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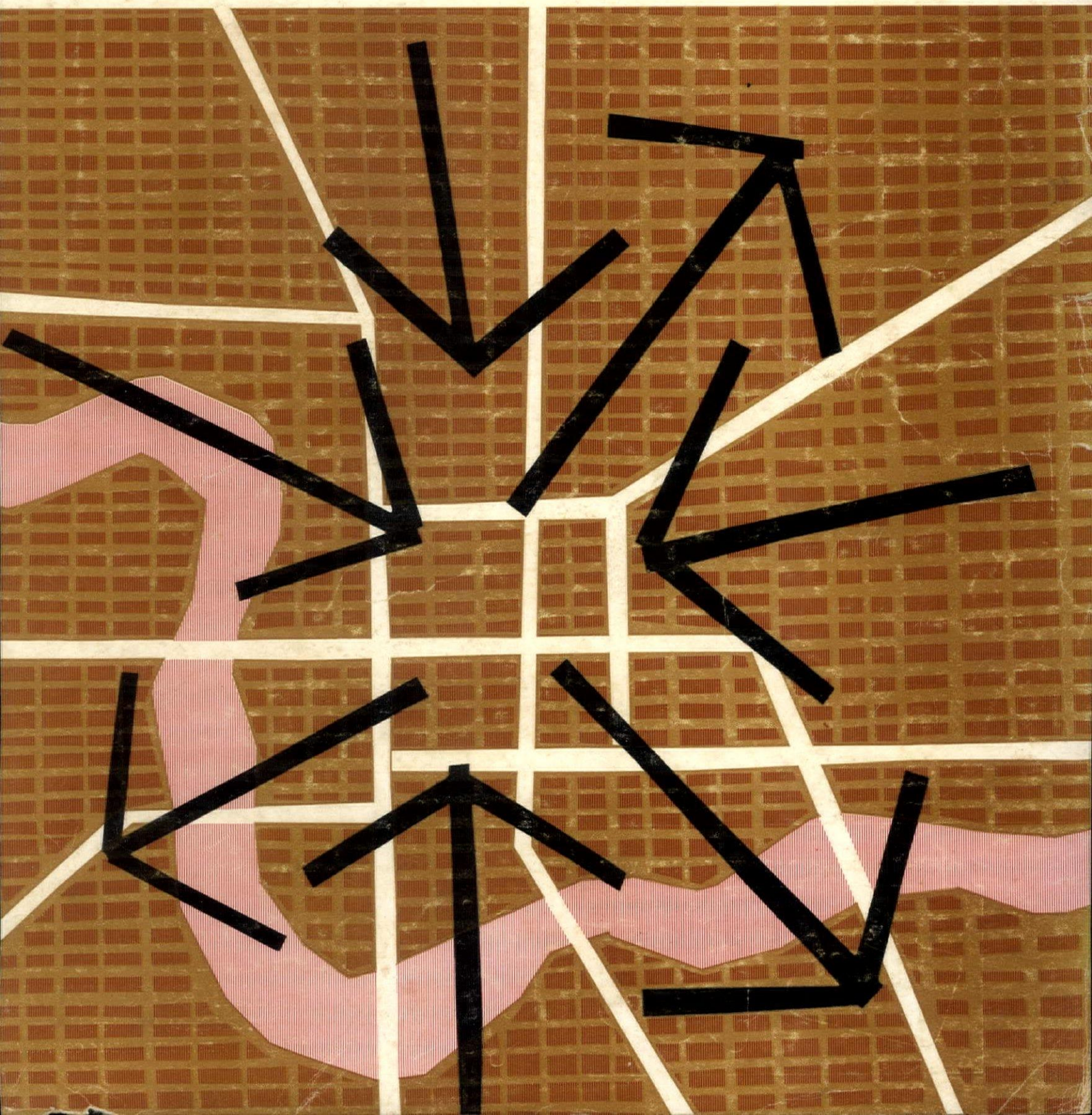
ew of Air Force Academy in Colorado (p. 100).... Prudential's five new Rocks of Gibraltar (p. 140)

o rebuild our cities downtown—a Round Table report (p. 122)

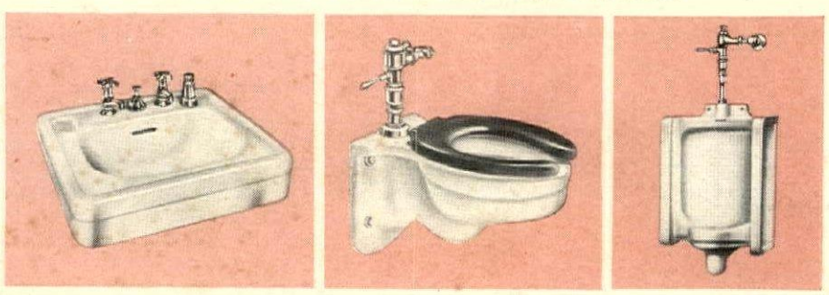


Plumbing Fixtures by RICHMOND

NEW YORK COLISEUM

ARCHITECT—Leon and Lionel Levy
MECHANICAL ENGINEER—Guy B. Panero
STRUCTURAL ENGINEER—Dr. Jacob Feld
OWNER—Triborough Bridge & Tunnel Authority
BUILDER—Walsh-Fuller-Slattery
PLUMBING CONTRACTOR—Astrove Plumbing Co.
WHOLESALER—Smolka Co., Inc.

RICHMOND FIXTURES FOR NEW YORK COLISEUM



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

architectural **FORUM**
the magazine of building

JUNE 1955

page 99 Men of the month

100 A preview of the Air Force Academy
Skidmore, Owings & Merrill, architects

110 Impotency of FHA's apartment policies
Part IV in Miles L. Colean's series on the realities of real estate investment

112 George Howe
A testimonial to a pioneering architect

114 US Embassy for New Delhi
Another in a series of the best of US State Department buildings overseas. Edward D. Stone, architect

120 Bus terminal for Ireland
In Dublin, a cheerful building for tired travelers
Michael Scott, architect

122 How to rebuild cities downtown
Eighteen recommendations from a Round Table of 26 representatives of every downtown activity and interest

132 Introvert school
Senior High School for East Hartford, Conn.
Nichols & Butterfield and Perkins & Will, architects

136 Extrovert clinic
A building for three doctors in Detroit
Leinweber, Yamasaki & Hellmuth, architects

138 Excerpts
Opinion from the rostrum and the press

140 The Pru's office building program
A discussion of the location, planning and design of five new buildings to accommodate the Prudential's decentralization

146 Office of merit
Automation for the office of M. Lowenstein & Sons, Inc. in New York by Designs for Business, Inc.

149 Prefabricated office wall
It is combined with lift slabs to cut the cost of the Magnet Cove Barium Corp. headquarters. George Pierce, Abel B. Pierce, architects

152 Building engineering
High-strength bolting . . . . Prefabricated floor forms . . . . Low-cost summer cooling. . . . High-frequency lighting

160 For all concerned
Editorials on architectural awards, architectural criticism and an accident

9 News

29 People

32 Trends

52 Dates

56 Parentheses

68 Letters

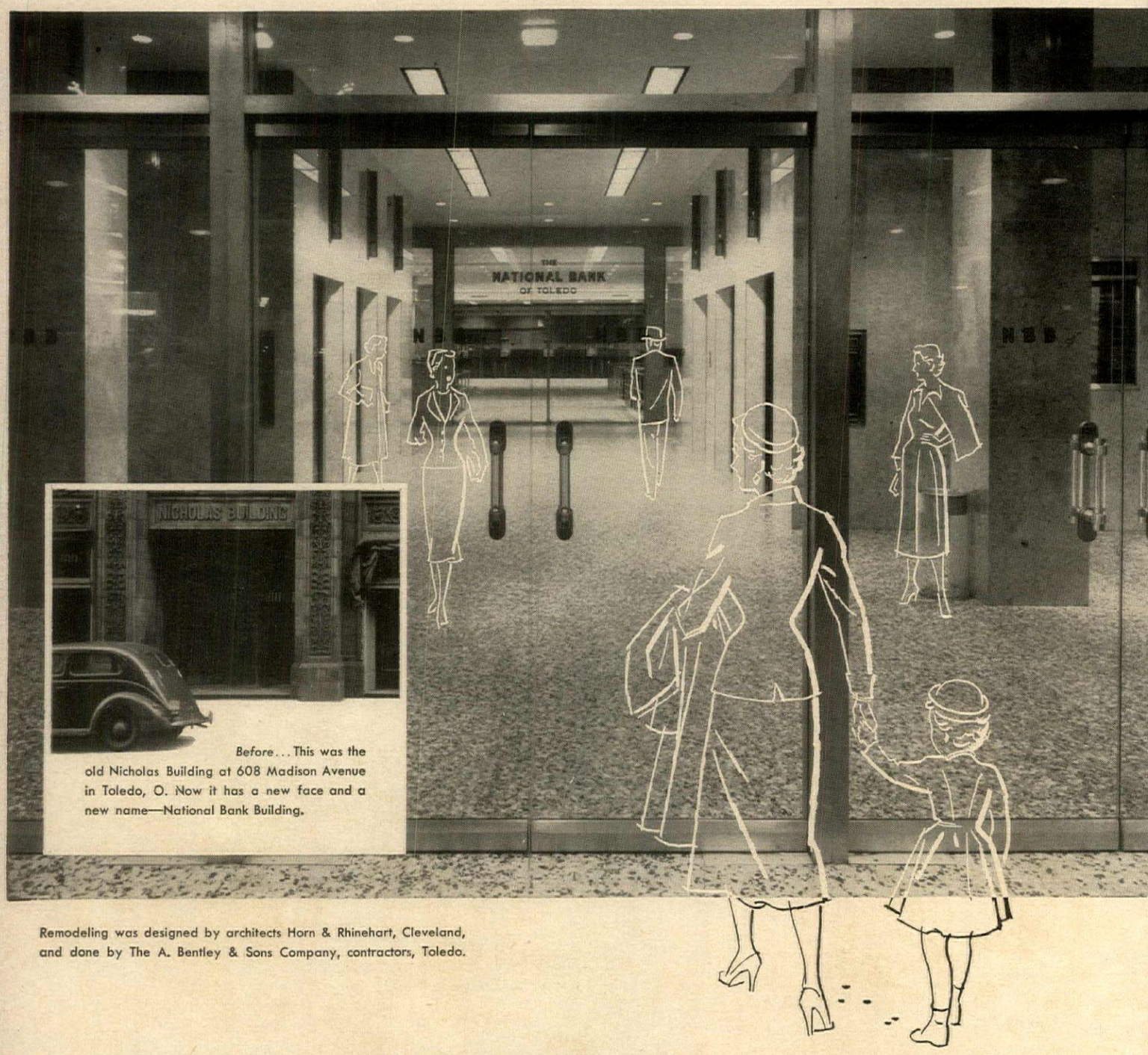
240 Products

Cover: Design by Ray Komai

92 Editorial data (including masthead) and subscription data

VOLUME 102, NUMBER 6

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



Before... This was the old Nicholas Building at 608 Madison Avenue in Toledo, O. Now it has a new face and a new name—National Bank Building.

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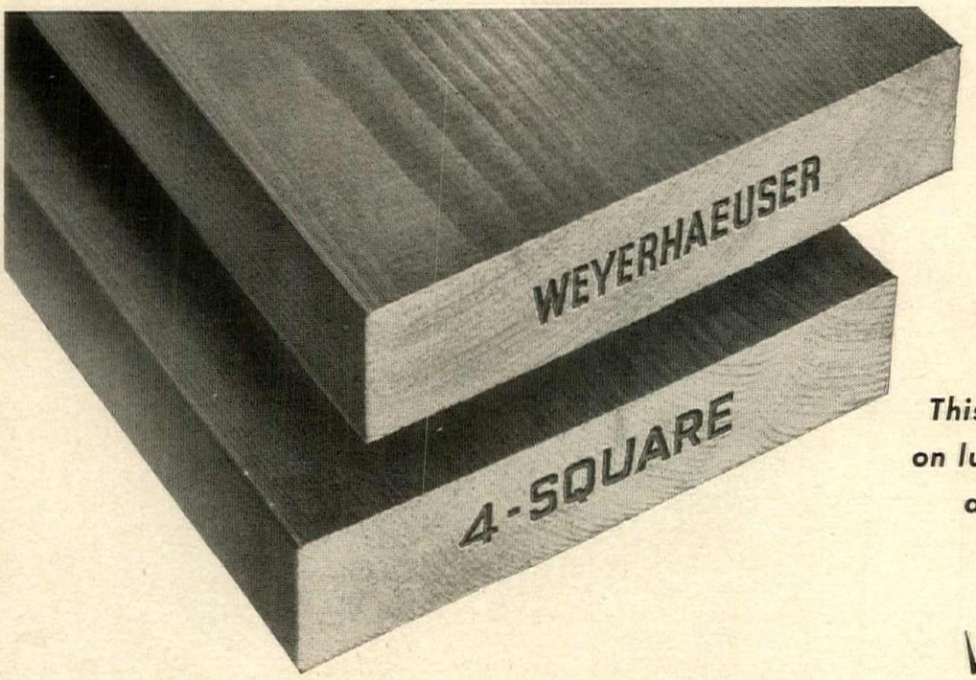

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Product Qualities that increase building values:

Kiln-dried

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Framing, scientifically kiln-dried, is more stable. Its use contributes much toward sturdy, rigid framing, which means true building economy.

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TREATED LUMBER—Pressure-treating with Wolman salts* extends the service life of lumber that is exposed to insects and decay. *T.M.REG.

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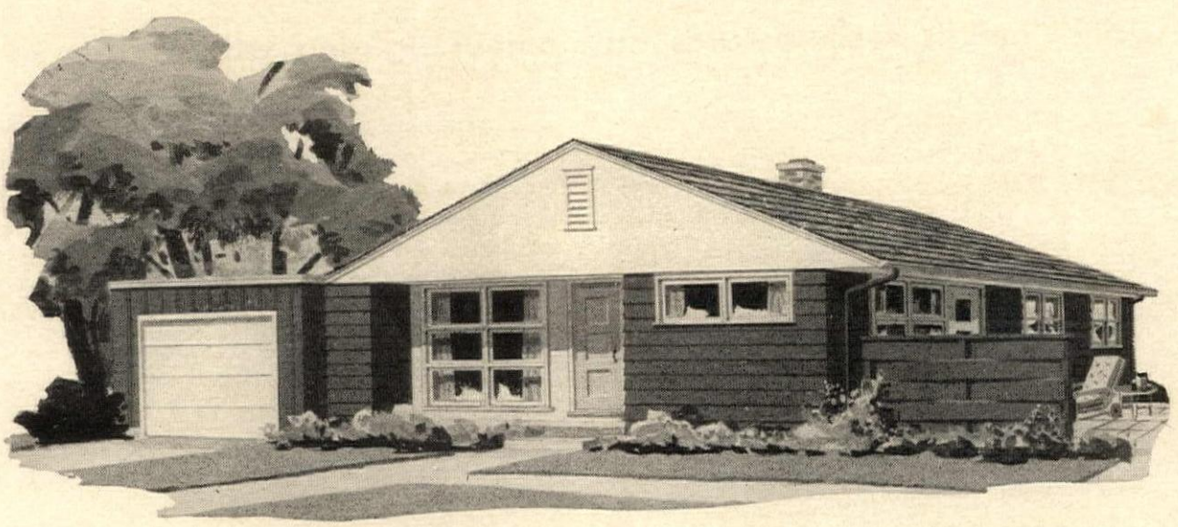

Sales Company

MINNESOTA

Ponderosa Pine

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Extruded "Lucite" acrylic resin assures harmonious lighting with lasting beauty

"LUCITE" is readily and economically fabricated to precise tolerances — even broad sections like this 4′ x 4′ panel. Fixtures of "Lucite" are lightweight for easy assembly, resist discoloration, are durable.

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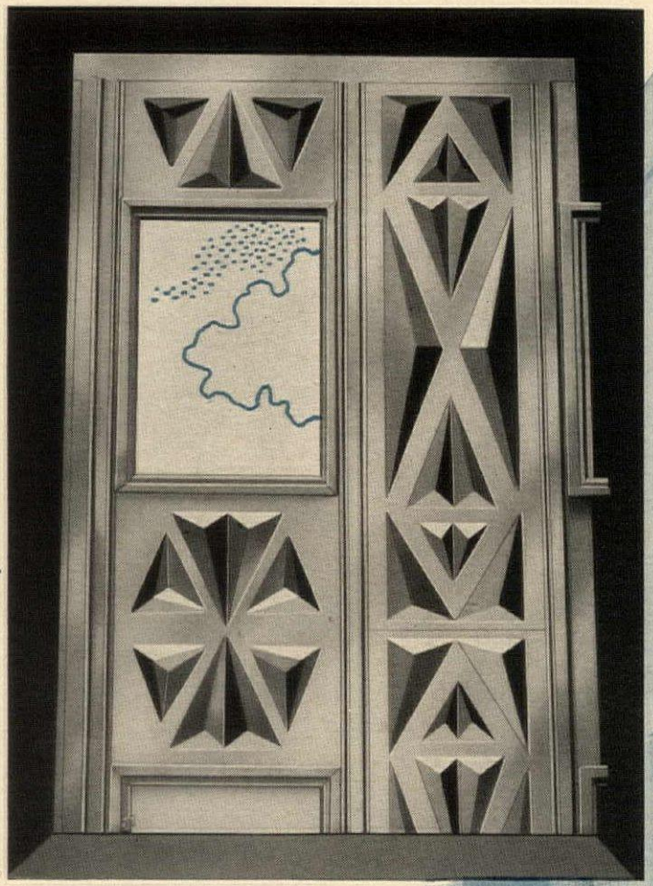
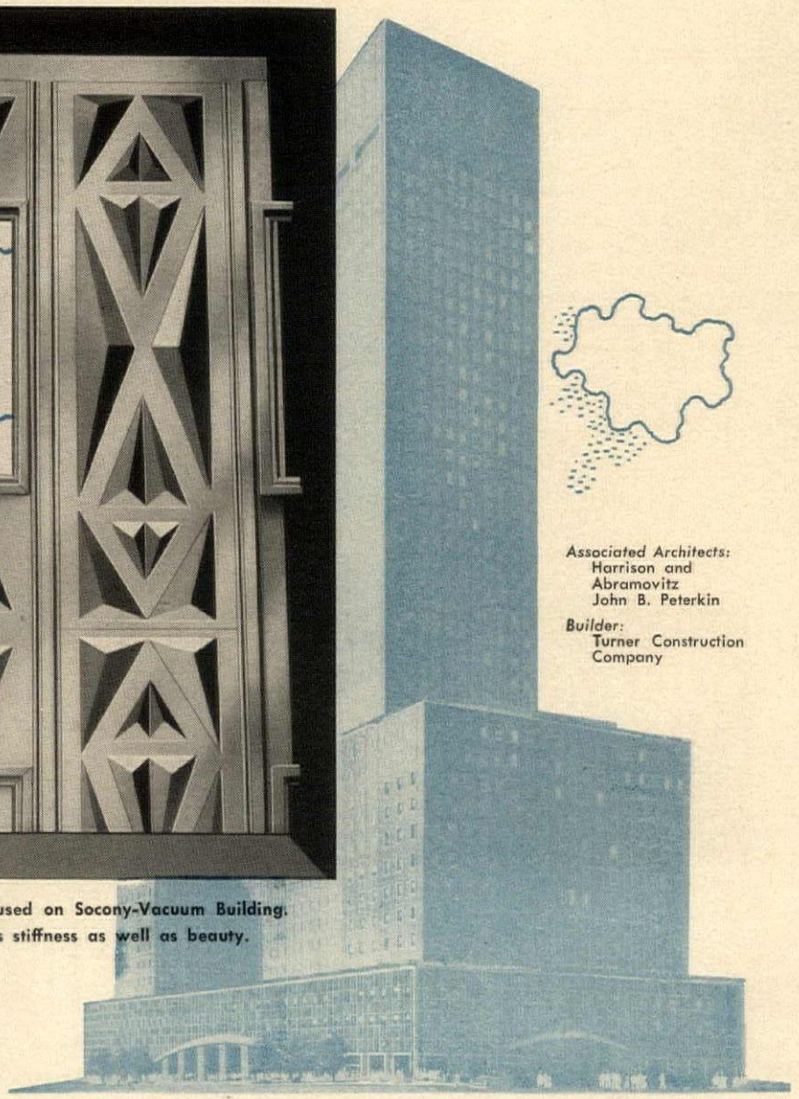
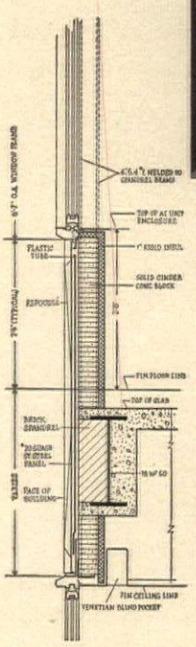


Stainless steel panel to be used on Socony-Vacuum Building. Stamped faceted design adds stiffness as well as beauty.



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

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

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architect

SEARS & KOPH
mechanical engineer

S. S. SILBERBLATT
general contractor

ASTROVE PLBG. & HTG. CO.
plumbing contractor

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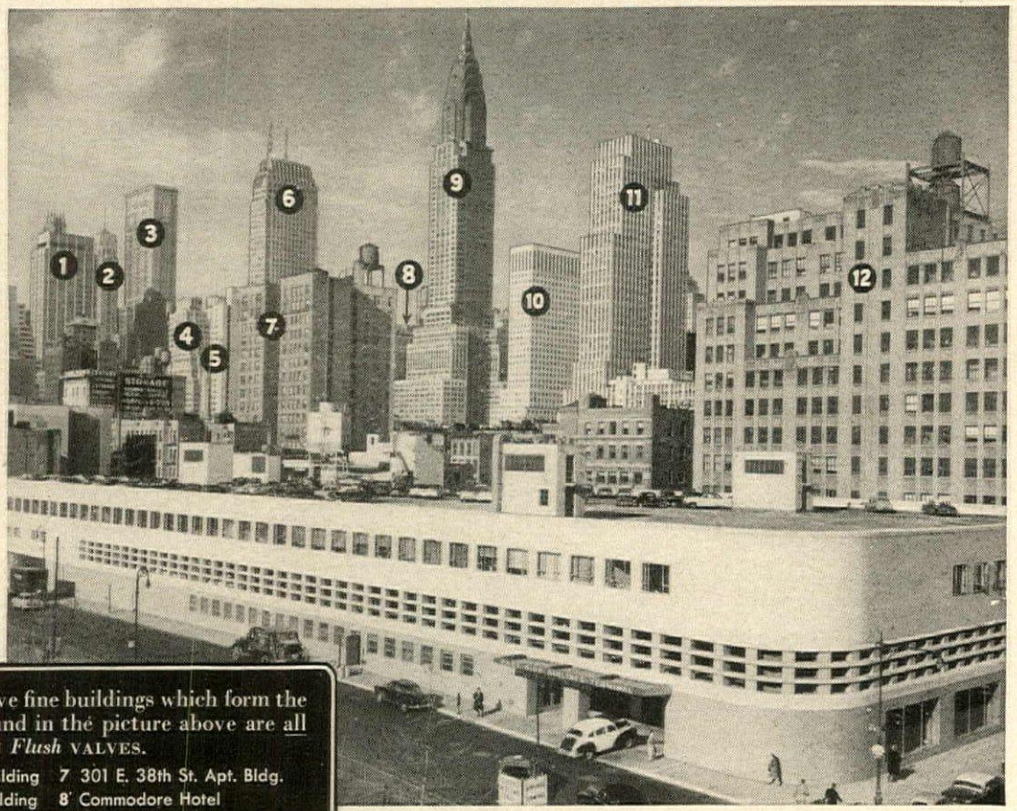

N. Y. Daily News Photo

The twelve fine buildings which form the spectacular background in the picture above are all equipped with SLOAN *Flush* VALVES.

1 100 Park Avenue Building
2 500 Fifth Avenue Building
3 Lincoln Building
4 370 Lexington Ave. Bldg.
5 369 Lexington Ave. Bldg.
6 Chanin Building
7 301 E. 38th St. Apt. Bldg.
8 Commodore Hotel
9 Chrysler Building
10 Chrysler East Building
11 New York News Building
12 United Parcel Service Bldg.

New York's EAST SIDE AIRLINES TERMINAL, *now nearing the end of its first year, has solved many problems for 20 airlines, the operators of airport buses, hundreds of thousands of air travelers and car drivers in midtown traffic*

BOON TO AIR TRAVELERS

• As many as 10,000 passengers are serviced in one day by offices of 20 airlines, American and foreign, within this new 7 million dollar terminal in downtown New York. On arrival at the terminal the passengers enter the spacious, air-conditioned concourse by escalator or stairs. Buses load on an enclosed ramp that runs around three sides of the block-long main rotunda and the travelers are whisked away through Midtown Tunnel to La Guardia and International Airports in from 27 to 35 minutes. In this and other terminals, railroad stations, bus depots and other buildings serving a vast and continuous flow of people, the operation of each flush valve *in one day* is likely to be a dozen or more times greater than in many other types of buildings. Where use is recurring, day and night, the performance, endurance and low cost maintenance of such equipment are of utmost importance. As in the vast majority of fine buildings, this terminal is completely equipped with SLOAN *Flush* VALVES—further evidence of preference that explains why . . .

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

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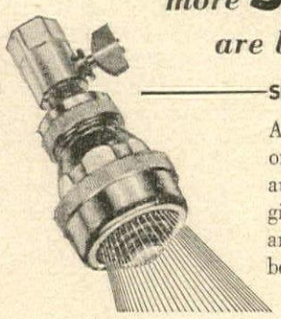

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

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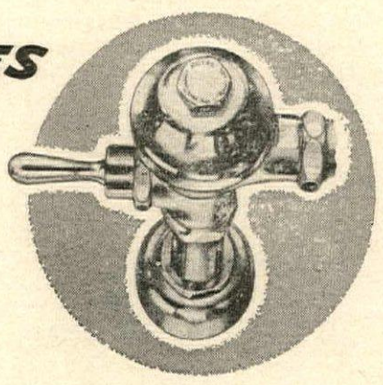


Big wave of office construction renews overbuilding question

"We're Over Building in Office Structures," was the title of the leading article in MBA's *Mortgage Banker* magazine five years ago this August. Wrote the author, Lee Thompson Smith (president 1924-26 of NABOM and president 1949-53 of New York Real Estate Board):

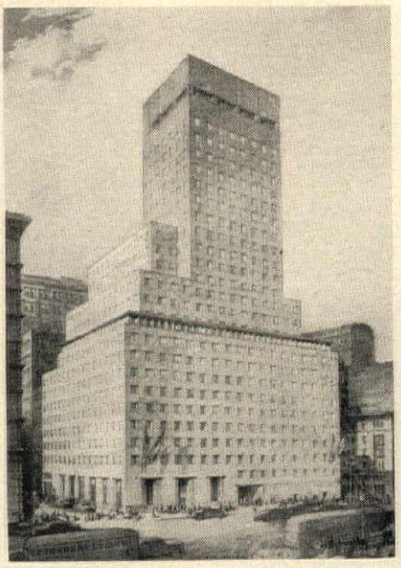
"The spectre of an oversupply of office space is rising again. Great modern structures, now rising in many cities, fling serious challenges to all office buildings . . . make up a new boom that has all the earmarks of being bolder and lustier than the notorious overexpansion that began around 1925." . . . In New York we have had more space placed on the market since the war than was built in several of the giddiest boom years of the twenties. . . . There is no economic justification for additional office building in Chicago. . . ."

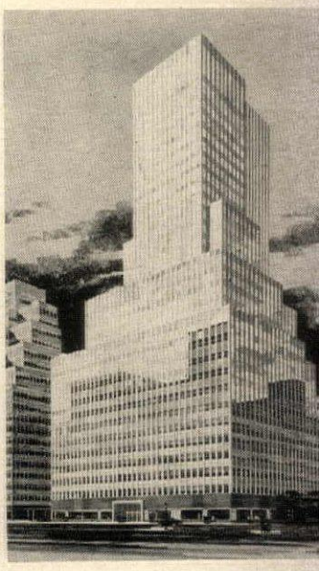
Temporary check. Credit and material controls for the Korean crisis put the brakes on new construction during 1951 and most of 1952. But the big Korean-sparked defense program also gave an extra artificial boost to the constantly expanding national economy, disrupted the schedules or mocked the prophets of business setbacks in virtually every field. After picking up steam again in 1953 and 1954, office construction was still booming along this year as lustily as before Korea with no signs of a letup.

Magic Manhattan. Last January the New York Real Estate Board issued a summary of that city's postwar office construction. Including structures for which plans had been filed, but excluding several very large projects still on architects' drawing boards, it totaled 68 buildings with 17.5 million sq. ft. of floor area—15 million of it in the competitive market. This 17.5 million sq. ft. put up since World War II, noted Board President Clinton W. Blume, "is a greater amount of space than exists in any other city in the world—both old and new space—except Chicago. It represents an increase of about 17%, since Manhattan had about 100 million sq. ft. at the end of the war."

Last month Realtor-Appraiser James Felt, in reviewing New York's fabulous boom, including various projects announced since January, wrote: "There is some magic in Manhattan which defies logic. During the past ten years . . . from 34th to 60th Sts., more than 21 million sq. ft. of office space have either been built or are in prospect; 10 million feet have been completed; 4 million will be in buildings under construction or on sites now being cleared; plans filed account for 3 million; and the balance of 4 million is in the planning stage. . . . Park Ave. will have more than 5 million feet, while Madison Ave. will be second with close to 4 million. Half the new buildings will involve blockfronts."

Since the war New York's office vacancy rate has remained below 2.7%, and most brokers have consistently reported a strong market for new, efficient air-conditioned space. The 1955 construction spurt, however, seemed sure to revive the question whether the overbuilding point was in sight, or was being passed. Informed realtors predict that the blockfront 400,000 sq. ft. owner-and-tenant building for the C.I.T. Financial Corp. on upper Madison Ave. designed by Harrison & Abramovitz will be built only to about 200,000 sq. ft. and restricted to owner occupancy—perhaps the first sign of tangible concern about the future rental market.





THREE OF MANHATTAN'S NEWEST: Bank of New York building (left) will have 25-stories, will occupy block-front on Fifth Ave. Voorhees Walker Smith & Smith are architects. Contractor: Starrett Brothers & Elken. Glass enclosed building on Madison Ave. has 19 stories, was designed by Emory Roth & Sons for Joseph P. Blitz, Inc., owner-builders. Kahn & Jacobs designed 30-story building on Park Ave. (right) for group headed by George A. Engler. George A. Fuller Co. is contractor.

The situation in several other key cities:

▸ Denver's April 1 vacancy rate was 10.8%, compared with 1.9% a year earlier, as a result of completion of the Denver Club, Mile High and Farmers Union Insurance buildings. When the Petroleum Club is finished later this year and the city's aggregate office space is 51% greater than in 1953 (AF, May '54), local building managers predict that vacancies will range between 13 and 15%, rather than the 18 to 20% they previously feared. On April 1 vacancies in older buildings were 4.5%, but rental rates were holding steady; in its three completed new buildings vacancies averaged 26.8%. The Denver Club was fully rented, except the ground floor (10,000 sq. ft.) at $5 a foot with free partitioning, lighting fixtures, floor covering and decorating. Mile High was reported 60% occupied at $5.50 a foot and the tenant paying extra for all partitioning. With Denver continuing to grow and boom abnormally, however, managers predicted rents would hold steady and the vacancy rate would gradually subside after it reached its peak upon completion of the Petroleum Club.

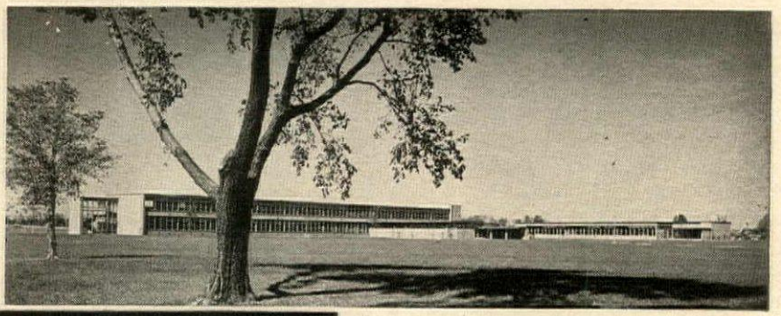
▸ Chicago has been erecting a number of moderate sized office buildings in outlying areas such as a $2-million, 15-story combination studio apartment and office building for Realtor-Developer Arthur Rubloff (AF, March '55) and a $1.5-million, eight-story, 60,000 sq. ft. building planned by Brown and Storch Inc. in conjunction with an adjoining 26-story lake front luxury apartment. Downtown the Prudential, Inland Steel and Harris Trust buildings were projected mainly for owner occupancy. In April, however, Realty Operator and Apartment Builder John Mack announced he was confident there would be plenty of tenants for completed space and that he was starting an entirely speculative $5-million, eight-story office building in the Loop.

▸ Philadelphia's first new office tower in 22 years, the 440,000 sq. ft. Penn Center redevelopment structure erected by New York's Uris Brothers, was nearly all rented when it was opened last month. The owners will not start their second Penn Center building, however, until a substantial portion has been rented in advance. Other new and converted buildings will add another 1.1 million sq. ft. to Philadelphia's office suppy by the end of next year, and its vacancy rate has edged up over 4% partly because the US Government gave up 150,000 sq. ft. last year.

▸ Pittsburgh has about a 10% vacancy rate compared with 8.8% 18 months ago, according to former NABOM President James Bamford. Available air-conditioned space is not commanding any premium, reported Bamford, and tenants are demanding and receiving more decorating and modernization concessions; the city's older buildings will probably spend $15 to $20 million for modernization during the next two years. Three more scheduled Gateway Center buildings—a State Office, a telephone building of 300,000 sq. ft. each, and a People-First National Bank of 350,000 sq. ft.—will boost Pittsburgh's aggregate new space in the Golden Triangle area since 1953 to 3 million sq. ft. or about a 5% expansion.

NEWS continued on p. 12

Glenbrook High School, Northbrook, Illinois
Architects: Perkins & Will, Chicago, Illinois
Contractors: Jacobsen Brothers, Chicago, Illinois
Windows: 708 Lupton Aluminum Master Projected
Hedrich-Blessing photographs.



Light by Nature through Windows by Lupton

This new "glass" school is a far cry from the "musty halls of learning" of the past. Here, the classrooms are flooded with easy-on-the-eyes natural daylight . . . most of the "walls" are Lupton Aluminum Master Projected Windows. Ventilation is adaptable to the season through easy-to-operate ventilators.

These long-lasting Lupton Master Windows are a boon to budgets. They never need painting . . . help cut maintenance costs to practically nothing. They always operate smoothly and easily, unhampered by clogging layers of paint. Scientifically designed, based on window knowledge gained by over 40 years experience, these windows are Lupton products from start to finish. Special aluminum alloys are extruded in the Lupton plant into section and frame members calculated for maximum strength and beauty. All manufacturing operations are rigidly controlled. Proof of dependability is the year after year, trouble-free service delivered by Lupton Metal Windows . . . some of them for over two generations. You'll build for the future when Lupton makes the windows, their worth has been time proven. Ask for the complete Lupton catalog.

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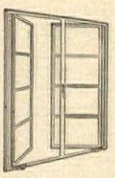
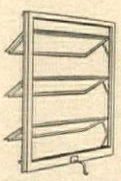
LUPTON MASTER ALUMINUM PROJECTED WINDOW



LUPTON CASEMENT ALUMINUM OR STEEL



LUPTON ALUMINUM AWNING WINDOW

LUPTON ALUMINUM DOUBLE HUNG WINDOW

MICHAEL FLYNN MANUFACTURING COMPANY
700 East Godfrey Avenue, Philadelphia 24, Pa.

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Brixment is waterproofed during manufacture, with the most effective air-entraining, water-repelling agent known.

The fact that Brixment is waterproofed can be demonstrated by making the crater test shown in Figure 1. Brixment's *effectiveness* in preventing the passage of water through the mortar can be demonstrated by making the test shown in Figure 2.

* * * * * *

Waterproofed Brixment gives you three practical benefits which are not available in ordinary cement-and-lime mortars:

1 HELPS PREVENT LEAKY WALLS

Even under pressure, water cannot readily pass through Brixment mortar. Therefore, if the face brick are back-plastered with Brixment mortar, a barrier is set up against the passage of water to the inside of the wall.

2 GREATLY INCREASES DURABILITY

Water cannot readily penetrate Brixment mortar. This prevents the mortar from becoming saturated — therefore helps protect it from the destructive action of freezing and thawing to which it is subjected many times each winter.

3 HELPS PREVENT EFFLORESCENCE

Waterproofed Brixment mortar checks the passage of water and keeps it from percolating down through the wall, dissolving salts which may be in the masonry materials, and carrying them to the surface.

Louisville Cement Co., Louisville 2, Ky.

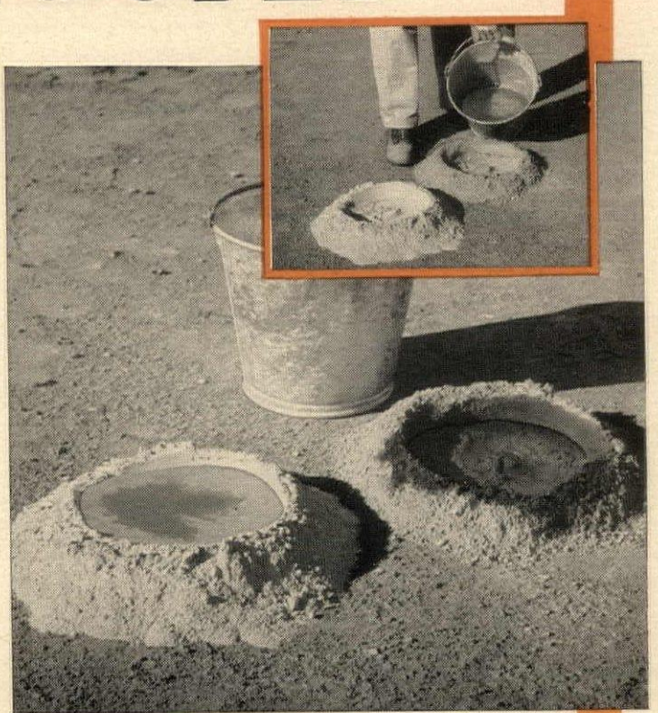
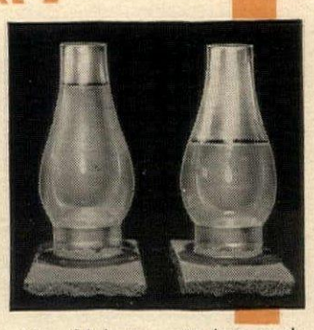


FIGURE 1

Pour out a pile of Brixment and a pile of ordinary cement and lime. Make a crater in the top of each pile. Fill each crater with water. Note how the cement-and-lime mixture absorbs the water immediately. Note how the waterproofed Brixment *holds* it.

FIGURE 2

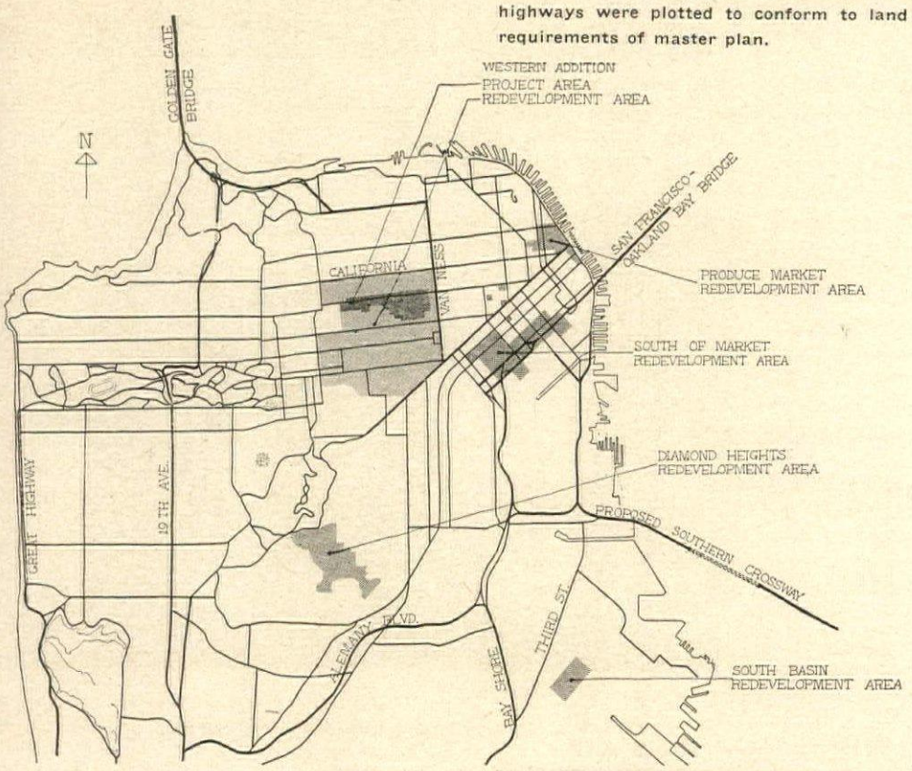
Prepare two slabs of mortar, one with Brixment and one with ordinary lime-and-cement mortar. After mortars have hardened, seal a lamp chimney to each of the mortar slabs, using wax or candle grease, and fill with water.



After 24 hours, note how much water has gone into and through the non-waterproofed mortar, and how little water has gone into or through the Brixment mortar.

RENEWING OUR CITIES

DOWNTOWN BUSINESS and industrial area, showing freeway system. Roads and elevated highways were plotted to conform to land use requirements of master plan.



REDEVELOPMENT AREAS, three large, two small, pockmark city map.

HIGH-DENSITY HABIT, carried to suburbs, dumps thousands of cars daily into city's core.

San Francisco's construction and rebuilding urge, welling up in more or less uncoordinated form for the past half dozen years, has begun to take substance as a joint effort toward a well-defined goal: preservation of the city, especially its core, as the center of the Bay area population mass.

Not since the disastrous earthquake and fire of 1906 has San Francisco been atingle with hopes, plans—and above all—activity to renew itself. World War II and the postwar years brought hundreds of thousands of new residents and many new industries to the Bay area. From 1950 to 1954 the area's population increased from 2,681,322 to 3,024,650. Nearly all of the expansion occurred beyond San Francisco's city limits; population of the city has remained fairly steady at about 775,000.

The extraordinary suburban growth of the Bay region, about 7,600 persons a month, according to the San Francisco Bay Area Council, a sort of nine-county chamber of commerce, has been accompanied by typical troubles, some of which are described in a review of San Mateo County's plight on page 17. Effect on San Francisco of swift and often uncontrolled expansion of its suburbs has been acceleration of central city deterioration and quickened obsolescence of municipal facilities. Never lethargic—San Francisco has been called the New York of the West Coast—the city has met a few of its problems squarely. San Francisco voters characteristically have been willing to spend rather freely for all kinds of ambitious projects. School construction has kept pace with population shifts and increased birth rate; a good start has been made in building freeways and elevated highways; pioneer construction of underground parking garages has been a model for several other cities.

In recent months, encouraged by the prospect of federal funds for redevelopment and renewal, and given leadership in the form of an awakened group of downtown businessmen, San Francisco has moved into a period of big-scale, planned rejuvenation.

The movers. A welter of public, quasi-public and private groups have been hacking away at San Francisco's problems with varying degrees of effectiveness. The Department of City Planning, directed by Paul Oppermann, has kept the city in a healthful dither of self-criticism. More than any other group, perhaps, the planning department has created a climate of opinion in which plans could be made and started toward execution.

The Redevelopment Agency, headed by Eugene Riordan, is a legal entity under state law, and is responsible for land acquisition and disposition for urban renewal and rehabilitation projects under California's Community Redevelopment Law. The agency has had its troubles. Before a building can be demolished or a shovelful of earth turned on a redevelopment project, twelve steps must

San Francisco decides to fight blight

Inertia and the confusion of postwar growth give way to redevelopment urge as downtown business interests awaken

be taken, involving hearings, reviews, recommendations and adoption of tentative and final plans by the board of supervisors of San Francisco City & County, the planning commission and the Redevelopment Agency. Last year after the agency had been wracked by political turmoil, HHFA's urban renewal chief, James W. Follin, threatened to withhold federal redevelopment funds pending a cleanup. With Riordan's appointment, the agency began to function effectively again.

A new group, the Citizen Participation Committee for Urban Renewal, has been appointed by Mayor Elmer E. Robinson. A "workable program," required under the Housing Act of 1954 as a prerequisite to federal grants for renewal, has been prepared. By last month the plan had worked its way to the city comptroller's office for approval before submission to HHFA. By the end of May no agency had been designated to work with HHFA in treating San Francisco's blighted areas with federal funds.

Strongest pressure for central city improvement comes from the powerful Downtown Assn. and the Chamber of Commerce. Both groups, alarmed by the effects of traffic congestion and urban blight on downtown trade, have moved in behind programs of the planning department and redevelopment agency.

Head start. Willingness of San Francisco voters to approve construction bond issues has given the city nearly $49 million worth of new schools since 1948, most of them built in areas of recent residential development.

Two years ago pennies from a boost in the state gasoline tax started piling up to finance freeway construction. Today San Francisco has some dazzling stretches of highway paid for with its share of the tax: 5 mi. of the 10-mi. Bayshore Freeway, which will carry motorists from the San Francisco–Oakland Bay Bridge almost to the southern city line without touching city streets; the first mile of a freeway to link Bayshore Freeway with Golden Gate Bridge; a good start on the Embarcadero Freeway which will take traffic from the northern waterfront south under the Bay Bridge to the Southern Crossing. Location of the controversial $300 million Southern Bay Crossing, to be built by the California Toll Bridge Authority, has been settled (see map).

Other Bay counties have extensive expressways too: Bayshore Freeway will be pushed almost 25 mi. southward well into San Mateo county. Highway 101 north of the Golden Gate Bridge is being rebuilt to handle anticipated traffic as Marin county, the only open area close to San Francisco, becomes developed. The Eastshore Freeway, on which construction is well under way, will pass through part of Oakland as an elevated highway and will channel traffic to and from the eastern end of the Bay Bridge and three major highways through an intricate distribution maze.

Planning and construction of freeways within San Francisco conform to a master plan, adopted in 1945. The roads are used not only to move traffic but also to form boundaries of areas zoned for industrial or commerical use.

Money on tap. In 1947 voters authorized the San Francisco Parking Authority to spend $5 million for off-street parking facilities. The authority acquires land, so the theory goes, and permits private builders to construct garages on a concession basis. This year the authority still was a few dollars shy of spending its first million. There is little question of the need for off-street facilities: pampering of the automobile implicit in the building of freeways has cut into rail and bus transit. Car pools move commuters in and out of the city across the Bay Bridge (a toll facility) less expensively than the privately run Key System which operates commuter trains across the bridge.

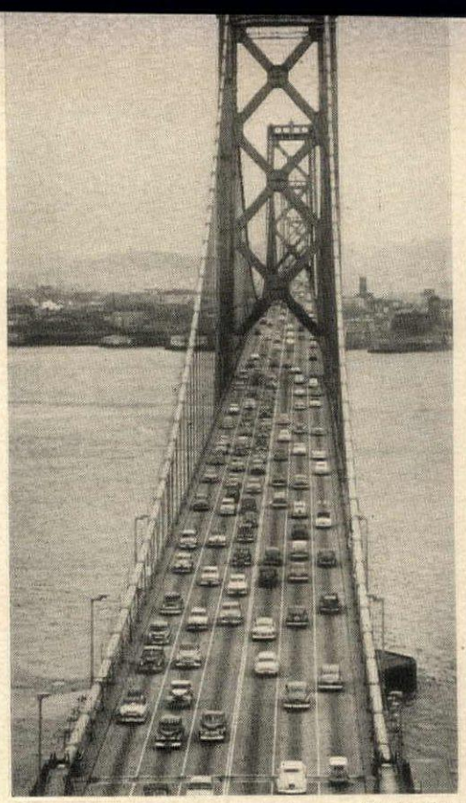
Last month it appeared likely that two garages, near two big department stores, would be added to two already built under the authority's plan.

Sick transit. Planner Paul Opermann has been insisting for years that highway development is only one element in a total transportation program. He has foreseen frustration and unhappiness among San Francisco's citizens if they fail to bring their mass transit system up to date. For two years Parsons, Brinckerhoff, Hall & MacDonald, consulting engineers, have been making a $600,000 study of the transit plight of the nine-county Bay area.

Last month, in a preliminary report, the firm turned down a monorail plan and recommended rail lines extending southward from San Francisco to the Palo Alto area and eastward through Oakland and Richmond. No suggestion was made about how the bay should be crossed. This, and the engineers' findings on a subway for downtown San Francisco—an old dream of civic leaders—are due later. Just now San Francisco's transit system is anything but integrated. The city-owned Municipal Railway operates trolleys, buses and cable cars at a yearly loss of about $1 million. Buses which the Key System operates in addition to its Bay Bridge trains, come in for constant criticism about fares and infrequent service. Southern Pacific commuter trains between San Jose and San Francisco can scarcely keep up with growth of the suburban areas they serve.

The rotten spots. Three big redevelopment areas, designated as blighted sections by the

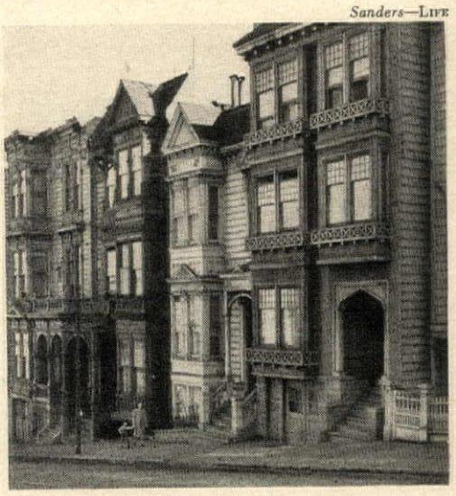
continued on p. 17



Mydans—Life

BAY BRIDGE and approaches, acrawl daily with traffic from crowded East Bay cities, will be relieved by Southern Crossing.

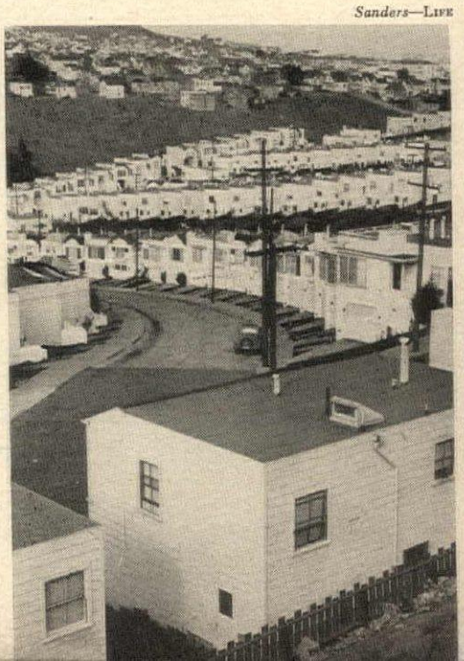
Sanders—Life



OLD ROW HOUSES, typical of city, will be rejuvenated under renewal plan, such as proposed Potrero Hill pilot program.

NEW ROW HOUSES on 25′ lots were accepted in postwar boom, but city now requires 33′ lots to reduce crowding.

Sanders—Life



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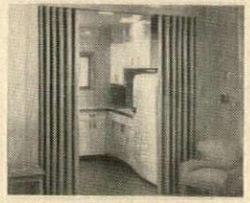

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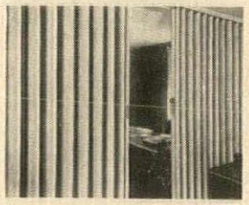

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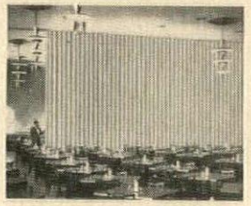

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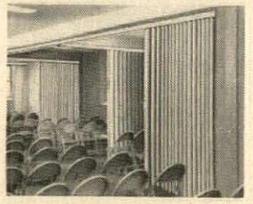

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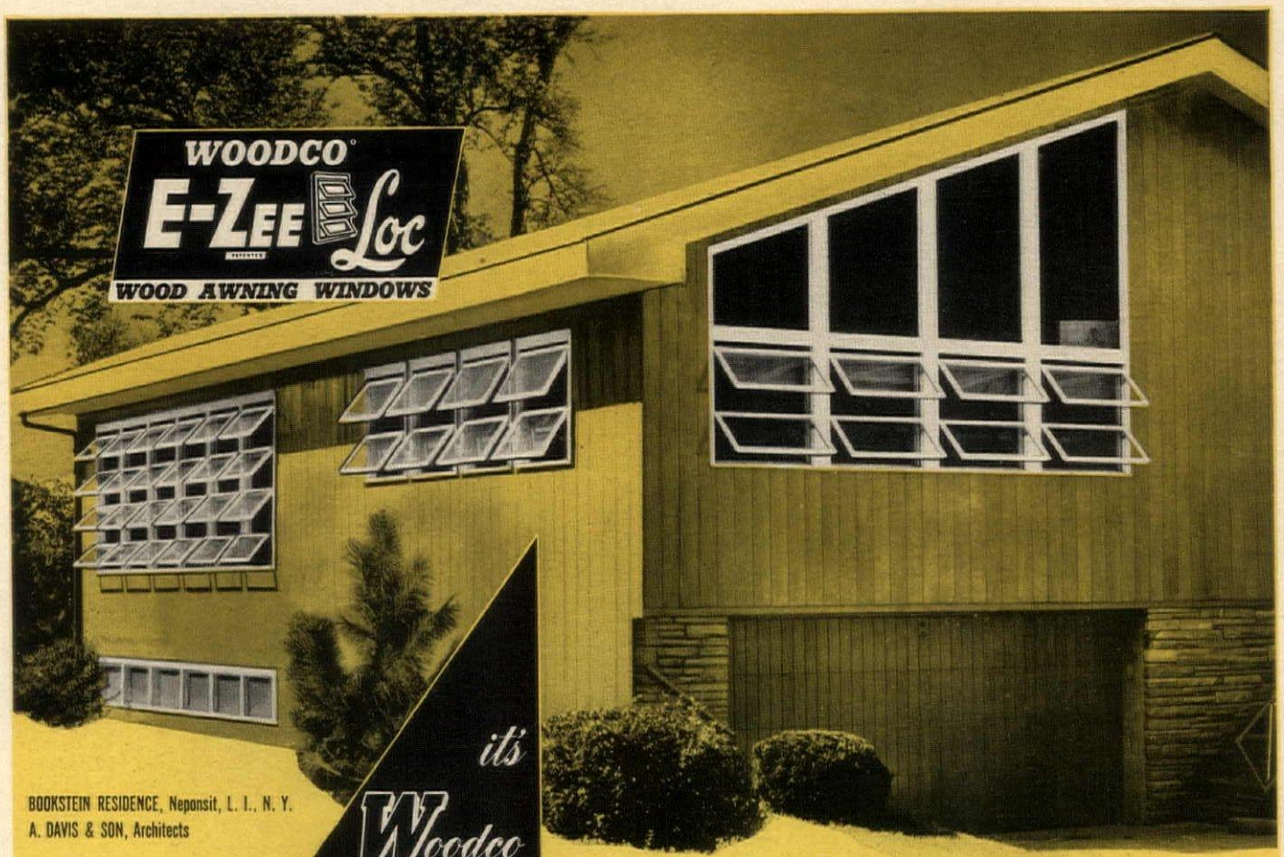

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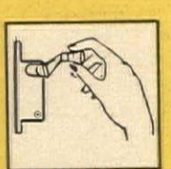

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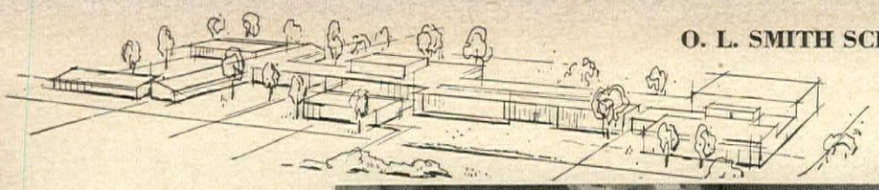
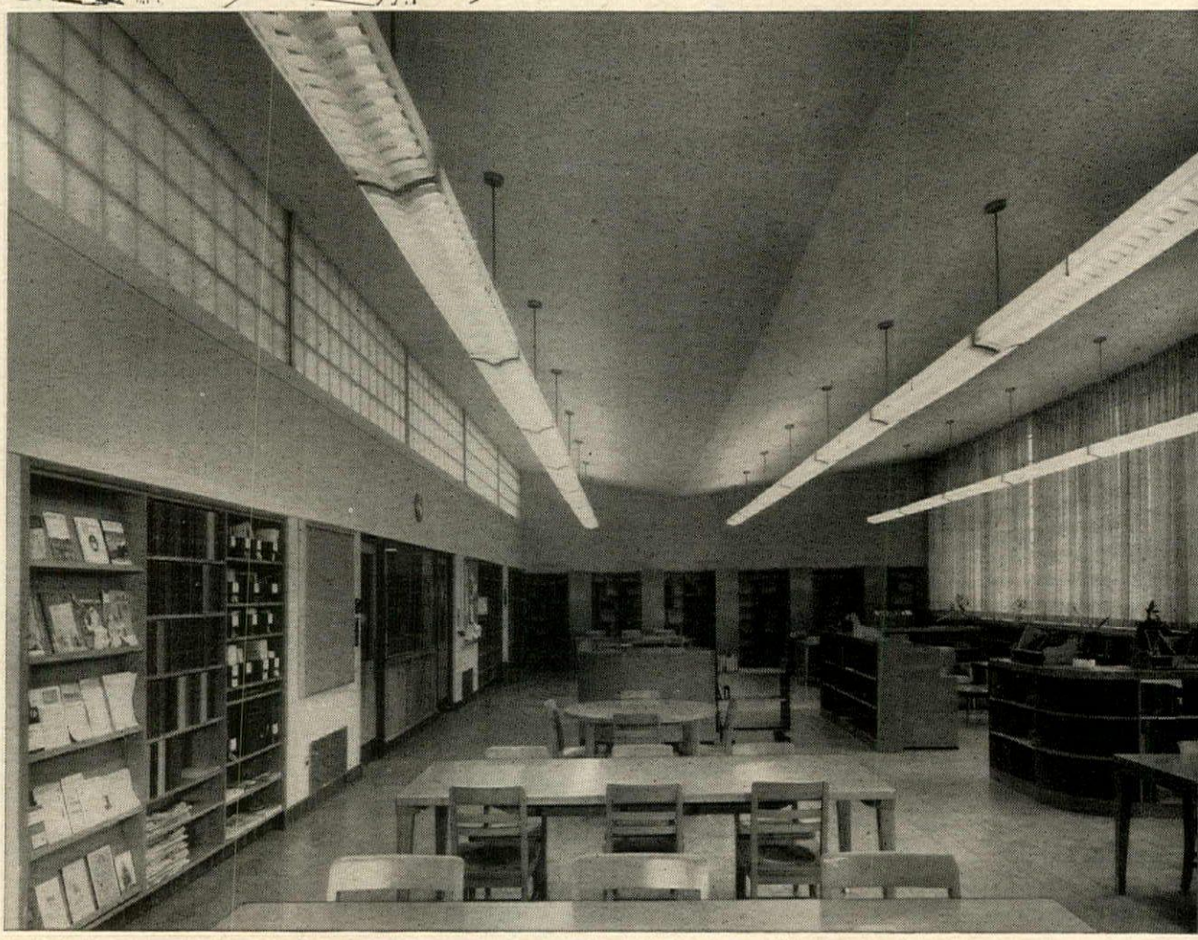


O. L. SMITH SCHOOL, Dearborn, Michigan

Architect: **Jahr-Anderson, Inc.**

General Contractor: **A. W. Kutsche & Co.**

Acoustical Contractor: **Detroit Acoustical Contracting Co.**



Quiet helps concentration in the school library. The attractive ceiling of Armstrong Travertone soaks up noise, helps promote a relaxing atmosphere for study or casual reading. Completely incombustible, Travertone adds an important measure of fire safety, too.

