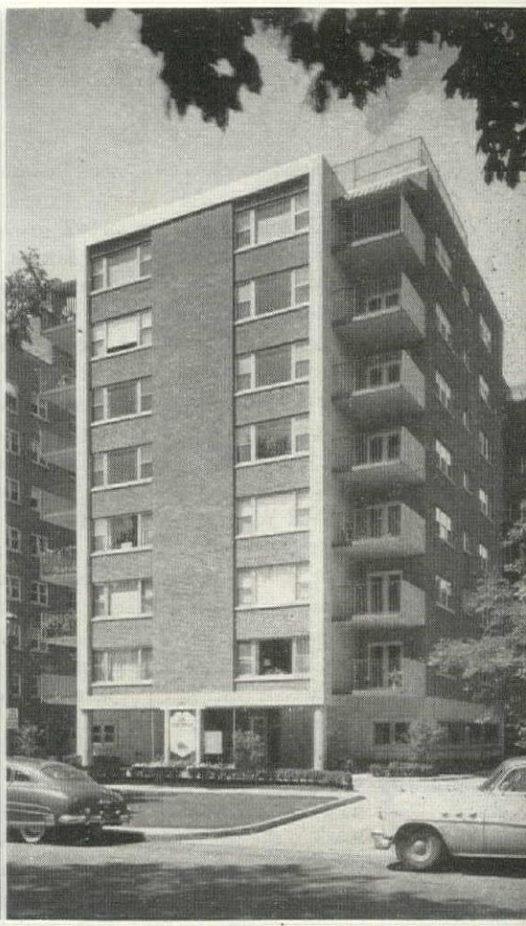
The plan of this slab building is interesting for its division into two separate foyers with the center apartment extending through the building.

The first 11 of the 23 stories use a composite column design of both structural and reinforcing steel to minimize column size; thereafter columns are reinforced concrete. Spandrels on the north-south walls are green tinted structural glass set in an aluminum frame and backed with insulation and block and then plastered. "Eyebrows" are cantilevered portions of floor slabs. Slabs incorporate copper radiant heating coils.

The building has 187 apartments, in one-, two- and three-bedroom units and garage space for 135 cars. Rentals average $65 per room. Cost was $3,500,000 including fees, or $13 per sq. ft., financed on a long term mortgage shared by an insurance company, realty company and mortgage company.

1000 LAKESHORE DRIVE, Chicago
SPONSOR: Harold L. Perlman
ARCHITECT: Sidney H. Morris & Associates
CONSULTING ARCHITECTS: Shaw, Metz & Dolio
LANDSCAPE ARCHITECT: Arthur Fitzgerald
STRUCTURAL ENGINEER: Frank J. Kornacker
MECHANICAL AND ELECTRICAL ENGINEERS: William Goodman
GENERAL CONTRACTOR: Loftus Contracting





6. COOPERATIVE FOR A CONSERVATIVE SUBURB

The developers' instructions to the architect of this 32-unit cooperative were to make fullest use of the 99′ x 200′ site. The building does literally just that. Ironically, this suburban building is crowded closer to its neighbors than most new apartments going up in Chicago proper.

Architect Ralph Harris has some informative words about completing a cooperative: "The last phase is extremely painful. As apartments are sold, it is necessary for someone to arrange with each purchaser for his decorating, floor finish, minor changes, special lighting, optional equipment, etc. The architect cannot possibly charge an over-all fee large enough even to include his expenses for this service, let alone make a profit. However, he must furnish it as a moral obligation to the promoter, his client. So we arrange, at the time we are commissioned, to charge each purchaser a fee based on percentage of changes and additions. We then become the architect for the purchaser and handle him exactly as any other client. Thus we represent a lot of clients in addition to our original one. After the routine is established, the service is not difficult until 30 or 40 families all want to move in at once, and then, having moved in, all find the minor defects and want them corrected immediately. This is not the most pleasant thing, but if an architect wants to do cooperatives he must resign himself to it."

Cost of this concrete frame, brick cavity wall building was $995,744 including fees; $15.60 per sq. ft. Sales price of three-bedroom (six-room) units: $33,600 to $47,000; 60% down; monthly carrying charges $186 to $260 for the same units.

THE EVANSTONIAN, Evanston, Ill.
DEVELOPERS: Harold V. Snyder and James A. Henderson
ARCHITECT: Ralph C. Harris
STRUCTURAL ENGINEER: Henry Miller
MECHANICAL AND ELECTRICAL ENGINEER: Norman E. Beuter
GENERAL CONTRACTOR: Carl E. Erickson

7. OFFICE-APARTMENT "SANDWICH" BUILDING

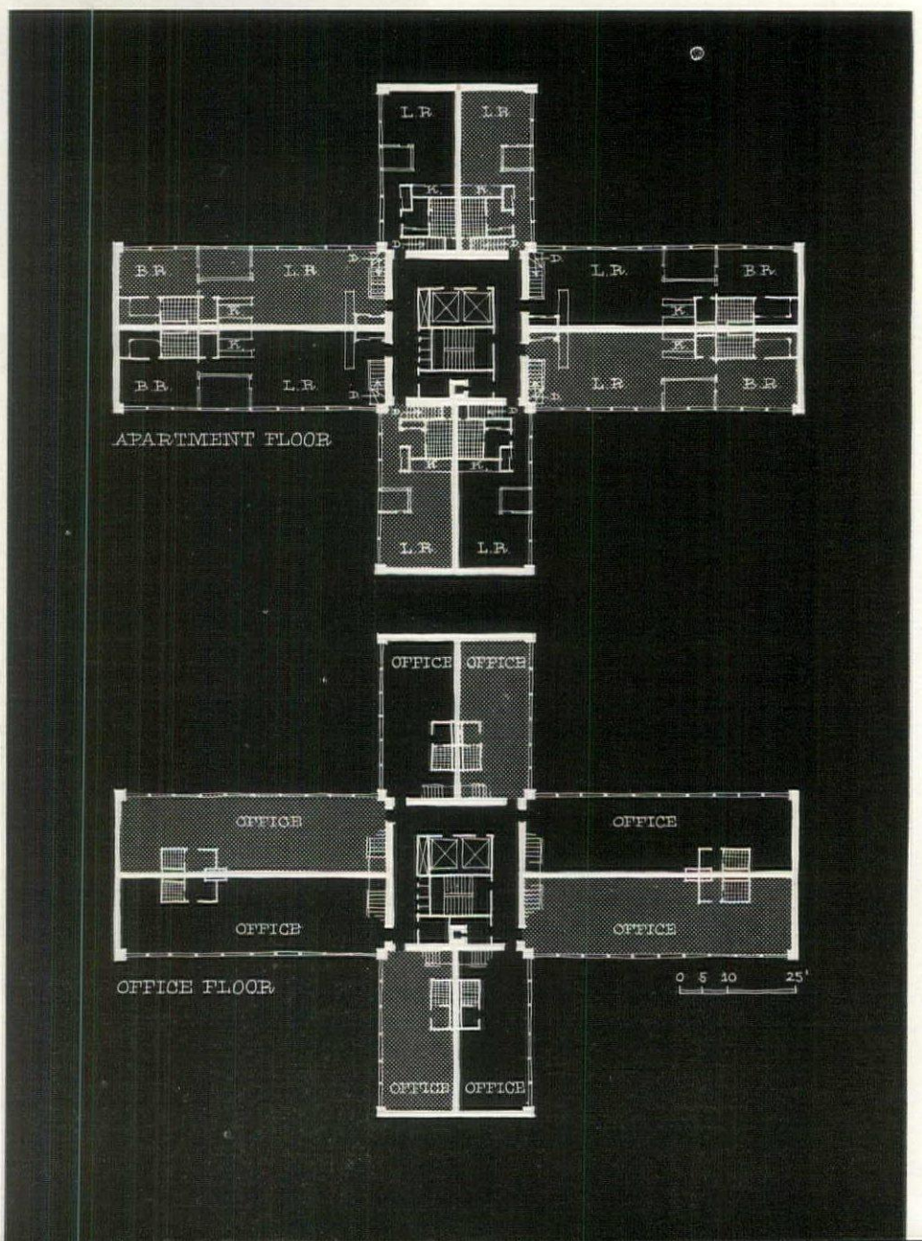
This proposed combination office building-apartment house, for which Promotor Arthur Rubloff expects to break ground next spring, goes back to the tradition of "living over the store." It contains 12 floors of 48 duplexes, each consisting of an apartment with an office below, connected by interior stair. The idea came out of an observation that many old residences in Chicago's Near North Side are being converted for joint work-living. (For another office-apartment building, the Price Tower by Frank Lloyd Wright, see *News.*)

The ground floor will have office and apartment services (stationery and photostat, laundry, valet, barber, restaurant, etc.); second floor, which covers the entire 15,000 sq. ft. site, will have parking for 65 cars; 15th floor will have separate offices. There is no basement.

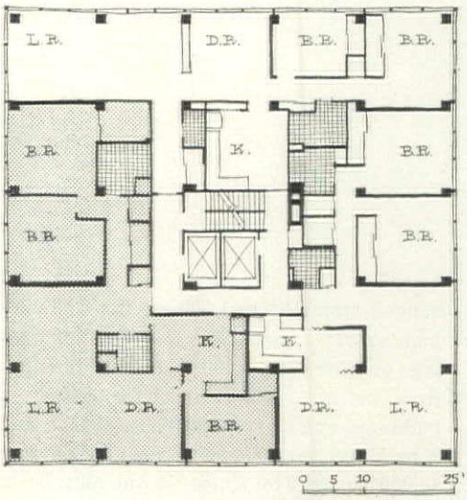
Office floors of the duplexes will rent at $2.31 and $2.80 per sq. ft., apartments at $85 and $97.50 per month. These low rentals are possible, the architect reports, because 87% of the building is rentable space (against the usual 75 to 80%); tenants will provide their own gas heat, cooling, and hot water from individual units; only three instead of the usual ten employees will be needed. Annual expenses, including 5% management allowance, are estimated at $75,600 per year. Rubloff calls it a "vertical taxpayer."

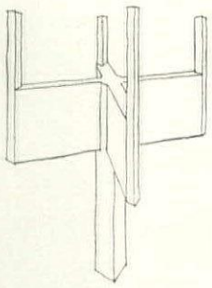
Construction will be slip-form reinforced concrete, eliminating conventional columns and beams (AF, Nov. '52). The shallow 15½′ bays will give the building about 1 sq. ft. of glass to each 3 sq. ft. of floor. The exterior will be exposed concrete with aluminum sash. Floors above the second are 9′ high, a compromise between apartment and office heights.

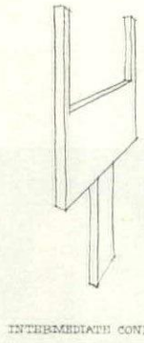
Cost is estimated at $1,353,000 excluding fees; $11 per sq. ft. Financing is now in negotiation for a first mortgage of $1,135,000 to be amortized at 7½% constant.

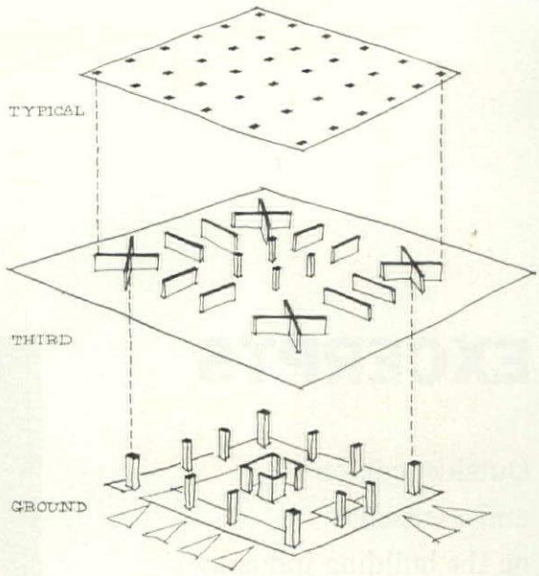


THE "X" BUILDING, Chicago
SPONSOR: Frank Katzin
PROMOTOR: Arthur Rubloff
ARCHITECT AND ENGINEER: Bertrand Goldberg Associates
CONSULTING ARCHITECTS: Pace Associates
SLIP-FORM CONTRACTOR: B. M. Heede Co.









8. NINETEEN GLASS TIERS SITTING ON A CANTILEVER

Each floor of this cooperative apartment is surrounded by a 3'-4" cantilevered ledge. Moreover, the entire ledged tower, from the third floor up, is cantilevered out over the lobby stilts (as shown in the diagram above). This rather outlandish underpinning pulls in the lower floor sufficiently so that covered peripheral parking can be provided at ground level. The scheme makes a much better impression at close range than from a distance and is at its best from the inside looking out—either at ground level or above.

To reduce weight, lightweight concrete block fillers were used between the 8½"-deep concrete floor joists; ceilings are plaster applied directly to the bottom of joists and filler. Windows are sliding aluminum sash above fixed panes and 6" spandrel. To counteract wind stresses the horizontal mullion has an aluminum stiffener. The effect from the apartments is a satisfying combination of openness and security. The building is air conditioned; hot or chilled water is circulated to individual apartment or room units.

A surprise to the developers was the big demand for three-bedroom units (about half the total of 57 apartments), and the small demand for two bedrooms (about a quarter, no more than the demand for one bedroom).

Cost was $1,450,000 including fees; $10.46 per sq. ft.; financed with a 20-year mortgage for $800,000 at 5%. Two-bedroom (5½-room) apartments sold for $32,500 to $34,200; three-bedroom (6½-room) apartments for $36,850 to $38,550; 60% downpayment. Monthly assessments are in the neighborhood of $200, will drop $30 in five years.

320 OAKDALE COOPERATIVE, Chicago
OWNER: Northcenter Realty Co.
ARCHITECT: Milton M. Schwartz
STRUCTURAL ENGINEER: Henry Miller
MECHANICAL ENGINEERING ASSOCIATE: A. H. Schwartz

Carl Ulrich

EXCERPTS

Outside opinion
and comment
on the building industry
from the rostrum
and the press

New York office boom

Excerpts from a statement by Clinton W. Blume, president of the New York Real Estate Board

The prosperous condition of our economy is making itself felt in Manhattan office buildings with 8,652,500 sq. ft.; 18 are nonment of the national economy. Since the end of World War II 50 new structures have been completed containing 11,643,500 sq. ft. of rentable space: 32 are competitive buildings with 8,652,500 sq. ft.; 18 are noncompetitive with 2,991,000 sq. ft.

In addition 13,993,200 sq. ft. more are projected. Of this, about 5,066,000 sq. ft., or 14 buildings, are actually under construction. Plans have been filed for 14 buildings with 5,001,900 sq. ft. more, and an additional 3,925,000 sq. ft. have been announced in the newspapers in ten new buildings.

The annual Competitive Office Building Occupancy Survey of May 1, '55, which included the 32 new competitive buildings, showed all except 55,135 sq. ft.—0.6%—had been rented. The greater part of the vacant space, 887,560 sq. ft., was among the 346 prewar buildings. The current vacancy rate in these old buildings is 1.39.

These statements are based on statistics yielded by a survey made under the supervision of Dr. Gordon D. MacDonald, director of the Real Estate Board's Research Dept. Included this year were 378 competitive office buildings containing 75,079,-099 sq. ft. of rentable area that showed on May 1st a vacancy of 942,695 sq. ft., or 1.3%. Last year 363 buildings, with 71,542,-767 sq. ft., reported a vacancy of 1,215,247 sq. ft., or 1.7%. Of the total vacant space reported for this year, 836,589 sq. ft. was in the above-grade area. In 1954 the comparable area was 1,127,693 sq. ft.

The above-grade vacant space of 836,589 sq. ft. was found in 155 buildings, or 41%, of the 378 buildings surveyed. The vacant space ranged from 100 to 40,000 sq. ft. or more. Forty-eight buildings, or 31%, of the 155 office buildings had vacancies which ranged from 100 to 1,500 sq. ft.; 57 buildings, or 37%, from 1,500 to 5,000; 26 buildings or 17% from 5,000 to 10,000; 18 buildings, or 12%, from 10,000 to 20,000; 4 buildings, or 2%, from 20,000 to 40,000; and 2 buildings, or 1%, with vacancy of over 40,000 sq. ft. The space vacant may be in small units or the total rentable area of one or more floors.

While representing only 32.5% of the total number of office buildings, the 378 buildings surveyed are nevertheless assessed at $1,437,489,000, or close to 77.2% of the total assessed valuation of all office buildings in Manhattan. (Manhattan has 1,164 office buildings assessed at $1,862,-722,500.)

The 32 competitive buildings completed 1947-1955 represent approximately 11.5% of the space surveyed.

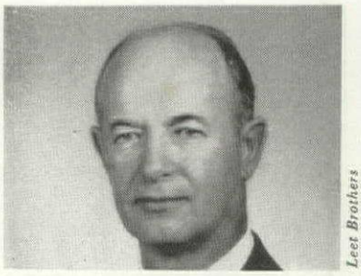
Air Academy chapel

Excerpts from an editorial by Ian C. MacCallum in the Report *of the Baltimore AIA Chapter*

The Air Academy is to be a "factory for birdmen." Of course it is. Where in the language of Webster or of the poets could a more exact definition be found? Yet these three words, said sneeringly, did more to damn an idea than volumes of prose could ever do. The tragedy of those words lies, now that the controversy has lessened, not in any serious harm to the architect's central idea for the academy itself but in the dubious future of his chapel. Here, in the chapel, the central idea could really come clear, if not to the public then certainly to a few in the profession. But its omission, for the moment we hope, is the price of compromising a controversy.

Here was a design done in the truest heritage of the American fighting man. The chapel was a campaign tent set up on the field of battle for communion, with helmet off and rifle in readiness. None of your stained cathedral glass, swinging censers and Gregorian chants but a chapel to the God of Moses on the March, to the God of Washington kneeling in the snows of Valley Forge. One could almost see the light of a candle through canvas. No airman cadet could enter it without sensing his dedication to the fighting for which he was being prepared. The stripped starkness of the moments before a hundred beaches of Normandy and of the Pacific were expressed there for him to feel.

Opinions expressed
in these excerpts
are not necessarily those
of the FORUM's editors



Leet Brothers

Modern engineering practice

Excerpts from a paper presented at the annual convention of the American Society of Civil Engineers by Raymond A. Hill, chairman of the ASCE committee on professional practice and a member of the Los Angeles firm of Leeds, Hill & Jewett

The competition for new engineering contracts has been much more intense during the past ten years than ever before in the history of our profession. Many of my friends have created Frankensteins in the form of very large staffs; they must feed these Frankensteins new business every month or be themselves destroyed. Payrolls of $50,000 or $100,000 or $200,000 per month cannot be met without constantly obtaining new contracts for engineering services. Not many firms can obtain the requisite amount of new work month after month purely on the basis of the professional qualifications of the principals and the key men of the organization.

The premium necessarily placed on quantity production of plans and specifications during the war is still having its effect, although the necessity no longer exists. For example, most of the engineering firms in this country have been asked from time to time by federal and other governmental agencies to submit their qualifications by filling out elaborate questionnaires. Almost invariably these questionnaires are directed to the size of the organization. The questions asked are: How many civil engineers, mechanical engineers, electrical engineers and other specialists are on the payroll? What is the area of the office space that the firm has or could immediately obtain? What is the financial standing of the firm? What was the construction cost of work for which plans and specifications were prepared by the firm in the last five years? Ad infinitum, ad nauseam. Rarely is interest evidenced in the particular qualifications of the partners or other principals of the engineering firm. The general statement can almost be made that the professional qualifications of the owners of an engineering firm are not considered except where an individual is needed as an expert witness or for the solution of some specialized problem. Impersonal consideration of the qualifications of engineering firms is also characteristic of public utilities and large industrial corporations. Even if the selection of an engineering firm were not delegated, the effect would be much the same. Most modern corporation executives do not see much difference between the employment of a construction contractor and his organization of skilled personnel and the employment of an engineer and his organization of skilled personnel. The feeling is: If one should be selected on the basis of competitive bids, why should not the other?

This feeling stems from the fact that great changes have also taken place in the construction industry. Thirty years ago most contractors had started out as mechanics or foremen. At that time there were few professional engineers employed directly by construction firms and these were generally engaged on layout work and estimating. Today the situation is very different; the construction industry has become much more professional in nature; engineers head some contracting firms and many engineers now direct actual construction operations.

These men, many of whom are members of the American Society of Civil Engineers, accept the principle of competitive bidding for the services of their organizations; in fact the construction industry demands that competitive bids be taken on all public work and it exerts great influence to have competitive bids taken by private industry.

The complications of modern business also have a direct bearing on the operation of engineering organizations. The heads of any large firm must be administrators; they must also, from the very nature of their business, be the sales force. Little time is left for any of them to render professional service as such service was rendered by consulting engineers 30 years ago. In common with all large industry, the business of selling the services of a large engineering organization has become fully as important as the production of the finished product, which in this case consists of plans and specifications for the construction of engineering works.

In our modern economic system, sales of any commodity are sensitive to the price placed on that commodity. The buyer of engineering services may recognize that the value of the service of one firm is greater than the value of the service of another but he has the right to demand that the sale price of such services reflect these differences.

One-way business streets

Excerpts from the answers to seven out of 15 questions analyzed in a 16-page booklet of the same title by the Chamber of Commerce of the US (25¢ per copy)

HOW MUCH DO ONE-WAY STREETS INCREASE STREET CAPACITY?

The following table shows capacity of one-way and two-way streets of varying characteristics. These data are based on the Highway Capacity Manual of the Highway Research Board and apply to downtown business street where 5 to 15% of the total traffic is commercial vehicles, 20% of traffic turns right and left at intersections, there are far-side bus stops, and the signal system provides a "go" indication 60% of the time.

It is evident that traffic volume capacity on such one-way streets is about 10 to 20% greater than on two-way streets where curb parking is allowed, and about 20 to 40% greater where one-way movement is instituted on streets with prohibited curb parking.

HOW DO BUSINESSMEN REGARD ONE-WAY STREETS?

Businessmen generally oppose the conversion to one-way movement in front of their places of business. However, such opposition usually disappears after the one-way rule has been adopted and given a trial period.

These conclusions are based on a special

continued on p. 188

WORKING CAPACITIES OF TWO-WAY AND ONE-WAY DOWNTOWN STREET

	PRACTICAL PEAK HOUR CAPACITIES—VEHICLES PER HOUR					
	CURB PARKING PERMITTED			CURB PARKING PROHIBITED		
STREET WIDTHS CURB TO CURB	TWO-WAY	ONE-WAY	% GAIN	TWO-WAY	ONE-WAY	% GAIN
30 ft.	450	550	22	900	1,250	39
40 ft.	750	900	20	1,400	1,750	25
50 ft.	1,000	1,150	15	1,800	2,200	22
60 ft.	1,250	1,350	8	2,200	2,600	18

While other stores chase the customers to the suburbs, Rich's attracts them downtown with a gaily colored building, a verdant plaza, an attached garage and, to help compete with the discount houses, a built-in warehouse

A DOWNTOWN STORE FOR TODAY

The new Rich's, in Knoxville, is as vivid and verdant and easy to shop as a breezy suburban store—yet it is not built in a suburb. Rich's managers have put it squarely downtown—not on the "100%" merchandizing corner but four blocks away, where they can make the better corner for tomorrow. Here they show how the city center can offer the *same* lure as the suburbs—and draw a tremendous sidewalk trade besides.

Land was enough cheaper off the main shopping focus to allow some relaxation in its use (such as the pools and planting strips shown on these pages). The land slopes, but smart planning has turned this into an advantage to complement another advantage: an adjoining major traffic artery in and out of town. At the low end of their lot Rich's built a parking building to accommodate customers motoring to the department store, with an underground passage and elevators to the main building. But they did not forget that 60 or 65% of their customers would be city pedestrians. Their garage parks 450 cars; this provides 2700 customers per day at a maximum estimate; the number of customers they need is more like 25,000. To get this crucial trade in from the city sidewalks they put the major entrance to their store on the corner pointed at the heart of the city. Rich's "impulse" selling area, the sharpest arrow in any department store's quiver, is also pointed toward pedestrians, on the level of the main entrance, right there where people will walk into it and be tempted to buy that pretty extra something. (Bill Snaith, Loewy designer in charge, says, however, that the usual shopper only *looks* at impulse merchandise on the way in to get something else; he does not *buy* the impulse item until he's on the way out of the store.)

Gardens and pools are Rich's contribution to neighborhood uplifting in downtown Knoxville. Façade is faced with green glazed tile with glass panels. Ends of building are red glazed brick.

Photos: Gottscho-Schleisner

Sloping site helps integrate store, garage and warehouse

The hillside site permitted an advantage in planning; the usual basement shop of the department store here has the respectability of a street-level entrance on the downhill side. There is an advantage in the plan in warehousing too (see section). Under both garage and store proper is the storage area—served by trucks at the garage end, and by automatic conveyors throughout. To take advantage of this, the planners put the housewares department on the basement level, a location which permits salesmen to give buyers such items as toasters to carry home with them rather than ordering by number for delivery from a distant warehouse (at a profit-eating cost to management). The floor samples are for sale here on the take-with basis because they can be replaced from stocks a few feet away.

This detail is a small one, but it is illustrative of the way Rich's and other bright new department stores are being girded to fight the discount houses. Although most big, old department stores have been succeeding with suburban offspring, many of the midtown bases still have been worrying the experts, who have been pointing out that the downtown stores may be holding their own, but they have not been getting their share of the increasing spendable income of the nation's customers. It is so expensive for many of the big boys to operate that they simply cannot compete profitably with smaller stores offering fewer services. Snaith points out that the enormous volume of department stores has never been their real merchandising edge anyway. What has marked the big, successful stores in the past, he says, is the reliance of their customers on them as "editors" or selectors of merchandise, and as guarantors of its quality. But today, more and more buyers are looking past the retailer. Customers are being guided by national advertising, and goods are also being guaranteed by the manufacturer, not the storekeeper. In this selling situation it is hard to make a canny shopper pay the larger profit necessary for the department store's carpeted overhead; he buys at a dirty-floor discount house.

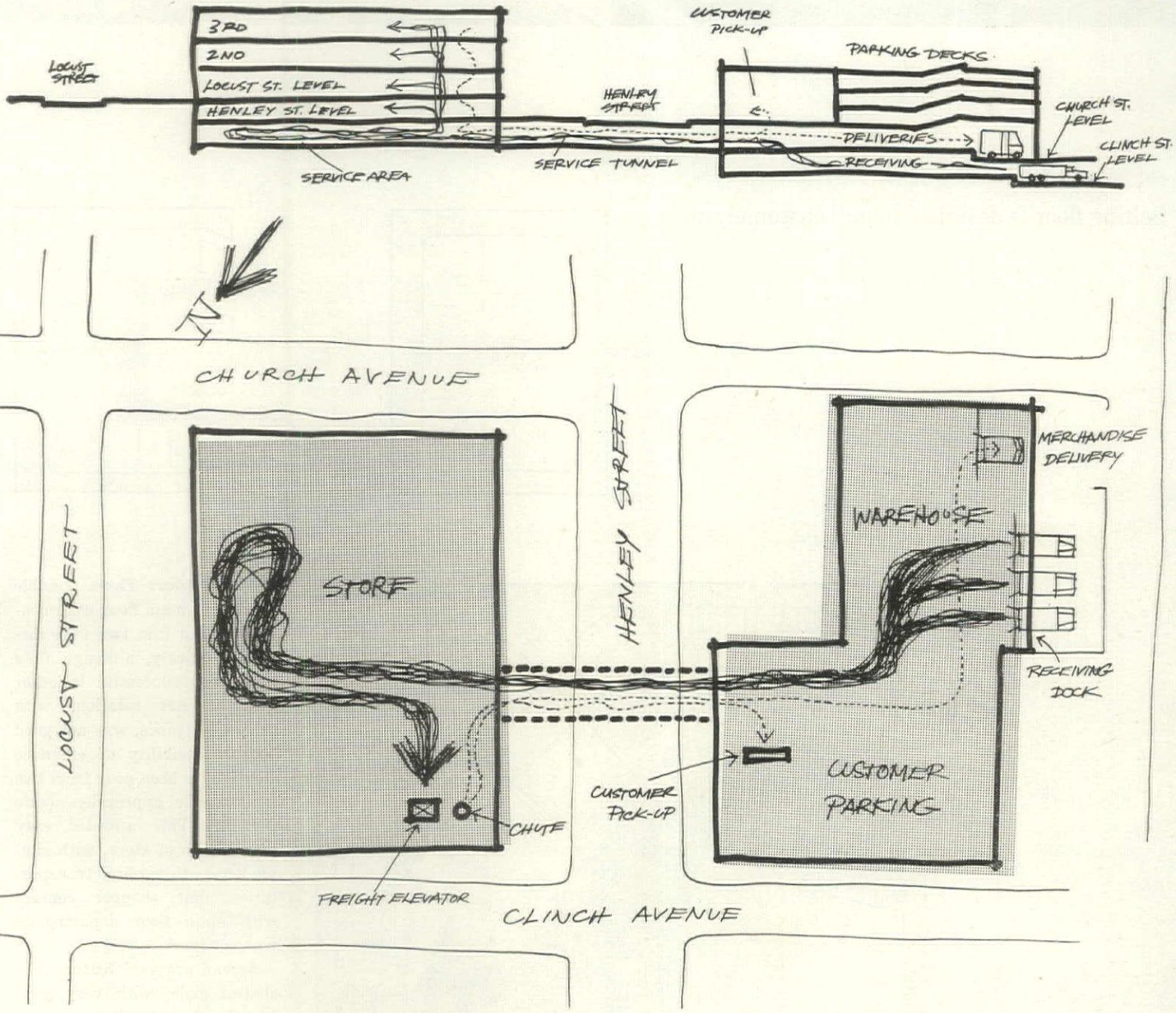
Department stores can still prosper, Snaith argues, but only by becoming much more efficient merchandisers, as well as redramatizing their position as arbiters of taste, to compete with the national magazines and TV. Rich's is a store which has realized this.

Rich's moves its stock about four times a year, devotes about 20% of its space to backup, so the renewing of floor stocks is a continual process; a conveyor system moves stock in fairly easily, and coddles the automobile shopper by carrying his packages back out to the garage for him, to be picked up as he drives out.

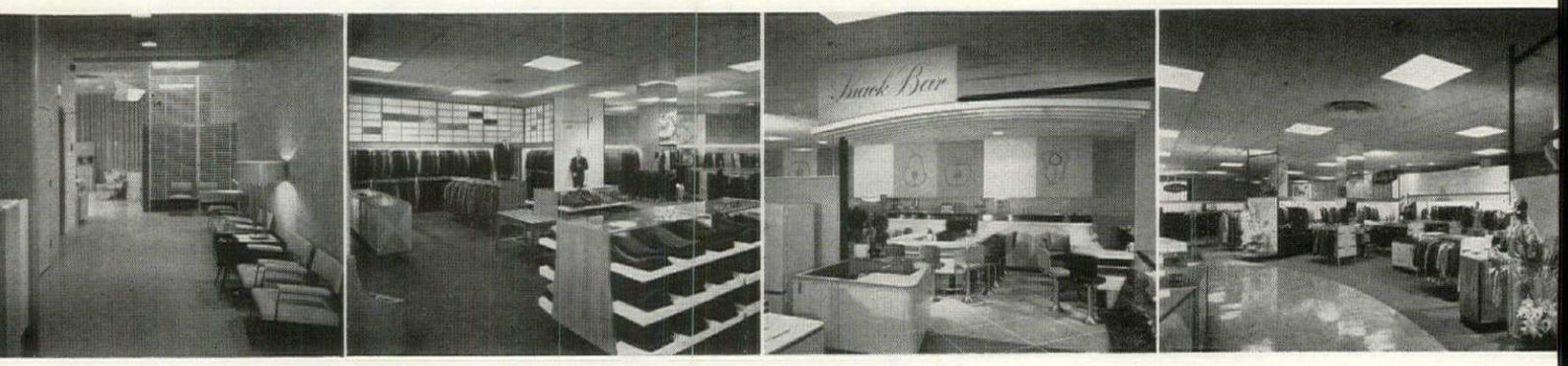
The store asserts itself in the community at night with towers bearing new-type floodlights which pour on about 50,000 w. of tinted illumination as dark comes on.

Façade of brick is framed in glass and accented by long, corrugated canopy of concrete

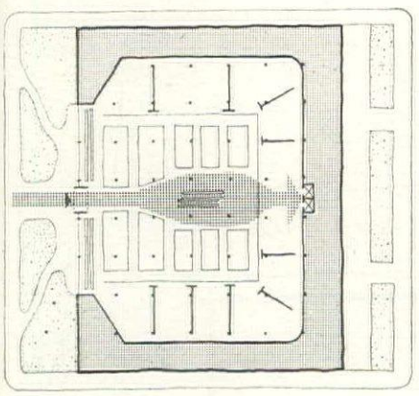
RICH'S DEPARTMENT STORE: Knoxville, Tenn.
ARCHITECTS: Stevens & Wilkinson
DESIGNERS: Raymond Loewy Corp.
LANDSCAPE ARCHITECTS: Eckbo, Royston & Williams
MECHANICAL ENGINEER: Edward E. Ashley
EXTERIOR LIGHTING: Abe Feder
GENERAL CONTRACTOR: Batson-Cook

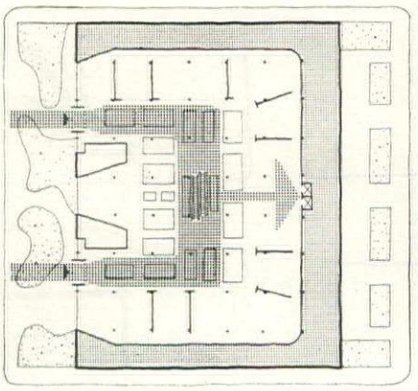


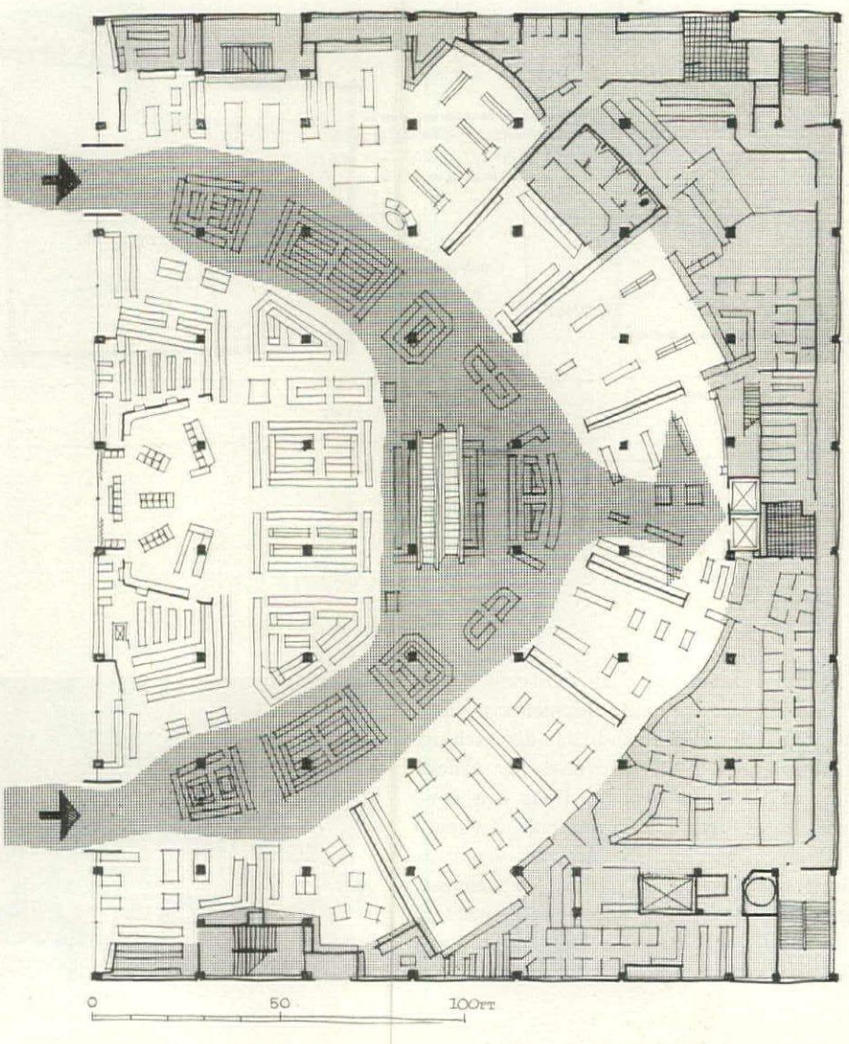
Garage entrance is directly across street from store's rear, "basement" shop entrance (left). Shoppers park their cars, descend to tunnel level in elevators, walk under street to store block, and ascend again in elevators to shop. Conveyor system carries their packages back over to garage, to be picked up upon leaving. Garage serves also as receiving depot for incoming shipments of merchandise and as dispatching post for deliveries by truck. These two functions are performed at lower end of depot, but, again, are on separate levels. In effect, warehouse stretches under both garage and store—a long set of conveyors to keep shelves full.



Selling floor is designed to pull customers in





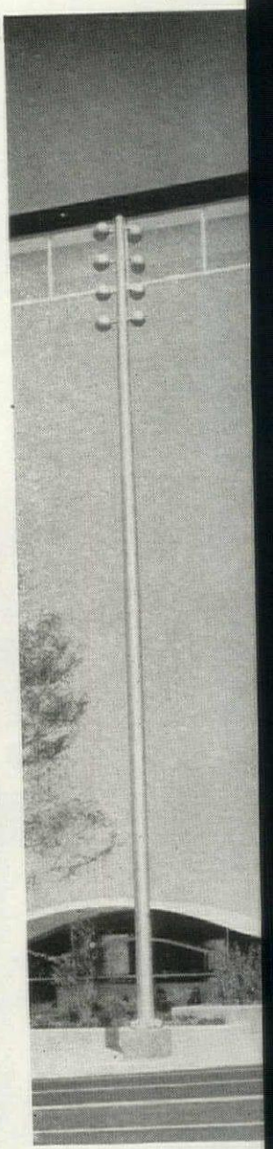


Selling floor: Three possible layouts of main floor were considered, but first two were discarded quickly, although they have been successful in other stores. First solution, with central entrance, was not good because visibility of entrance would have been poor from two main traffic approaches (side streets). This afforded easy penetration of store, with simple access to vertical transportation, but shopper contact with main floor departments was not good.

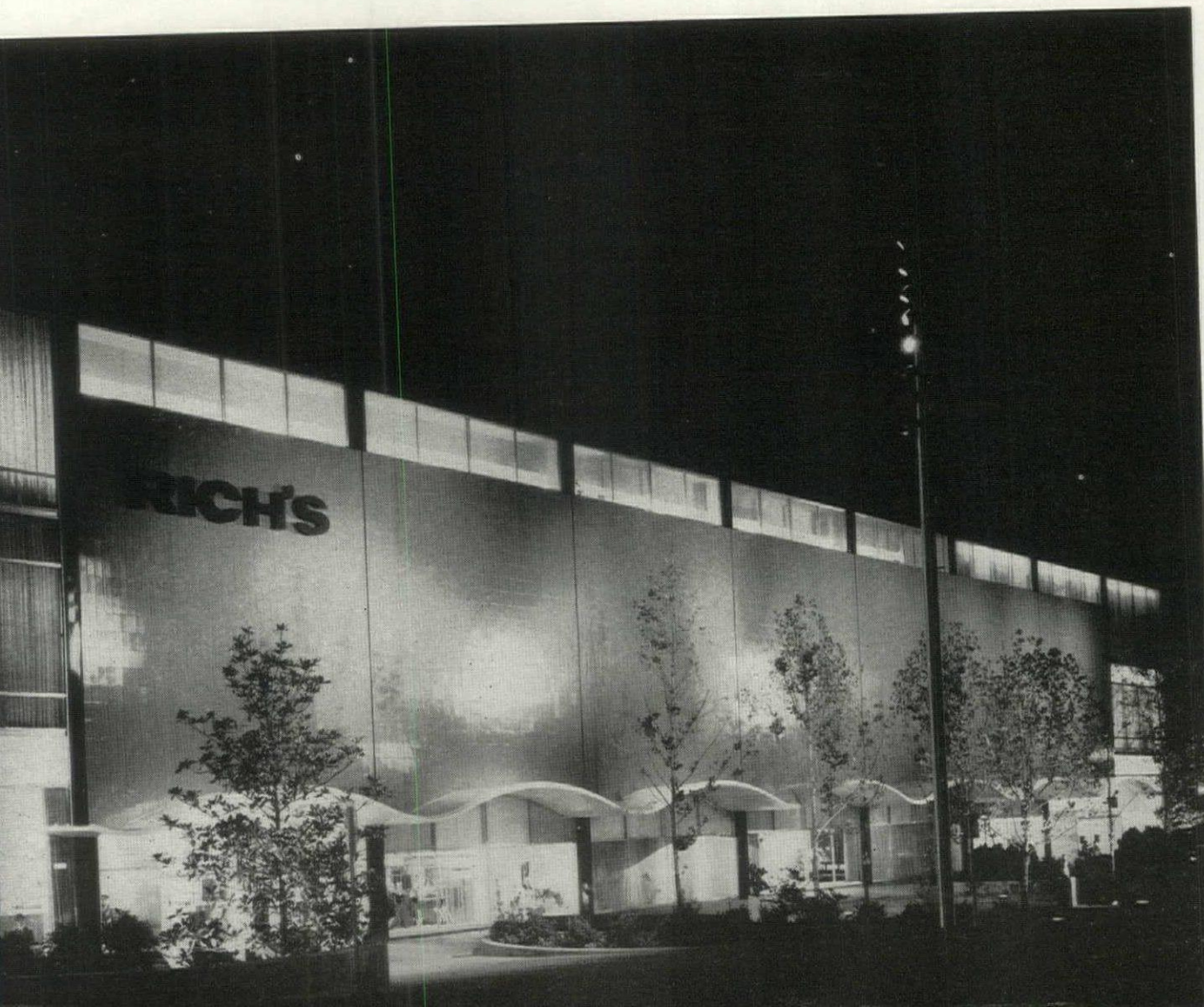
Second proposal featured U-shaped aisle, with very good "depth of contact" to various departments, but designers felt it lacked feeling of high fashion; it was graceless.

Final solution kept advantages of both discarded schemes. U-aisle was bent into horseshoe, keeping maximum interior display but pulling entrances to ends of building. Say the designers, "You start walking before you start shopping. It's more gracious."

Selling spaces are kept open, with departments divided by floating display boards rather than partitions. Ceiling access is simple: panels simply push up in their frames. From left to right: foyer of beauty shop, men's wear department, snack bar (there is also a larger restaurant), main floor aisle, fur department, upper floor aisle.



Nightlighting of exterior by Abe Feder, of Broadway fame (see p. 115), is done with banks of self-contained reflector lamps on slender, graceful posts. Reflector lamps are new type, 500 watts each, with projection beam of 120′. About 100 of them are used on this job. Their color can be adjusted easily to fit seasonal moods.



An alert metropolis circles its downtown problems with a ring highway, then tackles them with a three-pronged rebuilding program: parking garages, office buildings and apartments

Fairchild Aerial Surveys, Inc.

IN KANSAS CITY . . .

A FRAMEWORK FOR THE FUTURE

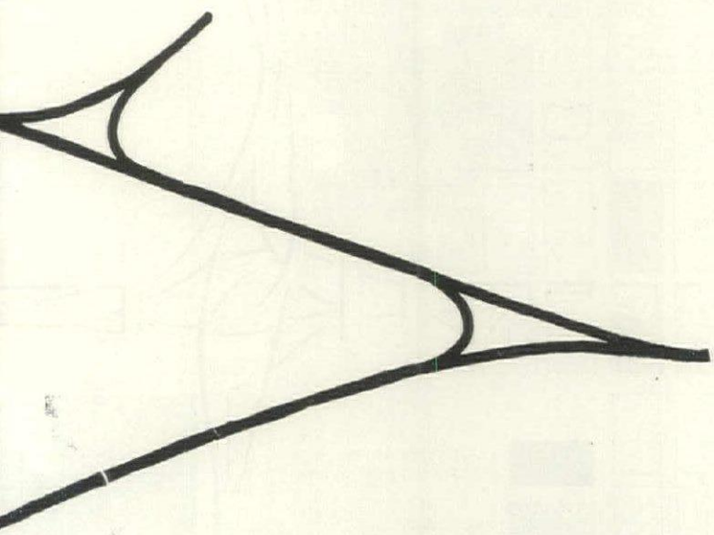
The problem facing Kansas City is the problem that sooner or later faces towns everywhere: middle-aged spread and a weakening heart. But where some towns have reached a crisis, Kansas City is at work on a bold solution to avoid it: a whole new set of arteries before the old ones harden, plus some vital surgery to keep its core alive. Other cities will want to watch closely as Kansas City builds its unique ring road (this page), completes a big underground garage and a parking project right through "skid row" (p. 160), and uses new laws to replace its semislums with apartments and with office buildings designed on a new and highly interesting three-way expansion grid (p. 163.)

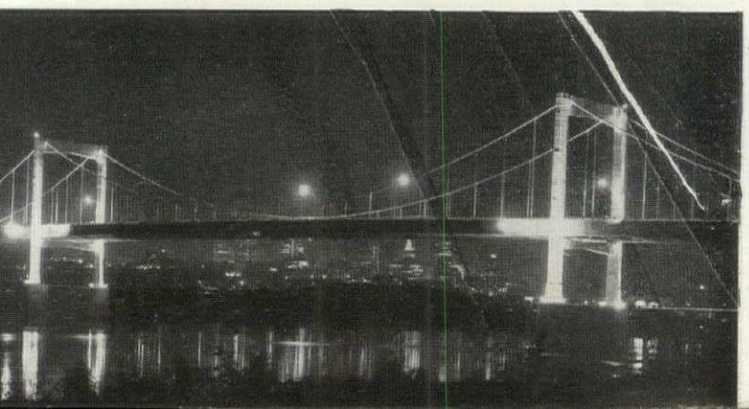
As it swelled from a trading post on the banks of the Missouri into a hustling metropolis at the very center of the US, Kansas City was forced by natural and political boundaries to build south. Some of these suburbs, spurred by Newspaperman William Rockhill Nelson and Developer J. C. Nichols, are now famous examples of early planning: parks, boulevards and shopping centers graced with trees, fountains and sculpture.

Today some of this foresight and civic energy has turned back north. A sprawling 20 sq. mi. area across the river finally has been annexed as Kansas City North, partly balancing the city's lopsided growth, and now planners are trying to stabilize it, too, with neighborhood parks and playgrounds.

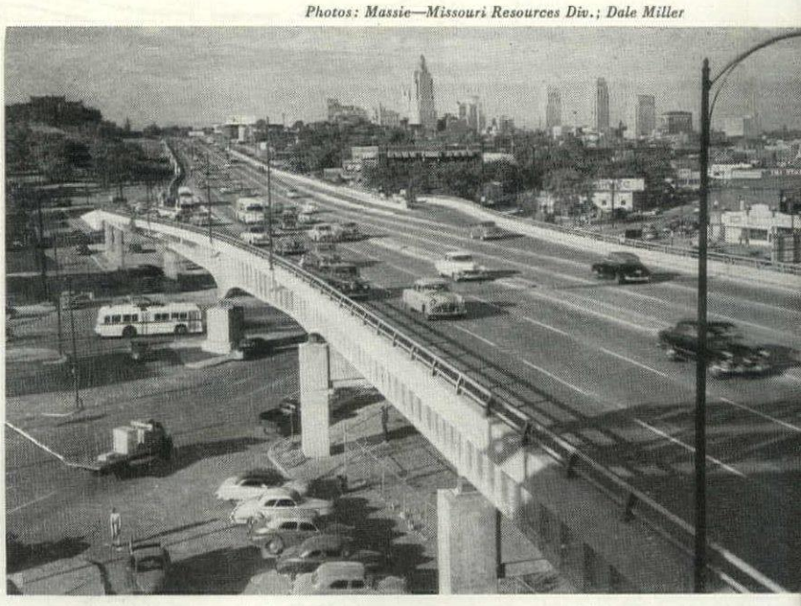
But in between lies an even bigger job: bolstering a central district that is losing business to the suburbs and fading around its edges into a typical collar of slums. Kansas City's answer is one that other cities will want to study closely. It is a giant web of expressways knitting center and suburbs together and spidering out into the new national highway system. Girding the core will be a close-in "ring road" (photo opposite), a huge coronary artery to pump customers and commuters into new peripheral parking, to by-pass the 40% of through-traffic now clotting downtown streets, and to frame the heart's dying outer cells for piece-by-piece renewal. Based on an exhaustive study by City Planning Engineer Philip Geissal and his staff, the $150 million program calls for 35 mi. of metropolitan superhighways over the next 20 years.

Photos: Massie—Missouri Resources Div.; Dale Miller



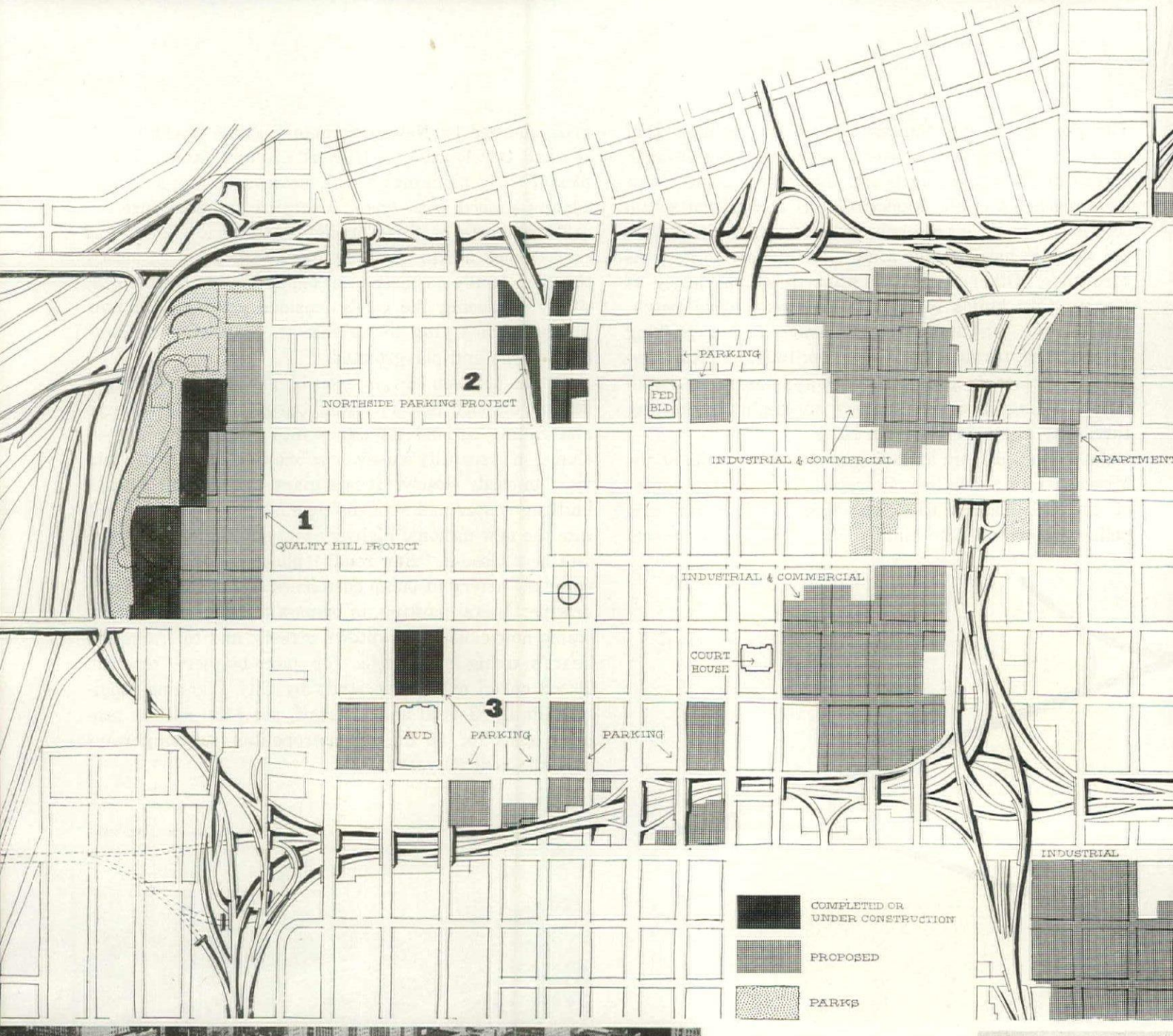


New Paseo Bridge is third linking Kansas City with growing northern suburbs. Fourth is under way.

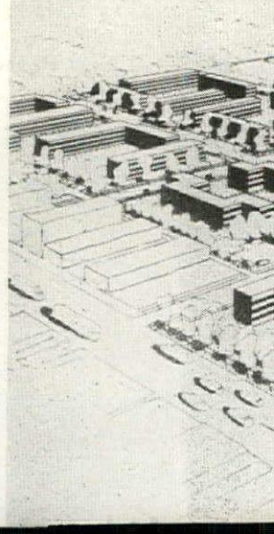


New West Freeway, first leg in metropolitan highway program, brings traffic in from expanding southwest.

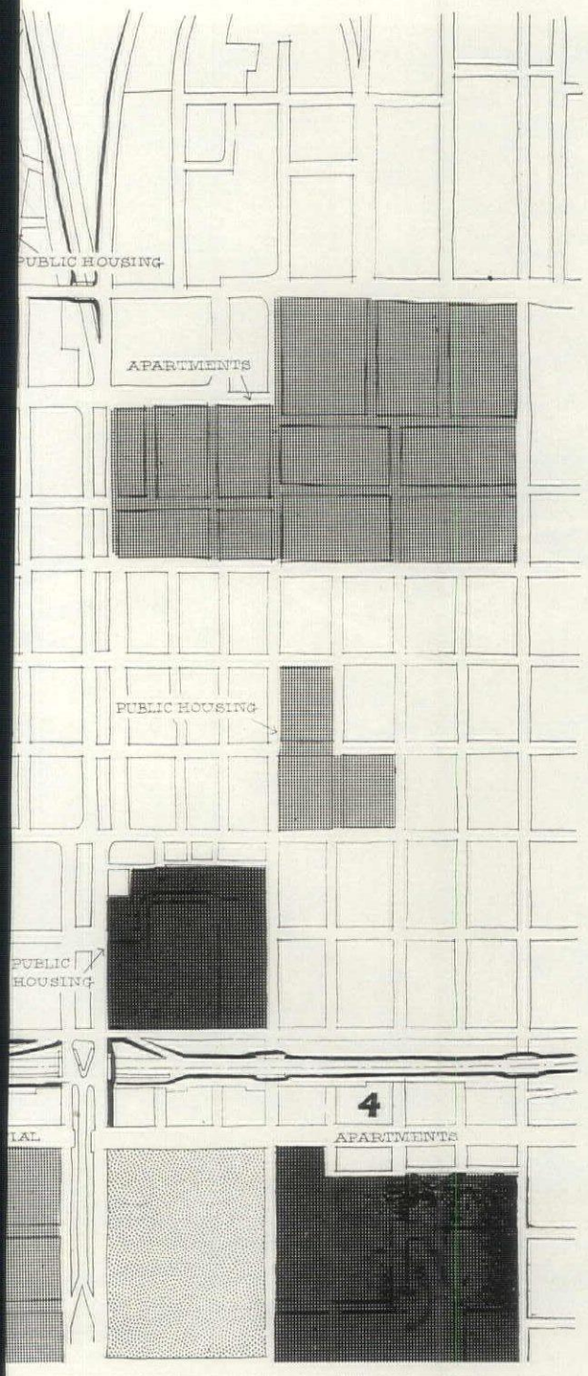
1. Quality Hill: private redevelopment started with five 10-story towers of 100 apartments each bordering park. Office buildings are next.

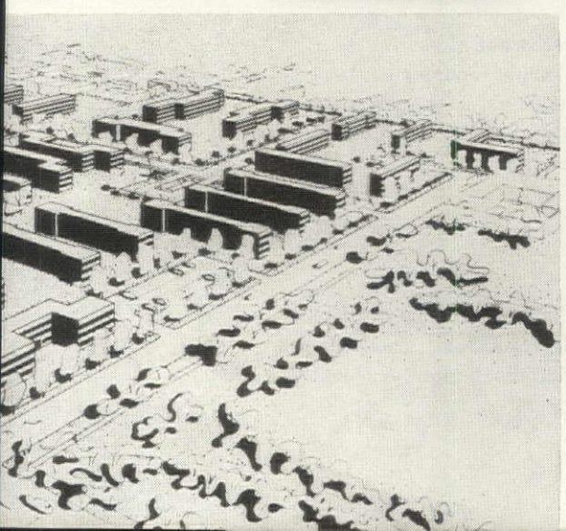


3. Underground garage for 1,500 cars nears completion opposite Municipal Auditorium. Sketch shows west entrance under formal park.



2. Northside Parking: V-shaped area cut out of city's "skid row" is being rebuilt as 1,850-car project connecting with new Intercity Expressway.





4. Housing project: slums will be cleared under Title I, land sold for private redevelopment as garden apartments for 725 middle-income families.

Within Kansas City's ring of roads, a ring of redevelopment

As the parkway ring is pieced together, it will work hand-in-glove with other new improvements just inside its boundaries.

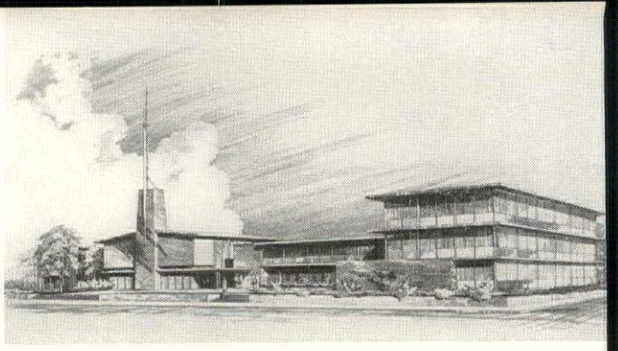
On the west, it will run between the stockyards and the base of Quality Hill, site of new apartment towers and office buildings (see following pages).

On the north, the typical downtown "skid row" of flophouses, saloons and dingy stores, which was once the center of town, has been carved away for the 1,850-car Northside Parking Project that connects with the ring's northern link. (Part of this area classifiable as mainly residential was prepared under Title I for resale to the Downtown Redevelopment Corp., a group of 98 businessmen under the leadership of Banker James Kemper. The remainder was acquired directly by the corporation under state and city redevelopment laws providing condemnation powers and 25-year tax relief.)

On the south, opposite Municipal Auditorium, the city is finishing a three-level, 1,500-car garage under a park, much like San Francisco's Union Square; proceeds from private operation will retire $4 million in revenue bonds used for construction. The ring road is planned close enough in so that still more parking may be developed along the south within a two- or three-block walk of the center of town.

On the east, slums almost in the shadow of City Hall will be acquired under Title I for resale and controlled private development of light industry, commercial and parking areas. Outside the ring, land is being publicly cleared for private redevelopment as apartments (sketch left) and four other areas are being studied. Under public housing, three projects totaling 1,148 units are built, three more of 388 units underway.

1. Apartment houses are planned for areas marked (1) in photo below. Exteriors are porcelain enameled steel. Architects: Kivett & Meyers.