V-shape acoustical ceilings aid lighting in new school

Imaginative planning and modern materials help promote natural lighting in the O. L. Smith School in Dearborn, Michigan. Of special importance to the lighting plan are V-shaped ceilings, covered with Armstrong acoustical materials.

The ceilings' V-shape reflects light both from the huge outside windows and from the clerestory windows on the corridor side of the school. The smooth, white paint finish of the acoustical tile helps diffuse the light evenly without annoying glare. In addition, the inside of the V-shaped acoustical ceilings also serves as a chase for concealed piping, wirings, and ducts.

Ceilings of Armstrong Travertone were used to sound condition the office and library where appearance was as important as acoustical efficiency. This efficient noise muffler soaks up as much as 80% of the sound that strikes it and adds beauty with its smartly fissured surface. Travertone is easily installed by conventional cement or suspension methods.

The large hall and classroom areas called for low-cost acoustical ceilings of Armstrong Cushiontone. A perforated wood fiber material, Cushiontone is inexpensive to install and easy to maintain. To quiet the cafeteria's serving area, Armstrong Arrestone, an easy-to-clean metal pan unit, was used.

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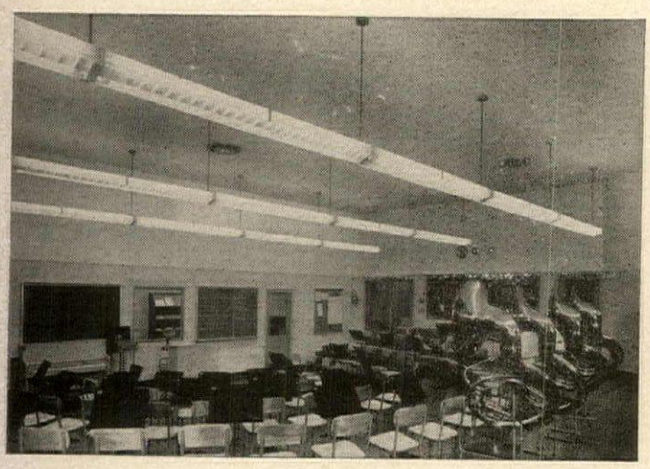
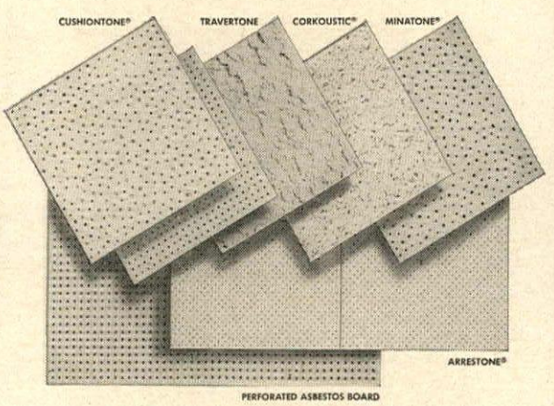


The handsome, Full Random pattern of perforations gives this Cushiontone ceiling an unbroken, monolithic appearance. Armstrong Cushiontone in the music room reduces the reverberation of sound and assures proper acoustics for band practice. Cushiontone can be washed or repainted whenever necessary without losing its high noise-absorbing efficiency.



Moulin Studio

GOOD START ON OFF-STREET PARKING

city-county board of supervisors, were in various stages of movement toward federal aid last month. "Grandfather" projects, they could be studied by HHFA without waiting for adoption of a workable program.

▸ The Western Addition is an old neighborhood lying west of Van Ness Ave., a wide street where the fire of 1906 was stopped. Downtown San Francisco was rebuilt after the fire, but the Western Addition was not. Now 280 blocks have been slated for redevelopment. The first project in the area for which a $7.3 million federal subsidy is being sought by the Redevelopment Agency is a 26-block section from which substandard frame houses, inhabited before World War II by Japanese families and now by Negroes, will be cleared. The land will be offered for private redevelopment, estimated to cost $17.4 million. Sixty blocks north of the project area have been marked for neighborhood rehabilitation, if federal renewal funds can be obtained. East-west traffic which has been filtering through the area along its many cross streets will be channeled along Geary St. The street runs through the first project area and will be widened to expressway standards.

▸ Diamond Heights is an area of 345 hilly, partially vacant acres southeast of Twin Peaks, famed San Francisco landmarks. The Redevelopment Agency has been looking for developers to build 1,049 apartment units, 542 single-family houses and 512 duplexes. Over a million cubic yards of earth will be moved from sharp hills to make contoured building sites and dumped into ravines and an old borrow pit to create playground. The agency expects housing built on Diamond Heights will absorb families displaced from other areas.

▸ South of Market St. the agency is doing some long-range thinking about redeveloping 19 blocks in a light industrial and wholesaling district. No project area has been selected.

Major dentistry. The Produce Market, eight blocks of wholesale fruit and vegetable establishments, has been bothering San Francisco planners and business leaders for a long time. Obsolete and decaying, the market lies just west of the city's financial district, yet pays only one tenth the tax rate of the banking area.

Most of the wholesale merchants in the market have voted to develop a new produce distribution center on a 30-acre tract at South Basin. Hoping that the market will be moved, the city-county supervisors have designated the surrounding 28-block area a blighted section. If the area is cleared, planners have no doubt that the financial district will spread into much of it. Apartment structures for downtown workers would surely use the remaining land.

The produce dealers will have to move fast; the South Basin area has been occupied by run-down temporary war housing, being demolished at the rate of 100 units a month. Ten acres are owned by private developers, and if no produce market is planned soon, the land will revert to them.

Facelifting scheduled. A plan has been advanced to use the Potrero Hill neighborhood as a pilot project under the urban renewal section of the 1954 Housing Act. The area, which has fogfree climate and an excellent view, has become run down but is by no means beyond salvation. The 3,469 houses on the hill were cheap when they were built, and without federal aid for a hill-wide upgrading plan, no one wants to build the first new middle-priced house.

Public housing accepted. Except for its attempt to maintain racial segregation under a so-called "neighborhood pattern" plan—knocked down last year by the US Supreme Court—the San Francisco Housing Authority has a liberal record. Real estate interests and other traditional opponents of public housing have accepted low-rent projects, the result, probably, of sound management of the authority for 16 years by E. N. Ayer, a real estate man and of strong labor support. Without flamboyance the authority has completed 2,900 units in 10 public housing projects, and has another 2,124 units scheduled for construction during the next two and a half years.

San Mateo two years after study: still not enough taxpaying industries

Two years ago civic leaders of San Mateo county, Calif., knew they had a serious problem on their hands. Their county, just south of San Francisco, had grown 111% in population during and after World War II —twice the growth rate of the San Francisco Bay area. And there seemed to be no letup of the inflow of families from all over the country; a population of 111,782 in 1940 was expected to reach 400,000 by 1960.

San Mateo had been a comfortable bedroom county, 25% of whose workers commuted to managerial, professional and middle-income white-collar jobs in San Francisco. It had become accustomed to better-than-average municipal services.

Needed: more highgrade taxpayers. Now, with blue-collar workers and lower-paid white-collar employees streaming into developments of low-cost houses which had been spreading like weeds over San Mateo's available land, it became frighteningly apparent that the county's tax base was not broad enough to maintain, let alone increase, public facilities required for its growing population. Example: the average tract house, costing $10,000 to $13,000, was paying only $50 toward the $204-per-year cost of keeping a pupil in school, and most young families moving into developments were sending more than one child to school. More disturbing yet was the knowledge that the $55-million school system would have to be doubled by 1960.

Industrial growth, always discouraged in San Mateo county, had occurred elsewhere in the Bay area. Contra Costa county, across the Bay from San Francisco, was booming. Industry, heavy and light, had flooded in during the war and kept coming in the post-war upsurge. San Mateo county leaders began to wonder if industrial expansion might be their answer.

They called in the Urban Land Institute. In April 1953, equipped with basic data on the county, ULI sent a 13-man panel of real estate and area development experts from the East and Midwest to San Mateo for a four-day study. The panel's recomendation: attract clean, light industry or get set for either unbearable taxation, drastic reduction in standards of comunity services—or both.

An unfilled prescription. Several months ago, when promoters of an eight-story office building planned for a seven-acre site in San Mateo city found their project held up by community resistance—culminating in court action brought by a residents' group—advocates of ULI's suggestions took stock of their county's situation and found it not much better than it had been before ULI was called.

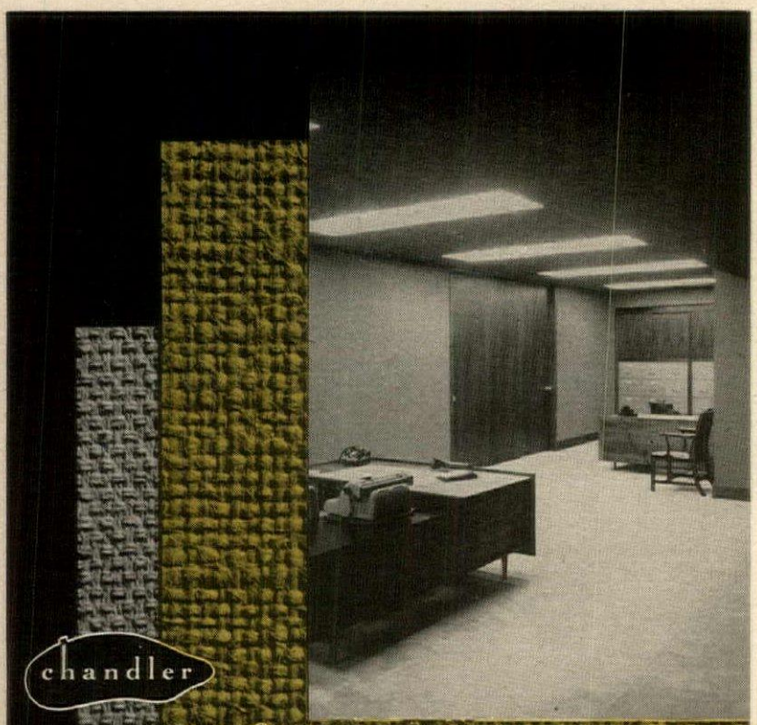
The San Mateo County Development Assn., a citizens' group which had formally sponsored ULI's visit, was in atrophy; it had no staff and no longer provided a clearing house for inforation about the county. By spring its first president, James E. Fitzgerald, had collected $11,000 toward $20,000 needed to revive the association.

One community, Burlingame, had rezoned 180 acres for industry and had attracted two plants costing $1.5 million.

True, there had been some county-wide industrial expansion, but it was debatable how much could be traced to follow-up on the ULI report. Twenty-seven new plants costing $4 million were built in 1953 and the same year existing industries put $11.3 into expansion; in 1954, when ULI's suggestions should have really started taking hold, new plant investment dropped to $3.2 million, plant expansion to $1.9 million. Explained County Planning Director Frank Skillman: "It has only been within the last two years that public opinion has been favorable to industry, and you don't get flooded with new industries overnight. Within three to five years measurements may show we have been swinging to a more balanced economy."

No letup in pace of homebuilding. But where to put new industry was the problem.

continued on p. 21



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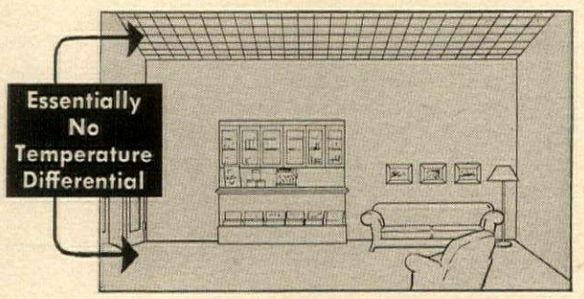

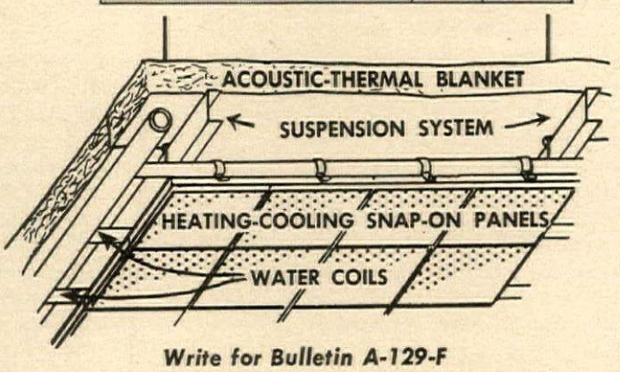

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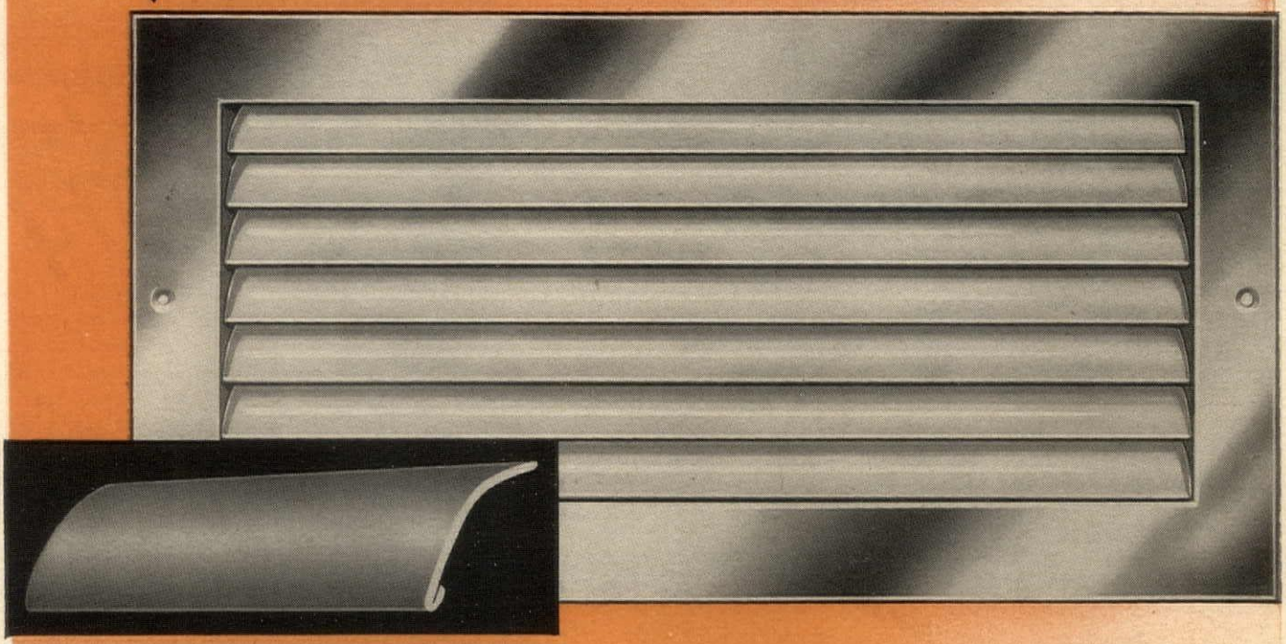

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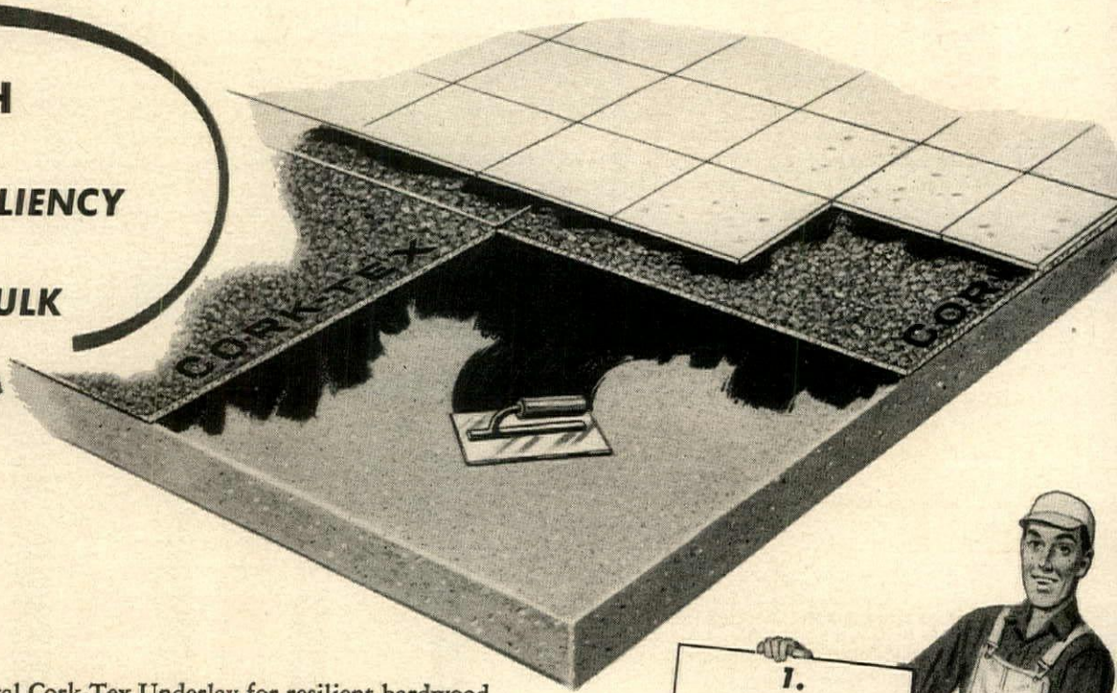

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Housing developments were still munching away at the land that ULI had said should allow San Mateo to compete with other counties trying to attract industry. "We had thought there was no more land available for tracts," Skillman said, "but now they are building on unbuildable land. Besides increasing the tax burden, these areas cost more to maintain and will become blighted first. The property owners there are not carrying their full load."

Harold Atkinson, city planning director of San Mateo, said the opposition to the office building did not mean San Mateo wanted to bar white-collar enterprises. Far from it, he said; San Mateo had set up what he called an "executive zone" and already had secured three office buildings (costing about $1.8 million) for it.

Neighboring county is more alert. Meanwhile, San Mateo's worried leaders were looking wistfully across the county line, where Santa Clara county was doing something very much like what ULI had prescribed for San Mateo. Three Santa Clara communities, Palo Alto, Sunnyvale and Mountain View, were attracting enviable investment by the kind of industry San Mateo had been advised to seek. Electronics research and manufacturing firms were settling on the Stanford University campus at Palo Alto (AF, Dec. '54, News). Sunnyvale with one of the two air-pollution engineers in the state (other one: in Los Angeles) was watching as quiet, clean industries invested $12 million in plant, some of it on 1,300 acres zoned strictly for industrial development. Sunnyvale industry provided 46% of the town's tax base, while industry and commerce in the San Mateo community of San Carlos, for example, combined to form only 28% of the tax base. Mountain View, with plenty of land available for industry, was not worrying.

Cole's housing requests modest; Congress expected to approve

Less controversial than most of its predecessors, the 1955 housing bill introduced a month ago was expected to clear Congress without much of a rumpus.

Except for extension and unscrambling of the public housing program, HHFAdministrator Albert Cole's modest draft of his legislative wants called for little more than replenishing money for programs running out of financing authority and extending FHA repair and remodeling loans. The Administrator asked for:

- $200 million for additional slum clearance and urban renewal grants, and a $4 billion increase in FHA's over-all mortgage-insurance underwriting authority.
- A year's extension of the June 30 deadline for getting this fiscal year's quota of 35,000 public housing units under contract, and additional installments of 35,000 units each for the public housing programs of fiscal 1956 and 1957.
- Removal of restrictions that have lamed the public housing program, such as those linking public housing inseparably to slum clearance and urban renewal.

Satisfied with the housing and slum clearance tools already in his hands, Cole asked simply for more time to put them to use. The Democratic Congress seemed willing to withhold opposition to the administration's housing program until next year, when it would probably make campaign material out of the lethargic slum clearance program and the findings of a year's digging by the Senate banking committee's new investigation of housing.

Meanwhile, Congress had a few extras they considered adding to Cole's package: HHFA loans to finance local-level public works, a stepped-up college housing loan program and aid in fighting air pollution.

Falsework of N Y Coliseum floor collapses

The New York Coliseum—which had stimulated plenty of spirited discussion among those who have studied the intricacies of its financing—made its first real impression on most of the nation last month. Some 16,000 sq. ft. of formwork and 8,000 sq. ft. of fresh concrete, supported on a forest of 4″ x 4″ timbers and steel jackposts, dropped 22′ to the street floor below.

The collapse, which occurred in two phases 15 min. apart, was not sudden. Men who saw it—and rode it down—said the failure rippled outward around a column about which concrete had been placed 2 hrs. earlier. Cause of the initial failure—near the column and roughly in the center of the first big area to collapse—was not known. But there was little mystery about what happened next: a vast wave of collapse spread among myriad jackpoles and the vertical, spliced four-by-fours upon which they stood. Two cement finishers, who were working around columns while concrete was being poured in the form above their heads, saw the falsework collapsing and started to run. One worker ran clear. But the other, Joseph Lombardi, 55, ran the wrong way. The wet concrete entombed him. His body was exposed two days later by workmen clearing the debris with air hammers. Fifty-one other workmen were injured.

Five investigating groups had not fixed blame by month's end. The falsework was of a type that had been standard on slab-pouring jobs 30 years ago, when concrete was moved in 3.5 cu. ft. wheelbarrows at 1.5 mph instead of in 12 cu. ft. power buggies at 6 mph, as it is today. Practical construction men, figuring costs and time schedules, will plead that diagonal bracing of form supports, which can prevent a local failure from causing a general collapse, also impedes movement of workmen under floor forms and makes adjusting of jacks to give forms camber a costly, cumbersome process.

Nobody blamed the engineering of the coliseum, done by Jacob Feld, New York consulting engineer who is, ironically, the nation's leading authority on building failures. More than 70 pours had been made prior to the collapse, and checks showed no damage to the steel frame or to other concrete floors. The weight of 1,150 tons of formwork and concrete thudding down on the main floor caused no deflection.

A week after the failure City Councilman Hugh Quinn, member of a contracting firm, called for a sixth investigation, by the council. He announced he would seek changes in New York's building codes calling for diagonal bracing on form supports more than 8′ high, outlawing of spliced supports and a waiting period of probably four days before stripping forms.

David G. Aronberg, chairman of the operating committee for joint-venture General Contractors Walsh-Fuller-Slattery, discounted reports of workers kicking out or removing jackpoles near the point of failure and said there was no jam-up of concrete buggies atop the form at the time of collapse. Concrete was being distributed efficiently through an arterial system, he said. Principals of Brennan & Sloan, Inc., and Knickerbocker Construction Corp., joint-venture subcontractors who had built the collapsed falsework, were saying nothing.

NEWS continued on p. 25

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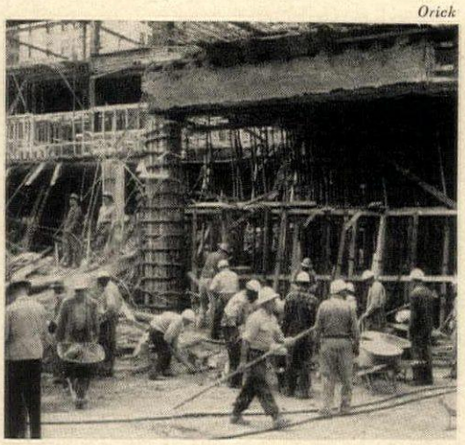
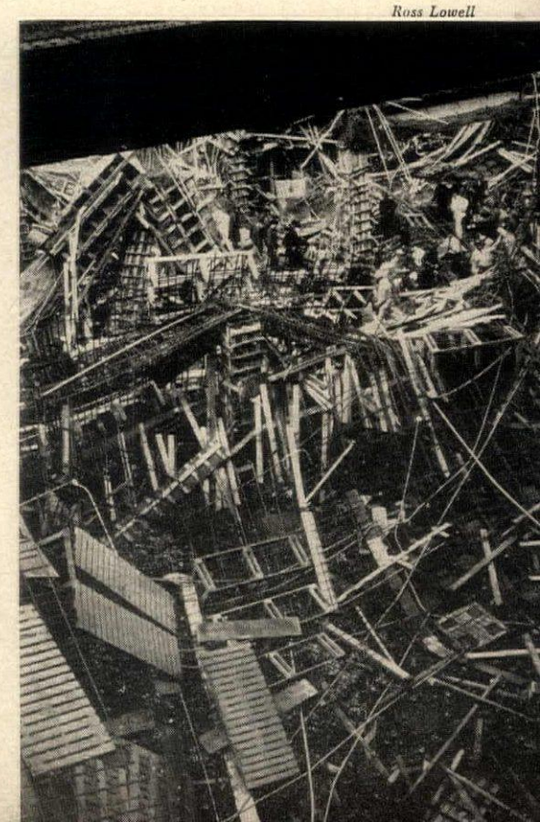
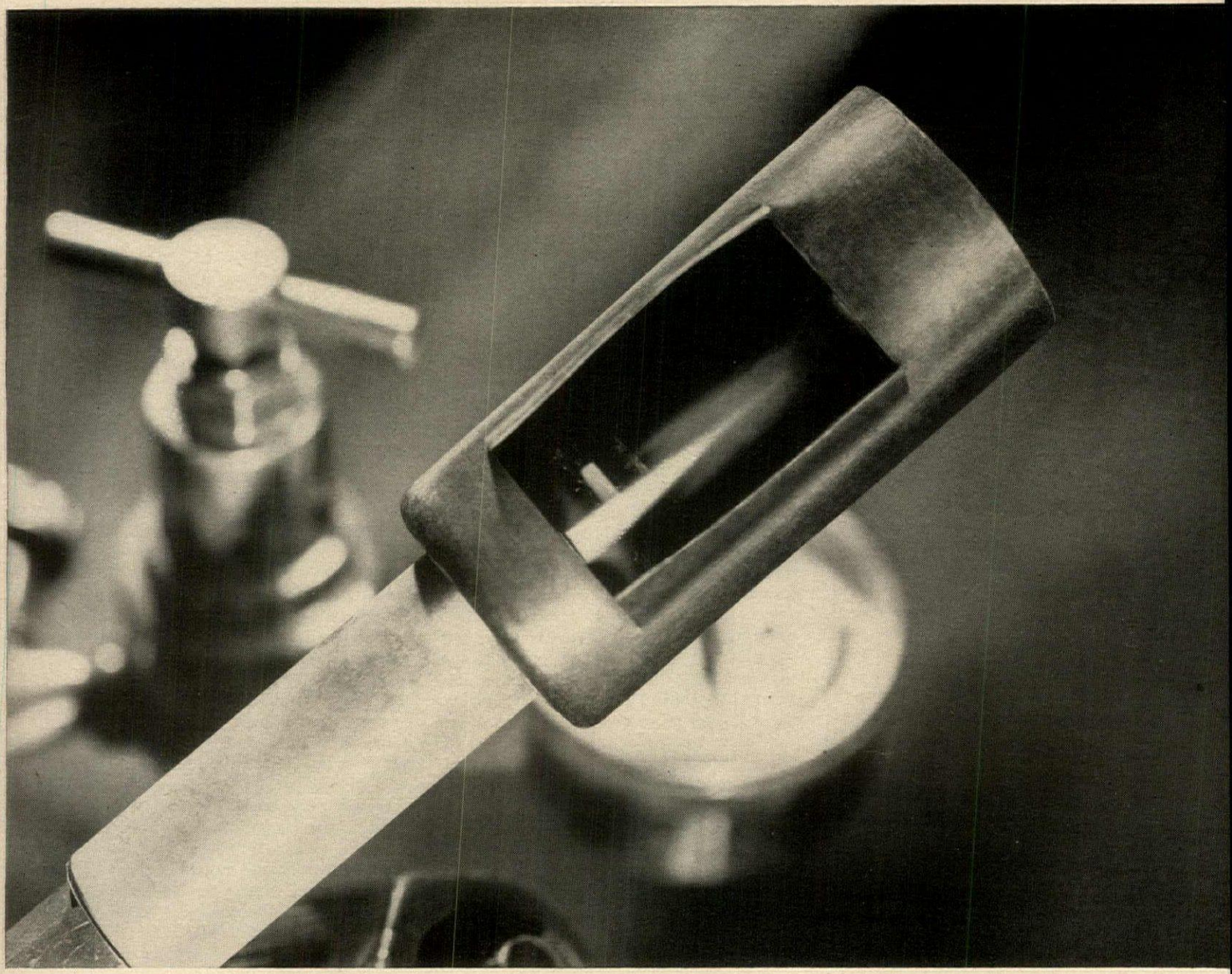


Ross Lowell



COLOSSAL MESS of reinforcing mesh, duckboards and supporting timbers immediately after Coliseum formwork collapse. Form supports (above), under slab adjacent to collapsed area, indicate how wave of failure spread through falsework. Workers are drilling through fallen slab in their search for body of cement finisher.



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Realtors help Philadelphia renewal, earn public bouquets

In many cities realtors are sneered at as the "real estate lobby" and are about as welcome at City Hall as encyclopedia salesmen.

But not so in Philadelphia. There the real estate board is setting a notable example of nonpartisan participation in urban renewal, redevelopment and all sorts of other municipal affairs. In return it could hardly ask for more respect or cooperation from the city if the mayor and his department heads were all fellow realtors.

Common welfare promoters. Last September, for instance, forward-looking Mayor Joseph S. Clark Jr. proposed formation of a Delaware Valley Authority with power to deal with area-wide civic and economic problems of the entire tristate Philadelphia-South Jersey–North Delaware metropolitan region. Chain reactions from the valley's great industrial boom, touched off by construction of its big new steel mills, are not confined within local political boundaries, he pointed out. "Problems of transportation, water, sewage disposal, police and fire protection, education, civil defense, recreation, health and welfare transcend city, state and county lines," he declared, and can be solved effectively only on some coordinated area-wide basis.

Immediately the Philadelphia board commended the mayor (a Democrat) and disclosed that it was already organizing a Delaware Valley Realtors Conference, composed of all nine realtor boards in the region, to work for the same objectives: to prevent "abnormal growth" and to promote the area's "sound development" by stimulating coordination and cooperation among its numerous governing and civic bodies.

Minimize the negative. Concentrating on the positive, the Philadelphia board constantly looks for tangible ways to cooperate with city officials on any programs that will help the city. It has found many opporunities to do so since Clark's reform and city rejuvenation administration took office three years ago. Examples:

▸ To boost the city's budding urban renewal and neighborhood rehabilitation program it: 1) cooperated in drafting a new housing code, 2) is planning meetings to explain the code's provisions to affected property owners, 3) has offered to make free appraisals and give authoritative advice on the economic feasibility of repairing or demolishing particular buildings in rehabilitation areas to any owners who request such advice through the City Housing Coordinator's office, and 4) has agreed to help in relocating families dispossessed from redevelopment sites.

▸ It has been working closely with the city's commerce department to attract more plants to the city and revise cumbersome procedures for the sale of city-owned industrial plots. It also has been working for industrial zoning, and has been opposing the intrusion of nonindustrial uses in the remaining open areas of the city that would be best suited for industrial development.

▸ Last winter the board had seven district subcommittees report on local aspects of the city's mass transit problem; last month it gave the city the recommendations of its central committee: Get rid of the city's trolley lines and expedite proposals for a peripheral highway system including the projected Delaware Expressway.

▸ Board Vice President Albert Quell is a member of the planning commission's technical advisory committee on zoning. The board's city planning committee headed by former President John J. Herd also works in close liaison with the planning commission and redevelopment authority, and Herd recently was appointed to the mayor's zoning advisory committee.

Typical of the board's insistence on "nonpolitical" activity was its action several years ago when city officials asked for its recommendations for establishing a new assessment pattern. The board assigned a committee of top-notch members to study the subject, but before their report was complete the assessment question had become a city council dispute along party lines. As a result the board withheld the committee's report, rather than become involved on either side of a political controversy. Instead it filed the committee's proposals for an "ideal, practical" assessment formula. The full report will be ready any time it may be requested again in a nonpolitical situation.

Mayor's tribute. The city administration periodically seeks realty board advice on many other matters too. Indicative of their respect for the realtors, early each year the mayor and his cabinet hold a private, off-the-record luncheon for the board's executive committee. At this the mayor outlines his long-range policies and programs, including many not yet ready for public disclosure. Mayor Clark told FORUM: "The contributions of the Philadelphia board toward a number of varied activities, ranging from better housing to attraction of industry, is a real demonstration of how a city-wide business group can help advance the welfare of the entire community."

Many real estate boards probably draw their greatest brickbat showers over their vociferous uncompromising opposition to public housing. But once more Philadelphia is an exception. Housing Authority Executive Director Walter Allessandroni says he enjoys the most harmonious and pleasant relations with realtors. Although he had little doubt the board must receive anti-public housing material from NAREB headquarters, he said that for as long as he can remember it has "never publicly, nor indirectly" objected to any Philadelphia project. About two years ago a local radio station sought a realtor debater to oppose public housing, but after checking about a dozen members the board was unable to direct the station to a single prominent member willing to argue against it.

Probably in deference to NAREB's national policies, the Philadelphia board has never given public housing outright positive support, athough as a private citizen nationally known Realtor Roland Rodrock Randall once served as chairman of the Philadelphia Housing Authority from 1939 to 1947.

On troublemaking rent control, the board and the city administration have amicably "agreed to disagree," without prejudice to their cooperation in other fields. Last year at the mayor's request, however, board members made a free survey of rents for the city that covered 63,000 units, about one-quarter of the entire rental market, despite the fact that data was to be used to help the council decide whether to continue controls. But this January Mayor Clark and the Rent Commission held a 45-minute private session to hear the realtors' views before the mayor signed the continuation bill, and the mayor publicly urged the commission to exercise its new discretionary decontrol powers—which are subject to city council veto—whenever feasible.

Long roster of leaders. Normally failure to fight public housing or consenting to a stand-off on rent control might be expected to evoke strong censure from NAREB headquarters. If this has not occurred, it is probably because the Philadelphia board is too valuable a member to offend and it has always contributed so much effort and leadership to NAREB and its many institutes over the years:

▸ Former national presidents from Philadelphia are Thomas Shallcross Jr. (1914), Philip W. Kniskern (1941) and Boyd T. Barnard (1946). National treasurer from 1948 to 1952 was H. Walter Graves, who has been succeeded by another Philadelphia board member, C. Armel Nutter of Camden, N.J., former national membership committee chairman. Current chairman of the national realtor committee is Philadelphia member E. Fred Kemner.

▸ The important Society of Industrial Realtors was born at the 1941 Philadelphia national convention under the auspices of several top Philadelphia brokers, and Philadelphia has the nation's largest SIR chapter. In 1949 SIR's national president was Roland Rodrock Randall, who also spearheaded creation of the new national Society of Real Estate Counselors, of which he is now the first president.

▸ In 1948 to '50 the influential Urban Land Institute was headed by Philadelphian Richard J. Seltzer, in 1951 to '52 by Kniskern.

▸ Barnard and Kniskern also have been National Appraisal Institute presidents.

Affection for their organization runs deep among the Philadelphia board's 1,200 members. Top Philadelphia realtors often postpone and even leave closings rather than miss board committee meetings. Setting a pace that challenges younger members, Maurice Massey Sr., at 80, regularly presides over the important arbitration and ethics committee. Massey still proudly carries an 1887 membership card in the Philadelphia Real Estate Exchange, one of the board's predecessors before it was charted under its present name in 1908.

continued on p. 29

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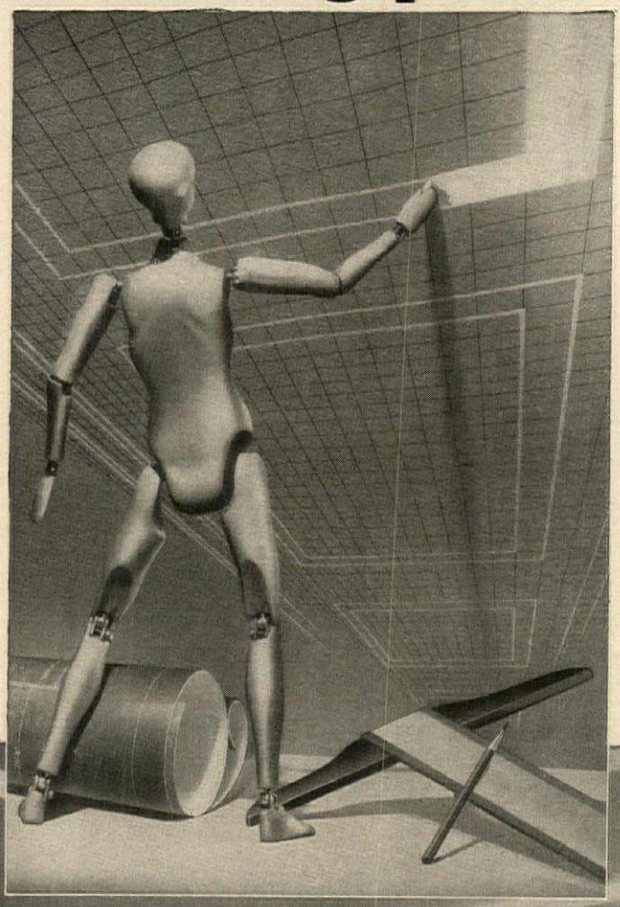

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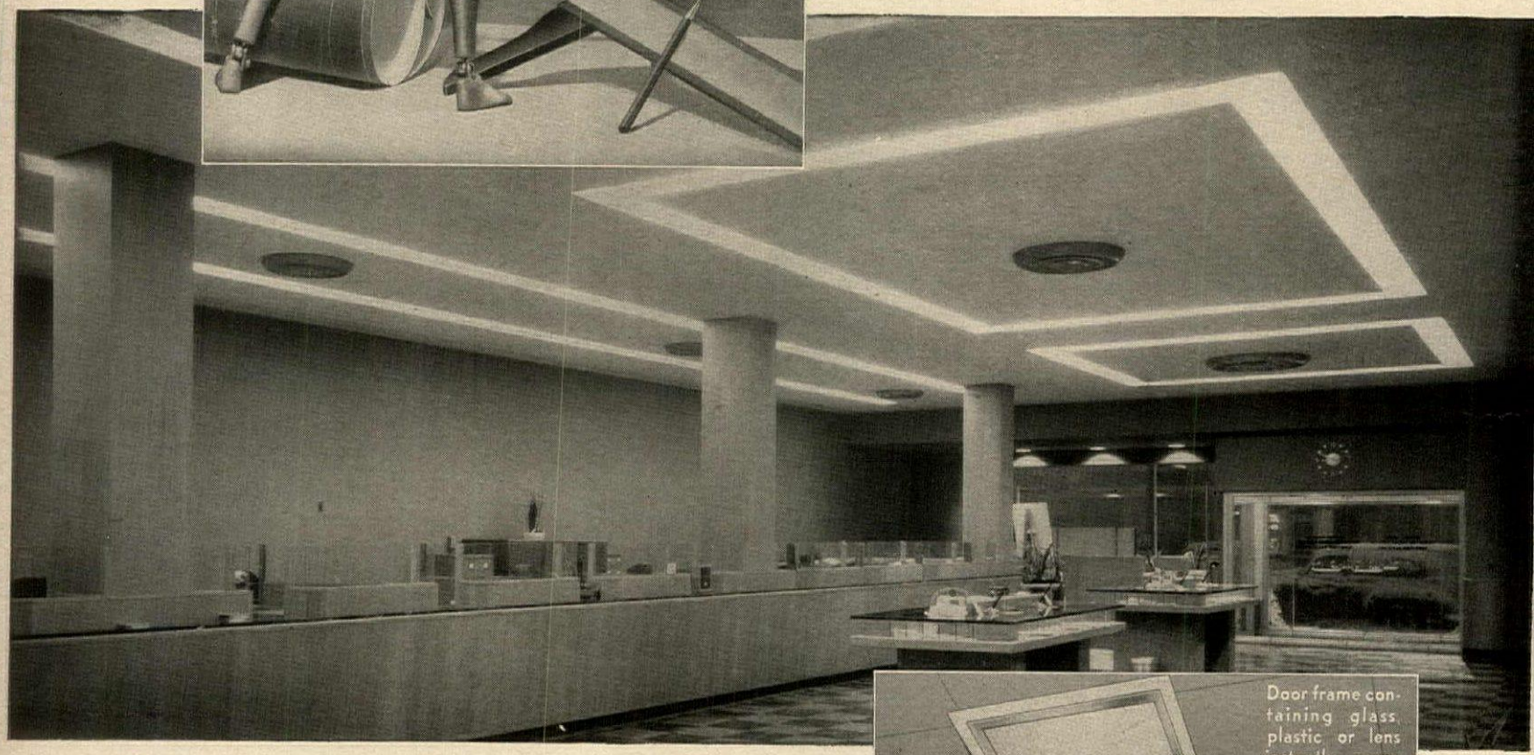

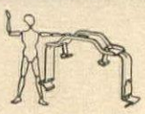

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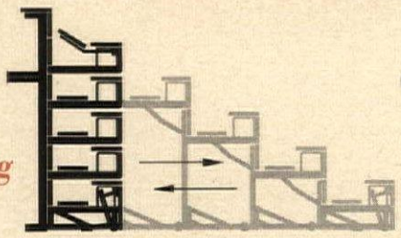

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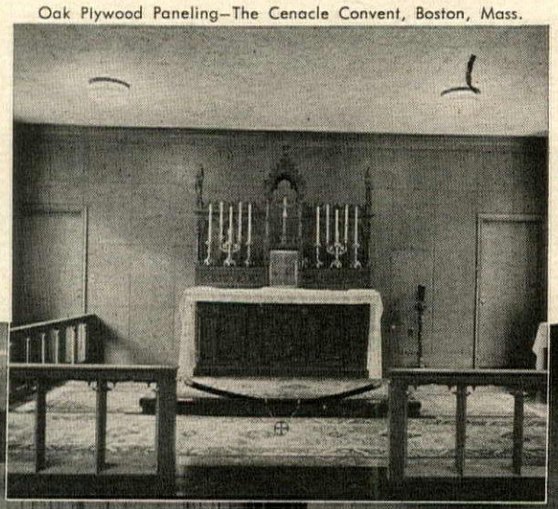

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PEOPLE

Willem Marinus Dudok, Dutch city planner, wins AIA gold medal; John Lloyd Wright found guilty in California license law trial

Willem Marinus Dudok, Dutch architect and city planner, has been chosen to receive the American Institute of Architects' gold medal, its highest professional honor. The award will be made at AIA's yearly convention this month in Minneapolis. Dudok, who made his first visit to US in 1953 to lecture under AIA sponsorship, is expected to receive his medal in person and to address the convention. The typically Dutch works of the internationally known pioneer of the modern movement are concentrated mostly in Hilversum, his home city, but his buildings are found also in Paris, Calcutta and the Dutch West Indies. **Talbot Hamlin,** architectural critic, wrote of Dudok (AF, Feb. '54, p. 150):

DUDOK

". . . In any architecture that claims to be democratic in aims, the extraordinary way in which Dudok has designed for people is of highest significance, as is his companion concept that visual beauty is something the people themselves demand. . . . For us today, his work stands as magnificent affirmation of an architecture designed always to set human beings at the very center of the focus."

In a tight vote of the AIA awards committee, Dudok nosed out **Clarence Stein,** quiet American city planner (Sunnyside, Radburn, Greenbelt, Kitimat). Stein, whose big thinking in regional development has never blinded him to even the tiniest needs and comforts of the people in the projects he designed, will be the banquet speaker at AIA's convention. Nominees for AIA offices: For president, **George Bain Cummings,** Binghamton, N.Y. finishing his second term as secretary; for first vice president, **Earl T. Heitschmidt,** Los Angeles; for second vice president, **Hugh Stubbins,** Lexington, Mass., and **John N. Richards,** Toledo, Ohio; for treasurer, **Leon Chatelain** Jr., Washington, D.C.; for secretary, **Ross Shumaker,** Raleigh, N.C., and **Edward L. Wilson,** Fort Worth, Tex.

CUMMINGS

An innovation of AIA's Washington state chapter this year was presentation of superior craftsmanship certificates to skilled construction workers. Purpose: to recognize the "skilled workmanship which brings architectural plans to full realization." Among the first six so honored were Electrician **George A. Onsum** and Carpenters **Earl Churchill** and **George Raymond,** shown receiving their certificates from **Robert L. Durham,** chapter president.

Architect **John Lloyd Wright** was found guilty a month ago in Oceanside, Calif., Municipal Court of "advertising and practicing architecture without having any license to do so." He was sentenced reluctantly by Judge **L. W. Cottingham** to 60 days in jail. His sentence was suspended; Wright has appealed. The charge, arising from a sign (above) Wright displayed outside his Del Mar home, was the last remaining count against the 62-year-old son of **Frank Lloyd Wright** in an action begun 16 months ago by the California Board of Architectural Examiners. Said Cottingham: "I have searched through several of the laws dealing with different professions and I have found none as loosely prepared as the statute dealing with architects. . . . I had hoped that the Board of Architecture would give serious consideration to having that law changed, and it should be clarified."

Gordon Bunshaft, 45, designer and principal executive of Skidmore, Owings & Merrill's steel-and-glass idiom, was awarded the National Institute of Arts and Letters' first prize in architecture, last month. Bunshaft was responsible for design of Lever House and the big-paned branch bank of Manufacturers Trust Co., both in New York. He is also principal designer of the Air Force Academy project at Colorado Springs, Col. (p. 100). Honorable mention went to **Minoru Yamasaki,** Detroit architect, designer of the Lambert–St. Louis Airport Terminal and the small clinic shown on p. 136.

Lindell Peterson, president of the Chicago Investment Co., was nominated last month for president of the Mortgage Bankers Association of America. Nomination is tantamount to election. Peterson will succeed **Wallace Moir,** of Beverly Hills, Calif., at the association's convention in Los Angeles next November.

Roger C. Davis of Virginia University's school of architecture and **Alexis Yatsevitch** of Rennselaer Polytechnic Institute's architecture department were selected as the first recipients of $2,000 faculty summer fellowships established by Voorhees Walker Smith & Smith, New York architectural firm. The two teachers will be resident at the firm's office for ten weeks, starting this month, and will study the work of each of the major departments.

ELECTED: **John F. Hennessy,** of the New York consulting engineering firm of Syska & Hennessy, and a pioneer in the engineering problems of advanced architecture, as president of the New York Building Congress, Inc.; **Joseph A. McGinniss,** New York specifications writer, as president of the Construction Specifications Institute; **Lloyd G. Mumaw** as president of the Concrete Reinforcing Steel Institute.

JOHN LLOYD WRIGHT AND SHINGLE

NAMED: **Emil C. Fischer,** a professor of architecture at Ohio State University, as head of the department of architecture at Kansas State College; **Harlan E. McClure,** professor of architecture at University of Minnesota, as head of Clemson College's department of architecture; **W. H. Wisley,** former executive secretary of the Federation of Sewage and Industrial Wastes Assns., as executive secretary of the American Society of Civil Engineers, succeeding retiring **William N. Carey; Wesley C. Pietz** as president and managing director of Raymond Concrete Pile Co., Ltd., Raymond Canadian subsidiary.

CONGRATULATIONS: to Architects **Douglas W. Orr** of New Haven, Conn., former AIA president, **Wallace K. Harrison** of New York and **William G. Perry** of Boston, appointed by President Eisenhower to the US Commission of Fine Arts; to **Herman O. Walther** of Chicago, 1946 president of the American Institue of Real Estate Appraisers, new editor of *The Appraisal Journal,* succeeding robust New Yorker **Robert H. Armstrong,** who on relinquishing the job after ten years was commended by the governing council for building the publication into the most authoritative in its field; to Architect **Pietro Belluschi** of Boston, elected to lifetime membership in the National Institute of Arts and Letters; to Architect **Edward D. Stone,** recipient of the 1955 medal of honor of AIA's New York Chapter.

DIED: **John Polachek,** 82, president and founder of General Bronze Corp., and an advocate of use of bronze in building, April 16, in New York; **Albert P. Greensfelder,** 75, 1931 president of Associated General Contractors of America, chairman of Fruin-Conlon Contracting Co. of St. Louis, creator and endower of an annual construction engineering prize of Amerian Society of Civil Engineers, April 17, in St. Louis; **Elmer C. Jensen,** 85, member of the Chicago architectural firm of Jensen & Halstead, designers of more than a score of Loop office buildings, April 24, in South Haven, Mich.; **Kenneth MacKinnon,** 67, president of Ebasco International Corp., April 27, in Bronxville, N.Y.; **Edmund R. Plunkett,** 63, a founder and first president of Northeastern Lumber Manufacturers Assn., May 4, in Pelham, N.Y.; **George W. Hellmuth,** 85, St. Louis residential architect, May 9, in St. Louis.

continued on p. 32

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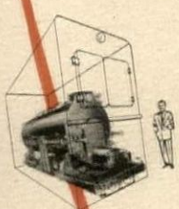

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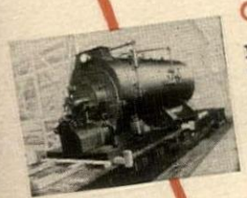

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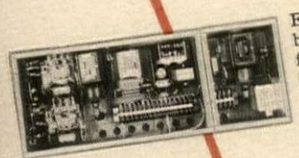

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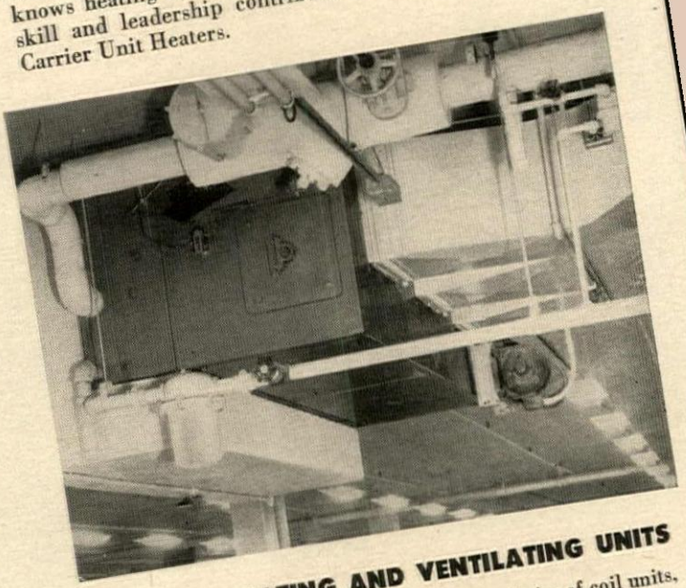

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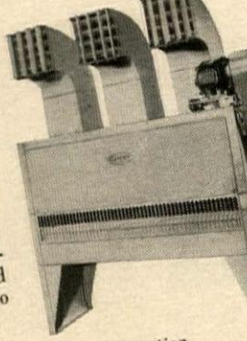

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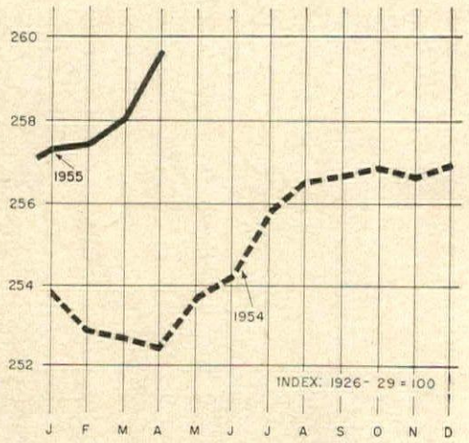
TRENDS

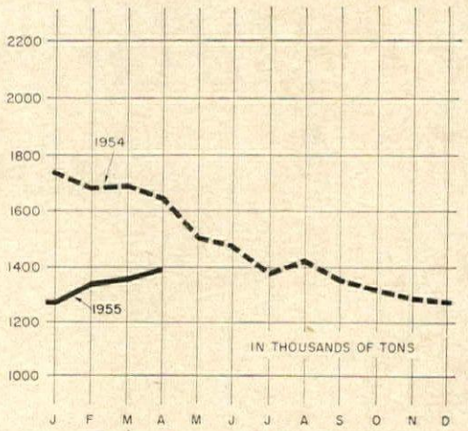
Building costs, level for past half year, rise under double impact of upturn in material prices and pattern of wage increases

Building costs reflected the spectacular upsurge of construction spending (see right) by jumping sharply in March and still more sharply in April. The sudden rise in costs followed a seven-month period of comparatively little change. Both big ingredients of construction costs—material prices and labor costs—were on the way up:

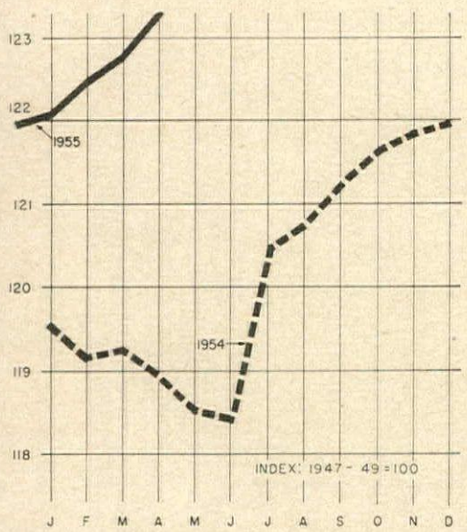
▶ Building material prices were responding perhaps more to demand than to any shortage in supply, for manufacturers and distributors in nearly all lines of building materials had sizable reserves. Exception was cement, which was scarce in some areas where big roadbuilding jobs were demanding more cement than local mills could supply. Nationwide, however, there was little indication that the cement industry would be unable to meet 1955's big demand. Fir lumber, up $1 mbf, and plumbing and heating supplies, up ½% to 1%, were typical of the upturn in prices. Both were responding primarily to the boom in house construction. Housing starts in April were 127,000—126,500 of them were private—the second highest on record (first: April 1950—133,400 starts). Total housing volume for the first four months of 1955 was the highest ever, 421,600 units, compared with 344,500 in 1954 and 412,300 in 1950.



CONSTRUCTION COSTS rise with contract volume. Source: E. H. Boeckh & Assoc.



STRUCTURAL STEEL fabricators have growing backlog of unfilled orders.

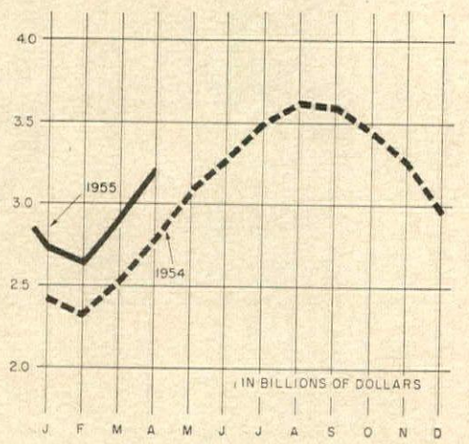


BUILDING MATERIALS prices are moving up according to Bureau of Labor Statistics.

▶ Building labor was confounding the economists again. Momentum of wage increases of the past decade was again, unexpectedly, pushing construction labor costs higher. Spring wage settlements were following a pattern of pay increases ranging from 5¢ to 10¢ an hour, mostly in pocketable cash rather than in fringe benefits. Most building trades in Minneapolis and St. Louis won increases of 10¢ an hour; in New Orleans their gains averaged 5¢. Laborers in Detroit and San Francisco were 10¢ an hour happier, in Kansas City 7½¢. The bulk of building labor contracts were due to expire as June began. The unprecedented pace of construction made it likely that contractor groups in most cities would succumb to union pressure for moderate wage increases rather than precipitate lengthy showdown strikes which could drag on during the peak of the building season.

Material costs probably will shoot still higher in midsummer, for there was little doubt last month that wage negotiations between the United Steelworkers of America and the Big Steel firms would result in higher pay for the steelworkers. Steel producers, anticipating higher labor costs and eyeing a rising backlog of fabricated structural steel orders, were already preparing their customers for higher prices.

Construction expenditures up 20% in first four months



NEW CONSTRUCTION activity showed no sign of abating. By May private contract awards were 20% ahead of last year. Greatest surprise was industrial building, whose rate of increase over last year continued to rise. Commercial building was still expanding, due to big volume of stores, restaurants and garages. Private institutional building, stimulated by a boom in religious structures, was exceeding last year's volume. Public construction was about the same as a year ago; drop in residential, industrial and hospital work was offset by rises elsewhere.

		First four months		
(millions of dollars)	Apr. '55	1955	1954	%±
PRIVATE BUILDING				
Residential	1 294	4,606	3,417	+35
Nonresidential building	564	2,212	1,893	+17
Industrial	185	743	697	+7
Commercial	213	807	626	+29
Religious	54	215	163	+32
Educational	40	162	154	+5
Social and recreational	17	69	64	+8
Hospital and institutional	29	113	106	+7
Miscellaneous	26	103	83	+24
Public utilities	350	1,274	1,265	+1
PRIVATE TOTAL	2,339	8 559	7,053	+21
PUBLIC BUILDING				
Residential building	21	86	139	—38
Nonresidential building	363	1,337	1,441	—7
Industrial	86	321	561	—43
Educational	195	725	623	+16
Hospital, institutional	25	97	102	—5
Military facilities	87	330	296	+11
Highways	245	680	645	+5
Conservation	52	185	207	—11
*PUBLIC TOTAL	886	3,031	3,117	—3
GRAND TOTAL	3,225	11 590	10,170	+14

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

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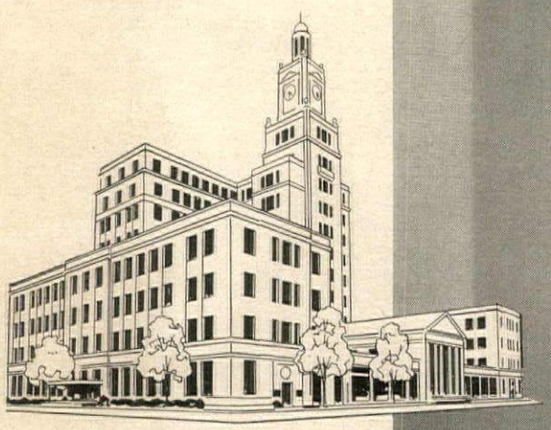

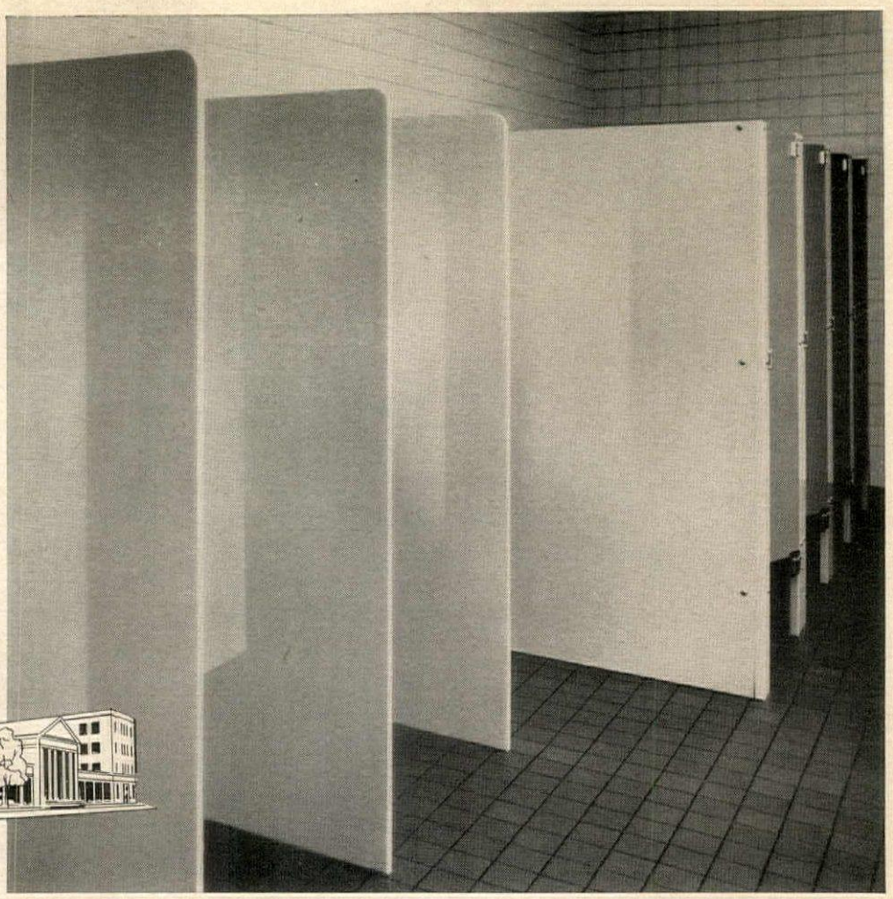

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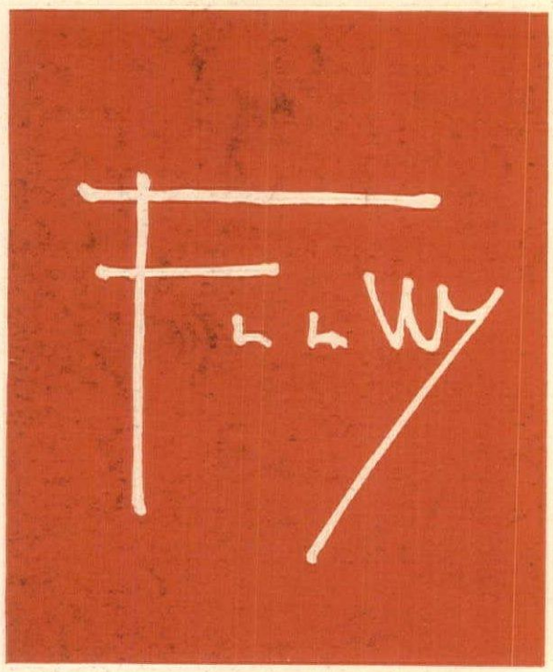

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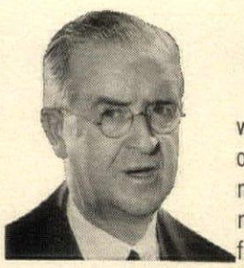

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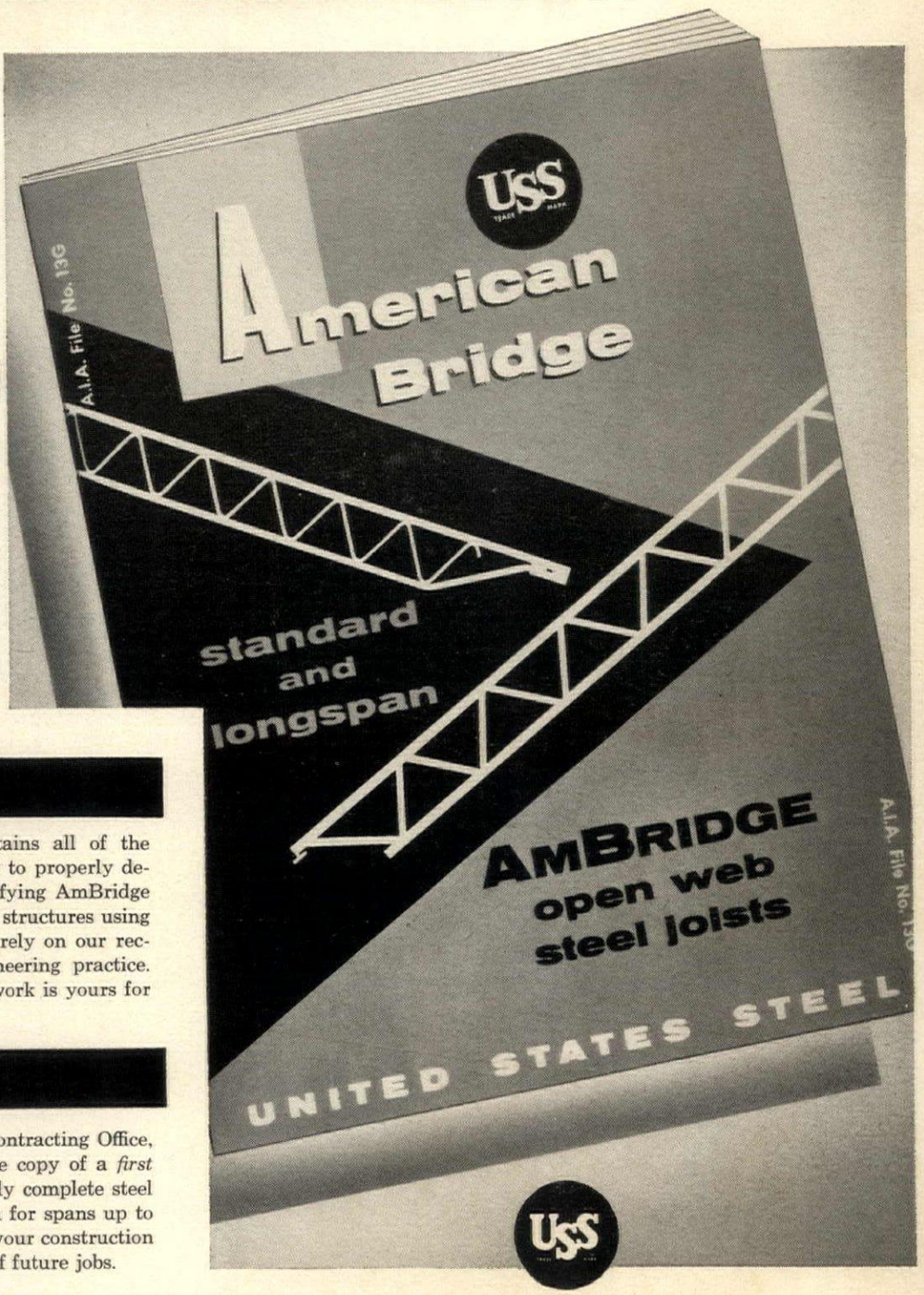

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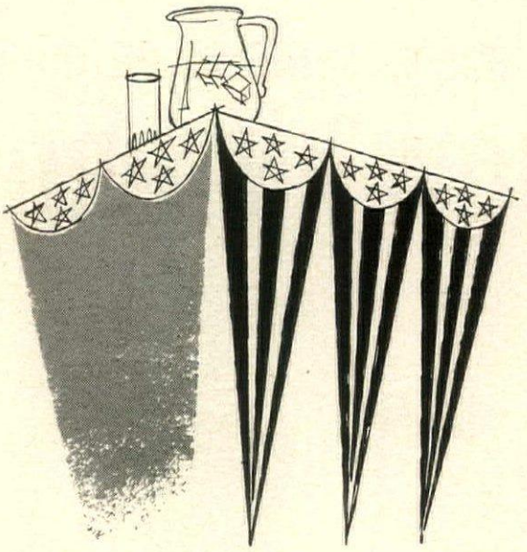

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On the Fourth of July this year, Crane will celebrate its 100th Birthday . . . and start in on a second century of progress.

While we're proud of being a century old—we're even prouder of our cordial relationship with America's Architects. Because *our* progress has been dependent upon theirs.

In modern America, most people take the buildings they live in and work in for granted. The new skyline is admired—but the man who put it there may be overlooked. Architecture is a modest profession—architects don't shout their accomplishments from the housetops. Yet our modern civilization would not have been possible without them.

That's why we're publishing the tribute you see on the page opposite. It appears in this month's issue of *Fortune*. It's our way of giving the American architect some of the respect we think is due him.

Would you like to have a reprint of the *Fortune* ad, suitable for framing? Send your request to our main offices in Chicago. No charge, of course.

CRANE

CRANE CO.
General Offices: 836 S. Michigan Ave., Chicago 5, Ill.
VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING

CRANE STARTS
ITS SECOND CENTURY
OF QUALITY
Founded July 4, 1855

Get full 28 Day Curing for Greater Density with CEM-SEAL

Unless properly sealed, a new concrete floor has a natural tendency to deposit alkaline salts on the surface as it cures. This causes surface powdering, called "dusting" or "bloom."

CEM-SEAL acts as a cap or dam to hold moisture down below the surface. This prevents formation of the damaging salts — and it also prolongs the curing period of the concrete. The surface comes through denser, harder, more resistant to wear.

Application is simple and easy. Treat acres of floor in a short time with big sheepskin applicators. Floors can be opened to traffic in just 4 hours.

CEM-SEAL is also an ideal primer for renewing old concrete floors.

Check these CEM-SEAL advantages — never before available.

1. **Goes on easy — just sweep floor and apply.**
2. **1-coat quick dry application — seals moisture in the concrete.**
3. **Complete curing of concrete gives you a dense, uniform surface with longer life.**
4. **Protects floor from stains while other building trades are at work.**
5. **Prevents "dusting" and efflorescence.**
6. **Gives you a smoother surface for easy maintenance.**

HILLYARD CHEMICAL CO.
St. Joseph, Mo.
Please send me full information about Hillyard CEM-SEAL.

.....for new concrete

..... for renewing old concrete

Name .....

Address .....

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

Mail This Coupon Today

Hillyard Maintaineers®, trained floor experts, are stationed in principal cities. There is one near you, who will be glad to consult with you on your problem of treatment or maintenance of any type floor No charge, no obligation for this service

FLOOR HILLYARD TREATMENTS

ST. JOSEPH, MISSOURI
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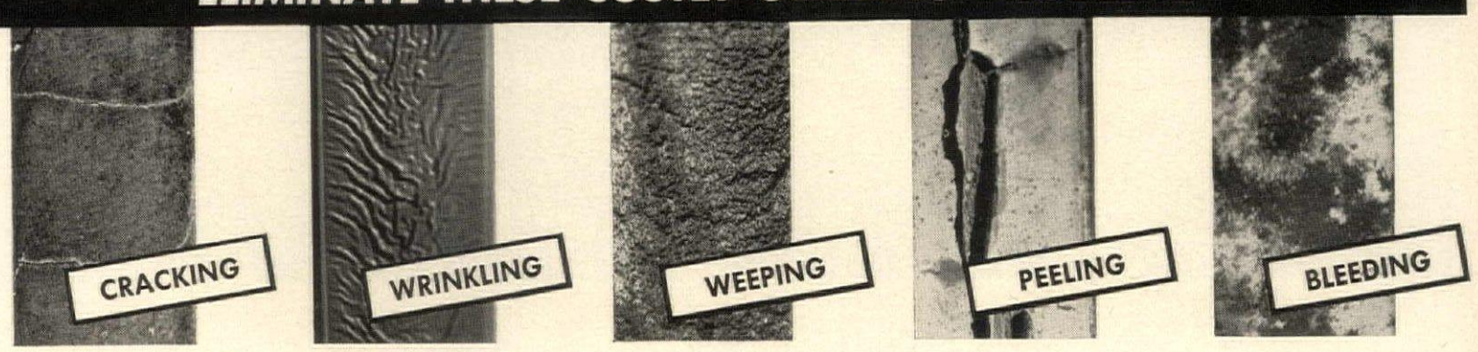
Again TREMCO Revolutionizes Glazing Compounds

NEW TREMGLAZE*

with Tremthol®

The New Safe Specification for Modern Glazing of Modern Windows

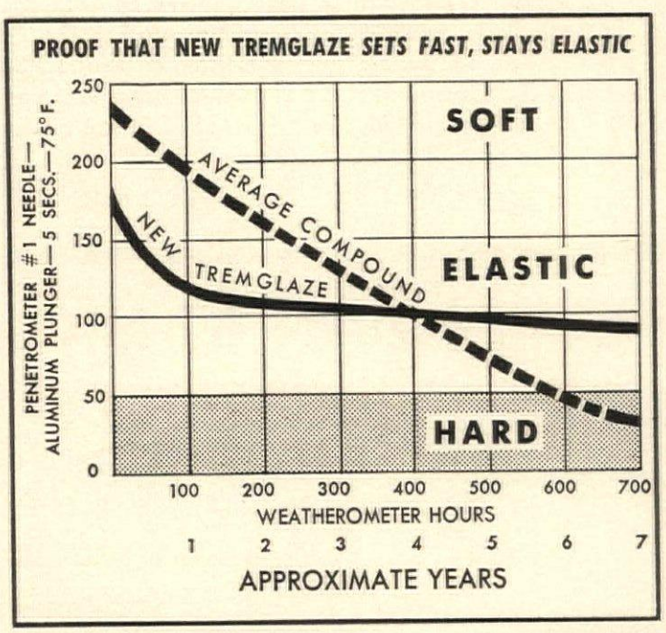
ELIMINATE THESE COSTLY GLAZING PROBLEMS



Modern metal sash, with deep rabbets, large glass areas, insulated glass, and ventilating type windows have created *new* problems in glazing. Now modern technology, through the development of Tremthol, a *balanced* blend of synthetic ingredients, makes possible *new* Tremglaze—the first glazing compound to combine a *fast setting* quality with *long elastic life.* In two or three weeks, new Tremglaze sets as firmly as typical mastic glazing compounds do in 1-1/2 years—then provides years of lasting protection. For safety—specify Tremglaze for *all* metal windows.

*Tremglaze—the *first name* in Mastic Glazing Compounds. The *last word* in safe specification for: aluminum, stainless steel, and galvanized-bonderized windows.

You should know the complete story of revolutionary new Tremglaze. Send today for the "Tremglaze Brochure".



SETS FAST
- No wrinkling
- No sagging
- No cracking
- No bleeding
- No weeping

STAYS ELASTIC
- Bonds securely
- Sets through its entire body
- Reduces window breakage
- Needs no painting
- Weather-tight

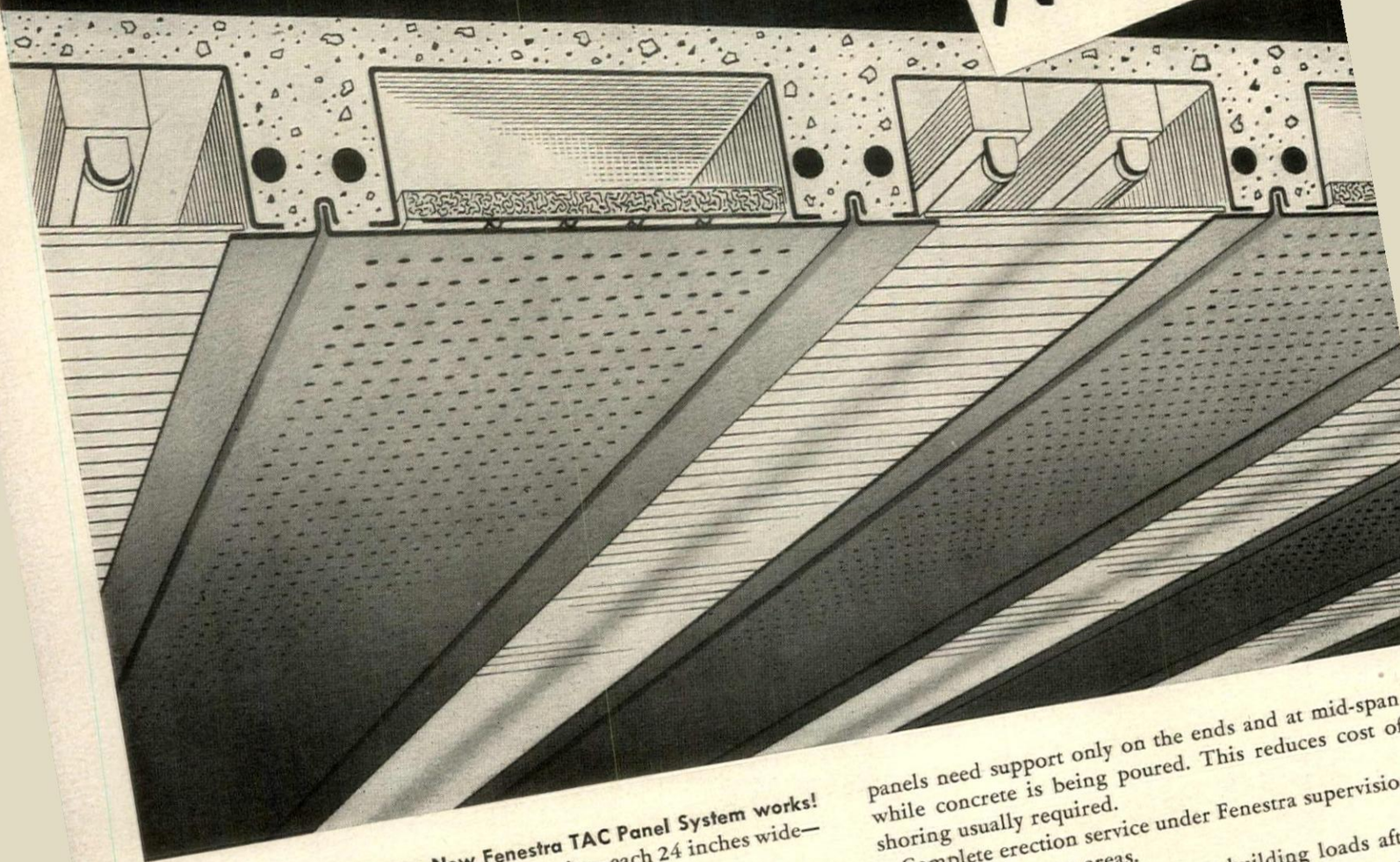
LASTING PROTECTION
- Long lasting weatherproof seal
- Prevents moisture infiltration
- Reduces corrosion
- Neat—attractive appearance

TREMCO

PRODUCTS AND METHODS FOR BUILDING MAINTENANCE & CONSTRUCTION

THE TREMCO MFG. CO., CLEVELAND, OHIO • THE TREMCO MFG. CO. (CANADA) LTD., Leaside, Toronto, Ontario

NEW!



Here's how the New Fenestra TAC Panel System works!

Troffer or acoustical panel units—each 24 inches wide—may be arranged in any combination.

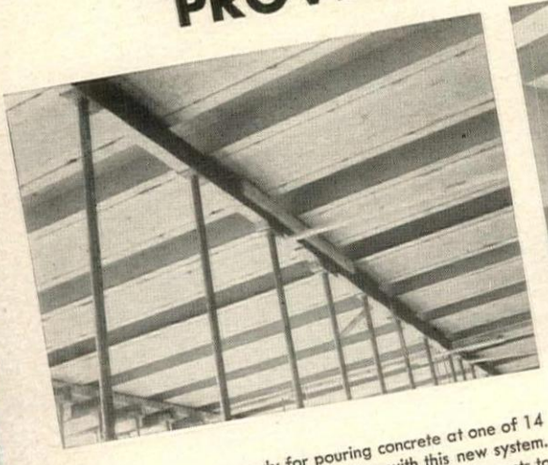
A noncombustible acoustical element is "built in" the acoustical panels. Minimum-cost fluorescent fixtures and plastic diffusers are installed in the troffer panels to provide recessed lighting.

Long span design makes for quick erection, and the panels need support only on the ends and at mid-span while concrete is being poured. This reduces cost of shoring usually required.

Complete erection service under Fenestra supervisio is available in many areas.

Since the TAC Panels carry no building loads aft the concrete has cured, all fire-resistive ratings a based on the reinforced concrete structural system.

PROVEN IN MICHIGAN SCHOOL BUILDING



TAC Panels in place, ready for pouring concrete at one of 14 Michigan schools now under construction with this new system. See how the long span design reduces shoring requirements to only mid-point support. **Marsh School**, Detroit, Michigan. Architect: C. Gabler. Detroit Board of Education, George L. Schulz, Consulting Architect. Contractor: Ellis Construction Co.

Here's a quiet, well-lighted classroom—the result of TAC Panel construction. Maintenance costs are low, because the ceiling can be washed or painted as needed, without reducing acoustical efficiency. Plastic diffusers are easily removed for servicing lighting fixtures. **Pasteur School**, Detroit, Michigan. Architect: Leo M. Bauer. Contractor: Maurice Strandberg Co.

An ideal ceiling for gymnasiums and acoustical treatment "built in" the not be damaged by balls thrown lighting fixtures are economically **Gompers School**, Detroit, Michig Meier. Contractor: A. W. Kutsche

FENESTRA TROFFER-ACOUSTICAL PANEL SYSTEM CUTS COST OF REINFORCED CONCRETE SCHOOL CONSTRUCTION

Multi-purpose Steel Panels provide long-span forms for concrete joists *plus* acoustical ceilings and recessed lighting troffers ***built right in!***

Multi-purpose is the key to economy in school construction. The NEW Fenestra* Troffer-Acoustical Panels (TAC Panels, for short) are designed for multi-purpose use of materials and construction labor. They permit you to have acoustical treatment and lighting—features that usually require extra time and labor—*built right in the structure itself.*

Money is saved because 3 expensive building materials are wrapped up in these economical building panels: (1) the forms for concrete joist construction, (2) metal pan acoustical ceilings, and (3) recessed lighting troffers.

Time is saved because the structural floor for the rooms above and the acoustical ceiling and lighting system for the rooms below are completed at the same time . . . with only paint, finished flooring and installation of fluorescent fixtures to be done after the concrete has cured.

And, this new building system gives you better-looking, better-lighted classrooms that are easier to maintain, year after year. The ceilings 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.

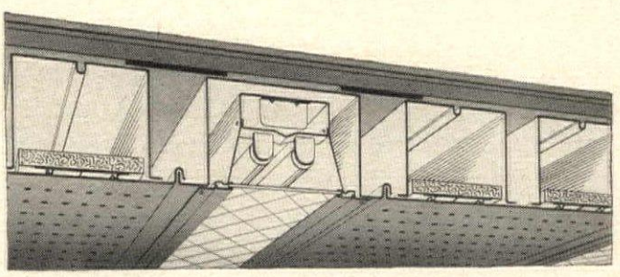
Investigate the New Fenestra TAC Panel System now. Even if you have plans on the drawing board, they may easily be adapted to use it. Write today for your copy of the new brochure, *Fenestra TAC Panel System.* Detroit Steel Products Co., Dept. AF-6, 2296 E. Grand Blvd., Detroit 11, Michigan. *Trade mark

NEW! TROFFER PANEL for Fenestra "D" Panel construction in one-story schools

Now you can have *built-in* troffer lighting in one-story school buildings designed with Fenestra Type "D" Acoustical-Structural Building Panels.

Standard troffer lighting fixtures may be installed flush with the acoustical ceiling in this new Type "D" Troffer Panel, eliminating hanging fixtures and exposed wiring conduits.

Write Detroit Steel Products Company, Dept. AF-6, 2296 East Grand Blvd., Detroit 11, Michigan, for your copy of the new book, *Fenestra for Schools,* and for complete details on this new Troffer Panel.



Fenestra

TAC

TROFFER-ACOUSTICAL

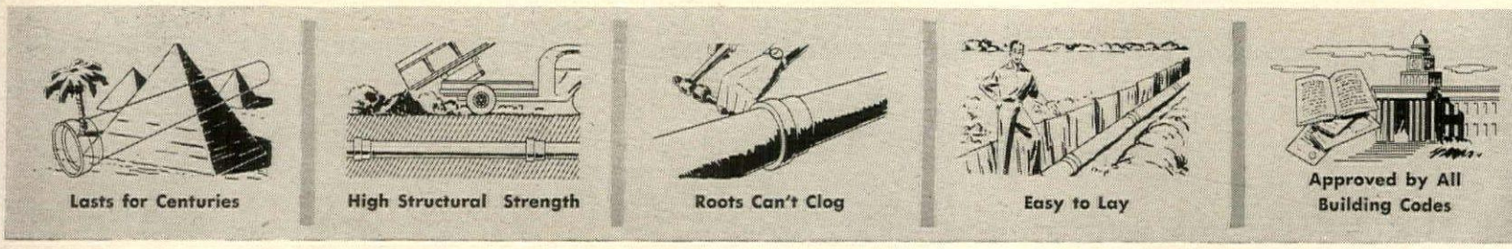
BUILDING PANELS

Every "Outdoor Living Room" Needs the Permanent Protection of *Durable* CAST IRON SOIL PIPE

Many of today's modern homes are being planned for outdoor living, too. The backyard—attractively landscaped and planted, with paved terrace, lawns, flower beds, trees, play-yard and barbecue pit—is the place where family and friends enjoy the relaxation that comes with getting close to nature.

A vital, though an unseen part of an outdoor living room, is the sewer drain that runs underground and underneath all of its improvements, including trees that have taken years to grow. It is important to the home owner who has lavished loving care and money on the planning and development of his home's grounds that this sewer drain should never break down.

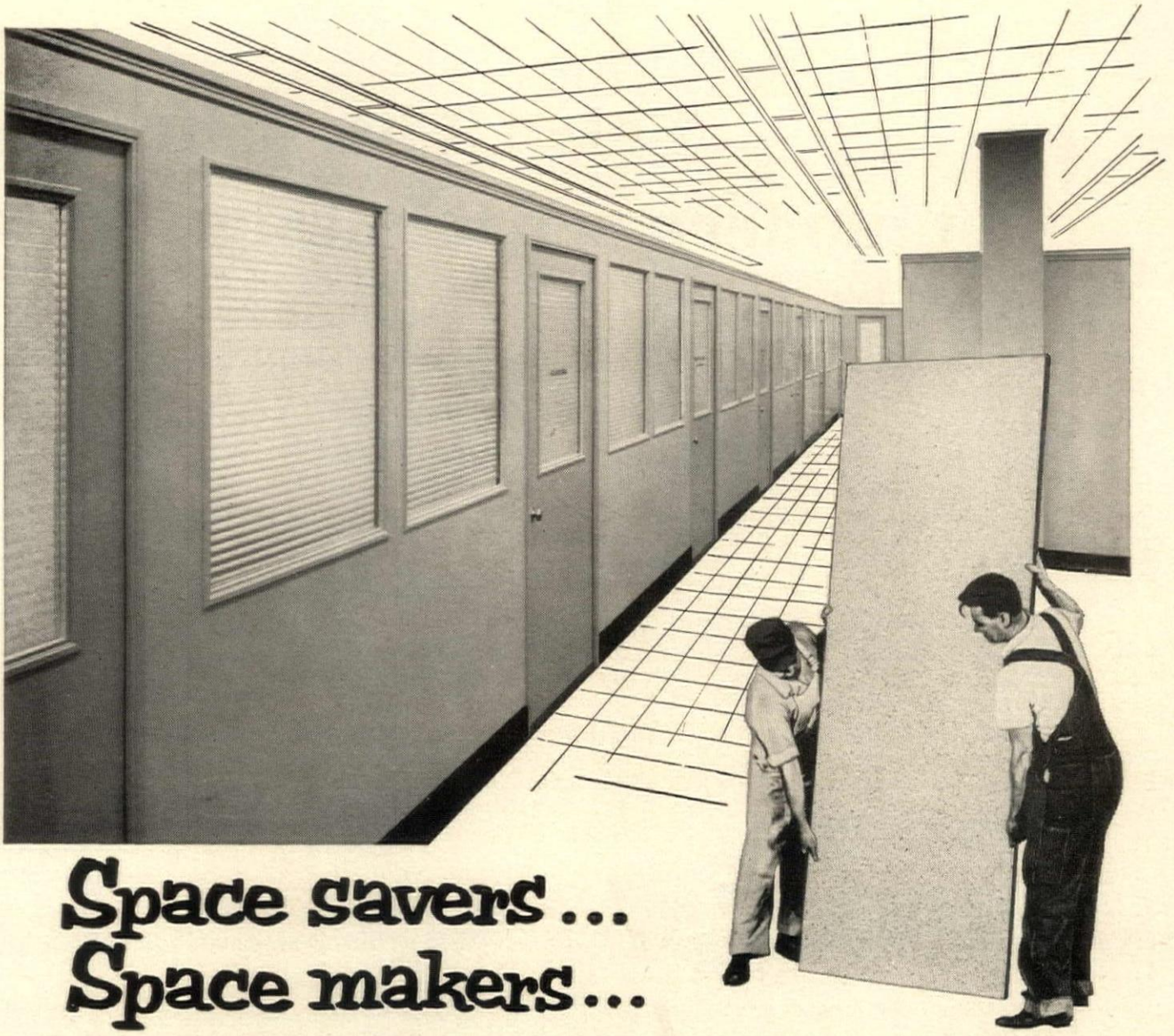
This assurance can be given by the architect or builder who specifies *permanent* Cast Iron Soil Pipe. Because of great metallic strength it withstands heavy strains and stresses, is impervious to root penetration, does not warp, flatten, absorb moisture, disintegrate, swell or buckle. Once buried, Cast Iron Soil Pipe can be forgotten forever. That's why it can be recommended with complete confidence that there will be no complaints.



Our Company does not make Cast Iron Soil Pipe, but produces quality pig iron used in its manufacture by many of the nation's leading foundries.

WOODWARD IRON COMPANY

WOODWARD, ALABAMA



Space savers... Space makers...

J-M Class A Asbestos Walls are movable... save space and make space ... are noncombustible, moderately priced... come in pleasing colors

New Johns-Manville Class A Movable Walls offer you advantages never before combined in an asbestos movable wall. They are modestly priced. They are noncombustible. They have a textured, stipple finish in restful colors. They reduce maintenance and relocation costs to a new low.

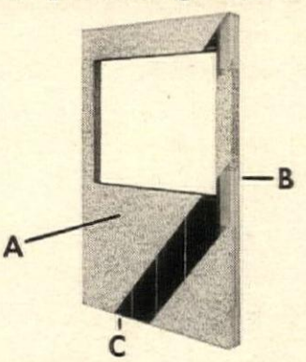
The finish of Class A Movable Walls is a tough, hard film many times thicker than on the usual movable partition. It is mar and scratch resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, it can be touched up inexpensively to look like new . . . and, unlike other types of factory-finished partitions, can be repainted with ordinary paint.

Undivided responsibility for a complete job

These flush or glazed partitions are erected by the Johns-Manville Construction Department complete with doors, door hardware, glass and trim.

• • •

For details about J-M Class A Asbestos Walls, consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Department AF, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario,



A Noncombustible asbestos-cement surfaces

B Generous reinforcing for added strength

C Noncombustible all-mineral insulating core

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

Solve 3 basic heating-of modern school design with 1

New Trane KB Unit Ventilator (1) stops wall-of-glass downdrafts, (2) provides even distribution of heat and ventilation air, (3) gives quick warm-up in the morning*

In modern classrooms, TRANE KB Unit Ventilators stop chilling downdrafts before they start—and make walls of glass practical!

They utilize *Kinetic Barrier* action—tempered air under constant pressure, rising from *wall-to-wall extensions*. The Kinetic Barrier operates constantly, whether the unit is heating, ventilating or cooling—providing *positive* protection—every minute of the day.

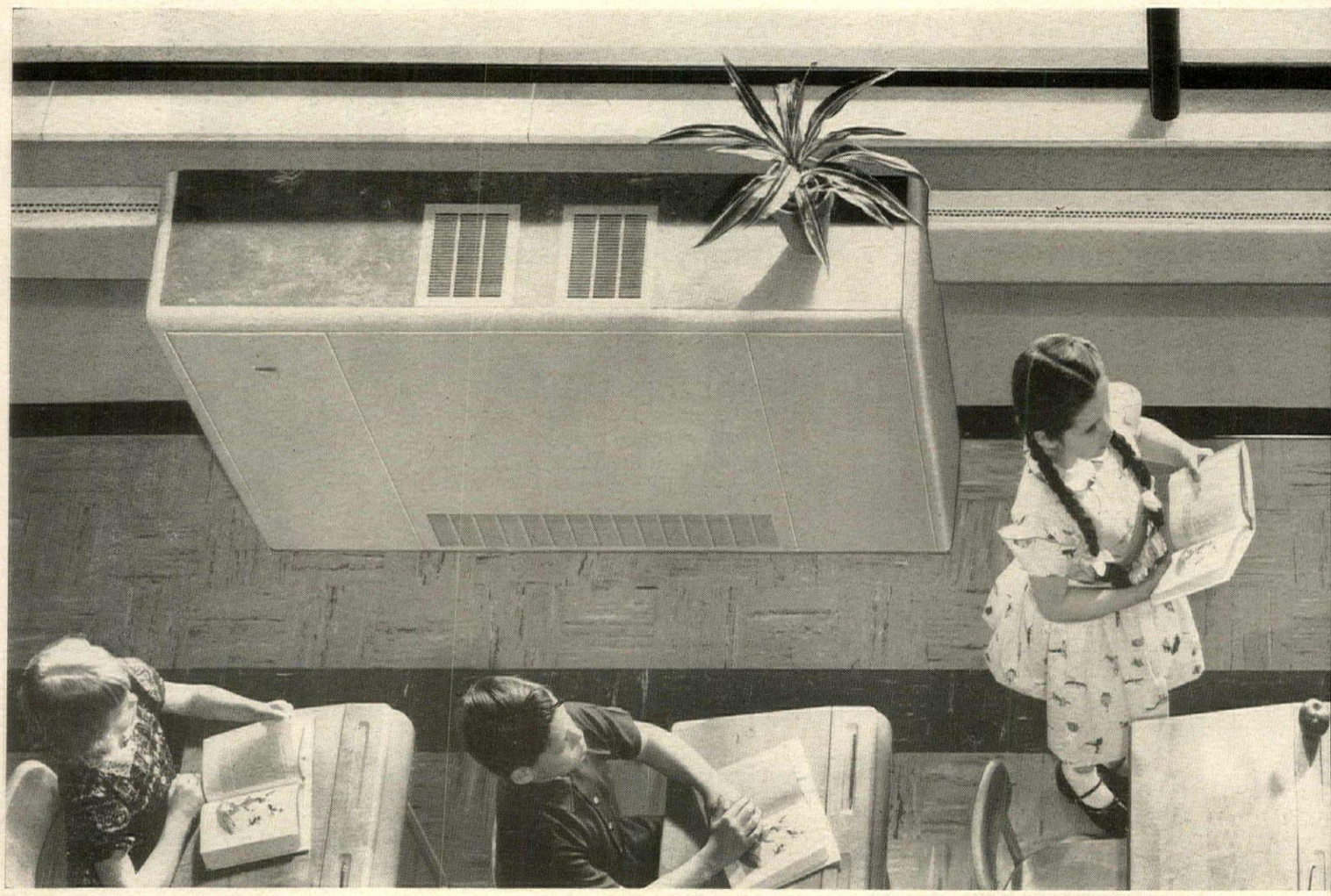
And, despite longer, narrower rooms, lower ceilings, the TRANE Kinetic Barrier provides uniform ventilation, because tempered fresh air is introduced across the *entire length* of outside wall or window. Room air is set in motion in a perfect flow pattern that eliminates cold spots, stale stuffy corners. Morning warm-up is speedy and sure, without excessive fuel cost or overheating.

Thus *three* basic comfort problems are solved by *one* TRANE unit—and, in addition, the *Kinetic Barrier* provides continuous defrosting action to keep windows clear on coldest days.

You want beauty with your comfort, too, and TRANE'S decorator styling offers a choice of six cabinet colors, six color-keyed linoleum tops, optional matching shelving.

Want the full details and available sizes? Contact your nearest TRANE Sales Office or write TRANE, La Crosse, Wis.

**Kinetic Barrier*



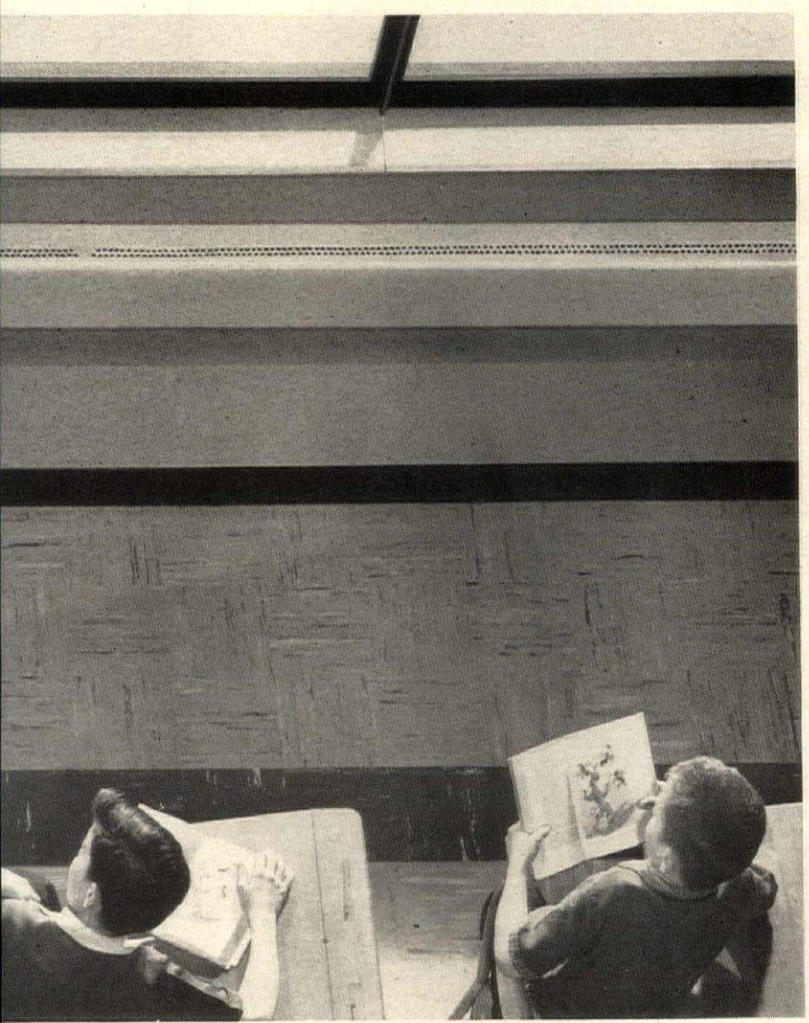
ventilating problems
Trane Unit!

TRANE

MANUFACTURING ENGINEERS

One source, one responsibility for:
Air Conditioning • Heating • Ventilating
Heat Transfer Equipment

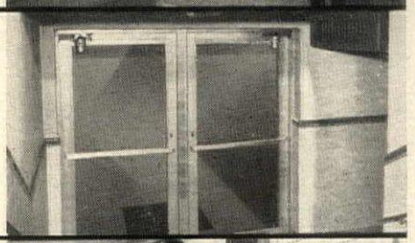
The Trane Company, La Crosse, Wis. • Eastern Mfg. Div., Scranton, Pa. • Trane Co. of Canada, Ltd., Toronto • 90 U.S. and 17 Canadian Offices.



Specify matched TRANE products for all school heating and ventilating needs

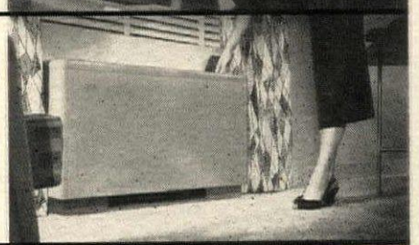
In Stairways TRANE Convectors combine beauty with efficiency, fit where other types of heating units won't.

In Entryways TRANE Force-Flo Heaters greet youngsters with warm welcome . . . blanket doors with heat to block cold air.



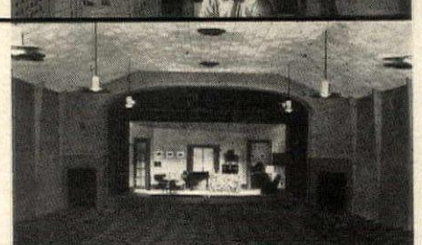
In Swimming Pools TRANE Wall-Fin surrounds occupants with warmth, stops drafts. (TRANE Torridors add tempered ventilation.)

In Offices, wherever year-around air conditioning is desired, TRANE Climate Changers heat or cool, ventilate, dehumidify, filter.



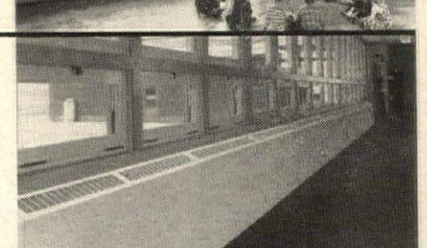
In Locker Rooms TRANE Torridors bring in fresh, warm outside air, blend it with room air. Keep locker rooms free of odors.

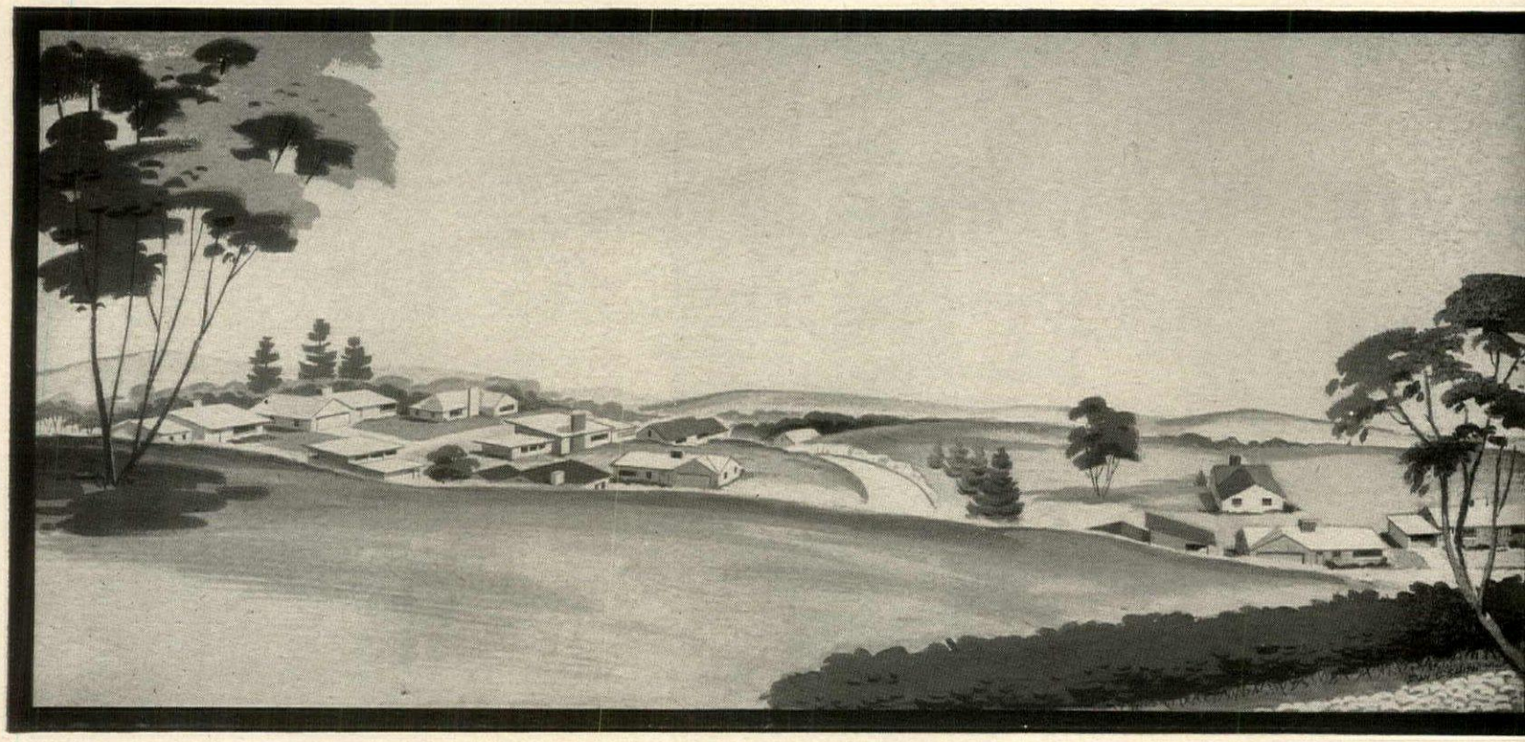
In Auditoriums TRANE Volume Ventilators blend outdoor air with inside room air, warm and distribute it silently.



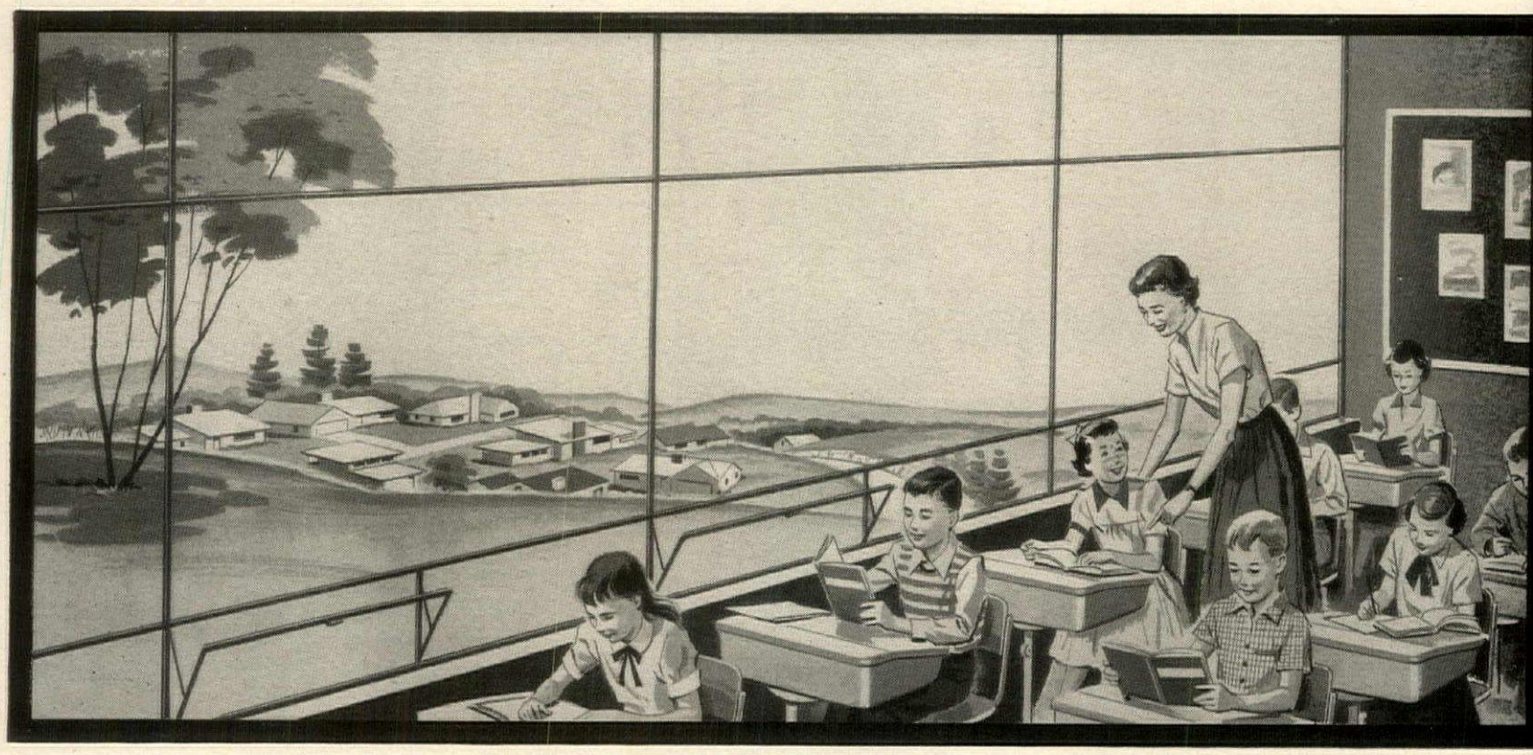
In Gymnasiums TRANE Unit Heaters with exclusive diffusers put heat where you want it, spread warmth evenly over large areas.

In Hallways TRANE Wall Line Convectors serve long wall and window runs, blending with the beauty of modern buildings.





Nature is a happy part



of the modern classroom

A "Daylight Wall" classroom is a happier classroom because it doesn't shut nature out . . . or children in.

Clear glass from wall to wall and sill to ceiling gives the whole room a feeling of bright alertness and openness.

Cuts costs, too. Artificial lighting isn't needed so much. There's less wall area to paint and maintain, and building costs are lower than in many other types of construction.