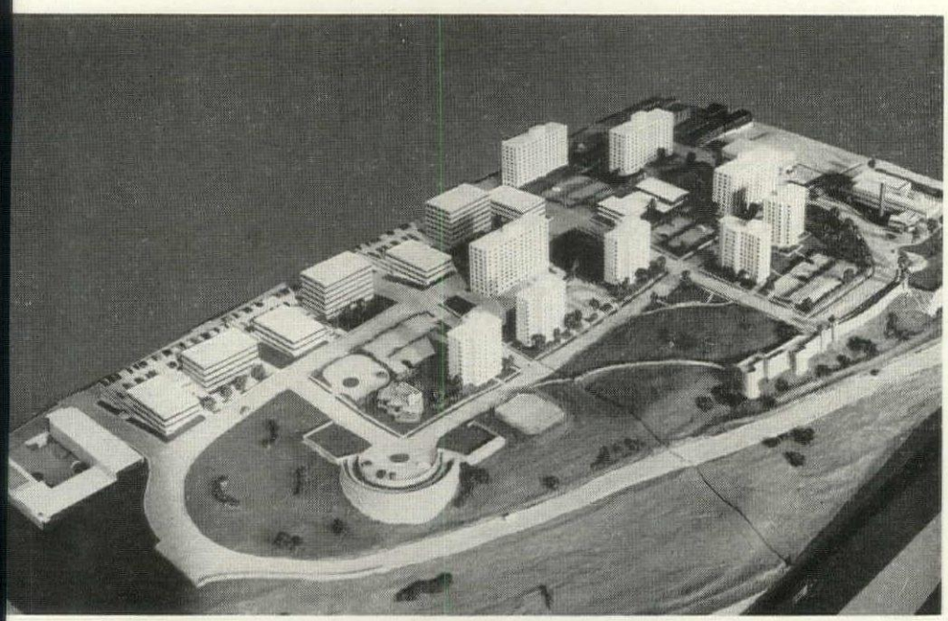


View from northwest shows (l. to r.): existing River Club, apartment towers, Hereford headquarters, with new project areas behind. Big auditorium garage is in center background.

3. Motor hotel, by Memphis interests, has convention hall, restaurant, pool, shops. Architects: Windrom, Haglund & Venable.

2. New Baptist Church will incorporate existing building, center, new lift-slab classrooms, right. Architects: Kivett & Meyers.

Quality Hill: Kansas City's biggest project moves ahead under private capital, public help



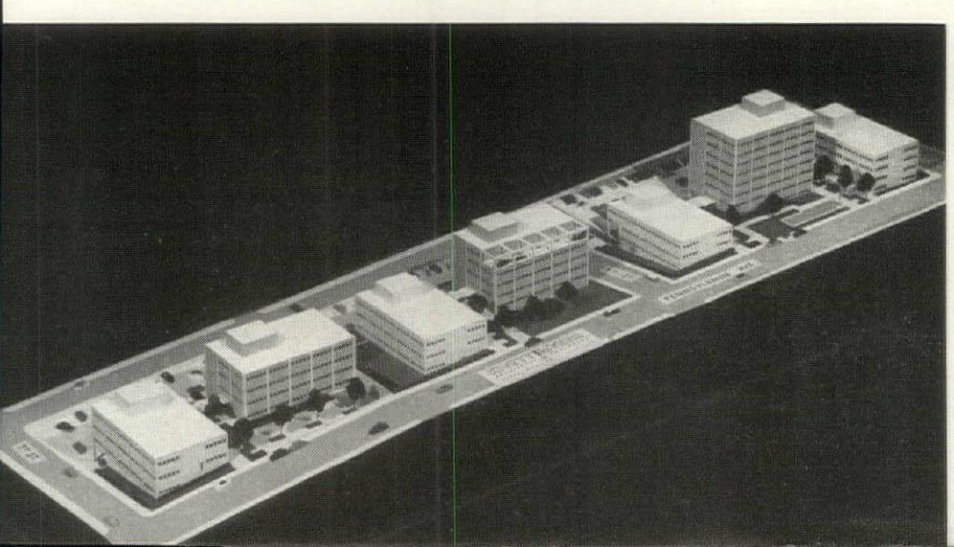
Completed project, as it should look in 1966, from same viewpoint as aerial photo at left. Area is four- or five-block walk from heart of downtown Kansas City.

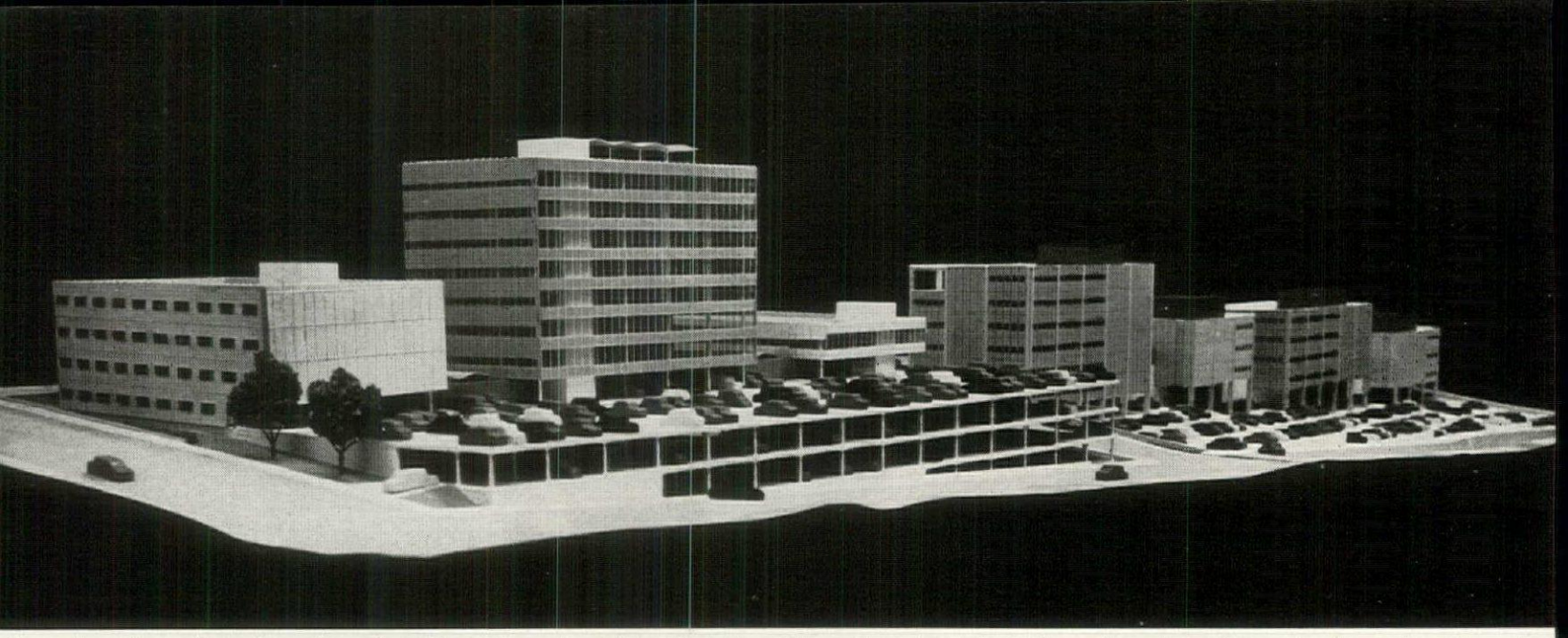
A blighted area just west of Kansas City's central business district is becoming one of the first places in the country where condemnation powers and tax relief have made large-scale private redevelopment possible. Quality Hill is a short walk from the center of town and commands a magnificent view of the river and the city. But the mansions first built there by early cattle barons and bankers had slowly turned into boarding houses, shacks and parking lots as the land values moved to new suburbs in the south. Then, with the passage of new state and city redevelopment laws in 1947, Realtor Lewis Kitchen and Banker William T. Kemper Jr. saw what could be done.

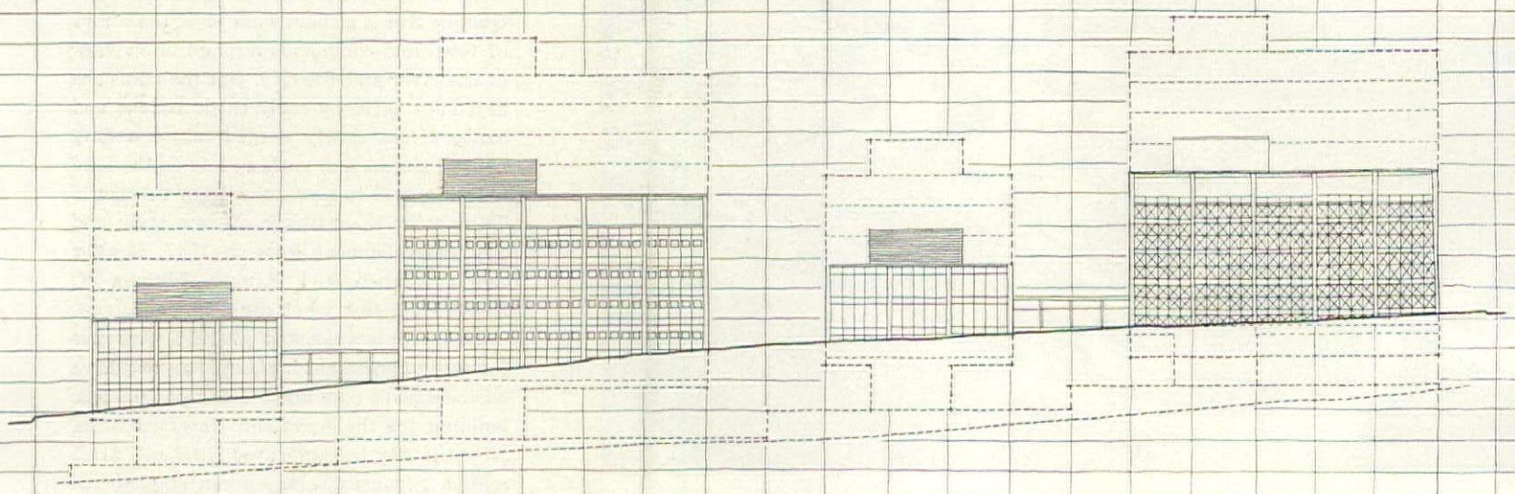
Their project started in 1950 with five ten-story apartment buildings, an exclusive businessmen's club and a new headquarters building for the American Hereford Assn. Now the city has approved Kitchen's $11.5 million expansion plan: seven single-occupancy office buildings, a larger ten-story apartment building and a 173-room motor hotel. Three more apartment buildings and a new church may be added in the future.

Under Missouri's Urban Redevelopment Corp. Act and Kansas City's implementing ordinance, private redevelopers may be helped by condemnation power (Kitchen did not need it on the first phase, expects it will be necessary on only 10% of the second phase where he must buy 50-odd parcels costing over $1 million). Then for 10 years the private redevelopment corporation, or corporations, set up for the purpose carry only the original tax on the land (a mere $694 last year for the expansion project area). During the following 15 years the corporation, whose profit is limited to 8% of costs, pays 50% of the regular tax rate on the new buildings, and in the 26th year goes to the full 100% rate. Estimates show the city will collect some $1.3 million in taxes over the 25-year abatement period—compared with some $160,000 if the land were not redeveloped—and about $160,000 a year thereafter.

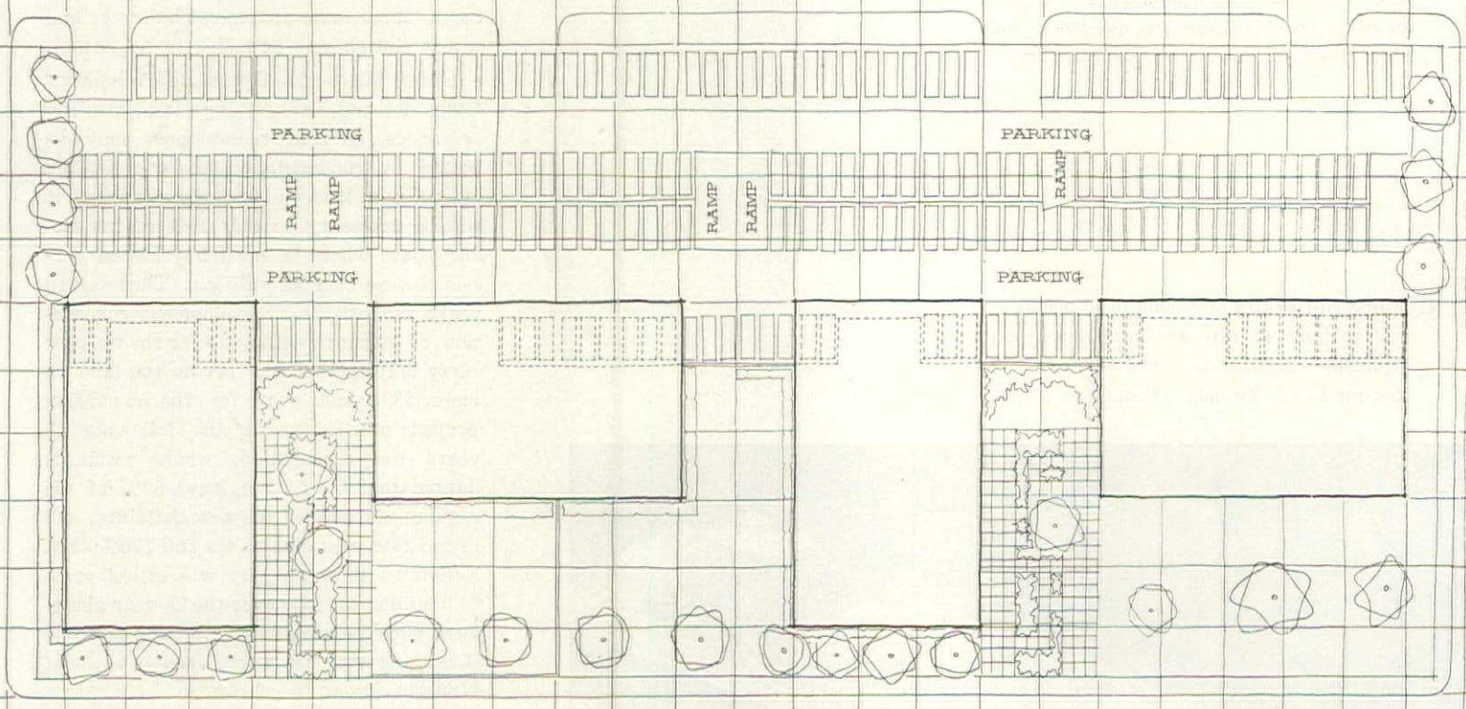
4. Office buildings of 31,000 to 64,000 sq. ft. will be built at rate of one a year under separate corporations and operated by Realtor Lewis Kitchen. (Details on p. 164.)







ELEVATION



PLAN

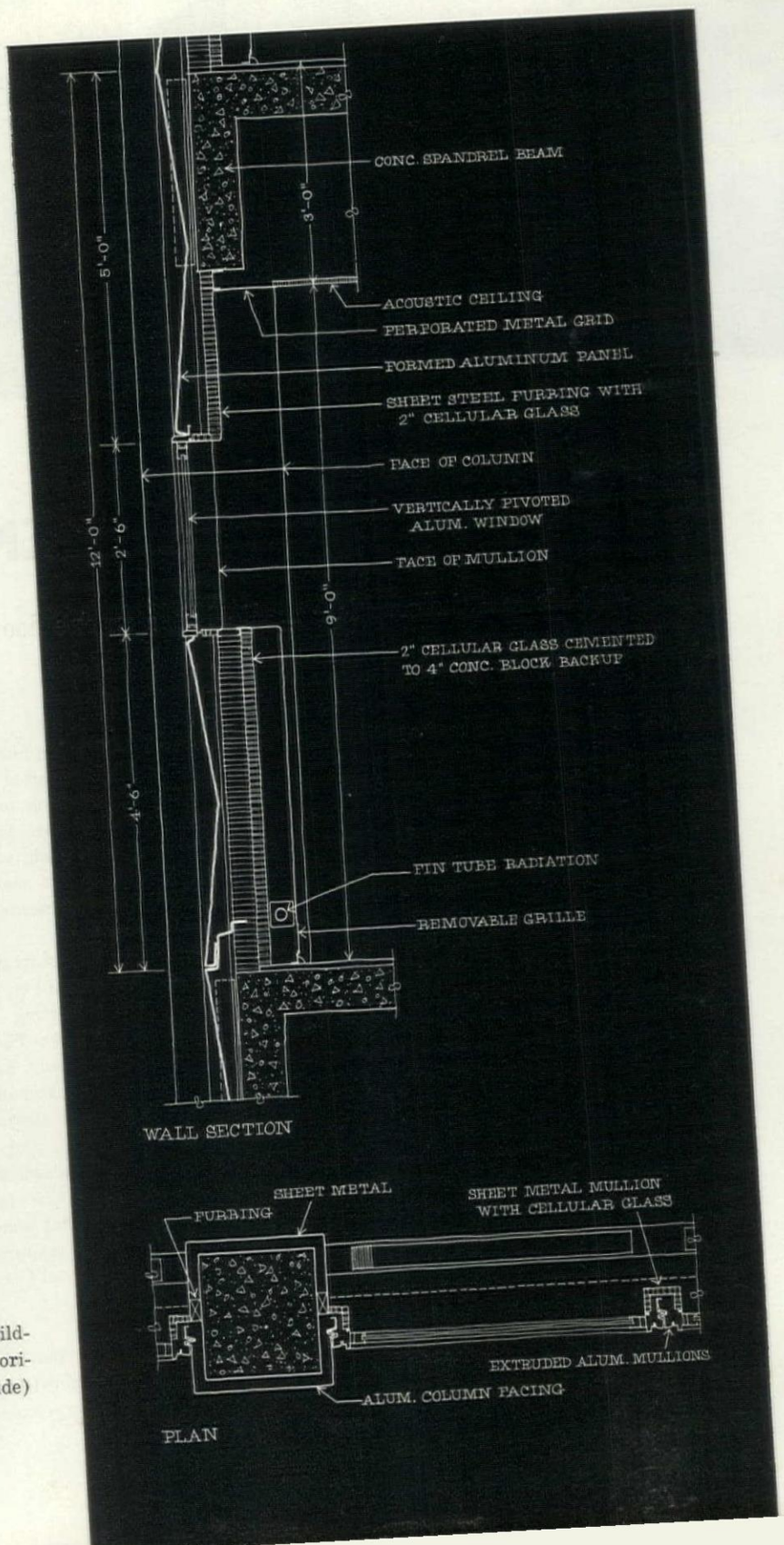
←26'-0"→←26'-0"→←26'-0"→

Quality Hill office and parking project can expand on a "jungle-gym" grid

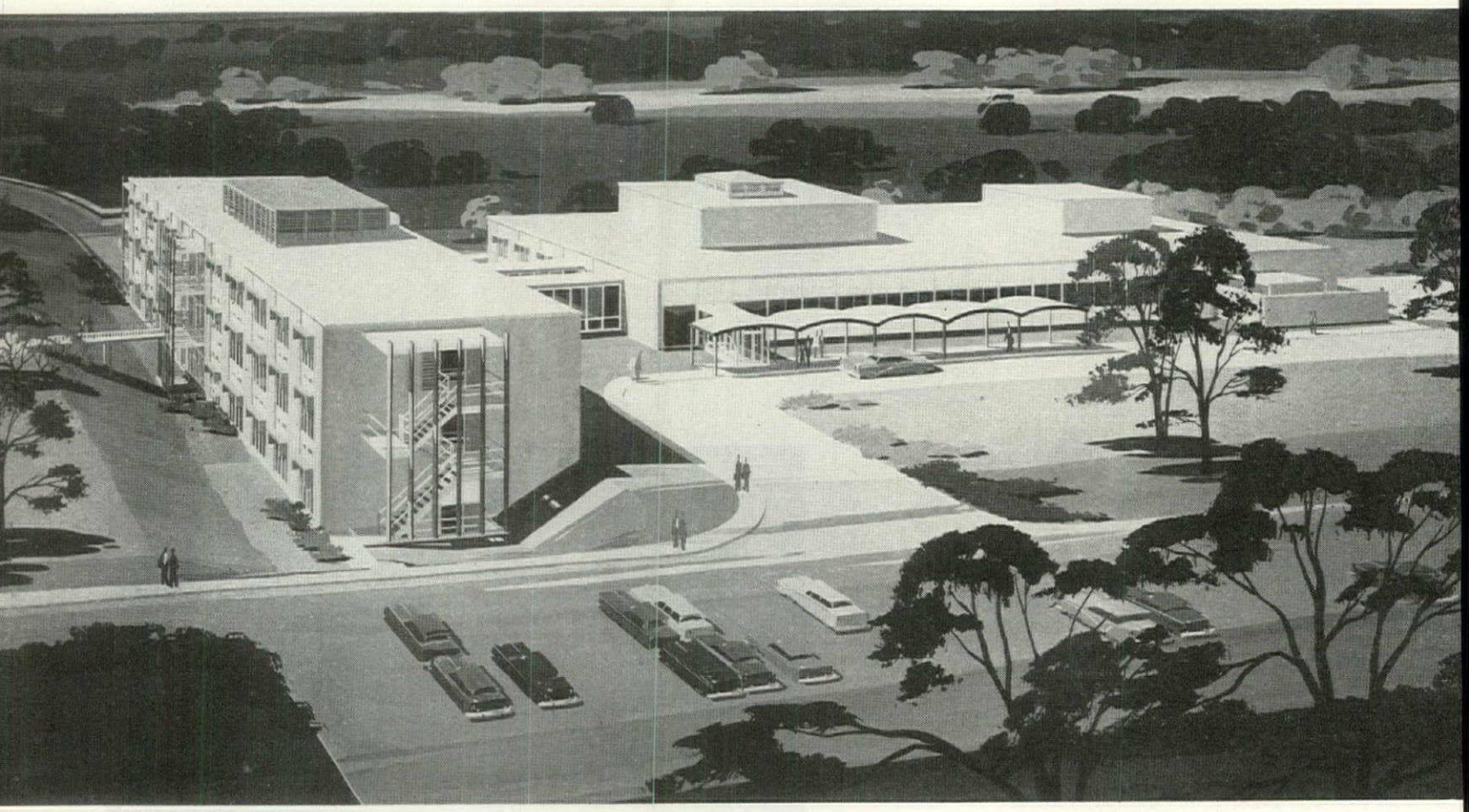
In the seven office buildings planned for the downtown edge of Quality Hill, Architects Kivett & Myers and Associate Angus McCallum have designed a uniquely flexible package with which Promoter-Operator Kitchen can meet the varying demands of different corporate tenants. Intended for single occupancy, each building will have its own parking and recessed entrance on the downhill side, toward the business district. Self-service elevators, stairs and washrooms are grouped in front and to one side to leave floor areas open and flexible. In addition, parking and garden areas *outside* the buildings are on the same horizontal and vertical module as the floors themselves, with floor heights lining up from building to building. This means that space can not only be added on top of buildings but bridged across from building to building to throw two of them together for a single large tenant. The slope below is neatly used to yield added multiple-deck parking when and if desired.

On the uphill side, the office buildings will present landscaped open areas to neighboring apartment houses of the same maximum height, hiding their own busy fronts and parking lots from residential view.

Large ribbon windows used in earlier studies have been reduced to small pivoting aluminum sash to cut glare and air-conditioning loads in Kansas City's summer sun, to reduce maintenance and leave enough height for filing cabinets below the sills. Exterior siding above and below the windows will be formed aluminum panels; the modular "jungle-gym" structure will be partly expressed in exposed verticals (and completely revealed for a glimpse, as in the roof terrace of the center building).



Wall section proposed for new office buildings: formed aluminum panels, small horizontal windows (2′-6″ high by 4′-9″ wide) with vertical-pivoting aluminum sash.



Mac Mizuki

THE FLATTENED-OUT HOSPITAL

It puts 86 beds and the complete medical core on one floor

This hospital is notable because its medical core has been completely released from the strait-jacket of the nursing wing and the tyranny of elevator circulation. By separating the core completely from nursing and by keeping it all on one story, the architects gained unusual freedom to plan rationally.

Some of the results: A central sterile supply that is truly central; clearly defined main hospital corridor and main visitors' corridor, both well related to the nursing wing; a self-contained maternity-obstetrics unit which is also immediately adjacent to all core facilities (this is eating your cake and having it too, in hospital planning); swift and easy consultation among personnel of different departments; great savings from elimination of repetitious multistory circulation. Only the pharmacy, in the basement of the nursing wing, has strayed off the reservation; this would be inadvisable if the hospital offered outpatient services.

With this scheme, too, the architects were freed from the limitation of a 40- or 50-bed nursing floor. The big nursing unit is usually denied medium-sized hospitals simply because it is too long to house the medium-sized lower-floor core facilities rationally. They get too strung out. In this scheme, the architects also made a very pleasant feature of the connection between the two separated units.

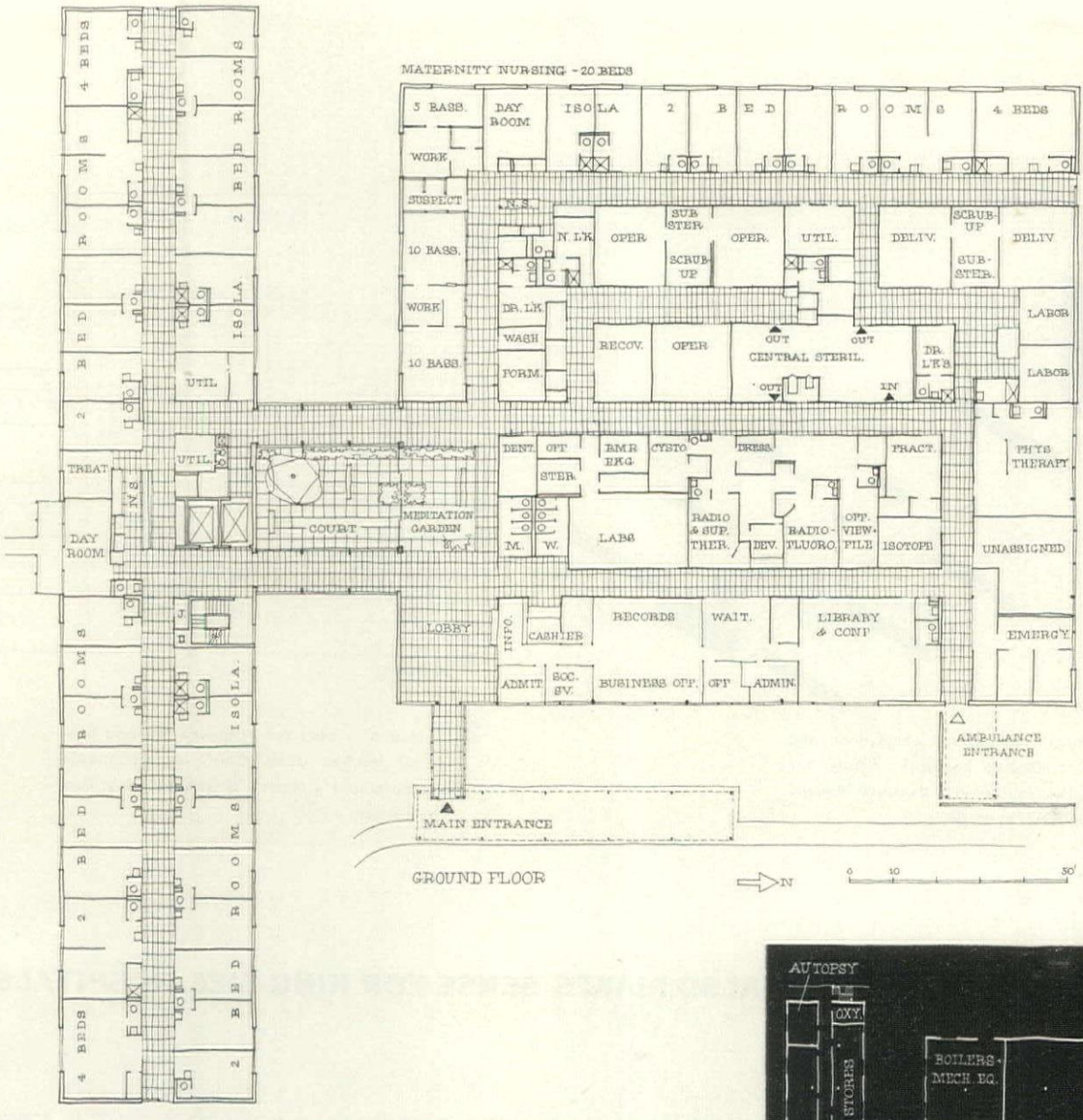
In its first stage of construction, the hospital will have 86 beds, all on one floor; later a second 66-bed nursing floor will bring the total to 154 beds. The conventional 150-bed hospital would have three stories of 40-odd beds, a maternity-obstetrics floor, one (more likely two) floors of surgical, medical, cafeteria, and administrative facilities, plus a basement, for a total of six or seven levels. Circulation and elevator savings of this flat scheme are obvious. Also obvious is the requirement of sufficient land; this hospital's 10½-acre site was a gift.

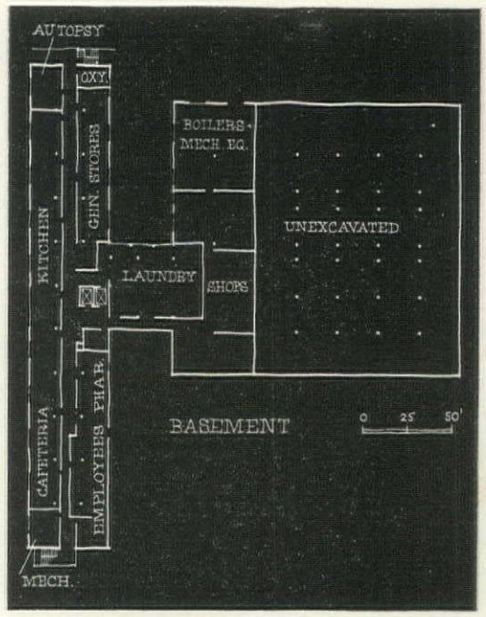
Too much economy? The Belleville plan, in accordance with the general trend, attempts to squeeze out every waste inch. While this aim produces such pioneering advances as the improved and tightened core shown here, maybe the process is going too far. This 66-bed nursing floor, for instance, may prove to be *too* economical. Patients' rooms, each with its own toilet, are sufficiently large, but dayroom and service facilities are minimum.

The Rosenfields say that the 12′ x 22′ dayroom is large enough because they have observed, in visiting many hospitals, that patients and visitors seldom use the dayrooms provided. This would seem to indicate that hospital people need to restudy the whole question of why they want dayrooms and what a dayroom should do and be if it is desirable at all.

Utility rooms, say the Rosenfields, usually provide too much storage, some of which, in time, is appropriated for personal effects. (Nurses do not like lockers distant from their working stations.)

Substations or auxiliary supply points toward the ends of the unit are omitted here not to save space but for another type of economy. They imply team nursing.





Team nursing, it was feared, would reduce flexibility in shifting staff because nurses become fond of their posts, and also at some future time it may occur to nurses manning substations to claim supervisory duties and put in for more pay.

The nurses' and female employees' lounges, in this wing, are small interior basement rooms. The reasoning: nurses seldom use the lounge because, like the lockers with which it is associated, it is distant from the work area. Where then do nurses go to let down for a minute or grab a smoke? Into the utility room. But now utility rooms have no place for a person to stand without being in the way.

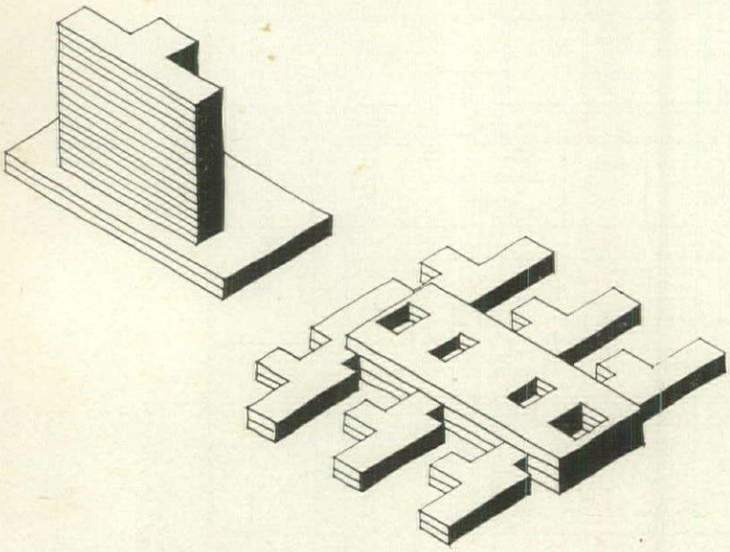
Belleville is no more skimpy in these respects than many other new hospitals, and that is why criticism of these points is important. A rationale of employee comfort and convenience that is accepted in department stores, factories and typist pools (whose employees work no harder than nurses) has not penetrated the hospital and now even the makeshifts by which nurses circumvent the plan are lost.

Structure: Steel columns set in brick panels in most cases; floor and roof framed with bar joists. Skin panels, porcelain enamel over metal studs, insulated with lightweight concrete sprayed on inside face, finished with metal lath and plaster. Air conditioning includes patients' rooms which have individual underwindow fan units using circulating hot water in winter, chilled water in summer.

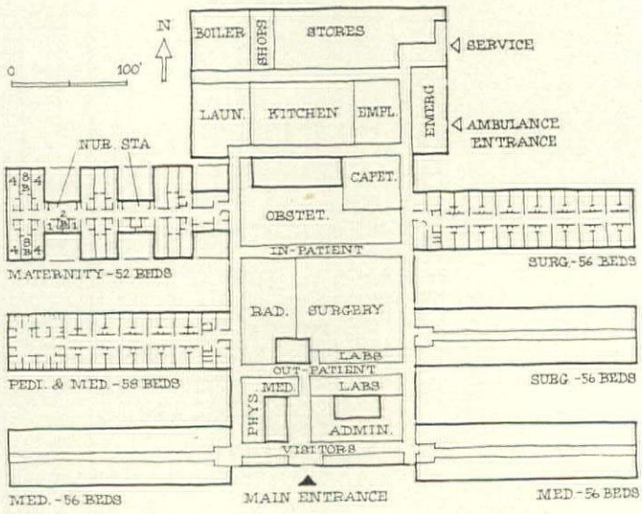
Costs: Architects' estimate of total construction, including Group I equipment and fees: $1,800,000; $26.30 per sq. ft.

Estimate on the building's ventilating-heating-cooling system (included in total): $375,000.

MEMORIAL HOSPITAL, Belleville, Ill.
ARCHITECTS: Isadore and Zachary Rosenfield, Hellmuth, Obata & Kassabaum; Charles E. King, associate
STRUCTURAL ENGINEER: John P. Nix
MECHANICAL AND ELECTRICAL ENGINEER: John D. Falvey
UTILITY ENGINEERS: Horner & Shiffrin
KITCHEN CONSULTANT: Frank T. Hilliker



1. Diagrammatic comparison of 18-level and four-level 1,000-bed hospital. Study for Palo Alto by Isadore and Zachary Rosenfield, consulting architects.



2. Schematic plan for proposed 334-bed hospital in San Jose, Calif. by Architects Isadore and Zachary Rosenfield and Rex W. Allen.

THE FLATTENED OUT PLAN ALSO MAKES SENSE FOR KING-SIZE HOSPITALS

For years it has been assumed a really big general hospital must be a tower built around vertical supply and travel.

Engaged to make a hospital study for the city of Palo Alto and Stanford University (diagram 1), Consultants Isadore and Zachary Rosenfield* decided to question this assumption. A compact flat form had worked beautifully for the core of 154-bed Belleville (p. 166); a still more thorough-going flat scheme appeared feasible for a proposed 334-bed institution (scheme 2). Could the principle be applied to a giant 1,000-bed hospital like that contemplated for Palo Alto?

The Rosenfields' conclusion—revolutionary to hospital dogma—is that the flat plan gives the giant hospital proportionately gigantic dividends in efficiency, clinical convenience and construction savings. *They figure it can save the 1,000-bed hospital $1¼ million in elevators and elevator space alone.*

Comparing a putative Palo Alto 18-story tower (basement, two-story base, 14 70-bed nursing floors, one obstetrical floor —the conventional scheme) with a putative Palo Alto pancake (partial basement, two full stories, partial third story for obstetrics), the Rosenfields made this analysis:

The tower would require at least ten elevators. (It should have more but the hospital tower with adequate elevators has yet to be built because of cost.) The pancake would need four elevators (giving much more adequate service than ten in the tower, say the Rosenfields). Difference in cost of elevators and their machinery: $865,000.

In addition, a hospital elevator shaft represents about 100 sq. ft. per floor. The tower would lose 18,000 sq. ft. to elevators against 1,600 sq. ft. for the pancake. This difference represents about $300,000 in construction cost, not including the difference in repetitious elevator, lobby, stair and circulation space.

Circulation savings contribute to low square-foot-per-bed figures: for Palo Alto, 474 sq. ft. at the first 432-bed stage, 402 sq. ft. at the 1,000-bed stage; for similar Pima County (scheme 3) 498 sq. ft. at 500 beds, 422 sq. ft. at 1,000.

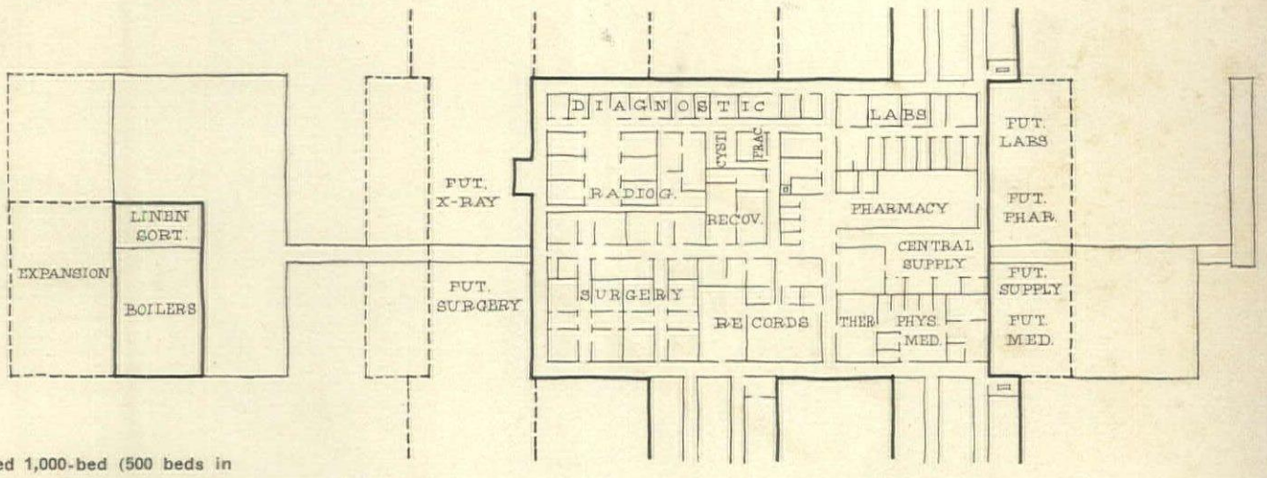
Even if a pancake and a tower cost the same, the Rosenfields think the pancake would be preferable because of time savings in horizontal transportation as against vertical, because of horizontal relationship of half the nursing beds to all clinical services and, most important, because of greater ease of interdepartmental face-to-face consultation (e.g. among surgeon, radiologist, pathologist).

As for travel distances, two factors are involved: time and steps. (Note that travel *within* the nursing unit is not affected by this scheme.) Vertical travel commonly takes three or four times as long as equivalent horizontal traffic because of time spent waiting for and riding in notoriously slow hospital elevators. And for most people, time spent standing is more tiring than time spent walking. These truths have begun to dawn on a number of hospital consultants and architects other than the Rosenfields. In the wind now are several schemes for automatic horizontal transportation of supplies and food. This is bound to be one of the big future developments in hospital equipment and plan.

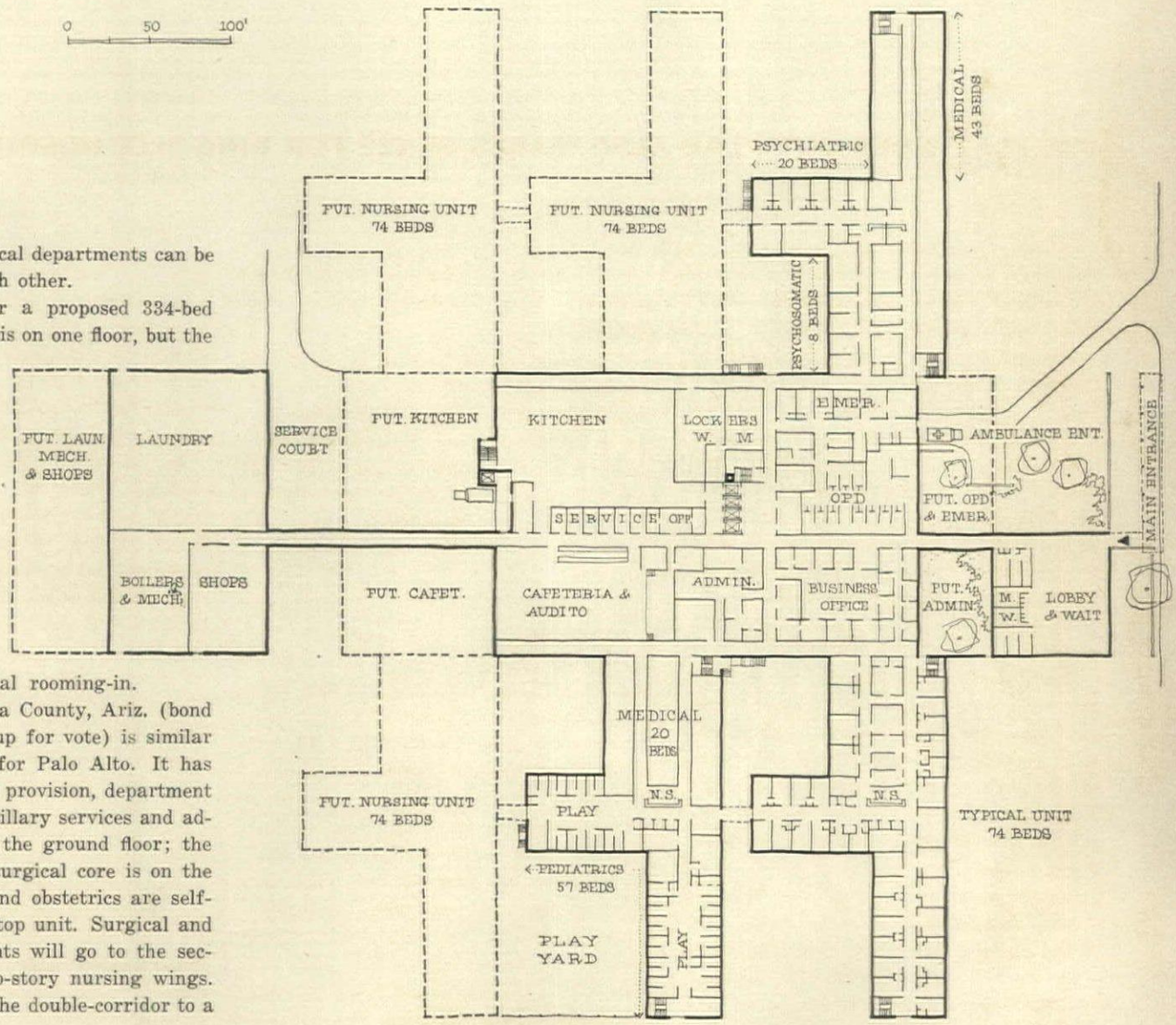
The pancake plan

Planning the pancake hospital is just as tricky as planning the tower, maybe more so. But it is more gratifying because

* Architect will be Edward D. Stone.



3. Plans for proposed 1,000-bed (500 beds in Stage I) hospital for Pima County, Ariz. Architects, Isadore and Zachary Rosenfield, and Scholer, Sakellar & Fuller.



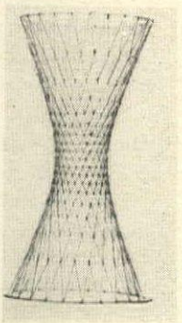
for once all the clinical departments can be reasonably near each other.

In Scheme 2, for a proposed 334-bed hospital, *everything* is on one floor, but the core lacks (at the client's request) expansion provisions. This would be inadvisable in most cases. Note the well-defined circulation and also the maternity wing which gives each room access to a patio and arranges nurseries for optional rooming-in.

Scheme 3 for Pima County, Ariz. (bond issue soon to come up for vote) is similar to the study made for Palo Alto. It has admirable expansion provision, department by department. Ancillary services and administration are on the ground floor; the entire medical and surgical core is on the second; maternity and obstetrics are self-contained in a roof-top unit. Surgical and acute medical patients will go to the second floor of the two-story nursing wings. These wings adapt the double-corridor to a large nursing unit.

A NEW WAY TO SPAN SPACE

Big, cheap, and column-free the warped plane called "hyperbolic paraboloid" is a graceful solution to the problem of roofing almost any kind of one-story building from a gas station to a railroad station.



The form sketched here and the sweeping roof on the opposite page are alike in one interesting respect — although both are doubly curved surfaces, both contain straight line elements. This means that the roof, which was built in North Carolina a year ago, and has already achieved a wide fame with both *avant-garde* estheticians and with building technicians, can be composed entirely with straight members.

This is significant on a thoroughly practical basis, although it also has the intrinsic delight of a simple solution to a trick mathematical problem.

By now most US building-designers—both architects and engineers—are thoroughly familiar with the paper-hat structures of folded or arched concrete which can be built, and are being built in other countries. Like eggs, their strength is in their shape, not their bulk. Foreign designers, using large forces of poorly paid workmen to build intricate forms and place reinforcing precisely, have achieved marvelous shapes with an economy of materials which remains only theoretical in the high-payroll US. Many US designers have yearned to cast their structures in these exciting structural forms, but as yet only a few can do it (and then almost always in special structures like vast, vaulted airplane hangars, where the formwork can be moved and reused). The barrier: The US, in mastering a building technology, has been mastered by its geometry. With our huge steel mills, we have enclosed billions of cubic feet of space with straight-line, two-dimensional structural elements, not because our concepts are rigid but because standard steel sections are rolled that way.

But if the designer of this curved roof had wanted to, he could have framed it in steel sections instead of making it a foil of bent timber planking, which is what it is. But in steel, the result would have been different. Instead of behaving as a continuous structure, spanning 90′ with a constant foil thickness of 2¼″, it would have been only a heavy rigid form with a thickness of 3′—more a decorative shape than a real structural form. The most logical material for this form is reinforced concrete.

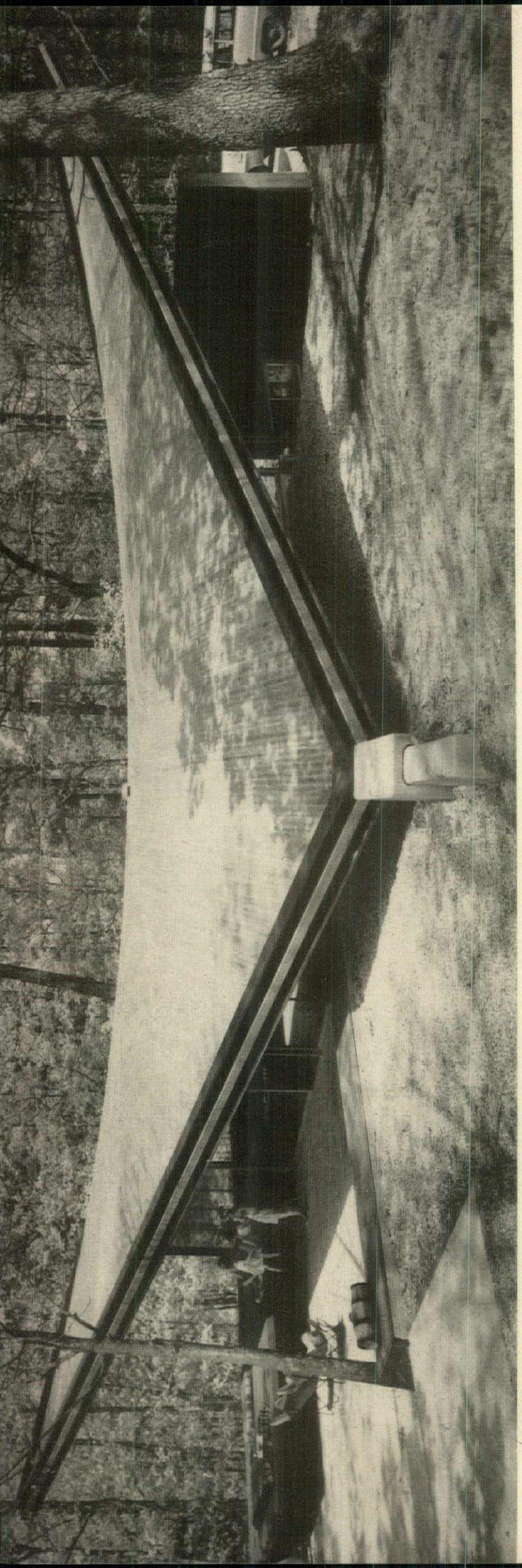
There is nothing new about this warped shape, except its structural scale. Engineers have been building little models of the hyperbolic paraboloid since before World War I. Eduardo Catalano, who teaches at the School of Design at North Carolina State College, built this one (with the advisory assistance of Structural Engineer Atilio Gallo) as a life-sized demonstration of the US practicality of his theories, a real argument that this is the most practical and efficient thin-shell spanning structure for US designers to adapt.

The graceful roof is appropriate, he points out, for railroad stations, filling stations, gymnasiums, shopping centers, churches, theaters, factories, libraries, and other buildings with sizable single-story spans. He says it is the most efficient spanning structure because all stresses on it are equal (it has no bending moment), because it is doubly curved and thus very rigid, because it produces probably the thinnest concrete shell, and because it is very economical. Based on Catalano's estimates, an area of about 15,000 sq. ft. covered by this structure and supported by four exterior columns (one midway in each side) could be framed in concrete, including slab, foundation and shell, for $4.00 per sq. ft. There is a further fact about this hyperbolic paraboloid which engineers will find significant: the designer holds that the stresses in this form are calculable.

Catalano himself is making good use of his demonstration roof; he lives under it. For more details about the particular shell over his house, see below and p. 172; for information on the evolution, characteristics, and calculations behind the shape, see p. 174; for a look at the future of the hyperbolic paraboloid, see p. 176.

Catalano's warped-plane roof in Raleigh

Photo (left): © Ezra Stoller

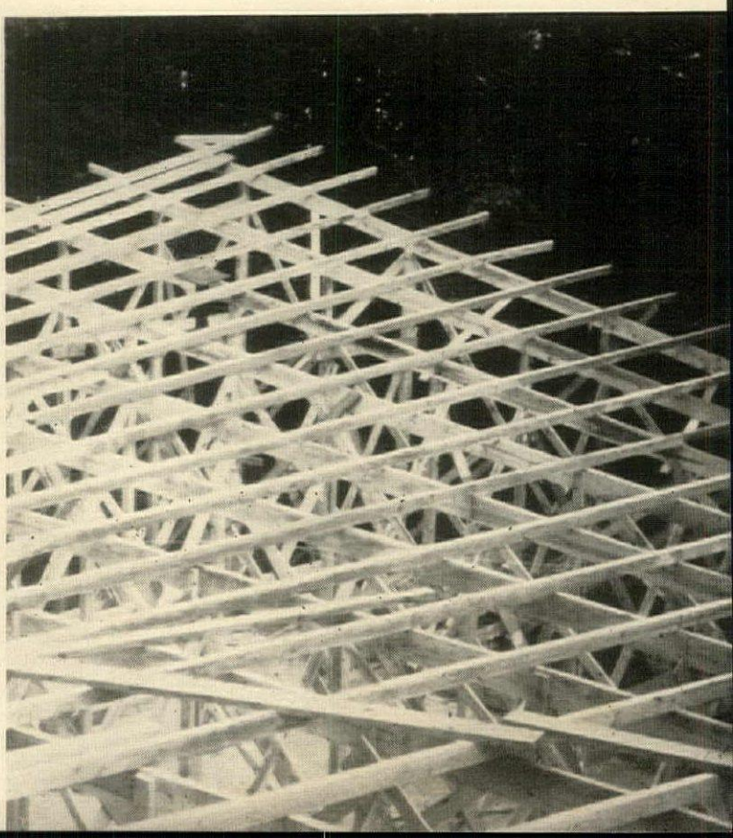


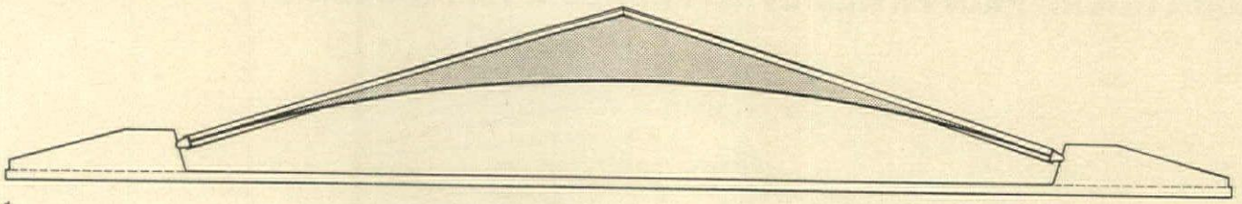
covers an area of about 4,000 sq. ft., with a diagonal span of almost 90′. No interior vertical supports were necessary to carry the load—it flows into a pair of buttresses at the down corners of the big handkerchieflike shelter. (The two struts near the other corners are anchors to prevent wind action from upsetting the shell.)

The roof was built in three layers of ¾″ x 3″ T&G planking, which was simply bent into place over a formwork of straight 2 x 4's as shown in the photograph below. To hold the shape of the shell after it was released from the formwork, the direction of adjoining layers of the planking was reversed. The bottom and top layers follow the direction of the compression stresses; the middle layer follows the direction of the tensile stresses. The layers are simply nailed together. Tangential stresses are taken care of by a steel frame bolted through the shell and welded at the low vertices to 2″ plate hinges, and the horizontal stress tending to deform the warp of the roof is met by three 1″ diameter cables located inside a post-tensioned underground horizontal beam. (Stresses applied to the cables in the post-tensioning operation were about two-thirds of the total anticipated tensile stress.)

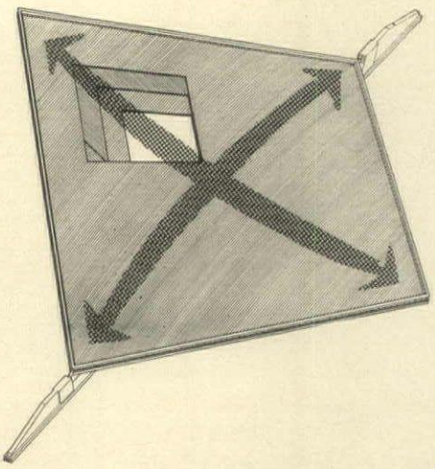
Weight of the roof: 9 lb. per sq. ft.; calculated ultimate loading: 30 lb. per sq. ft.; cost including foundations: $2.50 per sq. ft. Reception: sensational.

7.

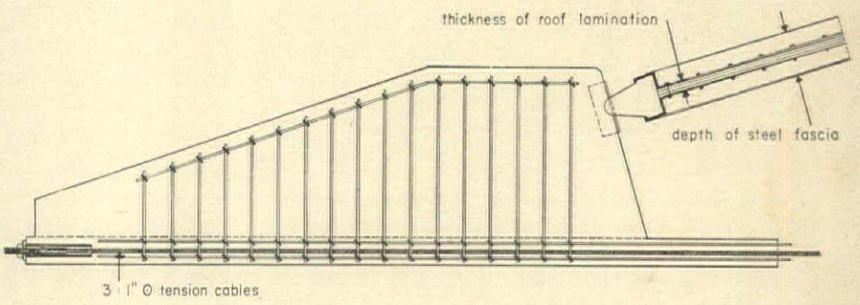




1.

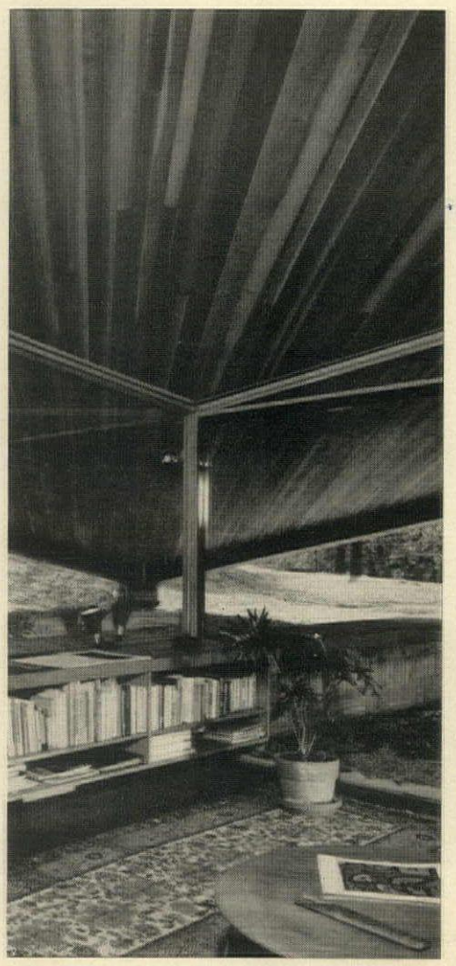


2.

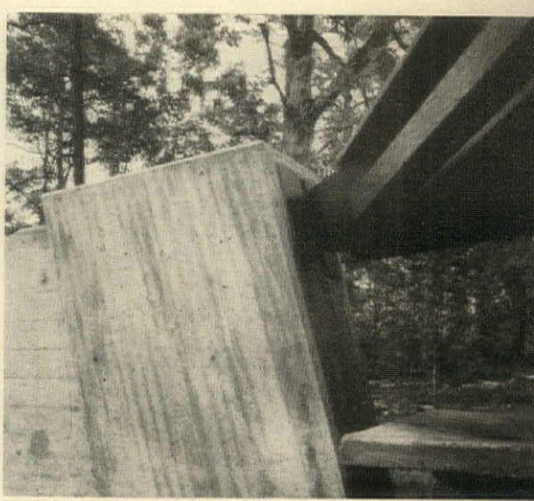


3.

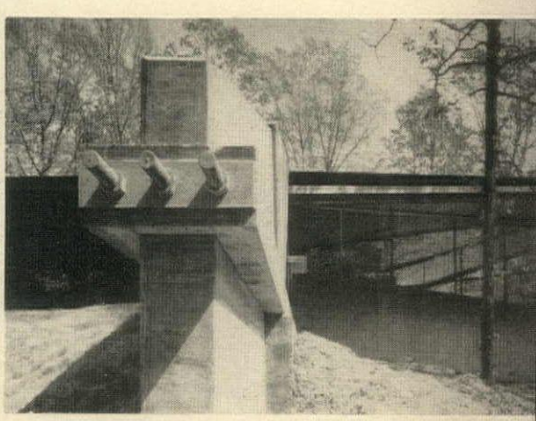
4.



5.



6.