In cold climates, your daylight walls should be *Thermopane** insulating glass for maximum comfort and heating economy. Write for your free copy of *How to Get Nature-Quality Light for School Children.* Dept. 4265, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio. *®

THERMOPANE • PLATE GLASS • WINDOW GLASS

LOF GLASS

DAYLIGHT WALLS

...THAT LET YOU SEE

LIBBEY·OWENS·FORD GLASS CO., TOLEDO, OHIO

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.

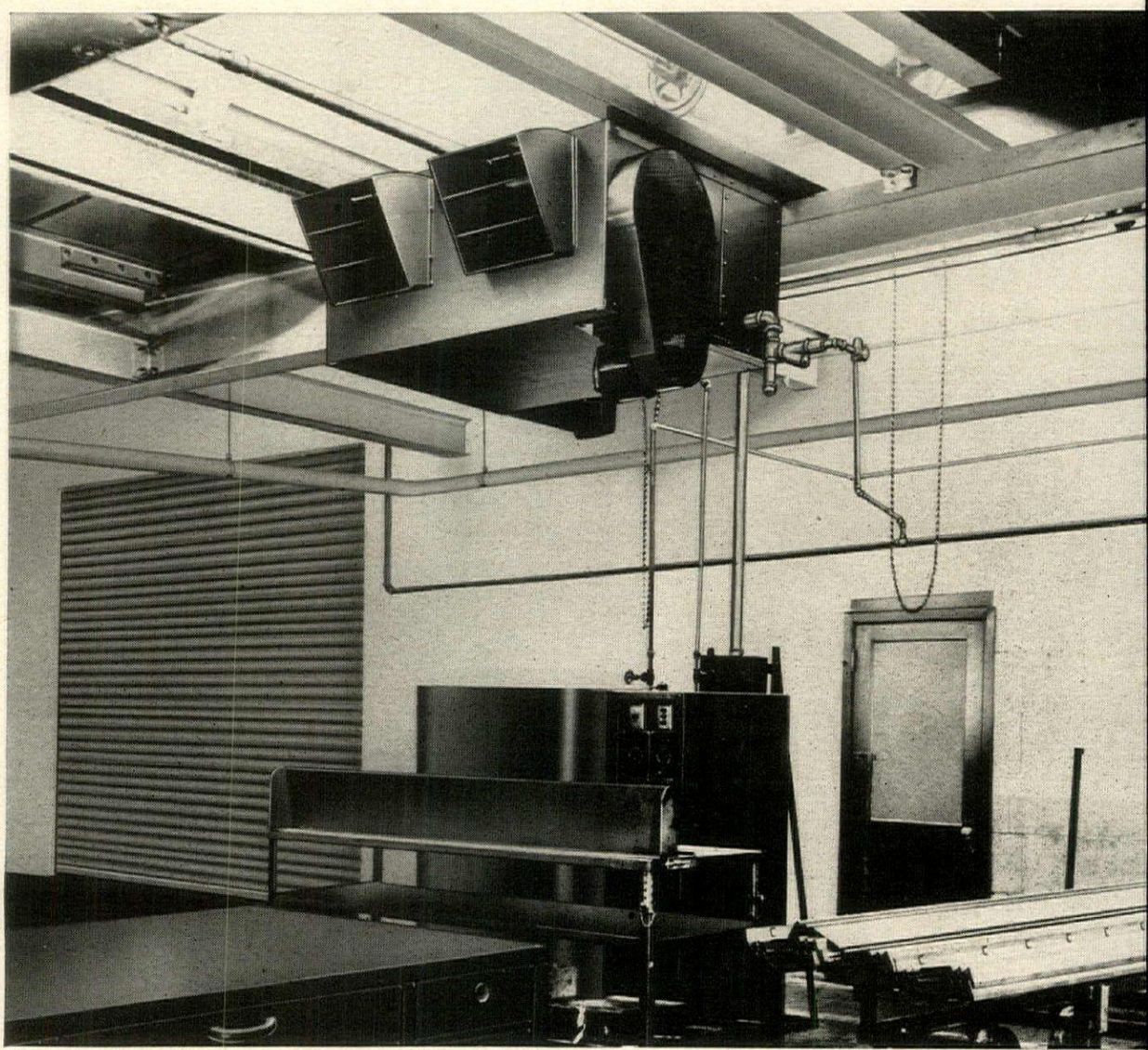
The General Electric Q-Floor wiring system is designed for installation in cellular steel subflooring, and makes every square foot of floor space available for outlets. Every cell is a raceway for present and future circuit requirements. No costly alterations, no litter, no tie-up of space, no matter 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 C49-64, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

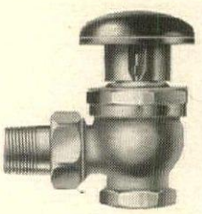
Progress Is Our Most Important Product

GENERAL ELECTRIC

New Dunham Blower Unit Heaters..



From radiator traps
to fully engineered systems
you can DEPEND ON DUNHAM for
everything you need in heating



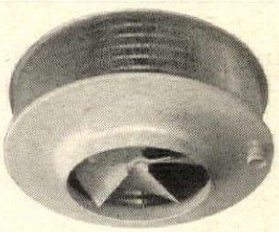
Dunham Radiator Valves. Complete line of radiator valves, traps and other specialties for steam heating.

Dunham Vacuum Heating Pumps. Single and Duplex models. No close clearance parts. Only one moving element.

types and capacities to fit every need

nham Cabinet
it Heaters for steam or hot water, capac-
es from 10,000 to 108,000 BTU.

unham Horizontal Discharge Unit Heater,
r steam or hot water, capacities from
0,600 to 360,000 BTU.



unham Vertical Discharge Unit Heater,
r steam or hot water, capacities from
6,000 to 576,000 BTU.

Dunham's newly redesigned line of blower unit heaters is one of the most broad and complete in the industry. Seventeen different sizes . . . in 170 ratings from 125,000 to 1,500,000 BTU . . . 1,430 to 20,800 CFM.

Dunham Blower Unit Heaters can be mounted on ceilings, walls or on floors. They solve any heating, ventilating, air cleaning, process heating or drying problem. A wide variety of nozzle and nozzle-extension arrangements lets you "pinpoint" or widely diffuse warmth where needed. Heaters can be used with or without ducts . . . with bypass damper, filter section and mixing dampers to handle any of your client's usual . . . or unusual . . . space or process heating and ventilating requirements.

And For Spot Heating, Dunham offers an unusually complete line of propeller fan unit heaters . . . cabinet types for floor- or wall-mounted installations . . . horizontal and vertical discharge heaters for overhead applications. For full information, write for Bulletin AF-6, C. A. Dunham Company, 400 W. Madison St., Chicago 6, Illinois.

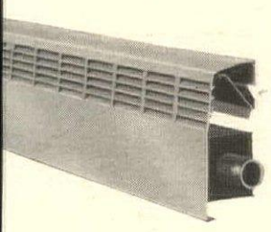
DUNHAM®

HEATING & COOLING EQUIPMENT

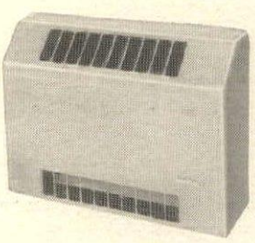
RADIATION • CONTROLS • UNIT HEATERS • PUMPS • SPECIALTIES

Quality First for Over Fifty Years

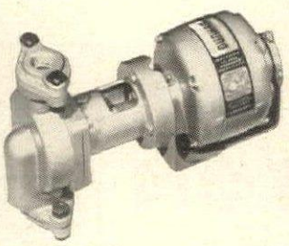
C. A. DUNHAM COMPANY • CHICAGO • TORONTO • LONDON



unham Radiation. Full range
f sizes and types of convectors,
aseboard and finned tube radi-
ion.

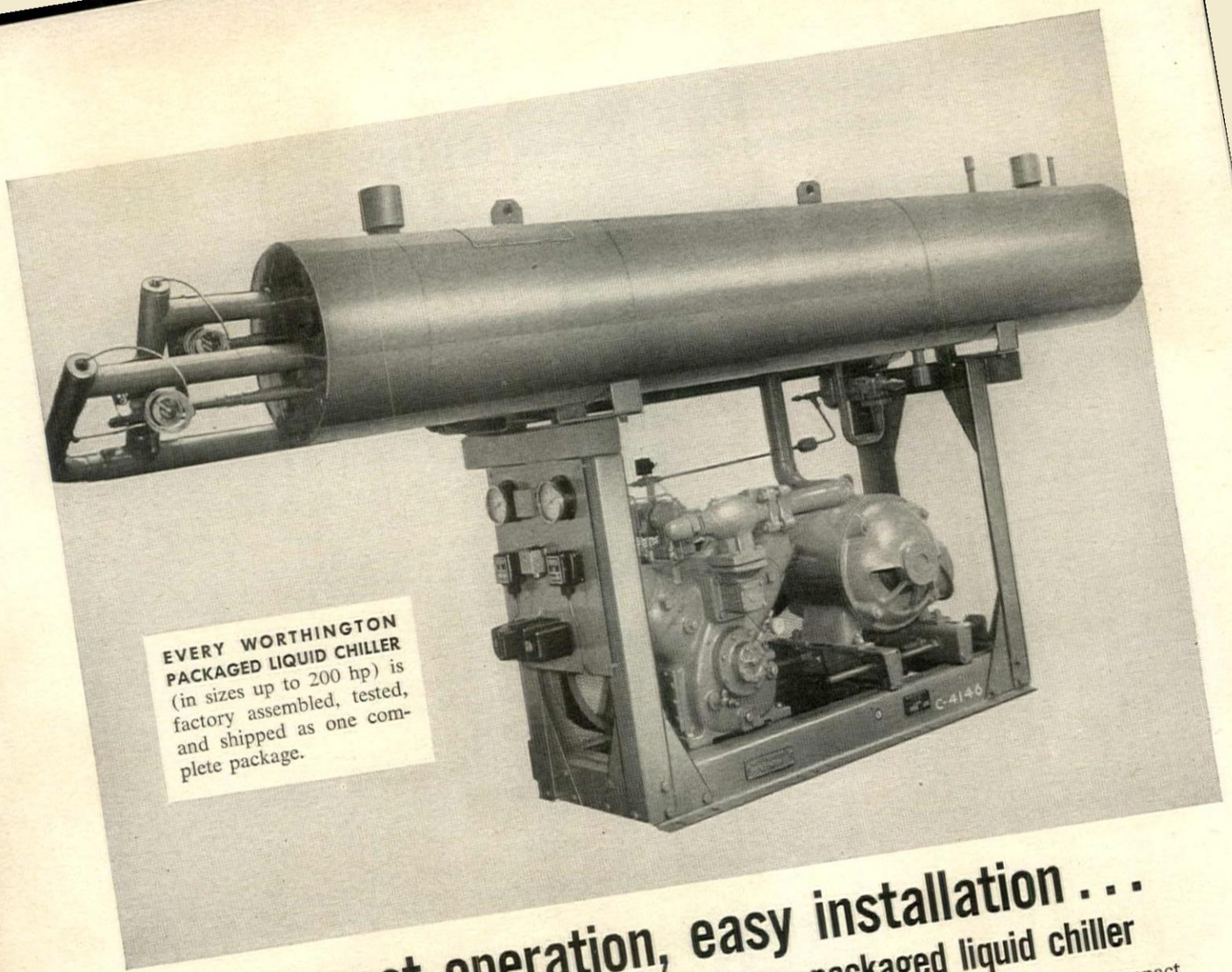


Dunham Unit Heaters. Line includes heating-cooling units, vertical, horizontal discharge and large blower unit heaters.



Dunham Circulators. Heart of Dunham's complete hot water line. Single-spring motor coupling. Brand-name motor.

Dunham Vari-Vac®. Precision temperature control system uses continuous-flow "cool" steam, cuts fuel costs up to 40%.



EVERY WORTHINGTON PACKAGED LIQUID CHILLER (in sizes up to 200 hp) is factory assembled, tested, and shipped as one complete package.

Low-cost operation, easy installation . . .

you get both with Worthington's new packaged liquid chiller

If you're interested in process cooling, refrigeration, or air conditioning, take a long look at these six big advantages of the new Worthington packaged liquid chillers:

LOW-COST OPERATION — Simple variable capacity control exactly matches load requirements — results in unusually economical operation.

EASY INSTALLATION — All units are shipped completely assembled. Only simple foundations are needed.

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2'8" x 6'8" 2' 7 11/16" x 6' 7 1/16"
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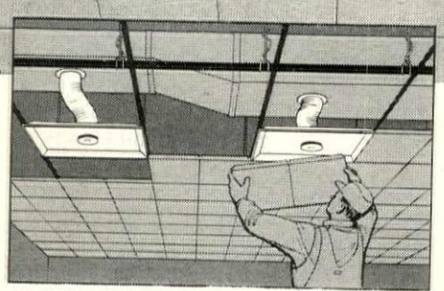

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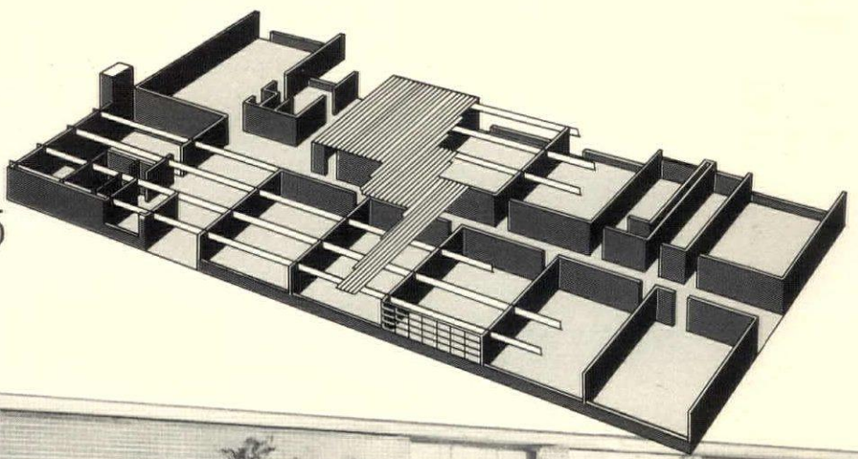
New "SCR" research project:

Low-cost schools in **brick and tile**

Basic structural element in this new concept for low-budget school building is an L-shaped, load-bearing clay masonry wall, repeated throughout the plan.

Exposed inside as well as out, the clay masonry adds beauty, eliminates painting, saves maintenance. It also provides structural stability, fire-resistance, and good insulation against sound transmission.

Including mechanical services, estimated cost of the school shown here is $8.35 per sq. ft. in the Chicago area.



***Complete file folder** on this Structural Clay Products Research Foundation project may be obtained free by writing*

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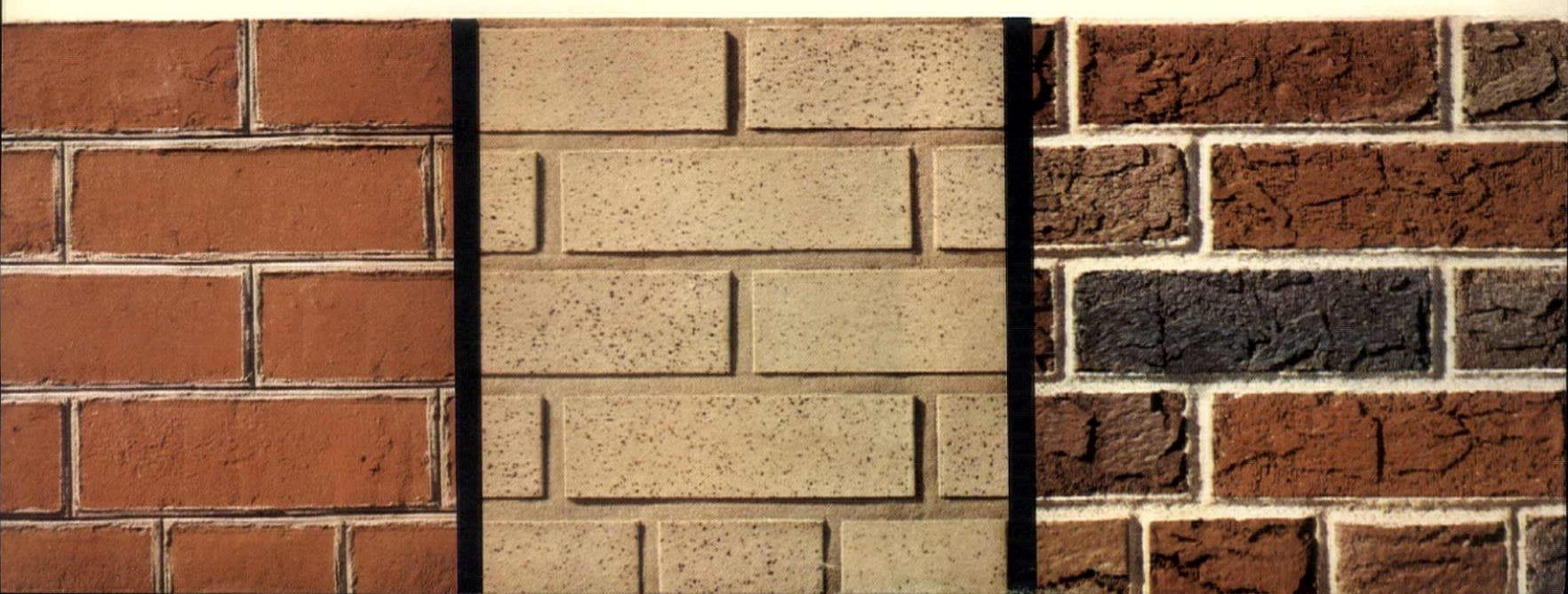
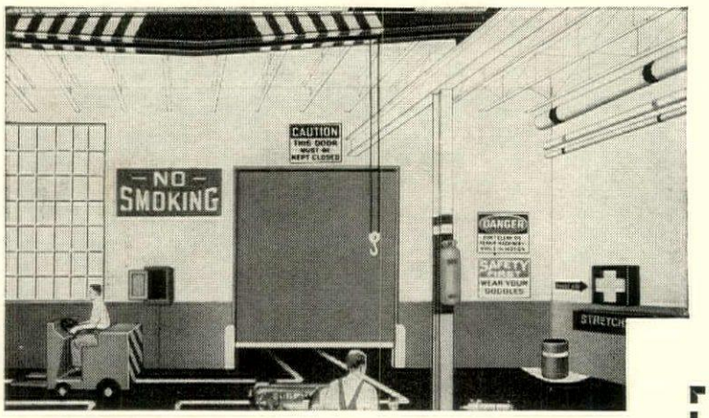


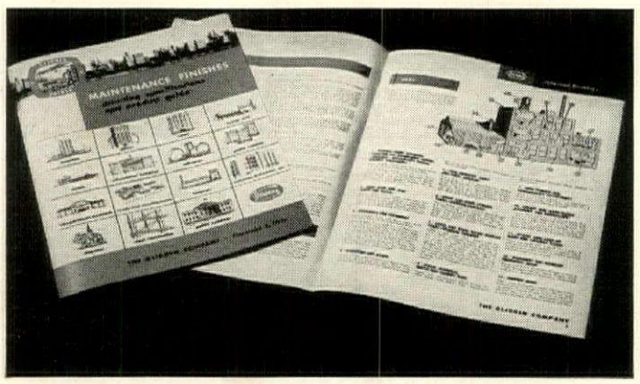
Glidden Announces: New commercial and institutional painting service

PAINTING ANALYSIS

Demonstrations of new latex, alkyd and vinyl paints can save your company thousands of dollars, help you train men in application of new paint products.



Glidden Color Studio puts professional color help at your disposal whether its safety markings for your factory or planning color to match your draperies in the case of offices.



New catalog includes complete specifications and product guide, selector charts, color chips, information on surface preparation, special finishes of all types—this book is a *must* for reference; training of personnel; purchasing guide.

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.

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It doesn't make good sense to combine high speed elevators with slow closing hoistway and elevator car doors. Seconds saved at each elevator stop can add up to hours of faster service in a busy building. Only Otis Electronic Elevator Doors—***with the electronic zone of detection***—have been designed to encourage people to step livelier—***and speed traffic!***

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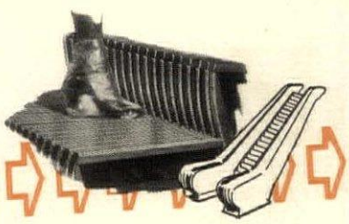
It's always well to remember that every elevator entrance has two doors. First, the hoistway door; and second, the elevator car door. This is of utmost importance, because passengers in high speed operatorless elevators should always be protected from both doors—***for the highest degree of safety!*** Only Otis Electronic Elevator Doors ***with the electronic zone of detection*** (as illustrated in phantom) provide double-door protection—as described in Otis booklet B-807. This unmatched safety—***obtainable only with completely automatic AUTOTRONIC elevators***—is available at only slightly extra cost above such standard equipment as rubber-edged contact doors, electric rays, and single-door protection.



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Because those floppy new plastic women's overshoes can—***and sometimes do***—get stuck between the steps of escalators, Otis engineers have come up with a new safety step. It's cleated in a way to prevent such a mishap. It's now available for new installations.

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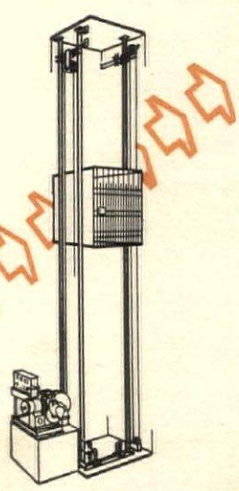

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Otis Light Duty freight elevators have a semi self-supporting framework that permits installation in new and existing hoistways without reinforcing the building, or adding overhead supports, or building a penthouse. They can be used for any rise up to 35 feet at a speed of 25 feet per minute with lifting capacities of 1,500, 2,000 and 2,500 pounds. They're described in Otis booklet B-720.

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DATES

Association of State Planning and Development Agencies, annual meeting, **June 7-10,** Shirley-Savoy Hotel, Denver.

American Welding Society, national spring meeting and exposition, **June 7-10,** Kansas City, Mo.

British Architects Conference, June 8-11, Harrogate, Yorkshire. For details address C. D. Spragg, Secretary, 66 Portland Pl., London, W. 1.

International Design Conference, June 13-16, Aspen, Col. Speakers will include Walter Gropius, Pier Luigi Nervi, Philip Johnson. For further details address R. Hunter Middleton, 220 S. Michigan Ave., Chicago.

Plastics in the Design of Building Products, special summer program conducted by the Massachusetts Institute of Technology, **June 14-24,** at Cambridge. For details address Summer Session Office, room 7-103, MIT, Cambridge, Mass.

National Association of Building Owners and Managers, annual convention, **June 19-23,** Netherlands-Plaza Hotel, Cincinnati.

Forest Products Research Society, national meeting, **June 20-23,** Olympic Hotel, Seattle.

American Institute of Architects, annual convention, **June 20-24,** Radisson Hotel, Minneapolis, Minn.

National Conference on Instruction in Landscape Architecture, June 22-25, Allerton Park, Monticello, Ill.

American Society of Landscape Architects, annual meeting, **June 26-29,** Sheraton-Cadillac Hotel, Detroit.

American Society for Testing Materials, annual meeting, **June 26–July 1,** Chalfonte Haddon Hall Hotel, Atlantic City, N.J.

First International Building and Public Works Equipment and Materials Fair, June 25–July 10, Saint Cloud National Park, Paris. For details address M. Charles Chereau, 29 Rue Canbon, Paris.

Congress of the International Union of Architects, fourth annual assembly, **July 8-16,** The Hague. Further details available from AIA headquarters in Washington.

Noise reduction, special summer program to present engineering advances in this field, sponsored by MIT, **August 15-26,** at Cambridge. For details address Summer Session Office, room 7-103, MIT, Cambridge, Mass.

International Congress of Refrigeration, sponsored by the International Institute of Refrigeration, **August 13–Sept. 15,** Sorbonne, Paris. Details available from the Institute, 177 Boulevard Malesherbes, Paris.

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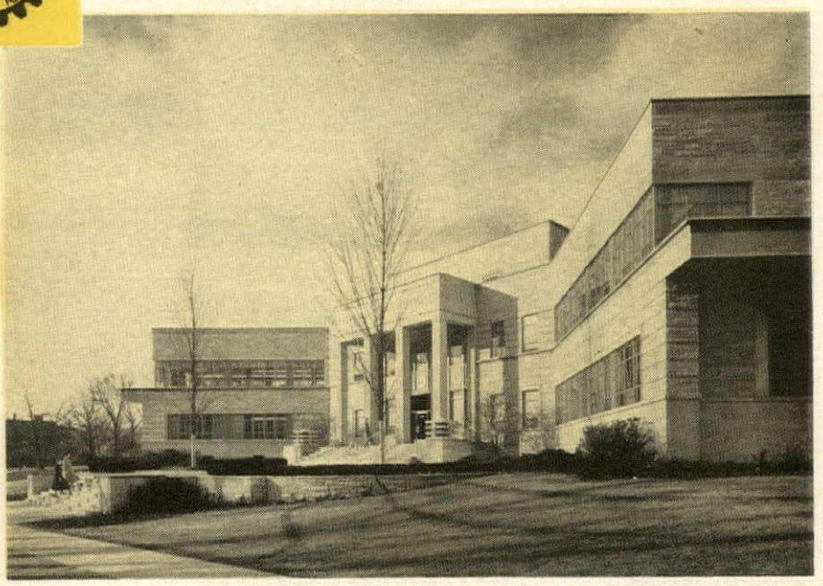
On its 50th anniversary Rotary International welcomes its members from 8600 clubs in 90 different countries to visit its new headquarters in Evanston, Illinois.



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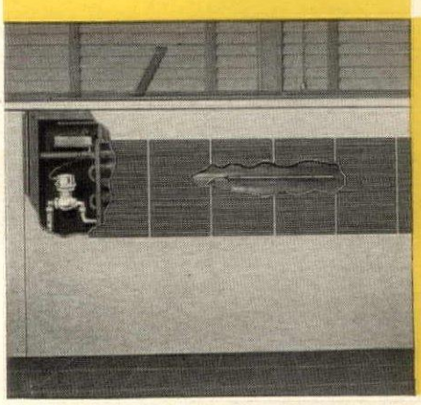

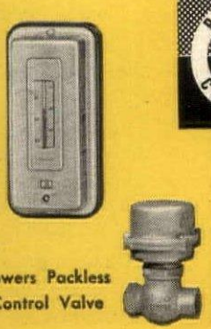

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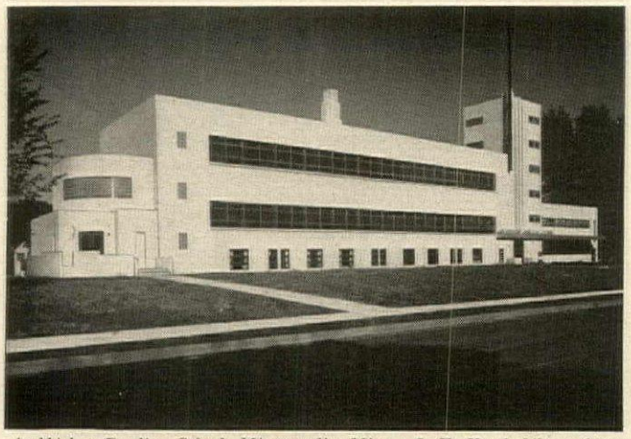
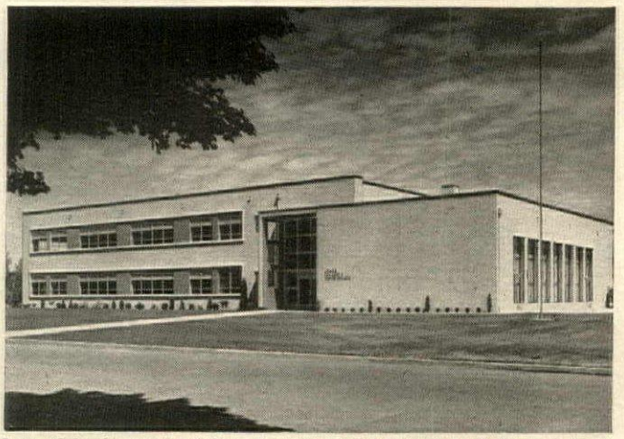
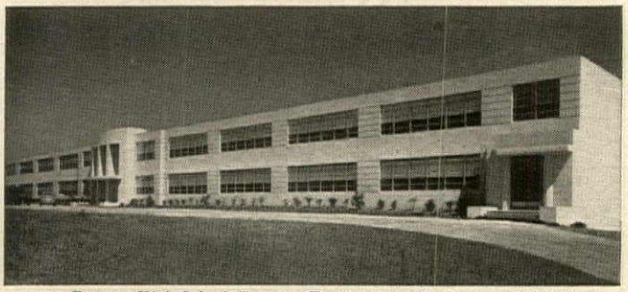


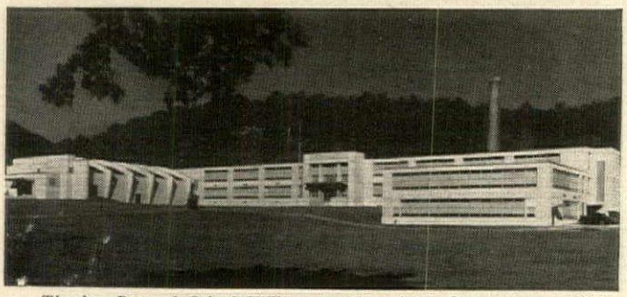
Archbishop Dowling School, Minneapolis, Minn.; J. V. Vanderbilt, architect



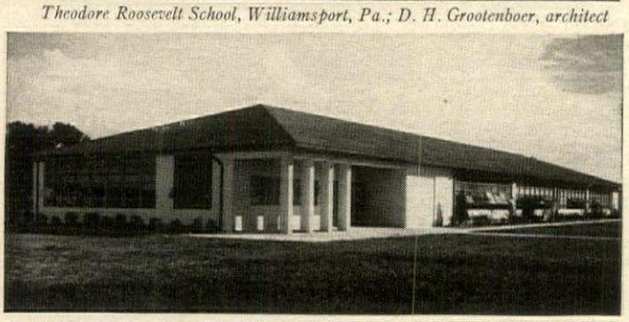
Lower Columbia Junior College, Longview, Wash.; Wolff & Phillips, architects



Frayser High School, Frayser, Tenn.; Anker F. Hansen, architect

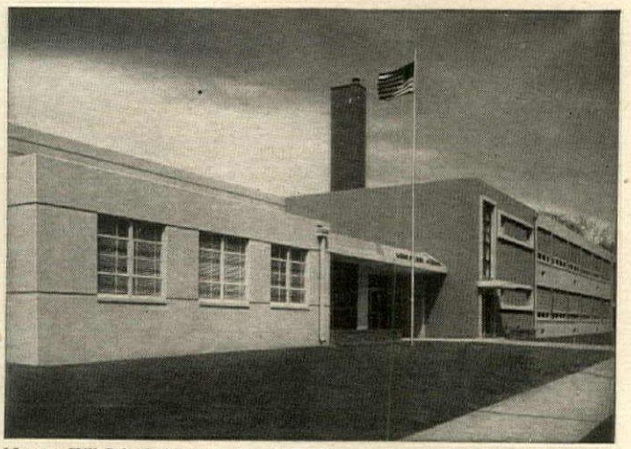


Theodore Roosevelt School, Williamsport, Pa.; D. H. Grootenboer, architect



South Downs Elementary School, Baton Rouge, La.; Bodman & Murrell, architects

Southern High School, Okolona, Ky.; Hartstern, Louis & Henry, architects



Murray Hill School, Chanute, Kans.; Williamson, Loebsack & Assocs., architects

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These photos show the possibilities architectural concrete offers the architect in designing schools of any size or type. This versatile structural material has great strength, provides maximum protection for students and teachers against violent storms, quakes, explosions, atomic blasts and fire.

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Schools in architectural concrete are moderate in first cost, require little maintenance and give years of long service. Result: ***low annual cost.***

For more information on architectural concrete schools, write for a free copy of "Concrete in Schools," distributed only in the U.S. and Canada.

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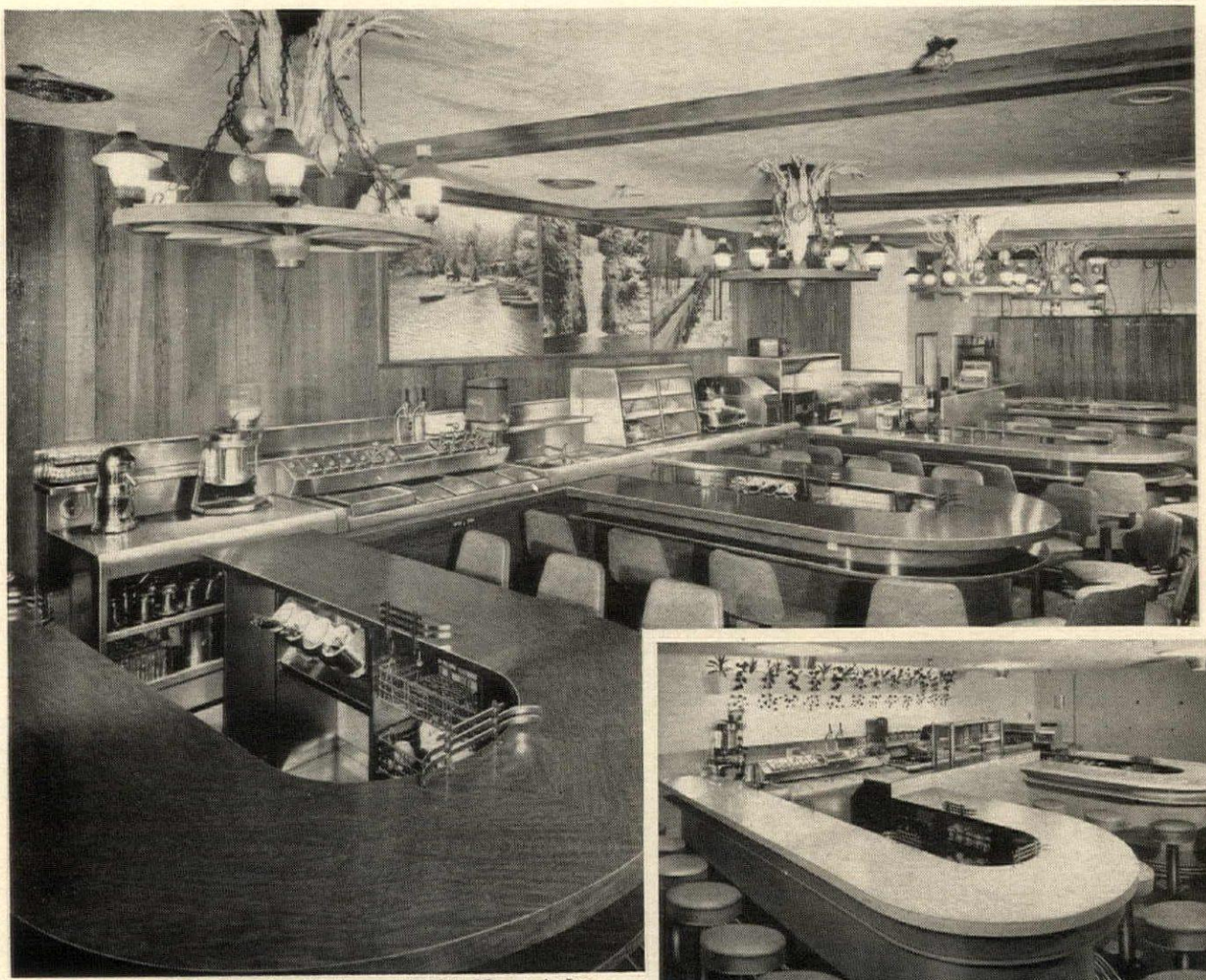

Luncheonettes on main floor (above) and in basement (right) of Pomeroy's, Inc., Wilkes Barre, Pa.

Two Bastian-Blessing Food Fountains Prove Profitable in Pomeroy's Department Store

Shoppers don't need to go out to eat—and perhaps change their minds about returning to shop—in this fast-growing department store. Two attractive food fountains seating a total of 68 people feature good food and fast service, and both have proved to be profitable operations.

The management of Pomeroy's appreciates the many sanitary features of the equipment, and the food service personnel likes the ease with which it can maintain the highest standards of cleanliness. Customers express approval of the result. The equipment in both food fountains includes a sandwich unit and a Fast-Serv fountain unit (see detail at right). A griddle stand is included in the main floor installation, which has a four-bay counter with 45 stools. The basement installation seats 23 at a two-bay counter.

Every Bastian-Blessing unit carries the Seal of Approval of the National Sanitation Foundation. Details like rounded corners, smooth edges, flat surfaces and heavy-gauge construction contribute greatly to ease of cleaning, convenience, and efficiency. Let the completeness of the line and the free planning service that goes with it help you serve more profitably, too. Write to The Bastian-Blessing Company, 4205 W. Peterson Avenue, Chicago 30, Illinois.

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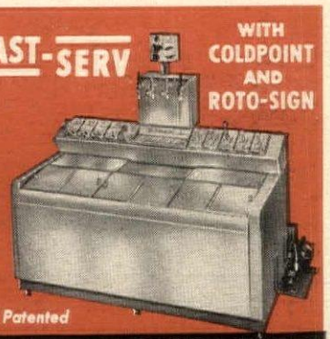

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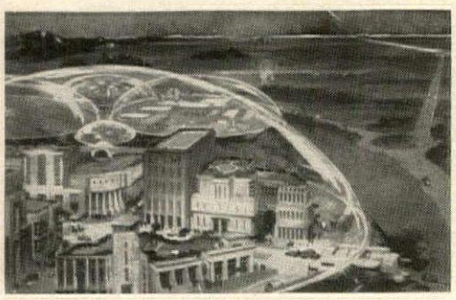
PARENTHESES

(MARSCAPE)

The Exploration of Space, a prophetic book about the interstellar vastness by Arthur C. Clarke (Harper & Bros.; Pocketbooks) starts off with a quotation from Tennyson:

"Come, my friends,
'Tis not too late to seek a newer world,
To sail beyond the sunset, and the baths
Of all the western stars . . ."

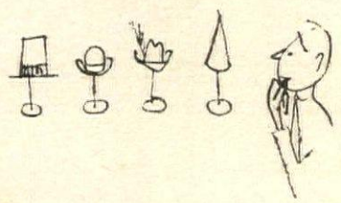
Sadly, modern architecture does not get a ticket on modern science's rocketship. Witness the illustration by Leslie Carr of the "Martian Base," a world outpost on Mars which looks quite a lot like Sinclair Lewis' Zenith. The city is covered over by a very modern looking transparent dome, but note the First National Bank at the intersection of Venus and Saturn Sts. Either this is earthly colonialism of the worst sort, or Mars has a very tough building code.



"Are thy wings plumed indeed for such far flights?"
—WALT WHITMAN, PASSAGE TO INDIA.

(DECISION)

A man in the trade, who travels around the country a great deal, has recently noticed far too many instances, he reports, of befuddled clients making their selection of an architect by putting names in a hat and drawing one. This sometimes is understandable, as in Georgia some months back when a blueprint company had to select an architect from among its customers to design a new blueprint building. But in Chicago not long ago, as prominent a firm as Skidmore, Owings & Merrill had to refuse indignantly to enter such a drawing by chance. The question remains: how do clients like these pick out their hats?



(ADSCAPE)

True architectural appreciation among laymen is rare, but it happens. Take this architectural folksong which appeared in the New York *Times* classified advertising pages:

FL 4-6682-6636
$20,500
bdrm Cape Cod and bath down, full bth up. ½ many extras. FL 4-0556-7
NEW HYDE PK
7,800. Fieldstone
ll bsmt, 4 bed- extras.
Estate Co.
New Hyde Pk.
3-6400
rk & Fieldstone.
bdrms, bth up.
ed plot. $19,990.
HO 4-4084
akeville Estates,
ter hall, 6 rms,
fully landscaped
, RE 9-4863.
stom-built Cape
garage, $21,995.
900.
ville Estates, 6-
fin bsmt, patio,
s; $24,000. After
wd.
r-old split-level.
ne, 7 rms, 2½
PI 6-1992.
yrs old, 7 rms, 2
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7,500. Pion 2-8226
—PINE EST
garage, patio,
old; near new
State Parkway:
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it. 4-bdrm, 2-bth.
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age family, 2 or
lifetime. Action
35 Great Neck

Lynbrook, South ½ mile to Pearl St. Left ½ block to model.
BUILDER: LO 6-3118 or WA 5-3271

OLD WESTBURY
MILLIONAIRE'S ESTATELET
Fabulous Modern Ranch
$62,500

Here's the story . . . about six months ago this pretentious Contemporary Ranch Home was built by one of the outstanding Custom Builders in the U S for this owner. This "showplace of the East" was designed by a top architect for modern, modest estate living. Imagine an "Artist's - Type" Mountain Ranch set beautifully in a veritable forest of tall pines, oaks and dogwoods—a good portion of a millionaire's estate! The long winding drive leads you to this captivating modern ranch home in the woods! After you enter the spacious center hall, you'll behold a 30-ft cathedral ceiling living room with giant brick fireplace—a real touch of Frank Lloyd Wright! You'll never forget the Scenic Window dining room with floor-to-ceiling sliding glass doors, the completely equipped Ultra-Matic Kitchen with Vista Window Breakfast Area. The master wing has 5 beautiful bedrooms (all with picture windows), 3 lavish pastel tiled Hollywood Baths—fit for a Movie Star. Wait 'til you see the Artist's Studio or cathedral ceiling redwood paneled library or den with massive picture window! The bowling alley basement has no equal. Enormous 2-car attached garage—fit for nothing but 2 Cadillacs! This unique home is in the heart of the North Shore Gold Coast Estate Section of Old Westbury—yet only a few minutes to station, shopping and schools. Widow moving in a matter of days has reduced price $10,000 today! NOW it's the buy of the year at $62,500! Here's your chance to live like a millionaire—without the million! Exclusively shown by your Estate Specialist

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OLD WESTBURY $52 400

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The same sort of message can be compressed.

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OLD WESTBURY. Luxurious push-button Ranch, exquisite taste finest builder. $55,000. Ask for Evelyn Baehr, Wheeler Agcy. ED 3-2606—ED 4-0388.

PATCHOGUE—BAY FRONT
200x135 bulkhead fenced, bear

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+
gla
W/
A

Pushing the button, we now transfer the scene in our picture window to Elmhurst, Ill., for some architectural history:

...ditional disputes on the job earlier this year.

104 S. Michigan Ave. 2nd Floor

BEAUTIFUL FRANK LLOYD WRIGHT HOME

This lovely, stately Colonial home, in a Garden of Eden setting on a 175x190 corner lot, has a circle drive and porte-cochere, home living room, formal din-

Shown this ad recently, Wright sighed: "It may be Colonial, but I didn't design that house. Happens all the time."

(SUNSCAPE)

What do gondoliers in Venice do when they are not out in the sunshine, working?

And what do Venetian pigeons do when they are not on the job functioning as confetti before the architecture of St. Marks? The answer is below: They sit in the shade. Mad dogs and parakeets go out in the noonday sun.

Chalk another marker up for the climatologists. And for Photographer Ham Millard.

(APOLOGIA)

It's great to have so many people get in touch with us when we start a new department in the magazine. The morning after the April issue was mailed the phone rang and a sweet, secretarial voice said, "Mrs. Knoll is calling."

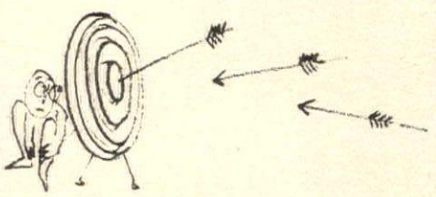
Then, after an instant of silence, another voice in a stern tone: "What do you mean, the diffusers at CBS don't work?"

Then a letter from Air Devices: "These continuous diffusers are laboratory and field tested in actual installations, and are scientifically designed to operate efficiently to the complete satisfaction of the user. We have never experienced any difficulty . . . nor have we received any complaints from users."

A letter from Columbia Ventilating Co.: ". . . The diffuser is performing very satisfactorily. . . . Installations of this type do present problems. However, when they are properly reviewed and analyzed, satisfactory conditions will result."

A letter from Frank Stanton, president of CBS: "I noticed *my* photo of my office ceiling in 'Parentheses.' Quite contrary to your footnote, the Stripline diffuser is working like a charm."

We stand corrected. In with the good air; out with the bad air.



(HUMILITY)

The Society of Industrial Designers held an evening panel discussion at the Museum of Modern Art in New York not long ago entitled "What's Happening to American Taste?" Tickets were $3.60 per seat, and the house was packed.

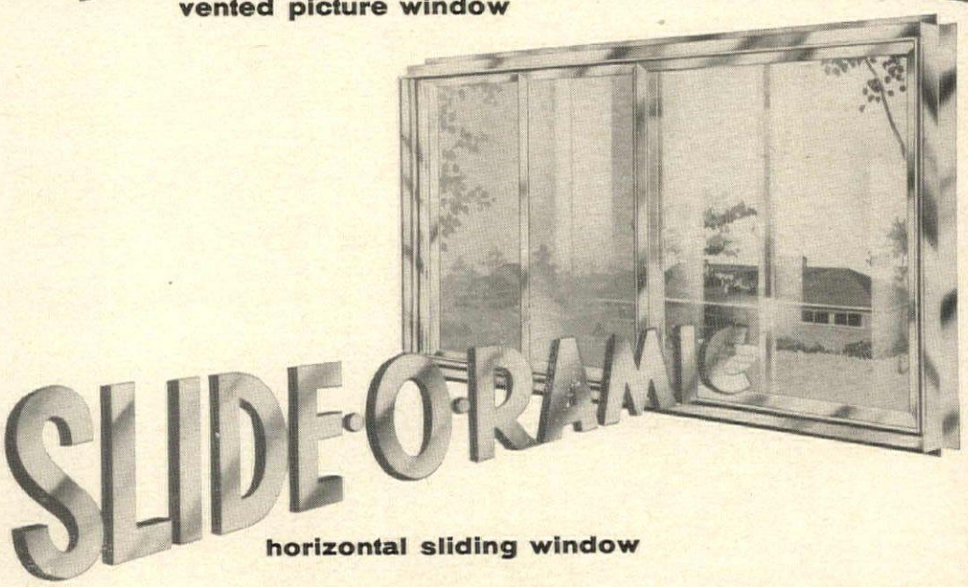
As it turned out, however, the speakers did not really talk much about taste. It was mostly an evening of mutual congratulation for what had already been done by Walter Dorwin Teague, Raymond Loewy and Henry Dreyfuss, who were the designers on the panel. They showed slides, gave sales pitches, talked about the tough early days, and clapped each other's backs up there on the stage. At the end of the evening the official summing up was delivered by Miss Dorothy Shaver, a witty, elegant lady who is president of Lord & Taylor: "Well," she said, "the evening has demonstrated that Raymond loves Walter and Walter loves Henry."

Mid-1955 is a legitimate time for congratulating industrial designers, of course, even for self-congratulating. Among the many first-rate accomplishments in design of this trio have been Teague's for Eastman Kodak, Dreyfuss' for Bell Telephone, and Loewy's

continued on p. 60

TWO GREAT NEW WINDOWS by WISCO

vented picture window



horizontal sliding window

The new Wisco horizontal sliding "Slide-O-Ramic"; and the new vented aluminum picture window, the "View-O-Ramic", are two new windows you will want to know about.

New in design, engineering and manufacture, these windows offer *profit* possibilities unmatched in their field.

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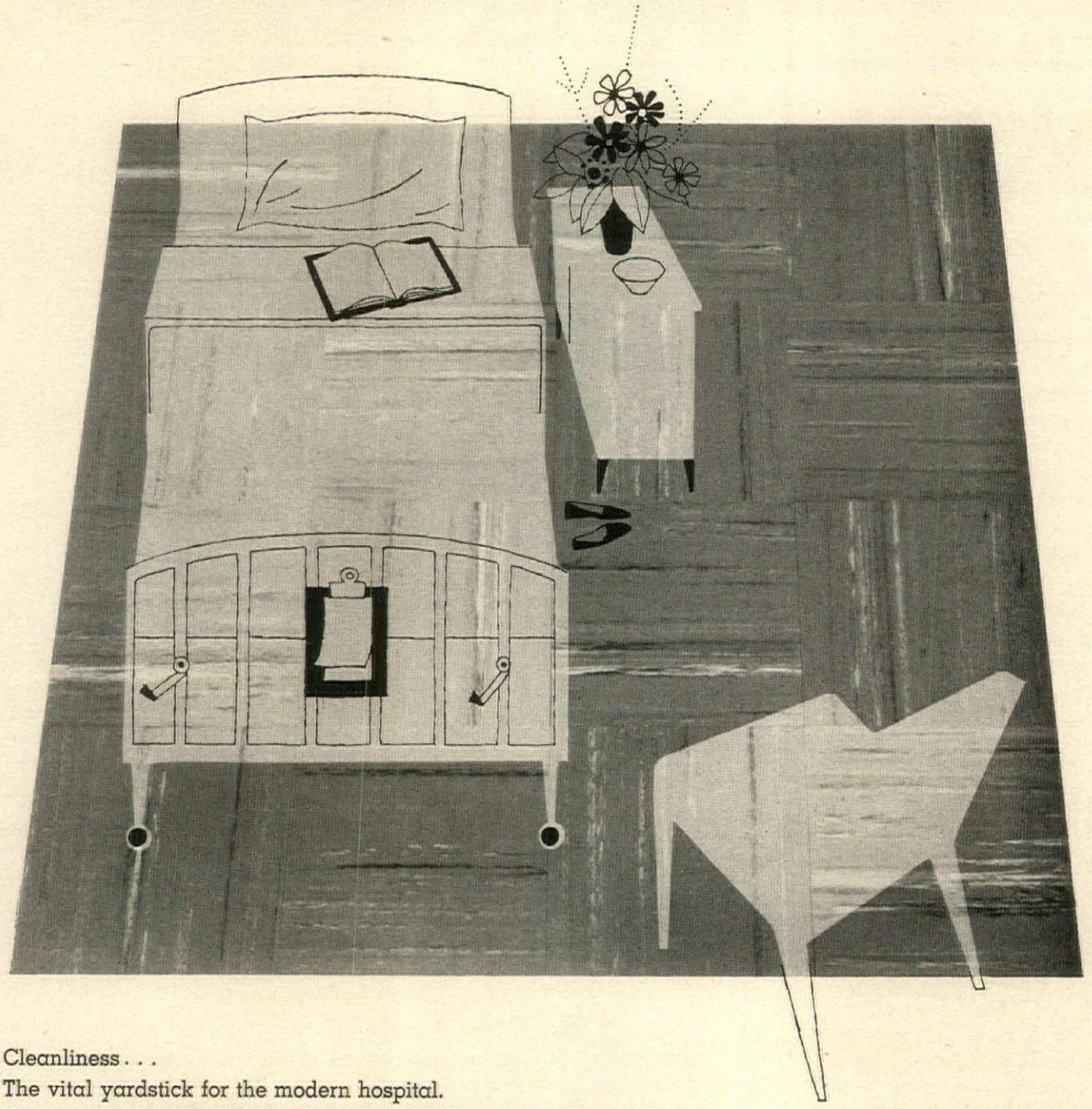
Moulflex TILE FLOORING

AND THE MODERN HOSPITAL



Cleanliness . . .

The vital yardstick for the modern hospital.

That's why for hospitals, especially, Moulflex vinyl-plastic tile flooring has so many unique advantages.

For Moulflex has an unusually dense, non-porous surface that sheds dirt, grease, acid and alkali miraculously . . . cleans easily with only damp mopping.

Cost? In standard gauge, Moulflex costs little more than grease-proof asphalt tile. Installation, of course, is fast, because precision-cut Moulflex is so easy to handle.

All these specific qualities . . . plus the fact that Moulflex can be used on, above or below grade . . . make it ideal for virtually all types of installations.

We would be happy to send you specification data.

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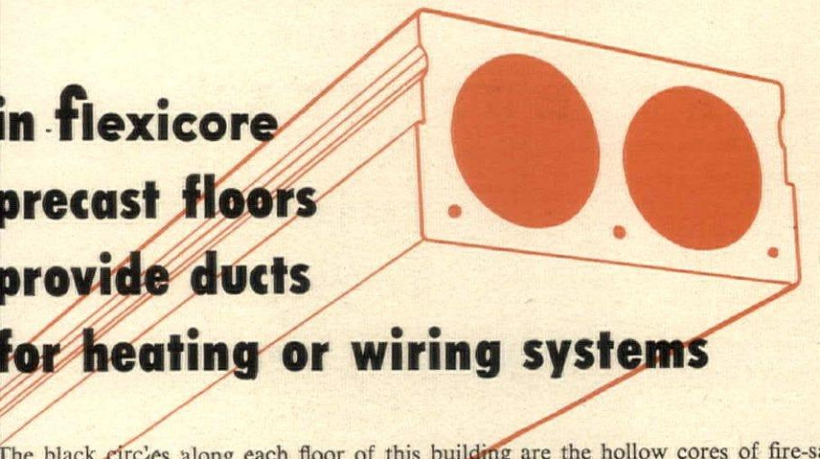
A35

Hollow Cores

in flexicore precast floors provide ducts for heating or wiring systems



The black circles along each floor of this building are the hollow cores of fire-safe Flexicore slabs. They run through each slab from end to end.

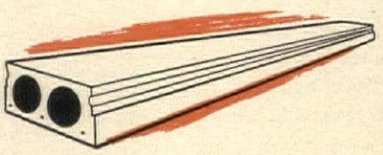
How would *you* use built-in raceways like these?

H. E. Beyster and Associates, used every fifth core for telephone cable or electric wiring in this addition to a building used by The Michigan Bell Telephone Co. Other builders use the cores for hot air ducts or piping.

In addition to many such money-saving uses, these cores cut dead load nearly 50%, increasing the load capacity of the structural concrete floor.

Flexicore is dependable, too. It's precast to the exact lengths you need, with a carefully controlled mix and pre-stressed reinforcing steel accurately positioned. Because slabs are mass-produced and quickly installed the cost is low. You save the nuisance, expense and delays of formwork and on-the-job pours. You save construction time, too (several months on large projects) because it's easy to erect 2500 to 5000 ft. a day in almost any weather.

Call the Flexicore manufacturer nearest you for full information or a look at nearby Flexicore installations. There's no obligation at all.



flexicore slabs are . . .

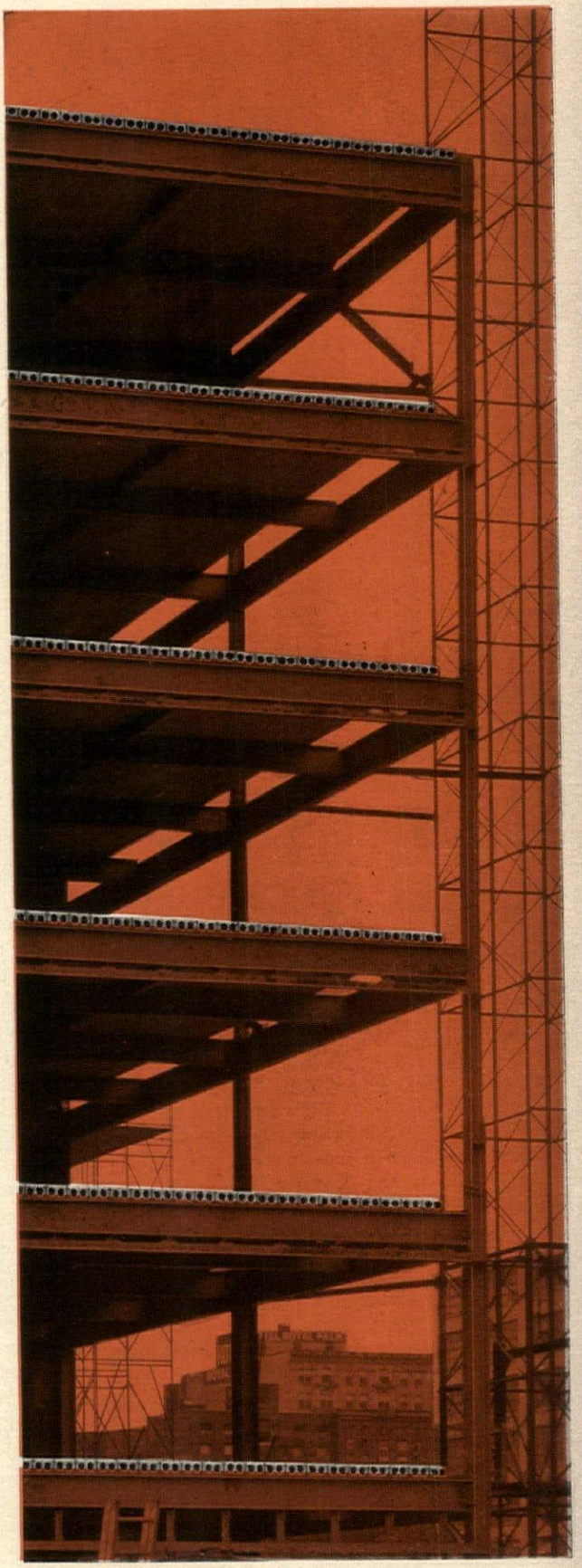
. . . low cost, kiln-cured concrete units—prefabricated to order in inch variations of length and reinforced for specified loading. Grouting of joint keys locks these monolithically cast slabs into a single, rigid floor or roof unit. Slabs clear-span up to 22′ 6″ or 26′ 8″, depending on cross-sections. Cross-sections range from 6″ x 12″ to 8″ x 16″. Hollow cores, 4⅛″ to 6⅛″ in diameter, increase load carrying capacity by reducing dead load. Smooth undersides form finished ceiling without plaster—require only caulking and painting.

Hollow cores for heating and cooling

Hollow cores of Flexicore floors make possible a *perfect comfort* heating system that combines circulating air and radiant heat. It is widely used for one-story structures. The same duct system can be used for summer cooling.

Write Nearest Manufacturer Below For This Literature

Flexicore Catalog
Flexicore Split-System Heating
Job Report on Cooling
How to Erect Flexicore
Flexicore for Homes



THE FLEXICORE MANUFACTURERS ASSOCIATION — PRODUCERS OF PRECAST CONCRETE FLOOR AND ROOF SLABS

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Florida—Tampa
Universal Concrete Pipe Co.
Phone 4-3931

Illinois—Chicago
Mid-West Concrete Pipe Co.
GLadstone 5-0127

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Phone 940

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WOodward 5-6376

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Anchor Conc. Products, Inc.
HUmboldt 3152

North Carolina—Lilesville
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Rio Piedras
Flexicore of Puerto Rico, Inc.
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Money Talks
...AND TALKS BACK, TOO!

When budgets are figured close, the pipe that "talks" less money *initially* is usually heard above the pipe that quietly says, "durability." Unfortunately, the pipe with the low-first-cost talk has a habit of talking back, too. You know this story too well if you've watched a pipe repair job where low-first-cost pipe has failed prematurely. The initial "savings" can be wiped out many times in labor costs.

You can save yourself a lot of headache, a lot of expense if you investigate longer-lasting wrought iron pipe. Write Department Z for our booklet, *Proof by Performance.*

WROUGHT IRON PIPE

A. M. BYERS COMPANY
Established 1864
Clark Building • Pittsburgh 22, Pa.

PARENTHESES

continued from p. 57

for Studebaker. Sitting listening to all the kind words, however, we fell to wondering if the industrial designer's era is not about to taper off, or change, as we have known it. The designer as a person will not go; he is his own best design—this was apparent at the panel discussion. He may become less of a hero, however. At one point in the evening, Loewy made a shrewd observation in asking himself what essentially had been the industrial designer's achievement in consumers' goods. His answer to his question: "In the last 25 years we have put appearance on the market." Shortly before this, Teague had pointed out that classic design periods today are defined in decades, instead of centuries, as they used to be.

Together these two statements may mean that the industrial designers have hitched themselves to a cart of customers and pulled it slowly uphill, but now they are over the crest of the hill and the cart is pushing them. *Streamline* has been a classic age no less emphatic than *gingerbread;* they have won this fight and designed many handsome, streamlined items. But they have also stimulated a restless, transient public taste that certainly is going to keep moving. Where is it going next? Might the slick fifties turn into the fancy sixties? Will industrial design turn back into sentimental packaging?

It was revealing when Teague commented bitterly on the Bauhaus, grudgingly admitting that Mies van der Rohe's Barcelona chair was a classic, but then deriding Harry Bertoia's recent chairs as imitations and extreme designs. He prefers Robsjohn-Gibbing's neat chairs. On the other hand, Dreyfuss showed slides of sweaters from the twenties and sweaters of today (both from Sears catalogues) to demonstrate that American taste has changed—has improved, he put it. Miss Shaver of Lord & Taylor might have corrected him; the amusing sweater of the twenties looked actually closer to the latest styles than the trim sweater Dreyfuss approved. It seemed that Teague was for mitigated modern, and Dreyfuss for functional modern—both in the face of a great sentimental nostalgia which may be developing in the customers. This could mean trouble for industrial designers; styling is not necessarily good design.

Loewy was the best. When Teague congratulated him deeply and solemnly for his design of a hammer which had been displayed at the Milan Triennale, and which Teague said had been admired by Italian designers who approvingly called it "humble," Loewy reacted as if he had been bitten by an ant. He does not design for humility, he protested; the first thing he designs for is sell-

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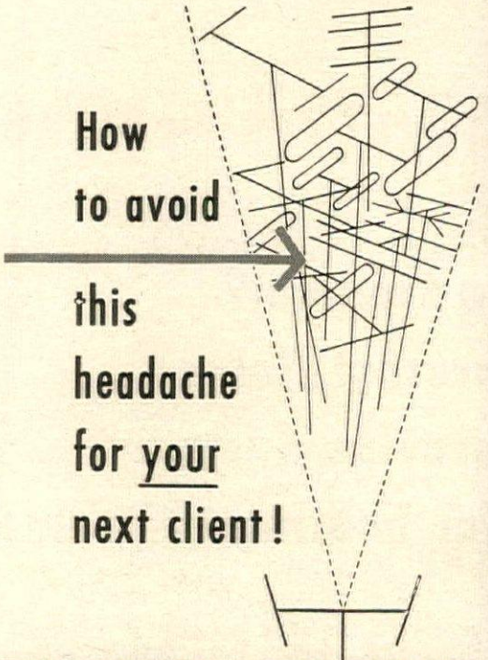
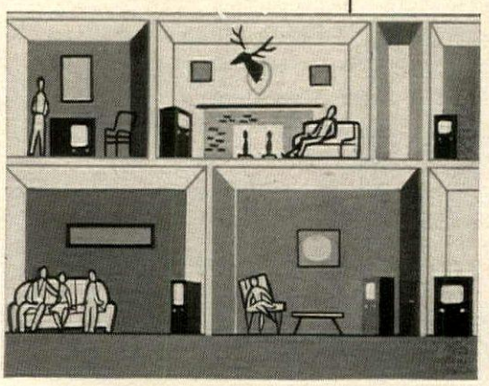


How to avoid this headache for your next client!

MASTER-TENNA* by RCA...



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Adventures in Architecture start with **Stylon** *Tile*

Departures in design *begin* with Stylon Ceramic Tile — and often end, excitingly, in new renderings of color, line, and space.

For Stylon Tile, alone among ceramics, offers the architect a vastly *flexible* and *versatile* new building tool.

Alone among ceramics, Stylon offers this broad color spectrum: *Seventeen* shades in bright-glazed wall tile; *seventeen* in matching/contrasting glazed floor tile; *eight* in matt-glazed wall tile; *twenty-four* in unglazed porcelain; *twelve* in unglazed natural clay.

And *these* are vital, modern colors, chosen by *architects* for today's interiors.

See them — and you'll want a drafting pencil in your hand. Use them — and discover a world of new adventures in design.

Gentlemen: I am interested in the Stylon Ceramic Tile Story. Please send me complete details.

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Firm Name.....

Address.....

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

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Ceramic Tile

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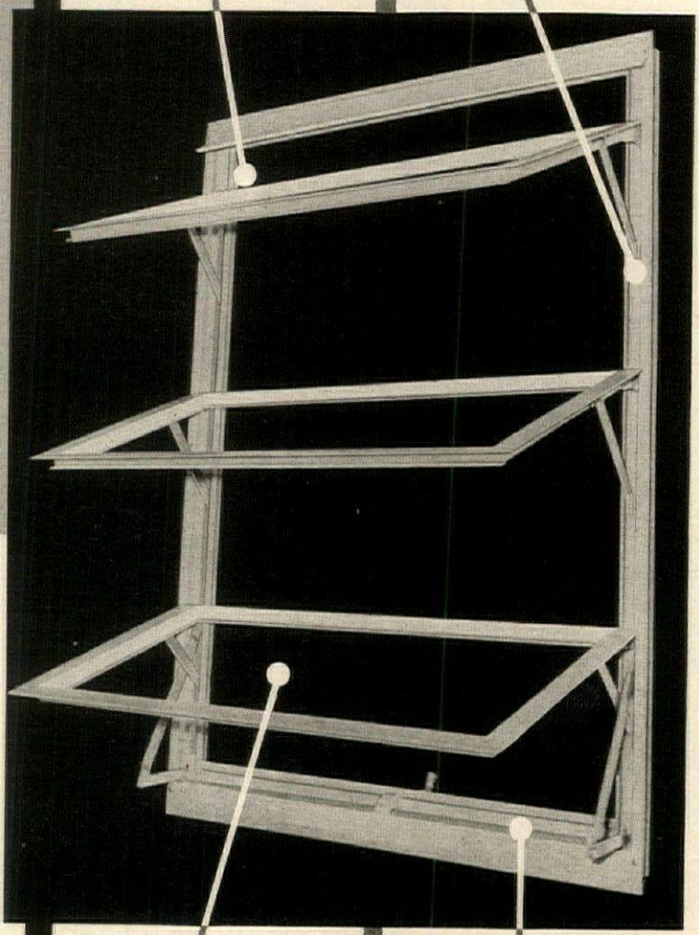
new weatherstripped WARE aluminum AWNING WINDOW

Combines famous Ware quality with important new features— at modest cost!

FEATURES THAT ADD PLUS VALUE!

Weatherstripped by premium vinyl locked in extruded channel unexposed to weather.

Wide overlap of weathering members. Minimum outside at jambs 5/16".



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Heavy reinforced sill.

Smooth, Sturdy CENTER SILL operator

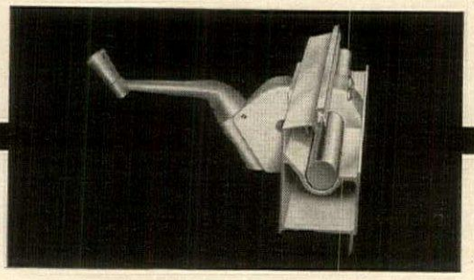
Compound operator sealed in grease—completely enclosed—affords smooth, effortless operation.

Gear ratio prevents strain or stripping and increases power. Concealed in sill at factory. No on-the-job installation!

Entire operator and power bar nylon bushed—entirely self-lubricating—permanent.

Assures **balanced** power activating **both** window jambs simultaneously—prevents torque lag which causes ventilator distortion and puts unbalanced strain on linkage.

Torsion resistant tubular sill. ¾" solid extruded aluminum power bar.



Snap-on glazing bead available.

No special locking devices to cause distortion of ventilators and put undue strain on operator.

All windows chemically cleaned, etched and lacquered per FHA requirements.

Engineered for **simple, speedy installation.**

Designed for a great diversity of applications.

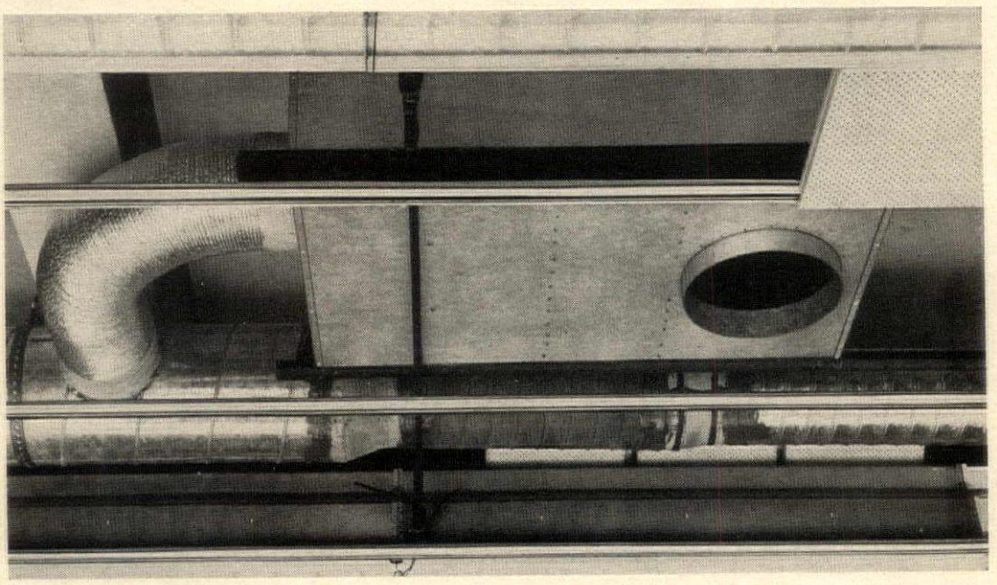
Write today for complete details
Address Dept. P-6

Aluminum WARE *Windows*

Jalousie | Econ-O-Wall | Econ-O-Ware Awning | Ware Awning Window | Projected | Casement

Ware Laboratories, Inc., 3700 N.W. 25th St., Miami, Florida

UNION CENTRAL Annex Building, Cincinnati, utilizes some 200 Kno-Draft High Pressure Air Diffusers for quiet, draftless, comfortable air distribution.



BEHIND THE SCENES photo shows typically compact Kno-Draft single-duct system. Note flexible connectors. Outlets at same level as ducts explain why...

High Pressure Saves Space

Space saving, of course, is only one advantage of high pressure air transmission. But it's important. High building costs make it worth while to reduce space allotted to air ducts; and in existing structures, small high pressure ducts have permitted central system air conditioning where space limitations prohibited conventional designs.

Additional advantages of Kno-Draft high pressure systems are: (1) flexibility to meet changes in air conditioning requirements without modifying the system, and (2) individual room temperature control from central station systems.

Kno-Draft High Pressure Air Diffusers are especially designed to handle air at branch duct velocities up to 3,000 feet per minute. Outlets are equipped with dampers and sound traps to eliminate noise. System provides even temperatures throughout the area *without drafts.*

For a full description of Kno-Draft High Pressure Air Diffusers and layouts for typical systems, read the Connor textbook on the subject. Write on your letterhead for a copy of Bulletin K33. Connor Engineering Corporation, Dept. D-65, Danbury, Connecticut.

see our catalog in ARCHITECTURAL FILE or write for copy

CONNOR ENGINEERING CORPORATION

kno·draft®
adjustable air diffusers

NEW PROTECTION AGAINST THE WATER MENACE

...masonry water repellents made with G-E DRI-FILM® silicones

Masonry water repellents containing General Electric DRI-FILM silicones preserve the beauty and prolong the life of structures—old and new. A simple, inexpensive treatment retards spalling and cracking, controls efflorescence and keeps surfaces cleaner. And, of course, a water-repellent *exterior* means a dry *interior*.

Water repellents formulated with DRI-FILM silicones are the *most durable known*. They're erosion-resistant—because silicones provide "defense in depth." They penetrate masonry pores deeply to keep water out—yet permit masonry to "breathe"!

Ask your water repellent supplier about a treatment based on G-E DRI-FILM silicones! For the names of suppliers using DRI-FILM in their products, just write to General Electric Company, Section 155-1A, Waterford, New York. (IN CANADA, write to Canadian General Electric Company, Ltd., Toronto.)

Paint and Chemical Manufacturers!

DRI-FILM silicones offer you a profitable opportunity to add a superior masonry water repellent to your product line. Ask us about DRI-FILM 103, a new G-E silicone with important manufacturing advantages!

G-E silicones fit in your future

GENERAL ELECTRIC

PARENTHESES

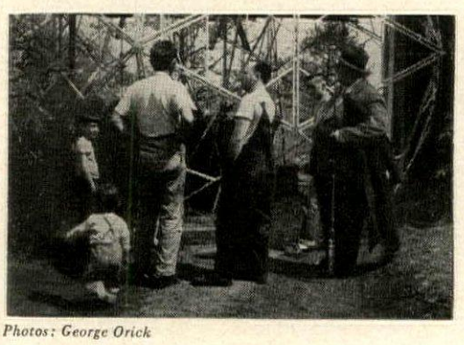
continued from p. 60

ing, and *then* he designs to make products as good as this limitation will allow.

(THE NEIGHBORHOOD)

Beside his two-story, shingled house on Hackensack St. in Carlstadt, N.J. Robert Connor is building a new garage, an unusual one. Connor is not strictly a usual man; he is in the respectable American tradition of the tinkering inventor. In his evenings Connor has invented a silk-screen cleaning machine, a machine for training paraplegics and amputees to walk, an incendiary-bomb testing device, a wrist depth-gage for Navy frogmen, and a skywriting device to make smoke rings and smoke puffs according to a taped pattern, like a player piano. Days he works for an aircraft engineering firm in nearby Hackensack. Connor studied Bucky Fuller's principles, but then went on his own design detours. He is thinking of making his garage so its top will open, petal-like, exposing a launching deck for a flying platform.

Curious neighbors and passers-by have been stopping ever since Connor began his garage. He and his wife Zelda and their three children like this neighborhood, he says; it has been tolerant and pleasant about his undertakings. When his garage is finished he is thinking of building the community a dome to shelter a "What's Needed Most Museum." It would house "ever changing displays to encourage youngsters to work at inventions that America needs."—W. McQ.



Photos: George Orick

marble teams with
aluminum in this
unusual curtain wall by

CUPPLES

The versatility of Cupples aluminum "skin" construction is dramatically demonstrated in this magnificent building now under construction in Topeka.

Entire framework and interior lobby treatment are aluminum in clear alumilite finish—designed and fabricated by Cupples. Panels are marble set in aluminum frames.

Specially designed aluminum windows are Cupples 1300 Series—top-hung, inswinging, double weather-stripped, with tubular sash. Clean from the inside.

Structurally sound and economical, Cupples aluminum curtain walls are equally effective with panels of aluminum, stainless steel, structural glass, porcelain enamel and other acceptable materials.

High standards of design and manufacture have established Cupples' leadership in engineering curtain walls as in the fabrication of aluminum windows, doors, architectural aluminum extrusions and special ornamental products. Our catalogs are filed in Sweet's.

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Factors that influence the selection of . . .

ADHESIVES FOR RESILIENT FLOORING

The life and serviceability of any resilient flooring installation depend greatly upon the proper application of the correct adhesive which will meet its specific installation requirements. Frequently, the selection of the proper adhesive is as important as the selection of the floor itself. To bond properly, the adhesive must hold the flooring material to the subfloor by surface attachment. This surface attachment, or bonding strength, must be great enough to prevent the separation of the flooring material from the subfloor under stresses slightly greater than those encountered in normal use. At the same time, the bond must not be so strong that it will be too difficult to remove the resilient flooring at a later date if necessary.

Factors to Be Considered

The type of subfloor, its condition, and the kind of resilient flooring material to be installed are important factors in the selection of the adhesive. Below-grade subfloors, for example, may require a different type of adhesive than suspended subfloors, and asphalt tile must be installed with a different adhesive than linoleum. The adhesive selected must also bond the resilient floor securely to the subfloor without chemical or physical damage to the flooring material. It should also be easy to handle and apply. It should develop and retain the correct tack or gripping power throughout the desired working period. The adhesive must have correct viscosity. If it is too thin, it will penetrate too deeply into the material and the bonding power will break down due to lack of sufficient adhesive at the surface. For this reason, resilient flooring adhesives should never be thinned except as specified by the manufacturer.

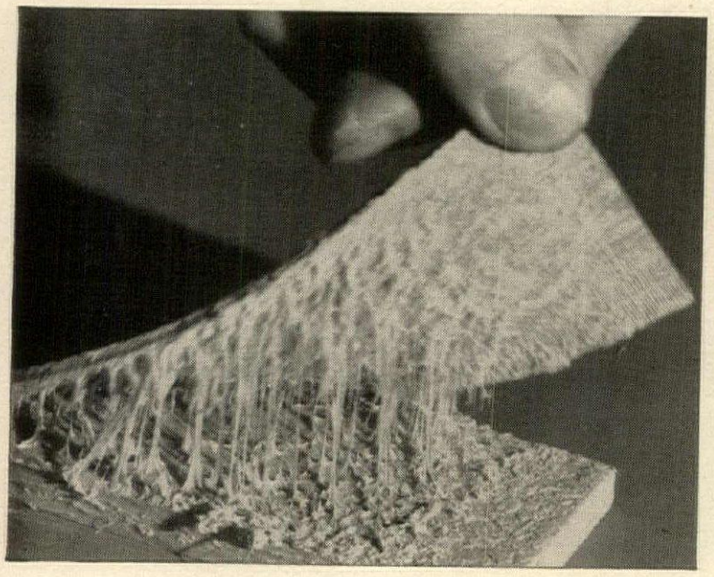
Because the various types of resilient floors available are designed to meet specific flooring requirements, it is necessary that the adhesive used in their installation meet the same requirements. As a guide in the proper selection of adhesives, the Armstrong Research and Development Center has prepared the chart shown on the opposite page as well as a brief description of each adhesive.

Armstrong No. S-128 Paste is an all-purpose adhesive developed for the installation of linoleum, Linotile, Corlon, rubber tile, Service Gauge Excelon Tile, the various linoleum and Corlon tiles, and lining felt over suspended subfloors. It has a sulphite liquor base and is water soluble.

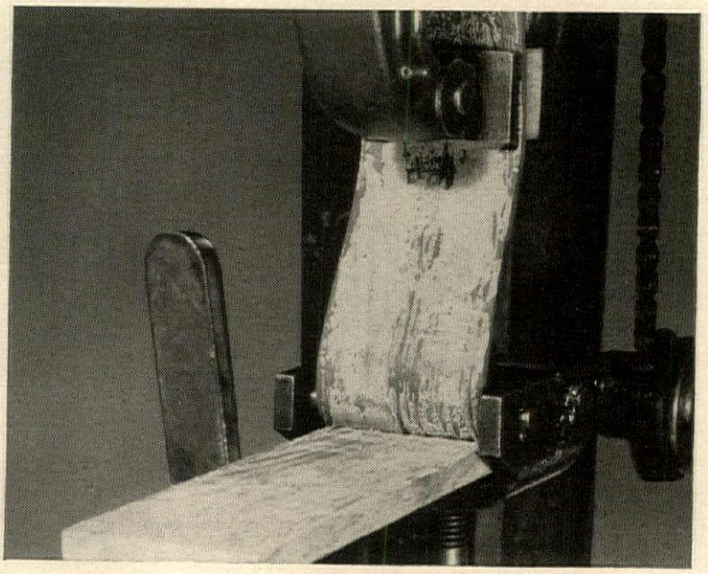
Armstrong No. S-130 Resilient Tile Paste was formulated especially to simplify and speed the installation of Linotile, rubber tile, cork tile, linoleum tile, Corlon tile, and lining felt over suspended subfloors. It develops a quick tack and keeps tiles from sliding or moving while mechanics work over finished areas.

Armstrong No. S-225 On-Grade Cement is an alcohol base cement which is both alkali and moisture resistant. It is designed for installation of both rubber tile and Custom Corlon Tile over on-grade floors. It should not be used below grade.

The bonding strength of any adhesive is determined by its cohesive strength as well as its ability to adhere to surfaces of both materials being bonded. The test strip below illustrates desired adhesion between the subfloor and flooring material surfaces and shows integral cohesion.



To insure adhesives of uniform quality, the Armstrong Research Laboratories continually test the bonding strength of adhesives before and after "setting." Below, is the "stripping test," one of many used. It measures bonding strength between the subfloor and flooring material after setting.



Armstrong FLOORS

LINOLEUM

PLAIN
SPATTER®
TEXTELLE*
JASPÉ
RAYBELLE®
ROYELLE®
MARBELLE®
DECORAY*
CRAFTLINE® INLAID
EMBOSSED INLAID
STRAIGHT LINE INLAID

Table of recommended adhesives for the installation of Armstrong resilient floors

Type of Resilient Floor	Wood Hardboard & Plywood	Concrete Suspended	Concrete On Grade	Concrete Below Grade	Ceramic Tile Terrazzo or Marble Suspended	Terrazzo or Marble On Grade	Steel	Magnesite	Floor Fill	
									Asphalt Type	Latex Type
Linoleum Corlon	S-128	S-128	Don't Install	Don't Install	Rough S-128 Smooth S-214	Don't Install	S-214	Special Recommendation by Armstrong	S-128 or S-214	S-128
Linotile	S-130 or S-128	S-130 or S-128	Don't Install	Don't Install	Rough S-130 or S-128 Smooth S-104 or S-214	Don't Install	S-104 or S-214	Special Recommendation by Armstrong	S-214 or S-225	S-130 or S-128
Rubber Tile and Custom Corlon Tile	S-130 or S-128	S-130 or S-128	S-104 or S-225	S-104	Rough S-130 or S-128 Smooth S-104 S-225 or S-214	S-104 or S-225	S-214 S-104 or S-225	Special Recommendation by Armstrong	S-214 or S-225	S-130 S-128 S-225 or S-104
Cork Tile	S-130 or S-214	S-130 or S-214	*S-214	Don't Install	S-214	S-214	S-214	Special Recommendation by Armstrong	S-214	S-130 or S-214
Linoleum Tile	S-130 or S-128	S-130 or S-128	Don't Install	Don't Install	Rough S-130 or S-128 Smooth S-214	Don't Install	S-214	Special Recommendation by Armstrong	S-214	S-130 or S-128
†Asphalt Tile and ⅛" Excelon Tile	S-80 Primer S-160	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-80 Primer S-160 or S-90	S-160	Don't Install
Conductive Asphalt Tile	S-80 Primer S-160	S-160 or S-90	S-160 or S-90	Don't Install	S-160 or S-90	S-160 or S-90	S-160 or S-90	S-80 Primer S-160 or S-90	S-160	Don't Install
Service Gauge Excelon Tile	S-128 S-130 or ‡S-90	S-128 S-130 or S-90	S-90	S-90	S-90	S-90	S-90	S-80 Primer and S-90	S-214 or S-225	S-128 or S-130
Lining Felt Install with No. S-128 or S-130 unless otherwise noted	*Must* for burlap back linoleum and most resilient tiles. *Optional* for felt back sheet linoleum, Corlon, asphalt and Excelon Tiles.	Optional for all floors	Don't Install	Don't Install	Optional for all floors Install Rough S-128 or S-130 Smooth S-214	Don't Install	Optional for all floors Install with S-214	Special Recommendation by Armstrong	Optional for all floors Install with S-128 or S-130 or S-214	Optional for all floors Install with S-128 or S-130

† Dusty and porous concrete subfloors should be primed with No. S-80 prior to the installation of asphalt tile or both types of Excelon Tiles with S-90 or S-160. Asphalt tile and both Excelon Tiles should be installed over lining felt on wood subfloors. No S-80 Primer is required with lining felt. Where asphalt tile and both Excelon Tiles are installed direct to plywood or hardboard, it is necessary to use S-80 Primer.

‡ The use of lining felt with service gauge Excelon Tile is optional over plywood and hardboard.

* Cork tile may be specified for certain grade-level installations where the floor surface of the concrete slab is at least 12" above grade level and the ground slope is away from the building. The subfloor should be well cured and visibly dry. The cork tile shall be installed with No. S-214 Waterproof Cement. Rubber tile and Custom Corlon Tile shall be installed with No. S-225 On-Grade Cement or No. S-104 Chemical-Set Cement.

Armstrong No. S-80 Primer is used to minimize moisture as well as to seal porous and dusty concrete subfloors for asphalt tile and ⅛" Excelon Tile installation. It also prepares the subfloor for the proper adhesive selected for the installation of asphalt tile or ⅛" Excelon Tile. It is a very thin "cut-back" asphalt.

Armstrong No. S-90 Asphalt Cement is recommended for below-grade installation of asphalt tile or Excelon Tile, especially if the subfloor is subject to or shows signs of dampness. It is a cut-back asphalt-type cement and is especially alkali and moisture resistant.

Armstrong No. S-160 Emulsion is an all-purpose adhesive for the installation of asphalt tile and Armstrong ⅛" Excelon Tile over suspended, grade-level, and below-grade subfloors. It is a water emulsion of asphalt and is resistant to both alkali and moisture.

Armstrong No. S-104 Chemical-Set Waterproof Cement is a special-purpose adhesive developed for the installation of Armstrong Rubber Tile and Custom Corlon Tile over below-grade concrete subfloors. It is also used to install certain floors to steel, terrazzo, ceramic tile, and other non-porous surfaces, and where excessive surface moisture is unavoidable. This adhesive consists of two elements, one a liquid, the other a powder, which are mixed on the job and installed within a specified time.

Special Problems

Frequently, unusual conditions such as extra-high alkalinity in concrete or magnesite subfloors will necessitate special adhesive recommendations. In such instances, Armstrong will be glad to furnish additional information which will be of help in determining the proper adhesive. In order for architects to be sure that the proper adhesive is being used, it is suggested that they specify the adhesive or specify that the flooring contractor use the adhesive recommended by the manufacturer of the resilient flooring being installed.

PLASTICS

CUSTOM CORLON® TILE
EXCELON® TILE
MORESQ* CORLON TILE
DECORESQ® CORLON
GRANETTE® CORLON
TERRAZZO* CORLON
MORESQ CORLON

RESILIENT TILES

ASPHALT TILE
Standard
Greaseproof
Flagstone*
Conductive
RUBBER TILE
LINOTILE®
CORK TILE
CUSTOM CORK TILE
LINOLEUM TILE

* Trade-Mark

Judges of 1955 **SIGNIFICANT PLANT AWARDS** say:

"Quite a roof! . . No painting involved either inside or out"

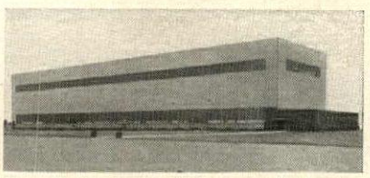
Among the 1955 winners of FACTORY MANAGEMENT AND MAINTENANCE's Significant Plant Awards is Sunstrand Machine Tool Co. of Belvidere, Ill. This modern plant received a special award going to "plants that are outstanding in some one respect, or in which there is an unusual feature of broad significance."

Sunstrand is cited for its installation of Ingersoll Roof Deck. Here are some of the words used by FACTORY to describe the decking:

"Quite a Roof! . . . This construction provides high rigidity and strength with 8-ft. purlin spacing. This despite the fact that the panels have full freedom for expansion and contraction . . . high reflective property of aluminum cuts summer heat. No painting involved either inside or out."

The Ingersoll Roof Deck used in the new Sunstrand plant is a system of full-floating panels that simply clip to galvanized steel sub-purlins which are precision spaced and welded to the building purlins.

No field or maintenance painting is necessary . . . erection is fast and easy. The permanently bright surface of the panels improves plant lighting.



The plant completed. Its award-winning Ingersoll Roof Deck reduces maintenance

Available in aluminum and porcelain enamel

Ingersoll Roof Deck is available in either aluminum or porcelain enamel. The latter offers all the advantages described above . . . plus protection where corrosion or excessive moisture is a problem . . . or where the special gleaming look of double coats of porcelain enamel is an advantage.

Write today!

New Ingersoll Roof Deck may be just right for your next job. Illustrated folders on both aluminum and porcelain enamel types are now available to give full details of this award-winning new system!

Ingersoll
5-1-101
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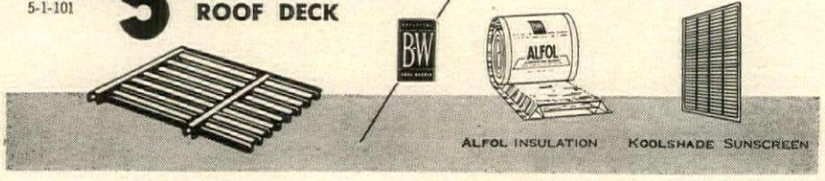


LETTERS

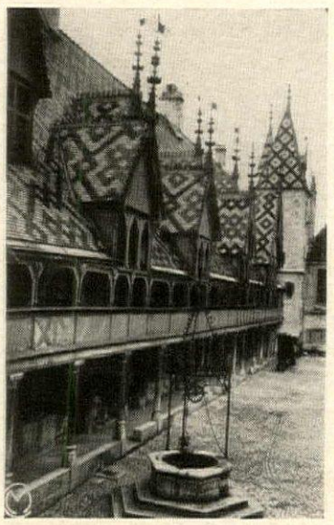
SAARINEN ABROAD

Forum:

We have been looking at Romanesqu churches carefully, and it is fascinating t see their struggle for a vocabulary. We ar I think, in a similar period—but with nc body struggling.

EERO SAARINEN
Somewhere in Franc

● Equally interesting as the comments of this lead ing modern architect is the picture post card h selected to convey them (see below).—ED.



UNLIMITED AIRPORT

Forum:

The long-awaited plans for development of the central terminal area at Idlewild Airport (AF, Apr. '55), which marks the final outcome of many years of intensive behind-the-scenes discussion and planning activity, appear to be a step in the right direction.

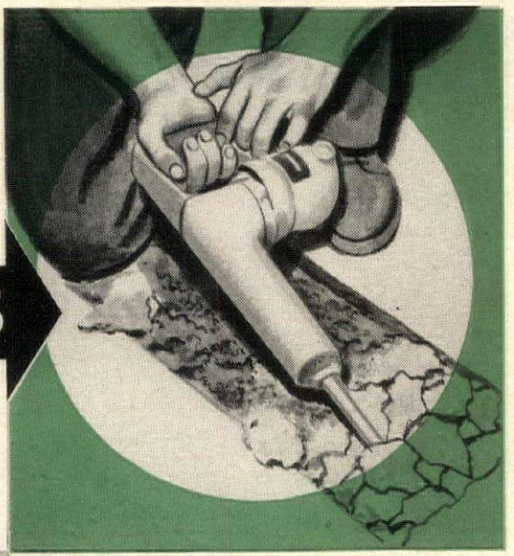
A vital requirement and objective in air station planning, too infrequently realized at major airports, is provision of an unimpeded flow of many different kinds of traffic: aircraft, automobile, passenger, baggage, airmail, freight, station employee and airport visitor and their diverse attendant services.

The adoption of a modified decentralized type of air station layout at Idlewild with finger-type loading docks, taking into account the very heavy air and surface traffic expected at this major airport, should facilitate flow of all categories of airport traffic. This new plan places on the circumferential outer rim of the airport's central area the seven individual airline buildings and the International Arrival building, thus allowing a spreading out instead of a tight concentration of air and surface traffic. This decentralization of airport facilities in conjunction with the proposed system of inner highways linking air transport buildings and the access road to the airport, would seem to make possible a free and unimpeded flow of traffic to all parts of the central terminal area and its encircling airline buildings.

continued on p. 72

Compare

THE COST OF THIS



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Dress up your client's entrances, lobbies or waiting rooms . . . quickly, easily and at moderate cost . . . with Flexachrome Vinyl-Asbestos Floor Tile.

Flexachrome is as versatile as your imagination. It will give you just about any floor design or color scheme you want. You have 23 unusually smart, brilliant colors to choose from . . . a wide range of sizes . . . custom-made inserts . . . tile-at-a-time installation.

As far as wearing ability is concerned, your clients get more "mileage" out of Flexachrome than you ever thought possible.

Flexachrome is greaseproof and highly resistant to scuffs, acids and alkalies. And its smooth, close-textured surface makes it easy to keep clean and sanitary. Daily sweeping and periodic washing is all that is necessary.

You'll like the quick, easy installation and the many extra years of beauty and satisfactory performance.

Get in touch with your Tile-Tex Contractor for complete specifications and samples, design and layout assistance. You'll find him in the local classified telephone directory. Or write:

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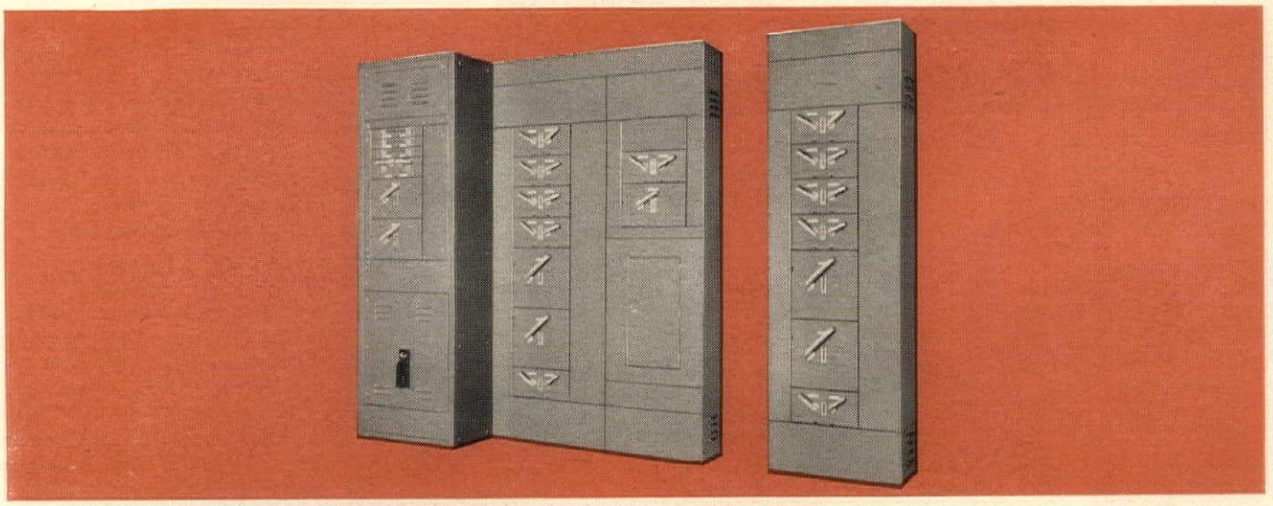

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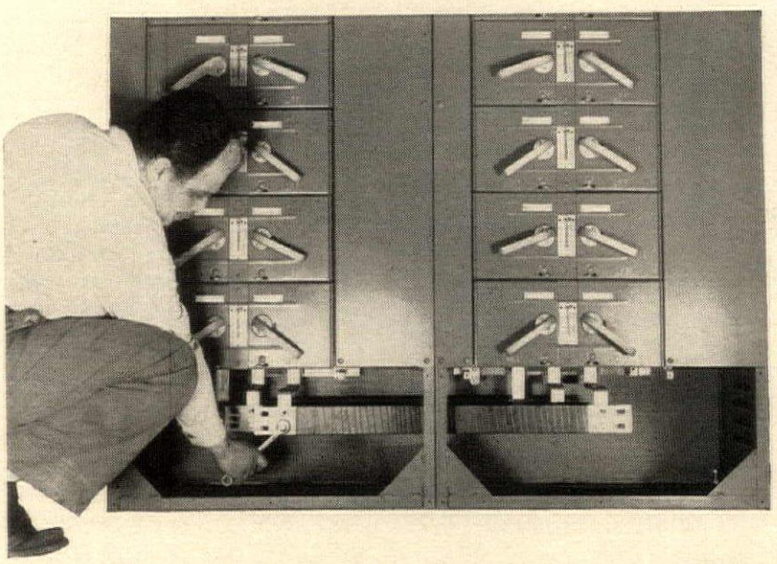

INSTALLS, EXTENDS, CONVERTS WITH ONLY A WRENCH AND A SCREWDRIVER!

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It is the one, low-cost unit of its kind that permits you to *add, remove or change* switches and breakers simply and easily. Or double, triple, or quadruple the branch-circuit capacity of the switchboard itself by just attaching standardized sections. Also, its design is so simple, you can install, extend or convert it swiftly with only a wrench and a screwdriver.

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25 BYRNE Turnover Doors

Saarinen, Saarinen & Associates—Architects
Smith-Hinchman & Grylls, Inc.—Engineers
Bryant & Detwiler Co.—Gen'l. Contr.

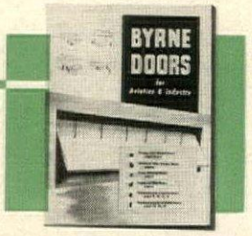
Architecturally ... Structurally CORRECT!

In this service shop building, the design and construction of the 25 required doors were of primary importance. Architectural design demanded a large amount of glass area and narrow columns between the doors. Sturdy tubular construction was employed to provide the necessary structural strength and, to eliminate counterweights on the columns, hoist operators were used. The result . . . a facade of doors of excellent appearance and built for long, dependable service.

Byrne Custom Turnover Doors are manufactured for openings up to 25 feet wide by 25 feet high. Standard Turnover Doors are furnished for openings up to 14 feet wide by 14 feet high. Requiring no more than two feet of head room above the lintel, in open position these doors project back into the building slightly more than half of the door opening height. All are constructed with wedge tight weathering and are equipped with safety operators with integrally mounted, self-adjusting limit switches.

This FREE Catalog

provides complete information on the various types of Byrne Doors built for industrial buildings and aircraft hangars. Write for your copy or refer to it in Sweet's.



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LETTERS

Continued from p. 68

Whether the inherent potentialities of the new plan are ever fully realized will of course depend on how expertly the plan is developed. A good omen in this regard is the report that top architects have been commissioned to plan buildings and coordinate over-all development of the airport's central terminal area.

Despite criticism that plans for developing Idlewild's permanent air terminal were not completed sooner, it may well prove in the long run to have been providential if this delay now results in a development of the central terminal area which matches in excellence Idlewild's open parallel runway layout with its built-in system of fluent air and surface traffic circulation. If this should be the case, Idlewild may well then deserve the title of the world's premier airport.

JOHN WALTER WOOD
Associate professor of architecture
University of Illinois
Urbana, Ill.

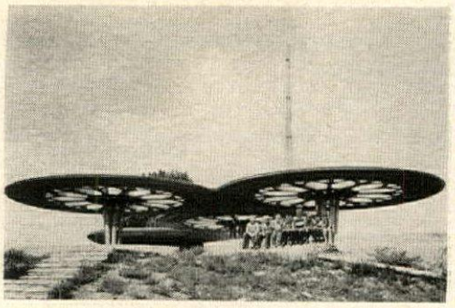
• Idlewild's planners may well be proud of Professor Wood's nod of approval, for he is an authority on airport planning and author of the books *Airports—Some Elements of Design and Future Development* (published in 1940 and still a standard text on the subject) and *Airports and Air Traffic* (published in 1949).—ED.

TORROJA'S CONCRETE

Forum:

Your Torroja article (AF, March '55) points out two characteristics of concrete that deserve more emphasis: its unusual flexibility and adaptability to architectural forms. Torroja's work should encourage architects to create new shapes in concrete, particularly with exposed surfaces.

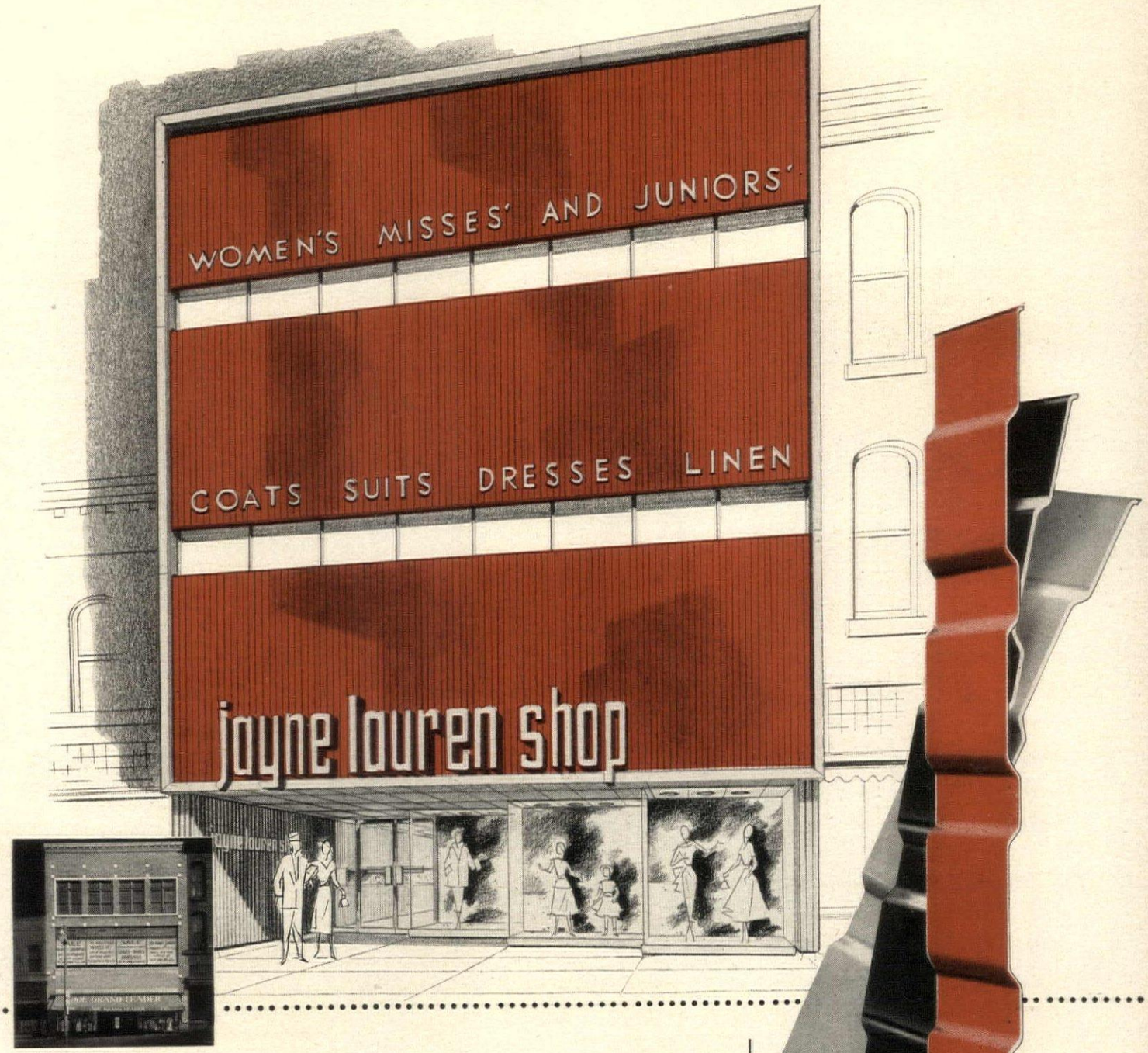
In this connection, the accompanying photo may be of interest. As part of the improvement of Bellevue Hill Park, Cincinnati, R. Carl Freund, AIA, and Hixon & Tartar, structural engineers, were given the job of producing park shelters. The result was highly imaginative circular shelter roofs of concrete 30′ in diameter, supported on



column clusters. The entire structure was cast in one operation. The unusual architectural effect achieved is at once apparent, despite the fact that the area had not been landscaped at the time the photograph was taken.

THOR GERMUNDSSON, *manager*
Structural and Railways Bureau
Portland Cement Assn.
Chicago, Ill.

continued on p. 76



Everlasting shopper appeal with built-in COLOR

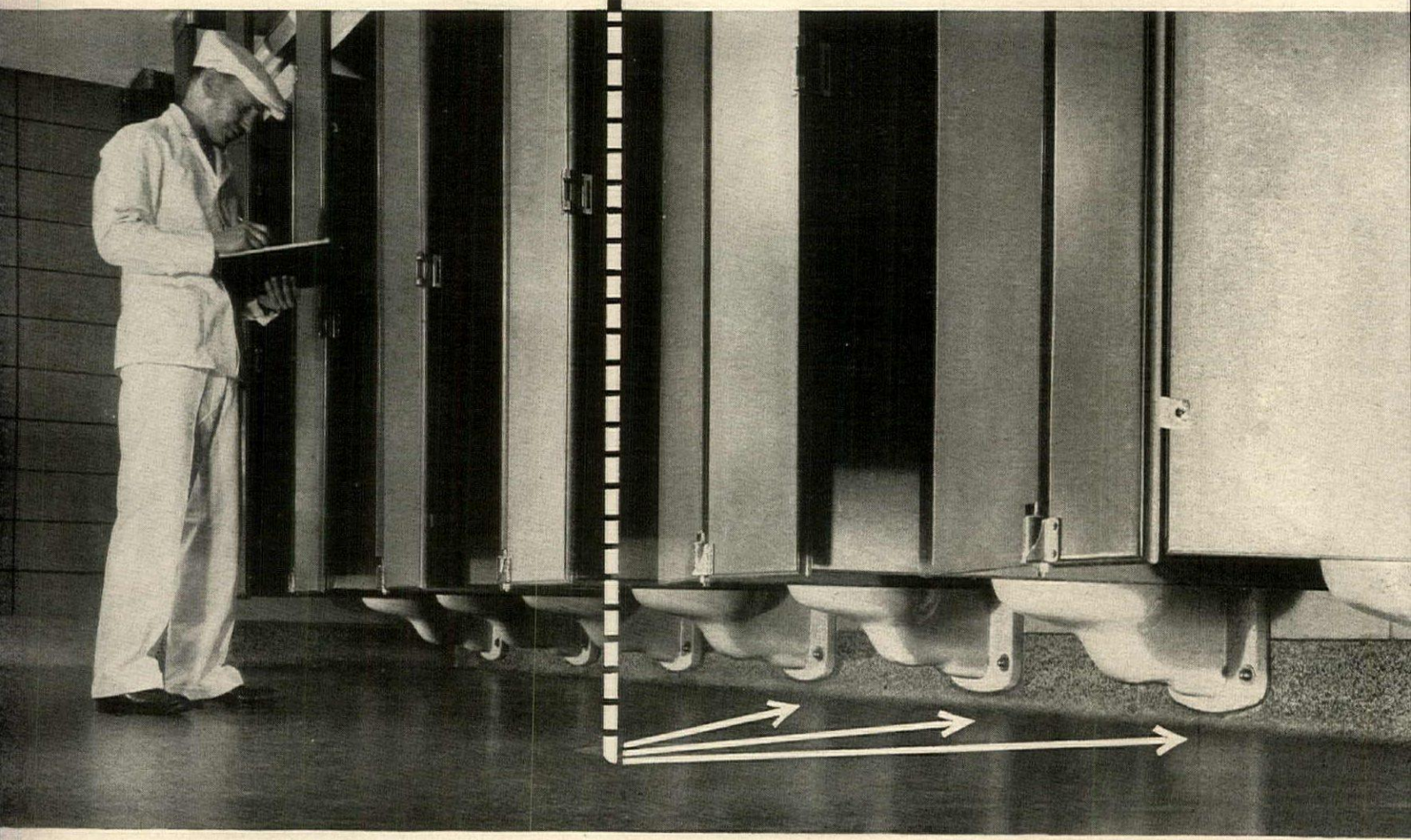
Drab store fronts today do not pay! Customers are attracted by *colorful* Kawneer Zourite (porcelain-enameled or alumilited aluminum). It is a facing material that resists chipping, cracking and fading, providing years of shopper appeal. Use as a sign backing, and as a covering for columns, pilasters, bulkheads, soffits and pylons. Plan now to remodel store fronts with practically no interference to normal operations using Kawneer Zourite, doors, store-front metal and sun-control products. See your Kawneer representative or dealer, or write for additional information.

Kawneer Aluminum Zourite Facing in ten attractive colors

- Velvet Black
- Alumilite
- Alumilite Gray
- Academy Blue
- Marine Blue
- Harvest Brown
- Spring Green
- Sunset Red
- Winter White
- Flame Orange

Kawneer General Offices NILES, MICHIGAN — ARCHITECTURAL PRODUCTS DIVISION

Planned sanitation pays off here...



...in lower cleaning costs, in complete 'round-the-clock sanitation, in modern appearance.

These advantages are made possible *only* with off-the-floor plumbing fixtures . . . the *modern* way to assure rest room sanitation.

By installing behind-the-wall ZURN SYSTEMS for the support of American-Standard off-the-floor plumbing fixtures, you achieve complete hospital-like sanitation forever. This keeps rest room floors free of fixtures and supports, speeds cleaning and permits the highest degree of sanitation and cleanliness to be attained and maintained.

The time for decision on plumbing fixtures for any really modern building comes at the drawing-board stage. Planning a Zurn-and-American-Standard installation simplifies the entire plumbing system . . . saves you time and space and lowers building costs.

Architects, contractors and building owners everywhere are recognizing the advantages of off-the-floor plumbing. For more information, write for free copies of "You Can Build it and Maintain it for Less a New Way," and "The American-Standard Better Rest Room Guide."

For complete data on the various ZURN SYSTEM fittings and carriers available for supporting American-Standard wall-type fixtures, specify our cross reference index, Form 54-A—111-2.

AMERICAN-Standard off-the-floor plumbing fixtures installed with the ZURN system® give you these important benefits:—

√ insured sanitation

√ simplified maintenance

√ modern appearance

ZURN / American-Standard

J.A. ZURN MFG. CO.

PLUMBING DIVISION

ERIE, PA., U.S.A.