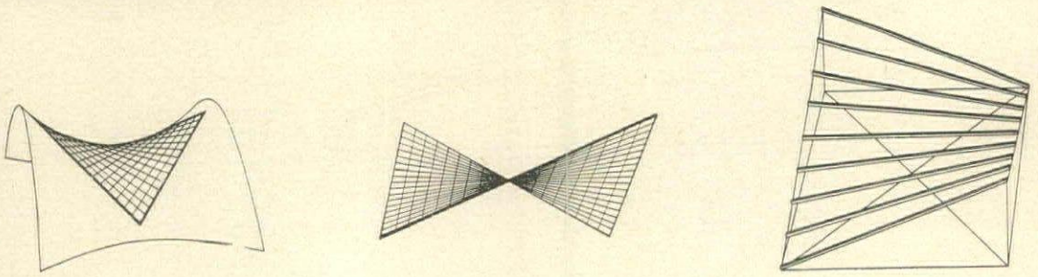


Photos: (top right) Gene Heil; (others) © Ezra Stoller

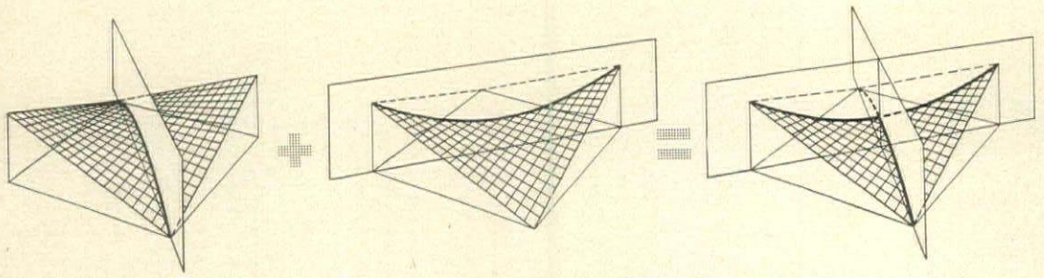
WARPED WOOD PLANE

1. Diagonal section of the roof, showing parabolic arch and concrete buttresses connected underground by tension ties.
2. Top view of shell showing the direction of the three laminations of the shell.
3. Detail of buttress showing ends of stressed cables and hinge.
4. Low vertex of shell at buttress point. Note that glass partitions meet the curved shell at straight lines.
5. Detail of hinge connecting steel frame of shell to buttress.
6. Ends of the three stressed cables.
7. Formwork over which planks were bent to shape warped plane; note that all timbers themselves in this frame are straight.

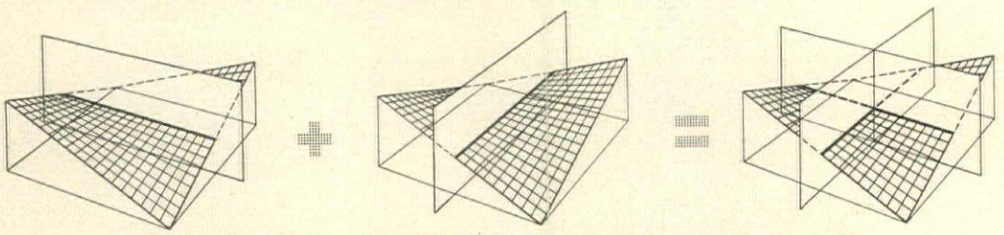
BASIC GEOMETRICAL PROPERTIES OF HYPERBOLIC PARABOLOIDS



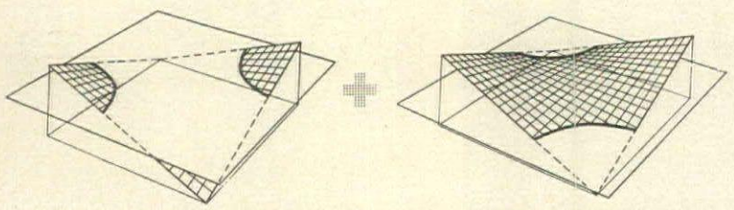
Hyperbolic paraboloid is warped double-curved surface, saddle shaped, generated by straight line that slides along two straight line directrices not in same plane and remains parallel to plane director.



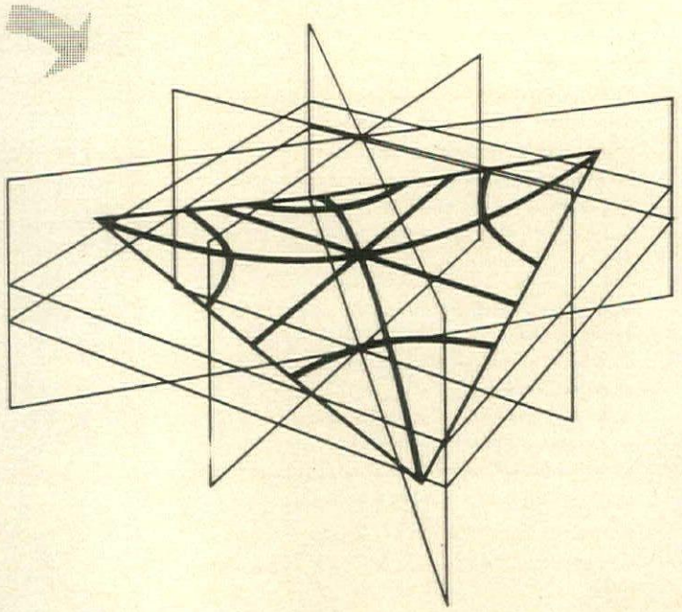
Any intersection of surface with vertical plane parallel to its diagonals produces parabolic curves



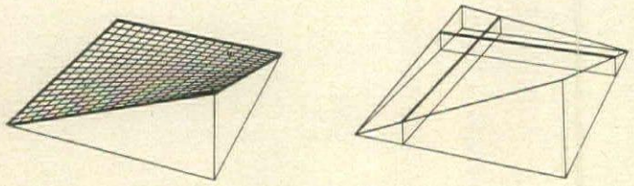
Although it is double-curved surface, its intersection with vertical plane parallel to edges of surface produces straight lines. Only central lines are horizontal.



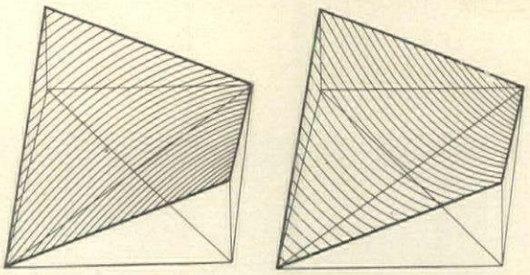
It is called hyperbolic paraboloid because any intersection of surface



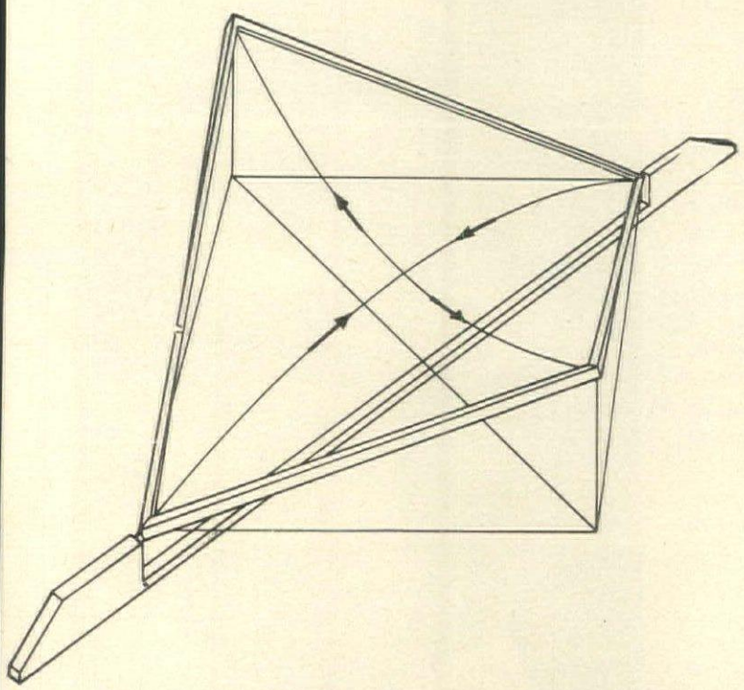
Synthesis of sections between surface and horizontal and vertical planes.

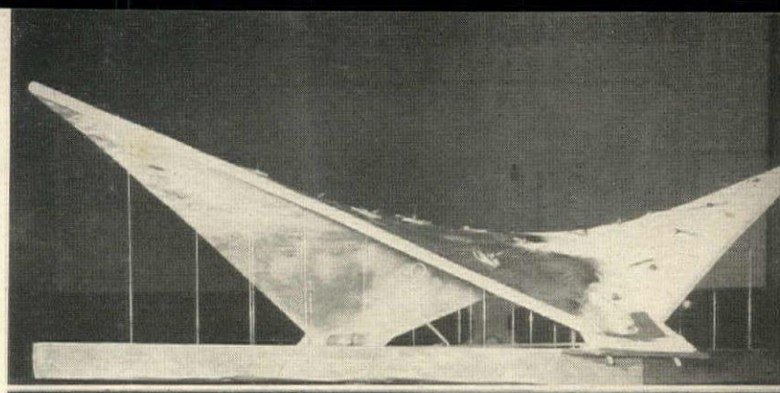


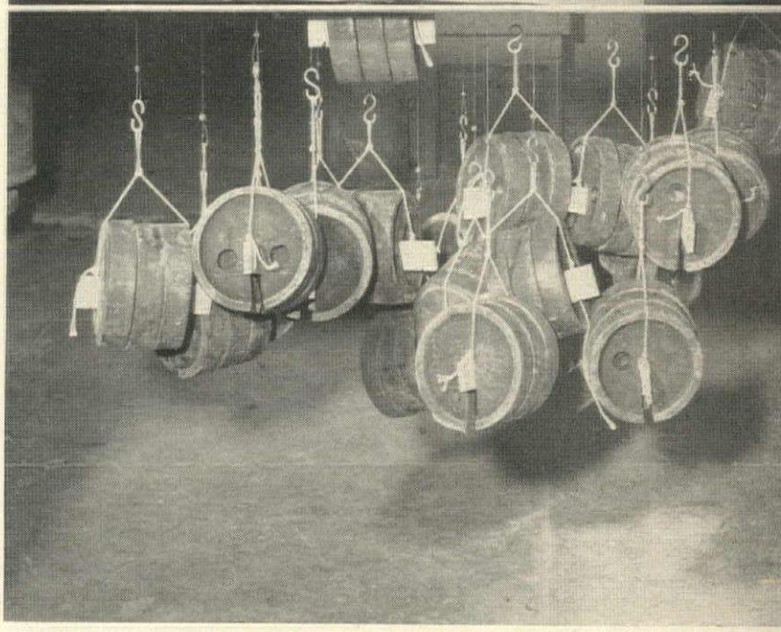
If hyperbolic paraboloid is tilted, horizontal lines displace edgeward



Parabolas in direction of low corners are subject to compression; and in direction of high corners are subject to tension.







A rough idea of the actual strength of the warped plane can be grasped at a glance in the photo, above, of a test underway. A model made of Balsa wood resisted a uniformly distributed load of 50 times its weight. It did not fail or bend out of design.

Engineers will like to know that the formulas which Catalano uses for designing hyperbolic paraboloids were developed by the French engineer, Aimond, after he had analyzed the structural behavior of the warped planes. In the first steps of his analysis he observed:

- That the hyperbolic paraboloid is a surface with equal structural behavior for uniform loads parallel to its Z axis.
- That on every point of the surface the internal stresses (R1, tension stresses; R2, compression stresses are equal and constant; and that every section parallel to AC is a parabola subject to simple compression, and that every section parallel to BD is a parabola subject to tension.
- That stresses of tension and compression are composed as tangential stresses along the edges; that the nature of the tangential stresses depends on the position of the supports; that compressed edges result from supports at the low vertices, and tensile stresses result from supports at the high.
- That the thrust to the void on the straight edges is null.

FORMULAS:

To calculate tension, compression, or shear at any point of the surface:

$$R_1 = R_2 = \frac{w.a.b.}{2.f.} = t$$

w = dead and live load

a,b = half of length of edges l

f = fleche, or height of central point

tangential stresses developed at the edges

$E = t.1$

compound stress from pair of meeting edges at the low vertices

$T = E.\ 1.4142$

cancellation of stress T

vertical $T_v = T$ cos alpha to be resisted by soil

horizontal $T_h = T$ sin alpha to be equilibrated by tension ties

thickness of the shell

$$S = x.12'' = \frac{t}{M/C} \therefore x = \frac{t}{12''.M/C}$$

S = area (x.12″) section of shell per lineal foot

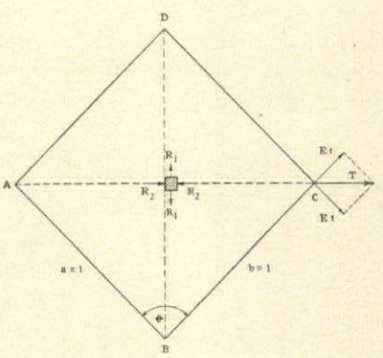
x = thickness of shell

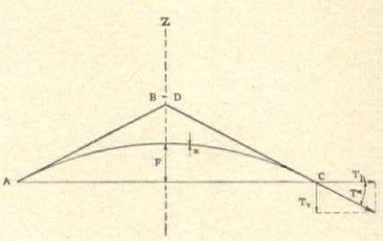
t = stress at every point

M = resistance of material affected by C

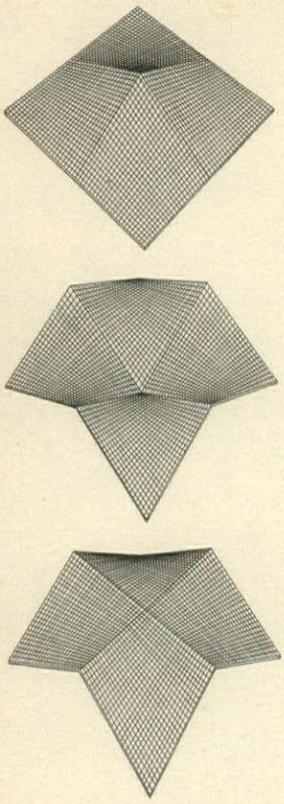
C = coefficient of safety applied to material used

(To calculate the edge, use formulas for tensioned or compressed members.)





WARPED SURFACES IN COMBINATION

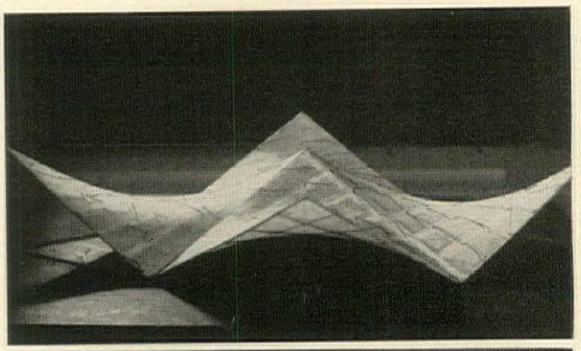


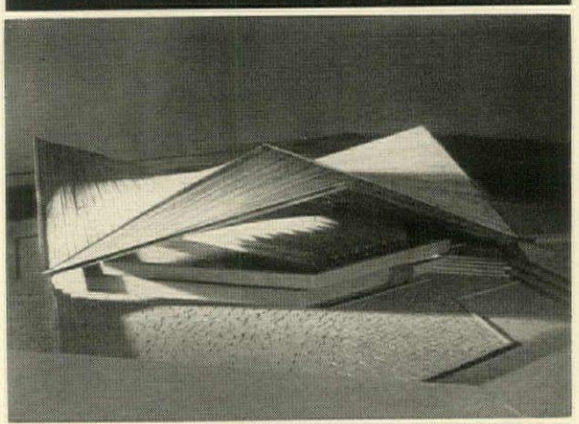
COMBINATIONS of four hyperbolic paraboloids.

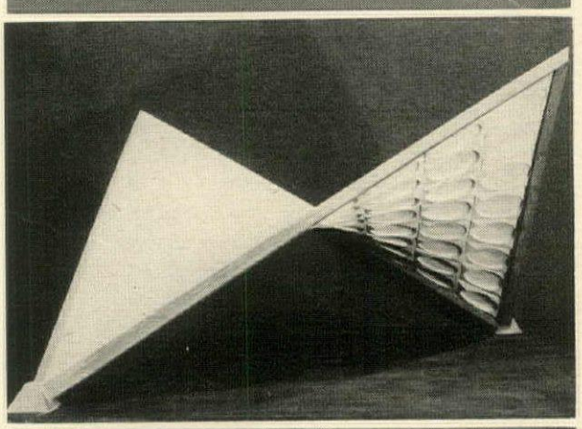
At their most efficient, these warped shells do not grow bigger, but multiply, repeating like molecules on a schoolboy's science chart of the elements. One reason for this can be seen readily by comparing a connected quartet of the shells with Catalano's single-shell house roof. Unlike the house the quartet would need no auxiliary anchoring against wind stress; its base automatically has four supports. In the top photo (right) is shown a simple way in which a square area of any given dimension can be roofed by a combination of four units. Below it is a roof of three units. In concrete construction this might also allow a repetitive use of formwork, and in some cases—according to Catalano—might improve the condition of the edges. The pair of meeting surfaces forms a V-shaped beam, with an increased moment of inertia; this condition, however, does not always occur at the required place. Prefabrication is also a possibility using precast concrete units see model photo, right).

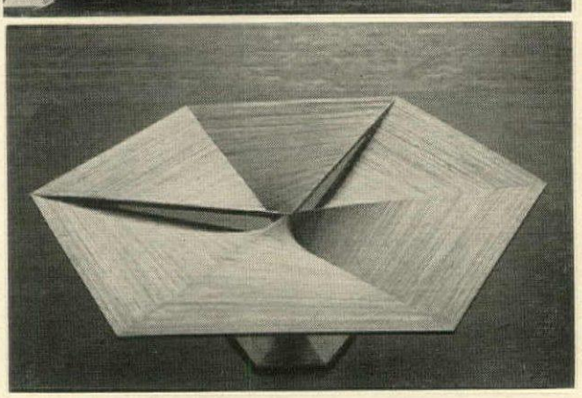
Three hyperbolic paraboloids is the minimum number which can be combined to form an efficient structure, providing three legs as wind insurance: one such combination is shown middle right. The quality of the spaces created by the grouping of units changes according to the position of the supports, leaving a great deal to the designer. Limitless combinations and variations are possible in building these shells over an extended area.

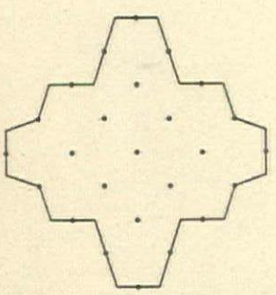
The other diagrams illustrate a few of these variations, made by varying the relationship between the length of edges, angles between the two sets of generatrices, curvature, etc. To open a clerestory between roofs, it is possible sometimes merely to turn one of the hyperbolic paraboloids upside-down, without disturbing the structural rhythm. Below is a unit of six cantilevered surfaces from a central support, with two of the warped surfaces overturned to form clerestories. The hexagonal plan of this plantlike structural form allows for easy, endless extension. In this structure, according to Catalano, a span of 60′ between units could be built with an average thickness of 3″ of reinforced concrete. Needed: good soil, good engineering.

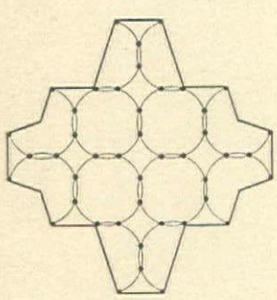


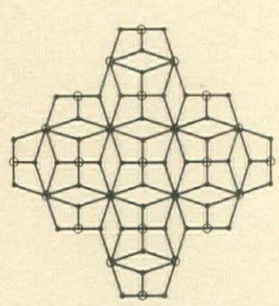




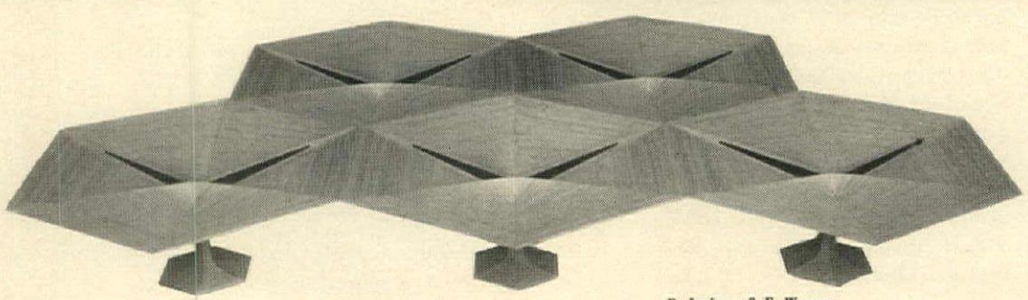




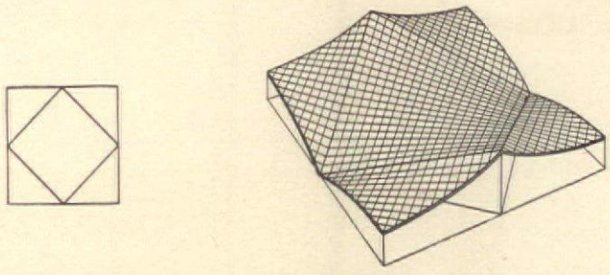




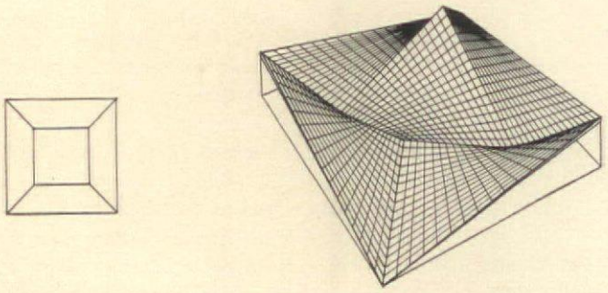
VERTICAL SUPPORTS can be shifted easily in plan, as shown above, creating two different sequences of spaces.



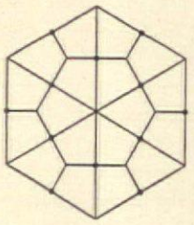
R. Jackson & E. Warren

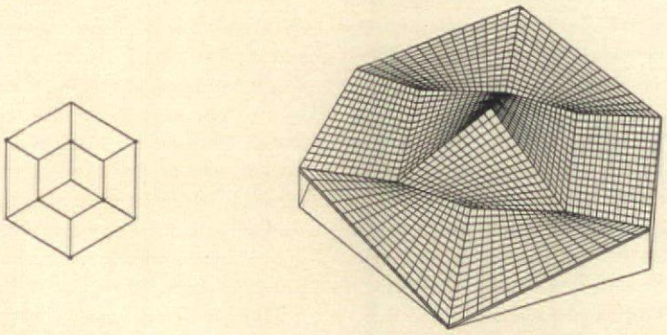


Square plan roofed with one warped plane plus four segments

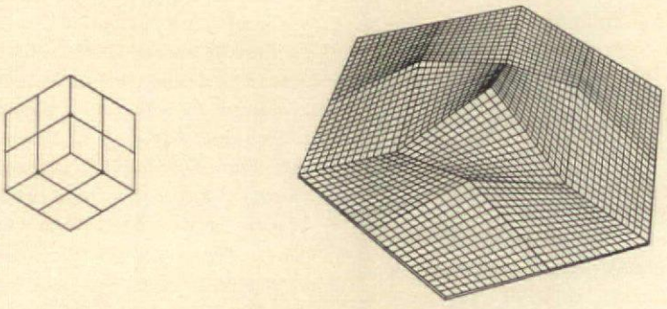


Square plan roofed with five complete units

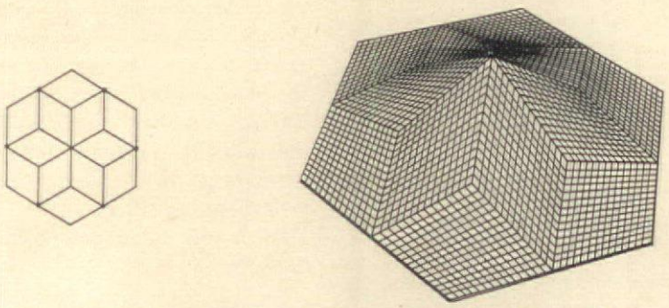




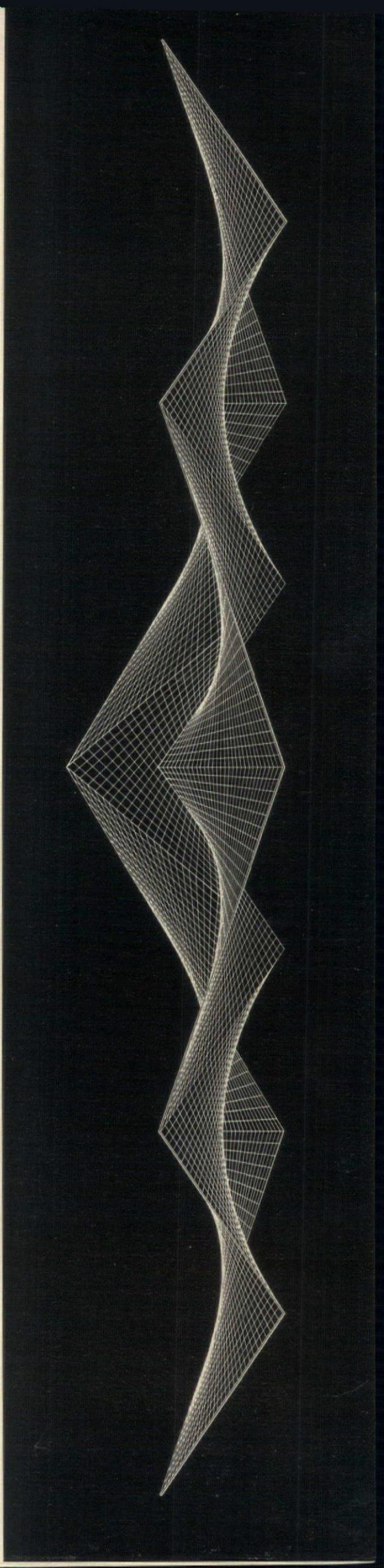
Hexagonal plan roofed with nine complete units



Hexagonal plan roofed with 12 complete units



Hexagonal plan roofed with 12 complete units, pitched differently



Elevation of 18 complete hyperbolic paraboloids indicates enormous possibilities and great grace of form (Plan is at right)

for all concerned

DELINQUENTS INTO BUILDERS?

You would scarcely expect juvenile delinquency to be cured by building but perhaps building can help. The more one thinks about it the more certain one becomes that some kinds of building could really help. The kind most worth talking about is least in the public print—building done by youths themselves.

"Impossible" is the quick answer but supposing one switched for a moment to the question of what it is, anyway, that makes a teen-ager delinquent. The experts disagree on many things but on one they agree heartily: delinquents are most frequently found where adolescents are least busy *and feel least needed.* Busy newsboys, who were once the sociologist's chief concern, have for example proved to be one of the least delinquent classes of adolescents, running to less than 1%. Needy they may be, but they are doing useful work. It is work like the work of adults. *They* therefore feel needed.

Most adolescents, by contrast, belong today to a completely separate nation, a nation in some ways more isolated from us adults than Indo China is. They choose their own heroes and set their own standards and have their own customs and language. This isolation is strictly a recent thing in human history. It occurs because we simply do not allow adolescents, who are still set to one side and "preparing to live," to engage *with* adults in useful work or needed activity. The most primitive of peoples, the Hottentots or the Comanche Indians, were far better pals to their youngsters than we can be. As soon as one of their youths achieved puberty he underwent an elaborate initiation which put childhood behind him and joined him to the adult group —though as a junior member; for example he did the more simple jobs of hunting. Half a century ago a majority of our youngsters were still fully needed on the farm, again as junior members of the responsible adult group. Today they are not even needed to wash the dishes.

So they join groups that appreciate their gifts and make them feel needed with excited importance. If we were smarter we could find constructive outlets through an education less wholly "academic."

BUILDING SCHOOL

Yet in our high schools as they are now built and operated, the one thing no adolescent is allowed to do is to add anything important to the environment he finds ready for him. Even his attempts to carve or paint his initials in out-of-the-way places are cleverly thwarted, by adults who hog the chance to do everything, and forbid all others. Only children going to summer camps have the chance to do useful things for their own community including some youthful building.

This is not to suggest that the youngsters themselves should build the walls and roof of a high school! The required standards of accuracy and finish would be far beyond them, and the setup would be a false one. And yet in a school with anything like adequate grounds there should clearly be outdoor places where the pupils could help do grading for play areas, and build simple retaining walls and amphitheaters and shelters. An acquaintance who went at age 11 to a simple little German school still tells with pride how he helped build a bridge across a drainage ditch; every boy was allowed one stone carved and painted with his own initials. At the age of 55 that man is still profoundly grateful because the initials still showed when he came back 30 years later.

To allow such natural and useful participation by adolescents, school plants would have to be planned with some features, especially out of doors, left incomplete for further building and landscaping by the adolescent community.

Since the school itself could hardly give scope for such additions by generation after generation of adolescents, the principle must spread to other places besides, such as recreation centers. Recreation facilities, like schools, should have provision somewhere in them for junior builders.

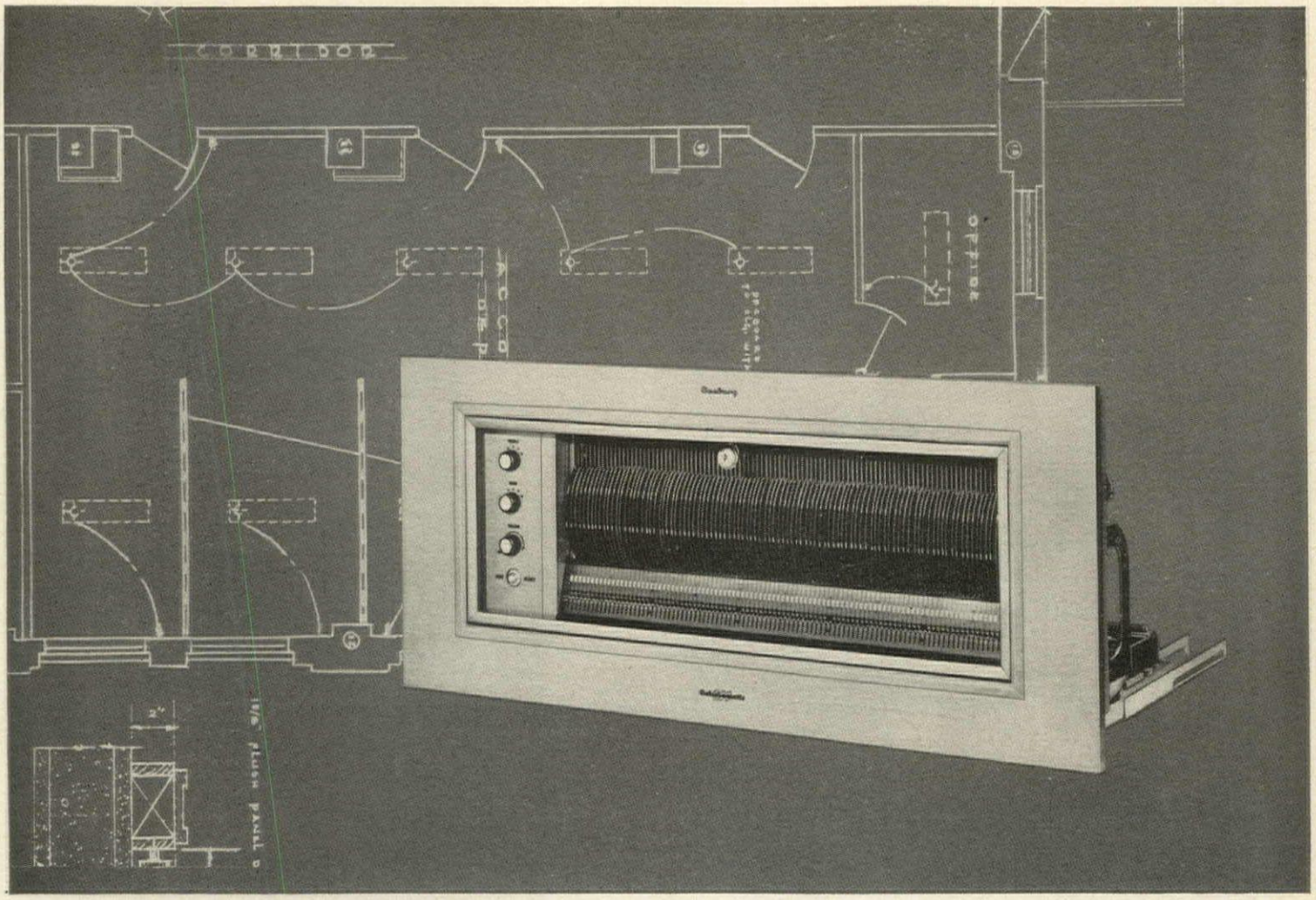
BUILDING COMMUNITY

If even this proves inadequate in scope, perhaps the community can remember other needed jobs that nobody is doing. For example, there is the needed job of community cleanup and painting. This is to be sure not in itself appetizing to youth, except maybe the painting. But has the adult community forgotten what it does in its own behalf where jobs are unappetizing? It supplies an incentive. Money is the best known, but the most ardent jobs are done by adults not for money but for recognition. Sometimes the two are coupled in the form of prizes. At a time when radio and TV chains are outvying one another to give prizes for thoroughly useless performances, they might try for a change crowning the most conspicuous neighborhood cleanup by competing groups of adolescents, with views on the screen "before" and "after."

These innovations might seem too disgustingly healthy at first, at a time when no vast prize is considered well given unless the performance that wins it is thoroughly meaningless. But with time we might cure ourselves of our love of a shameful thing, of seeing vast sums given away for nothing at all, and we might even revert to our earlier simple customs. This might incidentally help make our parks safer for an adult to frequent after dark. And American cities might well get rid of the well-earned reputation of being the most filthy in the Western world, while cleanup committees wring their hands in helplessness because adults will not take the job of policing them.

Leaders for the proposed corps of youthful builders will at first be indeed hard to find, since the delinquent adolescent community has its elders thoroughly scared of it. Policemen who find half a hundred youths ready for a fight with broken bottles herd them to court, from which they are promptly released for lack of space in reform institutions, instead of holding them at the vacant lot against arrival of a truck into which they can throw the bottles, clearing the lot as a playground, getting up a good sweat in the process. Later on, these youths might be appointed auxiliary policemen who will turn in, for a fine in court, the next adult who throws on another bottle to make a big dump out of his own city.

Douglas Haskell



The Seeburg Custom Unit *mounted on sliding metal tracks for simple, compact, built-in installations.*

There's a place in your plans for Seeburg Music

Seeburg Background Music Library. *Specifically developed for work and background music use. Pressed for Seeburg by RCA Victor Custom Record Department.*

Whether your plans are for a new or remodeled factory or bank . . . an office building or shopping center . . . a hospital or apartment building, it's easy, and inexpensive to include a Seeburg Background Music System.

Seeburg Music goes anywhere. This simply means that regardless of location of the building—large city, suburb or small town—you can give it the benefits of a modern Seeburg Background Music System.

Nucleus of the system is the world-famous Select-O-Matic mechanism with a capacity of 400 selections of music. All Seeburg components are high fidelity all the way to provide the ultimate in musical reproduction.

Write. Investigate the possibilities a Seeburg Music System holds for you. Your Seeburg Distributor will gladly work with you and your client to demonstrate the many advantages of a Seeburg Music System.

WORK AND ATMOSPHERE

SEEBURG
Background Music Service

J. P. Seeburg Corporation, Chicago 22, Illinois

J. P. Seeburg Corporation
Dept. A, Chicago 22, Illinois

Please send information on Seeburg Music Systems.

Name.....Position.....

Company.....

Address.....

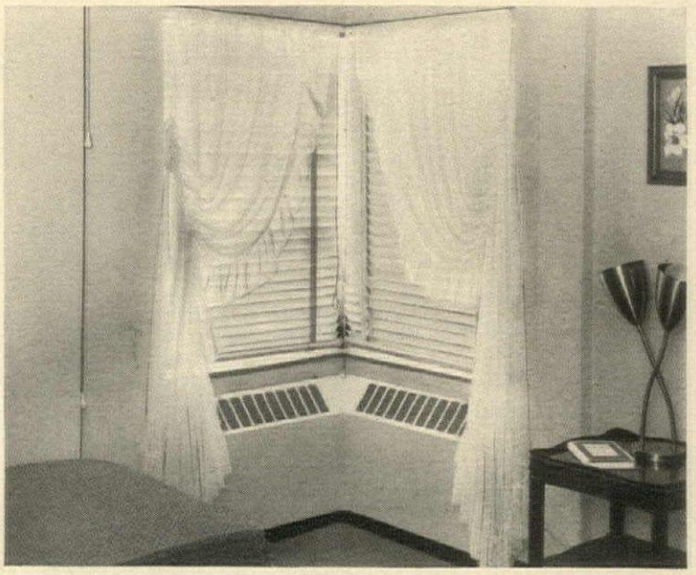
City.....Zone.....State.....

Quality Hill Towers, West Terrace Park, Kansas City, Missouri. "Downtown Homes with a Viewpoint." Shown here are two of the five 10-story, modern, fireproof, apartment buildings—conveniently located on Kansas City's scenic point overlooking the Missouri River.
Architect: J. F. Lauck and Associates, Kansas City, Missouri.
Consulting Engineer: Walter Gillham, Kansas City, Missouri.

"at Quality Hill towers

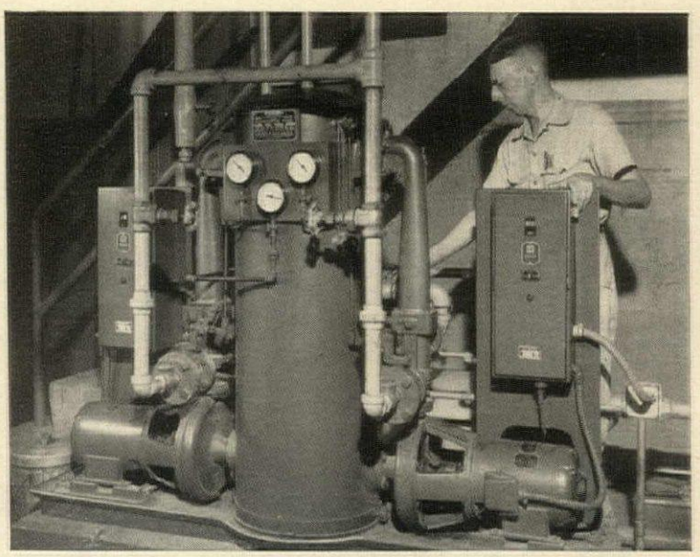
we know you can depend on Dunham Vari-Vac"

Spacious Quality Hill Towers living rooms—each with an outside view—each heated comfortably and economically by a sturdy, attractive Dunham Convector, specially designed for METRO piping.



Ample Bedroom Space for Quality Hill homeowners. Note Dunham Convectors, specially designed for METRO piping, used in bedrooms to counteract heat loss of corner windows.

Dunham VARI-VAC Controls in Quality Hill Towers provide centralized, one-man operating station for all adjustments, settings and remote control readings for 100 apartments.



Dunham Vacuum Heating Pump—the heart of the fuel-saving Dunham VARI-VAC system. Keeps subatmospheric steam circulating under vacuum and produces pressure differential between supply and return METRO piping to assure quick, complete steam circulation to all radiation.

"We know that Dunham VARI-VAC® Heating works 'as advertised,'" says Lewis Kitchen, President of Lewis Kitchen Realty Company, Kansas City, Mo., "because it has heated all five Quality Hill Towers most satisfactorily for the past four years.

"By satisfactorily I mean that tenant complaints have been far and few between, that maintenance costs are minimum, and that operating costs are low enough to be a big help to us."

Like many others, Mr. Kitchen has found that VARI-VAC—Dunham's fully automatic precision temperature control system combined with METRO® method of piping—keeps heat supply and demand in perfect balance, cuts original costs and effects substantial fuel savings.

For further information about versatile Dunham VARI-VAC Heating with METRO piping—regardless of the type of building you're designing—write for Bulletin AF-11; C. A. Dunham Company, 400 W. Madison Street, Chicago 6, Illinois.

DUNHAM®

HEATING & COOLING EQUIPMENT

RADIATION • CONTROLS • UNIT HEATERS • PUMPS • SPECIALTIES

C. A. DUNHAM COMPANY • CHICAGO • TORONTO • LONDON

BENSON'S *experience in the fabrication of metals to minute tolerances goes back almost 50 years. We offer one source, one responsibility in the supply of*

complete metal wall systems

including panels, mullions, spandrels — of aluminum or stainless steel — and extruded aluminum windows, doors, entrances.

We are one of a few with 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.

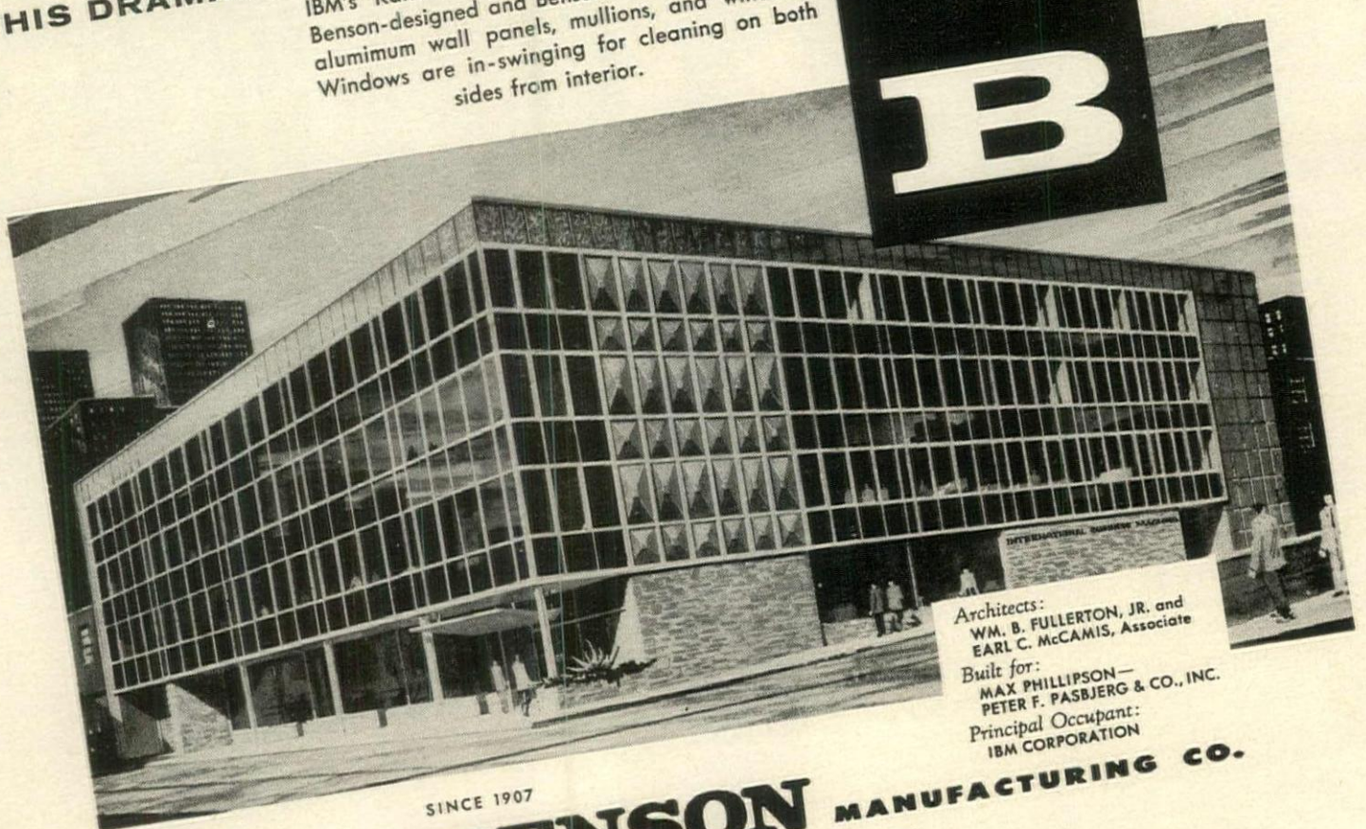
Benson Engineering and Planning Service works closely with the architect to develop or adapt designs and solve design problems.

We invite you to write our Architectural Division.

THIS DRAMATIC NEW BUILDING which will house IBM's Kansas City District offices, incorporates Benson-designed and Benson-fabricated stamped alumimum wall panels, mullions, and windows. Windows are in-swinging for cleaning on both sides from interior.

BENSON

B



Architects:
WM. B. FULLERTON, JR. and EARL C. McCAMIS, Associate
Built for:
MAX PHILLIPSON— PETER F. PASBJERG & CO., INC.
Principal Occupant:
IBM CORPORATION

SINCE 1907

Architectural Division **BENSON MANUFACTURING CO.**

18TH & AGNES • KANSAS CITY, MISSOURI

LOS ANGELES • NEW YORK

close ALL the doors

a type and size for every door closing need
and door hanging style ... exterior and interior ...
from the heaviest lead-lined x-ray room door
to the lightest office rail gate

contact your local RIXSON representative

LOS ANGELES, CALIF. ... *Russell & Whiteside, 5311 E. Beverly Blvd., P.O. Box 6732, East L.A., 22*
SAN FRANCISCO, CALIF. ..... *John P. Whitty, 1030 Arlington Blvd., El Cerrito*
DENVER, COLO. ..... *Lyle C. Hewett, 1608 Broadway*
ATLANTA, GA. ..... *Glenn D. Robertson, 4210 Club Drive, N.E.*
CHICAGO, ILL. ..... *Wm. A. Klaff, 210 Circle Ave., Forest Park, Ill.*
DOWNERS GROVE, Ill. ..... *H. G. Neise, 5616 Aubrey Terrace*
NEW ORLEANS, LA. ..... *Harold V. Toop, 426 Russell Ave., Long Beach, Miss.*
BOSTON, MASS. ..... *Kenneth H. Bullard, 15 Boylston Place, Brookline 47, Mass.*
ST. PAUL, MINN. ..... *Roland H. Gedatus, 1333 Delaware Ave.*
NEW YORK, N.Y. ..... *Fred G. MacKenzie, 107 Reade St.*
SYRACUSE, N.Y. ... *T. E. Davidson, West Genesee Turnpike, Camillus, R.F.D. 2, New York, Box 443*
CLEVELAND, OHIO ..... *K. A. Klaasse, 364 Lake Forrest Drive, Bay Village*
PHILADELPHIA, PA. ..... *G. Norris Williams, 211 Greenwood Ave., Wyncote, Pa.*
DALLAS, TEXAS ..... *R. M. Schneider, 4633 Rockaway Drive*
SEATTLE, WASH. ..... *S. G. Kirkland, 845 Bellevue Ave., N.*
WASHINGTON, D.C. ..... *Lloyd R. Anderson, 4318 Rosedale Ave., Bethesda, Md.*
TORONTO, CANADA ..... *K. M. Thomas Company, 410 Bloor St., East*
HONOLULU, T. H. ..... *B. F. Schoen, Ltd., P.O. Box 3464*

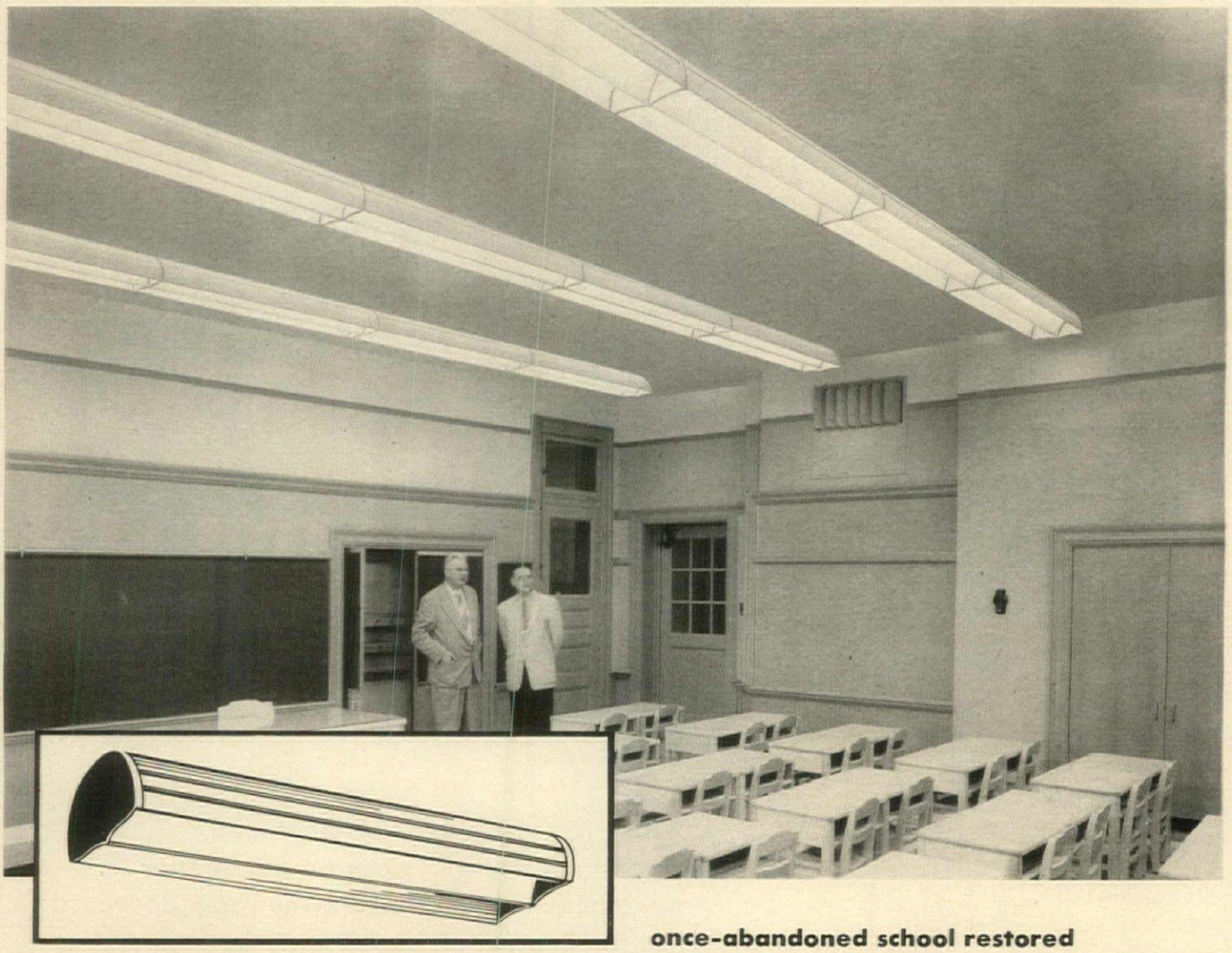
Uniform high quality for over 55 years

THE OSCAR C. RIXSON COMPANY

9100 w. belmont avenue • franklin park, ill.

MITCHELL lighting modernizes 60 year old school

LIGHTING LEVEL UP 600%...



MITCHELL LIGHTS ANOTHER SCHOOL

Sixth Ward School
Washington, Pennsylvania

Architect: C. Garey Dickson, Washington, Pa.
Electrical Contractor: Glenn Yoder, Hollsopple, Pa.
Distributor: Ward Electrical Supply Co., Washington, Pa.

INSTALLATION:
Approximately 200 MITCHELL "Low Brightness" Luminaires (Model 3245), flush-mounted in continuous rows throughout. Footcandles before relighting: 10. Footcandles after modernization with MITCHELL "Low Brightness" Luminaires: 60. Increase in lighting level: 600%.

once-abandoned school restored to complete usefulness

A remarkable difference... the renovation program of this 60 year old school cost less with MITCHELL "Low Brightness" fluorescents which have increased the overall lighting level by 600%. More than any other factor, the new lighting imparts the effect of pleasing modernity.

MITCHELL Low Brightness Lighting makes the modernization complete: The exclusive MITCHELL Elliptical Reflector, utilizing Low Brightness lamps, delivers a maximum of glare-free light to all work surfaces. The resulting freedom from harsh contrasts and disturbing shadows creates ideal classroom lighting conditions. Finally, the MITCHELL Low Brightness Luminaire provides the advantages of beautiful appearance, practical design, high efficiency and simplicity of maintenance at a most reasonable cost.

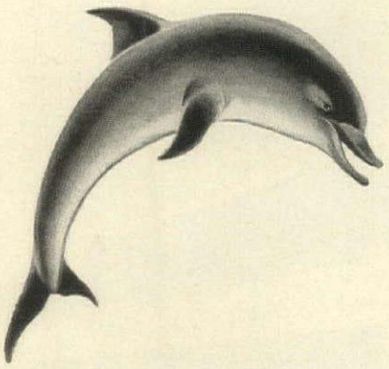
for better school lighting, SPECIFY MITCHELL

Write for complete details on MITCHELL School and Commercial Lighting

MITCHELL MANUFACTURING COMPANY

2525 N. Clybourn Ave., Chicago 14, Ill., Dept. 13-L

In Canada: Mitchell Mfg. Co., Ltd., 19 Waterman Ave., Toronto



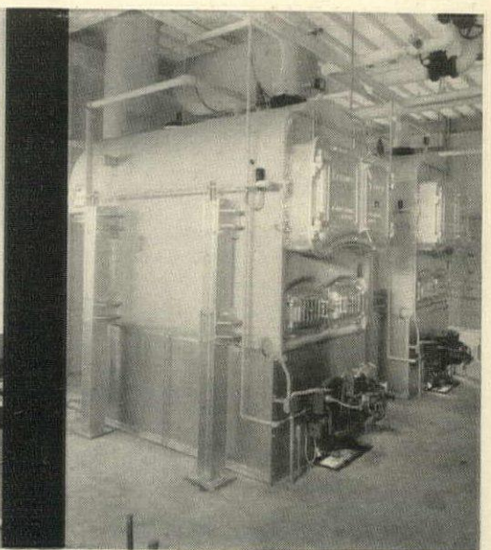
How Kewanee creates "safe weather" for fish...

KEWANEE reserve plus rated boilers

maintain constant temperature

Water temperature is like weather to fish and sudden variations of only a few degrees can be fatal. The problem at Marineland, world's largest oceanarium, Los Angeles County, California, is to meticulously maintain temperatures so its priceless deep sea specimens are not endangered. That's where Kewanee Boilers came in. Cold water from the sea is brought in at the rate of 2,000 gallons per minute. It is vital that boilers offer unfailing service so the inside water temperatures remain constant despite the ceaseless flow of water from the outside. Architects Pereira & Luckman specified Kewanee Reserve Plus Rated Boilers with 50% extra power built-in to take care of fluctuating demands. Only with reserve power could Marineland be sure its rare collection would be protected. And only boilers rated on nominal capacity with built-in reserve could meet the changing demands. So, if your problem is one of maintaining heat against as sharply a defined need as a few degrees change in temperature, or the broad problem of assuring sufficient power when expansion comes, choose Kewanee. You can be sure of unfaltering service.

Marineland Oceanarium, Los Angeles County, California, where rare fish are protected by Kewanee Boilers which assure uniform water temperature. Architects & Engineers: Pereira & Luckman/ Heating Contractor: Mehring & Hanson Company

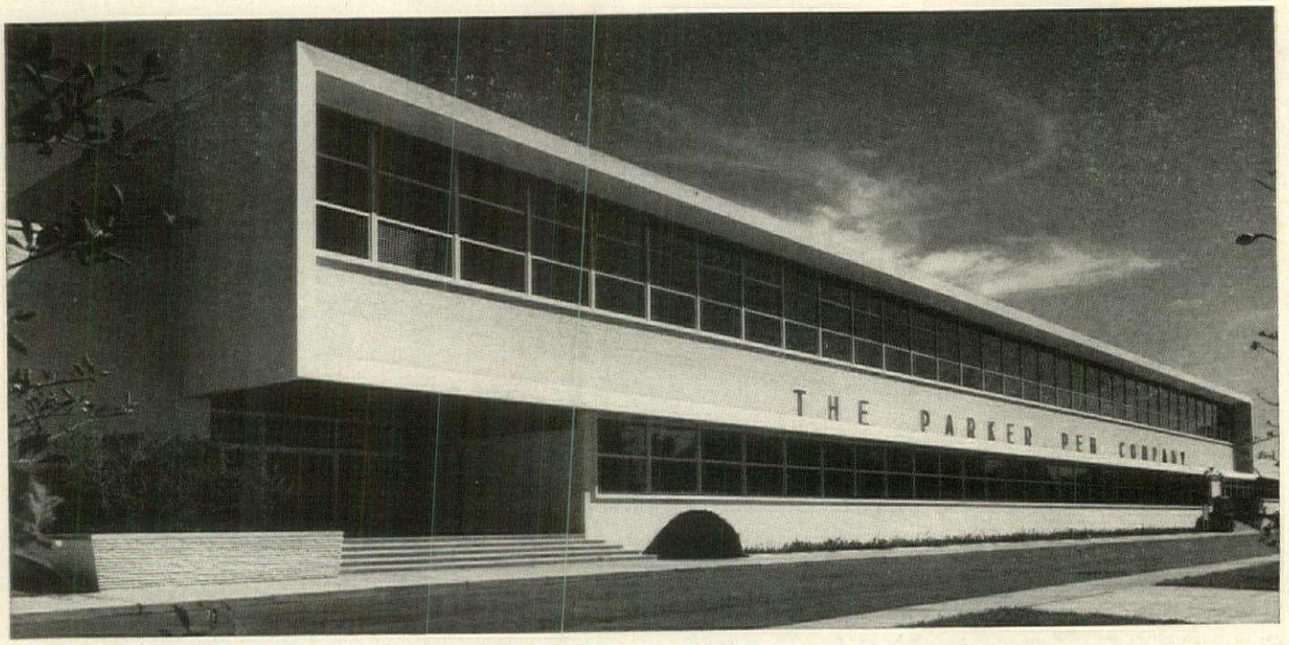


Two oil-fired Kewanee Boilers, housed with a 260 gallon hot water storage tank.

KEWANEE-ROSS CORPORATION, Kewanee, Illinois
Division of American Radiator & Standard Sanitary Corporation

KEWANEE ROSS

Serving home & industry American-Standard • American Blower • Church Seats & Wall Tile • Detroit Controls • Kewanee Boilers • Ross Exchangers • Sunbeam Air Conditioners



"HUMAN" BENEFITS SPELL SUCCESS OF *Thermopane*®

AT NEW PARKER PEN PLANT

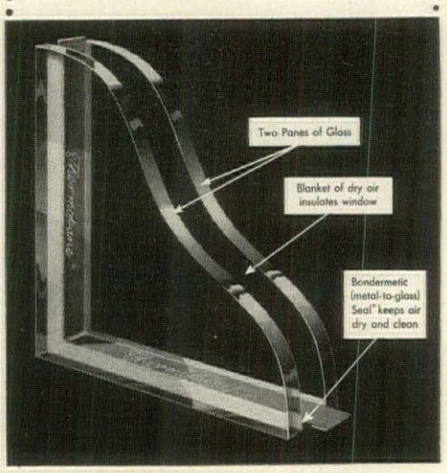
DATA ON PARKER PEN PLANT

Architects:
John J. Flad & Associates, Madison, Wisc.

212,500 sq. ft. plant is completely air conditioned and sound conditioned.

★

Thermopane insulating glass:
4680 sq. ft. on west elevation
3024 sq. ft. on east elevation
336 sq. ft. on north and on south elevations.



Recognized as an outstanding industrial building, The Parker Pen Co. at Janesville, Wisconsin, is an excellent example of designing for the combined benefits of operating efficiency and well being of building occupants.

For instance: *Thermopane* insulating glass was used to aid heating and cooling. To further reduce air-conditioning load, the outer panes of the *Thermopane* units are Heat Absorbing Plate Glass. Beauty and diffusion of incoming daylight were considered, too—for the inner panes are Blue Ridge Louvrex glass.