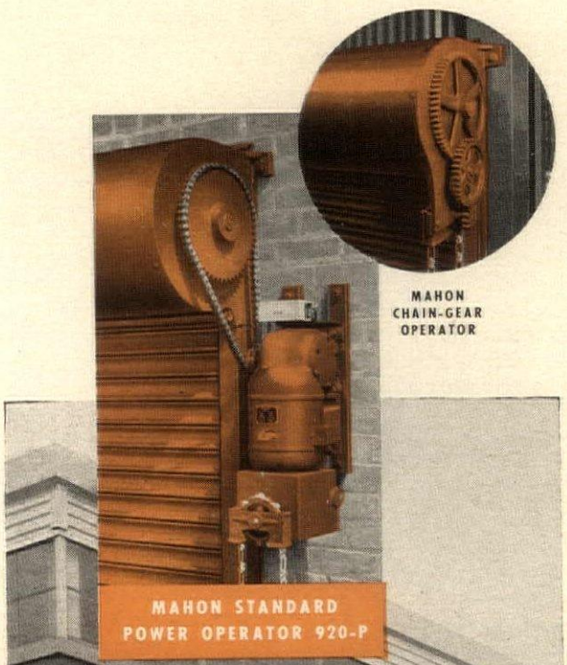
★ ★ ★ ★ ★ ★

AMERICAN RADIATOR AND STANDARD SANITARY CORPORATION

PITTSBURGH 22, PENNSYLVANIA

Rolling Steel Doors

Manually, Mechanically, or Electrically Operated



MAHON CHAIN-GEAR OPERATOR

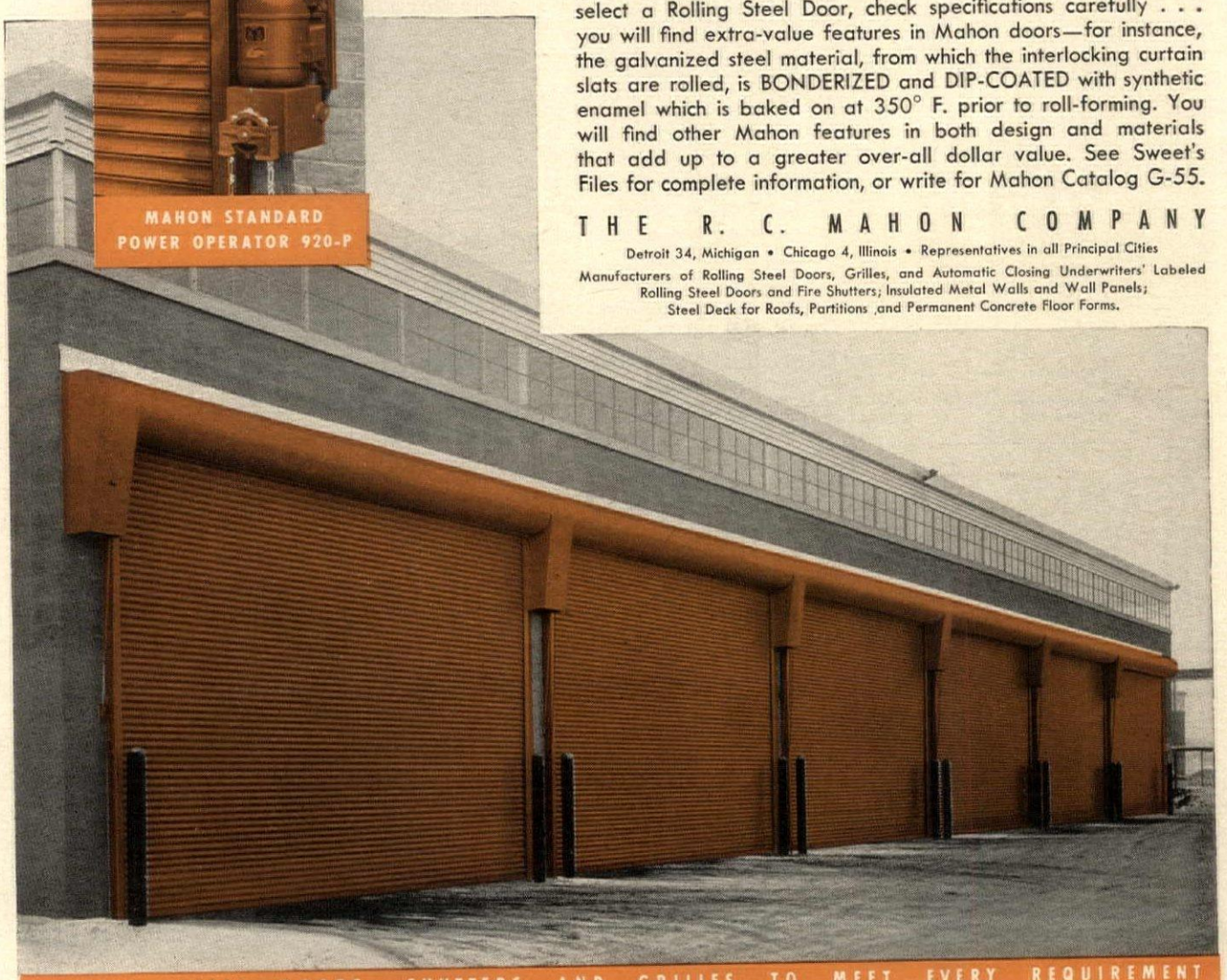
MAHON STANDARD POWER OPERATOR 920-P

If you want real protection, long life, and convenient, timesaving operation, you can't beat the quick action of a good power operated rolling Steel Door. No other type of door can match their compactness in operation . . . the vertical roll-up action of the door curtain occupies no usable space either inside or outside the opening—and, there are no overhead tracks or other obstructions to interfere with material stacking or crane handling adjacent to door openings. A quick-opening, quick-closing Mahon Power Operated Rolling Steel Door will save valuable space and valuable time in any type of opening. In addition, Mahon Rolling Steel Doors are permanent—their all-metal construction assures a lifetime of trouble-free service, and provides maximum protection against intrusion and fire. They require less maintenance, too, because, when the door is open, the interlocking steel curtain is rolled up above the opening safe from damage. When you select a Rolling Steel Door, check specifications carefully . . . you will find extra-value features in Mahon doors—for instance, the galvanized steel material, from which the interlocking curtain slats are rolled, is BONDERIZED and DIP-COATED with synthetic enamel which is baked on at 350° F. prior to roll-forming. You will find other Mahon features in both design and materials that add up to a greater over-all dollar value. See Sweet's Files for complete information, or write for Mahon Catalog G-55.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions ,and Permanent Concrete Floor Forms.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Six Mahon Power Operated Rolling Steel Doors installed in truck openings of a loading dock in the new plant of Sutherland Paper Co., Kalamazoo, Mich. Miller-Davis Company, Designers and General Contractors. A total of thirty-nine Mahon Rolling Steel Doors were installed in various types of openings in this plant.

MAHON

lifting loads for 60 years

SEDGWICK vertical transportation equipment has been specified by three generations of architects — to move loads from floor to floor—to make better use of space — to give one-floor convenience in dwellings. Sedgwick safety, dependability and economy are the result of six decades of technical improvement.

CORRESPONDENCE LIFTS for high-speed transmission of letters, orders, other light loads. Also parcel lifts for heavier loads.

SIDEWALK ELEVATORS dependable transportation of loads to and from basement. Standard capacity up to 2500 lbs.

FREIGHT-WAITERS for loads too heavy for dumb waiters, yet not heavy enough for expensive freight elevators.

DUMB WAITERS for industry, hospitals, hotels, restaurants, schools, banks, stores, etc. Under-counter or regular.

RESIDENCE ELEVATORS often recommended by physicians. A basic consideration in remodeling older dwellings.

STAIR-TRAVELORS a safe, economical way to avoid stair climbing. Widely used in homes with straight stairways.

when there's more than one floor . . . think of

Sedgwick

For free specification service and engineering recommendations, write:

SEDGWICK MACHINE WORKS
140 West 15th St., New York 11, N. Y.

LETTERS

Continued from p. 72

Forum:

The Torroja buildings at Spain's cement Institute (AF, Feb. '55) are most pleasing to the eye and certainly are a challenge to American engineering and construction.

ROGER H. CORBETTA, *president*
Corbetta Construction Co., Inc.
New York, N. Y.

Forum:

Being intimately concerned in developing and finding acceptance for new types of structures, I am gratified to see the productive accomplishments reflected by Engineer Torroja's work.

The statement is often repeated that in the US the relation between material and labor costs is such that we cannot economically duplicate some of the outstanding work done in concrete in other countries. Such a viewpoint may be convenient, but not necessarily true. There are an increasing number of examples of outstanding work in concrete construction which are esthetically stimulating and have been achieved economically through the ingenity of progressive builders and designers.

Not long ago it was thought that precast concrete was economically suited only to the very largest construction operations. It has been my experience that job operations can be so planned that precasting techniques are economically applicable to small operations.

One other deterrent to developing new types of concrete structures in this country is the general requirement that designs conform to building codes, which in so many cases are obsolete in the face of advancements in concrete techniques. There is, however, increased activity on the part of engineers and architects to have this situation corrected.

Publications such as the ARCHITECTURAL FORUM accomplish a great deal in stimulating progress in American building construction.

ROBERT ZABOROWSKI, *vice president*
Roberts & Schaefer Co.
Chicago, Ill.

GRAND CENTRAL

Forum:

I have read with great interest the article and letters concerning the future of the Grand Central Terminal (AF, Nov. '54, *et seq.*). A native-born Manhattanite, I have made frequent return visits to New York, and those which stand foremost in my memories are the ones which took me through the Grand Central Concourse. Thus, I must place myself on the side of the city builders who would preserve the city's most imposing "reception room."

As a city planner I have been generally opposed to the extensive bulking of structures in the central sections of our cities. The street patterns of our cities certainly did not anticipate the building congestion of our urban centers. While subways, under-

continued on p. 80

SURCO Terrazzo

ARCHITECT: WILLIAM L. PULGRAM, ATLANTA
GEN. CONTRACTOR: GREEN CONSTRUCTION CO., ATLANTA
FLOORING CONTRACTOR: BARBERI TILE CO., ATLANTA

For Beauty
For Economy

All floor surfaces throughout this home are SURCO terrazzo on concrete slab. SURCO terrazzo is not only beautiful and easy to maintain, but provides resiliency comparable to that of hardwood flooring.

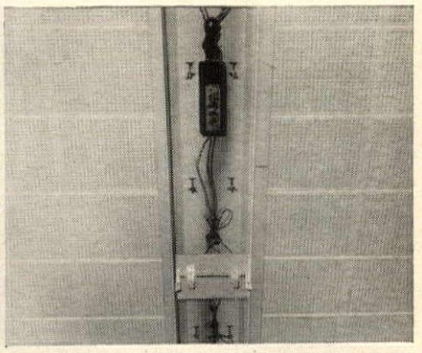
The concrete slab was laid on grade and SURCO terrazzo was applied ¼-⅜ inch thick after the slab was completely cured.

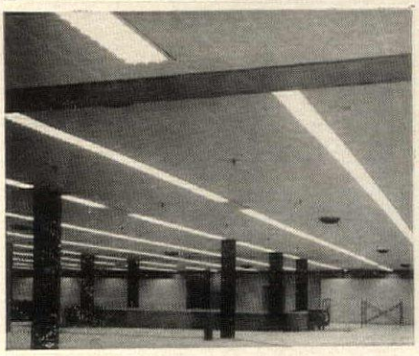
SURCO's latex base gives the material adhesive qualities found in no other terrazzo . . . saves time and money in application.

• *For more information on SURCO floors for home and industry see Sweet's Files or write to the address below.*

SURCO

Surface Coatings, Inc.
110 Pear St., S. E.
ATLANTA, GEORGIA





2,200 GUTH TROFFERS CREATE AN "ACRE OF LIGHT" AT LOVEMAN'S

Shoppers are greeted by a store full of lighting that says "come in and buy" as they enter Loveman's Department Store, Montgomery, Alabama.

Nicknamed "an acre of light", this beautiful new store has over 86,000 sq. ft. of sales area. Every inch is efficiently lighted by 2,200 Guth Recessed Troffers and 265 Guth Tile-Lites. Tile-Lites were used between fixtures and at row ends for added interest in the long lines of light.

This striking troffer installation looks as if it were custom-made for Loveman's. The fixtures blend harmoniously with the modern decor. Gleaming snap-on trim hides flange screws and "teebar gap" for a distinctive, tailored appearance. The effect of "arrow-straight lines of light" was made possible by the precision alignment of the troffers.

In a job this size, installation work is a big factor. According to the electrical contractor, this "acre of light" was . . . a breeze . . . one man could have handled it! The fixtures arrived in complete units . . . ready to mount. They fitted the "tile-wide" openings perfectly.

The troffers, with 35° x 30° metal eggcrate shielding provide 40 F. C. halfway between rows. Readings were taken at 34" above the floor.

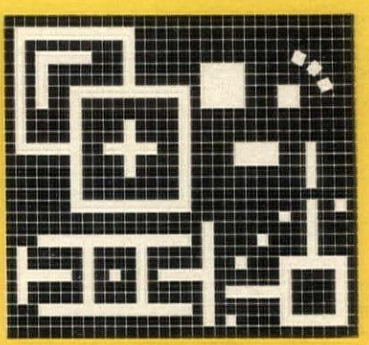
Another factor in the choice of Guth Troffers was maintenance economy. They have hinged shield frames for easy relamping or cleaning. Slide-in reflectors are simple to remove. Electrical apparatus may be replaced without taking troffers down.

Loveman officials give a great deal of credit to Guth Lighting for making their store a pleasant place to work, to shop . . . and to make profits!

Loveman's is part of the new Normandale Shopping Center—33 shops and stores, all lighted with Guth Troffers. It was developed by Aronov Realty Co., Inc.; Architect, Sherlock, Smith & Adams; Electrical Engineer, J. L. Phillips; Electrical Contractor, Long & McGhee Elec. Co.; General Contractor, Jehle Brothers, Inc.; Distributor, Noland Company, Inc.

Guth

LITE-BLOX TROFFERS
for sparkling lines of efficient light in any office or store
(See Loveman Article at left)



The most complete troffer line—

2 x 2's, 2 x 4's, 4 x 4's for unlimited pattern planning.

All types of shields from GrateLite* Louver-Diffuser to the new Paraflector and "Ro-Lo-B" Louvers.

WRITE ON YOUR LETTERHEAD TODAY FOR BIG NEW GUTH TROFFER CATALOG 50-E! FREE!

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

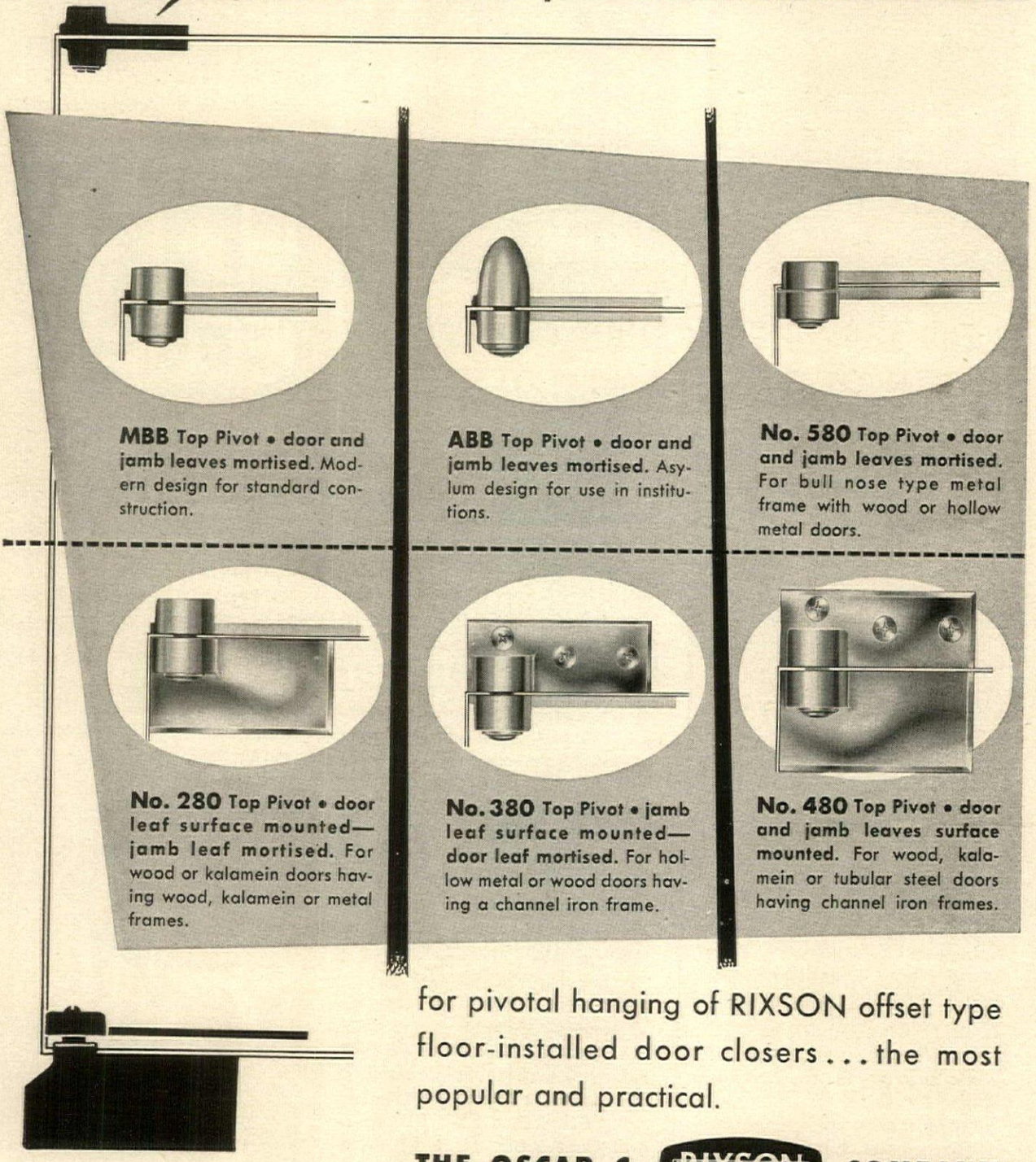
Guth

TRUSTED name in lighting since 1902

*T. M. Reg. U. S. & Can. Pats. Pend.

now 6 RIXSON TOP PIVOTS

to meet all requirements of door–jamb construction and materials



MBB Top Pivot • door and jamb leaves mortised. Modern design for standard construction.

ABB Top Pivot • door and jamb leaves mortised. Asylum design for use in institutions.

No. 580 Top Pivot • door and jamb leaves mortised. For bull nose type metal frame with wood or hollow metal doors.

No. 280 Top Pivot • door leaf surface mounted—jamb leaf mortised. For wood or kalamein doors having wood, kalamein or metal frames.

No. 380 Top Pivot • jamb leaf surface mounted—door leaf mortised. For hollow metal or wood doors having a channel iron frame.

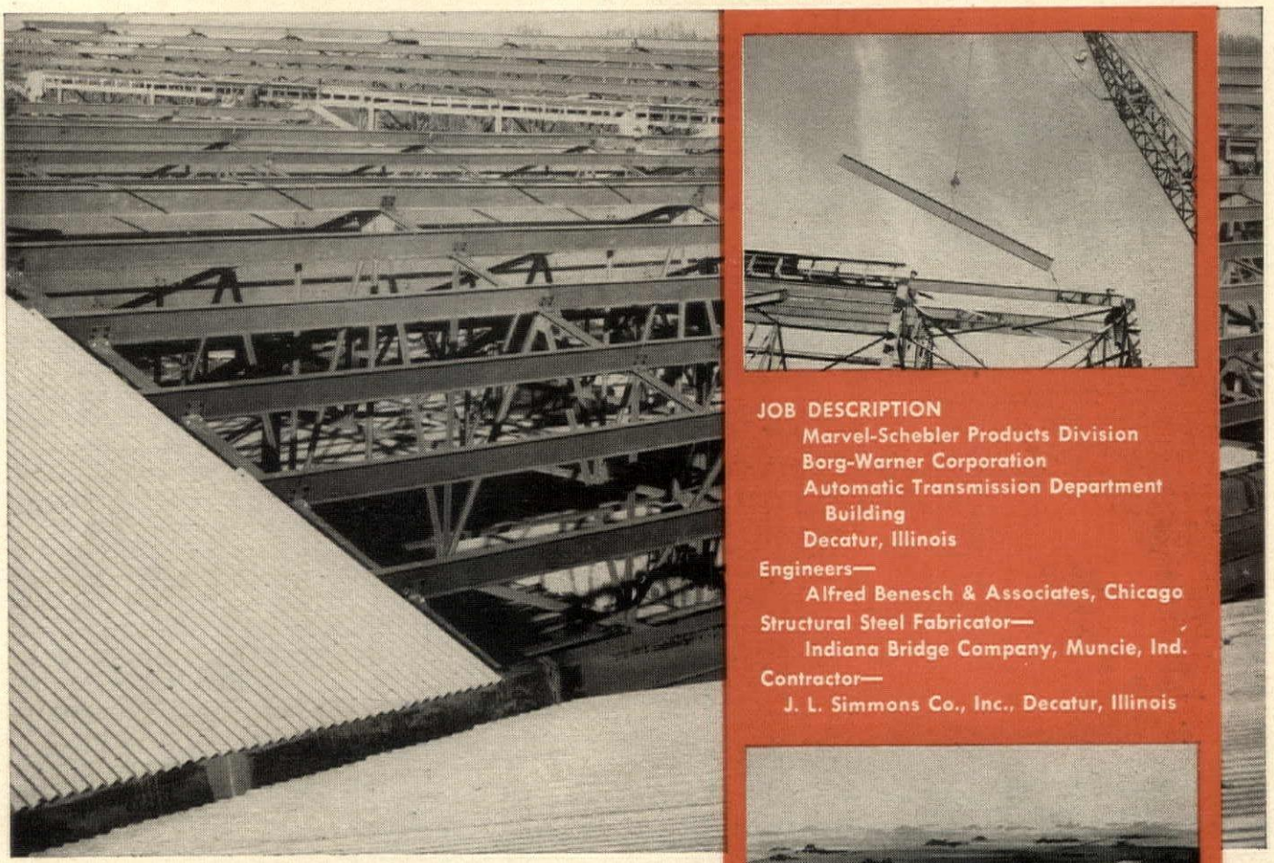
No. 480 Top Pivot • door and jamb leaves surface mounted. For wood, kalamein or tubular steel doors having channel iron frames.

for pivotal hanging of RIXSON offset type floor-installed door closers . . . the most popular and practical.

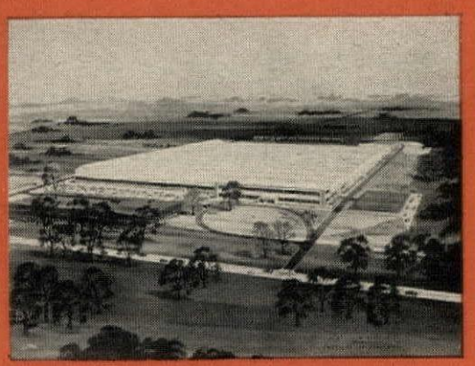
THE OSCAR C. RIXSON COMPANY

9100 w. belmont ave. • franklin park, illinois

BUILDERS BEAT A DEADLINE WITH J&L JUNIOR BEAMS



JOB DESCRIPTION
Marvel-Schebler Products Division
Borg-Warner Corporation
Automatic Transmission Department
Building
Decatur, Illinois
Engineers—
Alfred Benesch & Associates, Chicago
Structural Steel Fabricator—
Indiana Bridge Company, Muncie, Ind.
Contractor—
J. L. Simmons Co., Inc., Decatur, Illinois



2400 tons of steel structurals, including over 500 tons of J&L Junior Beams, in 75 days . . . that was the "unusual" erection schedule laid down for the new automatic transmission building of Borg-Warner Corporation's Marvel-Schebler Products Division. And the schedule was met with a few days to spare!

The men on the job give lightweight Junior Beam roof purlins a big share of the credit for this outstanding accomplishment. Here are just some of their reports.

"The time for delivery of steel . . . was the essence of the contract. We chose J&L Junior Beams because of their availability, simple fabrication and ease of erection."

H. E. WRAY, Assistant General Manager
INDIANA BRIDGE COMPANY

"We could never have met the schedule that was laid down without these J&L Junior Beams. They have a wider seating area and double footings which gave our workmen a safer, faster area of moving around aloft. If we had used the usual channels, we would have had to slow down for safety's sake. We would have had foot room on only one side of the bottom of the channels, compared with a place on either side for a man to get foot support on the beams."

CECIL STODGHILL, Construction Superintendent
INDIANA BRIDGE COMPANY

Take a tip from the men that are using them, J&L lightweight Junior Beams can help you cut building costs. Experience shows that J&L Junior Beams are the most economical hot rolled purlin sections available. They're adaptable, easy to install, rigid and vibration resistant.

Write today for more information on this modern lightweight J&L structural.

Jones & Laughlin Steel Corporation
491 Gateway Center, Pittsburgh 30, Pa.

☐ Please send me a free copy of your booklet on J&L Junior Beams.
☐ Please send me comparative cost figures on purlin sections.

Name_____
Company_____
Address_____

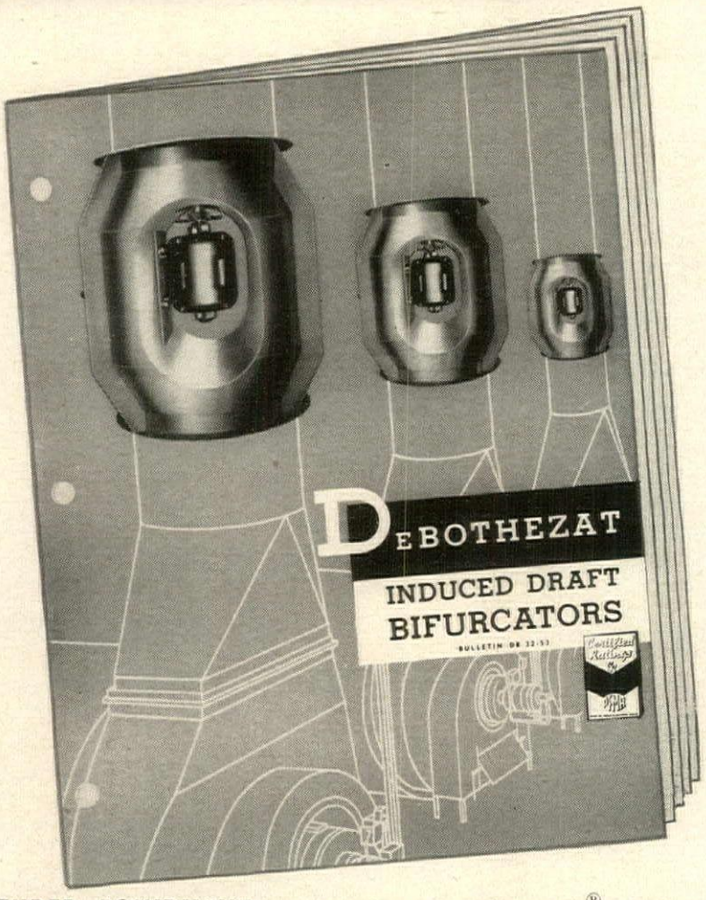
Jones & Laughlin
STEEL CORPORATION — *Pittsburgh*

J&L STEEL

JUNIOR BEAMS ARE READILY AVAILABLE FOR PROMPT DELIVERY

Send for FREE bulletin

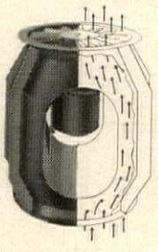
AIA File 34-B-4



FEATURED EQUIPMENT: Induced Draft Bifurcator® Fan

ITS PURPOSE: to cut cost of providing boiler draft

This data-packed bulletin may indicate that the Induced Draft Bifurcator Fan is your best way to avoid the cost of a tall stack — or to provide additional draft for newly added boilers. An Induced Draft Bifurcator Fan costs only a fraction as much as a tall stack and provides positively controlled boiler draft in any weather. What's more, by eliminating the tall stack, you preserve the design of a modern building.



The Induced Draft Bifurcator is an axial-flow fan in a divided housing. Flue gases bypass the motor which stays cool, clean and accessible. This fan unit can be used with high-pressure boilers delivering up to 60,000 pounds of steam per hour, or low-pressure boilers rated up to 190,000 EDR.

The bulletin illustrates how the Induced Draft Bifurcator installs as easily as a section of flanged breeching. Drawings show how to install it horizontally, vertically or at any angle, either inside the boiler room or on the roof above. The bulletin also contains selection data, specifications and special Bifurcator features. Send for your copy now.

De Bothezat FANS

A DIVISION OF

American Machine and Metals, Inc.

EAST MOLINE, ILLINOIS

DeBOTHEZAT FANS, Dept. AF-655
Division of American Machine and Metals, Inc., East Moline, Illinois

Please send free Bulletin DB-32-53 containing full data on Induced Draft Bifurcators.

FIRM NAME

STREET ADDRESS

CITY ZONE STATE

ATTENTION OF MR.

LETTERS

Continued from p. 76

ground and overhead trafficways, and traffic control expedients such as one-way streets, truck routes and parking prohibition have made it possible to handle greater volumes of vehicular movement it would appear that maximum benefits from these traffic relief measures have already been attained. Because of the capacity limitations of street rights-of-way in urban centers, it is extremely important that much more attention be devoted to relating building bulks to the traffic potential of the service streets.

Admittedly zoning ordinances have placed restrictions on the bulk of buildings, but such regulatory measures have been based on the need to provide adequate light and air. Thus indirectly, zoning has helped to relieve traffic congestion, but the tendency to avoid placing restrictions on building in the downtown areas has prevented the adoption of realistic controls. We have achieved notable progress in the regulating density of development in residential districts through zoning. Certainly similarly effective density control should be possible in our central business districts. What is needed is the cooperation of private and public interests in the attainment of a balanced arrangement of building bulk in relation to the potential capacity of the service streets.

The area in the vicinity of the Grand Central Terminal is already intensively developed. To add another building of the size sketched by Richard Roth (AF, Feb. '55) would impose still further upon an overtaxed system of trafficways. It is possible that additional traffic structures might serve to minimize materially the effect of the added traffic load on the adjacent street system, but prior to a final decision a very careful analysis of the existing and future traffic circulation facilities should be made.

While Park Ave., with its relative spaciousness, is a distinct asset in the city's appearance, I am inclined to agree that the placement of buildings as termini to break up the long vistas of wide avenues is also desirable. But the erection of a much taller building just north of the Grand Central emphasizes the need to study the possibility of redesigning the roof structure over the concourse and the front portion of the terminal building. From above, where thousands of persons in existing nearby buildings are now employed, the roof of the Grand Central presents a poor spectacle. Its unattractiveness would be even more evident with the erection of the contemplated 65-story tower of glass. Surely something more attractive could be done to the roof so that it might present a pleasing appearance to all those who must view it from above.

CARROLL V. HILL
Community planning consultant
Dayton, Ohio

Forum:

Regarding the article on Grand Central's outdoor concourse, you have brought out an interesting and important aspect of building location and civic design. For a long while planners have sought to have consid-

continued on p. 84

IMPORTANT

new bulletin board material complements any classroom decorating scheme . . .

Armstrong TACKBOARD

IN 4 MODERN PASTEL TONES

- ★ SAGE GREEN — No. 752
- ★ CORAL — No. 758
- ★ CORK TAN — No. 756
- ★ PUEBLO GRAY — No. 754

NAME a classroom color scheme and there's a shade of Armstrong Tackboard to harmonize with it. Armstrong Tackboard is designed to blend with *any* school décor.

Armstrong Tackboard colors are not surface finishes. They go all the way through. And the fine-textured surface of Armstrong Tackboard has relatively high light reflectance, helps reduce eyestrain and nervous fatigue.

This resilient new material is soft enough to make tack removal easy, yet it will take years of constant use without need for painting or other surface refinishing. Armstrong Tackboard is easily cleaned. Most soil spots can be removed with a soft rubber eraser.

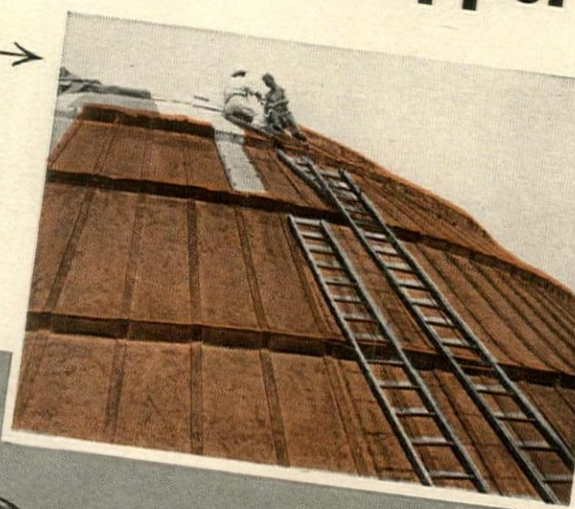
Armstrong Tackboard is available at leading school supply houses. It comes in continuous roll form, 48 or 72 inches wide, and in 1/4" or 1/8" gauge. Bulletin boards as long as 85 feet can be made in one piece, reducing installation time and resulting in a more attractive job.

We'll gladly send you samples of Armstrong Tackboard. Write on your letterhead to Armstrong Cork Company, Industrial Division, 8306 Drake Street, Lancaster, Pennsylvania.

Armstrong **TACKBOARD**

Re-roofing a dome with copper

ROOFING PANS preformed from 20″ x 96″ x 20 oz. gage cold rolled copper sheets were used for the batten seam construction.



COMPLETED COPPER-COVERED DOME which is 94′ 6″ in diameter and 28′ high. Architect: Carneal & Johnston. General Contractor: James Fox & Sons, Inc. Sheet Metal Contractor: N. W. Martin & Brothers. Anaconda Distributor: Gordon Metal Company. All are located in Richmond, Va.

NETWORK OF COPPER ALLOY BARS and angles suspended from the crown help to hold in place the additional structural surfacing required to form the new contour. Angles 3″ x 5″ bent to the radius and curvature of the dome produced the desired shadow lines.

New roof uses 45,000 lb. of Anaconda Sheet Copper . . . assures owner of low upkeep, long service

When the Richmond Terminal Railway Company's Broad Street Station at Richmond, Va., was built, the dome was roofed with a nonmetallic material. Structural movement of the roof covering made frequent repairs necessary. As it appeared this trouble would continue to mount, the owner authorized an extensive study by its architect-engineers resulting in the selection of copper.

Only this time-tested material could economically match the durability of this handsome building, for copper measures its economy by *generations* of service. It requires little attention or maintenance. And, as it grows older, a copper roof acquires a beautiful green patina.

Construction details

Placing a new copper covering over a concrete spherical surface called for special designs which dictated that the major portion of the copper roof be of batten seam construction using cold rolled copper sheets of 20 oz. gage, 20″ x 96″. Inverted bronze channels were employed for the battens. For the crown of the dome, flat lock seam construction was employed using 16″ x 18″ roofing squares of 20 oz. gage cold rolled copper. Edges were pretinned to a depth of 1½″.

When roofing must *last*, ANACONDA Sheet Copper costs *less*. Good design and proper application insure its endurance during service. Anaconda building engineers were privileged to assist with the design of this important roofing job. Their counsel is equally available to you in all problems involving sheet copper design and construction. 5457

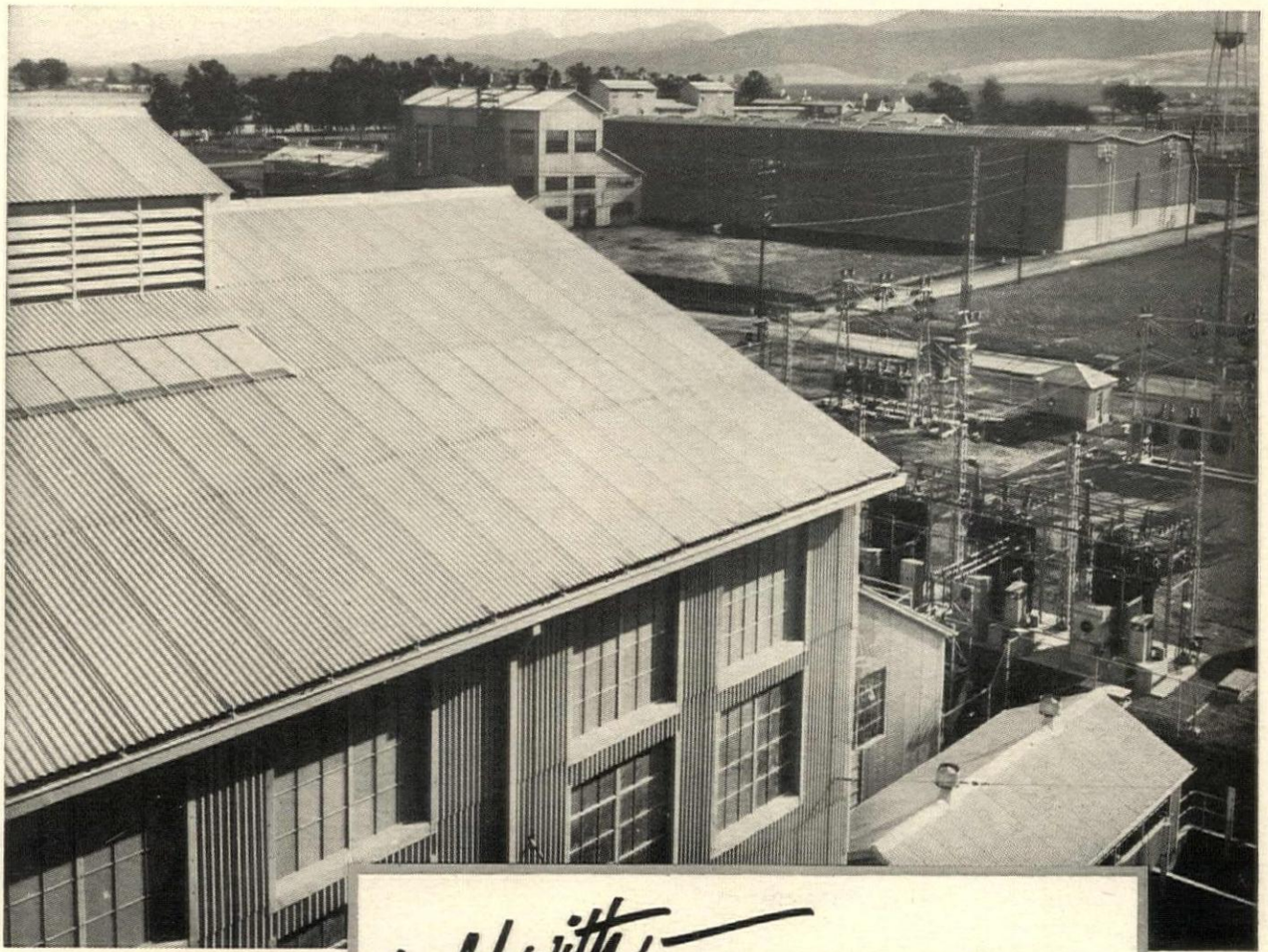
FREE file of drawings—Do you have the FREE Anaconda file of drawings? Nearly fifty drawings show new or improved ways to apply sheet copper. Each is printed on a separate 8½″ x 11″ page, handy for quick-reference filing. This entire series may be obtained absolutely FREE by writing for Portfolio S to: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

for better sheet metal work use

ANACONDA®

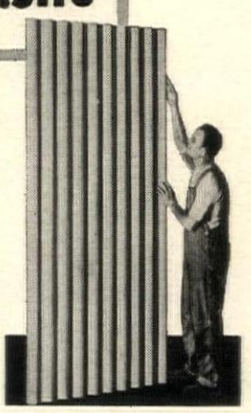
COPPER

No costly maintenance problem here



The Johns-Manville Corrugated Transite roof of this oil refinery building will give many years of dependable service, provide protection against fire, and will remain unaffected by the severest weather conditions.

build with **Johns-Manville Corrugated Asbestos Transite**



- Large sheets go up quickly
- Easy to fasten to steel
- Easy to nail to wood
- Easy to saw
- Easy to drill

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

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

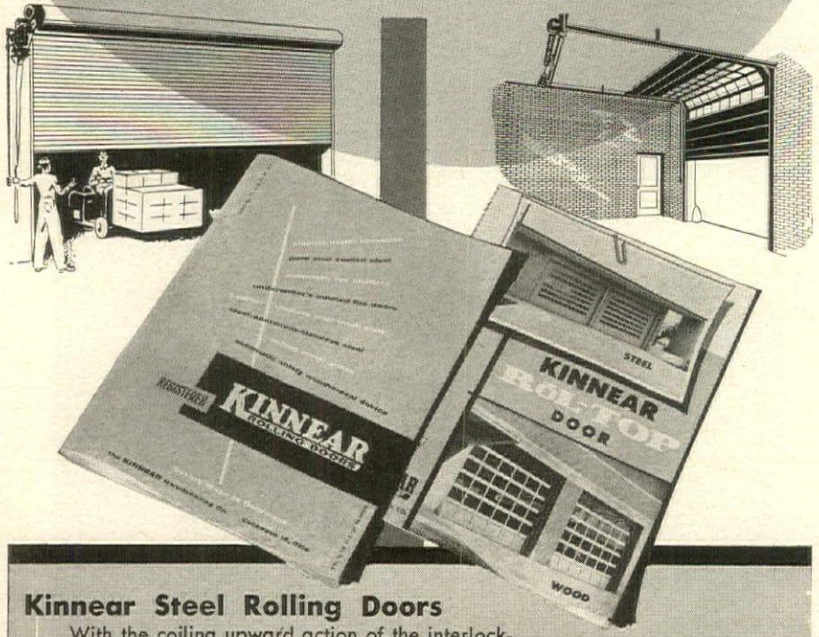
Made of asbestos and cement, Corrugated Transite is practically indestructible. It never needs paint or special treatment to preserve it . . . it's fireproof, rotproof and weatherproof. Corrugated Transite is also used increasingly for smart interiors . . . the streamlined corrugations and attractive shadow lines that give it such unusual architectural appeal for exteriors offer unlimited interior design possibilities.

Investigate Johns-Manville Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, 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 199 Bay St., Toronto, Ontario.

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

For cost-cutting answers to any door need, see these

TWO NEW CATALOGS!



Kinnear Steel Rolling Doors
With the coiling upward action of the interlocking steel-slat curtain, *originated* by Kinnear

Kinnear Rolling Fire Doors
All-steel "Akbar" Doors, famous for safety features and labeled by Underwriters Laboratories, Inc.

Kinnear Steel Rolling Grilles
A protective, attractive openwork of steel bars and links—admits light, air and vision

Kinnear Motor Operators
Special rugged motors for time-saving push-button door operation

Kinnear Rol-TOP Doors
Sectional upward-acting wood or all-steel doors with any number of panels for glass

KINNEAR ROLLING DOORS

Saving Ways in Doorways

Write for Your Copies Today

FACTORIES IN COLUMBUS, OHIO and LOS ANGELES, CALIFORNIA

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1640-60 Fields Avenue, Columbus 16, Ohio
Please send new Kinnear door catalogs to:

Name..... Title.....
Firm.....
Street.....
City..... Zone..... State.....

LETTERS

Continued from p. 80

erations of neighborhood design brought into civic development. It is particularly important when a proposed structure is Gargantuan in proportions. We appreciate the forces which lead to such super developments as this proposed for the Grand Central area. Nevertheless, we feel that from an esthetic viewpoint the finest architecture in the world is in execrably bad taste if it injures the neighborhood into which it is introduced.

DENNIS O'HARROW, *executive director*
American Society of Planning Officials
Chicago, Ill.

Forum:

The architects who are making concrete proposals on the problem of Grand Central Station, as well as those who are offering comments and signing round-robin letters, are all principally concerned with "saving" the present station and its concourse. This is an admirable objective in itself, but it is beside the point, for it quite overlooks the main issue, which is not one of architecture at all, but one of city planning. The problem originally arose from the announcement by the management of the New York Central that it is seeking ways to reduce the "burden" of carrying its real estate. If the railroad is being taxed on its real estate beyond what can be carried by an intelligently planned station such as now exists, the remedy may be found in tax reform rather than in the creation by the railroad of new problems for the city which will be well-nigh insolvable.

All of the proposed building schemes seem to accept as inevitable the dangerous postulate that erecting another mammoth building in the Grand Central area is the only solution for the financial difficulties of the New York Central Railroad. Why? From a planning point of view, the addition of so vast an increase of building bulk in the Grand Central area is indefensible. We already have too much. Whether this added bulk is filled with offices, theaters, restaurants or any combination thereof, and whether or not a modicum of garage space is provided, it will inevitably attract still more traffic to an area where the movement and parking of vehicles has already become almost impossible.

In FORUM's interesting spread in the February issue, the question of this added congestion is graphically described. So, too, is the sense of openness created, on lower Vanderbilt Ave., by the setback of the present station in relation to the west driveway as compared with upper Vanderbilt Ave., where the buildings rise directly on the street line. What seems to be overlooked here and what seems to be deliberately misrepresented in the architect's drawing in that article is that the proposed new building would itself, by enclosing the west driveway, rise directly from the east building line of Vanderbilt Ave. and thereby darken it just as much as do the existing buildings north of 45th St. What would happen on the east side of the station, in connection with the privately owned Depew Place, is not even

continued on p. 88

Solving noise problems and moisture problems, too...

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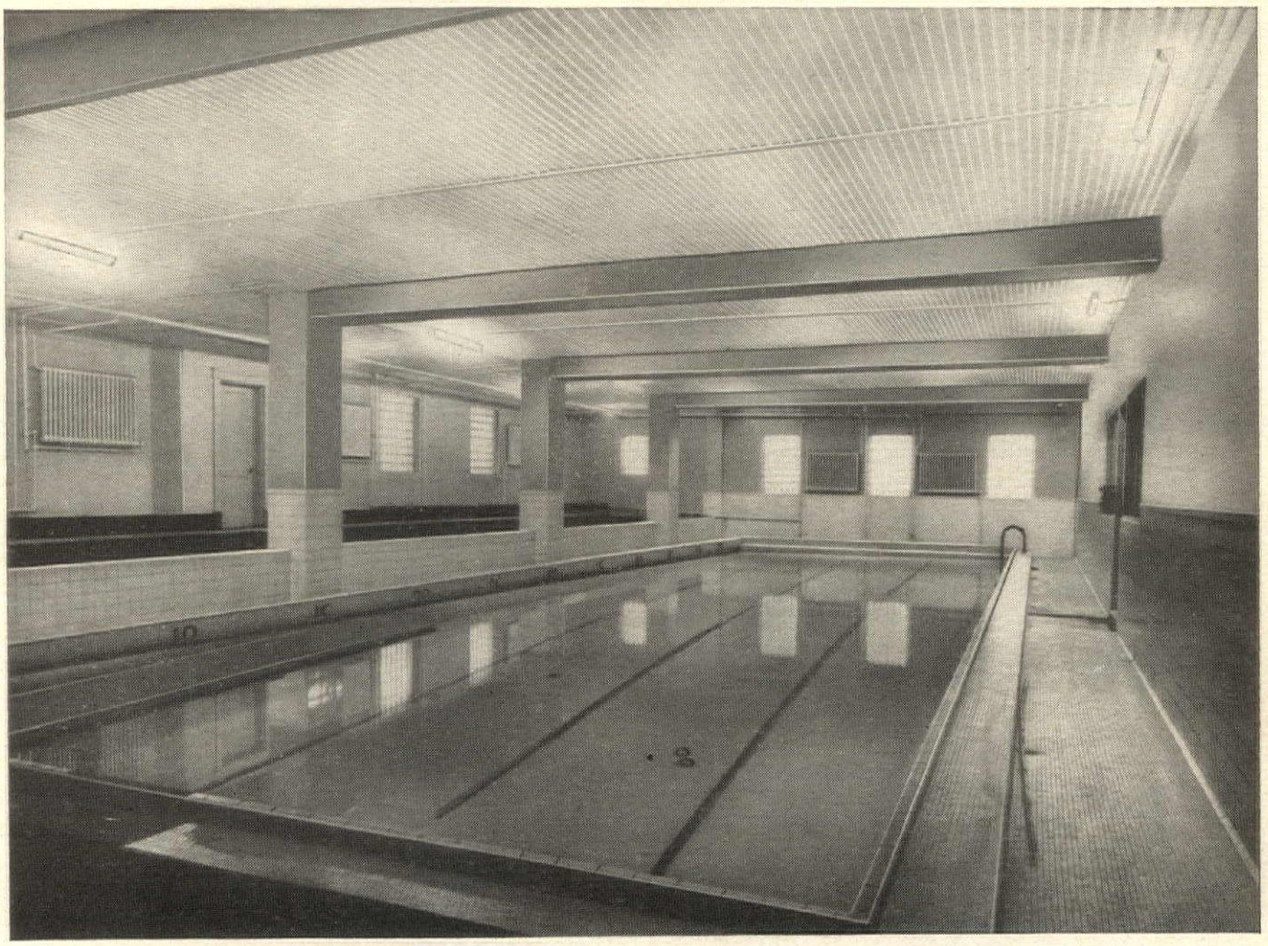
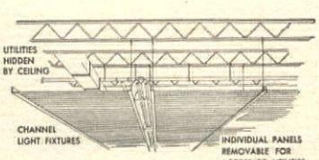


Wherever noise problems exist ReynoCoustic aluminum acoustical system offers an efficient solution in attractive form... combined with minimum maintenance and ready access to utilities above the ceiling. Incombustible, high in light reflection and easily cleaned, the ReynoCoustic system also has high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

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



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

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

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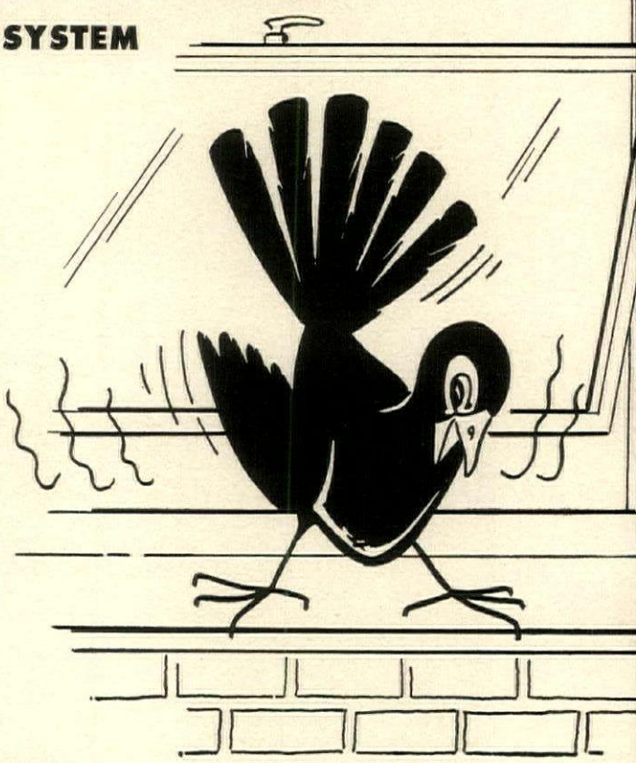

NO school can afford open window ventilation, if it counts the cost. Fuel dollars are wasted every day of the heating season. And, in addition to this needless extravagance, the problem of the overheated classroom remains unsolved.

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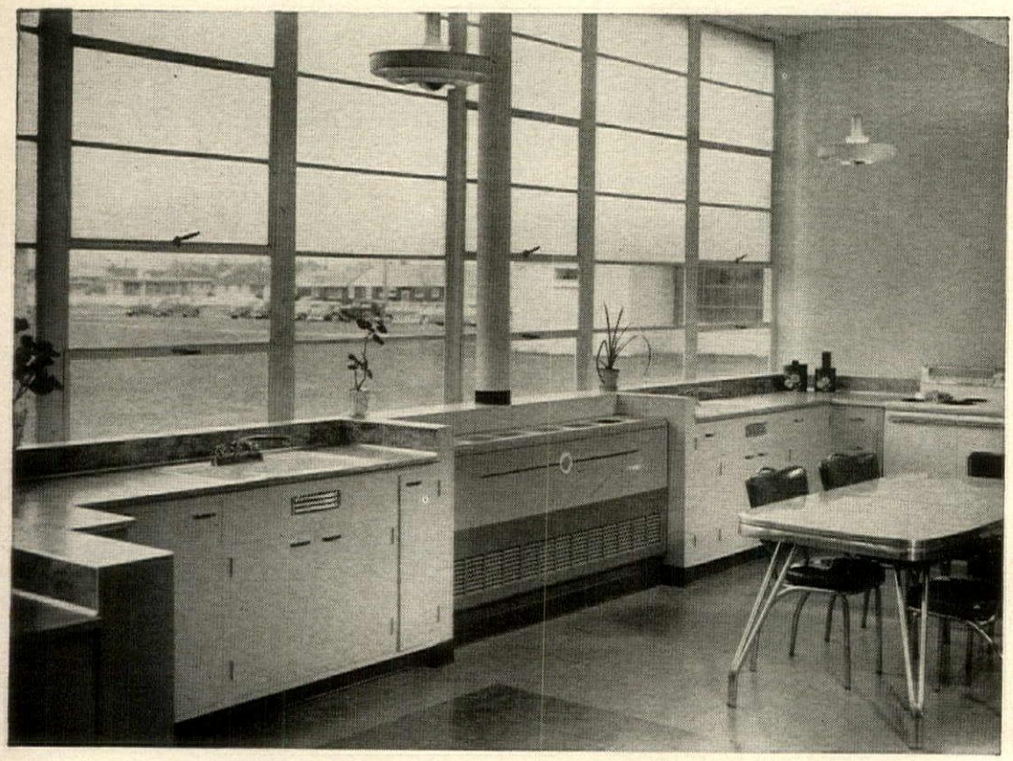

WASHINGTON. They cook in comfort at Pasco Senior High School, Pasco, Wash. Note cavity wall construction which permits passage of lally column through outdoor air opening of the Unit Ventilator—another example of the flexibility in Herman Nelson design. Superintendent of Schools: Herman F. Jaeger; Architect: Victor Louis Wulff; Engineers: Kendall M. Wood & Associates.

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MICHIGAN. Long, low and handsome. Edmonson Elementary and Junior High School, Willow Run, Mich. Installation cost of Herman Nelson DRAFT|STOP System was materially reduced by laying piping on depressed slab in exposed perimeter trench (see inset), with unit ventilators and utility cabinets serving as cover. Superintendent of Schools: Albert C. Johnsen; Business Manager: A. A. Wiench; Architect and Engineer: W. T. Anicka; Mechanical Contractor: United Heat Engineering Co.

TENNESSEE. Strictly modern and modest in cost. The new C. T. Kirkpatrick School, Nashville, Tenn., featuring Herman Nelson DRAFT|STOP Unit Ventilators, was built at a cost of $9.60 per square foot. Superintendent of Schools: W. A. Bass; Architects: Taylor & Crabtree; Engineers: I. C. Thomason & Associates.

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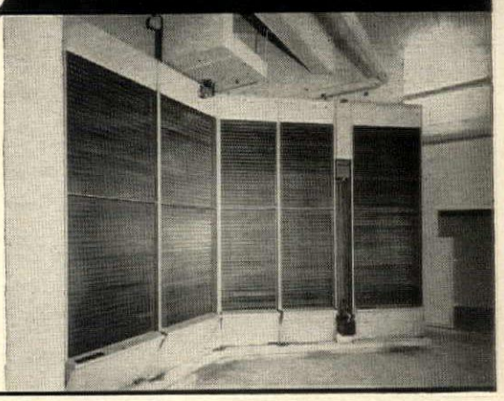

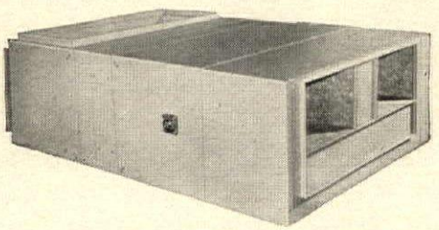

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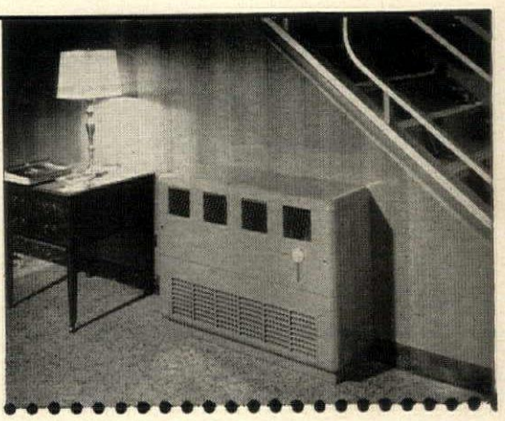

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LETTERS

Continued from p. 84

mentioned and is carefully concealed in the perspective. According to the sketch plan, the new building would seem to leave a chasm on the east of perhaps 10′ or so between itself and the Graybar building.

It is obvious, therefore, that the bulk created by any of the proposed solutions would darken the surrounding buildings now deriving light and air from the area occupied by the present low station structure which, in comparison with skyscraper altitudes, counts practically as an open space. Recognition of this fact points to a more logical solution of the New York Central's problem. Properties around parks and other public open spaces are normally assessed at a higher rate than if they faced an ordinary narrow street. Above the fourth story, the present New York Central Station serves, in effect, as open space. Its very existence makes possible the rents and profits of which the surrounding buildings receive the benefit. Let the city condemn or otherwise acquire the "air rights" above the roof level of the present station and then recoup the entire cost of this, over a stated period of years, by increasing the assessed valuation of all the properties in the area.

To the anticipated objections of the owners of these surrounding properties to increased assessments, a number of different answers could successfully be made on established precedents in law and taxation. If the condemnation by the city of the air rights above this present station is carried through as "an assessable improvement," local, borough and city-wide assessments could be levied as well as, or as an alternative to, increased assessed valuation of individual properties, on the same theory that was used in recouping the cost of demolishing the old elevated railroad lines. In that case, the city as a whole benefited by the removal of unsightly structures and interference to traffic, while adjacent property increased in value through the new light and air let into the street. Were the open space above the present station to be guaranteed in perpetuity, both the city as a whole and the surrounding properties would similarly be the gainers; and, in addition, the public would escape the consequences of an intolerable congestion in an already overcrowded central area.

ROBERT C. WEINBERG
Architect and city planner
New York, N. Y.

PORCELAIN ENAMEL

Forum:

Your article on porcelain enamel curtain walls (AF, March '55) is excellent—informative without being didactic. But there is an omission: The index to the special advertising section on porcelain enamel fails to list the name of our company which has been making installations of porcelain enamel building panels for 30 years.