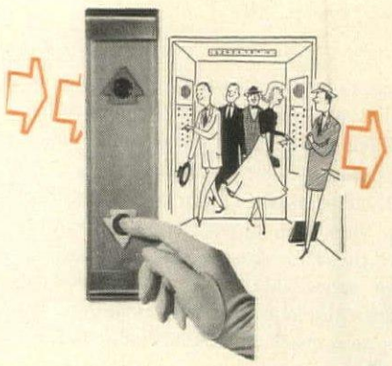
Results? After two years of occupancy, both management and employes are pleased. Workers close to the windows are more comfortable in winter due to *Thermopane's* insulation. Less summer sun heat is admitted by *Thermopane* made with heat absorbing glass. The excellent working conditions have reduced absenteeism, and the insulated windows are considered a factor in that record. Management specified quiet interiors so the entire plant is acoustically treated. And because *Thermopane* deadens outside noise, it helps keep interiors quieter. Even buses operating alongside the windows can hardly be heard.

Heat savings and air conditioning efficiency add economic dividends to the "human" benefits of *Thermopane*.

If you wish data on the insulating qualities of *Thermopane*, the heat reduction qualities of Heat Absorbing Plate Glass, or any other information on glass, call your L·O·F Distributor or Dealer listed under "Glass" in the phone book's yellow pages. Great demand has created a temporary shortage of *Thermopane*. See that your contractor places your order with your L·O·F Glass Distributor or Dealer as soon as your building plans are set. It may avoid construction delay. Libbey·Owens·Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio. *®

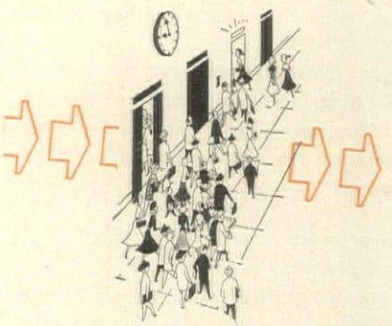
Thermopane
INSULATING GLASS

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



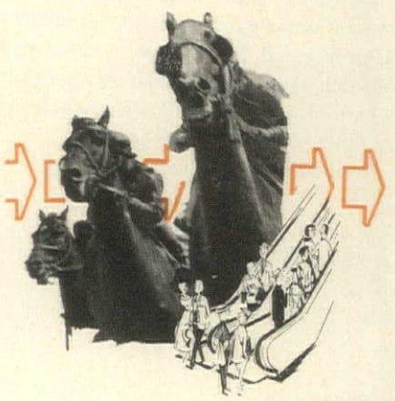
NOW! a touch of excitement in the car

The dramatic Otis Electronic ***Touch*** Button—***which makes AUTOTRONIC® elevators respond to your floor calls***—is now available for car operating panels. Signaling for the floor you want is an exciting and somewhat mystifying experience with the Otis Electronic ***Touch*** Button Panel. Nothing moves. A mere touch of a finger lights your floor number button. What makes it work? The Otis Electronic ***Touch*** Button has no moving parts or contacts. There's an electronic tube behind each floor number. A simple touch excites the tube and lights it to show that your call has been registered. Then as the car arrives at your floor, the call is cancelled; the tube stops conducting and goes dark. Simple—***and dramatic AUTOTRONIC elevatoring!***



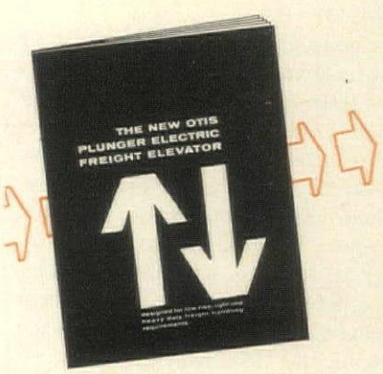
passengers take over 100%

How successful are completely automatic ***without attendant*** AUTOTRONIC elevators for busy buildings? Here's the record: The first AUTOTRONIC ***without attendant*** elevators were installed by Otis in the Atlantic Refining Company Building in Dallas, Texas in 1950. At the end of July, 1955, Otis had sold 711 new ***without attendant*** elevators for installation in 178 buildings and had contracted to convert 495 elevators in 109 existing buildings to completely automatic operation. This includes a second order from the Atlantic Refining Company for its Philadelphia building. Today, almost all new buildings are being planned on the basis of ***passenger operated*** elevators!



race track owners play "comfort to win"

Horse racing fans walk an average of three miles a day at the track. They're constantly on the move to and from the saddling paddock, the mutuel windows, the track rail and the points of refreshment during an eight race program. With patron comfort in mind, many of the leading tracks have installed Otis Escalators to eliminate all stair climbing. Fans will find Otis Escalators adding to their enjoyment at Arlington and Washington Parks in Illinois, Hialeah and Gulfstream Parks in Florida, Laurel Park in Maryland, and Monmouth and Garden State Parks in New Jersey.



FREE BOOKLET! hydraulic freight elevators

You'll find a complete description of the NEW Otis Plunger Electric Freight Elevators in Booklet A-414. It lists typical sizes from a light duty type with 2,500 lbs. capacity and manually operated car gates up to 20,000 lbs. power truck elevators with time saving, power operated doors. It details the new Otis compact, self-contained power unit that makes possible smooth starts and stops and automatic leveling within ¼" of floor level. It shows how the Otis Plunger Electric Freight Elevators, which require no penthouse, keep all direct heavy vertical loads off the building structure and simplify the hoistway construction. There's no real limit to the size, capacity or use of the Plunger Electric elevators described in Booklet A-414.

"SAFETY" is an important elevator word

"The most important word in the mind of anyone responsible for the operation of an elevator system is SAFETY," says Harry E. Wells. "It's important here at the Union Commerce Building in Cleveland where we have a fixed population of 5,500 people and 43,000 elevator riders daily. We handle traffic with 29 Otis elevators (19 are AUTOTRONIC without-attendant operation) which are kept at peak performance with 'Engineered Maintenance' by Otis. We're interested in the guarantee of Otis' high standards of safety. Especially, the checking and replacing of all wearing parts to assure uninterrupted peak safety performance."

OTIS ELEVATOR COMPANY, 260 11th Ave., New York 1, N. Y.
OFFICES AND SERVICE IN 295 CITIES ACROSS THE U. S. AND CANADA

directional arrows

for VERTICAL TRANSPORTATION

PASSENGER ELEVATORS

ESCALATORS

FREIGHT ELEVATORS

CARS AND ENTRANCES

DUMBWAITERS

MODERNIZATION

MAINTENANCE

Otis

EXCERPTS

Continued from p. 151

survey made by the Chamber of Commerce of the US and covering 134 communities where business district streets had been converted to one-way operation.

In 90 cities businessmen were against the idea, but such opposition disappeared in 62 of these cities after a trial period. In three cases there was no opposition until after the one-way was installed. In 41 cases no opposition existed either before or after the one-way was installed. In 41 cases no opposition existed either before or after.

All but nine of the one-way plans were retained. In these nine cases, all or part of the system was changed back to two-way operation due to opposition of affected businessmen.

How do one-way streets affect retail sales and property values?

There has been little research as to the effects, if any, on retail sales and property values when one-way movement is instituted. However, all findings point toward the conclusion that over-all business activity is enhanced and there is general agreement by businessmen on this point.

A study in the city of Sacramento (pop. 158,747) by the California Division of Highways before and after 16th St. was made one-way proved that retail business on this street increased 26.7%, a 5% greater increase than the average throughout the area.

Do one-way streets ever hurt business?

In some cases individual businesses may suffer because traffic flow from one direction past their location is cut off. Usually such effect is temporary. These occurrences involve principally those industries that cater to traffic from a particular direction and include parking lots or garages, food stores, service stations and drive-in establishments. In some cases, too, public transit companies have reported ill effects from one-way operation. Only seven (5%) of the 134 cities in the US Chamber survey reported any real hardships to business houses and these involved only a few cases in each city.

How do one-way streets affect motor vehicle traffic?

When two-way streets are converted to one-way operations, almost invariably the daily volumes increase, average speed is greater, delays are fewer and accident frequency drops. As pointed out elsewhere, the effect on local transit has not been good in some cities. Yet the opposite has

continued on p. 194

ALUMINUM IN MODERN ARCHITECTURE

COMMONWEALTH PROMENADE APARTMENTS

(pictured below)

and 900 ESPLANADE APARTMENTS, CHICAGO.

BUILDERS AND DEVELOPERS:

Herbert S. Greenwald and Samuel N. Katzin

ARCHITECT:

Ludwig Mies van der Rohe, Chicago

ASSOCIATE ARCHITECTS AND ENGINEERS:

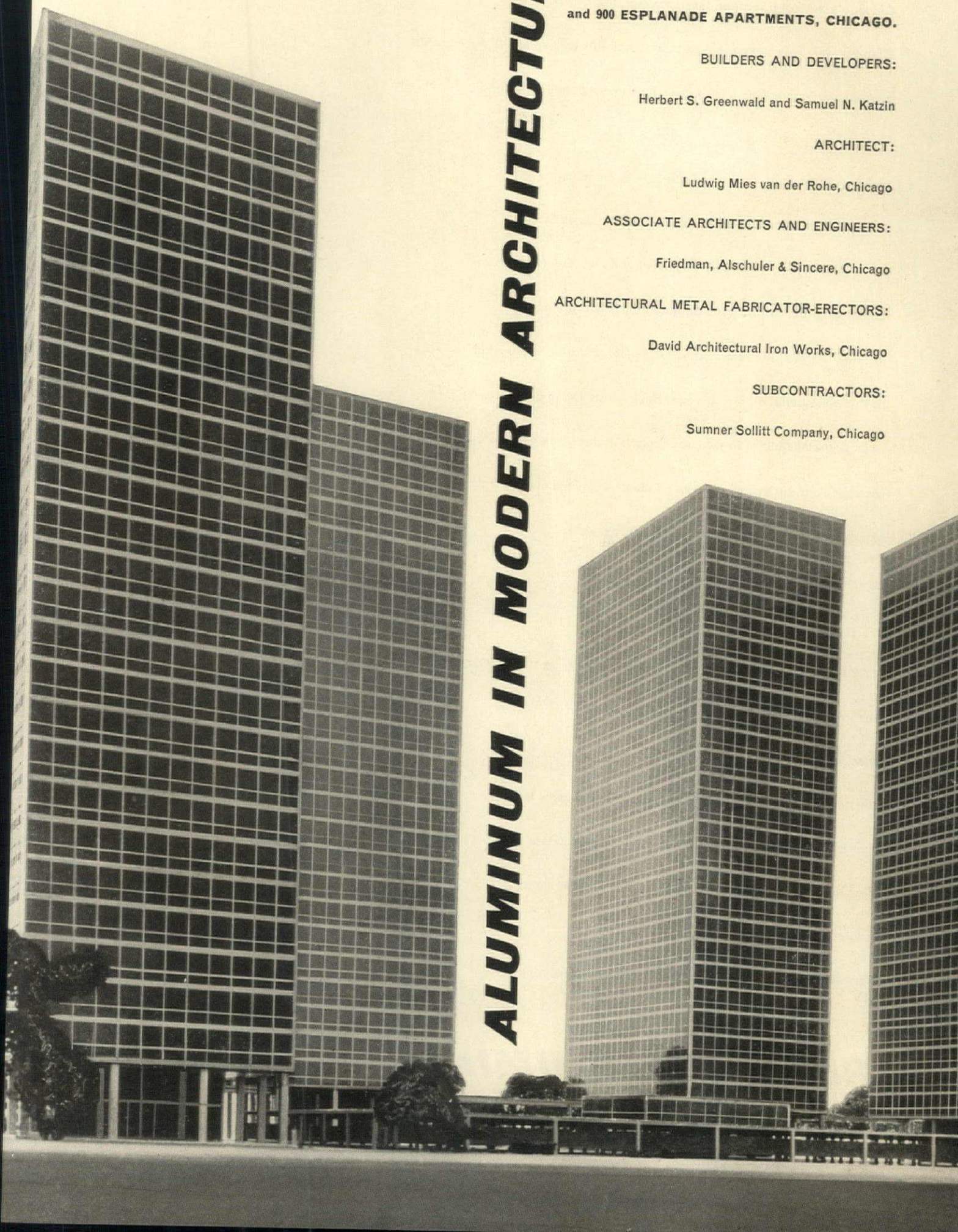
Friedman, Alschuler & Sincere, Chicago

ARCHITECTURAL METAL FABRICATOR-ERECTORS:

David Architectural Iron Works, Chicago

SUBCONTRACTORS:

Sumner Sollitt Company, Chicago



New concept in multi-story exteriors

Chicago's newest lake front developments, the Commonwealth Promenade Apartments and the 900 Esplanade Apartments, present a unique advance in modern glass-and-aluminum exteriors for multi-story buildings. On the four 28-story and the two 29-story structures, the skin is made up of large grids prefabricated to nominal 9′ x 21′ sizes from Reynolds Aluminum extrusions. These grids are anodized in complete units, using Reynolds newly expanded anodizing facilities—largest in the industry. A typical grid unit is indicated by the white panel on facing page. Basic joints in the grids are welded. Installation of these large units is expected to set new construction records. And the use of these large elements, eliminating as many field-erection joints as possible, assures maximum weatherproof protection.

REYNOLDS ALUMINUM SERVICE TO ARCHITECTS

Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, standard mill products 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 ALUMINUM

Reynolds Metals Company, Louisville 1, Ky.

LEVITTOWN STANDARDIZES ON CTA-11, NEW 3M CLAY TILE ADHESIVE

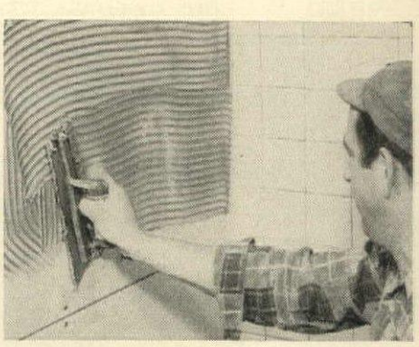
Levitt gives nod to the "new method" for all clay tile applications in giant project

MANUFACTURER CITES BENEFITS OF EASE, SPEED, ECONOMY, STRENGTH

The new adhesive method of installing clay tile has hit the "big time". Levitt and Sons have specified CTA-11, the clay tile adhesive made by Minnesota Mining & Manufacturing Company, for all clay tile installations in Levittown, Pennsylvania. The huge planned community, upon completion, will house a population of over 70,000 —forming a new city of 17,000 homes.

In Levittown, the tile on every bathroom wall will be put up with an easy-to-use adhesive, unlike anything most builders have ever seen before. For new CTA-11 can be spread right out of the can. No premixing is necessary and a trowel is the only tool needed. Almost any plumb surface will do—plaster, plywood, metal, cement block, "dry wall". The operator spreads the adhesive, sets up the tiles and finishes the job by grouting in the usual manner. Rooms can be occupied inside of 24 hours.

With CTA-11, the job is easier, faster and more economical. Savings in total installation costs run steadily around 20%. Superiorities in finished job quality are also claimed: 1) Tiles do not crack with settling . . . the adhesive "gives" enough to adjust to settling. 2) The adhesive has a shear strength of over a ton per tile. 3) Installation is moisture-proof.



For further details on CTA-11, interested architects, builders and tile contractors are advised to consult a building supply dealer or write to 3M, Department 1811, 417 Piquette, Detroit 2, Mich.

3M ADHESIVES

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.

EXCERPTS

Continued from p. 188

been reported in other cases. However, all other motor vehicle traffic benefits greatly.

What are major advantages of one-way streets?

Traffic carrying capacity under one-way operation is higher than with two-way operation largely because of less conflict and delay from turning movements at intersections. Another cause is the way in which the entire street width is used more efficiently in cases where there is an odd number of lanes for moving traffic and where overtaking and passing is simplified in case streetcar, bus or heavy truck operations are involved.

Due to increased capacity, traffic is attracted from nearby two-way streets which generally is an advantage to businesses along the one-way streets.

Average speed is higher on a one-way street because of the reduced number of possible conflicts in traffic movement and the greater ease in overtaking and passing slow vehicles. Also assisting in this regard, traffic signals can be timed easily for one-way progressive movement without interruptions in a platoon's smooth progression down the street whereas with two-way operation this is much more difficult, often impossible, to achieve.

The conversion to one-way movement may postpone the removal of curb parking. Where it is necessary to expand the capacity of a street and where the supply of parking is very small in relation to demand, the increase in capacity may be achieved through the one-way treatment instead of parking restriction.

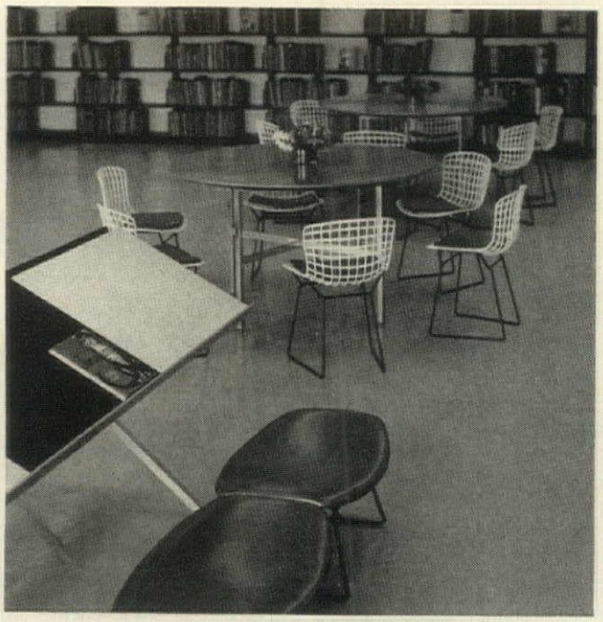
Conversion from two-way to one-way operation will usually reduce vehicle and pedestrian accidents and injuries.

One-way street operation is one of the simplest and cheapest methods of obtaining additional speed, capacity and safety in existing streets.

Pedestrian travel is benefited since conflicts between turning vehicles and pedestrians in intersection crosswalks are decreased. One crosswalk parallel to the one-way street is always free from such conflicts. Pedestrians have fewer turning movements to watch for.

Is curb parking prohibition preferable to the one-way rule?

From the standpoint of street traffic congestion relief alone, prohibition of curb parking is much to be preferred. Institution of one-way movement increases capacity about 10 to 20% (see above table) while prohibition of curb parking boosts capacity by 75 to 100%.



Midland Public Library, Midland, Mich., Alden Dow, architect.

KNOLL ASSOCIATES, INC., 575 MADISON AVENUE, NEW YORK 22

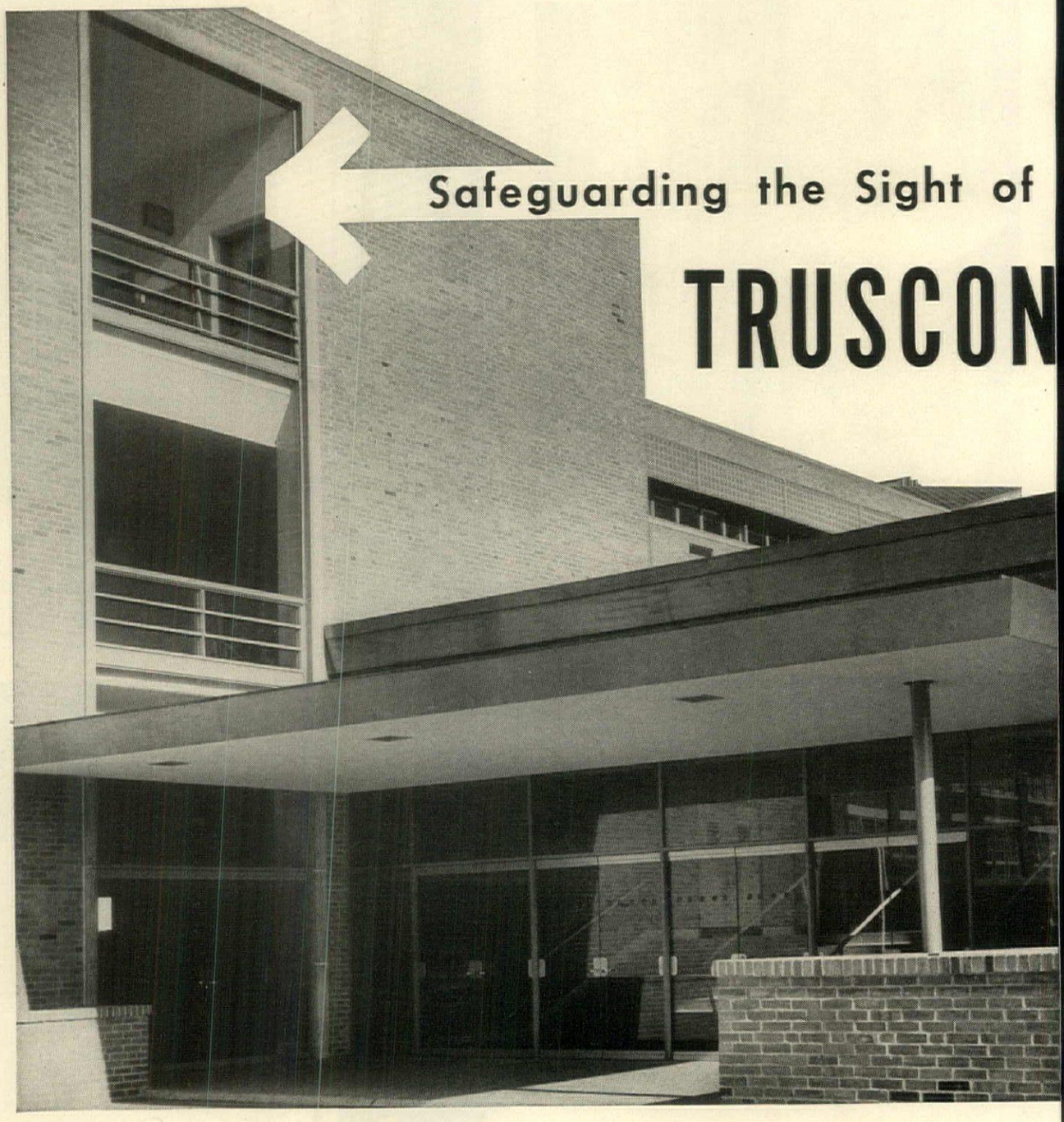
BOSTON, CHICAGO, DALLAS, DETROIT, HOUSTON, MIAMI,

SAN FRANCISCO, WASHINGTON, TORONTO, CANADA

The Knoll Planning Unit, design consultants to the architect, has won major recognition for its work in a wide variety of installations: offices, banks and embassies—colleges and libraries—marine and industrial projects.

An illustrated brochure on the Knoll approach to the architect's problems is available on request.

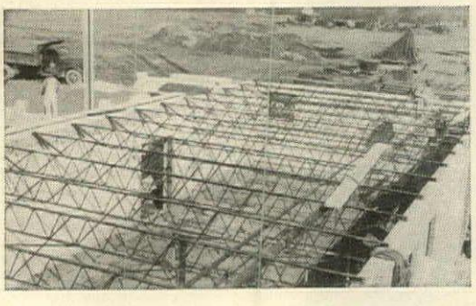
See our Catalog in Sweet's Architectural File, 22o/Kn.



Safeguarding the Sight of

TRUSCON

Always Specify Truscon-Engineered Building Products — Including:



Truscon "O-T" Steel Joists for floor and roof supports. They are light, strong, and fire-resistant. Easy to handle, they lessen the time and labor required for erection, save material in supporting framework and foundations.

Truscon Metal Lath for better, faster plastering. Accepted by *all* building codes . . . easy to erect, easy to form, easy to work over. Special accessories to meet every plastering requirement.

Tomorrow's Physicists

Steel Windows

in University of Pennsylvania Physics Lab, Philadelphia, Pa.

In corridors and classrooms, a variety of Truscon Steel Windows provides an abundance of natural illumination in the new University of Pennsylvania Physics Lab.

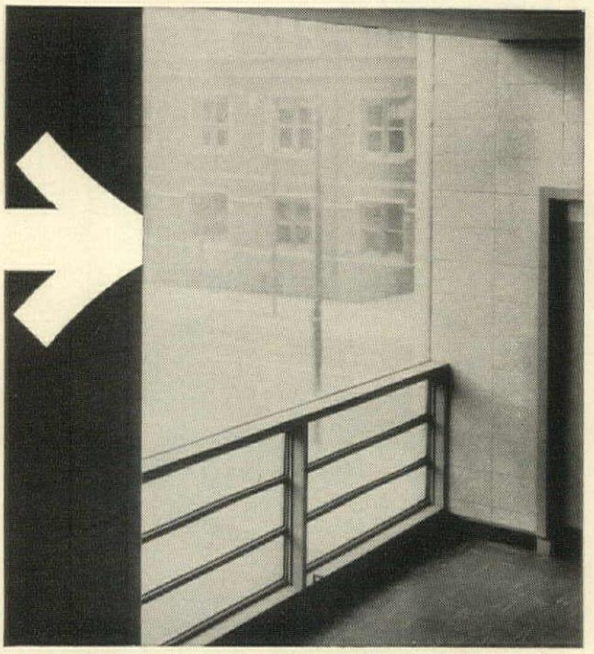
Functional in design, handsome in appearance, and economical to maintain, Truscon Steel Windows are especially adaptable to modern school requirements. Rigid, heavy frame sections insure long, satisfactory service. Solid bronze hardware will not rust or corrode. And you can choose from an almost endless variety of sizes and types, when you specify Truscon—the foremost line of metal windows available anywhere.

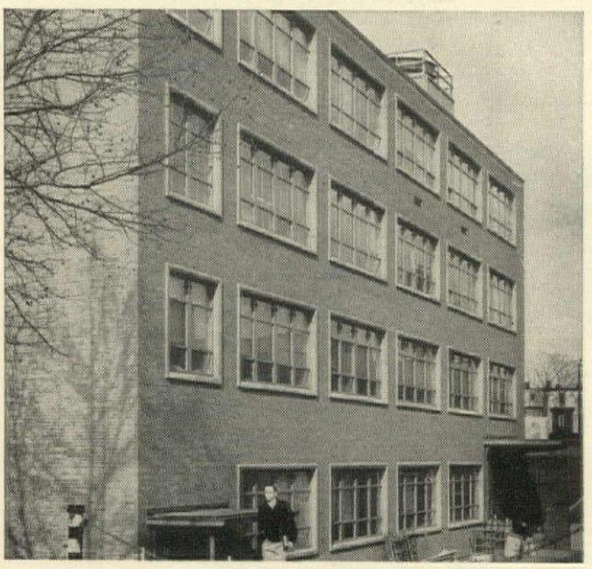
Many designs have combined varieties of Truscon Steel Windows to achieve beautiful as well as functional architectural effects. The Truscon line includes casement and awning windows in both steel and aluminum, picture, double-hung, ranch, basement, Donovan, detention, and an unexcelled choice of variations.

Send the coupon for your copy of the complete Truscon Window Catalog for your files. In a hurry? You'll find details, sections, and sizes in Sweet's.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products





UNIVERSITY OF PENNSYLVANIA PHYSICS LAB., Philadelphia, Pa.
ARCHITECTS: Jas. R. Edmonds, Jr., Baltimore, Md. and Willing, Sims & Talbutt, Philadelphia, Pa.
GENERAL CONTRACTOR: The Baton Construction Corp.
TRUSCON WINDOWS USED: Donovan, Architectural Projected, Commercial Projected, and Maxim-Air Steel Windows.

TRUSCON STEEL DIVISION,
REPUBLIC STEEL
3108 Albert Street
Youngstown 1, Ohio

Please send me more details on:
☐ Truscon Metal Windows ☐ Truscon Metal Lath
☐ Truscon "O-T" Steel Joists

Name_____ Title_____

Company_____

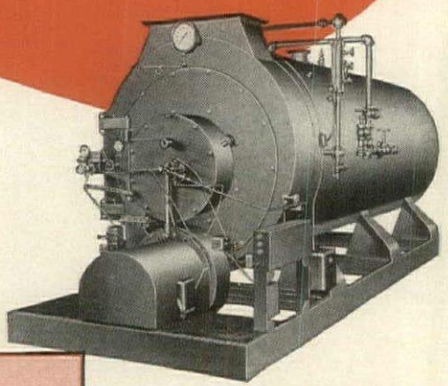
Address_____

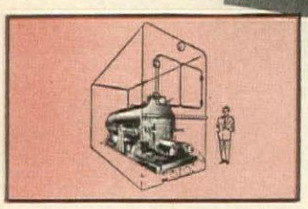
City_____ Zone____ State_____

K-8294

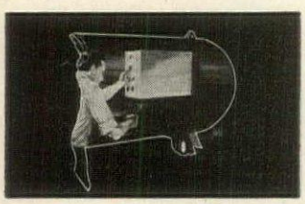
CYCLOTHERM...

FEATURE for FEATURE THE MOST ADVANCED DESIGN in STEAM GENERATION!

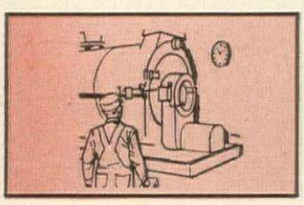




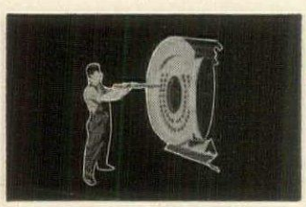
1. Most Compact For More Efficient Space Utilization! You can devote more space to storage and production. Or, you may need less space than you think. Cyclotherm requires minimum boiler room space. It has 40% less floor area and 75% less height than conventional units . . . is up to ⅓ smaller than other packaged units.



2. More Efficient Operation Reduces Fuel Costs! Cyclotherm guarantees a minimum 80% efficiency in oil and/or gas. Fuel changeover can be quickly made as fuel prices fluctuate. From cold start to full power takes only 15 to 20 minutes. Capacity can be reduced without losing peak efficiency.



3. The Finest Service Facilities In Steam Generation! *A nation-wide network* of factory-trained servicemen are available at any hour, weekdays and weekends.



4. Simplified Maintenance Saves Up To 50% In Costs! One maintenance man can clean return tubes . . . replace and clean burner nozzle. Firetube never needs cleaning.

See Our Exhibit
Cyclotherm Booth 181
Chicago Exposition of POWER and MECHANICAL ENGINEERING
Chicago Coliseum
November 14 to 18, 1955

Cyclotherm Steam and Hot Water Generators range from 18 to 500 hp . . . from 15 to 200 psi. For complete details on their many space—and cost-saving features, mail this coupon today for your free booklet.

YEARS AHEAD IN STEAM GENERATION
CYCLOTHERM®
Steam & Hot Water Generators

Cyclotherm Division National-U.S. Radiator Corp.,
2423 E. First Street, Oswego, New York

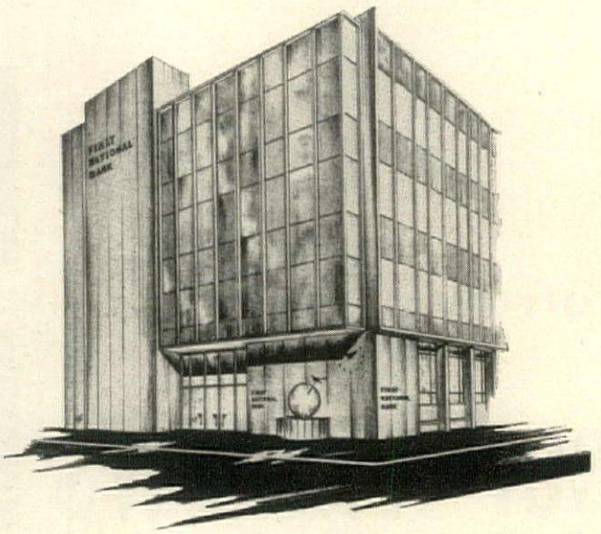
Please send me your free booklet which shows me how I can save time, money and space with Cyclotherm.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE____



Edwin A. Francis and Carlisle B. Guy, Associate Architects, Colorado Springs, Colorado.
W. M. Watson Company, Topeka, Kansas, General Contractor.

Effective Beauty...

in business buildings!

MARMET
WAUSAU, WISCONSIN

new type... CURTAIN WALL WINDOWS

The curtain wall system, as illustrated in the architect's sketch above, is fast becoming popular throughout the country. Although the First National Bank Building, Colorado Springs, Colorado is the first type of curtain wall of this particular construction that MARMET has developed, MARMET has been in the "curtain-wall" construction field since its inception. The "Curtain-Wall"—made of aluminum—to receive any type single or insulated glass up to ½" is "factory fit", unglazed and ready for installation . . . permanent and requires minimum maintenance. MARMET Curtain Wall offers architects a unit with which new ideas and design can be achieved . . . as illustrated in the above architect's sketch. MARMET Series 600 Curtain Wall has been developed as a "building block" for the aluminum window field. Write for complete specifications and details.

write ▶ for information on MARMET Aluminum Church Windows, Ribbon Windows, Projected Sash, 400 and 500 Series, Stock Size Ribbon Windows, Glass Block Ventilators, Wall of Windows—MARMET Aluminum Doors, both extruded and aluminum covered doors and door frames, and extruded aluminum screen doors . . . complete specifications and details without obligation.

MARMET CORPORATION
of WAUSAU, WISCONSIN

MARMET
WAUSAU, WISCONSIN

IN SCHOOLS, THEY CALL IT

"CHILDPROOF" PLEXTONE

and no wonder! This new multicolored paint is stain-mar-grease-scratch-chip resistant!

Williams Green Color-flecked **PLEXTONE,** one of many decorator color combinations for modern or traditional interiors. Also available in monotones and in custom multicolors for large projects.

Never before a paint for school interiors like amazing, rugged Color-flecked PLEXTONE. It's revolutionary . . . two or three *different* colors (sprayed at ONE time from ONE gun WITHOUT SPRAY DUST) which form a multicolored, textured pattern. SCHOOL AUTHORITIES find this new multicolored decorator finish easy on the budget. It resists wear, soil . . . and rambunctious youngsters. SCHOOL ARCHITECTS find that PLEXTONE's uniform coverage on different types of low-cost surface materials gives them new styling resources . . . and new design possibilities because of its *high light reflectivity* and durability. PAINTING CONTRACTORS say PLEXTONE goes on easier, WITHOUT SPRAY DUST, makes possible neater, cleaner jobs. And MAINTENANCE MEN find it unmatched for ease and low cost of upkeep.

SO RUGGED! Color-flecked PLEXTONE resists staining by crayon, ink, candy, grease, and other forms of soil. Its harder, thicker paint film cannot easily be scraped or scratched. It can be washed, scrubbed, scoured — *even sandpapered* — without marring. And touch-ups, if ever needed, defy detection!

SO PRACTICAL! Imagine! This amazing new paint gives you a color-flecked surface consisting of two or three different colors, sprayed from *one* gun at *one* time in *one* coat *without spray dust!* And PLEXTONE's textured surface has unmatched hiding power . . . cleans quickly and easily!

SO BEAUTIFUL! You've never seen a more unusual, more dramatic, more beautiful effect. PLEXTONE's multicolor finish matches the most skilled spatter-dash painting . . . in subtle tones-on-tone or a brilliant circus of colors.

***Write today for FREE* color chips and Color-flecked PLEXTONE application data.**

M.&W. CO. SINCE 1876

PLEXTONE® *COLOR-FLECKED* **TEXTURED ENAMEL**

MAAS & WALDSTEIN CO.

World's Largest Producer of Multicolored Paints

2125 McCARTER HIGHWAY
NEWARK 4, NEW JERSEY

MIDWEST DIVISION: 1658 Carroll Avenue, Chicago 12, Illinois
PACIFIC COAST DIV.: Smith-Davis Co., 10751 Venice Blvd., Los Angeles 34, Calif.

MAAS & WALDSTEIN CO., Architectural Division
2125 McCarter Highway, Newark 4, New Jersey

Gentlemen: Please rush free Color-flecked PLEXTONE color chips and application data.

Name_____

Title (or occupation)_____

Company_____

Address_____

City_____ Zone_____ State_____

BOOKS

BUILDING, PLANNING AND DESIGN STANDARDS. By Harold R. Sleeper. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. 331 pp. 9½" x 13¾". $12

Architectural Graphic Standards, the most thumbed book on drafting room shelves, has a new sister—half as big but twice as attractive, and a lot more interesting than its long title indicates. It is by the same Author-Architect: Harold R. Sleeper.

The new book is a graphic analysis of 23 building types ranging in size from small homes to air terminals, from motels to football stadia.* For each type there is a separate chapter on program data, spatial relationships, area requirements, typical plans, basic data on furniture, fixtures and equipment concluded by a handy bibliography on the building type. For example, the 15 pp. on office buildings, one of the smaller chapters, is subdivided under these headings: "functional relationships, site considerations, financial considerations, floor heights and bay spacing, office area requirements, general office clearances, movable partitions, desk-office units, office furniture." (It also contains a special five-page section on architects' offices.)

The purpose of *Design Standards* is to provide in one handy package the basic information necessary to make a design program and preliminary drawings for any one of the 23 building types. This it does well. Dean Pietro Belluschi, of MIT's School of Architecture and Planning, speaks for the architectural profession and its clients when, in the book's foreword, he says: "It will be of extreme usefulness to architectural and engineering offices, to schools and to all businesses related to the building industry. The need for such a body of technical information has long been felt."

This book got its start when FORUM asked Harold Sleeper to prepare a series of plates called "Forum Design Standards and Data." Their publication began in the Oct. '53 issue of FORUM and was concluded with the series on trucking in the March '55 issue. The new book reprints the 52 FORUM plates and adds some 250 new ones.

More attractively presented and more easily read than the hand-lettered *Graphic Standards*, *Design Standards* is printed from varitype, and its index is positioned for quick and frequent use: inside both the front and back covers.

* The complete list: Small Homes; Motels; Hotels; Bars, Restaurants and Kitchens; Schools; Gymnasiums; Theaters and Auditoriums; Stadiums and Grandstands; Shops and Stores; Office Buildings; Banks; Agricultural Buildings; Air Terminals; Bus Terminals; Parking Garages; Service Stations; Railroad and Trucking Data; Fire Stations; Hospitals; Doctors' Offices; Dentists' Offices; Churches and Temples; Mechanical Equipment.

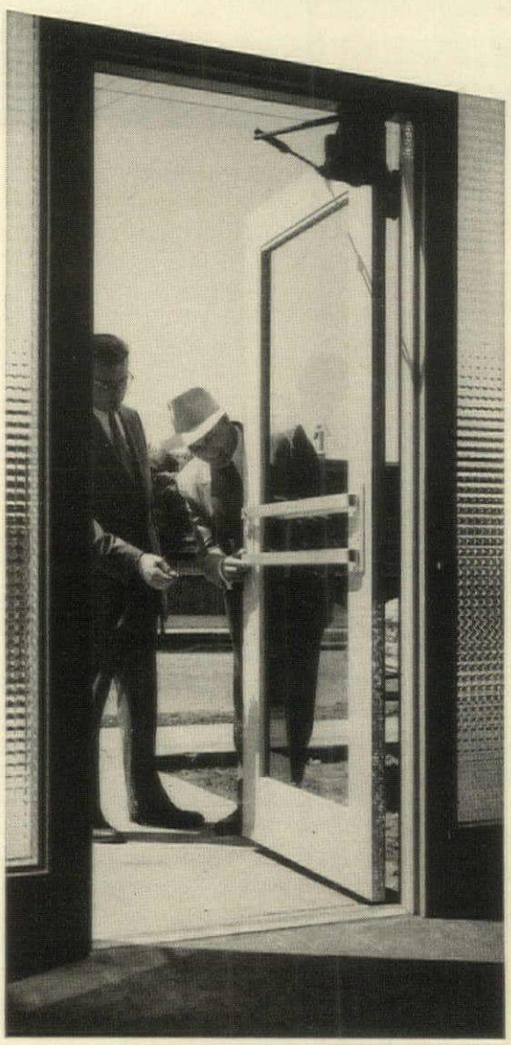
NEW FURNITURE. Edited by John Peter. Published by George Wittenborn Inc., 38 E. 57th St., New York 22, N.Y. 173 pp. 8¾" x 12". Illus. $8.50

This is the third annual graphic presentation of the design work in 15 countries—an exhibition of the best new furniture produced last year throughout the world.

IDEA 55. Edited by John Peter. Published by George Wittenborn Inc., 38 E. 57th St., New York 22, N.Y. 157 pp. 8¾" x 12". Illus. $8.50

Idea is the international yearbook of industrial design in the fields of appliances and consumers' goods. Over 410 examples have been selected by international experts for this third annual edition.

$100 SAVINGS PER DOOR!



Your Fenestra representative will be glad to demonstrate this "packaged door"—show you specifically how it can save you big sums of money. Ideal for schools, hospitals, offices and commercial buildings of all types.

Four big reasons why these Fenestra Hollow Metal Door units can give you this tremendous saving on every single door opening in your next building!

1. Fenestra* Hollow Metal Doors cost you less at the very start, because you get production-line economy—not custom job costs. They are mass produced on special jigs that avoid expensive time and labor.

2. You save time—these doors come to your job complete with pre-fitted door, frame and hardware specifically made for each other. There's no expensive lost time in planning, ordering and assembling special elements.

3. You save on installation costs because these complete units need no cutting, no fitting, no mortising or tapping. One carpenter with one screwdriver can install the door in *minutes!*

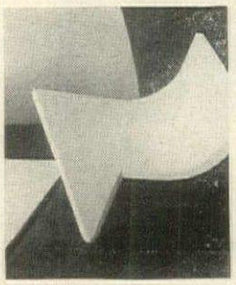
4. You save year after year on maintenance because Fenestra Hollow Metal Doors can't warp, swell, stick or splinter. They always open easily, smoothly. They close quietly because inside surfaces are covered with sound-deadening material.

There's a door for every purpose in the Fenestra line: Entrance Doors, Flush or Regular Interior Doors with glass or metal panels, Doors with the Underwriters' B Label. For photos and details, write the Detroit Steel Products Company, Dept. AF-11, 2296 East Grand Boulevard, Detroit 11, Michigan. *®

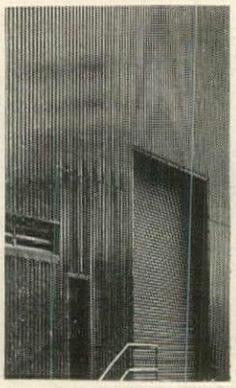
Fenestra | **HOLLOW METAL DOOR • FRAME • HARDWARE UNITS**

Architectural, Residential and Industrial Windows • Metal Building Panels • Electrifloor* • Roof Deck • Hollow Metal Swing and Slide Doors

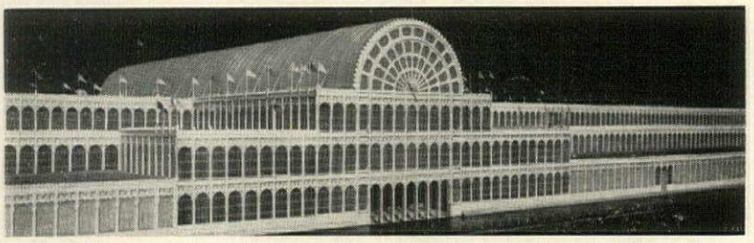
PRODUCTS



Shelled pool.....p. 218

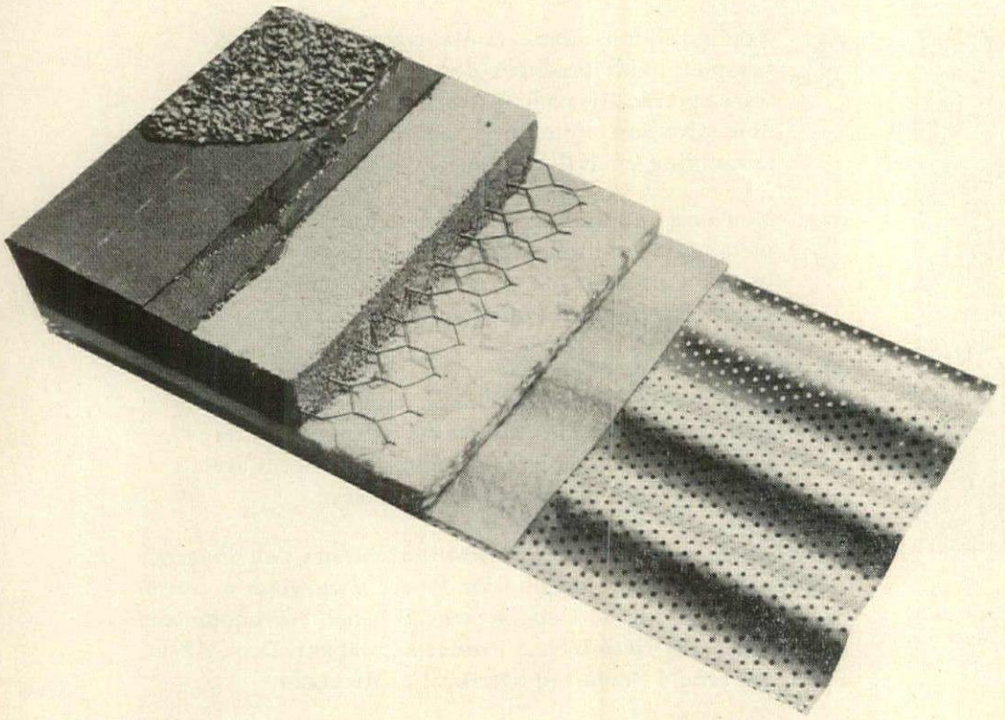


Sandwich wall....p. 224



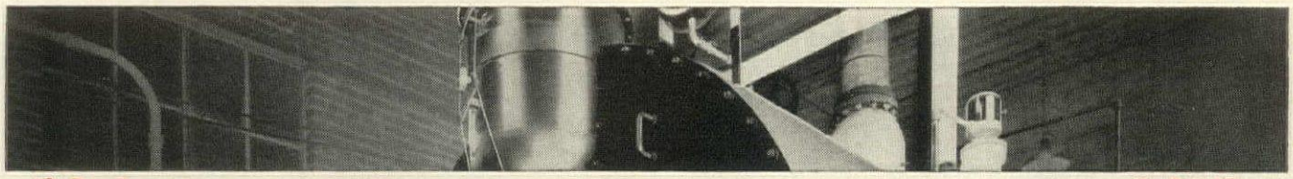
Models to scale to order.....p. 260

Perforated structural roof deck doubles as acoustical ceiling face



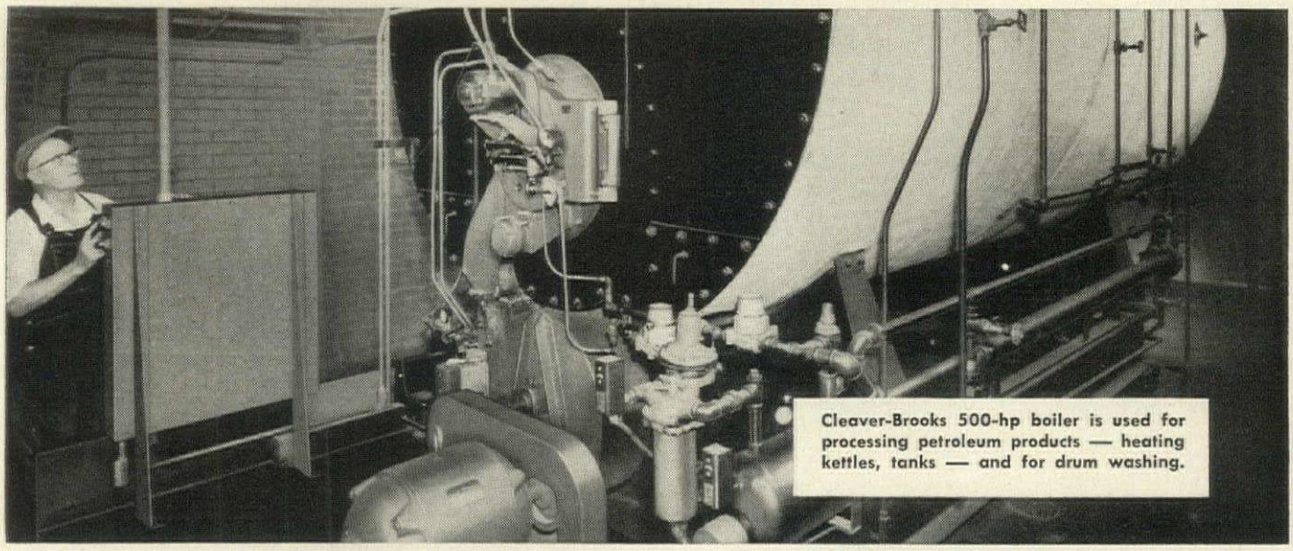
In its 5″ depth, from rooftop to ceiling underside, *Structur Acoustic* integrates a low-cost, fire-resistant roof with effective acoustic and thermal insulation. The corrugated panel of high tensile steel underlying the system serves both as a supporting deck, spanning up to 8′, and a presentable hard face for the sound-absorbent batts above. It is fabricated in 2½′-wide sheets of galvanized, tempered steel and punched with 5/32″ holes. These perforations, big enough to let noise travel through efficiently, are spaced ½″ apart so as not to subtract materially from the strength of the panel. Having a noise reduction coefficient of .65 and a U factor of .14 with a 2½″ slab, *Structur-Acoustic* system consists, from bottom up, of the corrugated deck laid over junior steel beams, concrete or timber beams. Over this is placed a phenolic membrane and a 1″-thick semirigid board of glass-fiber board. (The membrane prevents any fine glass particles from filtering down through the holes in the panel.) A slab of lightweight insulating concrete reinforced with wire mesh and fire-resistant concrete topping is poured over the acoustic board and a built-up tar and gravel roof laid down. The entire ceiling roof weighs under 8 lb. per sq. ft. yet can carry 130 lb. per sq. ft. on a 6½′ span.

continued on p. 206



"We heard Cleaver-Brooks Boilers were OK"

. . . and what an understatement that proved to be for a Milwaukee petroleum marketer*



Cleaver-Brooks 500-hp boiler is used for processing petroleum products — heating kettles, tanks — and for drum washing.

Look at the record:

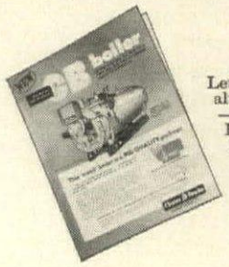
350 gallons of fuel oil saved per day!

On an annual basis — that's more than 90,000 gallons of oil saved.

Complete shutdown flexibility with the assurance of fast steaming from a cold start is the key to these remarkable savings for a petroleum processor and marketer in Milwaukee, Wisconsin. Now, a Cleaver-Brooks 500-hp boiler operates 10 hours a day, 5 days a week, where formerly two 150-hp units operated continuously 24 hours a day, 7 days a week. Fewer boiler working hours also saves up to $11,000 yearly in maintenance.

By replacing outmoded equipment, this petroleum processor also enjoys the benefits of guaranteed 80% operating efficiency, four-pass design, forced draft, 5 sq. ft. of heating surface per boiler-hp and fully-automatic firing. Cleaver-Brooks Company, Dept. M, 337 E. Keefe Ave., Milwaukee 12, Wisconsin — Cable Address: CLEBRO — Milwaukee — all codes.

**Name supplied upon request.*



Let us help you beat the penalties of boiler obsolescence — with a modern Cleaver-Brooks installation. Sizes from 15 to 600 hp, 15 to 250 psi — steam or hot water, for heating or processing. Write for catalog.

Look at these "before-and-after" facts

	NEW (1) 500-hp Cleaver-Brooks boiler	OLD (2) 150-hp obsolete boilers
FUEL CONSUMPTION	450 gal. per day (10-hr. day) 46 gal. per hour (operating hour)	800 gal. per day (24-hr. day) 60 gal. per hour (operating hour)
SCHEDULED STEAM SERVICE	Automatic firing from 6:30 a.m. to 4:30 p.m. Fast steaming from a cold start.	Continuous 24-hr. operation. Couldn't shut down. Wasted heat. No benefit from extra hours of operation.
OVERALL EFFICIENCY	Average 125 lb. of steam per gal. of oil.	Average 96 lb. of steam per gal. of oil.
OVERALL MAINTENANCE	Cleaned every 6 months. Single maintenance foreman.	Cleaned every 6 weeks. Required extra fireman for weekends.

Cleaver Brooks

25th YEAR

TWENTY-FIVE YEARS OF LEADERSHIP BY THE ORIGINATORS OF THE SELF-CONTAINED BOILER

No costly maintenance problem here

Clean, trim-looking Johns-Manville Corrugated Transite side walls will provide years of maintenance-free service for Grinnell Company of the Pacific. Architect: Richard Sundeleaf, Portland, Oregon; General Contractor: Henry M. Mason Company, Portland, Oregon; Transite Erector: The E. J. Bartells Company, Portland, Oregon.

build with Johns-Manville Corrugated Asbestos Transite

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

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

Made of asbestos and cement, Corrugated Transite is practically indestructible. It never needs paint or special treatment to preserve it . . . it's fireproof and rotproof. Corrugated Transite is also used increasingly for interiors. The streamlined corrugations and attractive shadow lines offer interesting design possibilities.

Investigate Johns-Manville Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, long-lasting, trouble-free structure regardless of size or purpose. For complete details write Johns-Manville, Box 158, Dept. AF, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

- Large sheets go up quickly
- Easy to fasten to steel
- Easy to nail to wood
- Easy to saw
- Easy to drill

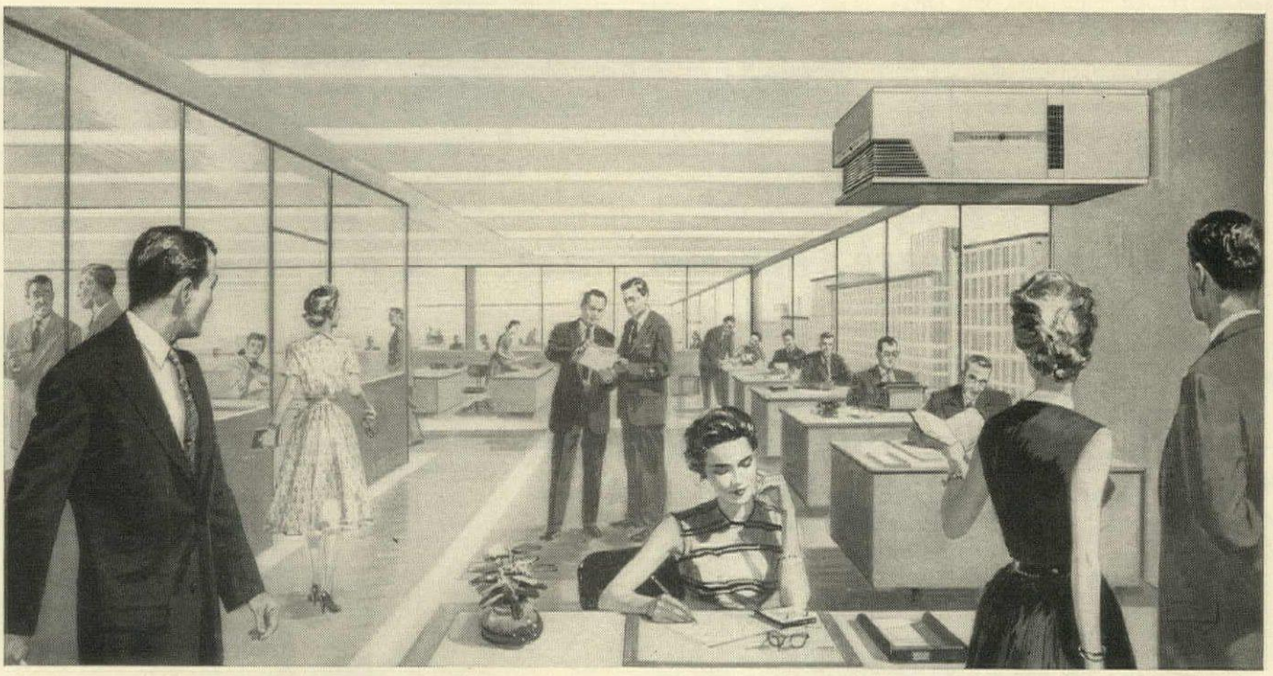
See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

JOHNS-MANVILLE PRODUCTS

Johns-Manville

NOW G-E CEILING-MOUNTED PACKAGED AIR CONDITIONERS HELP YOU

SOLVE 2 PROBLEMS



1 SPACE

Now your scope of design can include the finest air conditioning without using a foot of vital floor space. Because new G-E Packaged Air Conditioners are fastened to the ceiling—or can be mounted on a shelf. And these trim units enhance any modern scheme. They're compact, self-contained—with no exterior parts. Motor, compressor and condenser are all sealed inside.

2 WATER

Where water restrictions present a serious problem, specify G-E ceiling-mounted units in air-cooled models available in 3 and 5 ton capacities. These models use no water—require only air and electricity. Water-cooled models also available in 3, 5 and 7½ ton capacities. For *year-round* comfort, all new G-E ceiling-mounted units may be equipped with coils for winter heating.

And, remember! G-E is the only complete packaged air conditioning line on the market. You can specify both floor- and ceiling-mounted models from a single manufacturer. For free booklet, "What Every Businessman Should Know About Weather Reflex", write General Electric Company, Commercial and Industrial Air Conditioning Department, Bloomfield, New Jersey.

Packaged AIR CONDITIONERS

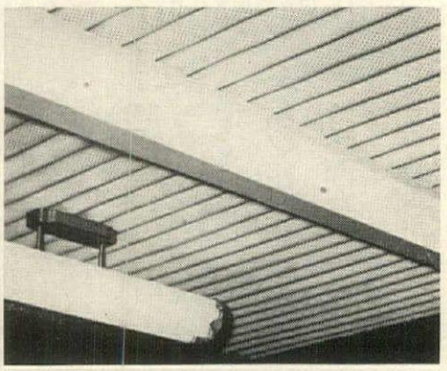
Progress Is Our Most Important Product

GENERAL ELECTRIC

PRODUCTS

Continued from p. 202

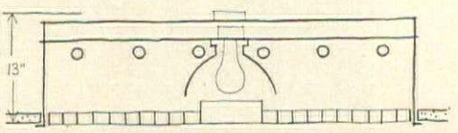
Particularly aimed at school and shopping-center construction, and other one-story buildings where fire resistance and price are important factors, the *Structur-Acoustic* system installs complete for about $1 to $1.10 per sq. ft. An additional, less obvious economy the 5″ roof makes possible is the saving of 13″ to 19″ of wall height that would be taken up by hanging a separate acoustical ceiling. Standard light troffers can be nested with the *Structur-Acoustic* panels.

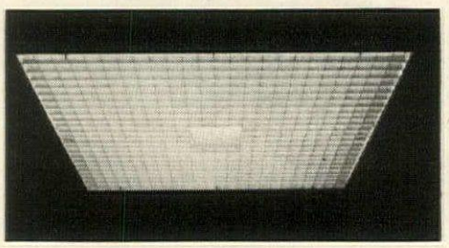


Manufacturer: Granco Steel Products Co., Subsidiary of Granite City Steel Co., Granite City, Ill.

EGG-CRATE FIXTURE mixes fluorescent and incandescent light

Easy on air-conditioning loads and electricity, fluorescent lamps well deserve their popularity for general lighting. Store designers and owners who know how crucial light is to sales and customer comfort often use flourescents for soft diffused illumination, but supplement them with separate accent lights to play up merchandise. Century's 4′ square white-louvered egg-crate fixture combines both kinds of light in a





single recessed unit. While it is not designed to substitute for the drama of spots and floods, it does, however, make up for the color shortcomings of fluorescents and offset their flat light with its own 200-w. or 300-w. incandescent bulb. Its six 40-w. warm white fluorescents provide 65 to 75% of the fixture's illumination. A square clear-backed prismatic reflector behind the incandescent bulb directs most of its light down but lets a portion through to mix with the general light. From eye level it is hard to detect any borderline between the two sources. Ballasts, sockets and transformers are all U. L. approved. Price is about $165 a fixture.