HERBERT R. SPENCER, *president*
Erie Enameling Co.
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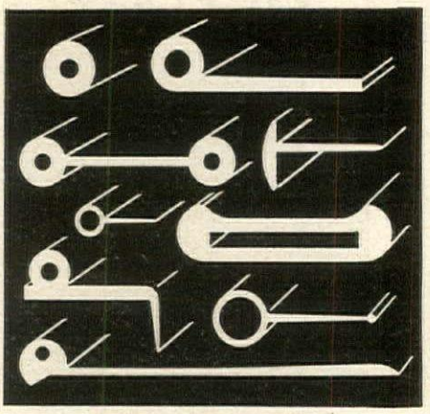

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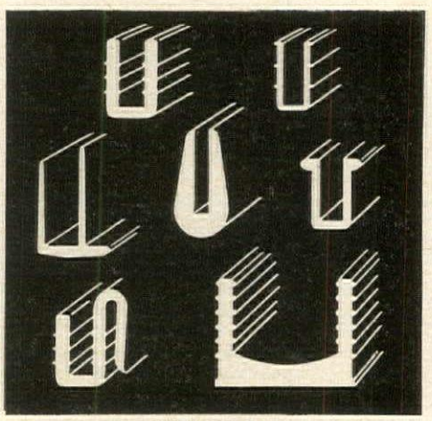

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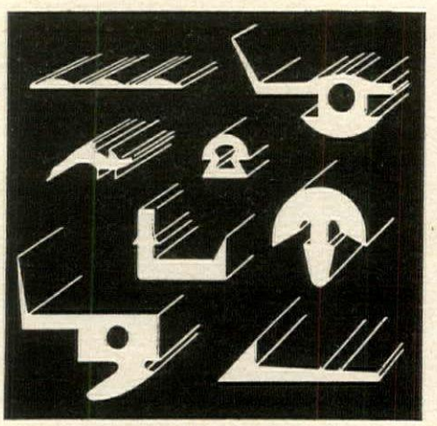

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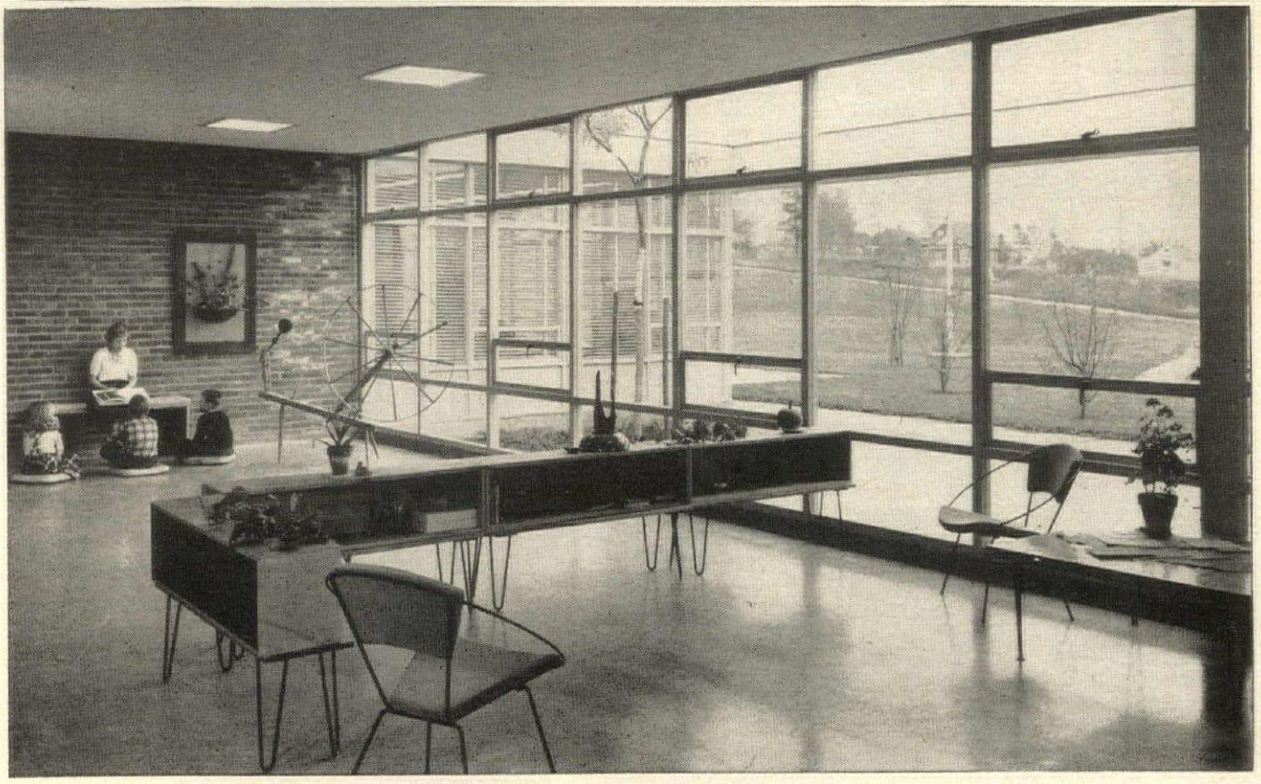

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Architect — Skidmore, Owens & Merrill *Contractor — Modern Construction Co. Inc.*

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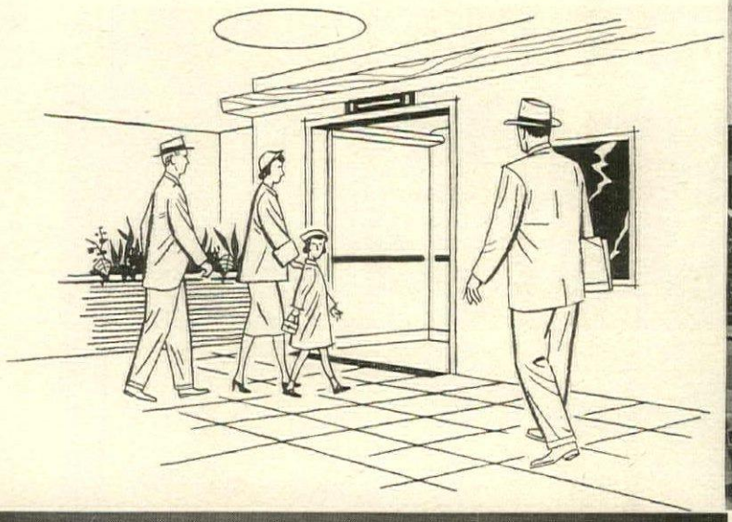
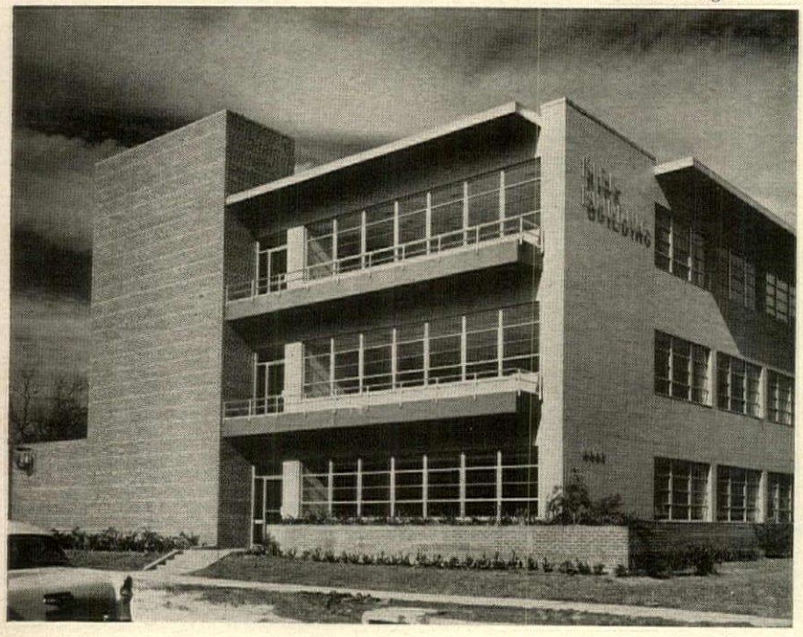


Northwestern Mutual Fire Ass'n—Los Angeles
Architect: Richard J. Neutra

Kirk Building—Dallas
Architect: George L. Dahl



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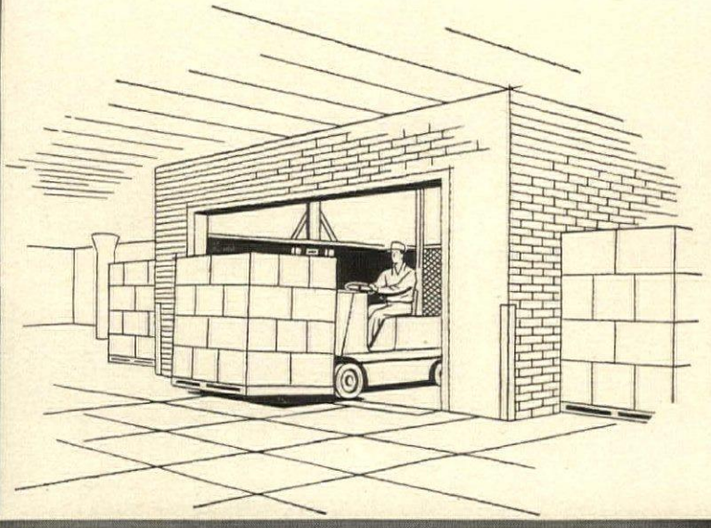

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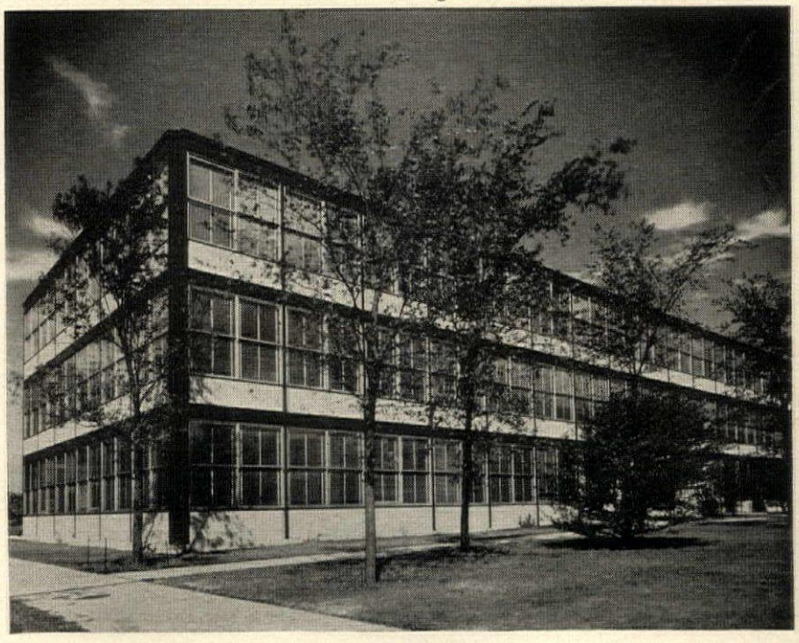

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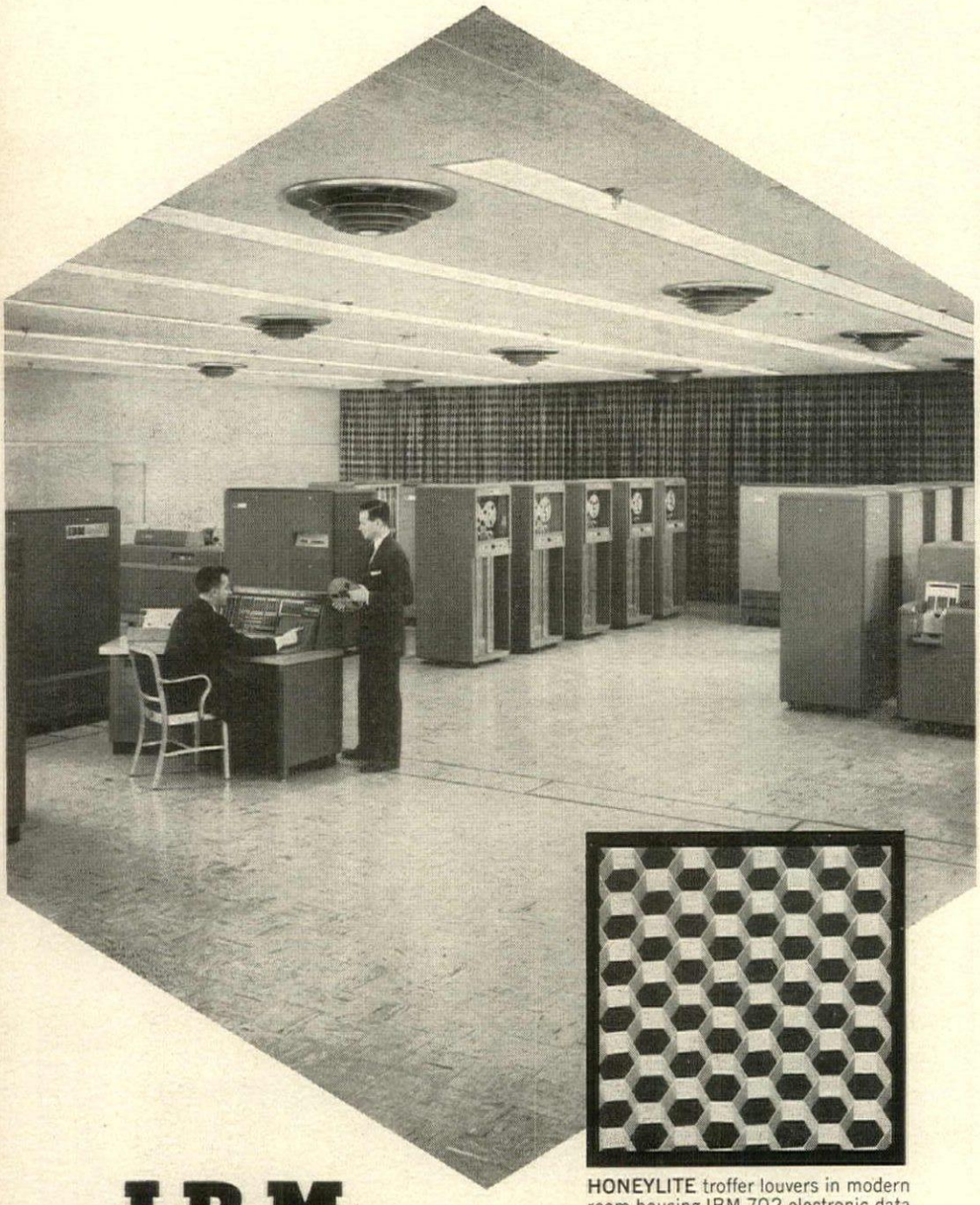

HONEYLITE troffer louvers in modern room housing IBM 702 electronic data processing machine at IBM's Poughkeepsie, New York, plant. Inset shows close-up of aluminum honeycomb.

IBM

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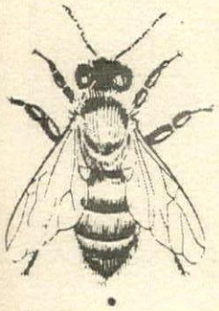

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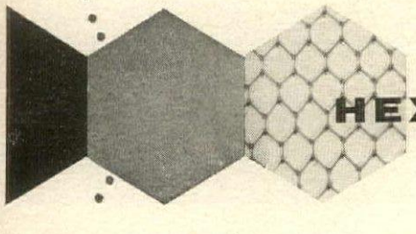

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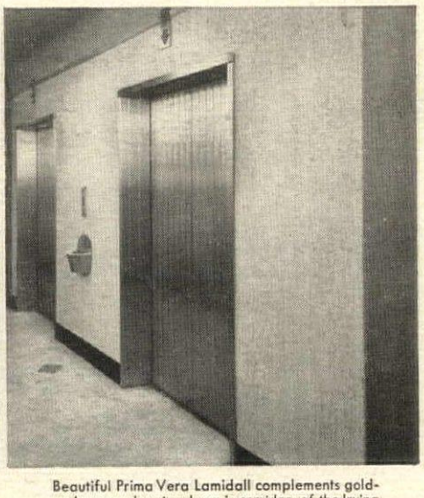

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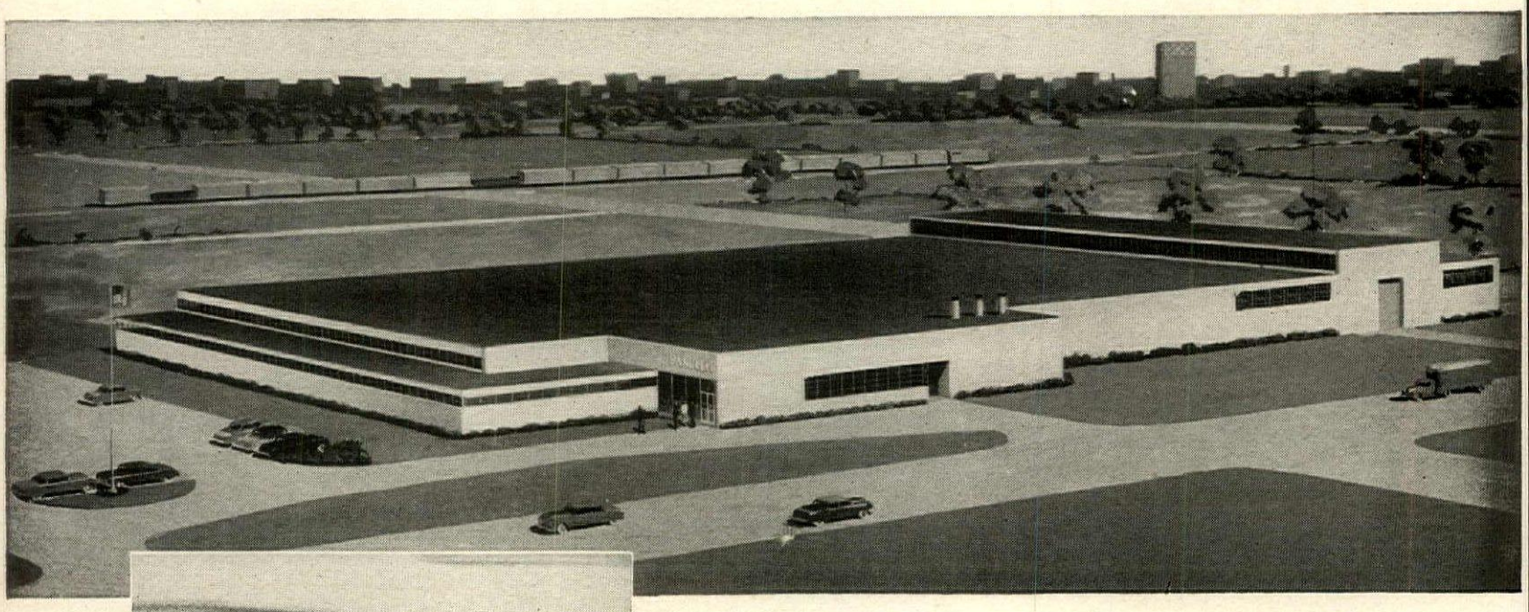
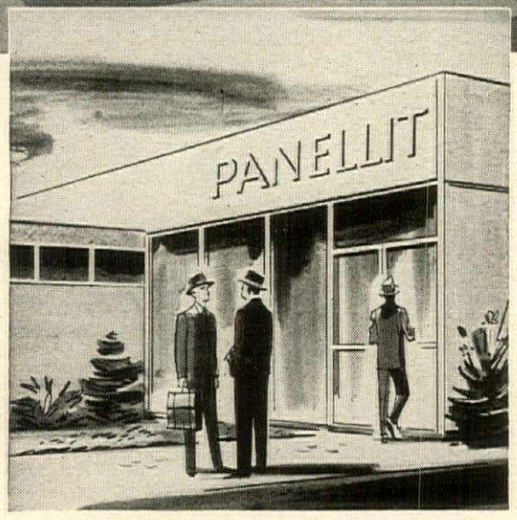
Skokie, Illinois





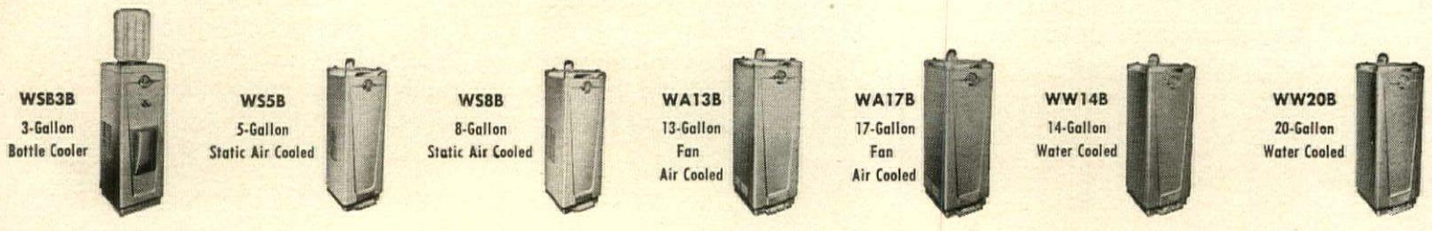
Contemporary precision keynotes the entrance to Panellit, Incorporated's new home. Seven landscaped acres, with ample parking space, provide an ideal setting for Panellit's engineering and manufacturing of industrial controls – many vital in Atomic Energy production.

Congratulations to *Dubin and Dubin*

Here is Dubin and Dubin's successful solution to special problems in lighting, air conditioning and communications. They provided many quiet, well-lighted and ventilated work areas – all virtually dust-free – for Panellit's designers and engineers.

This new 82,000 sq. ft. building of steel, concrete and brick houses office, factory and assembly space.

Also, special attention was given to the personal comfort of the employees: immaculate First Aid and Rest Rooms, Lockers, Kitchen and Cafeteria. The Reception Room, too, reflects the progressive outlook found at Panellit. Naturally, Westinghouse Water Coolers were specified to contribute to this atmosphere of quiet and comfort.



Dubin and Dubin, Architects, made sure with

Westinghouse Water Coolers

—the choice of more and more leading architects and construction engineers. This ever-increasing stamp of approval is in recognition of the superior quality and performance built into every Westinghouse Water Cooler.

Quiet...Dependable Operation

is assured with the new Solenoid Water Valve. There's no stem packing to leak, no moving parts to wear out. And the entire water system is completely sealed in—for years of maintenance-free service.

Superior Performance

from Automatic Stream Height Regulator. No spurt, no splash, no dribble—regardless of water pressure changes. Patented Pre-Cooler and Super-Sub Cooler deliver more cold water for less money. Cold waste water pre-cools incoming water . . . sub-cools hot refrigerant.

Greater Economy

—Only Westinghouse offers Dual Electric Control at no extra cost. Either the finger tip or toe tip control operates bubbler valve electrically. Stainless steel, splash-proof top is sanitary, unbreakable. And every Westinghouse water cooler is covered by 5-year Guarantee Plan.

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shows at a glance how many hundreds of dollars the Westinghouse Pay-Way Plan can save every year. Based on extensive time and motion studies, this Plan can indicate savings of as much as $350 for every 50 employees!

To determine *your* savings under the Pay-Way Plan, see this handy Westinghouse computer. Call your Westinghouse Water Cooler Distributor today. He's listed in the Yellow Pages of your telephone directory.

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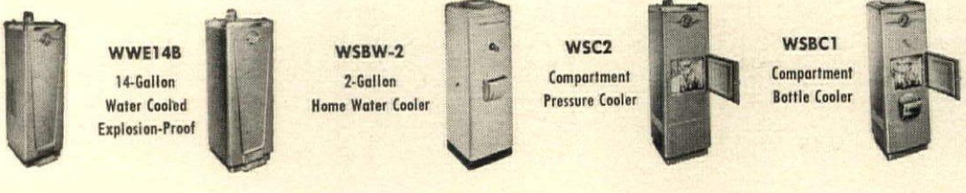


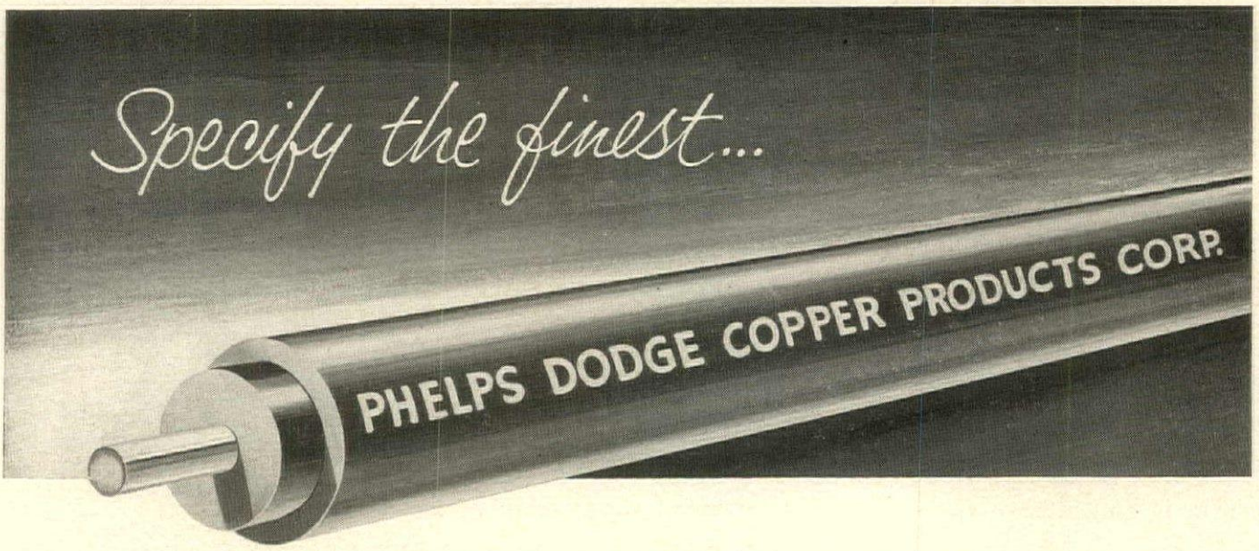
WSE8B 8-Gallon Static Air Cooled Explosion-Proof

WWE14B 14-Gallon Water Cooled Explosion-Proof

WSBW-2 2-Gallon Home Water Cooler

WSC2 Compartment Pressure Cooler

WSBC1 Compartment Bottle Cooler



Phelps Dodge Habirite-Habirprene!

Rely on this highest quality cable— it works where others fail

The term "RR" is only a name, not an assurance of quality. Instead of ordering just "RR" cable, insist on Phelps Dodge Habirite-Habirprene—developed through years of experience in designing and making high voltage cables. Habirite-Habirprene exceeds the trade's highest standards of quality and reliability.

Phelps Dodge Habirite insulation, a specially engineered butyl rubber compound, has a service dependability record unapproached by any other type of rubber insulation. Habirite is greatly superior to old-fashioned insulations for these reasons:

- Much greater resistance to heat and oxidation. This permits a higher temperature rating, with consequent reduction in conductor size and in cable cost.
- Much greater resistance to ozone—present around high voltage equipment.
- Much greater mechanical toughness affording maximum protection against damage from tools, stones and other installation hazards.
- Better electrical properties—giving a greater safety factor in operation.
- Maximum uniformity of finished product—due to controllable uniformity of raw materials.
- Elimination of seams which cause weak spots—through use of Phelps Dodge extrusion insulating process.

Phelps Dodge Habirprene sheath, a unique neoprene compound, is especially made to be extra resistant to corona, one of the worst enemies of high voltage cable. This *extra resistance to corona* is an exclusive Phelps Dodge feature. It provides a greater safety factor in operation and has contributed to the remarkable reputation and service record of Habirite-Habirprene.

When you specify Habirite-Habirprene, you are assured of getting "RR" cable with the utmost in safety and durability. Habirite-Habirprene is the result of Phelps Dodge's rigid quality standards, long experience, expert engineering and vast facilities.

PHELPS DODGE COPPER PRODUCTS CORPORATION

SALES OFFICES: Atlanta, Birmingham, Ala., Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Greensboro, N. C., Houston, Jacksonville, Kansas City, Mo., Los Angeles, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Roanoke, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D. C.

SelecTemp room units, only 18 inches high, are recessed into wall and can be painted to match color scheme. Three sizes: 6,000, 12,000, and 18,000 Btu output. 12,000 Btu size shown below. No electric wiring or power is used. Small flexible copper tubes carry steam to each room unit.

Why Iron Fireman® SelecTemp® is the greatest advance in modern heating

This Quick Quiz Tells Story

Features never before available bring new heating standards to apartments, hospitals, motels, office buildings, schools and other buildings of every size and type.

Q. What features are new and better in Iron Fireman SelecTemp heating?

A. (1) Thermostat in every room; (2) modulated (not "on-off") heat; (3) filtered warm air continuously circulated; (4) easily installed in new or old construction; (5) boiler can be located anywhere; (6) moderate operating costs.

Q. How does SelecTemp provide individual room temperature control?

A. Each room heating unit has its own thermostat. Temperature in any room, including bathrooms, can be raised or lowered without affecting temperature in any other rooms.

Q. What is meant by "modulating" heat?

A. SelecTemp is not "on-and-off" heating. Each room unit automatically modulates its own heat output. Steam turbine operated fan in each unit runs faster or slower, according to amount of heat needed, gently circulating filtered warm air.

Q. What happens when south rooms face warm sunshine and north rooms face cold winds?

A. SelecTemp heaters in the rooms affected act at once, adjusting heat output to the needs of the individual rooms. Heating units on the warm side of the building slow down to compensate for solar heat, while those on the cold side increase heat delivery to make up for extra heat loss. SelecTemp units mounted in outside walls quickly sense temperature changes and automatically increase room temperature to keep comfort level constant. Reaction is fast and accurate—no outside thermostats required.

Q. Is SelecTemp reasonable in cost?

A. Yes. The system is engineered for very economical installation and operation, both in new construction and modernization. SelecTemp, a new, different and revolutionary kind of heating, is one of the most desirable features you can put into any type of building where human comfort is involved.

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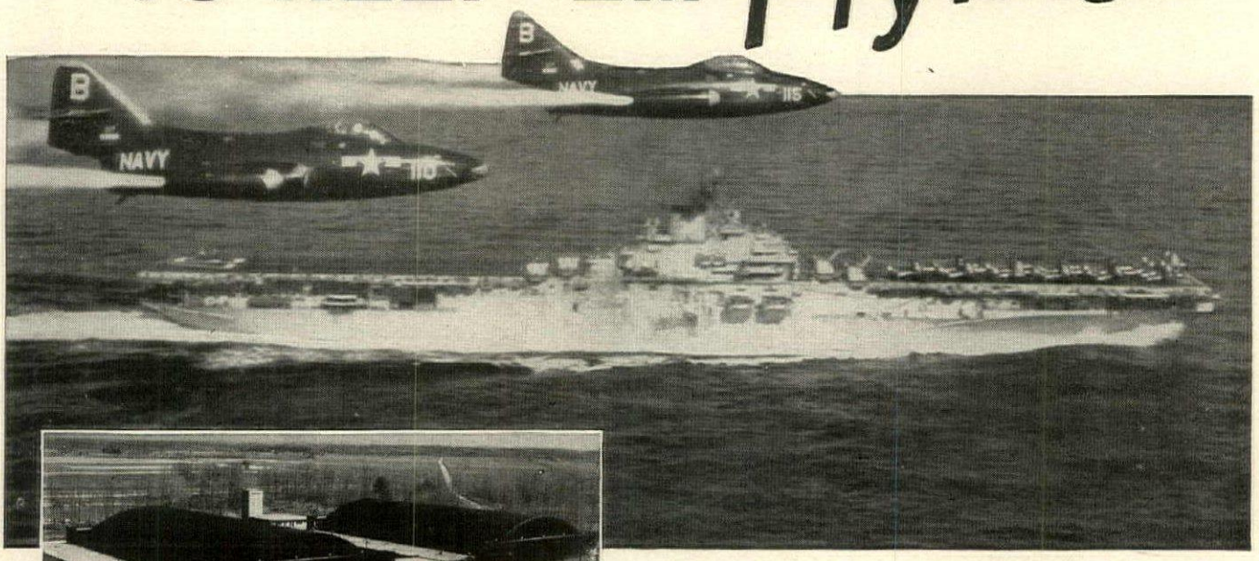
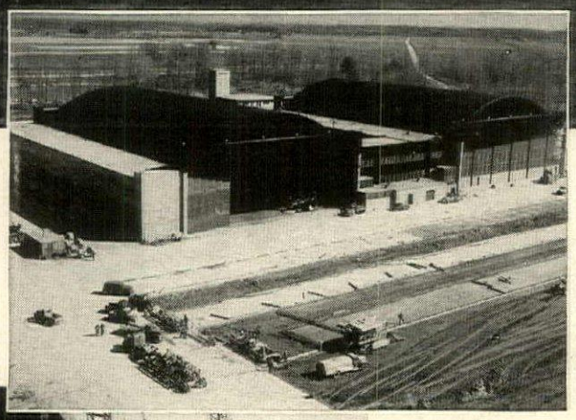
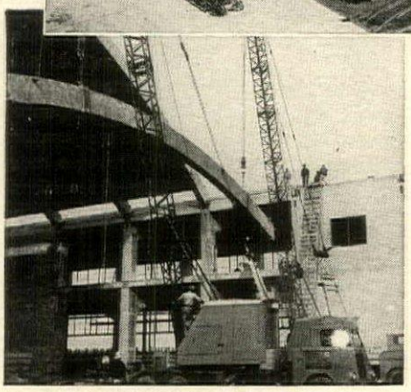
TO KEEP 'EM *Flying*







Hollow precast arch ribs, each 164 ft. x 3 ft. x 1¾ ft., twelve for each hangar, were precast at job site. The precast, thin-shell roof consists of 924 panels, each 24 ft. long, 4 ft. wide, with ribs 10 in. deep and 1¼-in. shell.

Hollow, Precast Concrete Arch Ribs 164 Ft. Long Support Precast Thin-Shell Concrete Roof for Navy's Oceana, Va., Aircraft Maintenance Hanger

● Forward-looking in all of its operations, the Navy has been a pace-setter in precast concrete design, as illustrated by this $2.1-million, twin-barreled Aircraft Maintenance Hangar at U. S. Naval Air Station, Oceana, Va., one of the east coast master jet air bases where Air Groups who man our carriers are trained and their jets maintained at peak operational efficiency.

Each barrel is spanned by 12 hollow, precast, reinforced-concrete arch ribs, 164 ft. long, rising parabolically above heavy concrete abutment bents which also form the frame of the two-story office sections. Arch ribs were precast at job site in half sections, each 82 ft. in length, weighing 22½ tons. The half arches were hinged at each end, and after full dead load was applied, hinges were welded and concreted to form fixed ends.

The arches support the thin-shell concrete roof, consisting of 924 panels, 20 with sloping overhang, cast at the job site on concrete forms, using the Vacuum Concrete, Inc. method.

Precise casting and erection schedules resulted in assembly-line precision in building a hangar which admirably fits its purpose—with overall economies that merit the attention this type of advanced prefabrication is receiving from designers all over the country.

Lone Star is proud of the privilege of supplying 23,405 bbls. of cement for this outstanding project—quality cement, every barrel of it, as reflected in a finished structure of outstanding character.

U. S. NAVY AIRCRAFT MAINTENANCE HANGAR
Oceana, Virginia

Designed and built by
U. S. NAVY BUREAU OF YARDS & DOCKS

Supervision:
DISTRICT PUBLIC WORKS OFFICER
5th NAVAL DISTRICT

Engineers:
W. W. SLOCUM & CO., Newark, N. J.
KISTNER, CURTIS & WRIGHT
Los Angeles

General Contractor:
VIRGINIA ENGINEERING COMPANY, INC.
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architectural **FORUM**
the magazine of building

Men behind the blueprints in this month's FORUM

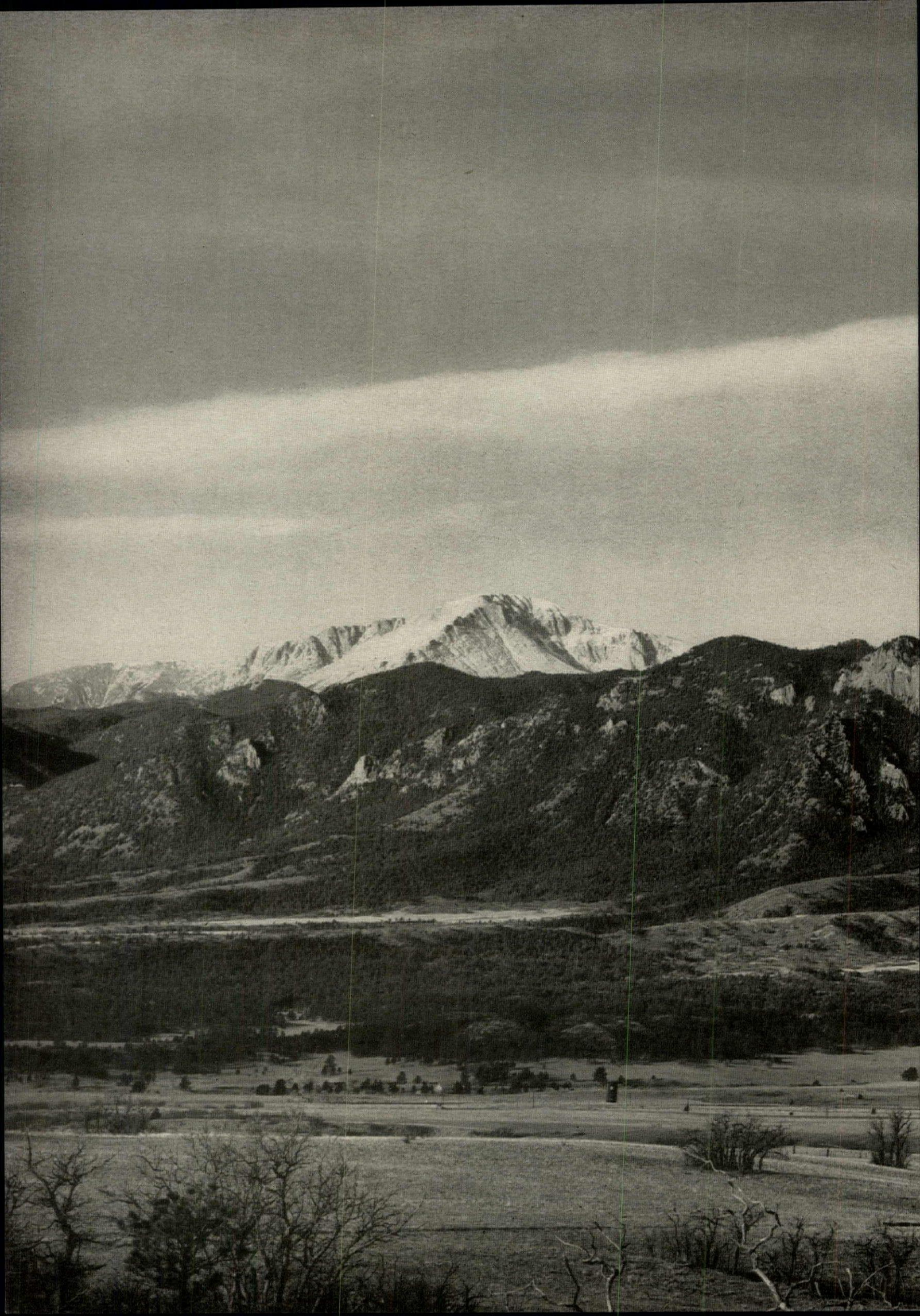
Hansel Mieth

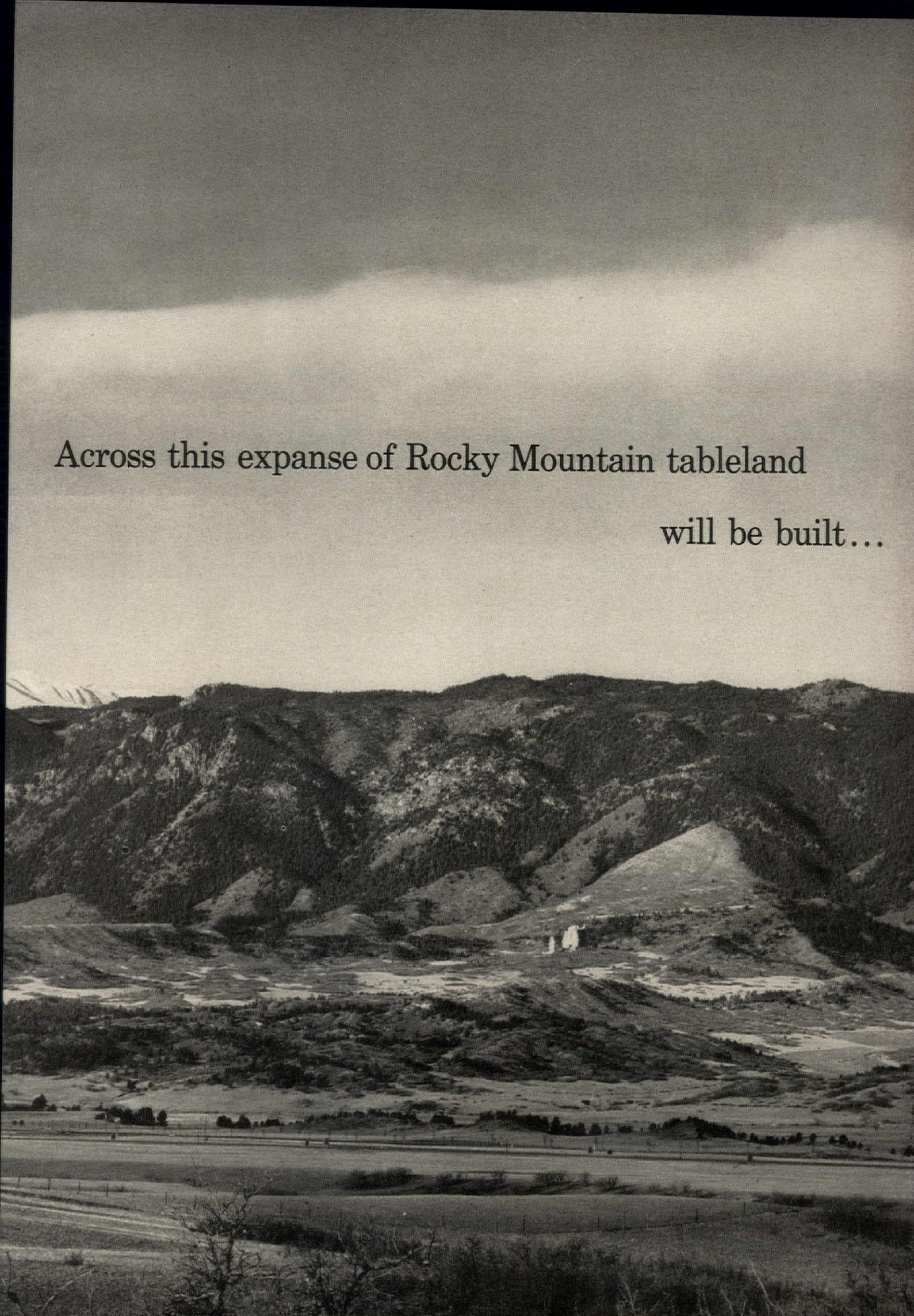
Walter Bennett

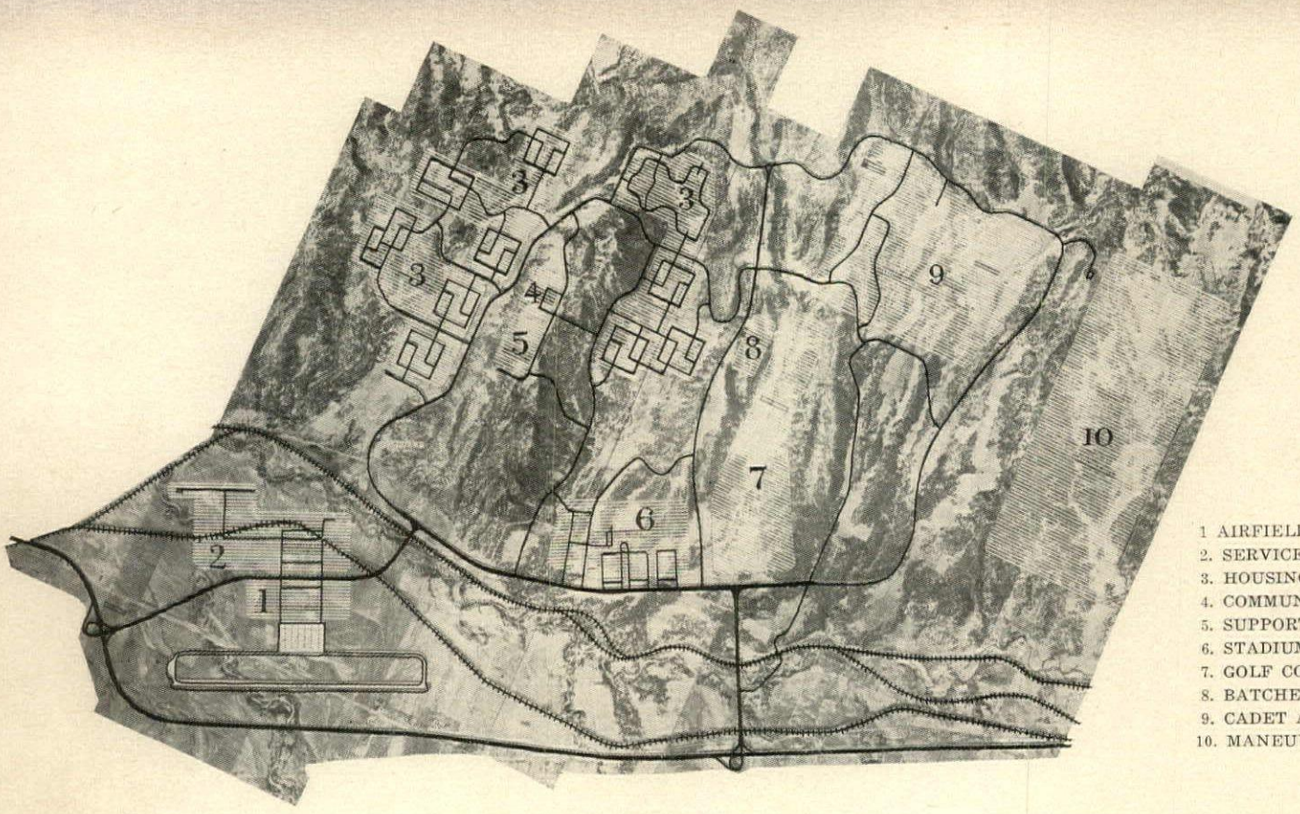
CLIENT: Carrol M. Shanks, since he became president of the Prudential Insurance Company of America in 1946, has fathered the company's vast decentralization program and authorized the construction of five new "home" office buildings around the country (p. 140). "To operate most efficiently, we have learned that we must be part and parcel of the community or area we serve." Although he delegates actual site selection and construction to his building department and farms out the design to local architects, their ultimate proposals come to him for approval. He is qualified to decide such questions, for he once had the job of employee relations for the Pru,

ARCHITECT: Edward D. Stone knows how to design buildings to fit into most every country in the world. He has been abroad about 25 times since the war, has designed buildings in half a dozen different lands (notably a hospital in Peru and hotels in Panama and Lebanon). On his second trip to India last fall (which, incidentally, was also his honeymoon) he visited the Taj Mahal, and it is no coincidence that his proposed US Embassy for New Delhi and 324-year-old palace have much in common (p. 114). Says Stone of his client: "It has been an inspiration to work under the State Department design board of H. R. Shepley, Ralph Walker and Pietro Belluschi, who have been sympathetic with our objectives and have given constructive guidance at every stage of the project's development."

ECONOMIST: Miles L. Colean was an architect, a builder and a government housing official before he became a consultant to a host of enterprises (including FORUM) and author of countless books (the latest of which is on the timely subject of *Renewing Our Cities*). Between 1922 and 1934 he practiced architecture in New York and Chicago. During the war he was a vice president of Starrett Brothers & Eken, New York City builders. In between he was assistant administrator of FHA. In this month's FORUM, Colean winds up a provocative series of articles on the realities of real estate investment by revealing the impotency of government policies in the field of apartment finance (p. 110).



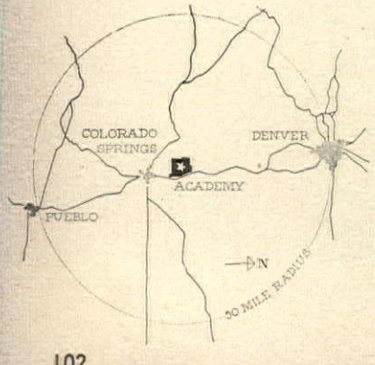

Across this expanse of Rocky Mountain tableland
will be built...



...THE UNITED STATES AIR FORCE ACADEMY

Last month in high Colorado, at the foot of Pike's Peak, the US Air Force showed several hundred dignitaries and journalists the first plans and models for the projected Air Force Academy. It was an out-of-town tryout for a great architectural show—the first US national shrine to be designed in the modern style. The assembled critics and congressmen contemplated the glass and aluminum model buildings perched on the model mesas, boggled at the angular planes of the cathedral, were awed by the scope and magnificence of the site and pronounced the whole presentation a solid hit. Thus passed, quietly, the eclectic era in government architecture. With the new embassies abroad and the Air Academy at home, the US has come to grips with architectural reality.

In the eight months they had sweated on the project, Architects Skidmore, Owings & Merrill had not presumed to solve everything. They showed no complete design. But in their brilliant organization of the 27 sq. mi. site, they made a firm, bold proposal of how they wanted to execute the commission: in light, precise academic buildings faced with glass and aluminum, consolidated on an acropolislike central mesa—scaled not to squads, intimately, but to squadrons, broadly—and with a constant sense of the mountains and mesas around them. The peak lines of those mountains, the Rampart Range, wander delicately among one another far up. They are like mountains in Japanese prints, but less severe. The rolling tableland before them wears a coarse covering of brush, sere grass, patches of red clay and, luckiest of all, black pine forests spilling into the minor valleys, filling them with green-black pools of foliage, outlining ridge lines. Then the foot land rolls on forever. Against this vista "the buildings themselves should seem unimportant," said Nat Owings in making his presentation.



He said also that the designers (directed by Gordon Bunshaft of the New York office, with Walter A. Netsch Jr. heading a full-time crew in Chicago) were attempting an architecture with "a national, not a regional character, the direct simple way of life, as styleless as the most modern guided missile . . . timeless." But he was understating style, of course, for good architecture must always represent a time, either following or creating a tradition. This is why West Point, awkward as it is physically, is a memorable image in the national mind. Graduates call it the fort, and that is how it began. (Architects Cram, Goodhue & Ferguson then rooted it firmly in the Gothic.) Annapolis, sentimental as its architecture is, has the gentility which has long distinguished the Navy's image of itself. (Architect Ernest Flagg's designs, in 1899, were French Renaissance.) SOM's models indicated their Air Force architecture will be traceable directly to the dynamic tradition of the great airplane hangars and the airplanes themselves. It will be straight, simple US industrial age idiom, but with the added refine-

DIRECTING OFFICERS AND AGENCIES

Harold E. Talbott
Secretary of the US Air Force

General Nathan F. Twining
Chief of Staff, US Air Force

Lieut. Gen. Hubert R. Harmon
Superintendent, US Air Force Academy

Major Gen. L. B. Washbourne
Assistant Chief of Staff, Air Force Installations

Col. A. E. Stoltz
Director, Air Force Academy Construction Agency

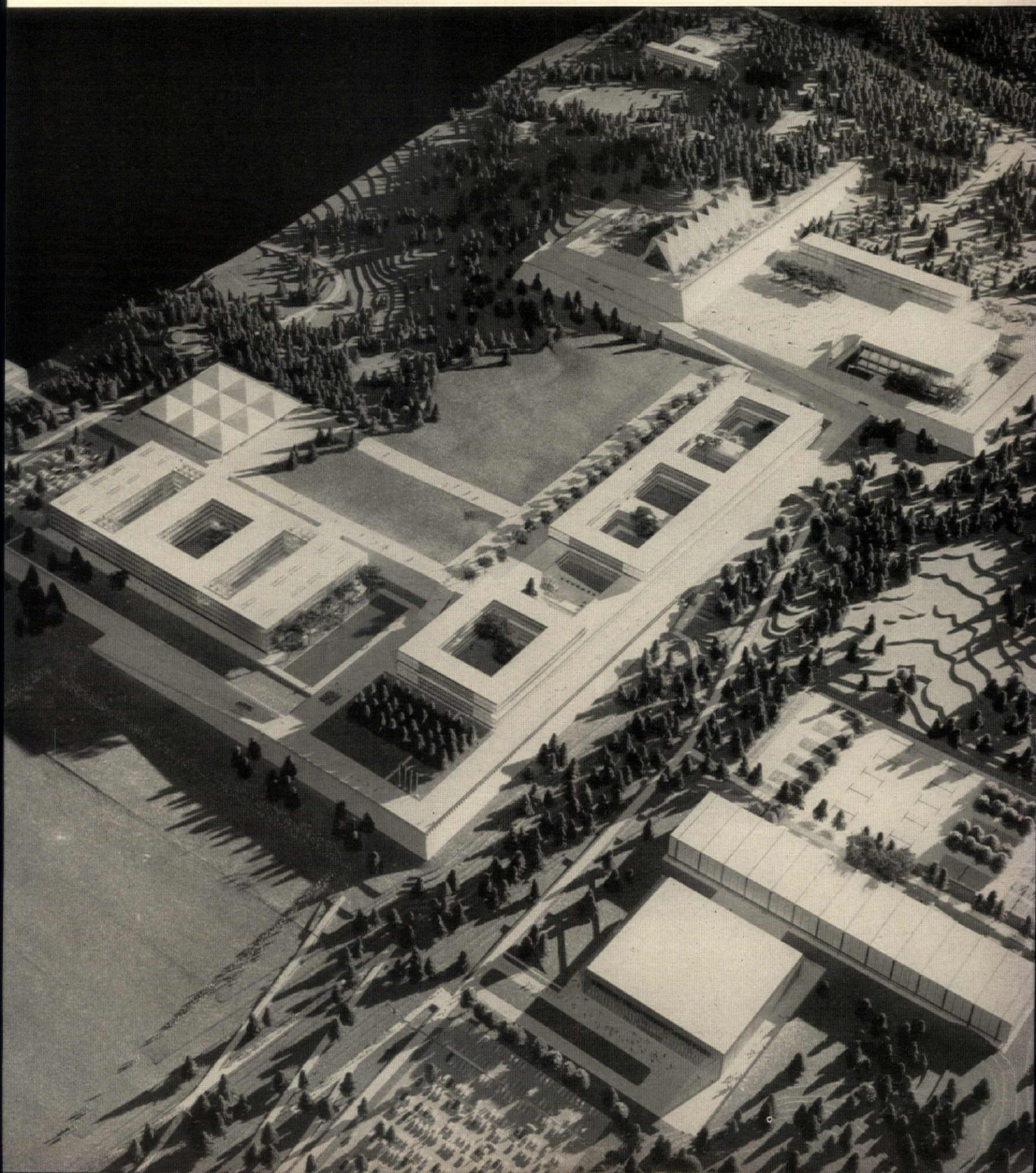
Ellery S. Husted
Consultant, Air Force Academy Construction Agency

Welton D. Becket, Pietro Belluschi, Eero Saarinen
Architectural Consultants to the Secretary of the Air Force

ARCHITECTS & ENGINEERS FOR THE AIR FORCE ACADEMY

Skidmore, Owings & Merrill

Moran, Proctor, Mueser & Rutledge;
Robert & Company Associates; Syska & Hennessy, Inc.,
consulting engineers



ment of what Owings called "global style."