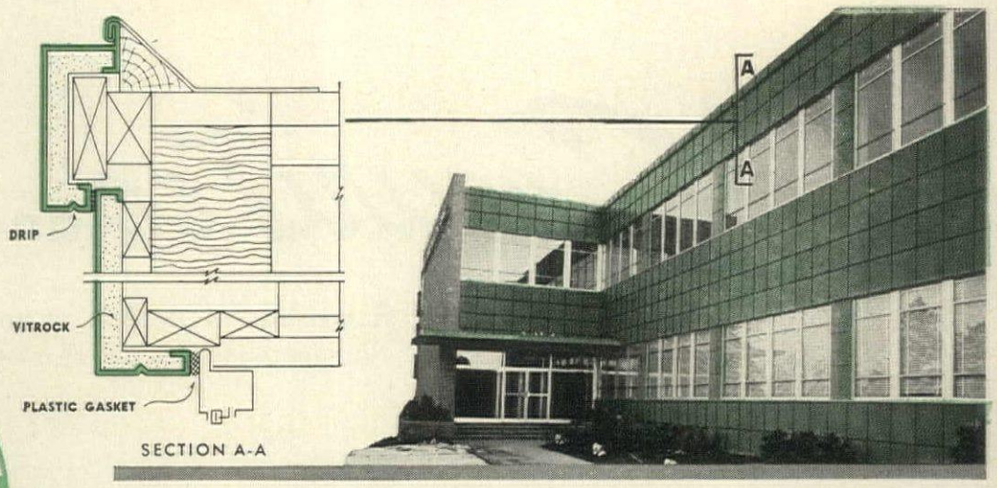
Manufacturer: Century Lighting Inc., 521 W. 43 St., New York 36, N.Y.

HONEYCOMB SANDWICHES made in matching door and wall panels

In manufacturing both its door and wall panels, Panelfab Products, Inc. pressure-heat-bonds a resin-impregnated fibrous honeycomb between sheets of aluminum. Made in modular sizes, the fixed panels and doors can provide a complete low-cost curtain wall suitable for schools and one-story office buildings. In addition to marketing the lightweight sandwich panels in single

continued on p. 212

At right, Radio-TV Station WBT, Charlotte, North Carolina; Davidson Architectural Porcelain with Vitrock backing used on building facade, coping and canopy. J. N. Pease & Co., Engineers and Architects, Charlotte, North Carolina.



SECTION A-A

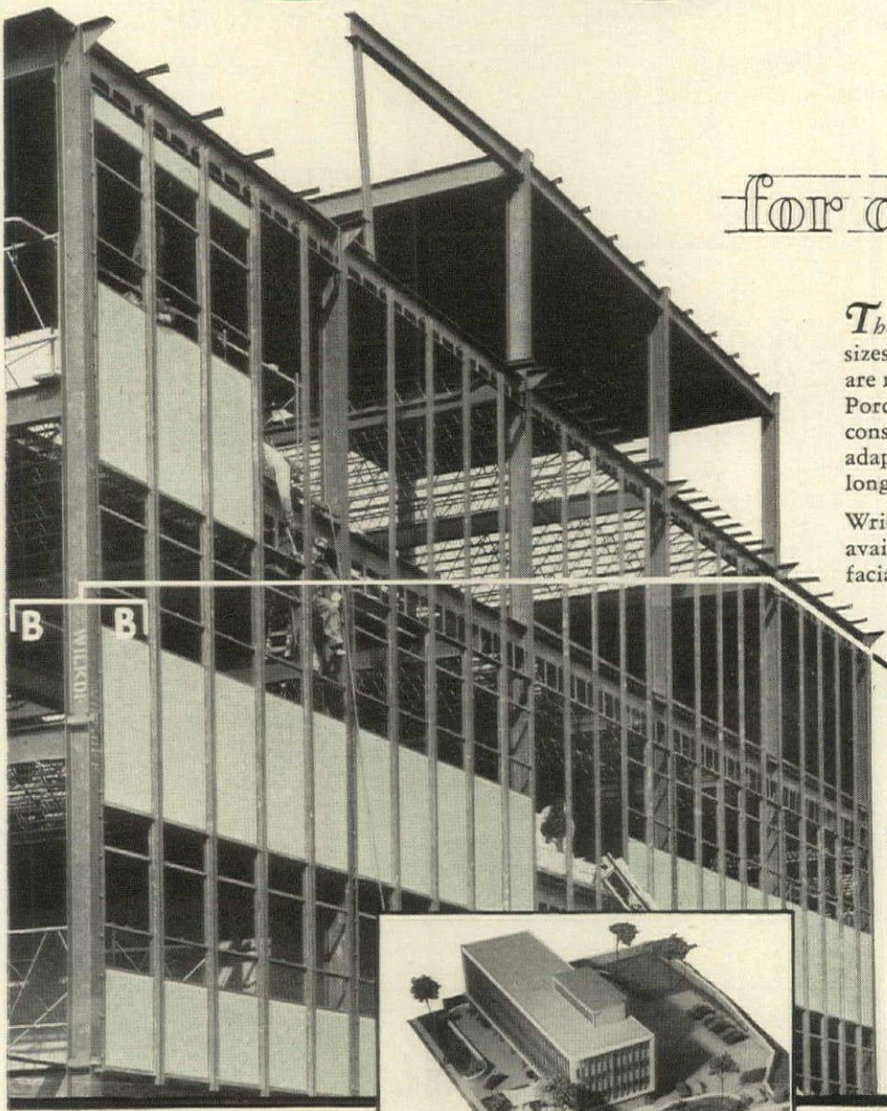
DAVIDSON ARCHITECTURAL PORCELAIN

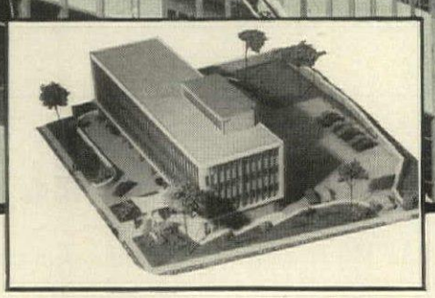
Selected

for appeal
for economy
for durability

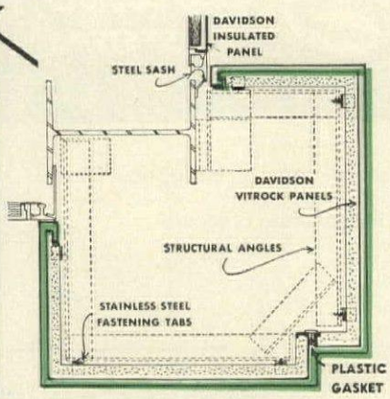
These factors—complete freedom of choice in panel shapes, sizes and colors, plus construction speed and economy—are resulting in specification of Davidson Architectural Porcelain for the finest buildings. Whether used for new construction or modernization, this modern building material adapts to any structural system and can be counted on for long-lasting, "new" appearance without maintenance.

Write for Architects Fact File, showing types of panels available and suggested curtain-wall, window-wall and facia applications.





Scale model showing Bel-Park Medical Building as it will appear on completion.



SECTION B-B

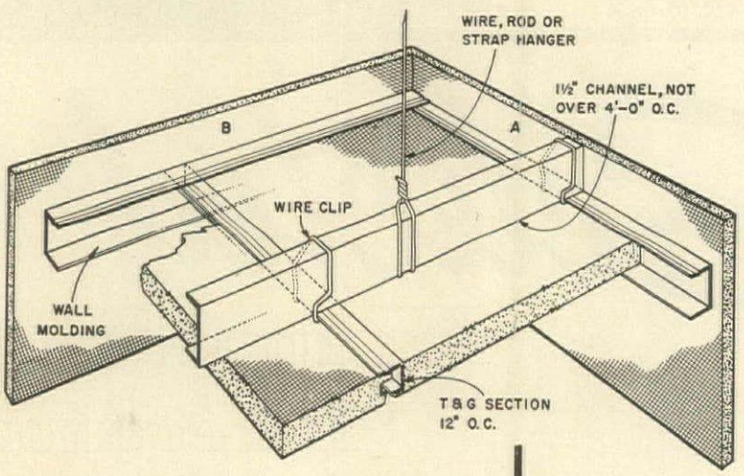
At left, Bel-Park Medical Building, Youngstown, Ohio, now under construction. Davidson Panels are assembled to window frames, then hoisted into place. Approximate time to install complete unit into building structure: two minutes. Architect, P. Arthur D'Orazio, Youngstown, Ohio. Contractor, Emanuel Katzman & Company, Youngstown, Ohio.

NOTICE TO ALL FERRO PORCELAIN DESIGN COMPETITION PARTICIPANTS —Write to Davidson for latest literature, including details showing the application of porcelain enamel for curtain-wall construction.

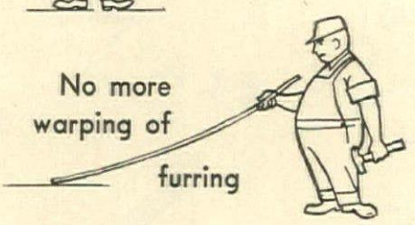
Davidson ENAMEL PRODUCTS, INC. • 1105 E. Kibby Street, Lima, Ohio

*Securitee and G system

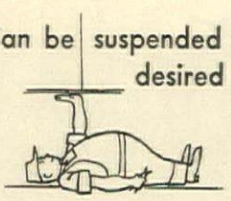
A mechanical method of suspending Tongue and Groove Acoustical Tile



No more nails



No more warping of furring



Can be suspended to desired ceiling height

Speeds up installation

This new addition to the Securitee Line is made under the same exacting conditions as all Securitee Systems. Heavy gauge rust resistant steel, sturdy spring clips, accurate fabrication—all engineered to last the life of the building.

Get complete information about this newest Securitee System—write today.

*Securitee SYSTEMS

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

Name_____

Company_____

Address_____

City_____ Zone____ State____

Dept. F

W. J. **HAERTEL** & CO.

832 West Eastman Street Chicago 22, Illinois

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

180° Sanitizing Hot Water delivered to washers at full flow rate recommended by the National Sanitation Foundation.

140° General-Use Hot Water is always on tap at the hot water faucets. Meets all code requirements. Unit requires less than 1 sq. yd. . . . can be used in multiples. One man installation.

For { rust-free hot water... two-temperature supply... easy installation... low maintenance... long life...

Ruud-Monel and Crane-Monel two-temp Sanimaster 80-80 provides low maintenance through minimum controls. Operates on all gases. Widely used in apartments, restaurants, institutions, clubs, dormitories, motels, schools, industrial plants, etc. Sold only by Ruud Manufacturing Company and Crane Co.

be sure the Monel label is on the water heater you specify

Your clients get no rust from these modern Sanimaster gas water heaters. Their tanks are solid MONEL®.

But they do get plenty of sparkling clean hot water . . . at the two temperatures they most need. And unrestricted flow of 180° *sanitizing* hot water for dish-and-clothes washers. 140° *regular* hot water at sinks, showers, faucets and lavatories. Both temperatures from the same tank, at the same time.

Strong, wear-resistant MONEL...the solid, high-nickel, long-life metal tank...is highly corrosion-resistant and rust-proof at *all* temperatures.

The Sanimaster is an automatic self-contained gas water heater, without coils. It carries the A.G.A. seal of approval for operation at 180°. An A.S.M.E. relief valve is standard equipment. No electric controls.

Be sure to specify either the Ruud-Monel or Crane-Monel *two-temp* Sanimaster. Send in the coupon . . . for details.

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

THE INTERNATIONAL NICKEL COMPANY, INC. INCO TRADE MARK
Dept. A.F. 11-5
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 _____

GENERAL ELECTRIC

walker of Conshohocken

NATIONAL ELECTRIC PRODUCTS

MILCOR CELLUFLOR APPROVED WITH ALL THREE

Underwriter's Laboratories, Inc. approves the use of General Electric, Walker, and Nepco systems with Celluflor

When you specify Milcor Celluflor, you are no longer limited to any one type of electrification system. Now, you choose your electrification from three major manufacturers — General Electric, Walker Brothers, and National Electric Products Corporation.

All three have been approved for use with Milcor Celluflor by Underwriter's Laboratories, Inc. Ohm-resistance and impact tests showed Celluflor to be a dry, safe, durable housing for both low- and high-potential wiring systems.

Catalog 270 explains these tests in detail and gives useful data on Milcor Celluflor. A copy will be sent to you upon request.

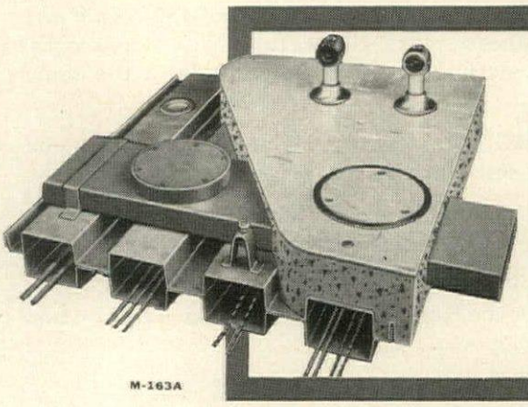
MILCOR®

CELLUFLOR

INLAND STEEL PRODUCTS COMPANY

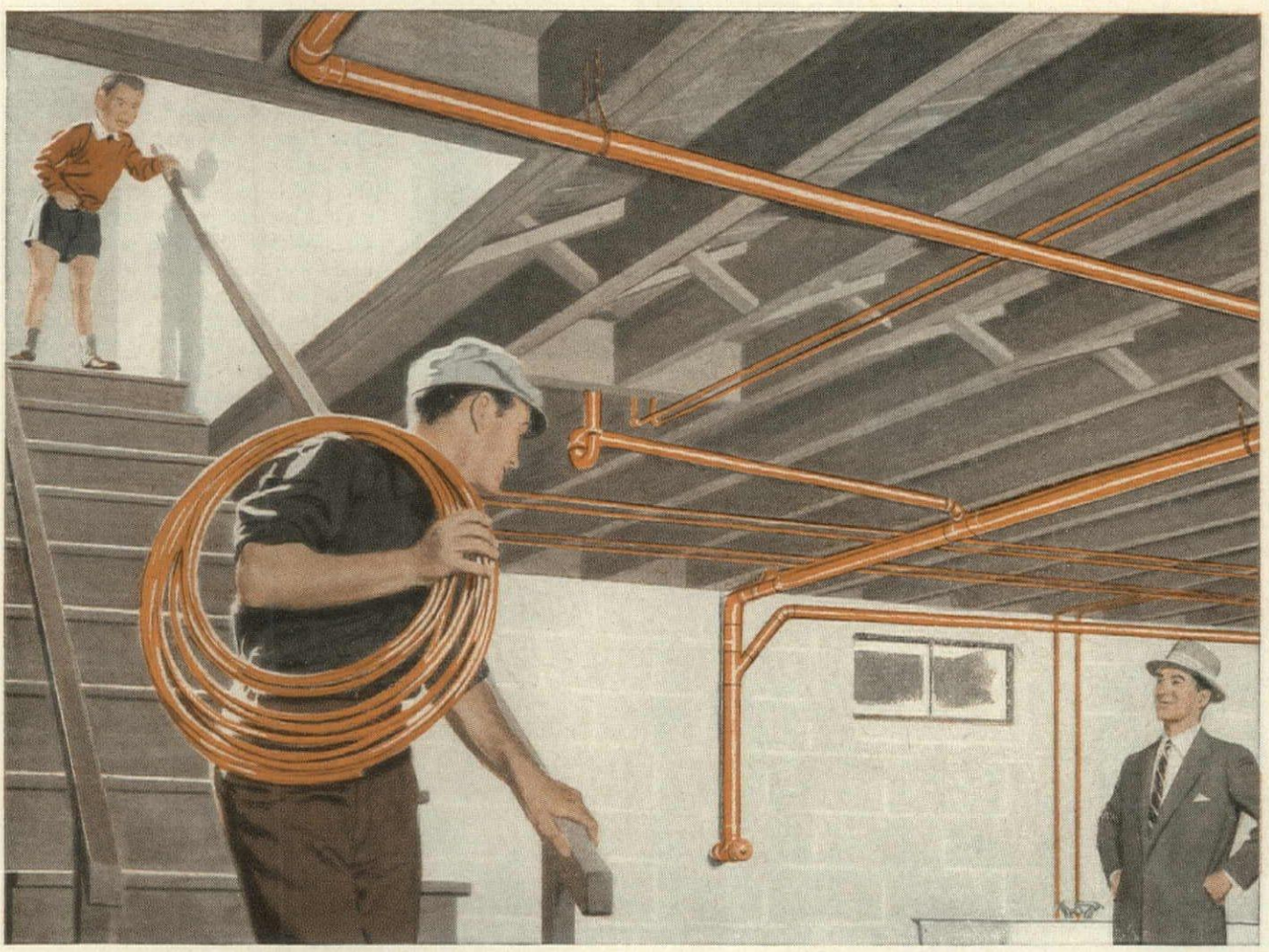
4031 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

Offices in: Baltimore • Buffalo • Chicago • Cincinnati
Cleveland • Dallas • Detroit • Kansas City • Los Angeles
Milwaukee • Minneapolis • New York and St. Louis.



M-163A

Milcor Celluflor gives you electrical-outlet availability throughout the entire floor area. Cells are spaced on 6" centers, wall to wall, to provide unlimited electrical flexibility — now, or in the future.



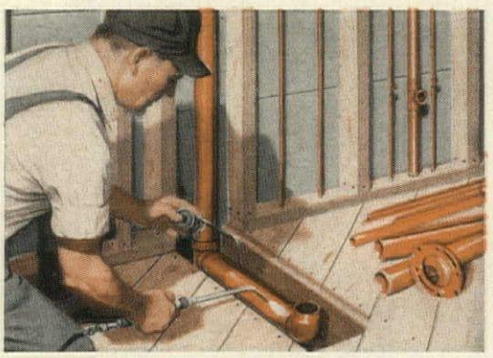
The **best** cellars feature **Chase® Copper Tube**

You add *extra-value* to the whole home with hot and cold water lines of Chase copper tube. *More years* of trouble-free service, *more efficient* water flow with little or no increase in cost!

That's because Chase copper tube *resists* corrosion—can't clog with rust! Diameter for diameter, this copper tube passes *higher water volume* than lines of rustable metal! Its smoother inside surface cuts friction to a minimum, assuring fast and efficient discharge of fixtures.

Chase copper tube is easier to handle. Can be *quickly* cut to the required length with ordinary tools. Rugged, leakproof solder joints are made *without* time-consuming threading. Long lengths are available; require *fewer* joints.

Specify Chase copper water tube for hot and cold water lines. Add extra quality at little or no extra cost!



Chase copper drainage lines, too, give superior service over the years... add extra-value to any home!

Chase®

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper

(†sales offices only)

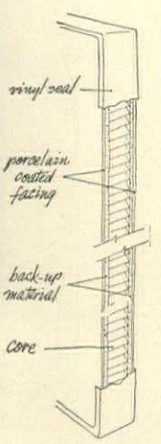
Albany†	Chicago	Detroit	Los Angeles	New Orleans	Rochester†
Atlanta	Cincinnati	Grand Rapids†	Louisville†	New York	St. Louis
Baltimore	Cleveland	Houston	Milwaukee	Philadelphia	San Francisco
Boston	Dallas	Indianapolis	Minneapolis	Pittsburgh	Seattle
Charlotte†	Denver	Kansas City, Mo.	Newark	Providence	Waterbury

PRODUCTS

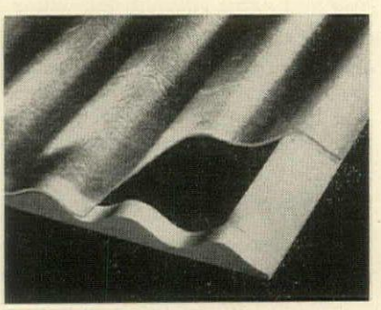
Continued from p. 206

units, Panelfab assembles them in small prefabricated structures. The 6'-long, 3½'-wide utility shelter pictured (right) sells for $600 complete with jalousie windows. It could serve as a factory guard station or as a portable field house for a contractor. Electrical outlets and fixtures are installed to specification. The panel's hardy construction resists extreme climate conditions as well as fire, rodents and vermin; and its rigid honeycomb core prevents any surface deflection or waviness in the metal facings. Selling for about $1.50 to $3.00 per sq. ft., the panels and doors may be ordered with smooth or embossed aluminum facings in an anodized finish, or prepared for paint coat. Wall panels also are obtainable with porcelain enameled skins. Doors are available in sliding, pivot and fold-up styles.

Insulation value of a 3" thick *Panelfab* wall, weighing only 1½ lb. per sq. ft., is reported to equal that of an 8" brick or 12" concrete wall.



Manufacturer: Panelfab Products, Inc., 2000 N. W. 146th St., North Miami, Fla.



VINYL CLOSURE STRIPS come in color

Formed to fit the 2½" x ½" undulations of corrugated acrylic and reinforced plastics, flexible *H-P Closure Strips* also correspond in color with the popular translucent sheeting. The closures are available in 34½" horizontal end strips at $1.10 and 36" side pieces at $1.96. *H-P*'s are fastened in place with nails, bolts or screws. Molded of resilient vinyl they hug the paneling, making a watertight airtight seal, and are said to take up expansions and contractions of the plastic sheeting.

Manufacturer: Hanszen Plastics Co., 835 S. Good Latimer Expressway, Dallas, Tex.

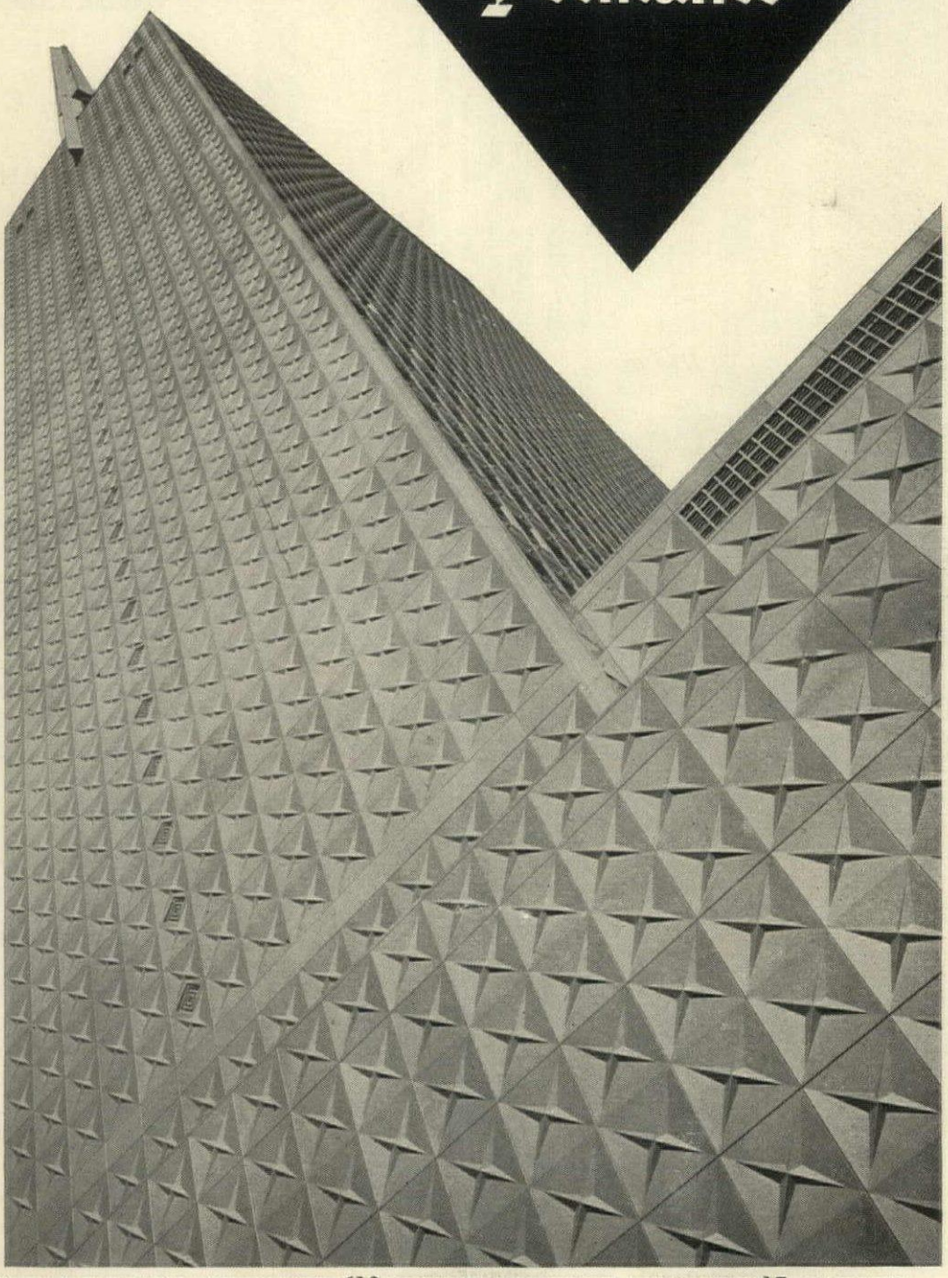
continued on p. 218

REPUBLIC NATIONAL BANK BUILDING, DALLAS, TEXAS

the tallest building in the southwest uses

the largest selling perlite aggregate in the world

Permalite®



PERMALITE perlite aggregate plaster, used to fireproof structural members, provides 4-hour fire rating.

PERMALITE lightweight insulating concrete, applied 4" thick on an exterior curtain wall, provides 1650 psi minimum compressive strength, achieved by carefully designed mix ratio and pressure application by E-Z-On spray gun.

PERMALITE used in modern lightweight construction increases the ratio of pay-load to dead-load and makes possible substantial savings in structural steel.

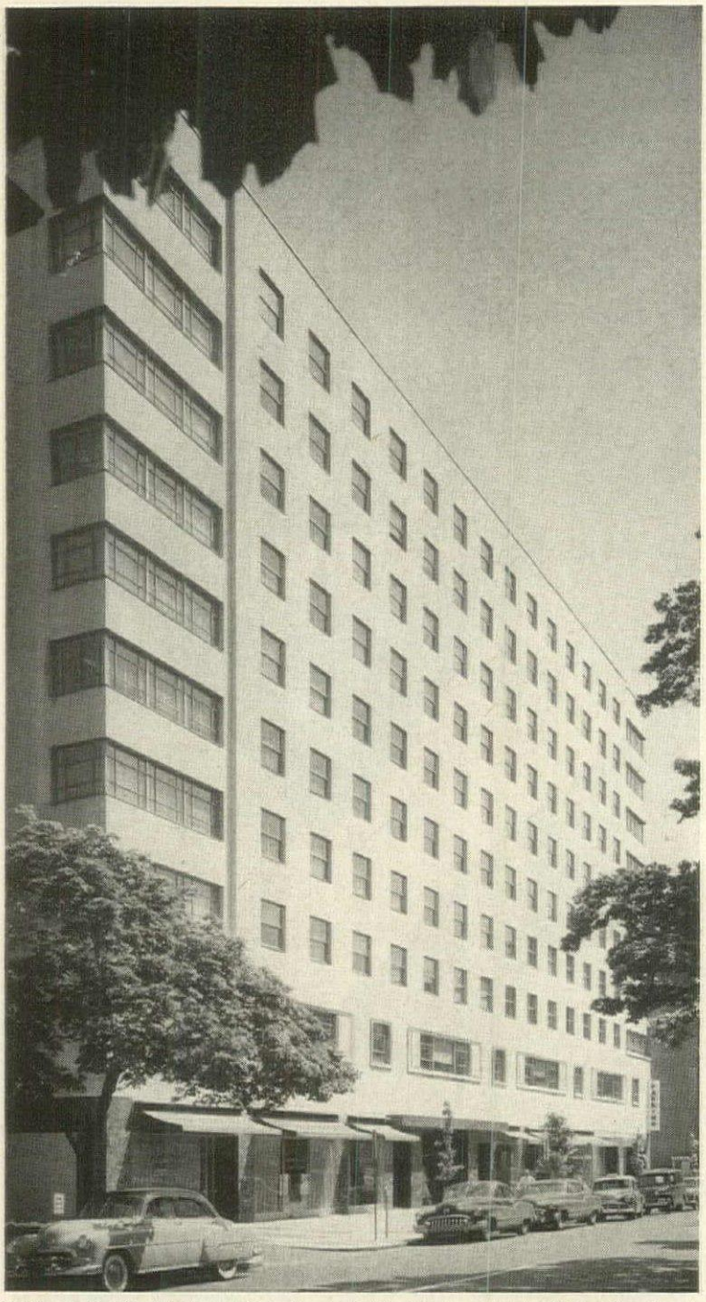
ARCHITECTS: *harrison and abramovitz, new york city*
gill and harrell, dallas

GENERAL CONTRACTOR:
j. w. bateson co., inc., dallas

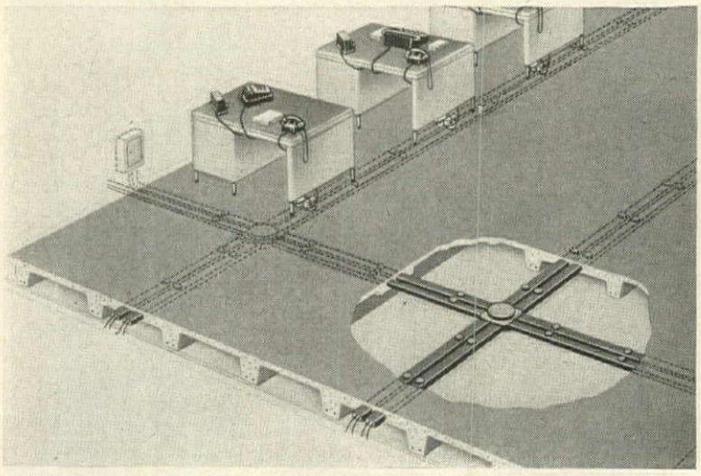
PLASTERING CONTRACTOR AND CURTAIN WALL APPLICATOR: *storbeck and gregory, dallas*

PERMALITE PROCESSED AND SUPPLIED BY:
texas lightweight products company, irving, texas

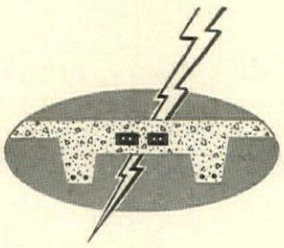
for information about PERMALITE plaster and concrete, write to: PERLITE DIVISION, GREAT LAKES CARBON CORP., 612 SOUTH FLOWER STREET, LOS ANGELES 17, CALIFORNIA



Cafritz Office Building, Washington, D.C., where electrical flexibility is provided by R/C Duct Floors formed with Ceco-Meyer Steelforms. LeRoy L.Werner, Architect / Beall & LeMay, Structural Engineers / Cafritz Construction Company, Builders



Standard electrical distribution ducts are buried in the monolithic structural concrete. No additional fill or expensive topping is needed. Electrical connections are provided as close as every 2 feet along the ducts.



Ceco electrified concrete joist floors cost 19% less than cellular steel...

provide outlets every 2 feet along ducts . . . in rigid structural concrete

The end objective of any construction project can be posed by this simple question: "How can building be done at less cost?" There is a way, for business buildings—and that's with R/C Duct Floors provided by Ceco-Meyer Reinforced Concrete Joist Construction. Extensive use of automatic office machines makes conveniently placed electrical outlets a necessity today. The best way to achieve electrical flexibility is with R/C Duct Floors. They provide a network of underfloor electrical ducts buried in rigid structural concrete. Capped outlets every two feet along the ducts are easy to open without drilling into the floor. They afford ample connections for all business machines, telephones and intercom . . . eliminate tangled extension cords. And this is done at a saving, too, because studies prove R/C Duct Floors cost approximately 19% less than cellular steel floors. An example of this improved, less costly way of building is the Cafritz Office Building, Washington, D.C. Before building, consult Ceco Engineers in the pre-planning stage. They can show you how to save with rigid reinforced electrified concrete floors. CECO STEEL

CECO STEEL PRODUCTS CORPORATION
Offices, warehouses and fabricating plants in principal cities
General Offices: 5601 West 26th Street, Chicago 50, Illinois

In construction products Ceco Engineering makes the big difference

To: Ceco Steel Products Corporation - 5601 W. 26th St., Chicago 50, Ill.
Please send me informative book entitled, "Electrical Outlets Wherever You Need Them".

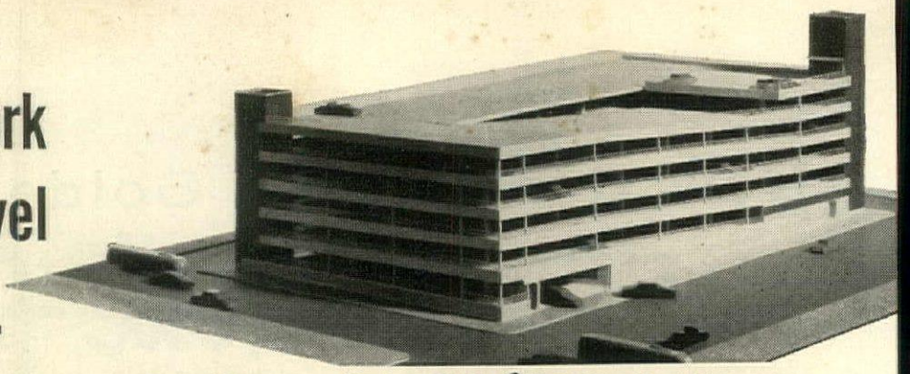
name_____

address_____

city_____ state_____

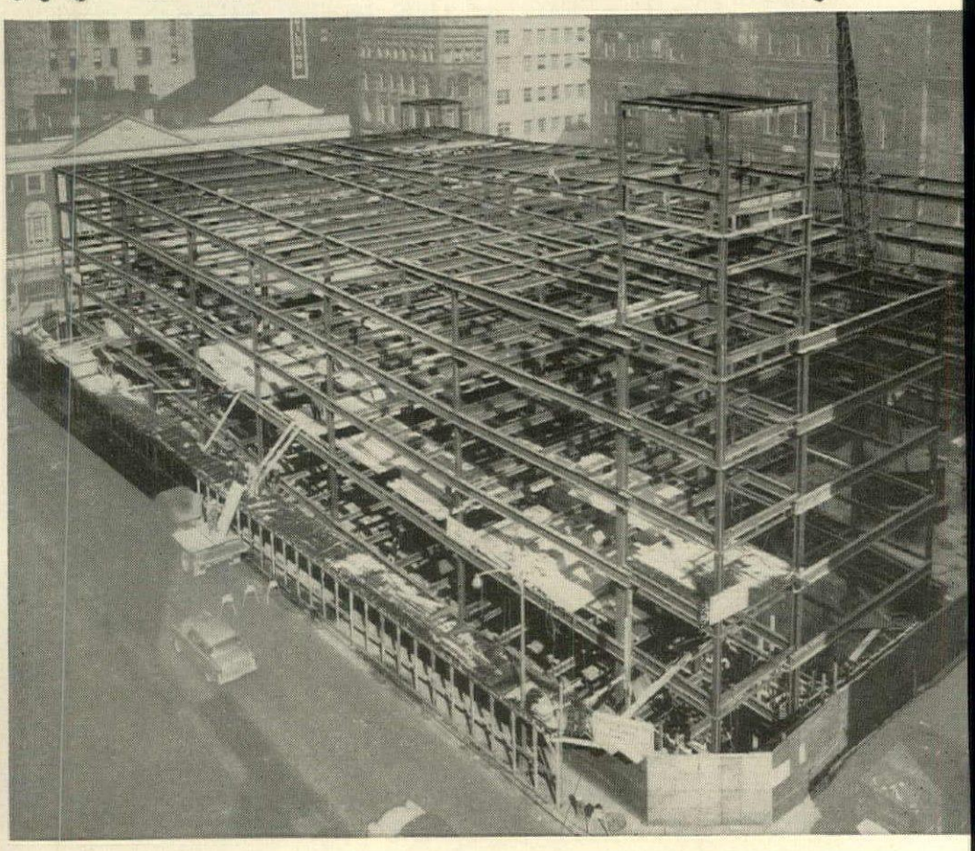
AF

700 Tons of Steelwork for this unique 6-level rampless garage....



ERECTED IN JUST 5 WEEKS!

Allies Parking Garage
Public Parking Authority of Pittsburgh, Pa.
Planning Consultant:
Ramp Buildings Corporation
General Contractor:
Ragnar Benson, Inc.
Designed by:
Hoffman and Crumpton, A.I.A.
Leland W. Cook, Structural Engineer
Structural Steelwork by:
AMERICAN BRIDGE
Building is 6 levels, 120′ wide x 220′ long.
Erection of steelwork began Feb. 4, 1955, completed March 11, 1955.



Using high tensile bolts for field connections, AMERICAN BRIDGE makes quiet, speedy work of large mid-town structure

The Parking Authority of the City of Pittsburgh is answering the demand for new and better parking facilities by building one of the most unusual structures of its type to be found anywhere.

And by using steel-frame construction *field connected with high strength bolts*, the job is being handled so speedily and so quietly that folks on the street and in neighboring buildings are scarcely aware that a big new building is being constructed in their midst.

Erection started February 4, 1955 and was completed March 11, 1955 — an elapsed time of just 5 weeks!

Located on the corner of the broad Boulevard of the Allies and busy Smithfield Street in the heart of the Golden Triangle, the new garage is 120′ wide x 220′ long with six levels for drive-in parking. *The slightly tilted floors do away entirely with ordinary ramps.* It is designed with a center section 120′ x 125′ on slope and two level end sections 120′ x 47′6″. All connections were made with high tensile bolts. The 700 tons of structural steel framework was fabricated and erected by American Bridge.

The fast, uninterrupted and unusually quiet erection of this modern parking garage provides another strong argument in favor of steel-frame construction and *bolted field connections* for buildings of any type and size. For American Bridge crewmen can make tight connections with high-strength bolts as efficiently and speedily as less skilled personnel can handle the more common methods.

For detailed information regarding your requirements, please contact the office nearest you. Our engineers welcome an opportunity to confer with you.

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

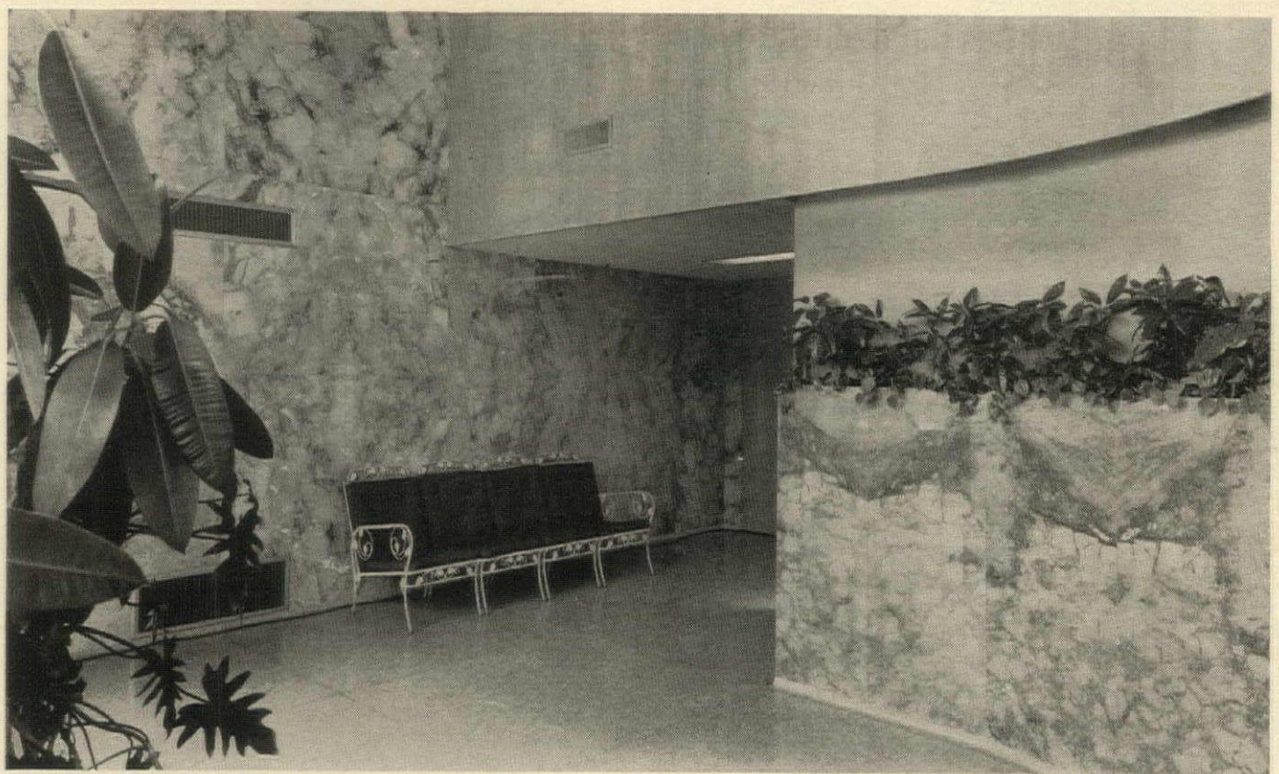
USS

UNITED STATES STEEL

marble *is economical*

proof . . . positive proof ✳

Proof means facts and figures, and this is the kind of proof we mean when we say that Marble is economical. Dozens of architects and building maintenance engineers have attested to the fact that Marble costs less than any comparable material. Not only is its initial cost comparatively small in relationship to the value it gives, but its real cost — including the all-important cost of maintenance — is unquestionably lower than many so-called economical materials.



Sorey, Hill & Sorey, Architects

✳ The facts and figures are available to you in two important publications: "Proof That Marble Costs Less . . ." and "Further Proof That Marble Costs Less . . .", which are yours for the asking if you write to:

MARBLE INSTITUTE OF AMERICA, INC.
108 FORSTER AVENUE MOUNT VERNON, NEW YORK

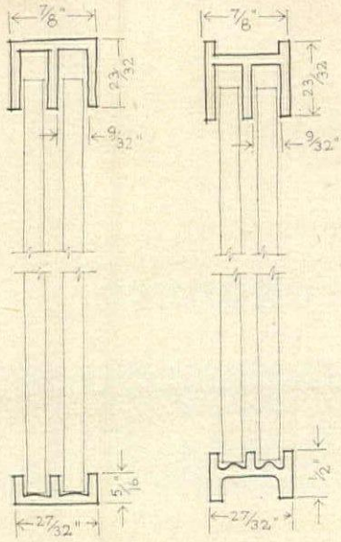
NEW LITERATURE: "Marble Forecast 1955-1956", "Marble In The Home", "Marble For The Modern Bank".

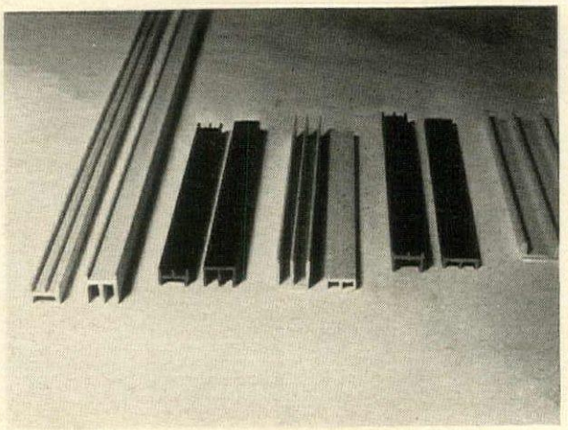
PRODUCTS

Continued from p. 212

EXTRUDED PLASTIC CHANNELS are low cost tracks for sliding doors

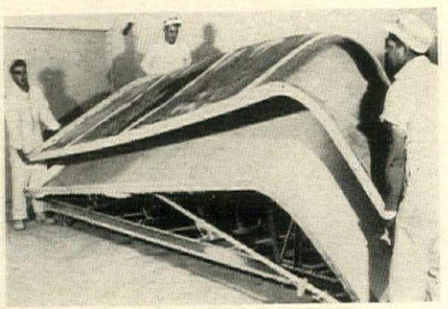
Anchor Plastics, extruder of thousands of plastic moldings and shapes, has developed stock, inexpensive, easily installed runners of polystyrene for cabinet and closet sliding doors of glass, hardboard, and plywood. Currently produced in black and off-white, the *Ancorene* plastic extrusions are





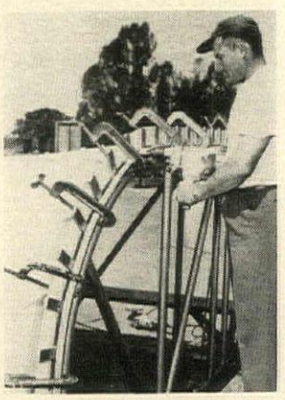
durable, nonwarping, nonchipping channels with high impact resistance. The lower tracks have rounded bearing surfaces to minimize resistance and friction; there are no rollers to jam or require lubrication. Averaging 5¢ to 15¢ per lin. ft., *Ancorene* tracks are furnished cut to exact lengths specified, and can be installed with adhesive or small nailing strips. Custom colors and shapes can be supplied on order.

Manufacturer: Anchor Plastics, Inc., 36-36 36th St., Long Island City 6, N.Y.



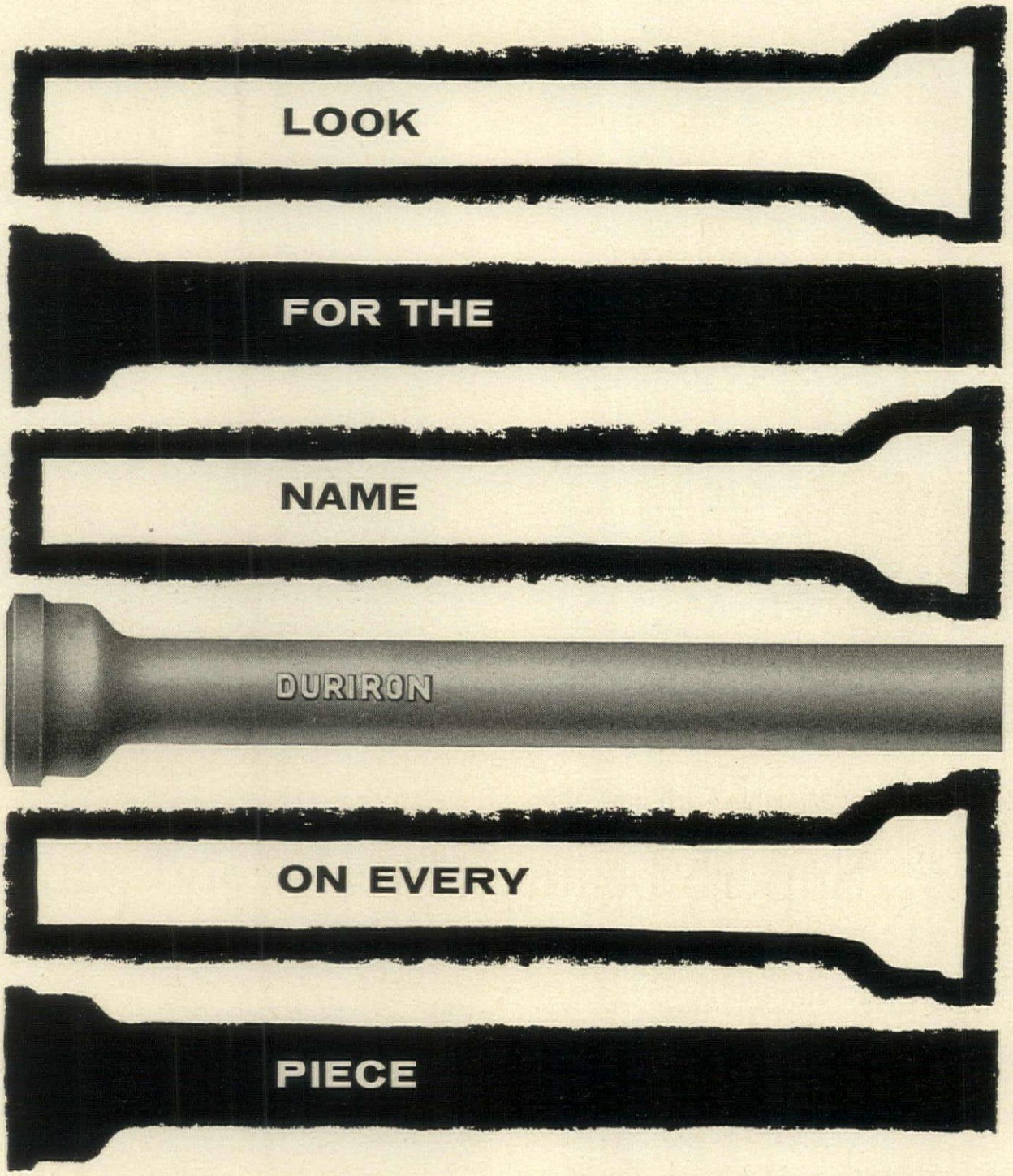
SWIMMING POOL molded in quarters of plastic and glass fiber

Probably the biggest item currently mass-produced of reinforced plastics is Paddock's 30′ x 15′ *Cinderella* swimming pool. Taking full advantage of the simple molding procedures possible with polyester resins, and of the high impact and flexural strengths of the glass-fiber plastic lamin-



ate, the Californian swimming pool manufacturer is making the 10,000 gal. pool in four matched shell sections. Designed for either oven curing or cold layup fabrication with self-curing resins, and weighing under 900 lb., the four pool sections can

continued on p. 224



DURIRON ACID PROOF DRAIN PIPE

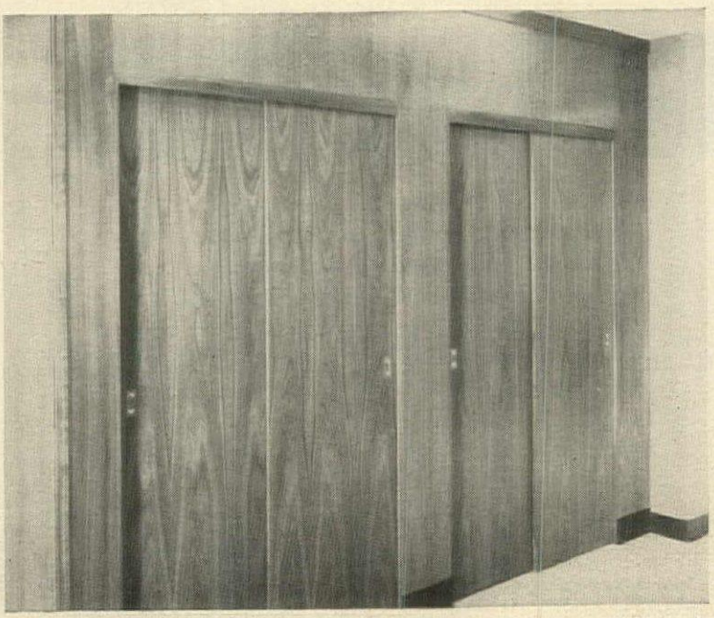
DURIRON is the *one* quality high silicon iron pipe specified for more than 30 years by architects and engineers for corrosive waste disposal systems. Specify DURIRON. Insist on DURIRON for resistance to practically all commercial acids and other corrosive solutions. It generally outlasts the building. A complete line of DURIRON pipe and fittings is stocked by leading wholesalers throughout the country. Free Bulletin PF/4.

THE DURIRON COMPANY, INC., DAYTON, OHIO

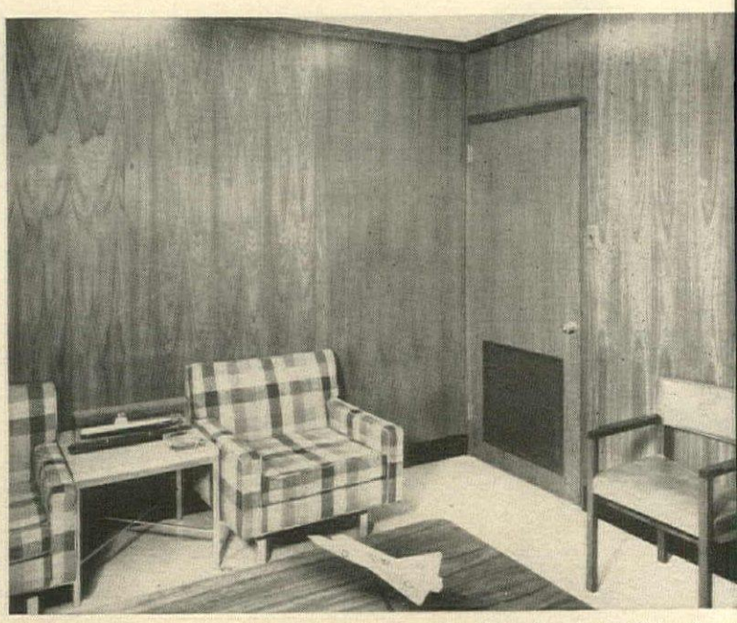
DURIRON
LOOK FOR THE NAME ON EVERY PIECE

Only Weldwood Movable Partitions offer

Superb beauty of real wood paneling



STORAGE CLOSETS use matching sliding doors to carry out over-all "wood-paneled look." These Weldwood walnut sliding doors have Novoply® cores.



PRIVATE OFFICE at General Dynamics Corporation shows how beautiful walnut Weldwood Partitions accent the atmosphere of quiet elegance and good taste.

PARTITIONS ARE INSTALLED without costly interruption of regular office routine. Workman is shown installing section of Weldwood Movable Partition; completed corridor is shown at left.

BEAUTIFULLY GRAINED WALNUT Weldwood Movable Partitions and matching Weldwood Doors with Weldrok cores are used for the executive offices of General Dynamics Corporation, New York City. Interior planning: Ethel Pilson Warren and Joseph W. Rogers, Jr. Distributor: Nuroco Woodwork, Inc.

plus overnight movability

Here's proof that offices needn't be dull and institutional-looking simply because they must be planned for frequent rearrangement.

The Weldwood Movable Partitions you see here have all the warm, natural beauty of wood paneling, yet can actually be rearranged completely in a few hours!

With Weldwood exclusive metal key construction, panels are locked together like a solid wall; yet they can be easily dismantled and set up in a new location at any time.

Save up to 50% in installation costs because Weldwood Movable Partitions are easy to install. Because they have so few parts, they can be installed by relatively unskilled maintenance crews (complete installation service is also available).

Only Weldwood has the Weldrok® core that's both fire-resistant and acts as a sound barrier; *it's twice as efficient* in cutting down office noises as a 2 x 4 stud partition with metal lath and plaster on both sides.

Select from magnificent veneers: walnut, birch and Korina® are regular stock items; mahogany, elm, maple, oak and many other woods are always available on special order.

Timeless decorating background. Beautiful wood subtly complements both traditional and contemporary architecture and furnishings. And occasional waxing is the only maintenance needed!

Send coupon for specifications and installation data or visit any of the 87 United States Plywood showrooms in principal cities.

Weldwood®

Weldwood®

MOVABLE PARTITIONS

A product of

UNITED STATES PLYWOOD CORPORATION

World's Largest Plywood Organization

United States Plywood Corporation
Weldwood Building, 55 West 44th Street, New York 36, New York

I'd like to know more about the advantages, specifications and data on installation of Weldwood Movable Partitions ( ) and Weldwood Mineral Core Doors ( ).

AF 11-5

NAME.....

COMPANY.....

ADDRESS.....

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

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.

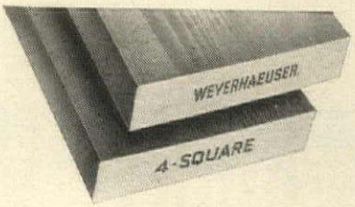
Name .....

Firm .....

Address .....

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

A-1283



THIS BRAND NAME ON LUMBER ALSO BRINGS YOU

A WIDE VARIETY OF *West Coast Hemlock Products*

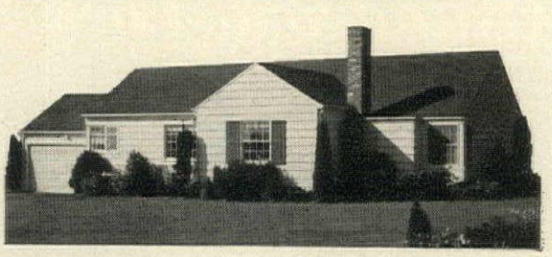
A LIVING ROOM PANELED

WITH West Coast Hemlock SIDING

Because Hemlock is so beautiful, the architect designing this modern home selected Hemlock siding for the interior. Its light, warm color mellows with age. Its straight grain and fine, even texture are pleasing to the eye. These characteristics, plus light weight, stiffness, and high nail-holding power, make Weyerhaeuser 4-Square West Coast Hemlock ideal for a wide range of uses. Freedom from pitch, loose knots, and splinters adds to its workability. Natural finishes or paints go on beautifully, and hold very well.

That's why this species often is called the "Ability Wood." For framing and sheathing, siding, molding, flooring, paneling, and scores of other uses, West Coast Hemlock has few equals.

More and more architects are specifying this versatile Weyerhaeuser 4-Square West Coast Hemlock. Write for descriptive literature.



Weyerhaeuser
Sales Company

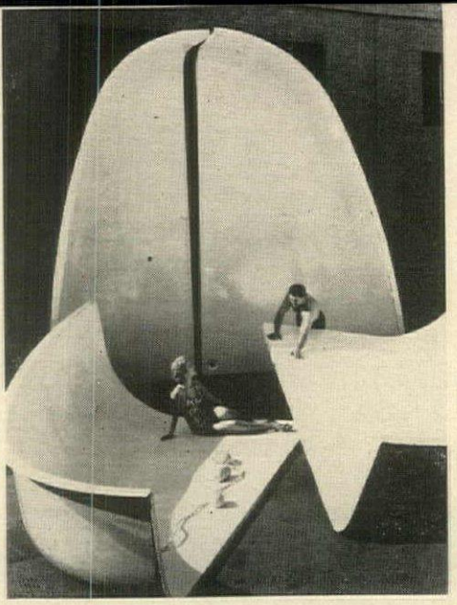
★ ★ ★

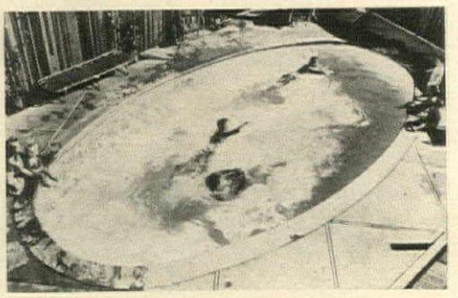
ST. PAUL 1, MINNESOTA

PRODUCTS

Continued from p. 218

be shipped anywhere in the country and installed complete with filter plant, trim and coping for about $2,000—about one-third less than a gunite or concrete pool of comparable size. On the site, the four sections are fitted with neoprene gaskets and bolted together. The current model has a maximum depth of 5′ and minimum depth of 3′ and is suitable for small community playgrounds and grammar schools. More



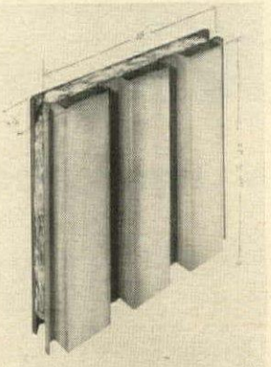


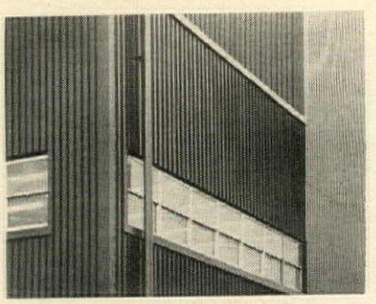
significant architecturally than the pool itself, perhaps, is the size in which the plastic laminate is being handled. Not so long ago, a polyester car body and a bathtub were news. Now, a swimming pool. Next?

Manufacturer: Paddock of California, Los Angeles, Calif.

FIREPROOF SANDWICH WALL comes shop assembled or knockdown

Pan-L-Wall offers two answers to the problem of providing trim, easily maintained, insulated walls for warehouse and manufacturing plants at moderate price. One, *Panel A series*, is a packaged sandwich which comes ready to hang on the framing. The second, *D series*, is delivered with facings and insulation knockdown for field assembly. Ranging in span from 6′-0″ to 11′-6″, and in length from 12′-0″ to 25′-0″, both field and shop fabricated panels comprise two layers of sheet metal fastened





around a core of 1½″-thick glass fiber. The interior sheets are flat 18- to 24-ga. galvanized steel and the exterior are steel or mill-finished aluminum corrugated in a wide variety of patterns. End walls, parapets and corners are easily assembled and

continued on p. 230

BARBER COLMAN

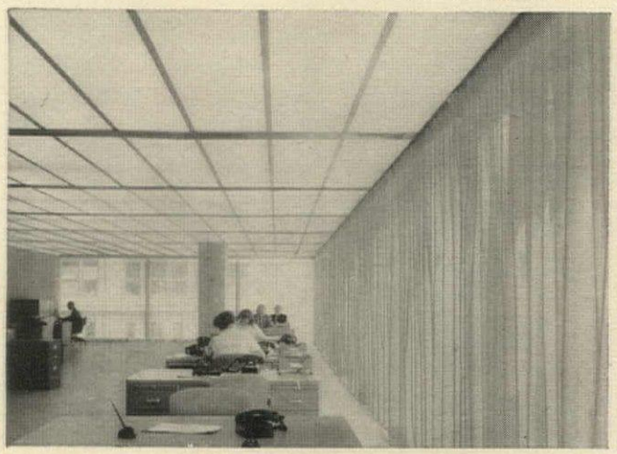
uni-flo Engineered Air Distribution

High velocity air distribution one of advanced features in Manhattan "glass-box" bank

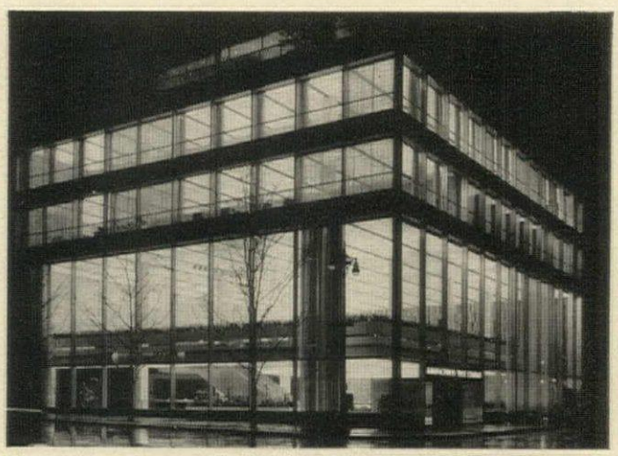
Photos by Ezra Stoller

"A showcase for banking" is a vivid picture phrase describing this unusual new Fifth Avenue Office of Manufacturers Trust Company in New York City. Skilled professional craftsmanship has created a structure unlike any other financial institution in the world. In its creation, the designers have employed most recent developments in structural and operational techniques. Among them is the space-saving high velocity air distribution system, using the Uni-Flo High Velocity Air Valves to supply conditioned air quietly, effectively for comfort of patrons and employees.

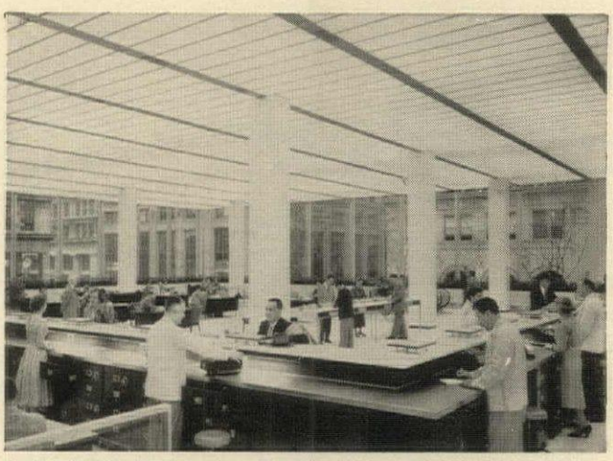
Architects: SKIDMORE, OWINGS & MERRILL. *Mechanical Engineers:* SYSKA & HENNESSY. *Air Conditioning Contractor:* BAKER SMITH, INC. *Interior Design Consultant:* ELEANOR LEMAIRE.



Uni-Flo Rectangular Diffusers are so inconspicuous they are practically invisible in this third-floor office. Mounted in aluminum strip, diffusers lead directly from air valves installed above luminous ceiling panels. Individually adjustable diffusers simplify system balancing.



Like a modern showcase, the interior of Manufacturers Trust Company's office gleams with light on a rainy night. Huge 10x22 foot panes of plate glass face the second floor mezzanine. Unusual air conditioning problems posed by the glass walls were solved satisfactorily.



No fixed teller positions is a new idea in commercial banking. During busy hours, tellers roll mobile currency buses along the line to make room for extra help. Uni-Flo Rectangular Ceiling Diffusers blend with modern luminous ceiling construction providing inconspicuous air distribution.

One Uni-Flo High Velocity Valve can serve several diffusers when installed at a low velocity branch duct take-off from a high velocity trunk duct. Or a "package" is available, consisting of an air valve, sound control chamber, and single diffuser.

. . . get reliable information and performance data from the pioneer in high velocity systems!

Phone nearby Field Office

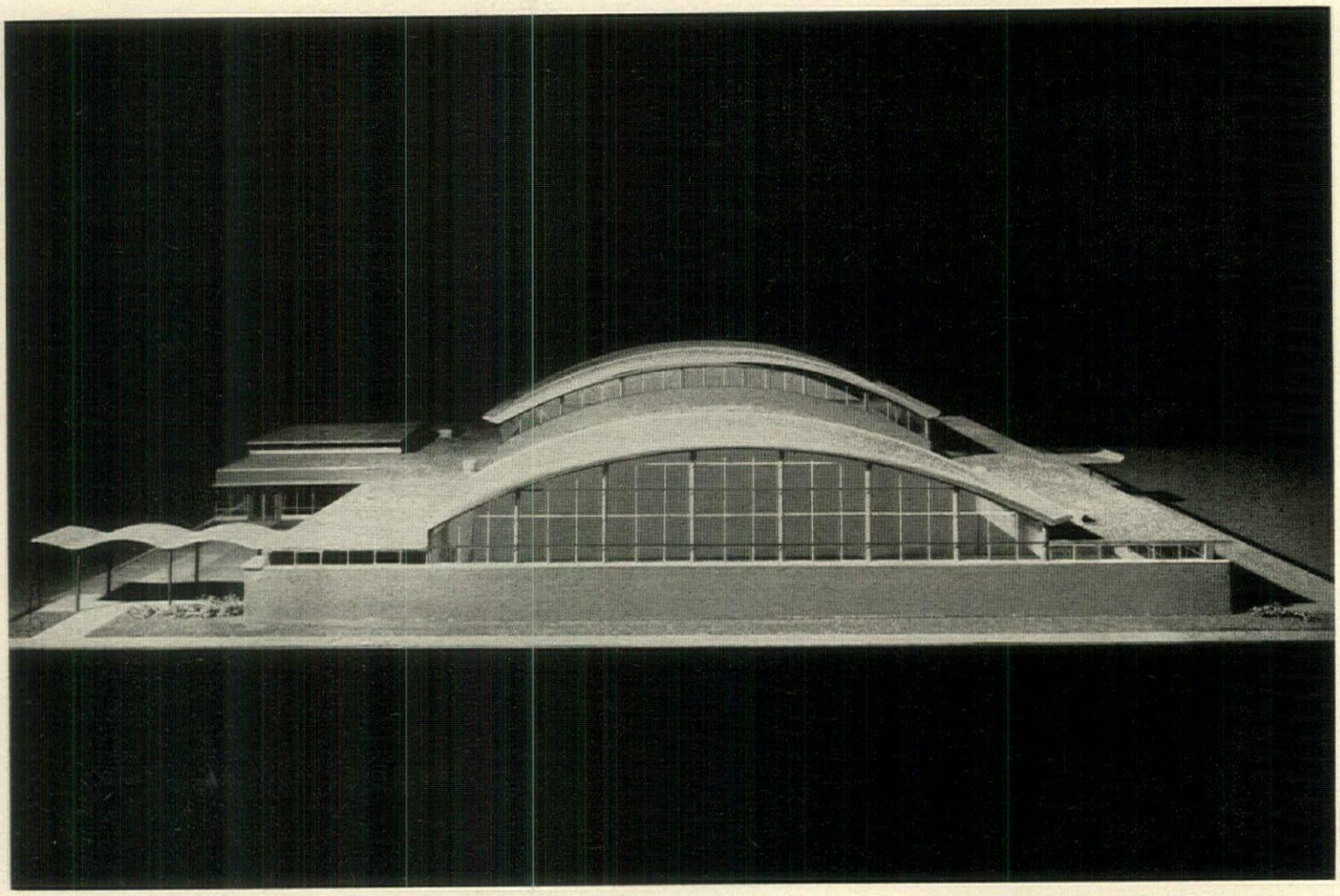
or write us for your copy of Uni-Flo High Velocity Catalog No. 6598. Fully illustrated manual on high velocity applications and techniques.

Barber-Colman Company

DEPT. W, 1135 ROCK ST., ROCKFORD, ILLINOIS, U.S.A.

Field Offices in Principal Cities

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



EDSEL FORD SENIOR HIGH SCHOOL
Architects and Engineers: Eberle M. Smith Associates
Project Manager: Stewart S. Kissinger
General Contractors: O. W. Burke Co.

Hollow Metal *at its best*

- * **Hollow Metal Doors & Frames**
- **Elevator Entrances**
- **Convector Enclosures**
- * **Metal Base & Trim**
- **Metal Wainscoting & Wall Linings**
- * **Custom Partitions**
- **Stall Partitions & Cubicles**
- **Stainless Steel Specialties**
- * **Hollow Metal Specialties**
- **Special Hollow Metal Lockers**

This too is "HOLLOW METAL."

Once again, SUPERIOR FIREPROOF DOOR & SASH COMPANY, INC., has been chosen to furnish the "HOLLOW METAL" for an outstanding project.

This time, THE EDSEL FORD SENIOR HIGH SCHOOL.

Doors and frames constitute only a portion of "HOLLOW METAL." Arched openings as shown in the above view, 104 feet long, and multi-unit interior and exterior borrowed lite units are the mark of a true Hollow Metal Man.

"HOLLOW METAL" is the mark of a trade that has the ability to coordinate and fabricate many related sheet steel products.

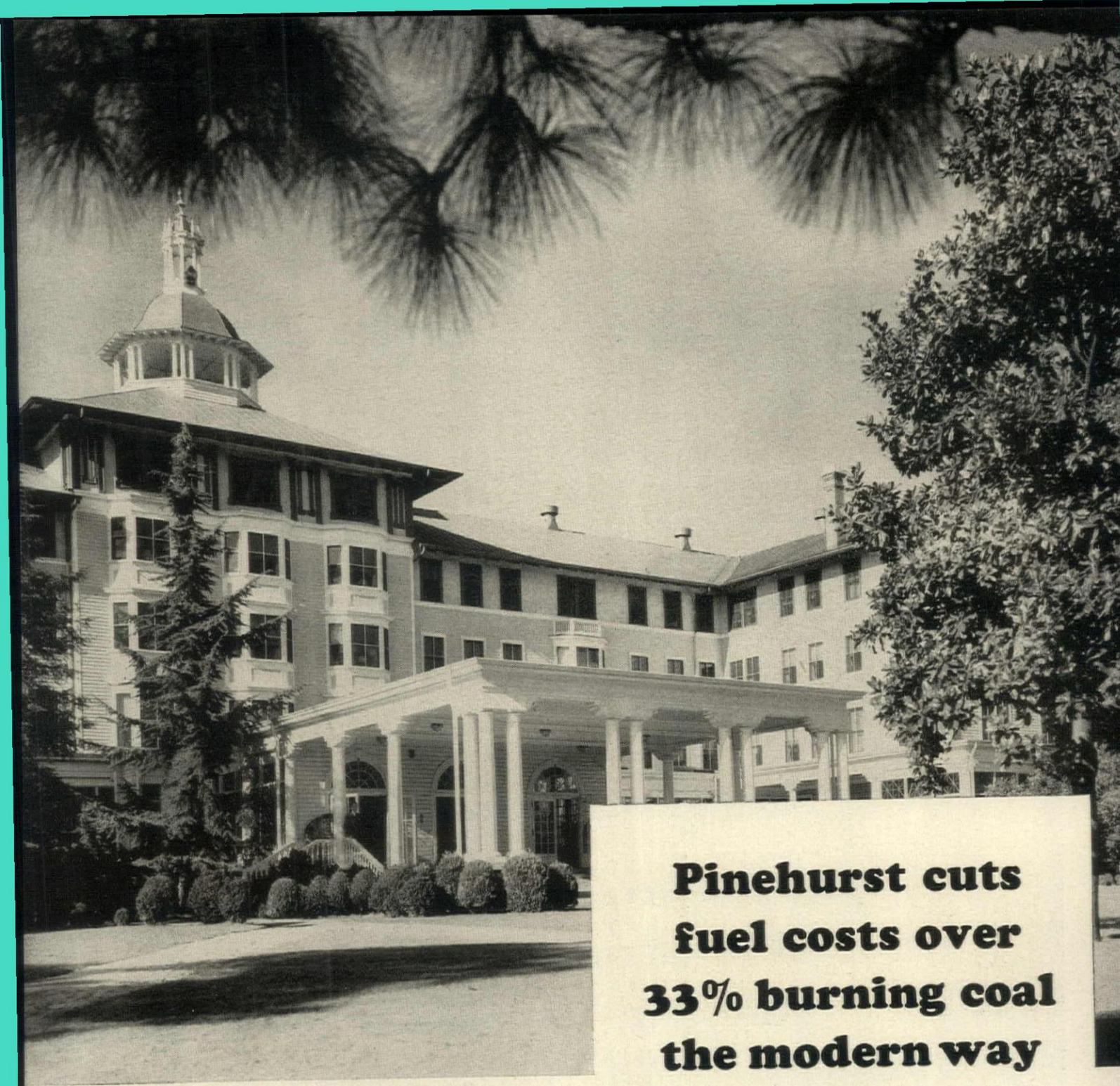
It is not an afterthought of manufacturing a few more items. Rather it is the experience of having made these specific related products over a long period of time.

Thirty-five years of experience in manufacturing "HOLLOW METAL" has given us the ability to combine planning and production with economy into a service for the construction industry.

As Hollow Metal Men, we are proud to have provided the products starred (*) for the Edsel Ford Senior High School.

Superior FIREPROOF DOOR & SASH CO., INC.

EXECUTIVE OFFICES: 4175 PARK AVENUE, NEW YORK 57, N. Y. • **PLANTS:** NEW YORK AND SCRANTON, PA.



Pinehurst cuts fuel costs over 33% burning coal the modern way

The central power plant at the famous golfing resort of Pinehurst, N.C., has to furnish a reliable supply of steam to three hotels and seven other buildings. When Pinehurst recently decided to modernize power facilities, the consulting firm of Wiley and Wilson, Richmond, Va., was called in to study the situation. Since coal cost approximately 40% less than the next cheapest fuel, the final decision called for burning coal the modern way. Today two new automatic stoker-fired boilers (only one of which is operated at a time) replace four 150-hp hand-fired boilers. Combustion control is automatic; coal and ash handling is greatly simplified. And now, according to management, "the cost of generating steam is 33.4% less than with the old plant." 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.

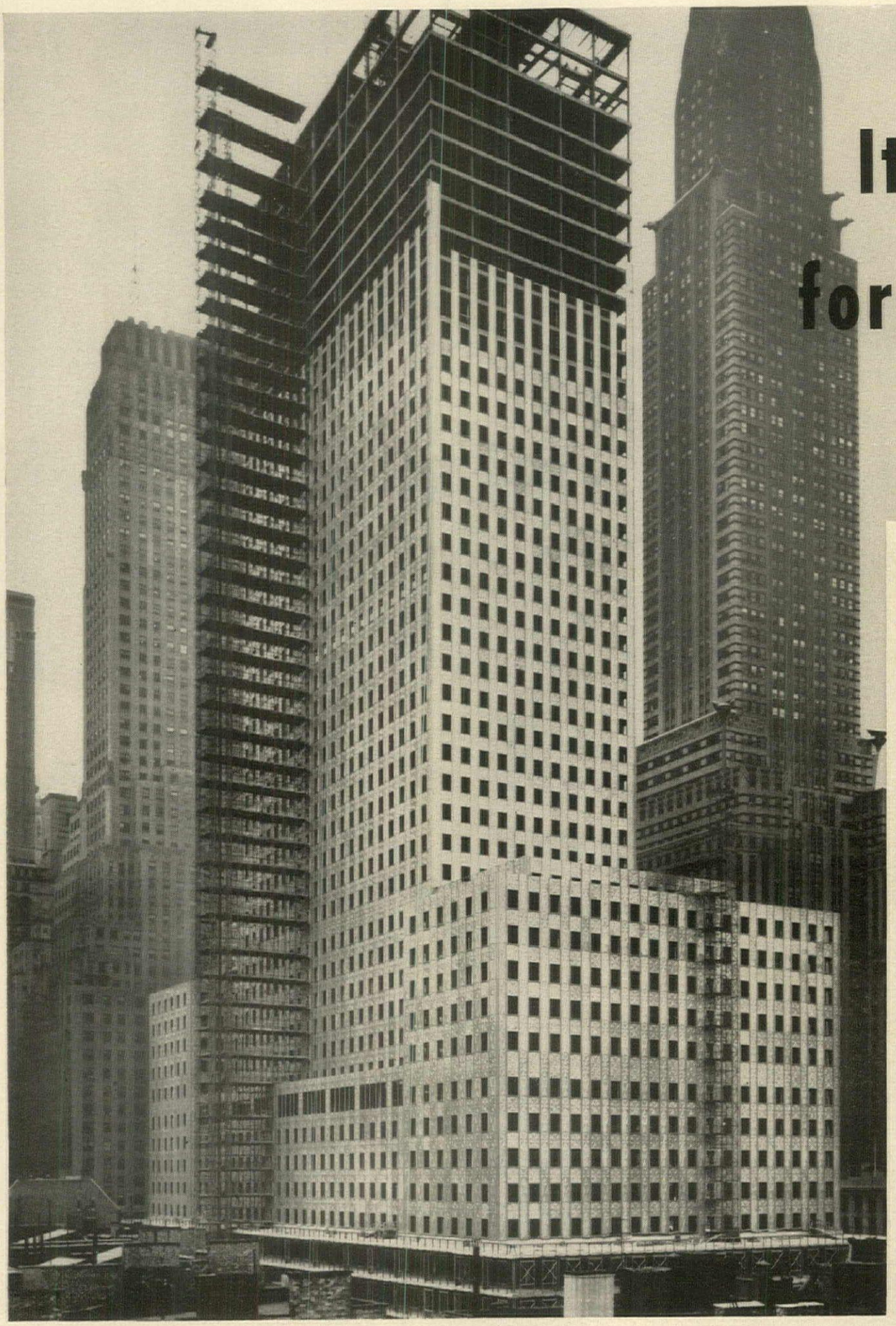
Consult an engineering firm

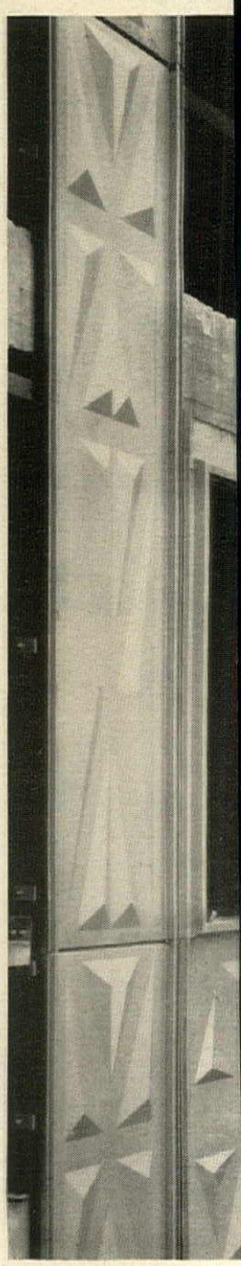
Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

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 smoke or dust 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.

It's a
for the





Harrison & Abramovitz, architects—John B. Peterkin, associate
John W. Galbreath Corporation, owner
Turner Construction Company, builder

Stainless Steel skin

largest metal-clad building in the world!

The next time you hit New York City, take special note of the bright new Socony Mobil Building at 42nd and Lexington, because this building is going to make history.

It's the 6th largest office structure in the world; and is completely clad with low maintenance Type 302 Stainless Steel. Directly across the street is the Chrysler Building, the first building to make major use of Stainless Steel for an exterior. Although it was erected in 1928, the Stainless on the Chrysler Building is still free from corrosion.

Stainless Steel sections can be thin, because it is so very strong, and no allowance for corrosion is necessary. Stainless Steel has such a high melting point that it will meet fire test requirements from inside *and* outside the building.

The Stainless Steel skin requires no maintenance. But if it is desirable to clean it simply for appearance' sake, it's an easy job. Best of all, Stainless Steel exteriors give fine service for the entire projected life of the building.

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, Room 4601, 525 William Penn Place, Pittsburgh 30, Pa.

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 — PIPE · TUBES · WIRE · SPECIAL SECTIONS

5-2219

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.

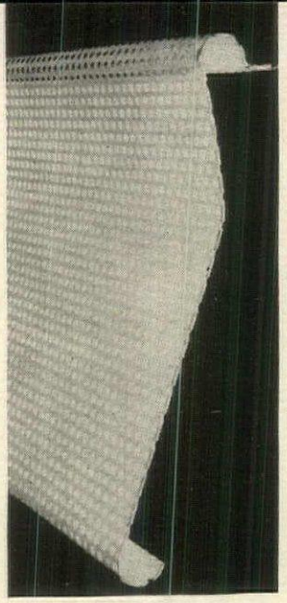
UNITED STATES STEEL

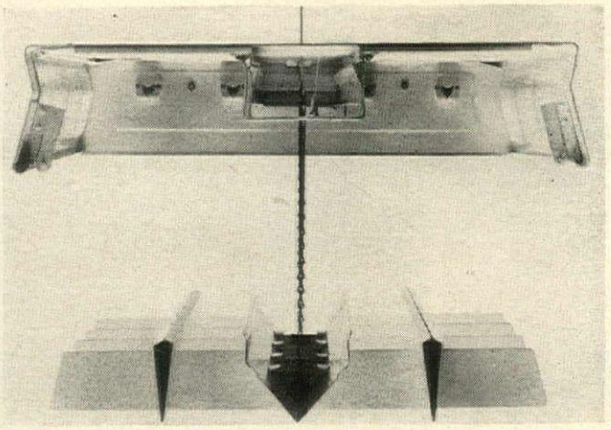
PRODUCTS

Continued from p. 224

offer no weatherproofing difficulties. With sill flashing, the panels may be used with stock steel or aluminum framed window units. Prices run $2 to $2.50 per sq. ft. for *A series* panels. Bi-yearly painting is the only maintenance required for either type of *Pan-L-Wall*.

Manufacturer: American Steel Band Co., Pittsburgh 30, Pa.

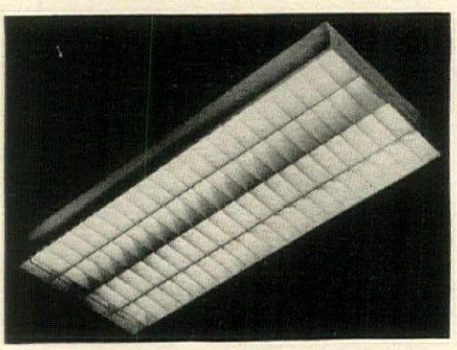




BROAD, FLAT TROFFERS with translucent sides cut brightness contrasts

Engineered for effective general illumination Lightolier's broad yet shallow *Louvron* fixtures are easily assimilated into a contemporary office interior, school, library or store. Side panels of the new troffers are fabricated of pin-holed steel coated with clear plastic so that each perforation becomes a tiny lens, directing soft light out through the sides of the fixtures to modify brightness contrasts against a dark ceiling. Flat surfaced top and bottom, the 4′ and 8′ *Louvron* units are easily mounted directly against the ceiling or on stems. Lower edges of the end plates are as thin as the louvers so that when the fixtures are hung in rows the impression is that of one, unbroken grid pattern.

The housing is die-formed of heavy-gauge steel in channel sections. Seen from



beneath, the nipped-in shape gives the fixtures a lean delicate line that belies their sturdiness. Accessory top reflectors and unperforated steel side panels are available where more downlight is required. For fuller light diffusion, side panels may be ordered of ribbed white polystyrene. In installation, a slide clamp hanger can be moved anywhere along the length of the fixture. Hook-on stems swivel up to 25° to compensate for uneven ceilings. Adjustments can be made after hanging simply by turning the stem.

Available for rapid start or slimline 40-w. fluorescents, *Louvrons* come in 13″-wide two lamp and 21″-wide four lamp models priced from about $25 to $90. Both are 4-5/16″ deep. For servicing or relamping, the louvers snap out under fingertip

continued on p. 236

Write- for these free books from Robertson's technical library

1. Acoustical Data on Q-Deck: It has long been known that the fluted underside of steel deck provides some acoustical value, yet demand for more has led to this new low-cost method. Application details and test data are included.

2. An Analysis of Industrial Roof Construction: This valuable booklet compares all the better-known roof types (flat, monitor, bow-string, high-low bay, saw tooth) on the basis of structural steel, volume, roofing, sash area, flashing, ventilation and daylighting.

3. Design and Cost Factors of Structural Floor Wiring: This study compares Q-Floor with other conventional floor systems using underfloor duct. Based upon a typical multi-story building, the book is replete with charts and cost analyses of all structural components.

4. Daylighting Cost Analysis: This new and unusual study contains a questionnaire, which when properly filled out will reveal how quickly scientifically planned natural daylighting will pay for itself in a structure through savings in electricity. All data are substantiated.

5. New Composite Q-Floor Catalog: This newly revised catalog contains many examples of the latest Q-Floor buildings and a full exposition of Q-Floor advantages. Structural details and specifications are more complete than ever before.

6. New M-Type Q-Panel Catalog: Recent newcomer to the Robertson product family is the M-Type Q-Panel which possesses unique advantages over other types of modern curtain wall construction. The book contains 3 pages of structural details plus complete specifications.

7. New Long-Span Q-Deck Catalog: Another new Robertson product is this sturdy, yet exceptionally long-span deck. Easy to handle and erect despite its length up to 32 feet, it is especially designed for schools and supermarkets and other structures in which unbroken spans and a saving of structural steel is beneficial.

8. Ventilation Engineering Booklet: More than a ventilator catalog, this booklet not only describes products, but contains detailed tables of exhaust capacities, based upon average wind velocities, temperature differences and height above intake. Use the coupon below.

Robertson Products

for modern buildings

H. H. Robertson Company
2403 Farmers Bank Building, Pittsburgh 22, Pa.
In England: Robertson Thain Ltd., Ellesmere Port, Cheshire
In Canada: Robertson-Irwin Ltd., Hamilton, Ontario
Offices in Principal Cities

Please send the free data book(s) I have circled below.

1 2 3 4 5 6 7 8

NAME _____

FIRM _____

ADDRESS _____

But where will you connect Miss Foster?

Whether you're planning or building offices for your own use or for rental to others, you'll need electrical circuit connections throughout the floor area—to efficiently utilize every square foot of space. You can't crowd all desks around wall outlets and it's dangerous and unsightly to run exposed raceways across floors. How then can you obtain maximum electrical adequacy plus space flexibility? The answer is General Electric Q-Floor wiring, the system that provides complete electrical availability for typewriters, dictating machines, calculators, telephones, intercoms, lighting, postal machines, and other electrically operated equipment.

The General Electric Q-Floor wiring system is designed for installation in cellular steel subflooring, and makes every square foot of floor space available for outlets. Every cell is a raceway for present and future circuit requirements. No costly alterations, no litter, no tie-up of space, no matter how often or how much your electrical requirements change. And it is doing a job in office buildings like famed Lever House in New York City, and in industrial buildings and institutions across the country.

For more information on General Electric Q-Floor wiring, call your G-E Construction Materials district office, or write to Section 749-114 Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Large city HOSPITAL or community MEDICAL CENTER

Medical Center, Athens, Ga.
Architect: Clarence Wilmer Henry
Contractor: Mathis Construction Co.

Lankenau Hospital, Philadelphia, Pa.
Architect: Vincent G. Kling
Contractor: Wark & Co.

Reduce MAINTENANCE EXPENSE with *Quality Approved*

ALUMINUM WINDOWS

It doesn't make any difference whether you're building a large 320 bed hospital like the beautiful new Lankenan Hospital shown above or a small, community medical center, you help save important maintenance dollars when you insist on "Quality-Approved" aluminum windows.

Experience has clearly demonstrated that aluminum windows are the only practical, reasonably-priced windows that *never* require painting . that cannot rust or rot, warp or swell that retain their trim, modern-looking appearance for the life of the building.

"Quality-Approved" aluminum windows are available through many manufacturers in sizes and styles (awning, casement, double-hung, projected and sliding) to fit any design treatment. Only those that carry the "Quality-Approved" Seal have been tested by the independent Pittsburgh Testing Laboratory and approved for quality of materials, construction, strength of sections, and minimum air infiltration.

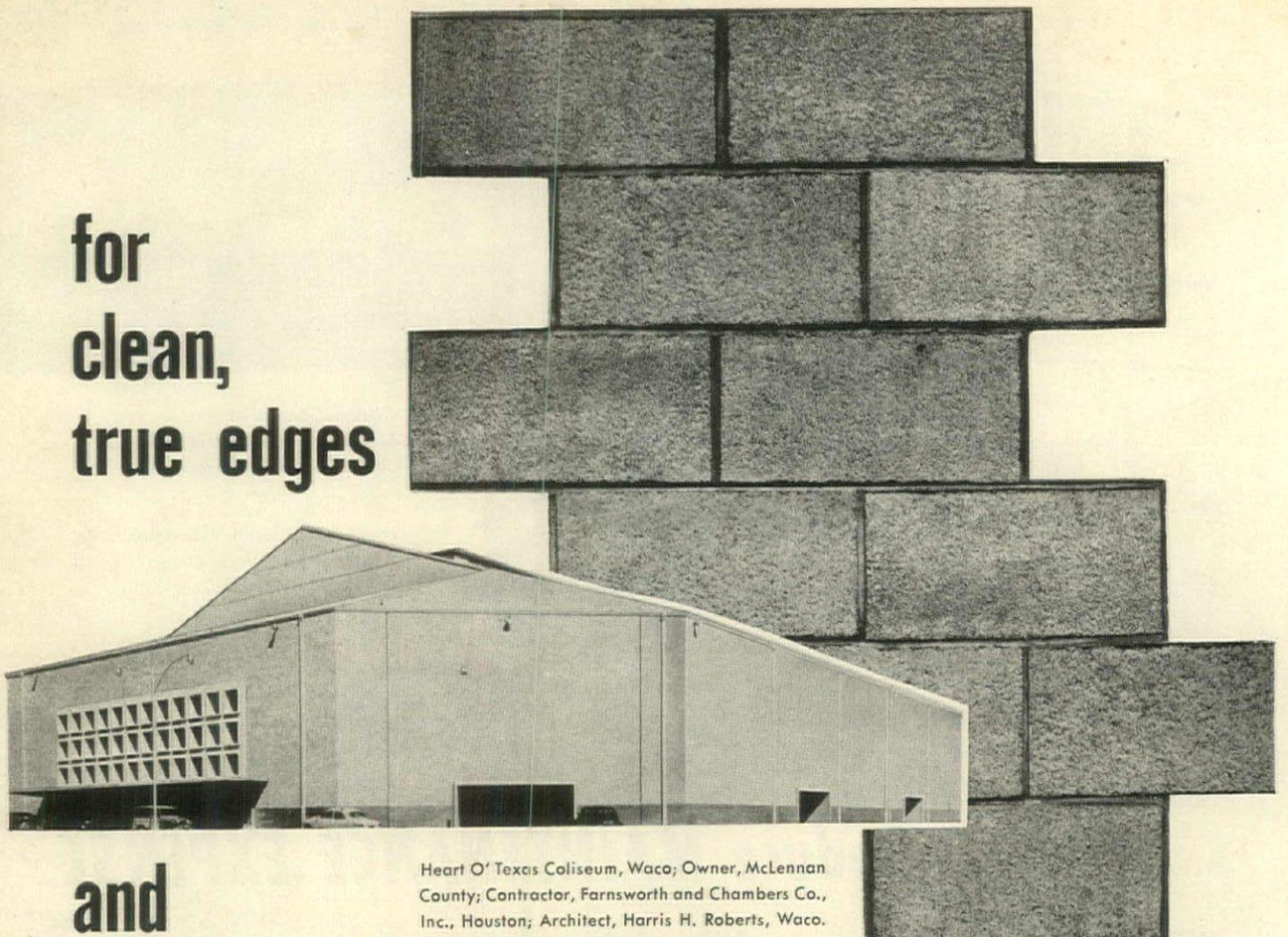
For our latest Window Specifications Book consult any manufacturer listed below, see Sweet's (16a/ALU) or address Dept. AF-511.

Aluminum Window Manufacturers Association

75 West Street, New York 6, N. Y.

MEMBERS: **Alcasco Products, Inc.**, Detroit, Mich. • **The Wm. Bayley Co.**, Springfield, Ohio • **Bourne Products, Inc.**, El Cajon, Calif. • **Ceco Steel Products Corp.** *(Sterling Aluminum Window Division)*, Chicago, Ill. • **Cupples Products Corp.**, St Louis, Mo. • **Duralite Window Corp.**, Knoxville, Tenn. • **Fentron Industries, Inc.**, Seattle, Wash • **Michael Flynn Mfg. Co.**, Philadelphia, Pa. • **General Bronze Corp.**, Garden City, N. Y. • **Metal Arts Mfg. Co., Inc.**, Atlanta, Ga. • **Reynolds Metals Co.** *(Parts Division)*, Louisville, Ky • **The F C. Russell Co.** *(Aluminum Division)*, Bristol, Pa. • **J. S. Thorn Co.**, Philadelphia, Pa. • **Universal Window Co.**, Berkeley, Calif • **Ware Laboratories, Inc.**, Miami, Fla • **Windalume Corp.**, Kenvil, N. J.

for clean, true edges



Heart O' Texas Coliseum, Waco; Owner, McLennan County; Contractor, Farnsworth and Chambers Co., Inc., Houston; Architect, Harris H. Roberts, Waco.

and richer texture

...concrete block made with DURAPLASTIC*

Over ninety-eight thousand concrete blocks went into the building of Waco's Heart O' Texas Coliseum. The job was a big one, calling for good looks on a large scale. That's why concrete block made with Atlas Duraplastic air-entraining portland cement were used.

A good choice, too. Because Duraplastic makes a more compact, more cleanly formed block with greater resistance to the passage of water. For outstanding durability and good appearance, use Duraplastic-made block on your next project.

Use Atlas Duraplastic cement in your regular concrete work, too. Aids proper placement and increases durability. Requires no unusual changes in procedure. Sells for the same price as regular cement. Complies with ASTM and Federal Specifications. Write for free descriptive booklet.

UNIVERSAL ATLAS CEMENT COMPANY

UNITED STATES STEEL (USS) CORPORATION SUBSIDIARY

100 PARK AVENUE, NEW YORK 17, N. Y.

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.

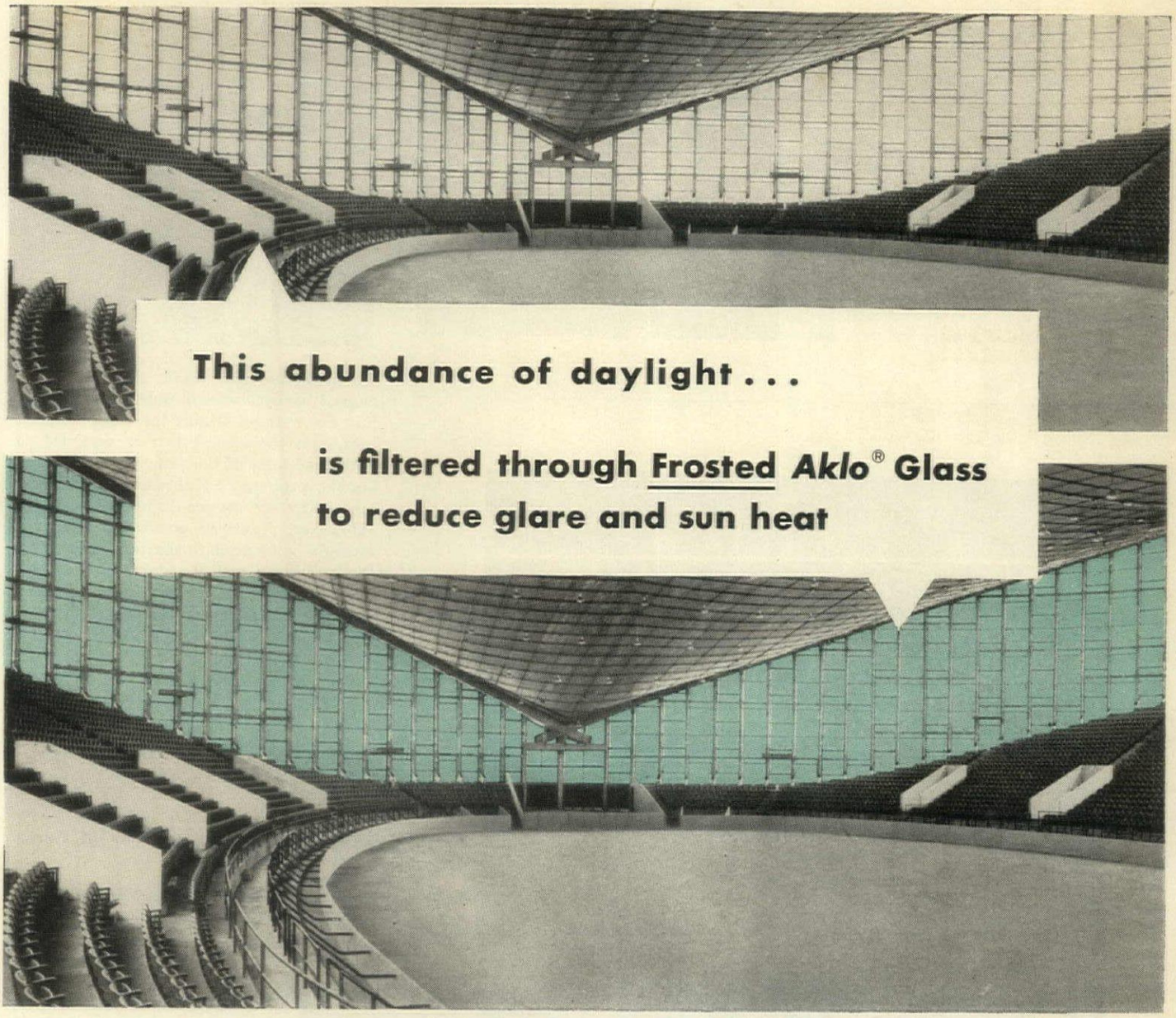
AF-D-177

AIR-ENTRAINING PORTLAND

Atlas® Duraplastic Cement

MAKES BETTER CONCRETE AT NO EXTRA COST

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



This abundance of daylight . . .

is filtered through Frosted *Aklo*® Glass to reduce glare and sun heat

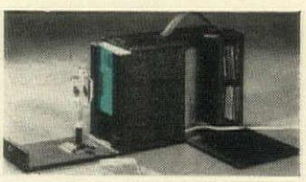
Wm. Henley Deitrick, architect; Matthew Nowicki, consultant; Severud-Elstad-Krueger, consulting engineer.

This is one of America's outstanding buildings . . . the prize-winning North Carolina State Fair Arena. In it, the architects and engineers employed two design features that produce eye-comfort daylighting:

1. A large expanse of glass that eliminates the glaring effect of contrasting opaque walls and "hole-in-wall" windows.
2. A filter of blue-green Frosted *Aklo* Glass.

Frosted *Aklo* Glass softens and diffuses direct sunlight, sky brightness and dazzling reflections. It cuts down sun heat. Used in ¼" thickness, it shuts out as much as 44% of the sun's radiant energy. And it's a restful color . . . a "cool" color.

Aklo is widely used in factories, offices and many other buildings. Better selling, greater comfort for occupants . . . better workmanship . . . better employe relations are all worth-while benefits.



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*

PRODUCTS

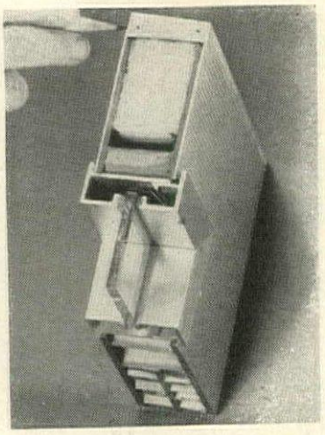
Continued from p. 230

pressure and are suspended on safety chains or may be completely removed.

Manufacturer: Lightolier, Inc., Jersey City 5, N.J.

FLUSH DOOR clad in colored vinyl

By laminating colored, textured vinyl to an aluminum sheet and backing this combination with hardboard, Kawneer has produced

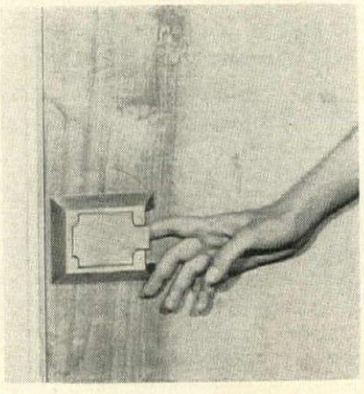


an attractive yet tough facing for its rugged honeycomb-core flush door. Locked into the mitered frame, the skins will not peel, and the entire door is designed to withstand most of the dampness, dirt, heat, liquids, pressures or abrasions that store, school or office use would impose on them. (However, Kawneer points out that the facing *is* vulnerable to sharp instruments.) Decorative as well as durable, the door comes in seven colors, some with an interesting fabric finish and one in a leather-like saddle-tan. Two types are suitable for exterior use. Standard heights are 6′-8″ and 7″ and widths run from 2′-6″ up to 3′-4″. Prices range from $150 to $175 installed.

Manufacturer: The Kawneer Co., Niles, Mich.

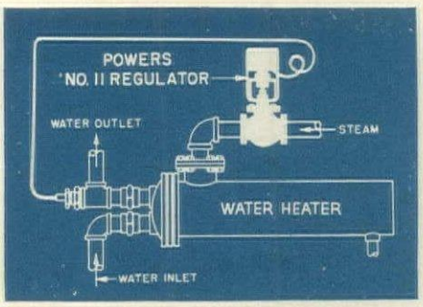
LEVER LATCH opens door at finger flick

Soss, the hardware company renowned for its invisible hinge, is now making a knobless latch for interior doors. A simple beveled box, the *Lev-R-Latch* is 3¼″ high, 4″ long and extends out from the door ½″. Delivered in three parts, the assembly is quickly installed by boring a hole for the bolt and one for the latch, positioning the bolt and screw-fastening the two outside plates. In operation, a finger inserted under the back part of the latch releases the bolt to let the door swing open. The *Lev-R-Latch* retails for $3.05; with a locking mechanism, $3.40. Its zinc alloy face plates are plated in various finishes.

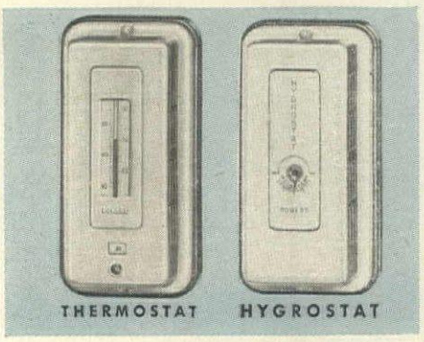


Manufacturer: Soss Mfg. Co., 21777 Hoover Rd., Detroit 13, Mich.

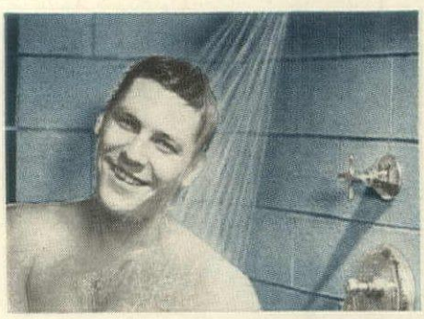
continued on p. 242



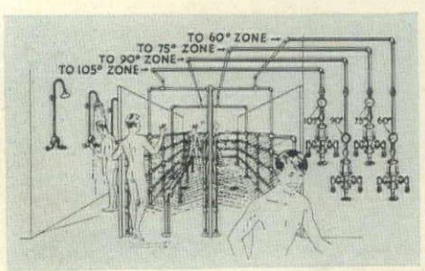
Comfortable Water Temperature in Swimming Pools is obtained with Powers thermostatic Regulators for water heaters. *Fuel Economy* also results from eliminating OVER-heated water.



Comfortable Air Temperature in Pool Area and Locker Room is assured with Powers control of temperature, humidity and proper ventilation.



Greater Comfort and SAFER Showers with Powers double protection against scalding. Temperature remains constant wherever the bather wants it regardless of *pressure* or *temperature* changes in water supply lines.



Zone Showers with straddle rail, often used in connection with swimming pools require the dependable temperature control supplied by the four Powers thermostatic controllers above. (c-46)

in Swimming Pools, Locker Rooms and Showers

Specify and Install **POWERS**

THERMOSTATIC CONTROL

In the world's largest indoor swimming pool at Great Lakes Naval Training Station and in thousands of other famous pools from coast to coast, Powers control provides water and atmospheric comfort.

Quality Controls and Nationwide Service plus more than 60 years of know how in the proper application of a complete line of products... are important advantages offered by Powers.

Only a few of our many controls are shown here. Others are available for whirlpool arm and leg baths and many other types of hydrotherapy.

Consult Powers on Thermostatic Control for swimming pools, locker rooms and showers. An experienced engineer in Powers nearest office will gladly help you select the right type of control for your requirements.

THE POWERS REGULATOR COMPANY

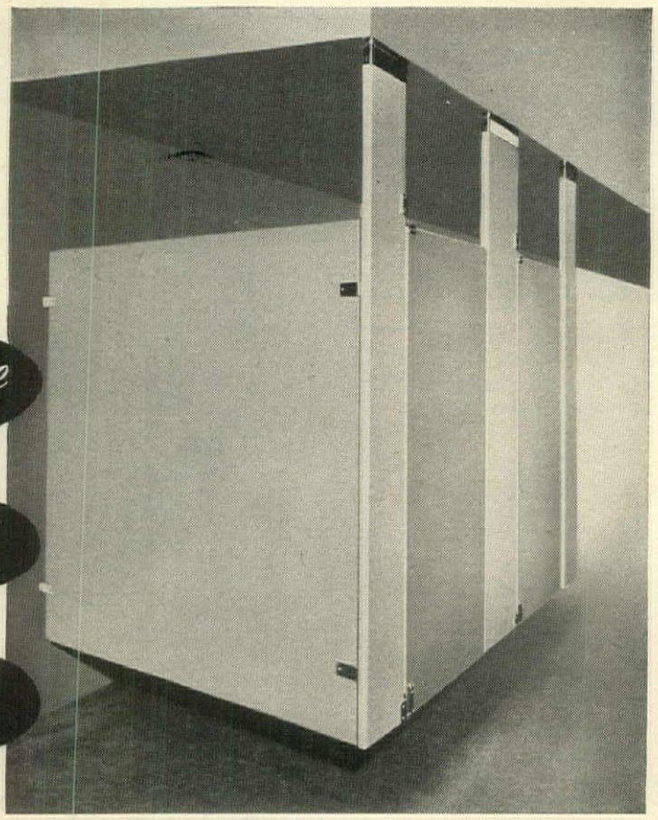
SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*

Over 60 years of Automatic Temperature and Humidity Control

full gauge

full width

full finish



Nicholson Type AC Toilet Compartment. Ceiling hung. Ultra-modern. Sanitary.

Nicholson Metal Partitions

better built . . . for lasting service

Only time will tell . . . whether or not the average toilet compartment will deliver long life and real service-ability. But Nicholson compartments give you "full" assurance right from the start—full gauge metals . . . full width partitions . . . full final finish. Nicholsons' are built to stand up and still stand out . . . even after years of steady service.

- **heavier gauge steel:** panels—full 20 gauge
  pilasters—full 16 gauge
  headrail and tubing—full 16 gauge
  stainless steel plinth—full 20 gauge
- **thicker partitions:** doors and panels—full 1" thick
  pilasters—full 1¼" thick
- **extra protective coats:** galvanized, bonderized coatings
  zinc chromate primer
  2 coats of synthetic baked enamel

Specify *for lasting service.* 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 ARP—panel type
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

BULLETIN NO. 97
October, 1955

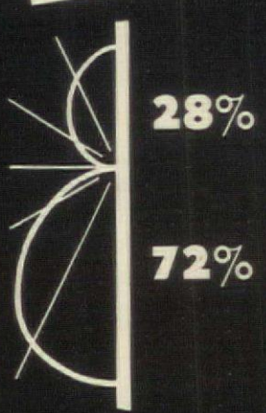
an entirely new development in industrial lighting

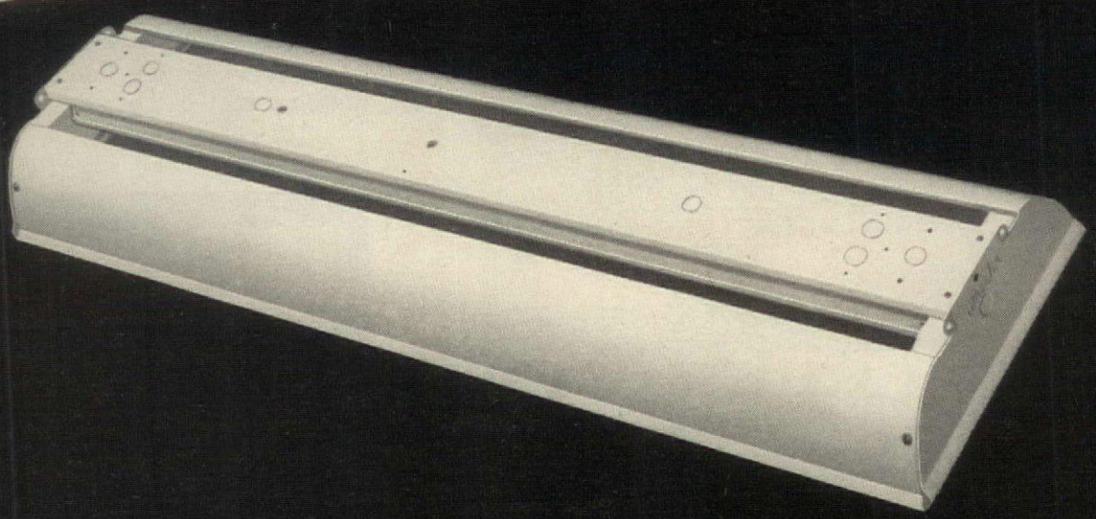
Wheeler BI-FLO UPLITER

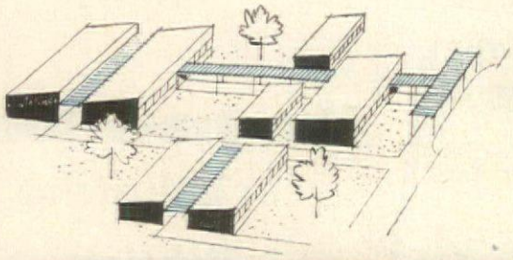
28% uplight — low cost.

WHEELER REFLECTOR COMPANY
275 Congress Street Boston 10, Mass.
Distributed Exclusively through Electrical Wholesalers

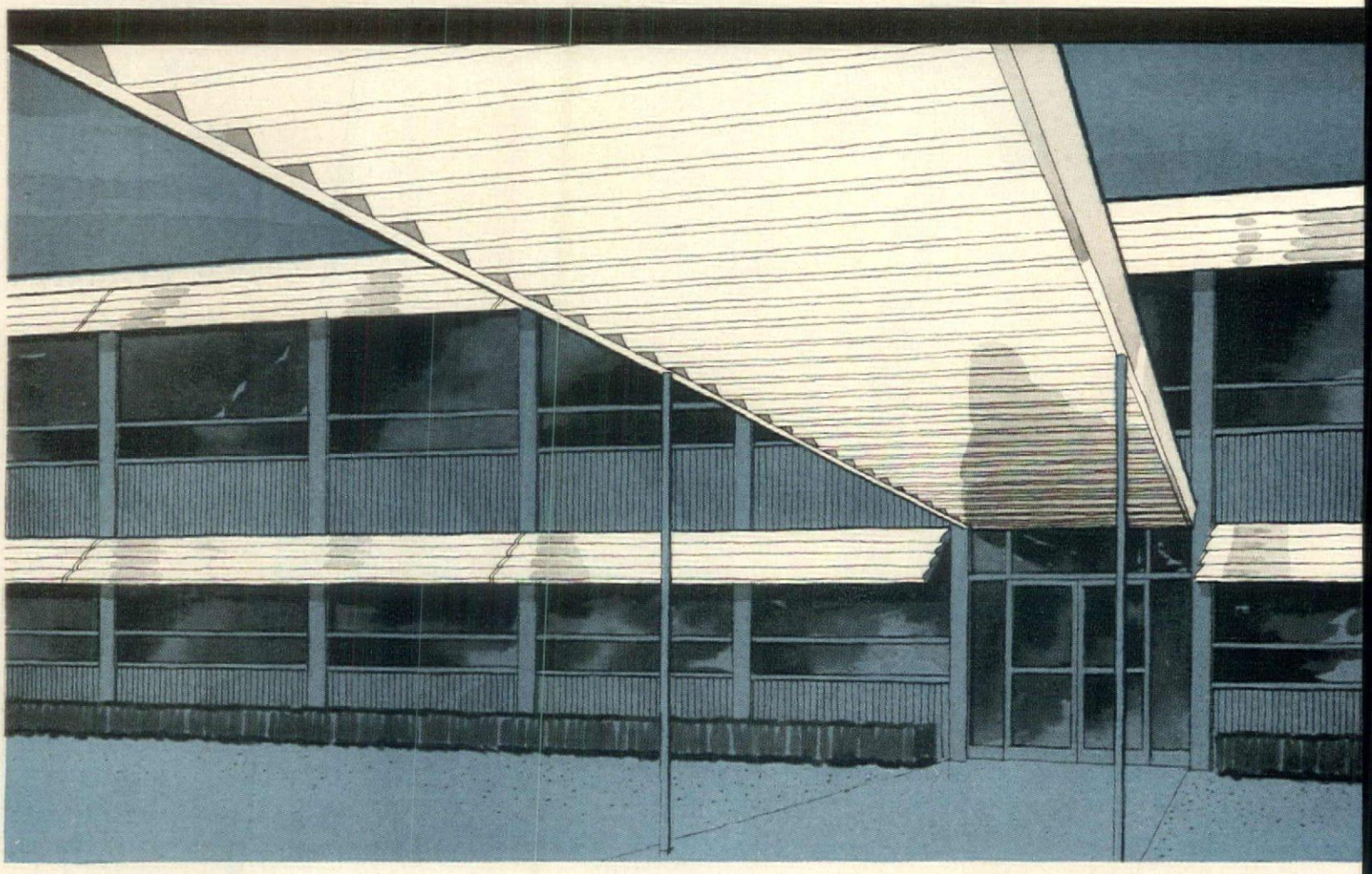
the new look in industrial lighting starts here! Write for your copy of new Wheeler bulletin No. 97 today!





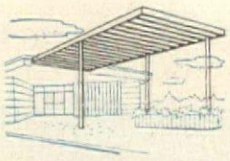


NOW – low-cost walk, window and entrance weather protection

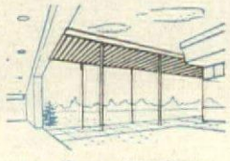


KAWNEER
all-aluminum prefabricated

CANOPY

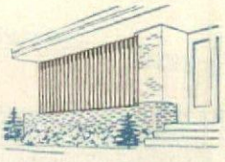


entrance protection



walk protection

K-LOUVER



window protection

overhang addition

School design can be simplified with Kawneer's Sun-Control and weather protection products. You have great flexibility with the prefabricated sections enabling you to cover almost every glass opening and passageway to design specifications. The advantages far exceed the relatively low cost. Both products are made of heavy-gauge alumilited aluminum which means long, maintenance-free life. The reflective surface assures cool areas. The unique shapes such as the "W" of the canopy sections provide and encourage ventilation, yet protect from rain and snow. The quick and easy erection means a faster completion date and fewer labor hours. Fill out the coupon below to learn more about Kawneer Sun-Control and Weather Protection products, and how they can be adapted to your school plans.

Kawneer
General Offices
NILES, MICHIGAN

ARCHITECTURAL PRODUCTS DIVISION

Kawneer Company, Niles, Michigan
Gentlemen:

_____ Please send me further information on the Canopy and K-Louver.

_____ Have your representative contact me.

Name_____

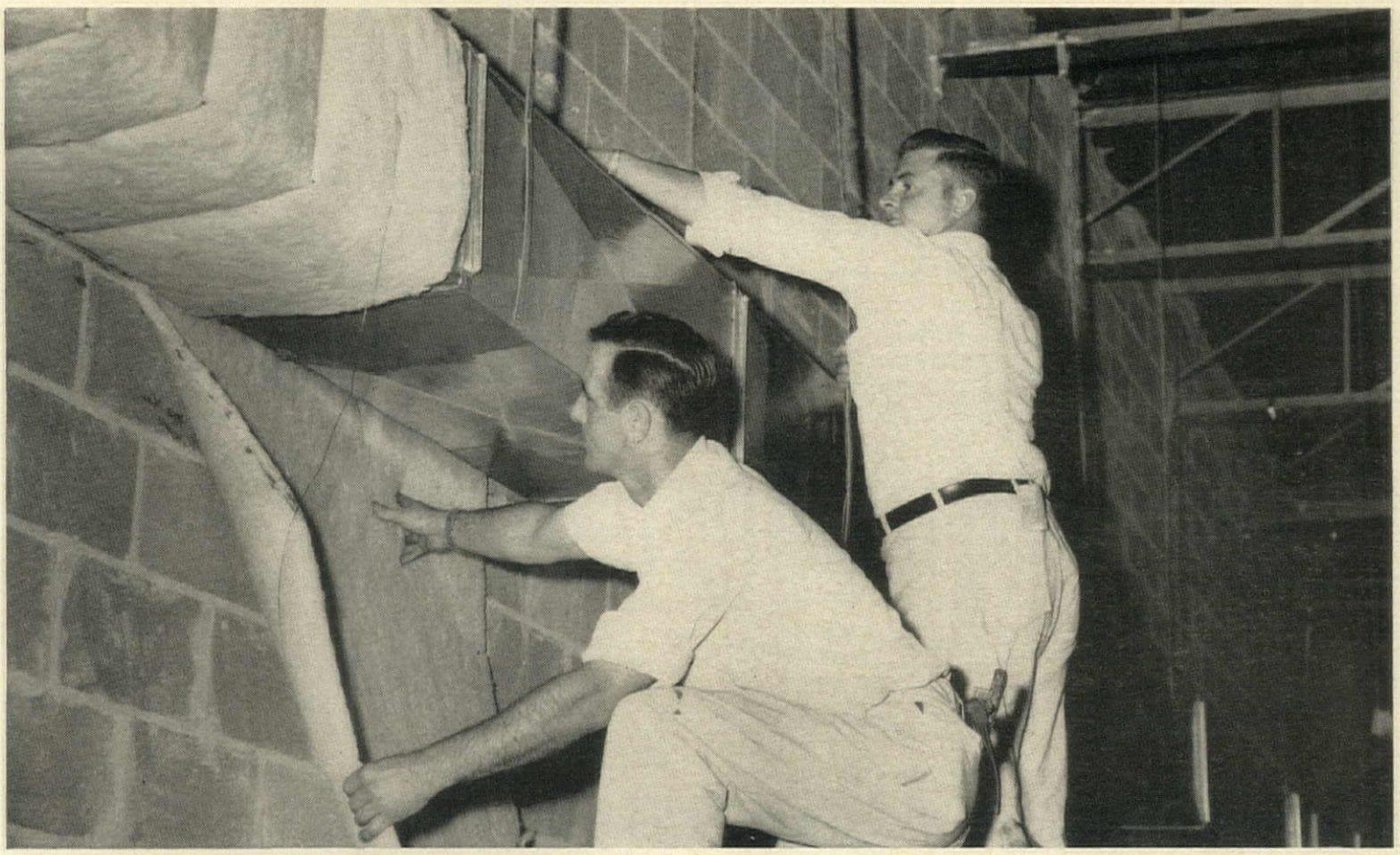
School or Firm_____

Street_____

City_____ Zone_____ State_____

Economically applied on heating and cooling ducts,

L·O·F Super·Fine reduces heat transfer, increases cooling efficiency

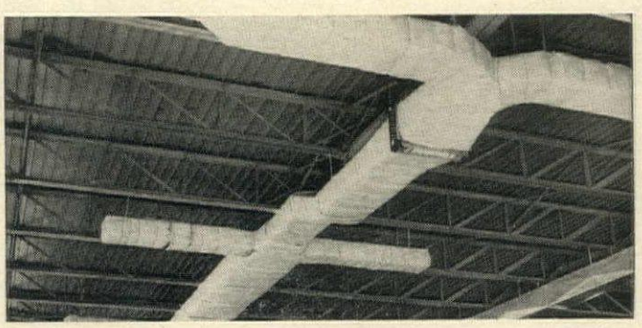


Applying L·O·F Super·Fine at the Northwood Shopping Center. The high tensile strength of the glass fiber blankets permits them to be pulled between the duct and wall without tearing.

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.

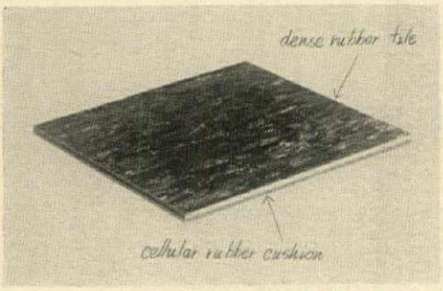
L·O·F GLASS FIBERS COMPANY
TOLEDO 1, OHIO

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 60-115, 1810 Madison Avenue, Toledo 1, Ohio.

PRODUCTS

Continued from p. 236



BUOYANT RUBBER TILE cushioned for comfort and quiet

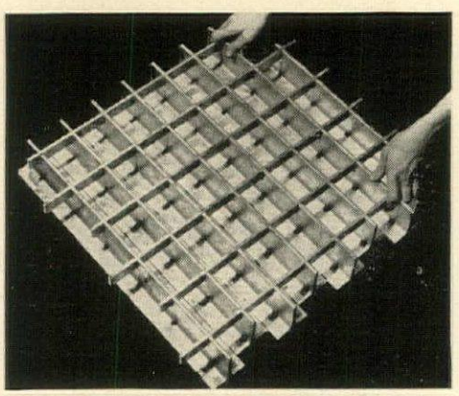
A resilient shock-and-sound-absorbing rubber tile, B. F. Goodrich's *Airpath* was developed for commercial and institutional applications where a floor's sound absorbency is as essential as its wearing life. Backed with cellular rubber, 3/16"-thick *Airpath* is most effective acoustically in absorbing impact noises at 600 to 1,200 cycles (the sound levels that interfer with speech) and so is especially suited for use in hospitals, churches, studios and other hush areas. The tile also retards vibration transmission, making it useful where there are problems of sounds conducted through the structure rumbling from one floor to another. *Airpath's* dense, nonporous surface resists scuffing and marring from

dropped cigarettes or matches, and is easily maintained with a periodic washing and waxing. The tile comes in 9" squares and border lengths up to 3' in 10 marbleized colors. Installed costs run between 85¢ and $1 per sq. ft.

Manufacturer: B. F. Goodrich Co., Flooring Div., Watertown, Mass.

FLOOR ARMOR doubles as form for concrete fill

Fabricated for use with concrete or asphaltic filler, Blaw-Knox's *T-Bar* grating is a sensible solution to the problem of heavy bearing loads on factory floors. Pressure-interlocked, the *T-Bar* grating, is made in sectional depths of 1" to 6" and in panels 3' wide and up to 20' long. It provides

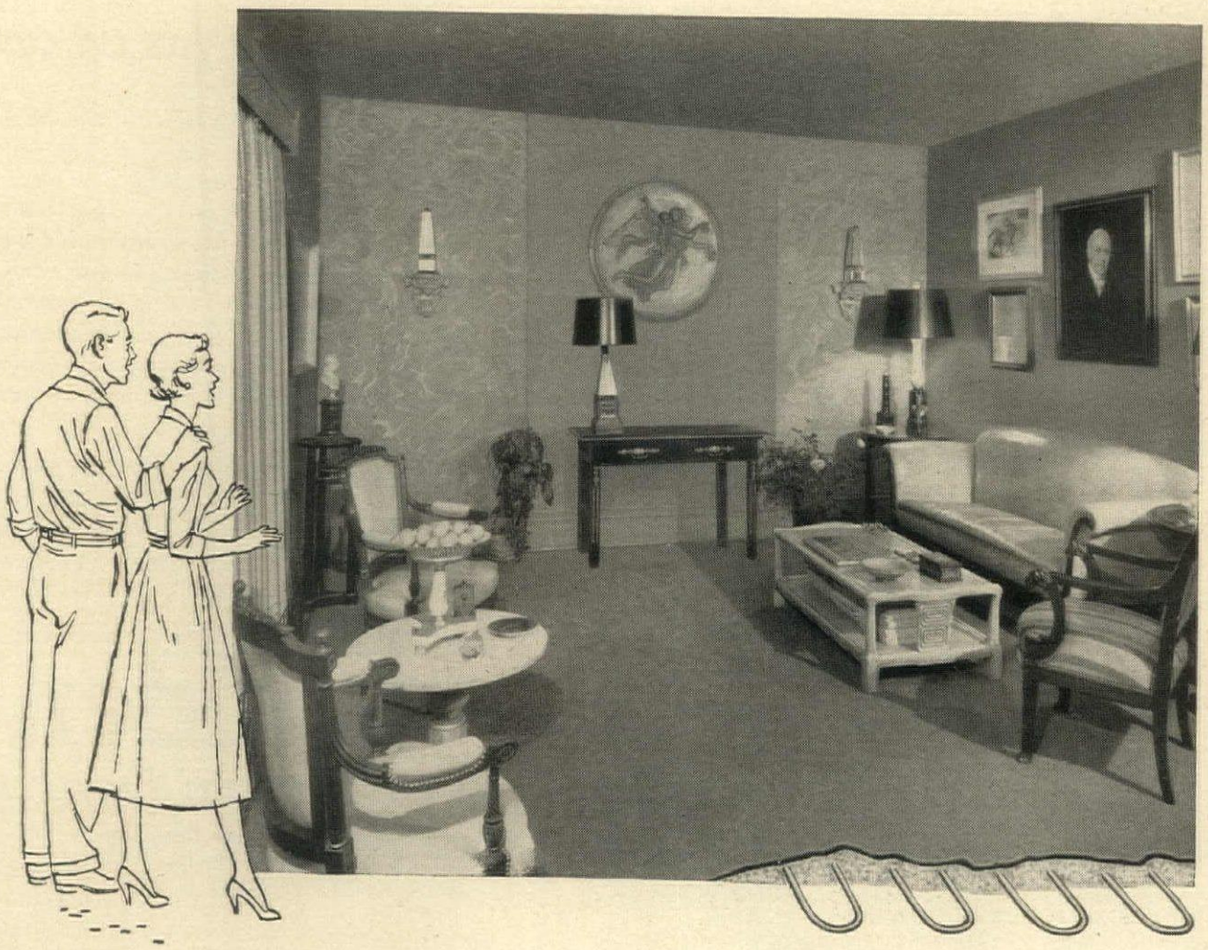


both reinforcing and form in one unit, eliminating the construction of usual wood form. The underside of the grating forms a retaining surface; the upper surface serves as rugged floor armor. Conduit may be run in the channels formed by the grating. The grating alone weighs from 20 to 78 lb. per square foot, depending on depth.

Manufacturer: Blaw-Knox Co., Farmers Bank Bldg., Pittsburgh, Pa.

continued on p. 248

Every inch of Floor and Wall Space is usable . . .



A typical radiant heated suburban development home.

Typical installation of steel pipe radiant heating coils on slab.

with "invisible" radiant panel heating

As the song says, "little things mean a lot" . . . to a woman.

She chooses an automobile by its color, selects a television set for its cabinet . . . and may insist on a radiant panel heating system solely because it gives her *complete* freedom of decoration in her home. The *only* heating system that does, because every inch of floor and wall space remains *usable*. Why should a mere man object to her whims as long as there's horsepower under the hood, a clear picture from the T.V. set, and the heating system gives clean, healthful, draft-free comfort!

It *is* a fact that *women* have helped make radiant panel heating increasingly popular for individual homes, multiple dwellings and housing developments . . . up significantly last year among wet heat installations.

And, as in other wet heat systems, the *men* who design, specify and install, know that reliable steel pipe is first choice for heat transmission. Time tested through more than 60 years of hot water and steam applications, it also has the qualities of economy, durability, weldability and formability required for successful "invisible" radiant panel heating. In fact it's the most widely used pipe in the world!

Write for the free 48 page color booklet "Radiant Panel Heating with Steel Pipe" and 32 page companion booklet "Steel Pipe Snow Melting and Ice Removal Systems."

Steel Pipe is First Choice

Committee on
STEEL PIPE RESEARCH
AMERICAN IRON AND STEEL INSTITUTE
350 FIFTH AVENUE, NEW YORK 1, N.Y.

PAINTING ANALYSIS

Learn how new Glidden painting service can help you cut costs!

New Formula NEV-A-RUST dries to a sparkling, high gloss; has greater resistance to rust, acid, gases, fumes. Ideal for structural steel, iron fences, grillwork, smokestacks, metal roofs and all metal surfaces.

Now Glidden offers a no-cost, no-obligation analysis of *any commercial and institutional painting problem.* This new service can be as comprehensive as you wish—anything from stain for a paneled office to special paint formulations to end corrosion on a water tower. A Glidden Painting Analysis can help you train personnel, work out safety markings, make color efficiency tests or work out complete office and plant redecoration!

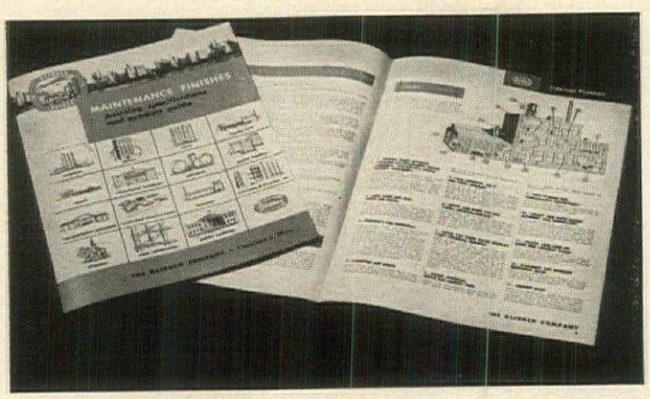
Pictures at left show a few of the ways a Glidden Painting Analysis can help you. For more information or for specific helps, fill in coupon below.

Four-Year Exposure Test of bricks above shows superior durability of SPRED GLIDE-ON — new exterior masonry finish for stucco, brick and asbestos shingles. Brick at left painted with SPRED GLIDE-ON did not peel, chip or flake in four years.

Glidden

Professional Finishes

The Glidden Company
Maintenance Finishes Division
Cleveland 2, Ohio



New catalog includes complete specifications and product guide, selector charts, color chips, information on special finishes of all types — this book is a *must* for reference; training of personnel; purchasing guide.

Fill in and mail to The Glidden Co., Dept. AF-1155
11001 Madison Ave., Cleveland 2, Ohio

- ☐ I am interested in complete details of Glidden Painting Analysis.

I am particularly interested in:

- ☐ NEV-A-RUST; other anti-corrosion finishes.
- ☐ Product demonstrations for training purposes.
- ☐ Color Studio Service
- ☐ SPRED GLIDE-ON
- ☐ New Glidden complete-line catalog

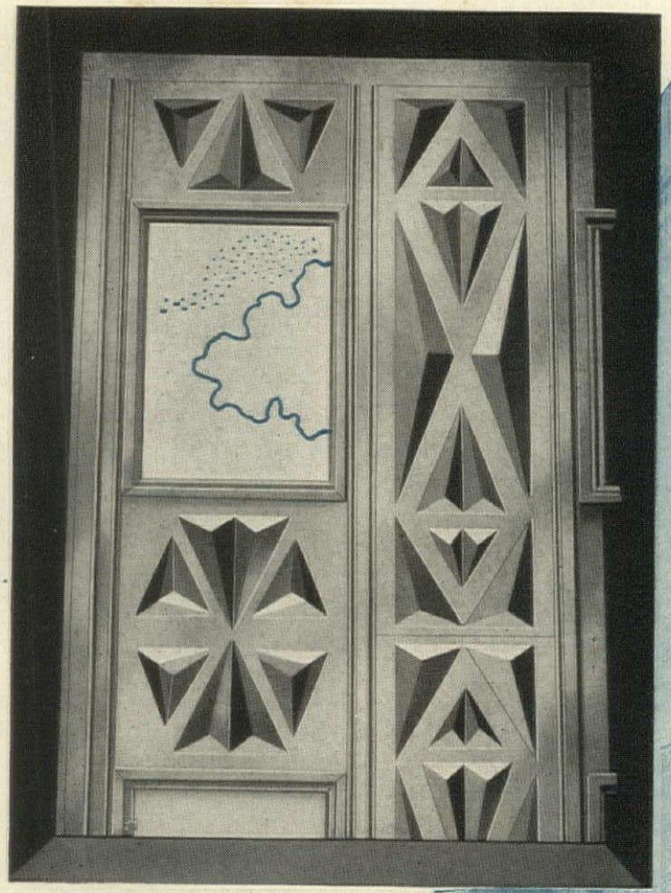
Name_____

Title_____

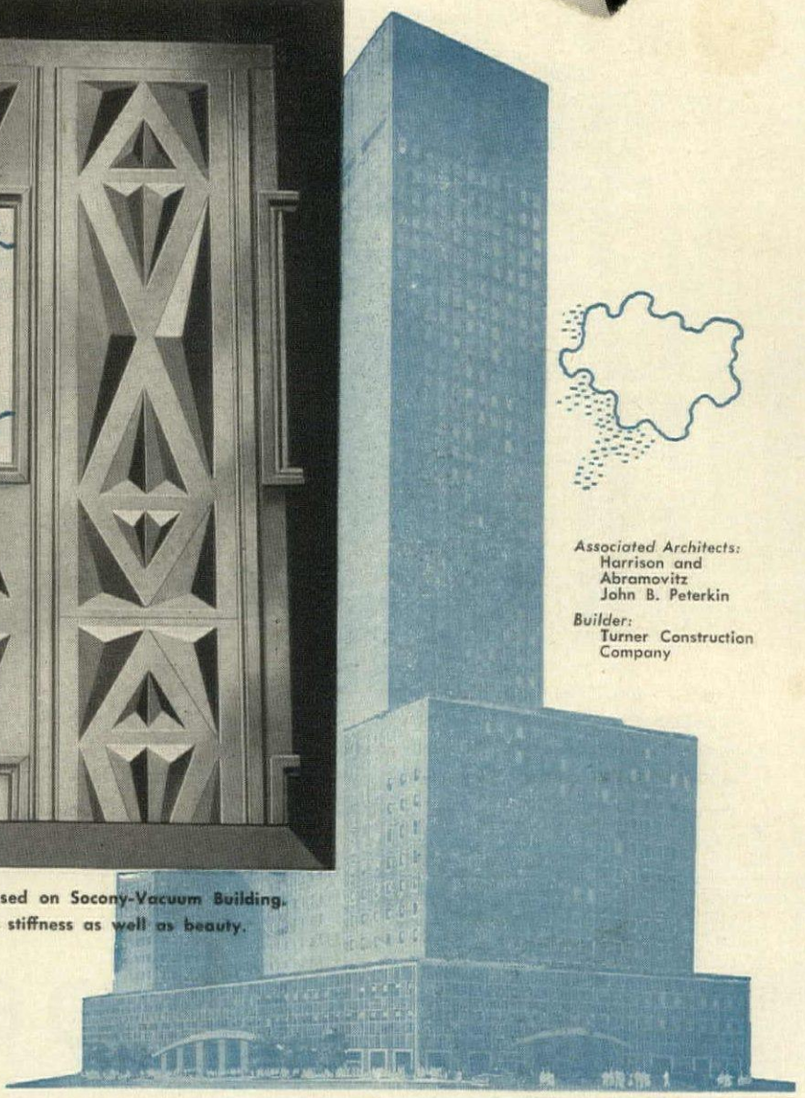
Company_____

Address_____

City_____ **Zone**____ **State**_____

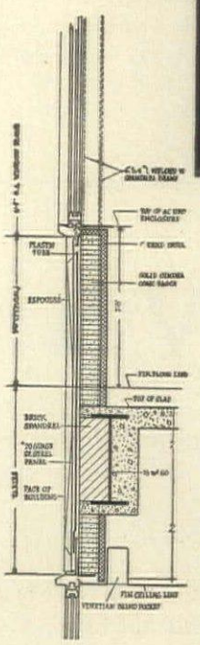


Stainless steel panel to be used on Socony-Vacuum Building. Stamped faceted design adds stiffness as well as beauty.



Associated Architects:
Harrison and Abramovitz
John B. Peterkin

Builder:
Turner Construction Company



Detail drawing showing how stainless panels will be installed.

STAINLESS STEEL ARMOR ...for a New York GIANT!

There's *extra* bustle, these days, in busy midtown Manhattan. It's caused by the construction of a new 42-story, 45-million dollar Socony-Vacuum Building . . . New York's largest in 25 years.

Most distinctive architectural feature of this robust giant will be its *stainless steel* skin. An armor of .037" thick 18-8 chromium-nickel stainless, type 302, was chosen for very *practical* reasons. Not only will stainless walls mean lasting beauty, but they'll save many tons of excess weight. For the stainless skin will weigh only 1½ lbs. per sq. ft., as compared to 48 lbs. per sq. ft., for a 4" brick exterior wall.

Crucible is one of several leading producers who are supplying the stainless steel for this skyscraper. When completed it will be the largest metal-sheathed office building in the world. In planning *your* next project consider the advantages of stainless. For helpful suggestions, write for your copy of "A Guide to Future Uses of Stainless Steel in Architecture and Building." *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 30, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Here's the world's first commercially successful SPEEDWALK in operation at an eastern *railroad terminal*. In less than two years it has handled almost 2 million passengers. By eliminating a fatiguing uphill climb the moving sidewalk has increased commuter travel 4½%, countering a downward trend in revenue.

Carrying visitors to and from an elevated display at a midwestern *exposition*, two SPEEDWALK units eliminated the hazardous and fatiguing effort of climbing stairs. Fifty-two feet long, the passenger conveyors operated on a 14½ degree slope. Total attendance at the exposition ran over 3 million people.

It's Here Now! # Speedwalk*

MINIMIZES TRAFFIC CONGESTION AND PEDESTRIAN

SPEEDWALK passenger conveyors are operating *now!* . . . and have been since 1952! Backed by intensive research and testing, these passenger-proven Stephens-Adamson systems are making pedestrian travel easier, quicker and safer.

Wherever large crowds must be moved, whether inside or out, the SPEEDWALK has an important contribution to make . . . at a cost well within the budget limitations of most projects. Since the weight of SPEEDWALK systems on a per square foot basis is relatively low, they can be incorporated easily into existing structures.

The Stephens-Adamson SPEEDWALK is backed by over fifty years in the field of engineered conveyor systems. It is this experience, coupled with intensive physiological and psychological research on people, which has already made the SPEEDWALK an acceptable mode of travel to thousands of passengers now using it daily.

Stephens-Adamson engineers welcome the opportunity to discuss your transportation problems with you. Your inquiry will receive prompt attention.

WHERE YOU CAN USE THE SPEEDWALK:

• Railroad Terminals • Airports • Industrial Plants • Department Stores • Parking Lots • Shopping Centers • Bus Terminals • Stadiums • Congested Metropolitan Areas

• WHEREVER LARGE CROWDS CONGREGATE

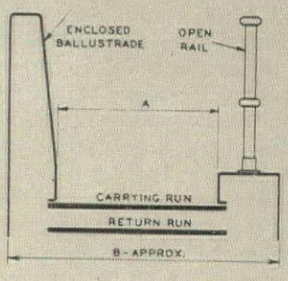
At this Ohio *industrial plant*, employees are carried up an incline to the plant gates in an effortless and orderly flow. By regulating the pedestrian traffic pattern, this SPEEDWALK eliminates jostling and crowding. Other SPEEDWALK installations in industry are underway to boost employee morale and promote safer working conditions.

A Chicago *museum* is the site for this SPEEDWALK installation. It began operation in November of 1952 and has carried thousands of adults and children past a colorful industrial display. Visitors pass through the area at a measured speed which enables them to devote complete attention to the exhibit.

---

the passenger-proven moving sidewalk system

FATIGUE...WITH INCREASED SPEED AND SAFETY



LANES	A	B (APPROX.)	BELT WIDTH
1	21"	38	24"
2	39"	56	42"
3	63"	80	66"
4	78"	95	81"
5	105"	122	108"

SPEEDWALK

*A Registered Trade Name

STEPHEN S-A ADAMSON MFG. CO.

AURORA, ILLINOIS LOS ANGELES, CALIF.
BELLEVILLE, ONTARIO, CANADA

Get all the facts

write for detailed information concerning S-A SPEEDWALK passenger conveyor systems. A colorful illustrated brochure is available for the asking.

Stephens-Adamson Mfg. Co.
27 Ridgeway Ave., Aurora, Illinois

Gentlemen:
Kindly send me detailed data on S-A SPEEDWALK systems

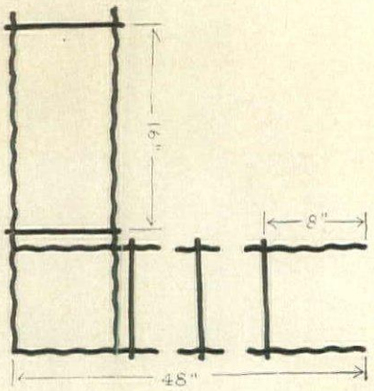
Name.....
Title.....
Company.....
Address.....
City.....Zone...State.....

PRODUCTS

Continued from p. 242

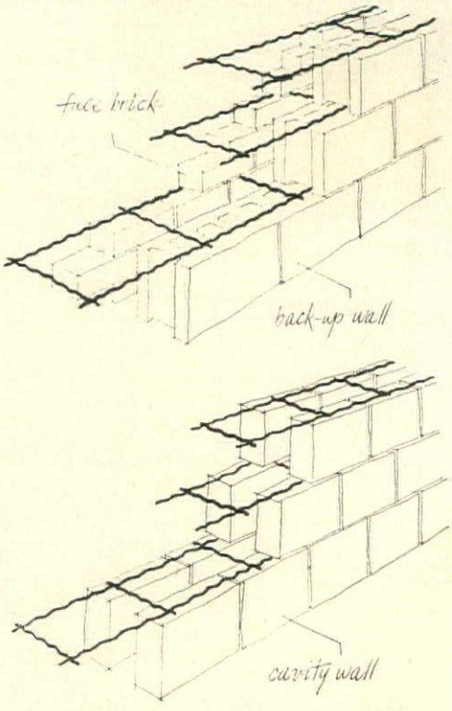
MORTAR JOINT REINFORCING doubles stress resistance of masonry wall

Corner and stretcher sections of heavy duty mortar joint reinforcement for 4″ to 12″ brick and concrete block walls are now being produced by Adrian Peerless in addition to the firm's standard weight *Wal-Lok* reinforcing. The new *Superstandard* grade, with knurled and serrated 3/16″ stretcher



bars of 100,000-lb. tensile-strength steel and cross bars of 9-ga. steel, offsets wall strains brought on by changes in masonry moisture content, and differences in inside and outside temperatures. It is also reported to give the masonry wall twice the resistance to stresses caused by foundation failures and water or wind pressures. For efficient mortar anchorage, the welded cross bars are designed to project but are galvanized to prevent any corrosion should they be exposed. (If the stretcher bars were galvanized they would slip, so they are not treated.)

In tests conducted by the University of Toledo's Research Foundation, two 3′-4″ x 9′-4″ panels were made up of 8″-high cin-



der block, one with *Superstandard*, the other without. After a week of setting time, the reinforced panel was found to withstand 2½ times the load the unreinforced could take with one third the deflection. In shrinkage-cracking tests on three panels, the first, unreinforced, developed a large crack. The second, reinforced every third course, had one long and two short cracks; and the third, reinforced every course, had several tiny cracks.

Factory formed 48″ x 48″ corner sections not only save time on the job, but eliminate any jurisdictional difficulty where bricklayers are reluctant to do the metal cutting necessary to form corners from straight rods. *Wal-Lok Superstandard* reinforcing comes in 12′ lengths, 300′ to the bundle. An extra heavy grade, ⅜″ in diameter, is also available. Prices for the different types range from $40 to $60 per 1000 lin. ft.

Manufacturer: Adrian Peerless Inc., 1401 E. Michigan St., Adrian, Mich.

continued on p. 254

Handles All Inside Calls

. . . and does it handsomely

ARCHITECTS:
Dealer Consultation—Kellogg franchised representatives, located in all principal cities in the U.S. and Canada, are trained and experienced in intercommunications. They're qualified to give you valuable assistance in all stages of planning for internal communication.

Automatic **SELECT-O-PHONE** goes direct—requires no operator—gives you instant "priority service" between two, three or more parties. Conversations are always private. All stations call each other at the quick flick of a dial. New **SELECT-O-PHONE INSTRUMENT** is handsome evidence of continued progress and leadership by Kellogg Intercommunication Systems! Completely new—features instant-action dial and ringing button—complimentary brown finish enhances any desk.

SYSTEM REGISTRATION—Under Kellogg's exclusive Registration Warranty, your client's system is always assured of proper maintenance and service.

FAST!. . . AUTOMATIC!. . . GUARANTEED!
KELLOGG INTERCOMMUNICATION SYSTEMS FOR ANY BUSINESS, ANY BUDGET.

KELLOGG SELECT-O-PHONE (illustrated above)—Recommended for systems of up through 55 stations.
KELLOGG RELAYMATIC for systems requiring more than 55 stations. Provides for any future expansion!
SELECT-O-PHONE EXECUTIVE STATION, especially designed for Executive use, puts key men at your fingertips! No buttons to hold—leaves both hands free.

KELLOGG DIVISION OF IT&T
Intercommunication Systems
The Inside Voice of Business

KELLOGG SWITCHBOARD AND SUPPLY CO.
A Division of International Telephone and Telegraph Corporation

Send for FREE INTER-COMMUNICATIONS ARCHITECTURAL PLANNING KIT

Kellogg Switchboard and Supply Company
Commercial Products Dept. 76K
79 West Monroe Street, Chicago 3, Illinois
Send me your free INTERCOMMUNICATIONS ARCHITECTURAL PLANING KIT.

Name_____
Company_____
Address_____
City_____ Zone____ State_____

MR. ARCHITECT:

Get uniform Wood Paneling of Extra Beauty with Panels of . . .

FINELINE

Trade Mark Reg. U. S. Patent Pending

"FINELINE", the outstanding new veneer development in years, guarantees rich wood paneling with UNIFORM beauty! In addition, plywood panels made of "FINELINE", save the architect time and bother; they save the client money!

Because "FINELINE" is a manufactured wood veneer, produced through an exclusive new process developed by Williamson, there is no need for the architect to spend long hours seeking matching wood panels! "FINELINE" panels are made to match!

"FINELINE" has been tested in leading laboratories for durability and finish under all conditions. Panels of "FINELINE" have added unusual beauty to architectural jobs in hotels, public buildings, banks, and homes (details supplied on request).

Write or call either of firms below for sample kits of "FINELINE".

Available in
PENCIL STRIPE WALNUT
NATURAL BIRCH
MAHOGANY
COMB GRAIN OAK

FINELINE

The WILLIAMSON VENEER COMPANY
Manufacturers of "FINELINE" VENEERS
Cockeysville, Maryland
Phone: Cockeysville 750

OLD DOMINION PLYWOOD CORPORATION
Manufacturers of "FINELINE" PANELING
Bristol, Virginia
Phone: North 1096

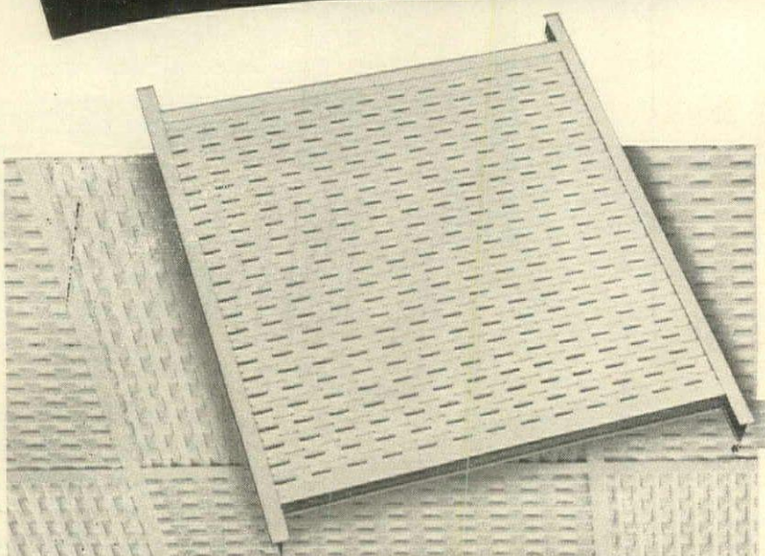
Another Acousti-Celotex Exclusive!

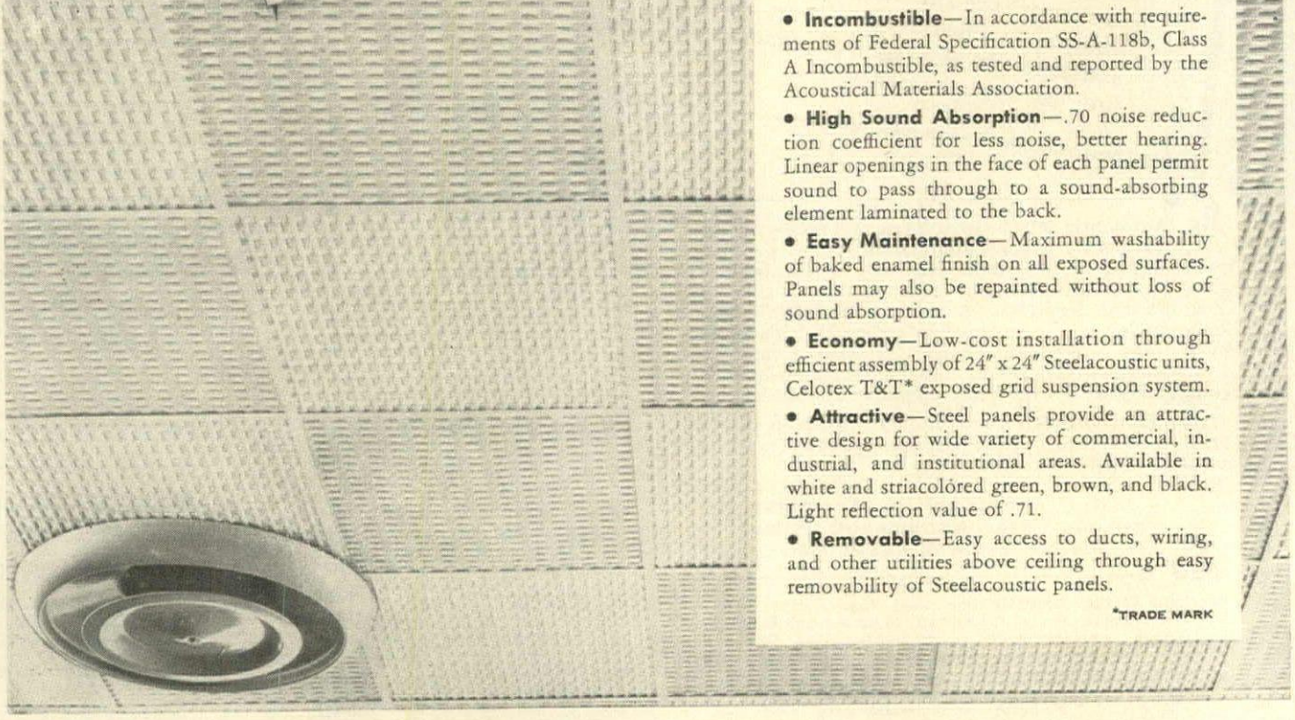
ACOUSTI-CELOTEX
REGISTERED U. S. PAT. OFF.

STEELACOUSTIC
TRADE MARK

PANELS

new, economical sound conditioning material and suspension system





Note these Outstanding STEELACOUSTIC Features!

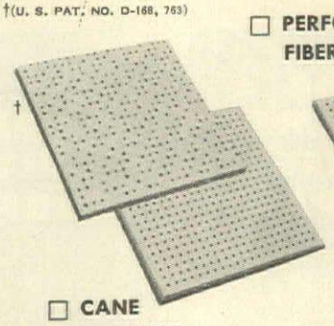
- **Incombustible**—In accordance with requirements of Federal Specification SS-A-118b, Class A Incombustible, as tested and reported by the Acoustical Materials Association.
- **High Sound Absorption**—.70 noise reduction coefficient for less noise, better hearing. Linear openings in the face of each panel permit sound to pass through to a sound-absorbing element laminated to the back.
- **Easy Maintenance**—Maximum washability of baked enamel finish on all exposed surfaces. Panels may also be repainted without loss of sound absorption.
- **Economy**—Low-cost installation through efficient assembly of 24″ x 24″ Steelacoustic units, Celotex T&T* exposed grid suspension system.
- **Attractive**—Steel panels provide an attractive design for wide variety of commercial, industrial, and institutional areas. Available in white and striacolored green, brown, and black. Light reflection value of .71.
- **Removable**—Easy access to ducts, wiring, and other utilities above ceiling through easy removability of Steelacoustic panels.

*TRADE MARK

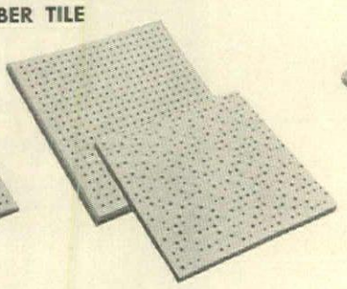
FOR FULL INFORMATION ON THESE AND OTHER CELOTEX ACOUSTICAL PRODUCTS . . .

The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Illinois.

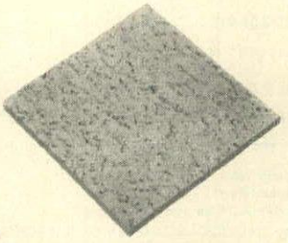
†(U. S. PAT. NO. D-168, 763)



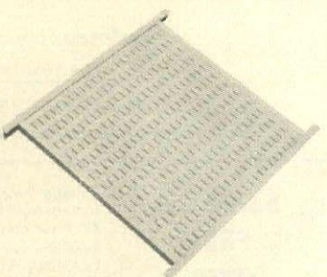
† ☐ CANE FIBER TILE



☐ PERFORATED MINERAL FIBER TILE



☐ CELOTONE® FISSURED MINERAL FIBER TILE



☐ STEELACOUSTIC PANELS

Architects Please Note!

These Acousti-Celotex Distributors have STEELACOUSTIC Panels to Show You Now!

ALABAMA
Birmingham 3 ..... Acousti Engineering of Alabama, Inc.
New Orleans 12, La. ..... Acoustics & Specialties Co.

ARIZONA
Phoenix, Tucson ..... Laing-Garrett Construction Specialties, Inc.

ARKANSAS
Little Rock ..... Acoustics & Specialties Co.
Memphis 3, Tenn. ..... Acoustics & Specialties, Inc.

CALIFORNIA
Bakersfield ..... The Harold E. Shugart Co. of Bakersfield
Los Angeles 38, The Harold E. Shugart Co., Inc.
Fresno, Oakland 6, Sacramento 14,
San Francisco 3, San Jose, Stockton ..... Western Asbestos Co.
San Diego 1, Baird-Hackett Sound Control, Inc.

COLORADO
Denver 1 ..... Lauren Burt, Inc. of Colorado

CONNECTICUT
E. Hartford 8 ..... C. A. Bader Co.

DELAWARE
Baltimore 11, Md. ..... The Hampshire Corp.
Philadelphia 31, Pa. ..... Jacobson & Co., Inc.

DISTRICT OF COLUMBIA
Bladensburg, Md. ..... The Hampshire Corp.

FLORIDA
Jacksonville 4, Tampa 5, Orlando ..... Acousti Engineering Co. of Fla.
Miami 42 ..... Acousti Engineering of Miami, Ltd.
New Orleans 12, La. ..... Acoustics & Specialties Co.

GEORGIA
Atlanta 3 ..... Acousti Engineering Co.
Chattanooga 4, Tenn. ..... Hale & Wallace, Inc.

IDAHO
Salt Lake City, Utah ..... Lauren Burt, Inc.
Spokane 10, Wash. ..... Noise Control of Spokane, Inc.

ILLINOIS
Chicago 10, Peoria, Rockford ..... James L. Lyon Co.
Evansville, Ind. ..... Hugh J. Baker & Co.
Davenport, Iowa ..... Acousti-Celotex Division
..... Perma-Stone Des Moines, Inc.
St. Louis 3, Mo. ..... Henges Co., Inc.

INDIANA
Evansville, Fort Wayne 7, Wabash,
Indianapolis 6 ..... Hugh J. Baker & Co.
Chicago 10, Ill. ..... James L. Lyon Co.
Louisville 2, Ky. ..... E. C. Decker & Co. of Ky., Inc.
Cincinnati 2, Ohio ..... E. C. Decker & Co., Inc.

IOWA
Des Moines, Davenport ..... Acousti-Celotex Division
..... Perma-Stone Des Moines, Inc.
Sioux City; Omaha, Neb. ..... Earl S. Lewis & Co., Inc.

KANSAS
Wichita; Kansas City 8, Mo. ..... Henges Co., Inc.

KENTUCKY
Louisville 2 ..... E. C. Decker & Co., of Ky., Inc.
Cincinnati 2, Ohio ..... E. C. Decker & Co., Inc.
Evansville, Ind. ..... Hugh J. Baker & Co.
Knoxville, Tenn. ..... Tri-State Roofing Co.
Nashville 2, Tenn. ..... John W. McDougall Co.

LOUISIANA
New Orleans 12, Shreveport ..... Acoustics & Specialties Co.

MAINE
Cambridge 42, Mass. ..... Pitcher & Co., Inc.

MARYLAND
Baltimore 11, Bladensburg ..... The Hampshire Corp.

MASSACHUSETTS
Cambridge 42 ..... Worcester, Pitcher & Co., Inc.
E. Hartford 8, Conn. ..... C. A. Bader Co.

MICHIGAN
Dearborn, Lansing, Saginaw ..... R. E. Leggette Co.
Grand Rapids ..... Leggete-Michaels Co.
Green Bay, Wis. ..... Edward T. Ver Halen, Inc.

MINNESOTA
Minneapolis 15, Duluth ..... Insulation Sales Co., Inc.

MISSISSIPPI
Jackson; Memphis 3, Tenn. ..... Acoustics & Specialties, Inc.
New Orleans 12, La. ..... Acoustics & Specialties Co.

MISSOURI
Kansas City 8, St. Louis 3 ..... Henges Co., Inc.

MONTANA
Spokane 10, Wash. ..... Noise Control of Spokane, Inc.

NEBRASKA
Omaha 2 ..... Earl S. Lewis & Co., Inc.
Denver 1, Colo. ..... Lauren Burt, Inc. of Colorado

NEVADA
Sacramento 14, Calif. ..... Western Asbestos Co.
Salt Lake City 4, Utah ..... Lauren Burt, Inc.
Phoenix, Ariz. ..... Laing-Garrett Construction Specialties, Inc.

NEW HAMPSHIRE
Cambridge 42, Mass. ..... Pitcher & Co., Inc.

NEW JERSEY
Elizabeth 4; Philadelphia 31, Pa. ..... Jacobson & Co., Inc.

NEW MEXICO
Albuquerque, R. E. Leggette Co. of New Mexico
El Paso, Texas ..... Southwest Acoustical Co.

NEW YORK
Albany, Rochester 10, Syracuse 3 ..... Collum Acoustical Co., Inc.
Buffalo 2, Jamestown ..... Western New York Collum Acoustical Corp.
New York 17 ..... Jacobson & Co., Inc.

NORTH CAROLINA
Charlotte 3 ..... Acousti Engineering of Carolinas, Inc.
Norfolk, Va. ..... The Hampshire Corp.

NORTH DAKOTA
Minneapolis 15, Minn. ..... Insulation Sales Co., Inc.

OHIO
Cincinnati 2, Dayton 2 ..... E. C. Decker & Co. Inc.
Cleveland 13, Columbus 8, Akron 4:
Pittsburgh 12, Pa. ..... The George P. Little Co., Inc.

OKLAHOMA
Oklahoma City 5, Tulsa ..... Oklahoma Acoustical & Specialties Co.

OREGON
Portland 10 ..... Noise Control of Oregon, Inc.

PENNSYLVANIA
Philadelphia 31, Harrisburg ..... Jacobson & Co., Inc.
Pittsburgh 12 ..... The George P. Little Co., Inc.
Buffalo 2, N. Y. ..... Western New York Collum Acoustical Corp.

RHODE ISLAND
Providence ..... Pitcher & Co., Inc.

SOUTH CAROLINA
Charlotte 3, N. C. ..... Acousti Engineering of Carolinas, Inc.

SOUTH DAKOTA
Minneapolis 15, Minn. ..... Insulation Sales Co., Inc.
Denver 1, Colo. ..... Lauren Burt, Inc. of Colo.

TENNESSEE
Memphis 3 ..... Acoustics & Specialties, Inc.
Knoxville ..... Tri-State Roofing Co.
Chattanooga 4 ..... Hale & Wallace, Inc.
Nashville 2 ..... John W. McDougall Co.

TEXAS
Abilene ..... Callaway's
Midland ..... West Texas Brick & Tile Co.
Amarillo ..... Jenkins Brick & Supply Co.
Dallas ..... The Celotex Corp.
El Paso ..... Southwest Acoustical Company

UTAH
Salt Lake City 4 ..... Lauren Burt, Inc.

VERMONT
Burlington, Rutland ..... C. A. Bader Co.

VIRGINIA
Richmond 22, Roanoke 2, Norfolk ..... The Hampshire Corp.

WASHINGTON
Seattle 3 ..... Noise Control of Seattle, Inc.
Spokane 10 ..... Noise Control of Spokane, Inc.

WEST VIRGINIA
Cincinnati ..... E. C. Decker & Co.
Charleston ..... The Hampshire Corp.
Pittsburgh 12, Pa. ..... The George P. Little Co., Inc.
Baltimore 11, Bladensburg, Md. ..... The Hampshire Corp.

WISCONSIN
Milwaukee 2, Green Bay, Madison 1 ..... Edward T. Ver Halen, Inc.
Minneapolis 15, Minn. ..... Insulation Sales Co., Inc.

WYOMING
Denver 1, Colo. ..... Lauren Burt, Inc. of Colorado
Salt Lake City 4, Utah ..... Lauren Burt, Inc.

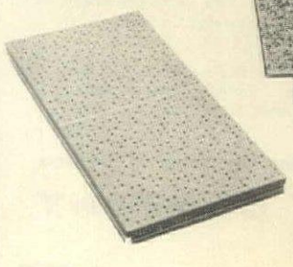
IN CANADA
Halifax, Saint John, Montreal (Home Office), Ottawa, Toronto, Winnipeg, Regina, Calgary, Edmonton, Vancouver ..... Dominion Sound Equipments, Ltd.

ACOUSTI-CELOTEX REGISTERED U. S. PAT. OFF. TRADE MARK *Sound Conditioning*

Products for Every Sound Conditioning Problem

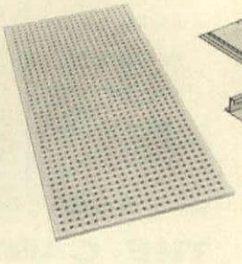
CALL YOUR ACOUSTI-CELOTEX DISTRIBUTOR OR MARK THIS CHECK LIST AND MAIL TO:
In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec.

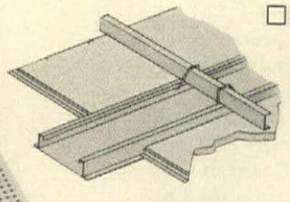
☐ **ACOUSTEEL® METAL PAN ASSEMBLY**



☐ **VARITEX® FINISH CANE FIBER TILE**

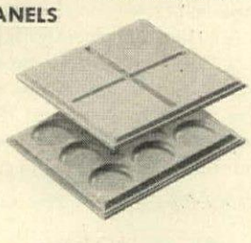
☐ **CAVITY TILE**





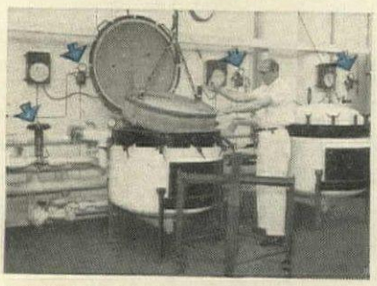
☐ **ACOUSTI-LINE® SUSPENSION SYSTEM**

☐ **ACOUSTI-LUX* AND LUMICEL* TRANSLUCENT PANELS**

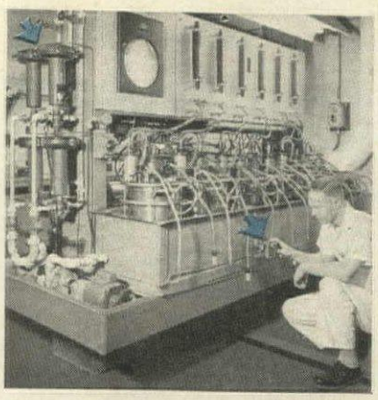


(U. S. PAT. NOS. 2,218,992 AND 2,710,335)

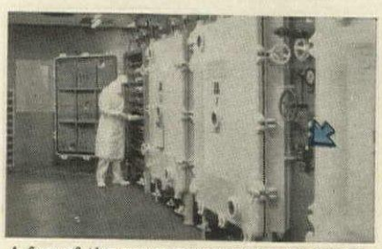
Shaker room and incubator in Fermentation Department. Powers Temperature Recording Controllers are used here.



Ampoule Sterilizers regulated by Powers No. 252 Pressure Regulators and Valves.



Fermentation process in research pilot plant controlled by Powers ACCRITEM Regulators and FLOWRITE Valves.



A few of the many vacuum dryers equipped with Powers Temperature Controllers.

Below: Air Conditioned Room for Board of Directors and executive conferences.

POWERS

AUTOMATIC temperature, humidity and pressure control

.... helps Abbott Laboratories bring better health to millions

Heating and Air Conditioning in many of the above buildings are automatically regulated by Powers Temperature and Humidity Control Systems.

Research at Abbott's has paid off in an unbroken dividend record, numerous stock dividends and splits. Many of their famous products such as Nembutal, Pentothal, Erythrocin, Iberol, Vi-Daylin, Selsun and Sucaryl have been developed in laboratories equipped with Powers control.

Versatility of Powers control used at Abbott's is indicated by some of the applications shown here and in the following installations: Air conditioning control systems for auditorium with 900 seating capacity, executive offices and dining room, cafeteria and animal rooms; also controls for tablet machines, demineralized water heaters, autoclaves and many other applications.

When you need automatic control for temperature, humidity or pressure, call your nearest Powers office or write us direct. An experienced Powers engineer will gladly help you select the right type of control for your requirements.

(c42a)

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*

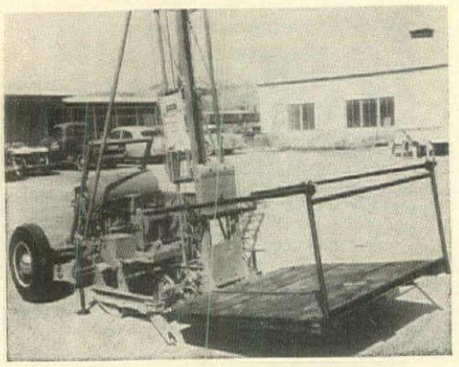
Over 60 years of Automatic Temperature and Humidity Control

PRODUCTS

Continued from p. 248

OUTDOOR ELEVATOR comes on job ready to climb

A portable, automatic construction elevator, the *Tusky Hoist* can be towed by truck or car to the job site, fully assembled. Set-up time averages about three minutes. Ready for towing, the 2,650-lb. hoist is 26′ long, 96″ high, 70″ wide. It stands free up to 24′; with extra 11′ sections, guyed, can extend up to 100′. A two cylinder gas engine coupled to a simple hydraulic unit raises or lowers the platform loaded with 1000 lbs. at the rate of 100′ per minute. The hoist has a positive safety catch, and an automatic governor prevents overloading. An alternate standby system permits the operator to work the hoist manually from platform or ground level. Cost of the basic unit is about $3,000 west of the Mississippi; $100 more, east. The manufacturer points out that in less than a year of normal use the *Tusky Hoist* can save 900 man hours, and so in effect pay for itself.



Manufacturer: Tubular Structures Corp. of America, 2960 Marsh St., Los Angeles 39, Calif.

LOADING RAMP rides with changing truck bed heights

Globe's *Trans-O-Matic Ramp* features a built-in floating action which permits it to adjust automatically to any height truck bed. As weight changes alter the truck bed height, a hydraulic mechanism, contained between supporting members beneath the ramp, raises or lowers the lip of the ramp as much as 15″ from dock level to follow the truck bed. To prevent any sudden drop of the ramp when the truck pulls away, an automatic safety switch locks the ramp instantly in place. When not used for loading, the *Trans-O-Matic* may be set at dock level for cross-over traffic or for use as a storage platform. Five cast steel hinges, welded to the mounting plate, provide continuous support at the dock edge.

Installation involves no excavation or ground ductwork; and power is supplied by wiring to any 110-v. A-C line. The ramp is shipped semi-assembled, complete with dock hinge and pushbutton controls. The 6′ x 8′-4″ platform has a nonskid surface of ⅜″ checkered steel deck plate. The *Trans-O-Matic* sells for about $910.

Manufacturer: Globe Hoist Co., E. Mermaid Lane at Queen St., Philadelphia 18, Pa.

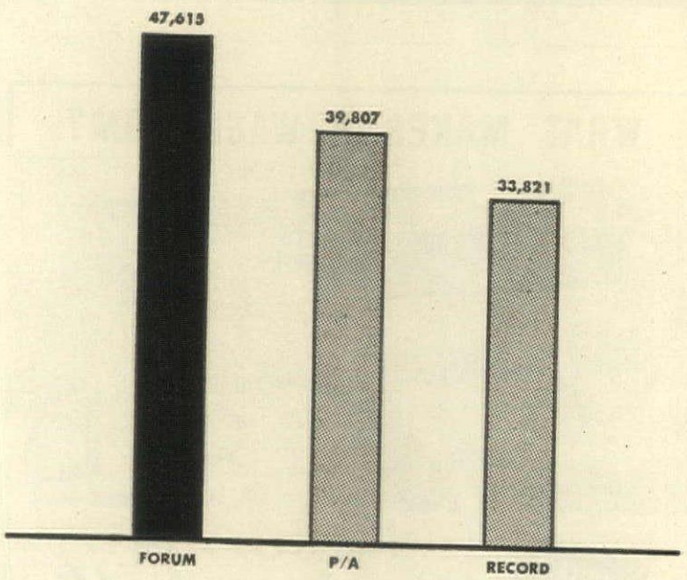
continued on p. 260

Let's get one thing straight!

FORUM has the largest circulation in its field

Here are the facts.

Latest available figures published by the Audit Bureau of Circulations show the following paid circulation averages for the last six months of 1954:



FORUM's circulation leadership isn't new; it has led the architectural magazines in circulation ever since 1935.

Twenty years of continuous leadership is no accident

architectural **FORUM**
the magazine of building

Editorial Offices:
9 Rockefeller Plaza
New York 20, N.Y.

Subscription offices:
540 N. Michigan Avenue
Chicago 11, Illinois

this coupon brings you basic data on the newest and best in building entrances

INTERNATIONAL STEEL COMPANY
ENTRANCE DIVISION
2062 Edgar Street, Evansville 7, Indiana

Send me without obligation my personal copy of the New International PACKAGED STAINLESS STEEL ENTRANCE MANUAL.

NAME and POSITION_____
FIRM_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

NOW...

"Packaged" Stainless Steel
SWING DOOR ENTRANCES

The wide experience and individual skills of International Steel — gained through 75 years of specialization in the development of doors for American business and industry — today bring you an entirely new concept in swing door entrances. Beautifully fashioned of stainless steel, and available for the first time as complete "packages," these newest International innovations permit smartest customized effects at quantity-production savings. But the most important difference is *pre-proving* . . . careful pre-assembly and pre-fitting of accessories by International to insure fast, accurate, economical installations.

However "different" the entrance need, or difficult the problem, you have a standing invitation to make International Steel your partner-in-planning. Meanwhile, mail the coupon above for a complete handbook of helpful data compiled by America's entrance specialists.

See Sweet's Architectural File or Classified Section of Your Telephone Directory

ENTRANCE DIVISION
2062 EDGAR ST., EVANSVILLE 7, IND.

INTERNATIONAL STEEL COMPANY

ANOTHER ARCHITECTURAL ACHIEVEMENT USING ALTEC LANSING SOUND EQUIPMENT

The Altec Lansing sound system which serves this magnificent new Mormon Temple is similar to the systems found in more and more of the country's finest buildings. Architects have come to rely on Altec Lansing sound equipment not only for quality but for long term operating economy. Superior craftsmanship and stringent production testing guard this reputation for leadership in all phases of sound engineering.

Listed in the Blue Book of Satisfied Altec Customers are the newest and finest public buildings, hotels, department stores and schools. Designed by skilled Altec Lansing engineers and installed by a qualified sound engineering contractor, Altec Lansing equipment insures highest quality performance through years of trouble-free service. See our catalog in the Architectural File (32a/AL) and in the Industrial Construction File (12j/AL) of Sweet's Catalog or write Dept. 11-F.

Outstanding on the West Los Angeles skyline is the beautiful new Latter Day Saints Temple that overlooks the city from the hills of Westwood. Graceful architecture and construction set it apart as a building of exceptional beauty—an edifice with which Altec Lansing is proud to be associated.

ALTEC LANSING CORPORATION

A SOUND REPUTATION SECOND TO NONE!

Dept. 11-F
9356 Santa Monica Blvd., Beverly Hills, Calif.
161 Sixth Avenue, New York 13, N.Y.

+ 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

WHAT MAKES A WASHROOM?

NEW! STAINLESS STEEL *Lathurshelf*

Combination SHELF and SOAP DISPENSER

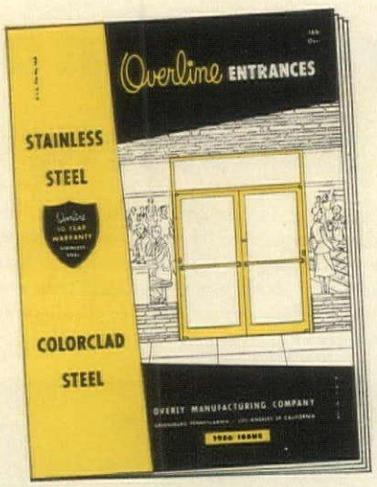
A public washroom is not complete unless it includes the conveniences for which it is intended. Two necessary conveniences are a soap dispenser and a shelf for personal articles.

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



now ready !

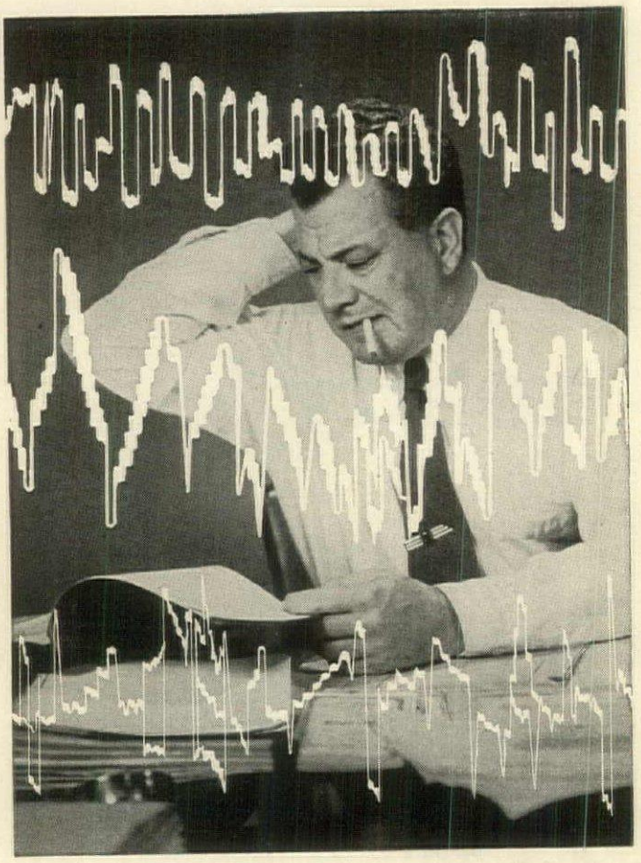
New Overline® entrance catalog... covering "packaged" units.....in both Stainless and Colorclad steels. Write us at once for our new catalog 701.

You will find this catalog a big help in specifying and detailing Overline packaged stainless steel and Colorclad steel entrances. Overline Entrances are available in standard, semi-standard, and custom units. Stainless steel in the new OV-400 lustrous satin finish, created exclusively by Overly, plus 11 appealing colors, gives you a wide range of finishes to select from. Send today for catalog.

10-year warranty on stainless units !

Overly Manufacturing Company

Greensburg, Pennsylvania Los Angeles 39, California



What should an architect know about SOUND?

What are its principal advantages?
Why are notable firms using it?

How many types of systems are there?

What equipment manufacturer has had the most experience?

Who is best qualified to take over layout installation details?

What company can assure expert service for any project?

That's *all* he needs to know . . . and the answers are in this new booklet "Sound in Industry." The coupon will bring your copy by return mail.

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

SOUND PRODUCTS
RADIO CORPORATION of AMERICA
CAMDEN, NEW JERSEY
In Canada: RCA VICTOR Company Limited, Montreal

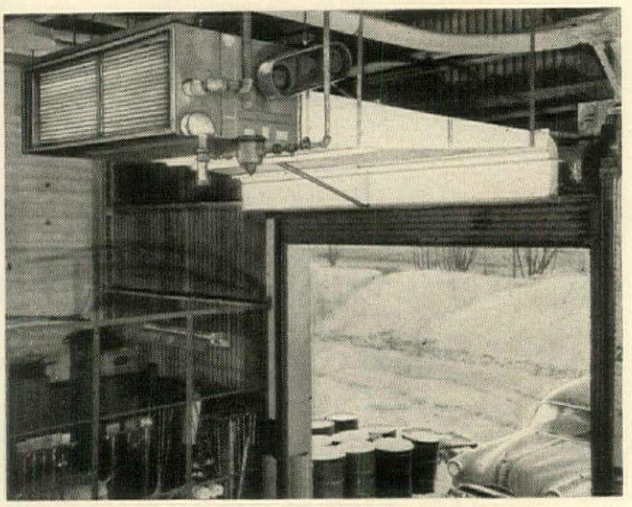
Sound Products Dept. Y-269, Building 15-1
Radio Corporation of America, Camden, N. J.

☐ Please have an RCA Distributor Sound Specialist call on us.
☐ Send me the new RCA Booklet "Sound in Industry."

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

Carrier knows heating

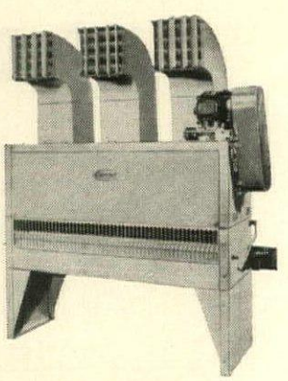
Over fifty years of leadership in air conditioning have given Carrier unmatched experience in the control of temperature—heating as well as cooling. Yes, Carrier knows heating by experience—and all this engineering skill and leadership contributes to the superiority of Carrier Unit Heaters.



Heat Diffuser used to "Air Blanket" Door Openings

This compact, versatile unit "blankets" door openings with a wall of warm air. Unique down-flow, warm-air outlet can be installed to extend across the top of the door. A full-width air blanket blasts warm air all the way to the floor. Unit can be thermostatically controlled to operate only while door is open. It keeps cold out, prevents drafts and saves fuel. It is ideal for open shipping doors. Sectionalized construction makes installation easy.

Carrier Heat Diffusers can be used for many other applications, industrial or commercial. They distribute heat evenly at full or partial loads. Positive control of heat saves fuel through flow control of steam or hot water, or damper control of air. Sectionalized construction permits floor mounting, vertical or horizontal suspension. Sizes and arrangements for 80,000 to 1,620,000 Btu/hr; 1500 to 31,000 cfm.



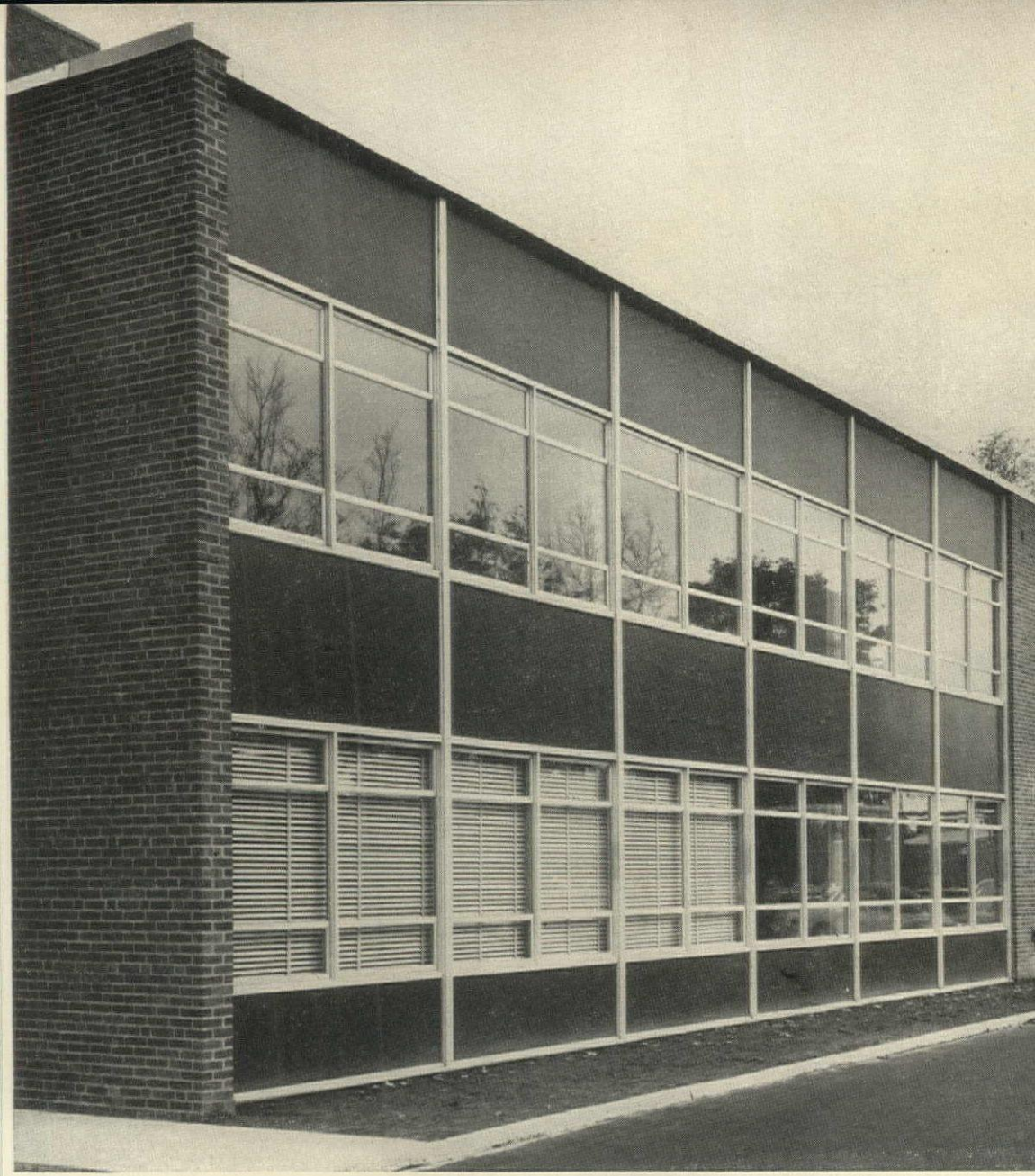
WRITE or USE COUPON for complete information

Carrier

air conditioning
refrigeration
industrial heating

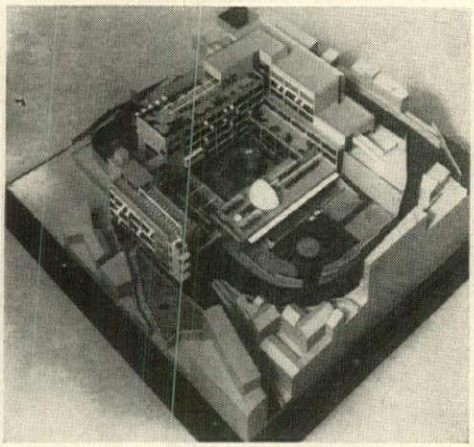
CARRIER CORPORATION, 335 S. Geddes St., Syracuse, New York
Please send folders on features and selection data for Carrier Heating and Ventilating Units and Heat Diffusers.

Name _____
Business _____
Address _____



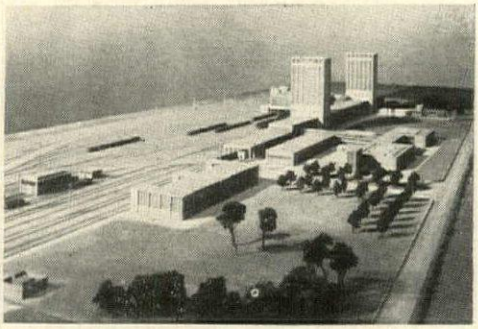
Mathilde Steinam, Stella S. Housman Wing, Monmouth Memorial Hospital, Long Branch, N. J. Architects: Ferrenz & Taylor, New York City. Contractors: Chas. B. Hembling & Son, Red Bank, N. J. Lupton Curtain-Wall System Type G. Width Modules: 8'8". Ventilators project in and project out, with fixed glass between. Opaque Panels: outside, blue-green porcelain enamel flecked with lighter spots, etched aluminum inside. Opaque panels are insulated — made of two components with air space between for drainage. Outside

Add Lupton
Your Curtai



ARCHITECTURAL MODELS London-tailored to US blueprints

Architects and engineers who want to make their plans graphically clear to clients and contractors, and are also eager to save money and foster foreign trade can satisfy all three instincts by turning to a London firm for modest-priced, precision-made scale models. From blueprints sent via its US representative, Hunting Aero-surveys Ltd. not only reproduce to scale anything from a single building to a city, but also make 3-D models of reinforced concrete framework and cutaways of processing plants. A miniature of the Crystal Palace (p. 202) for an exhibit cost $1,600. The factory model above was $800; the one below, $1,000. Due to the higher cost of



US skilled labor, prices here for comparable work would be about double these figures. The firm has had wide experience in packing and shipping finished models to arrive intact anywhere in the world.

US Representative: Lord Pentland, American British Electric Co., 57 Park Ave., N.Y.

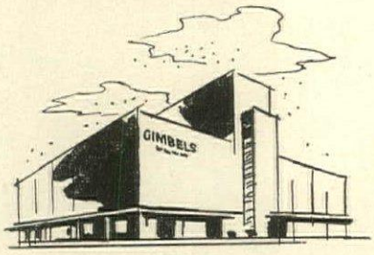
job — so right on the job

TECHNICAL PUBLICATIONS

"Everybody but Everybody"*

uses St. Regis PANELYTE

including Gimbels!



St. Regis Panelyte in beautiful marl white pattern on both vertical and horizontal surfaces in Gimbels new branch store in the Cross County Center.

Raymond Loewy Corporation, famed industrial designers and store planners, specified St. Regis Panelyte for the Smoke Shop in their design for the fabulous new Gimbels Westchester store in the Cross County Center, Yonkers, New York.

A growing number of leading architects are discovering increasingly wide applications for St. Regis Panelyte . . . wherever beauty and durability must be combined on vertical and horizontal surfaces.

Write for Technical Data* and sample chips to Architects' Consulting Service Department. Panelyte Division, St. Regis Paper Company, Sales Subsidiary: St. Regis Sales Corporation, 230 Park Avenue, New York 17, N. Y.

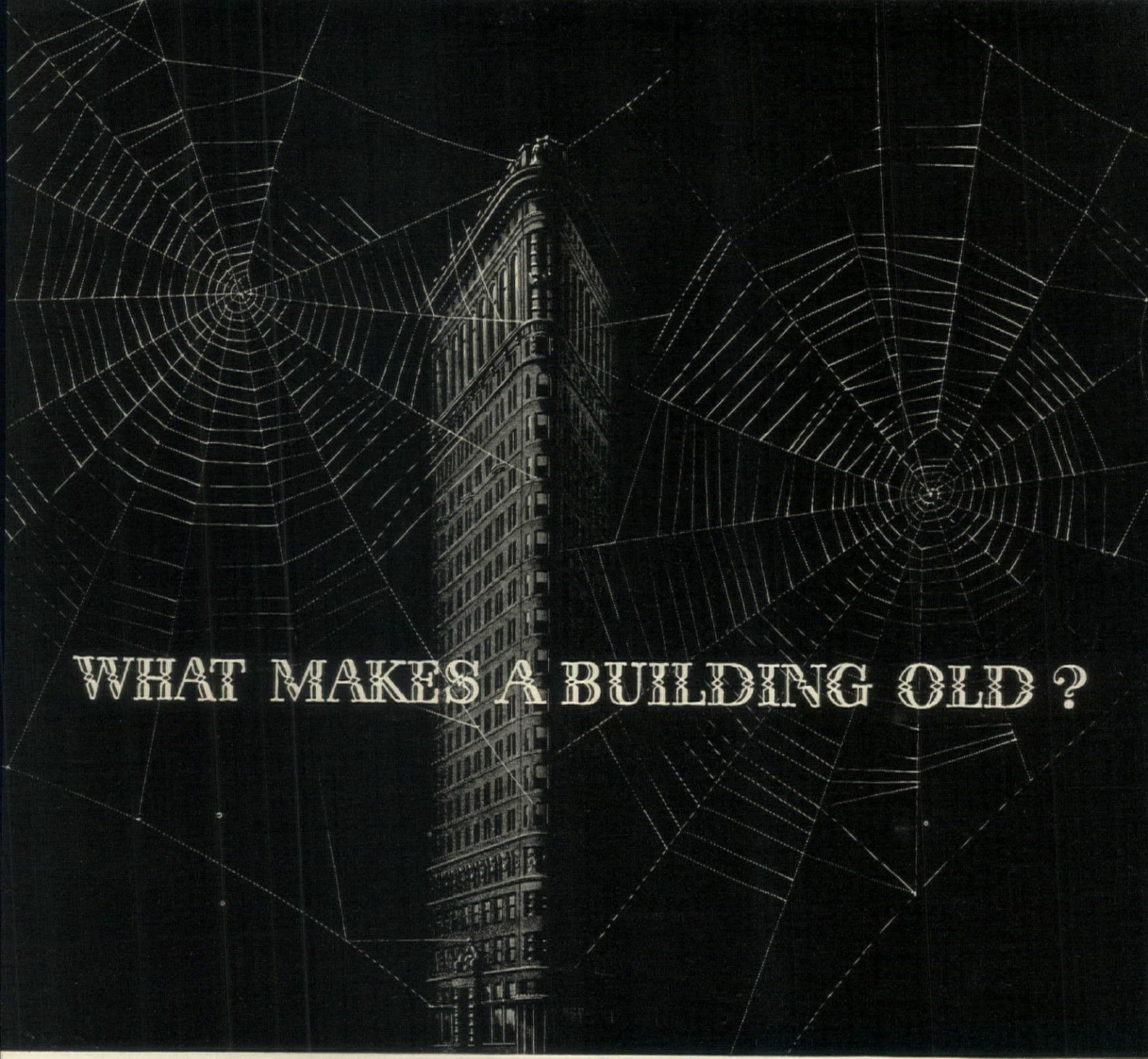
See St. Regis Panelyte in SWEET'S Architectural File $\frac{13a}{5a}$.

*Performance standards set for the industry by the National Electrical Manufacturers' Association for thermo-setting decorative laminates.

SR St. Regis® PANELYTE®

the durable, decorative surface

*"NOBODY BUT NOBODY UNDERSELLS GIMBELS" *has been for years the distinctive and successful slogan of this great retail institution... whose newest store is the talk of the architectural world*



...and what keeps a building young?

What is it that keeps some buildings "young" . . . always with a waiting list and never a vacancy . . . while other structures half their age are regarded as old? You generally find the answer in a *management* that maintains the building properly . . . and behind that, an *architect* who appreciated the importance of designing for "perpetual youth."

Because the rest room is one place where a building is most likely to show its age, smart architects today plan this area with particular care. They specify off-the-floor plumbing fixtures in all major new buildings. These not only *look* modern . . . they make it easy to maintain hospital-like standards of cleanliness and sanitation. They facilitate redecoration, and give the widest latitude in future desired changes in the structure of floor or wall.

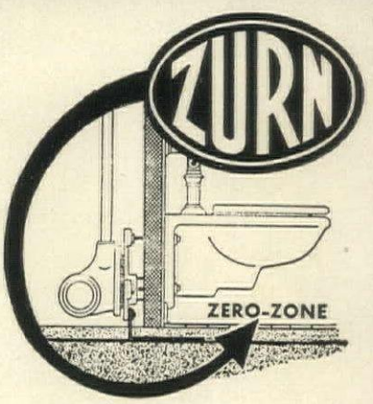
You will find also, in most such installations, that the fixtures are suspended on the ZURN SYSTEM®. The patented, engineered features of the ZURN SYSTEM makes installation easy, alignment simple, and support completely and permanently dependable. All of the stress is carried by the system . . . no stresses are transmitted to the wall. The best indication of how successfully the ZURN SYSTEM does its job is shown by the 800,000 individual fixtures currently supported on the ZURN SYSTEMS.

To help sell your clients on this modern mode in rest room design, write for our free booklet, "Behind Closed Doors." 110-3

J.A. ZURN MFG. CO.

PLUMBING DIVISION

ERIE, PA., U.S.A.

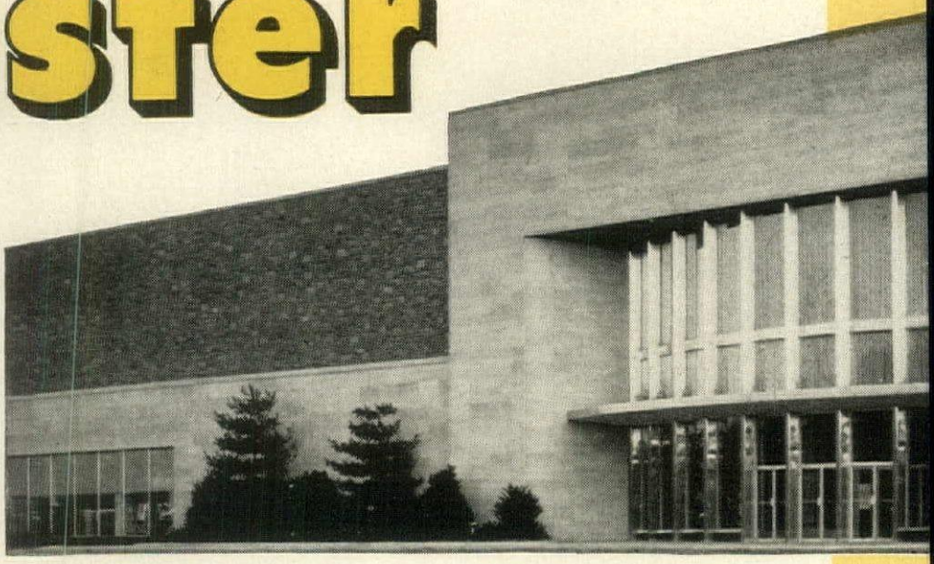


The Zurn Zero Zone® is created by mounting off-the-floor plumbing fixtures on behind-the-wall ZURN SYSTEMS. This permits the highest degree of rest room sanitation to be attained and maintained. All major plumbing manufacturers make fixtures to fit this system.

See our catalog in Sweet's Architectural File and Industrial Construction File.

LATH and plaster

Saves Nearly $60,000 and 30 days



on New Wanamaker Store

• Mr. A. O. Leighton, Partner of Irwin and Leighton, General Contractors, says: "In the new Wanamaker store in Wynnewood, Pa., a lath and plaster ceiling, serving as membrane fireproofing for the floor beams, eliminated the need for individual encasement of structural members with heavy concrete.

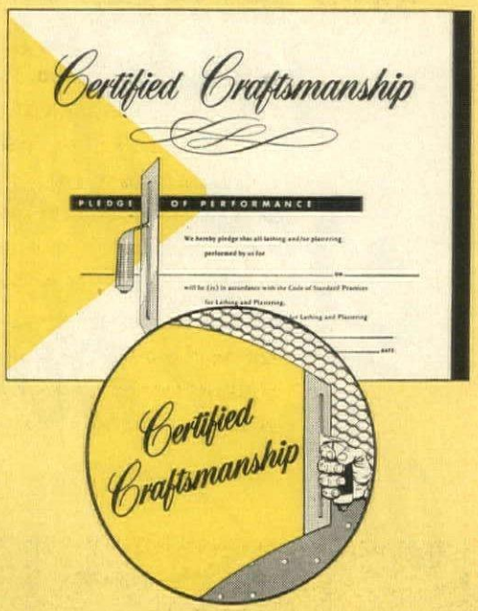
"This construction substantially reduced the dead load weight of the building, thereby cutting framing costs, and reducing the construction time by 30 days. An over-all saving of approximately $60,000.00 was effected!"

The technique of using lath and plaster ceilings to fire protect structural floor beams and "shell" or perimeter fireproofing to protect columns, has advanced sharply in recent years. Fire resistive ratings up to 4 hours for beams and columns are provided with lath and plaster that weighs as little as 12 pounds per square foot. These constructions permit a reduction in dead weight of as much as 50%, thereby reducing the cost of steel framing.

Certified Craftsmanship *IN ACTION...*

• The Certified Craftsmanship Certificate is a written pledge of adherence to work schedules, job cooperation, work of craftsmanship caliber and nationally recognized standards of quality. A certificate is yours for the asking from lathing and plastering contractors adhering to the Code of Standard Practices for Lathing and Plastering.

We suggest a thorough reading of the Code of Standard Practices which appears on the back of every certificate. Ask your lathing and plastering contractor for a copy, or write National Bureau for Lathing and Plastering, 1401 K Street, N.W., Washington 5, D. C.



This is the emblem of the National Bureau for Lathing and Plastering. It symbolizes high standards of job performance and responsibility.

Associated Manufacturers
of Lathing and Plastering Materials
520 N. Michigan Avenue, Chicago 11, Illinois

FINISHING LIME ASSOCIATION OF OHIO • GYPSUM ASSOCIATION
METAL LATH MANUFACTURERS ASSOCIATION
PERLITE INSTITUTE • VERMICULITE INSTITUTE

Edmond F. Venzie, Plastering Contractor presents Certified Craftsmanship Certificate covering Wanamaker Store to Brigadier General Brenton G. Wallace, R.A., and R. R. Fields, A. I. A., Wallace and Warner, Architects.

PRODUCTS

Continued from p. 260

HEATING AND AIR CONDITIONING

Choose Your Own Weather with Unitrane. Trane Co., La Crosse, Wis. 6 pp.

Olaflo Unit Conditioners. American Blower Corp., Detroit 32, Mich. 4 pp.

Multizone Air Conditioning Units. Bul. 805. Bush Manufacturing Co., West Hartford, Conn. 12 pp.

Principles of Warm Air Floor Panel Heating. National Concrete Masonry Assn., 38 S. Dearborn St., Chicago 3, Ill. 22 pp.

Recent Development in Perimeter Heating. Fibre Duct Div., International Oil Burner Co., Spring & Park Aves., St. Louis 10, Mo.

Series 13 Lexington Oil Fired Boilers for Hot Water Water Heating Systems. Bul. 655. Dunkirk Radiator Corp., Dunkirk, N.Y. 4 pp.

Two-Stage Pumps. 52B6105C. Allis-Chalmers Mfg. Co., 1183 S. 70th St., Milwaukee, Wis. 6 pp.

Ventura Fans. Bul. No. 7214. American Blower Corp., Detroit 32, Mich. 4 pp.

Webster Propeller Fan Unit Heaters for Both Steam and Hot Water. Warren Webster & Co., Camden 5, N.J. 24 pp.

ICE SKATING RINKS

Ice Skating Rinks—Their Construction and Maintenance. A. M. Byers Co., Pittsburgh 22, Pa. 32 pp.

INSULATION

Tentative Specifications for Corkboard Thermal Insulation. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. 4 pp.

LIGHTING

Fluor-O-Plex Edge Lighted Signs. Metallic Arts of New England Inc., 150 Broadway, Cambridge 42, Mass. 4 pp.

Lighting Fixture Guide. General Electric Co., Nela Park, Cleveland 12, Ohio. 40 pp. 50¢

Modern Department Store Lighting. Sylvania Electric Products Inc., 1740 Broadway, New York 19, N.Y. 20 pp.

MAINTENANCE

Alcoa Architectural Aluminum: Care During Construction and Cleaning and Maintenance. Two booklets. Aluminum Co. of America, 768 Alcoa Building, Pittsburgh 19, Pa.

Operation and Maintenance Handbooks for Industrial Plants. Factory Handbook Section, Kenneth A. Young Associates, 233 Harvard St., Brookline, Mass.

PARTITIONS

Flexibility in the Co-ordinated Classroom. E. F. Hauserman Co., 7507 Grant Ave., Cleveland 5, Ohio.

PIPES

Transite Pressure Pipe and the Ring-Tite Coupling. Johns-Manville, 22 E. 40th St., New York 16, N.Y. 8 pp.

PLUMBING FIXTURES

The Handling and Care of Enameled Cast Iron Plumbing Fixtures. Plumbing Fixtures Mfrs. Assn., Washington 6, D.C. 16 pp.

Vitreous China Enameled Cast Iron Plumbing Fixtures. Richmond Radiator Co., 16 Pearl St., Metuchen, N.J. 32 pp.

B.F.Goodrich RUBBER FLOOR TILE

Luxurious...

and Economical!

THE JEFFERSON, ST. LOUIS, MO. — A HILTON HOTEL

Today's interior furnishings are more beautiful and serviceable than ever before . . . a trend calling for floor tile with similar characteristics.

Assure your clients of flooring that is beautiful, easy to clean and durable — specify B. F. Goodrich Rubber Floor Tile.

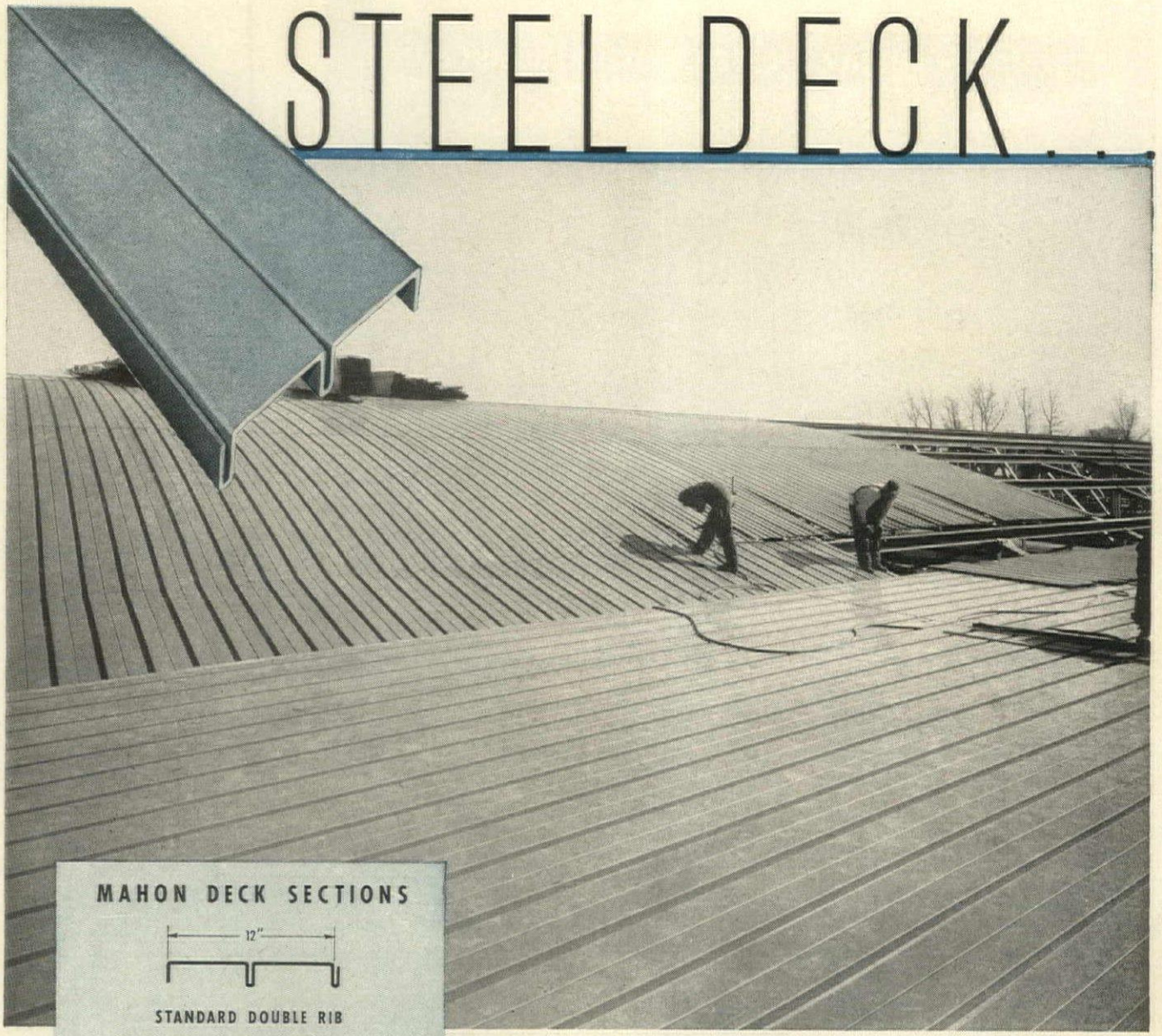
B. F. Goodrich Rubber Floor Tile has *Super Density*, an exclusive feature that provides a smoother surface, eliminates dirt-catching pores, makes floors easier to clean and keep clean. Its *Natural Resiliency* assures quiet comfort underfoot. And it is made in 26 modern colors that blend with any decor.

For color chart and more information, write:
B. F. Goodrich Co., Flooring Division, Dept. AF11, Watertown 72, Mass.

B.F.Goodrich FLOORING PRODUCTS

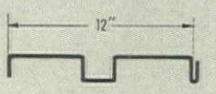
RUBBER TILE • ASPHALT TILE • KOROSEAL TILE • RUBBER COVE BASE • ACCESSORIES

STEEL DECK . . .

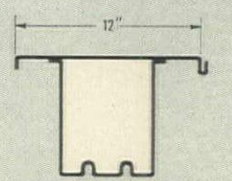


MAHON DECK SECTIONS

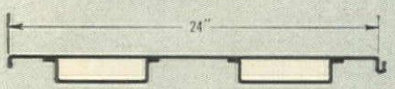
STANDARD DOUBLE RIB



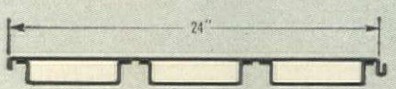
WIDE-FLANGE DOUBLE RIB



LONG SPAN M-DECK
SECTION M1



LONG SPAN M-DECK
SECTION M2



LONG SPAN M-DECK
SECTION M3

The illustration above shows Mahon Wide-flange Double Rib Steel Deck installed over bowstring trusses of a new roller skating rink. Year after year, Steel Deck roofs a greater percentage of new construction . . . and, it will continue to do so, because it weighs less and it costs less than any other type of permanent roof construction. Mahon Steel Deck is now available in the five Sections shown at left. The Long Span M-Deck Sections can be employed either with flat plate up or flat plate down . . . they span from beam to beam, eliminating roof purlins, and, when installed with flat plate up, they produce an attractive beamed ceiling effect. In either position, the bottom metal can be perforated and sound absorbing material inserted in the Cel-Beams to provide a highly effective acoustical ceiling. See Sweet's Files for information, or write for Mahon Catalogs D-56 and M-56.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

SALES ENGINEERING OFFICES in NEW YORK and CHICAGO • Representatives in Principal Cities

Manufacturers of Steel Deck for Roofs, Partitions, and Permanent Floor Forms; Insulated Metal Walls and Wall Panels; M-Floors (Mahon Cel-Beam Floor Systems); Rolling Steel Doors, Grilles and Underwriters' Labeled Automatic Rolling Steel Fire Doors and Fire Shutters.

MAHON

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation of Architectural Forum published monthly at New York, N. Y., for October 1, 1955.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Time Incorporated, 9 Rockefeller Plaza, New York 20, N. Y. Editor-in-Chief, Henry R. Luce, 9 Rockefeller Plaza, New York 20, N. Y.; Editor, Douglas Haskell, 9 Rockefeller Plaza, New York 20, N. Y. Managing Editor, Joseph C. Hazen, Jr., 9 Rockefeller Plaza, New York 20, N. Y.; Business Manager, John J. Frey, 9 Rockefeller Plaza, New York 20, N. Y.

2. That the owner is: Time Incorporated, Time & Life Building, New York 20, N. Y.; that the names and addresses of stockholders owning or holding one per cent or more of total amount of stock are: Henry P. Davison, c/o J. P. Morgan & Company, P. O. Box 1266, New York, N. Y.; William V. Griffin, 20 Exchange Place, New York 5, N. Y.; Irving Trust Company, New York City, successor trustee under the will of Briton Hadden for the benefit of Elizabeth Busch Pool, c/o Irving Trust Company, Custodies Department, 1 Wall Street, New York 15, N. Y.; Margaret Zerbe Larsen, c/o Time Inc., Time & Life Building, Rockefeller Center, New York 20, N. Y.; Roy E. Larsen, c/o Time Inc., Time & Life Building, Rockefeller Center, New York 20, N. Y.; Henry R. Luce, c/o Time Inc., Time & Life Building, Rockefeller Center, New York 20, N. Y., The Henry Luce Foundation, Inc., 9 Rockefeller Plaza, New York 20, N. Y.; Samuel W. Meek, c/o Greenwich Trust Company, Greenwich, Conn.

Stock to the extent of more than one per cent is registered in the names of the following companies, but in each case the company is a nominee for a number of stockholders, no one of whom is known to own more than one per cent: Brown Brothers, Harriman & Company, 59 Wall Street, New York 5, N. Y.; Cobb & Company, c/o New York Trust Company, 100 Broadway, New York 5, N. Y.

3. The known bondholders, mortgagees, and other security holders owing or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases when the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

JOHN J. FREY,
Business Manager.

Sworn to and subscribed before me this 19th day of September, 1955.

EILEEN WALSH (STORZ)
(My commission expires March 30, 1958)

[SEAL.]

Temple Israel, Albany, New York.
Architect: Leon Einhorn, Albany.
Installed by New York Plate & Window Glass Co.

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, BLACK LITE, BLUE LITE and AQUA LITE

Send for 1955 Catalogs "Alumiline" Store Front Construction and "Alumiline" Entrances and Doors

see our catalog in ARCHITECTURAL FILE or write for copy

THE ALUMILINE CORPORATION

DUNNELL LANE PAWTUCKET, R. I.

team-work does it every time...

Another example of outstanding results that are possible when architect and Columbus work together.
It's because we've been working with architects for 60 years, providing helpful information and skillful assistance. Next time you modernize or plan a whole store, we'd like to work with you.
You'll find that we'll help make your plans particularly resultful as well as functional and attractive — and all the while you'll be saving money for your client.

Macy's Hillsdale Store
San Mateo, California
John S. Bolles,
A.I.A., Architect
San Francisco, California
Meyer Katzman, A.I.A.,
Consulting Architect
New York, N. Y.

THE COLUMBUS SHOW CASE COMPANY
850 WEST FIFTH AVENUE
COLUMBUS, OHIO
AXminster 9-2166

$25,000 porcelain enamel design competition

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

Competition Closes DECEMBER 12, 1955

mail entries to:

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

New Guide for Architects

1956 edition just off the press!

292 pages of complete data on office desks, chairs, filing cabinets and Fire-File equipment which eliminates need for record vaults.

A valuable aid in planning offices for factories, office buildings, schools, banks or public buildings. Dimensions, space requirements, descriptions, prices, and hundreds of illustrations, many in full color. Contains many useful ideas developed by Shaw-Walker's famous "Time-Engineering" principles which save space, time, steps, make work easier.

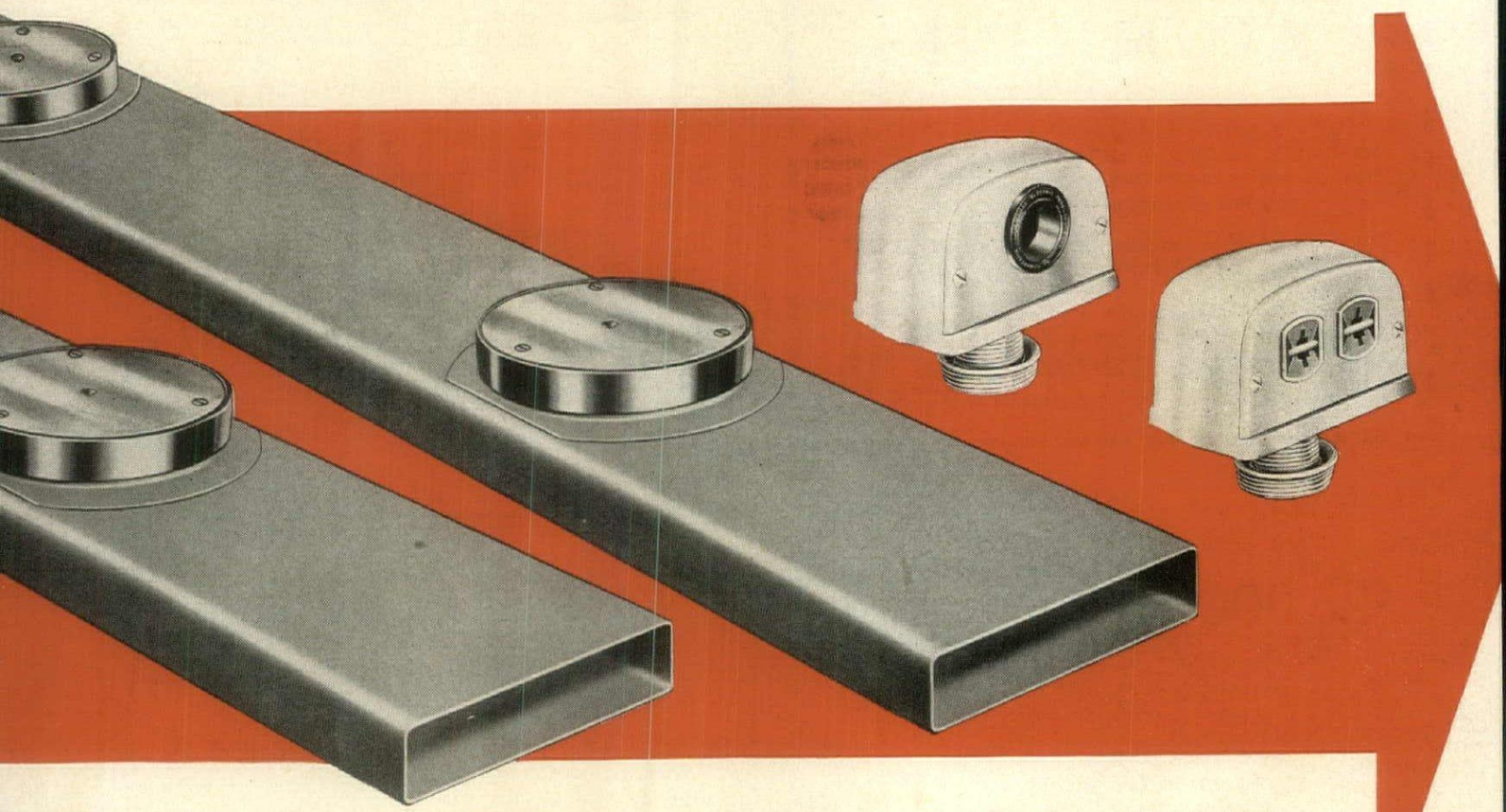
Free to Architects, Designers, Purchasing and Office Executives. Please request on business letterhead.

SHAW-WALKER

Factories and Home Office—Muskegon 37, Mich.
Largest Exclusive Makers of Office Furniture and Filing Equipment in the World

WHEN YOU SPECIFY CELLULAR STEEL FLOORS insist on

NEPCO HEADER DUCT



NEPCO HEADER DUCT gives your clients the ultimate in Underfloor Electric Service

You can get complete electrical distribution from cellular steel floor construction with National Electric Header Duct, the all-steel grounded feeder raceway from distribution panel to the raceway formed by the structural steel floor panels. With National Electric Header Duct, selected raceways may be energized to accommodate any requirement for power, light, telephone or communication.

The result—electrical outlets may be cheaply and economically located and relocated wherever they are needed to best serve the requirements of the owner's office layout.

When you are planning for cellular steel floors, make certain that you include a National Electric Header Duct system to take care of all your client's present and future electrical needs.

NEW NEPCO SERVICE FITTINGS

are especially designed for installation where height of fitting is restricted to less than 3″ by modern desks and free-standing equipment.

Their simplified one-piece housing cuts installation time and reduces replacement inventory because it is designed to accommodate cover plates for any service.

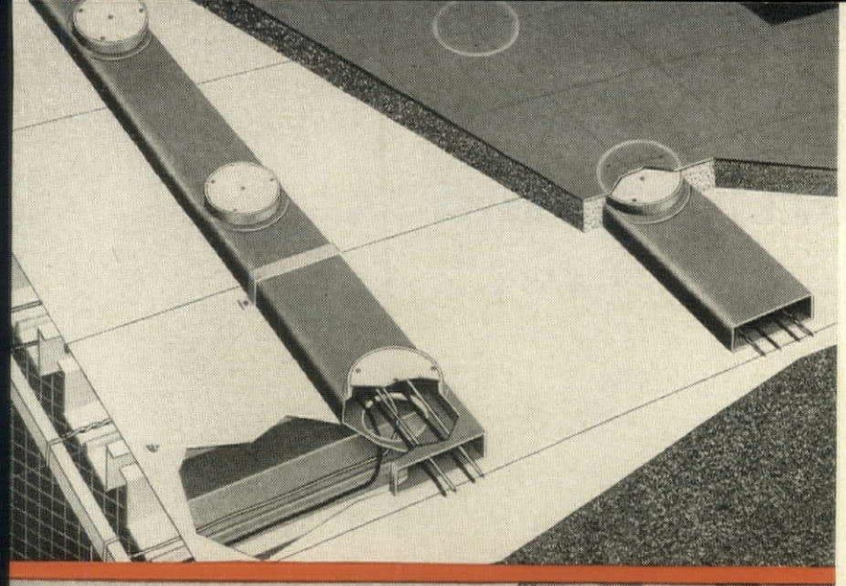
Listed by Underwriters' Laboratories, Inc.

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

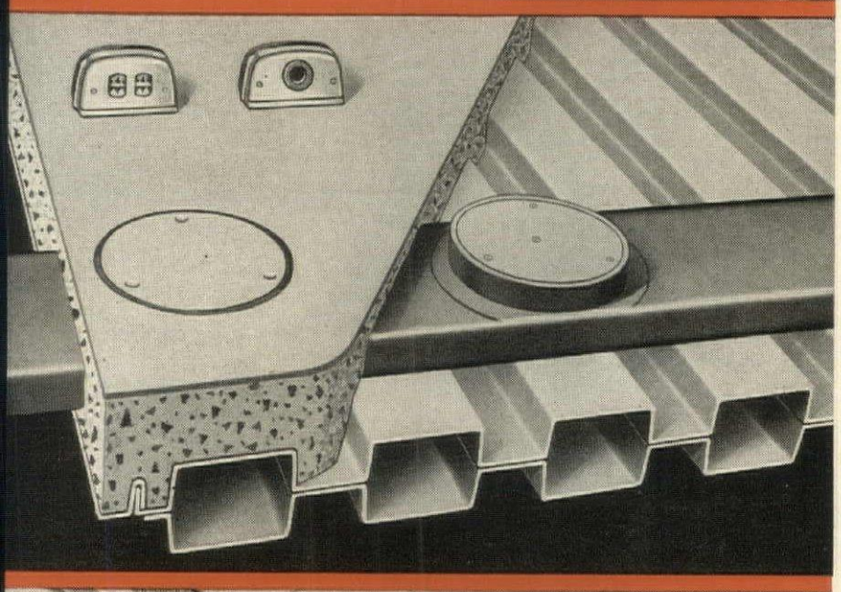
National Electric Products

PITTSBURGH, PA.

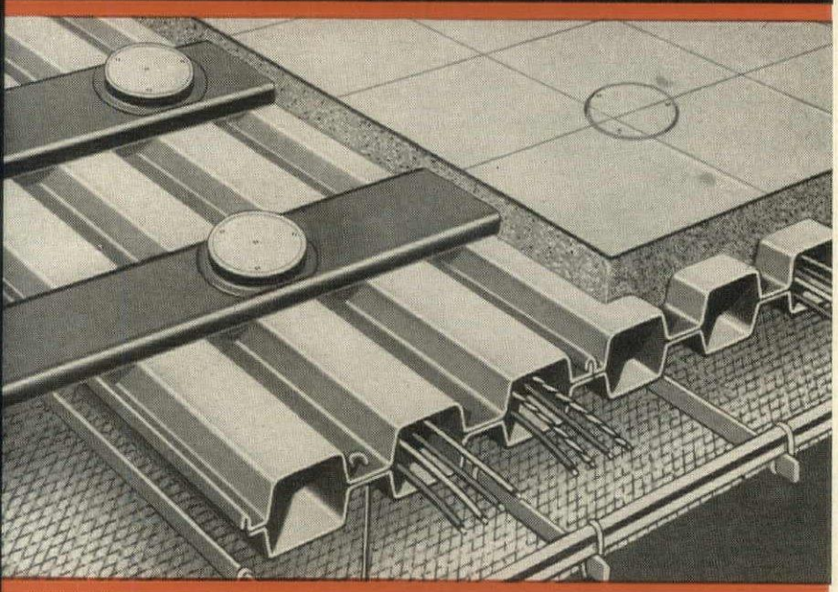
3 Plants • 10 Warehouses • 36 Sales Offices



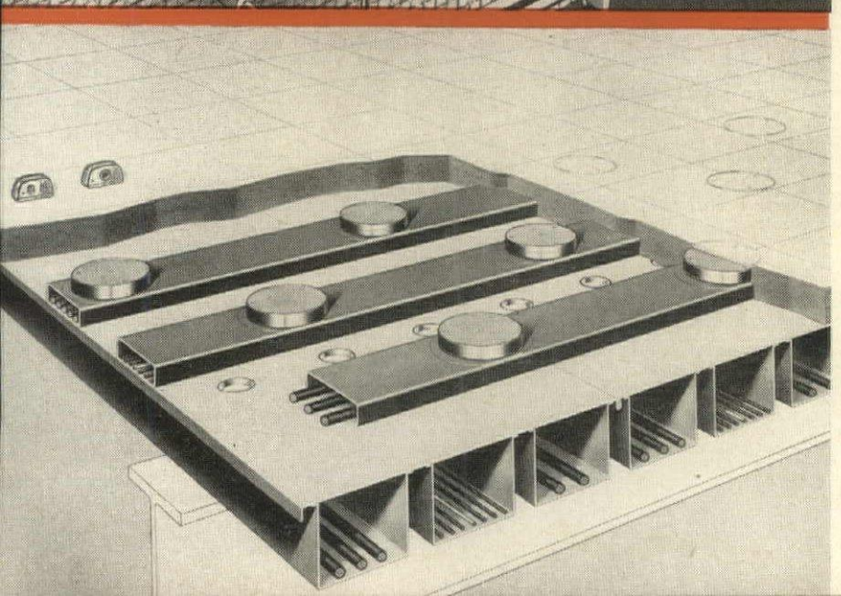
NEPCO HEADER DUCT
AND DETROIT STEEL
PRODUCTS' ELECTRIFLOOR



NEPCO HEADER DUCT
AND INLAND STEEL
PRODUCTS COMPANY'S
MILCOR CELLUFLOR

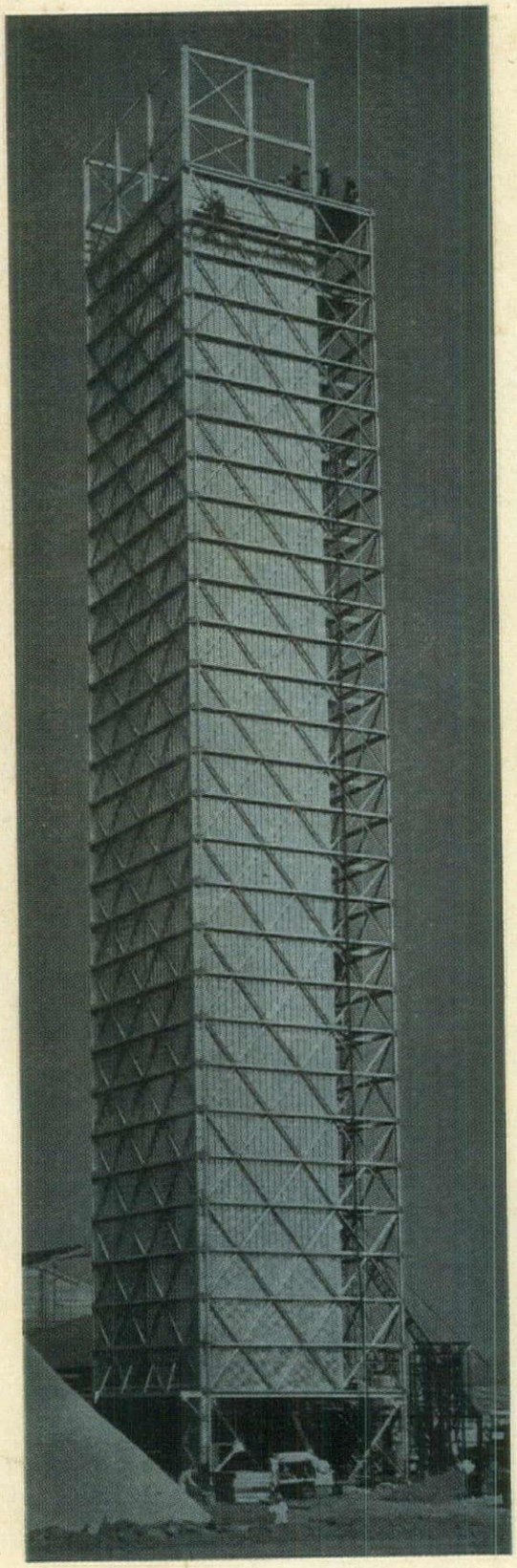


NEPCO HEADER DUCT
AND AMERICAN STEEL
BAND COMPANY'S
AMERICAN CELLULAR
SUBFLOORING



NEPCO HEADER DUCT
AND R. C. MAHON
COMPANY'S
M-FLOOR

Advertisers Index:



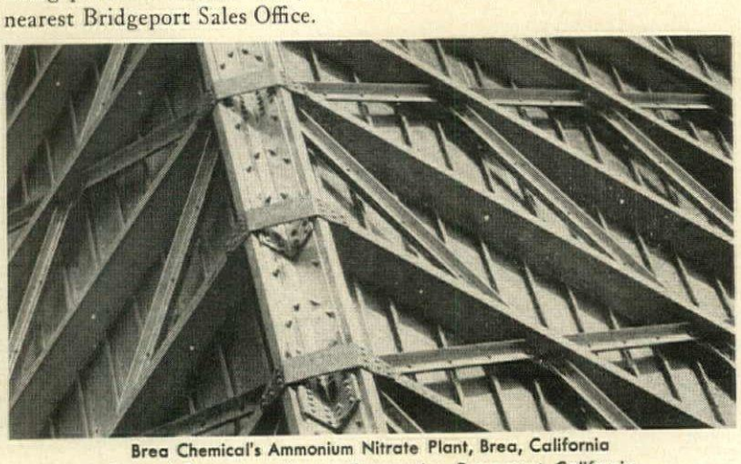
Nation's Tallest all-aluminum process structure uses BRIDGEPORT Aluminum Extrusions

High-strength structurals used in new 200 ft. fertilizer tower to speed erection, resist corrosion and reduce maintenance

The structural members of Brea Chemical Company's all-aluminum prilling tower had to have high strength . . . corrosion resistance and be easy to fabricate and erect. These rigid requirements were met by the Vinnel Company, the structural fabricator, by using Bridgeport aluminum structural I beams (up to 12" in size) and angles.

By using these high-strength extrusions to support and frame the tower, Vinnel was able to reduce construction time, save on material costs, and make possible a long corrosion-free life with little or no maintenance. This all-aluminum tower is another example of the growing use of Bridgeport aluminum extrusions for a wide variety of structural applications. With over 800,000 square feet of modern, completely integrated extrusion facilities, Bridgeport can furnish a broad range of structural and architectural extrusions in standard shapes or tailor-made to meet exact specifications.

For complete information on the architectural and industrial extrusions Bridgeport can furnish for your application, get in touch with your nearest Bridgeport Sales Office.



Brea Chemical's Ammonium Nitrate Plant, Brea, California
General Contractor—Macco Corporation, Paramount, California
Structural Fabricator—Vinnel Company, Inc., Baldwin Park, California

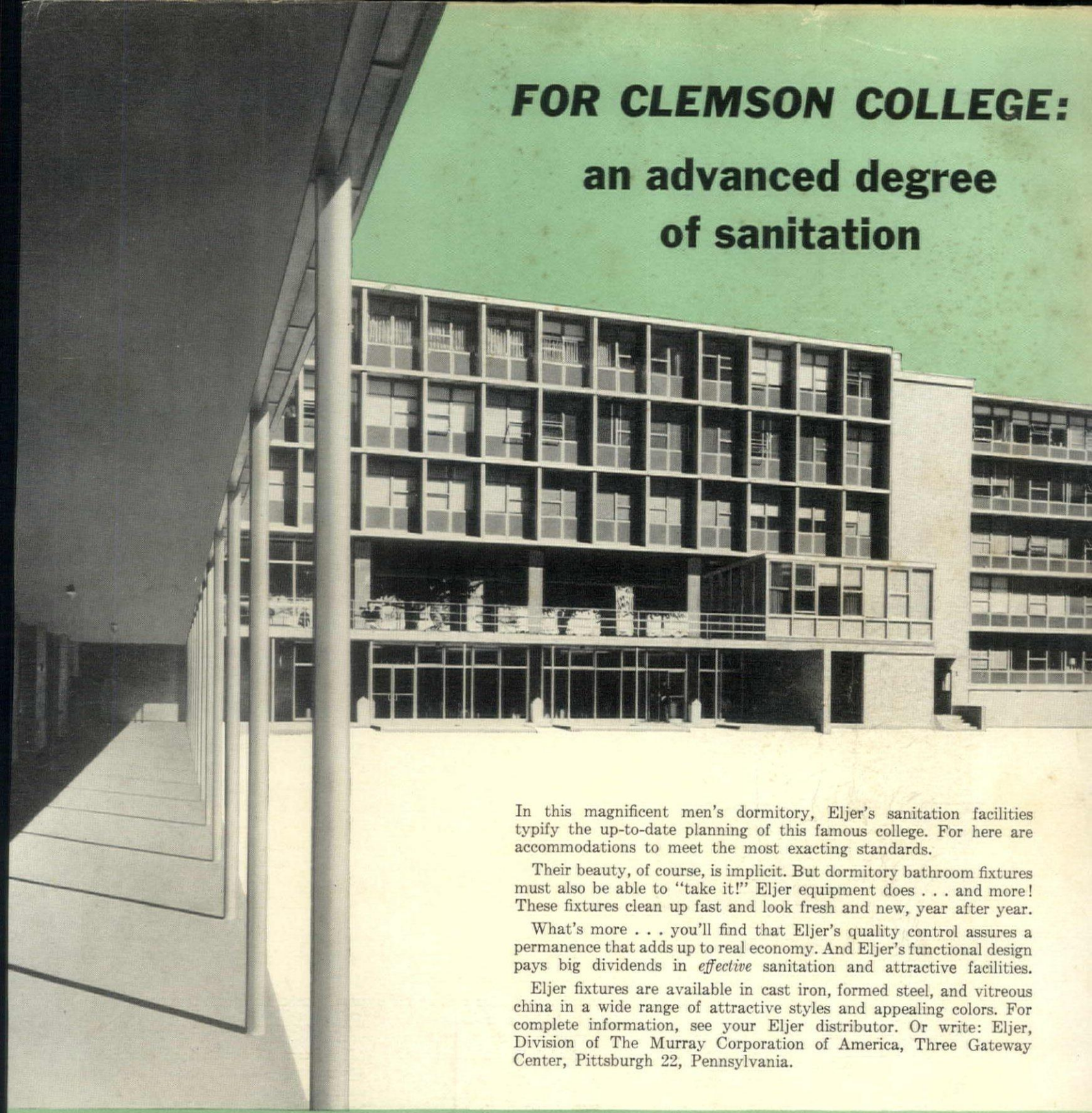
For the very latest in
BRIDGEPORT ALUMINUM

BRASS Bridgeport CO.

EXTRUSIONS, DIE AND HAND FORGINGS
Bridgeport Brass Company, Aluminum Division, Bridgeport 2, Connecticut
Offices in Principal Cities

FOR CLEMSON COLLEGE:

an advanced degree of sanitation



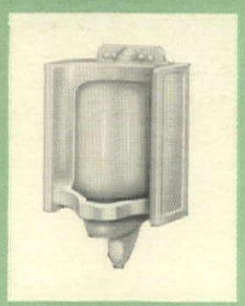
In this magnificent men's dormitory, Eljer's sanitation facilities typify the up-to-date planning of this famous college. For here are accommodations to meet the most exacting standards.

Their beauty, of course, is implicit. But dormitory bathroom fixtures must also be able to "take it!" Eljer equipment does . . . and more! These fixtures clean up fast and look fresh and new, year after year.

What's more . . . you'll find that Eljer's quality control assures a permanence that adds up to real economy. And Eljer's functional design pays big dividends in *effective* sanitation and attractive facilities.

Eljer fixtures are available in cast iron, formed steel, and vitreous china in a wide range of attractive styles and appealing colors. For complete information, see your Eljer distributor. Or write: Eljer, Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh 22, Pennsylvania.

General Contractor: Daniel Construction Co.—Greenville, South Carolina
Architects: Lyles, Bisset, Carlisle & Wolfe—Columbia, South Carolina



Fixtures for every institutional plumbing need.

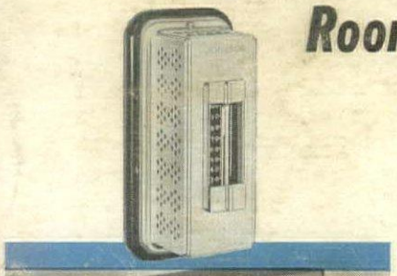
ELJER

DIVISION OF THE MURRAY CORPORATION OF AMERICA

THE ONLY NAME YOU NEED TO KNOW IN PLUMBING FIXTURES

for the *New Look* Office Building...

Individual Room Temperature Control by *Johnso*



First use of Alcoa's striking new, colored aluminum curtain walls is in the company's own sales center* in Cincinnati. Finished in gold and blue aluminum, with contrasting natural-finish aluminum windows and trim, it brings a truly distinctive new look to the building scene.

IDEAL INDOOR WEATHER

Equally modern are the building's mechanical features, notably the air conditioning system and its Johnson-engineered Control System. Johnson *Individual Room* Thermostats permit the occupants of each office to enjoy the temperature of their choice—a refreshing, comfortable temperature that increases employee satisfaction and helps them do better work.

DOUBLE DUCT SYSTEM

Conditioned air is supplied by a high pressure primary air system with Johnson *Individual Room* Thermostats controlling the hot and cold duct dampers in high-velocity mixing boxes serving each room. Refrigeration is furnished by a 50-ton Trane Centravac unit under the control of a highly accurate Johnson T-800 Thermostat.

To save personnel time and for extra operating economy, a special 7-day program clock automatically places the primary air system in and out of operation predetermined cycle throughout the week.

WASTE-FREE AIR CONDITIONING

All Johnson Thermostats, Valves, Dampers and apparatus are combined into a single, highly eff control system that not only insures ideal tempera but makes possible waste-free heating and co performance.

Whether your temperature control problems invo smaller building or a towering skyscraper, a spe planned system of Johnson *Individual Room* Contro provide it with the same superior standards of co and economy enjoyed by Alcoa's new building. Joh originated the idea of *individual room* temperature trol over 70 years ago and today offers you more spe ized experience than anyone else! The recommenda of a nearby Johnson engineer are yours without ob tion. Johnson Service Company, Milwaukee 1, Wisco Direct Branch Offices in Principal Cities.

*Aluminum Company of America, Cincinnati sales office. Paul S architect, Pittsburgh; Martin C. Knabe, structural engineer, Pittsb Theo. E. Rockwell, mechanical engineer, Pittsburgh; Henry Nier Co., Inc., mechanical contractor, Cincinnati.

JOHNSON CONTROL

TEMPERATURE AIR CONDITIONING

PLANNING • MANUFACTURING • INSTALLING • SINCE