The commission who picked the site could hardly have done better. They got both sweep and verticality. The Air Force cadets will live with the sky. When they go from room to room in their classroom building they will step out into halls walled outside with glare-resistant glass—but sliding walls, so the cadets may actually be walking on exposed galleries. Some days they will squint, but the basic Air Force expression is a cowboy squint, shrewd and appraising. (West Point and Annapolis, incidentally, have already warned the Air Academy that they will not send their football teams up there to play. The air is too thin. The airmen will have to descend.)

The Air Force wants to move into the academy in the fall of 1957; this July they will start their first class of 300 cadets to school in temporary quarters in Denver. The planned eventual complement for the Academy is 2,500 cadets, 725 officers, 760 airmen (enlisted men) and 2,300 civilians. Of $126 million budgeted for the project, $31 million is for flying facilities, $36 million for staff living quarters, $58 million for the Academy itself.

The cadets actually will not do very much flying here. Lieut. Gen. Hubert R. Harmon, Academy superintendent, says sharply: "The Air Academy is not a flying school or in any sense a trade school." Cadets will get only navigation training at the Academy, then take flight training postgraduate elsewhere. But when the Air Force cadets are drilling on the parade ground, learning discipline, shouldering their rifles, they can always glance up at the mountain peaks and know they're headed up there in the sky eventually. It is certain that when they graduate, they will carry a great sentimental nostalgia for the efficient metal and glass Academy sitting on the Incalike stone bases. Where the West Point cadets have their ramparts to remember, the Colorado Springs cadets will have their Rampart Range.

ACADEMIC GROUP has been nicknamed the Acropolis. On or beside it will stand the cadets' world: barracks, classroom building, mess, social center, administrative building, drill fields and athletic facilities. Of this central group, the barracks is the center of gravity. Although the rest of the 17,500-acre site is laid out frankly on an automotive scale, roads do not penetrate here. The cadet will be able to walk everywhere he needs to go except to the airfield.

The mesa will demand a good deal of walking up and down. Ramps are used extensively, but SOM is also designing outdoor stairs proportioned to a marching group.

Masonry will be used to make a transition from the natural landscaping (trees are being preserved) to the metal and glass buildings. The masonry retaining walls, as high as fair-sized dams, will be native stone, slanted in outline, stiffened at their top in a crimped piecrust pattern. The walks and formation spaces under barracks will be textured precast terrazzo of local stone, much of it very dark to cut down on reflected glare. The next transition toward the aluminum and glass upper walls will be polished granite used on the first levels as screen walls between the aluminum-clad columns.

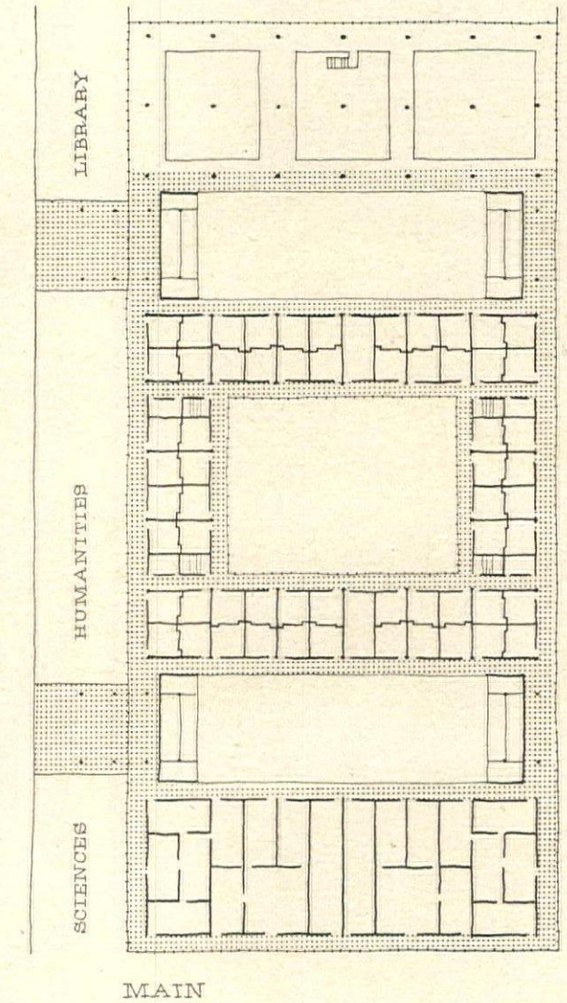
CLASSROOM BUILDING is to be a galleried structure, with 14'-wide overhangs used as hallways, glazed completely with sliding walls. Most classrooms are small, for 15 students, and deliberately are withdrawn into the interior of the building, with clear glass on their outer partitions only from the 7' level up. Chalkboards will run all the way around the classrooms, permitting the whole class to work at them simultaneously. Between classes, cadets will be able to relax their eyes with the great views from the gallery.

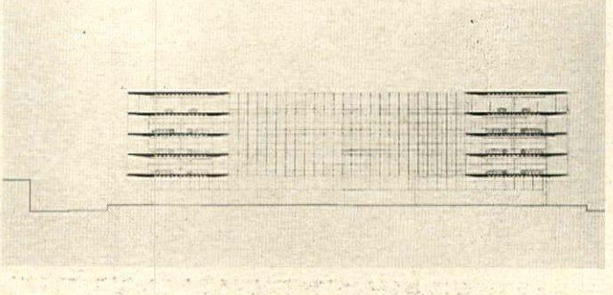
Glazing will be gray glare-reducing glass; heating will be warm air, exhausting to the corridors. Corridor walls will be various bright colors, to shine through the gray glass.

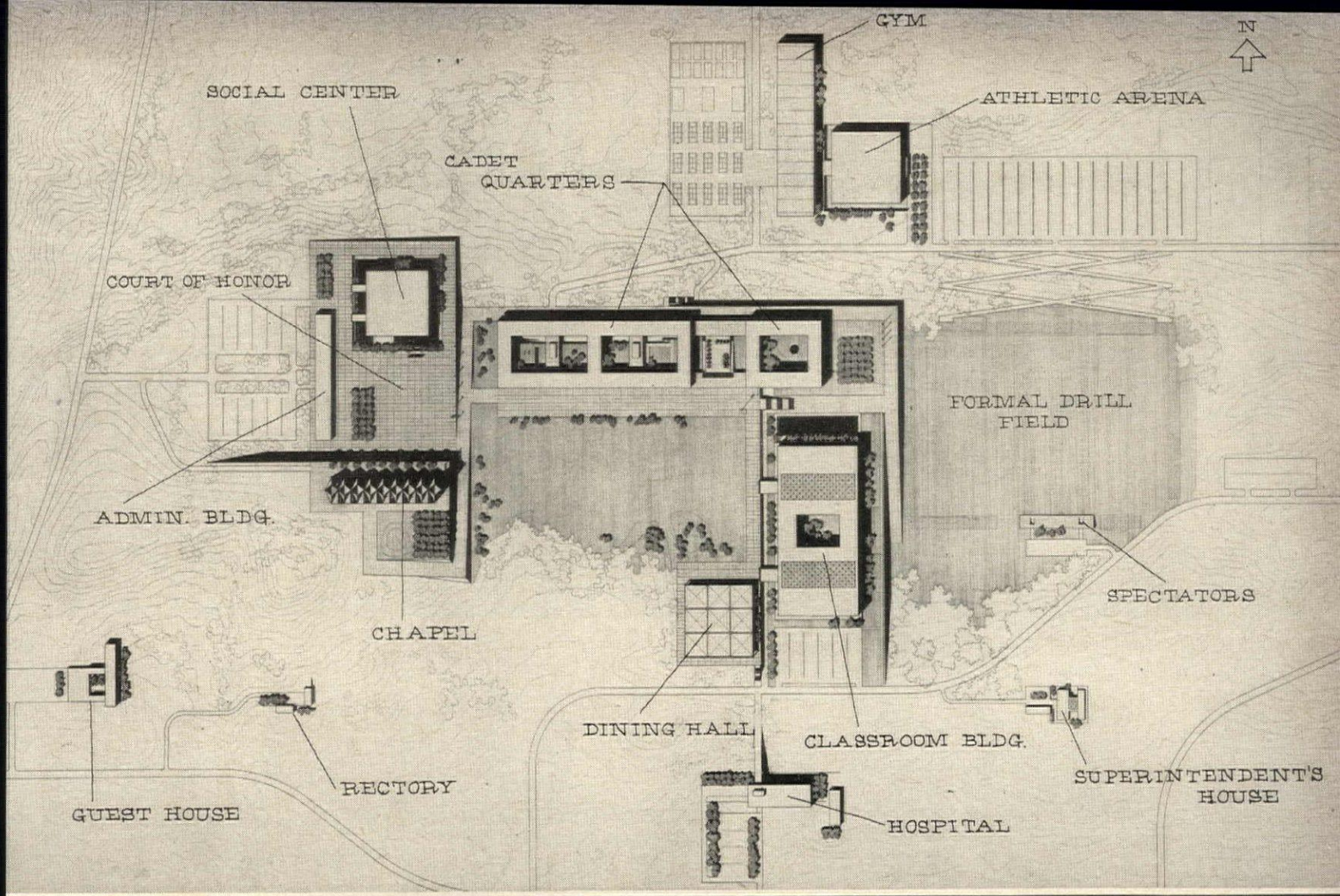
This building, really three buildings tied together by vertical circulation stacks which enclose courts, will have the library facing north, the humanities in the center, and the sciences facing south (the direction available for expansion). Base floor is heavy labs, and top floor is faculty offices.

Cadets will have to climb a maximum of two flights of stairs to get to class; teachers will park cars on base level and take elevator to their top-floor offices.

At this early stage of design all the buildings on the site are laid out on an over-all grid of 56'.



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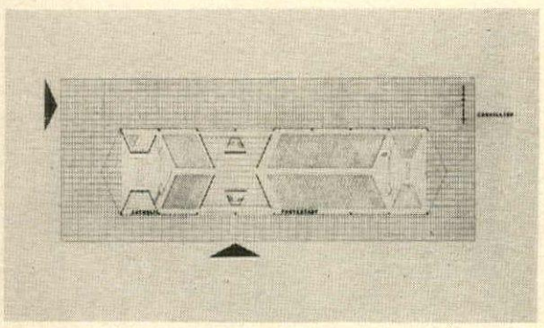
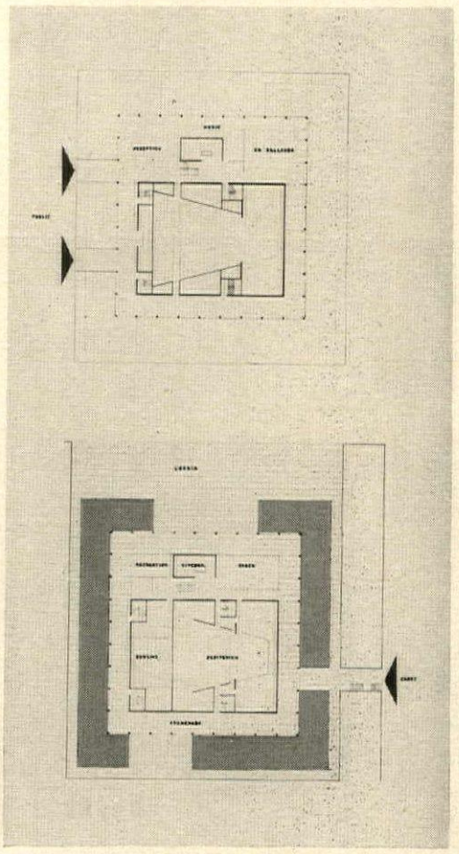
CHAPEL
DINING HALL
CLASSROOM BLDG.
SUPERINTENDENT'S
HOUSE
RECTORY
GUEST HOUSE
HOSPITAL

AIR FORCE ACADEMY



CHAPEL (left and above), still under study, is shown in model as long, tall steel frame structure roofed in intersecting planes of marble. Protestant church occupies one end, Catholic church the other, and in the center on a mezzanine is area for Jewish services. Entrances are in center, and clear glass end walls have sections of stained glass.



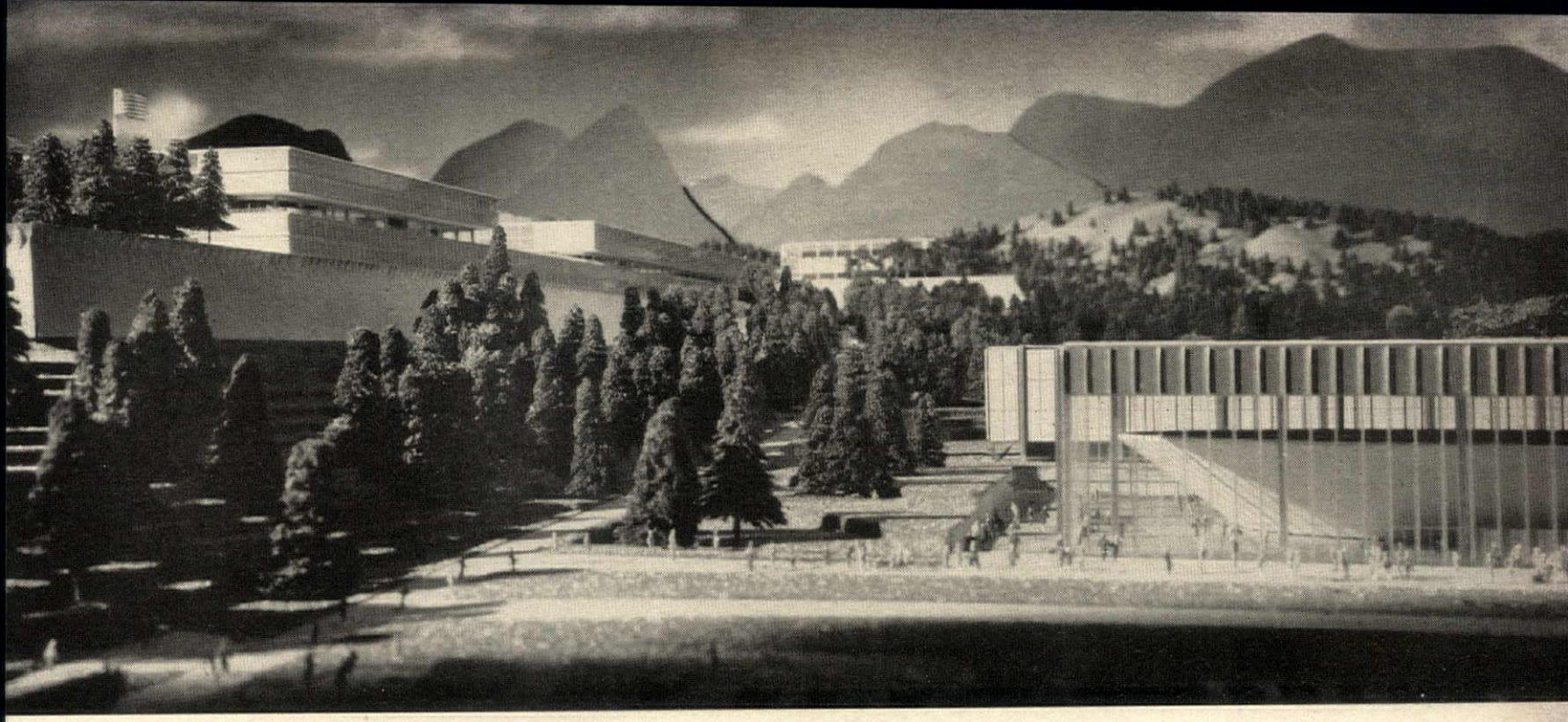
SOCIAL HALL (right and above) is divided in strata. Lowest level, immediately accessible from cadets' quarters, will be exclusively theirs. Two upper levels, open to public, will be center for cadets' off-campus social life. Between social hall and administration building will be Court of Honor, commemorating Air Force heroes.

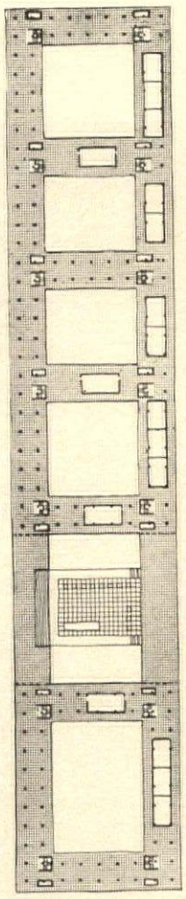
COLORADO SPRINGS is a tourist town, but a conservative one. Says a motel owner: "We don't get the Las Vegas crowd, but mostly older people who like to sit around and rest." The population is 75,000, and it is quite happy to get the Air Force Academy. There is little or no industry. The biggest thing in town, at present, is the Broadmoor Hotel at the foot of Pike's Peak, a large, rather expensive place to sit and rest in luxury.

A recurring source of conversation in Colorado Springs is water. (The weather is so good it is taken for granted.) There is little rain, and too many wells would endanger the water table below, so there is mild civic rationing for watering lawns, etc.

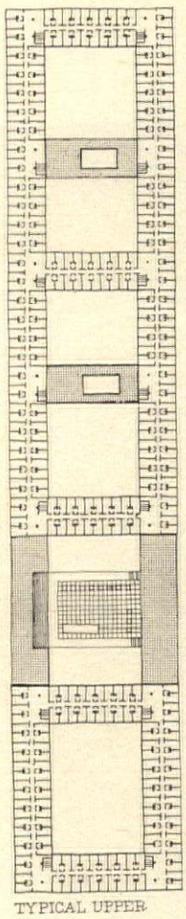
The new Air Academy will drink or otherwise use 5½ million gal. a day. Some local residents wonder where it will come from, but few really are worried. "The Air Force," they say, or "Congress." Probably at least part of the solution will be to pipe water from the other side of the Rockies, where the Pacific clouds dump cargo to get over the divide.

Of the approximately 17,500 acres of the Air Force site, 8,800 have been acquired. The smallest parcel was three acres, bought for $18,000, the largest a 4,630-acre ranch, bought for $300,000. The Colorado Land Acquisition Commission can condemn land if it wants to, but it does not want to, and the Air Force does not want it to. The state of Colorado is contributing $1 million, a third of the expected cost of the land purchase.





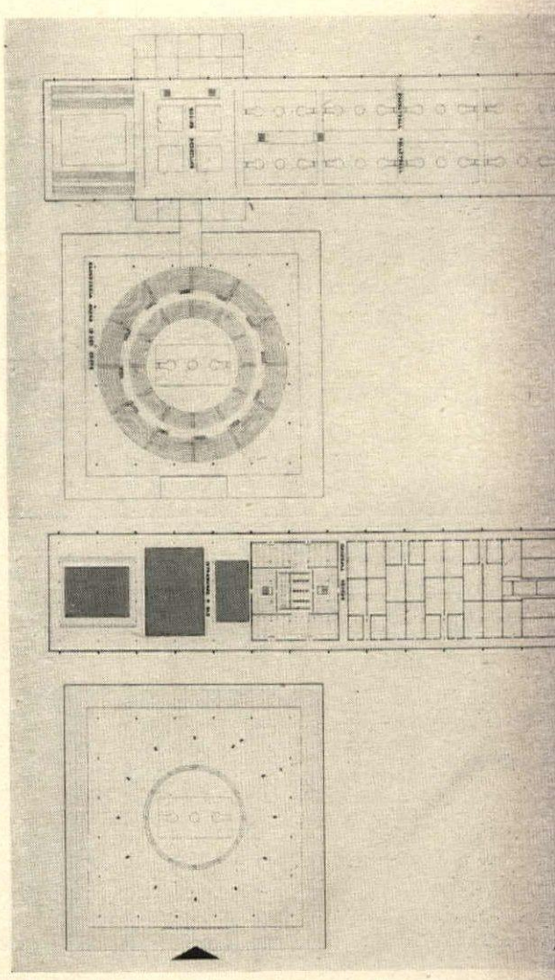
MAIN



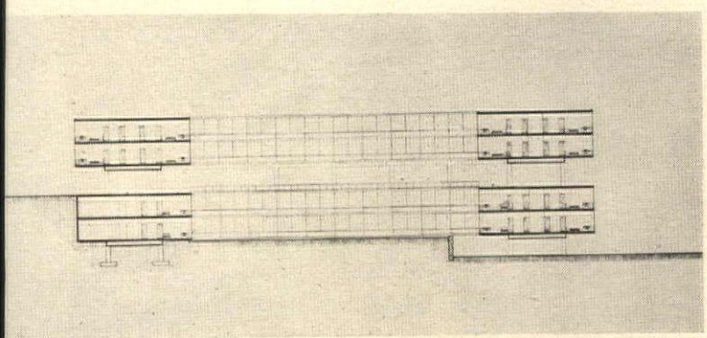
TYPICAL UPPER

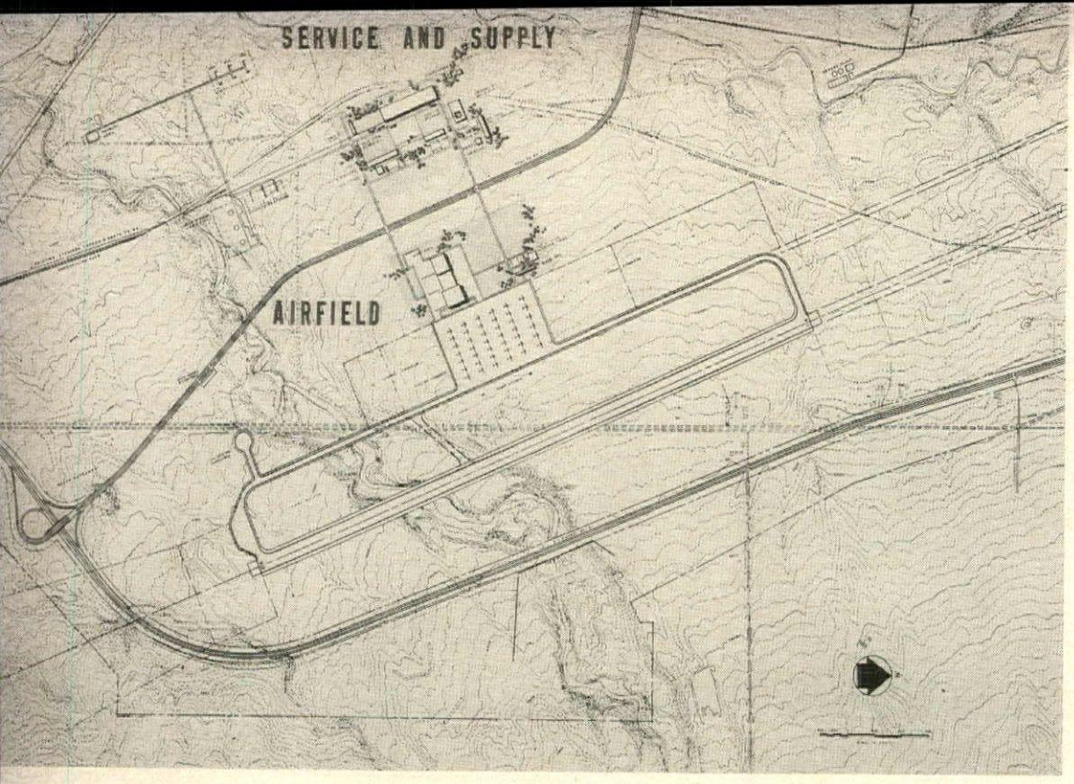
CADET BARRACKS are designed on a 3′-6″ module vertically and horizontally. A barracks building will be almost but not quite as long as the formations its occupants will have to stand thrice daily. The core, however, aims for the Oxford intimacy of contained courts and gardens. First studies included a number of smaller buildings in place of the large barracks, but the sloping site made a good arrangement impossible and hindered future expansion. Moreover, the architects were eager to build a complete unit rather than waiting 50 years to attain a final interlocking entity.

Entering from the high side on an open level, cadets will have to walk a maximum of two flights up or down to their rooms. The rooms themselves are still under study, but will probably have 300 sq. ft. for two cadets to share. Windows will be clear glass, and Architect Bunshaft is working on a scheme to issue washable drapes on the same basis as the cadet's bedding.

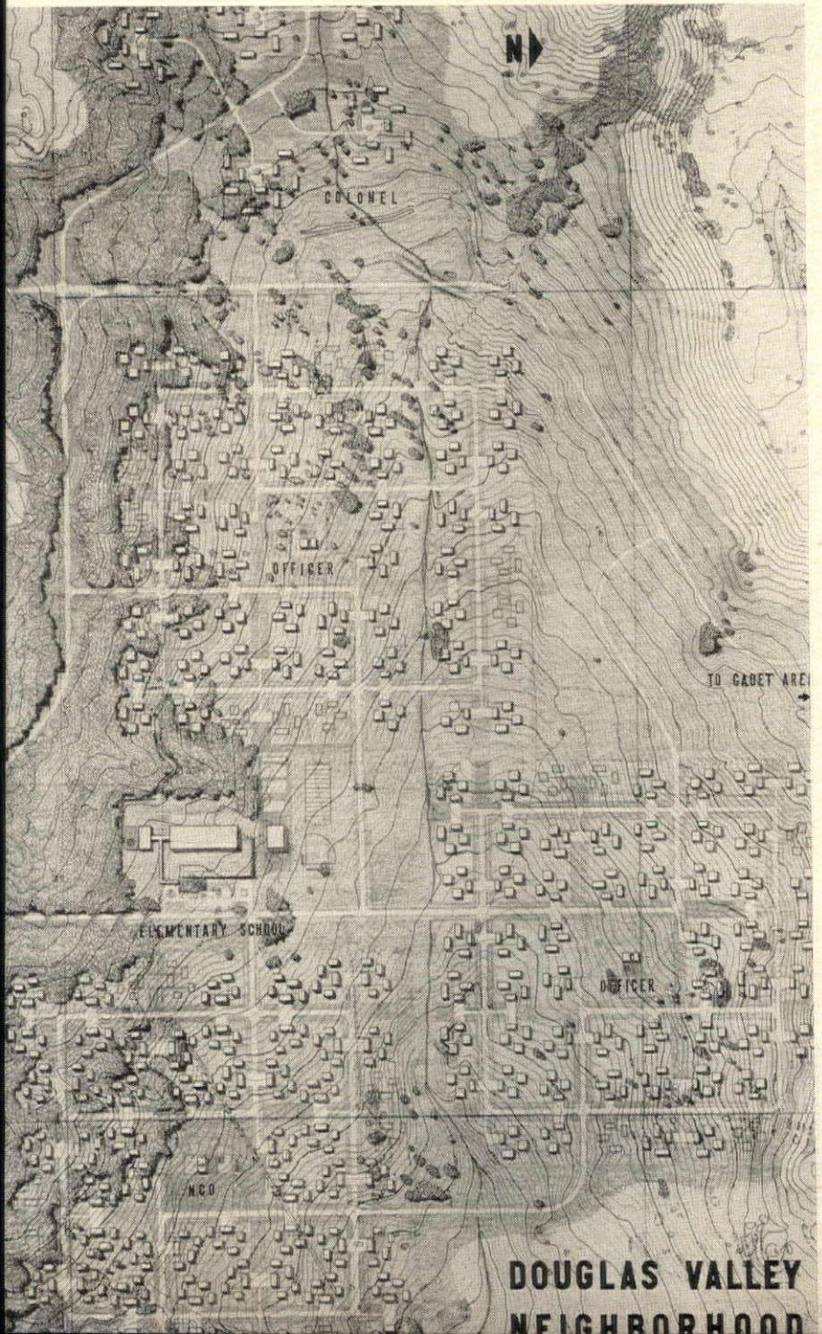


ARENA BUILDING in athletic complex below academic buildings will house inverted truncated cone of seats inside straight glass walls. Intercollegiate basketball will be the big sport here, but this space will also be used for Academy gatherings of a ceremonial nature.





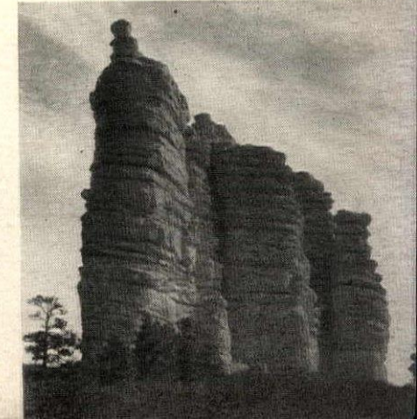
AIRFIELD, directly off the main road into the Academy, is on relatively flat land occupied at present by a small private air strip. The runway, 8,800′ long, is oriented to avoid covering built-up areas of Colorado Springs with approach zones and flight pattern; also to avoid the elevated terrain to northeast. Steady wind conditions allowed a single strip. Included in the airfield group will be hangar, operations tower, shop, cadet high-altitude-flying training, parachute and dinghy repair shop. The airfield is not a major part of the Academy; most of the cadets will go elsewhere for pilot training as postgraduate work. Photo opposite shows supply and service buildings in foreground, airfield in background.



DOUGLAS VALLEY NEIGHBORHOOD

HOUSING: six neighborhoods, each with 130 single-family houses, surround a mesa occupied by a community and shopping center, chapel, library, high school, etc. In each neighborhood, as presently conceived, is an elementary school and three subneighborhoods with nursery schools. No through-streets cross the individual developments, and their seeming grid-rigidity of plan at this point probably will be tempered by the contours. "This is just a diagram now, but when we lay the diagram on the land, we'll bring the curves in. We have merely stated a principle of neighborhood division so far," says Bunshaft. Netsch adds: "We didn't want suburban sprawl." Additions to the individual communities will be limited to "creeping expansion," adding more houses only across the outer streets.

Across a recreation area from the community center will be apartments for support personnel who work in the airfield shops. Neighborhoods will deliberately be constituted to mix schoolchildren of officers and enlisted men. For officers, airmen and cadets, for young and old, the symbol of the Air Force Academy may well be Cathedral Rock, the immense outcropping to the north end of the long site, a full 175′ high.



Photos (pp. 100, 101 & 109): Ansel Adams
Photos of models: ©Ezra Stoller

As long as government policies ignore the facts of today's apartment investment, risk capital will continue to flow into other fields and FHA's rental housing program will continue in low gear

Part IV: IMPOTENCY OF FHA POLICIES ON APARTMENT FINANCE *by Miles L. Colean*

This is Part IV of a four-part article on:
realities of today's real estate investment.
*Parts I and II, which appeared in April, covered the facts and myths of real estate investment and the important role of today's tax and depreciation policies. Part III, which appeared in May, covered the relationship between loan patterns and the right time to sell real property.**

Government influence on real property investment is by no means limited to the intricate ramifications of the Internal Revenue Act covered in the earlier parts of this discussion. The National Housing Act, under which FHA operates, has always contained provisions hopefully designed to encourage apartment construction. These provisions have been changed from time to time as their ineffectiveness became patent; but only on one occasion—and then, apparently, by sheer inadvertence—was a formula concocted that produced results. This formula was the Act's much discussed Section 608 which made it possible, with reasonably favorable breaks during the construction process, not only to create a property without any equity investment whatever, but also to reap the reward of a beautiful tax gimmick which magnified the area on which capital gains could be claimed.

The fact that some senators and administrative officials were later startled at the consequences only shows that they may not have understood the implications of what they had done, not that they had not done it. They were reminiscent of numerous defendants who "didn't know it was loaded." Like those who play with high explosives without an elementary knowledge of chemistry, they had, after producing many duds, come through with something that went off in their faces.

The whole FHA rental housing experience, including the aftermath of investigation, accusation, blacklisting, and general hubbub, is a perfect example of missing the main point. The main point is a very simple one: the problem of equity investment in rental property is not one of getting the money in but of getting it out. If there is a good chance of getting the risk capital out within a period comparable to what is possible with other venture investments, there will ordinarily be little difficulty in getting as much of the precious stuff as is needed in the first instance; but, if there is no such chance, then venture money will be scarcer than violets in February.

The fallacy of FHA (and the author confesses that in his now remote and relatively innocent youth, he was a party to its formulation) rested on the assumptions that equity investment in rental property was somehow different from that in other risk enterprises and that investors existed, if one could only find them (and when one could not, one was often led to imagining that he had), who would be willing to put their funds into a proposition on the basis of a low yield and of recovery of capital only after satisfaction of long-term debt.

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*Most of this discourse has dealt with the influence of federal tax policy on investment in income-producing property. The extent of this influence is so broad that it is safe to say not only that every knowledgeable investor thoroughly explores all tax angles but also that, unless there can be discovered an advantageous tax angle, an investment is not likely to be made.

The 1954 revisions to the Internal Revenue Act provide powerful incentives to the application of risk capital to new income-producing property through the methods provided for the possible rapid recovery of the venture money. It must be recognized, nevertheless, that these incentives apply only to propositions where the prospect is for net income, after operating expense and debt service, sufficiently high in the early years to make the allowances actually fruitful. They give little help to the property that is slow in establishing itself or that looks to a perhaps steady but comparatively low yield.

Although the new depreciation formulas are not available to successive investors for the property as acquired (who may use only the straight-line method), they are applicable to any new capital introduced by them in the form of improvements to the property. The tax law thus offers an incentive to the continuous modernization of property as well as to its erection.

The statute contributes to the safety of investment by making it possible to accumulate and maintain reasonable reserves against future expenses and by somewhat extending the period over which profits and losses may be averaged for tax purposes. On the other hand, it increases the long-range uncertainties of the enterprise, especially to the initial investor, a situation which in turn may influence the price at which he might be willing to sell and hence, indirectly, the inducement that exists for a second investor.

Although the effects of the new tax provisions are thus somewhat mixed, on net they seem to be much more on the side of inducing investment than was true under the old law, especially for commercial or industrial property.

The FHA approach was to require only a small proportion of equity capital and, when little happened as a result, to reduce the amount of equity previously required. This, of course, ignored the fact that as long as the yield was kept low and the capital illiquid, the risk of loss was increased with every increase of the loan-to-value ratio. This approach could be successful only if carried to the point of a 100% loan, at which point the questions of yield on, and recoverability of, the equity became academic.

The essence of "608"

That, of course, is what happened under Section 608, where a 90% loan-to-value ratio taken along with a generous appraisal of land (on the long-established basis of estimating value after completion) could, under favorable construction conditions, give the sponsor as much or more money than he actually needed for carrying out his project. On top of this, the corporate charters were so worded in many instances that any such excess amounts could be taken out of the corporation's assets and claimed as capital gains.

The plan was successful, judged solely by the criterion of getting something done, for over 7,000 apartment house enterprises were launched under these auspices and the most crucial aspect of the postwar housing shortage was rapidly changed. The probability is, however, that close to the same measure of success might have been obtained if the actual loan-to-total requirements had been lessened and if the sponsor could have been given the opportunity to get his risk investment out according to tax-depreciation plans now available.

This, however, would have meant recognizing as a fallacy what had become a cherished principle: that the kind of investment which will run all the chances involved in building and establishing a property is the kind which is content to be frozen in at a low yield over an indefinite period. Because of this attitude, the government found itself with a contingent liability considerably larger than might have been the case if a more realistic policy had been adopted.

The fallacy intensified

While Congress with its right hand was facing up to the problem of venture investment in redrafting the Revenue Act, it was, in amending the Housing Act with its left, completely ignoring that problem so far as investment in rental housing property was concerned. Real estate ventures were still considered to be something special, something with entirely different motivation from other forms of investment.

Consequently, the revisions of the National Housing Act in 1954 produced a sort of inverted "608"—an anomaly that much increased the amount of venture capital required, froze it into the enterprise at low yield more irretrievably than ever, and at the same time eliminated the possibility of circumambulation that previously had permitted a practicable operation to be carried on without destroying the cherished illusion that a high-risk enterprise was something on the order of a government bond.

The result has been what any informed observer would have expected, and which experts uniformly forecast—the virtual elimination of mortgage insurance as a feature in financing rental housing property. In fact the result could hardly have been accomplished better if it had knowingly been planned that way.

It is not pertinent here to inquire into the propriety of providing a government-backed insurance system for mortgages on rental housing. It is enough to say that the government has considered the encouragement of rental construction desirable in the public interest and that it has set up a mortgage insurance system to accomplish that purpose. A grave danger arises when the failure of the system is interpreted, not as a consequence of the shortcomings of the system itself, but as the supposed result of a breakdown of free, private enterprise.

This danger is presently heightened by the expectancy that private investors could be depended upon to assure the success of the federal government's ambitious schemes for slum clearance and urban rehabilitation. A special provision, "Section 220," was appended to the National Housing Act for the purpose of insuring mortgages in older urban districts that had been left behind in the normal current of development. As a special inducement, a lower equity requirement was established for this type of activity than for insured rental housing mortgages generally. This inducement, for whatever it might have been worth, was, however, offset not only by rigid proscriptions against "mortgaging out" but also by the retention of restrictions on quick recovery of venture capital and on yield of some very solid cash investment.

FHA officials have been struggling with the palpable impracticability of this approach and have recently come up with some "administrative determinations" hopefully designed to make Section 220 work. Among these new features are: a permissive retirement of cash equity in the form of redeemable stock; the possibility of adopting a level annuity plan for interest and amortization payments (rather than FHA's customary declining annuity plan, which requires relatively high payments in the early years); and a gesture toward the recognition of land value created by improvement of the environment (rather than value as evidenced solely by an estimated purchase price).

These steps, while good, are not enough. If Section 220 is to work, the equity investor must be given the privilege of setting up his capital structure and mortgage payment pattern in whatever legitimate form he may himself choose so as to give him the maximum tax advantage; and he must be without restriction on recovering capital, via depreciation allowances, from funds available after meeting debt charges, operating expenses and reasonable reserves. There should be no strings on the use of a constant annuity pattern; and the complicated idea of redeemable stock, the payments on which are under FHA control, should be simplified and expanded to permit the payment of tax-free capital dividends up to the full limit that the exigencies of income and depreciation permit.

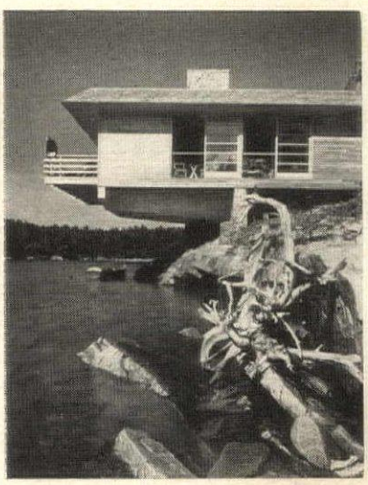
In addition, the whole idea of attempting to limit mortgages to actual cost must be dropped. It is foreign to conventional loan practice; it inevitably leads into profit con-

continued on p. 162

Photos: Ben Schnall
J. W. Gillies
Albertus—Yale News Bureau

Howe's first house, which he built for himself in suburban Philadelphia in 1914, reflected comfortable early years of travel and training on the Continent. "In 1928," he later wrote, "I delivered my last Jumbo, Anti-economy Romantic Country House Package." Howe's "Wall Street Pastoral" period was over, and the struggle was on. Disapproval turned to sneers and vicious attacks when he and his new partner William Lescaze proposed a radical skyscraper for the Philadelphia Savings Fund Society (left). But Howe spoke and wrote so eloquently in defense of their design that the bank's president, finally convinced by the man's sincerity, pushed it through an unwilling board. In 1932 the building opened, the first to integrate flexible office space with air conditioning, proper lighting and acoustics, still the most satisfactory expression of full-windowed curtain walls cantilevered on supporting ribs. Twenty-three years of progress have not left the PSFS behind.

In 1939 Howe designed quite a different house from his first: "Fortune Rock," the well-known Thomas house on Mt. Desert Island, Maine.



GEORGE HOWE

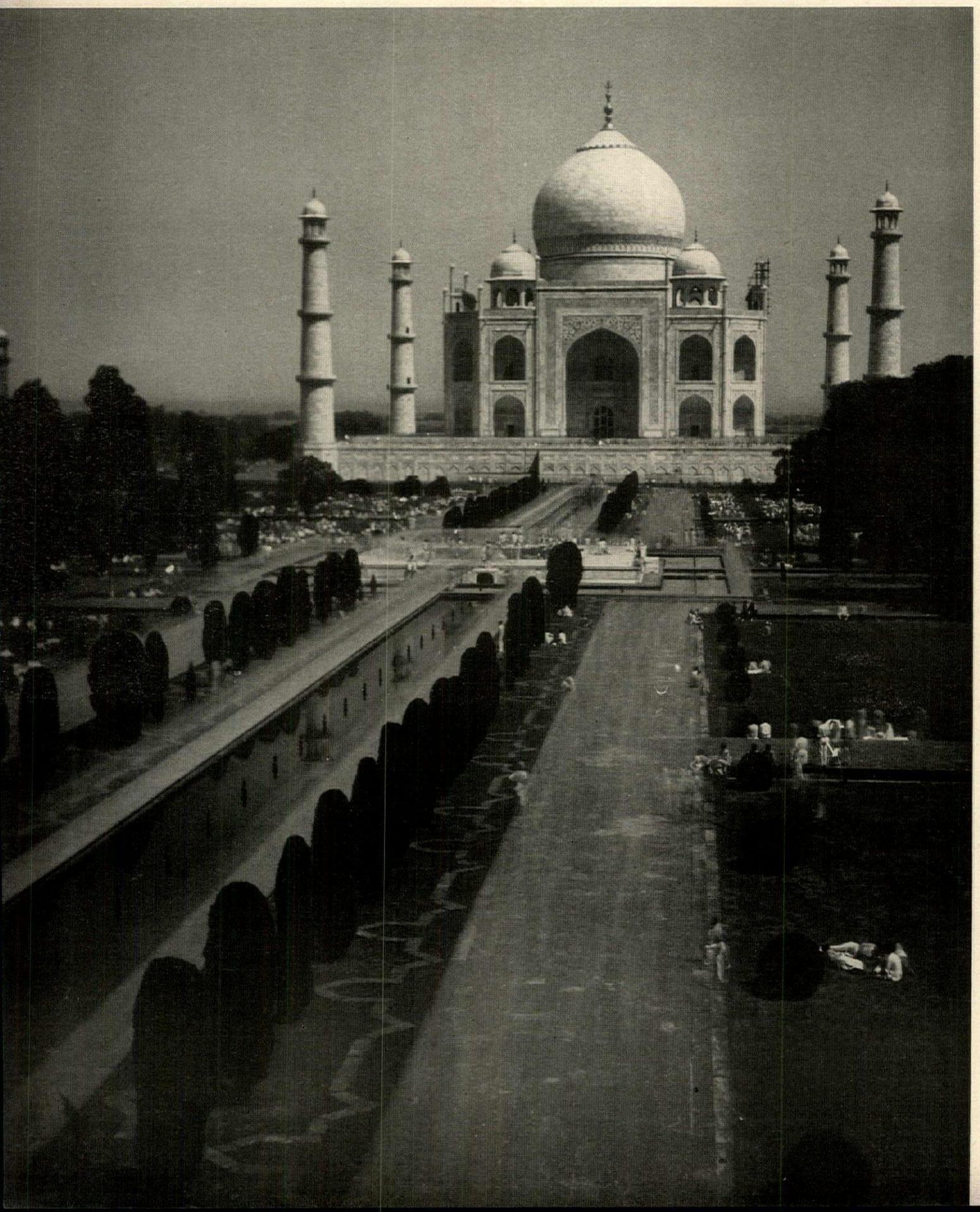
1886-1955

"I would have made a wonderful client," George Howe once told a friend, with an almost wistful smile. An aristocrat by birth, a widely read and democratic man by choice, Howe was more than anything else a superb critic of the forces that shape architecture. He listened, and when he spoke, his polite, persuasive wit would usually cut to the heart of a design or an argument. He had time for everyone, but he had little respect for the symbols of dogmatists and frauds.

Howe drew great sustenance from books. When he returned from the ferment of World War I to a complacent, fashionable practice with Mellor, Meigs & Howe in Philadelphia, he began to read and think more deeply than in his Groton, Harvard and Beaux-Arts days about the meaning of architecture—Oswald Spengler's *Decline of the West,* the writings of Le Corbusier, the European architectural reviews. He liked to quote Philosopher Edgar Singer: "Only the art whose purpose is to change the purposes of the beings to whom it is addressed is a fine, freeing art. The artist must be a messenger of discontent."

It was as a messenger of discontent that he renounced traditionalism and fought for his PSFS building, the great rebellious act that made Howe an effective leader in the American architectural revolution. It took conviction, at the age of 42, to drop a profitable practice and start all over again. In his later years as chief architect for the federal government he extended his beliefs to planning and administration: "Only the architect-planner can provide the statesman with graphic projections of the still impossible. . . . . Whatever else he does, this he must continue to do. He must provide master plans for master politicians."

In his last years at the American Academy in Rome and as chairman of Yale's department of architecture, Howe treated his students as mature men, leading them on rich intellectual explorations and bringing them a stimulating variety of critics. In the end, he went home to Philadelphia to practice with Partner Robert Montgomery Brown and to head the mayor's committee on planning and the Penn Center advisory board, working with others, as he did so skeptically but so well, toward creating a bold and dignified future for his city.



Jim Burke—LIFE

Second in a series on the US State Department overseas

US EMBASSY FOR NEW DELHI

Louis Checkman

ARCHITECT: Edward D. Stone
ASSOCIATES: Stanley M. Torkelsen, Lloyd Flood, Richard W. Snibbe
MECHANICAL & STRUCTURAL ENGINEER: Peter W. Bruder

Taj Mahal was built by Shah Jahan in seventeenth century in memory of his wife.

When they look carefully, the Indian people will recognize in this foreign headquarters building a number of the same wise and graceful practices present in their own ancient building culture.

Architect Stone's proposed embassy is a diplomatic building, a tribute to what he found to admire and use in India. He found a lot; for examples, compare the two photos on these pages. Each building has:

A *formal pool* before the building, around which—in the case of the embassy—cars approach the entrance.

A *platform* under the building, which in the embassy is used as a lower service floor and garage.

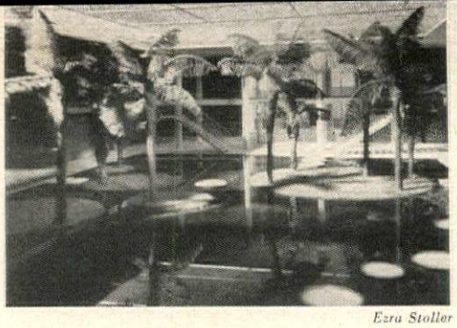
A *symmetry* of the kind which can help a building seem to hang motionless in time and space, above strife, with an easy formality.

A *richness of texture*, with the emphasis on masonry, perforated screens and tiles.

A *whiteness against the sky*, another guarantee of calm.

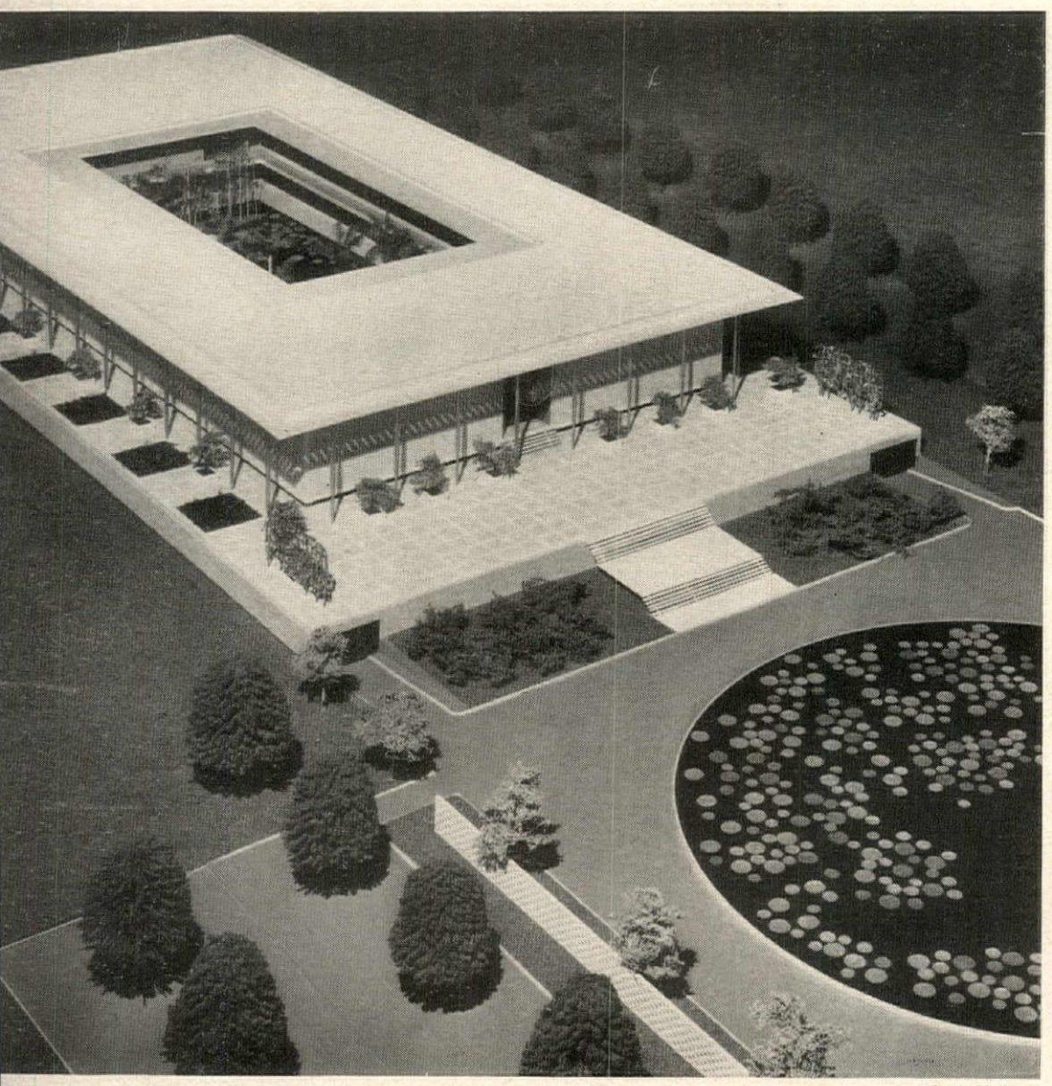
But Stone knew where to stop and keep the embassy his own: that was at the roof line. He made it flat and modest, where India's monuments are deliberately grand in shape and effect. His design never becomes just an architectural dialect story; its great charm is that it is a faithful abstraction of the old spirit, without being an imitation temple. It is likely that people in Des Moines, USA would enjoy this building too. But in Des Moines it would not be identified with Indian building; only in India.

The new embassy will be a long rectangle

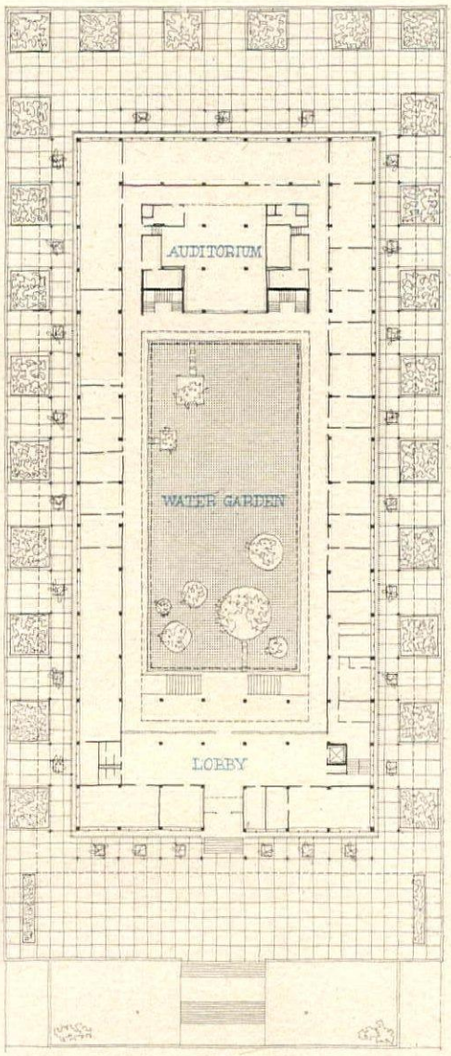


Ezra Stoller

Pool, with garden, is core of design. Mesh roof (see photo, right) will be suspended over it creating a half-shade below.



Louis Checkman



MAIN FLOOR

0 50 100 FEET

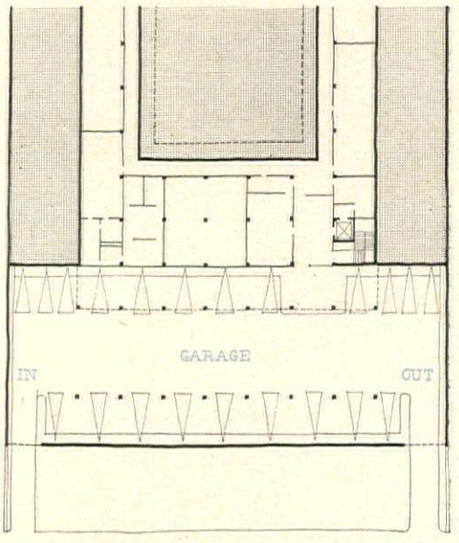
of three floors, the lowest half-sunk into the ground under the platform. In wet weather drivers will be able to drop passengers inside the building, entering through corner ports in the platform. Cars also can be parked there out of India's summer sun.

In the center of the rectangular plan on the platform level is a rectangular water patio—a pool with trees, plants, a large bird cage, and stepping stones, to be roofed over by suspended strings of aluminum discs, making a dappled shade.

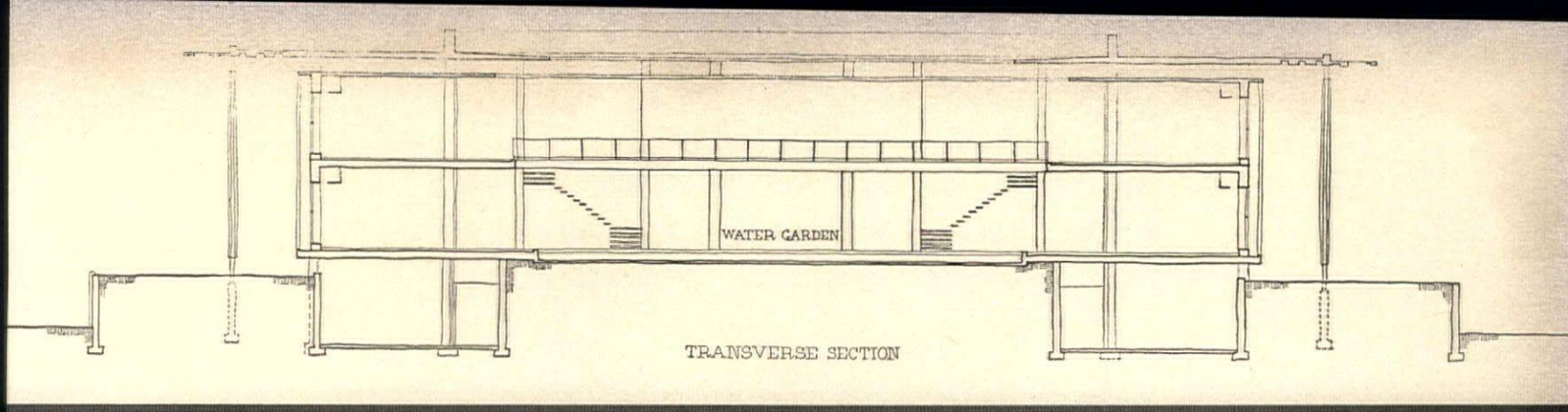
Structure of the building will be reinforced concrete. Around the periphery a row of decorated steel columns will help support the roof slab, which will be perforated near the edge to add the interest of a slotted shadow to the exterior screen wall. Behind the golden toothpicks of the columns, but in front of the wall of the offices, will be a grille of pierced tile (detail, opposite). These tiles, cast blocks of white glazed terra cotta or concrete, will be strung on rods.

The tiles will be worth their weight in air-conditioning equipment, taking the edge off the fierce glare of India's summer sun. Behind them, the wall is largely glass. Another air-conditioning aide: a second roof slab will sit like a parasol above the regular roof, deflecting the sun, with air circulation between the two slabs.

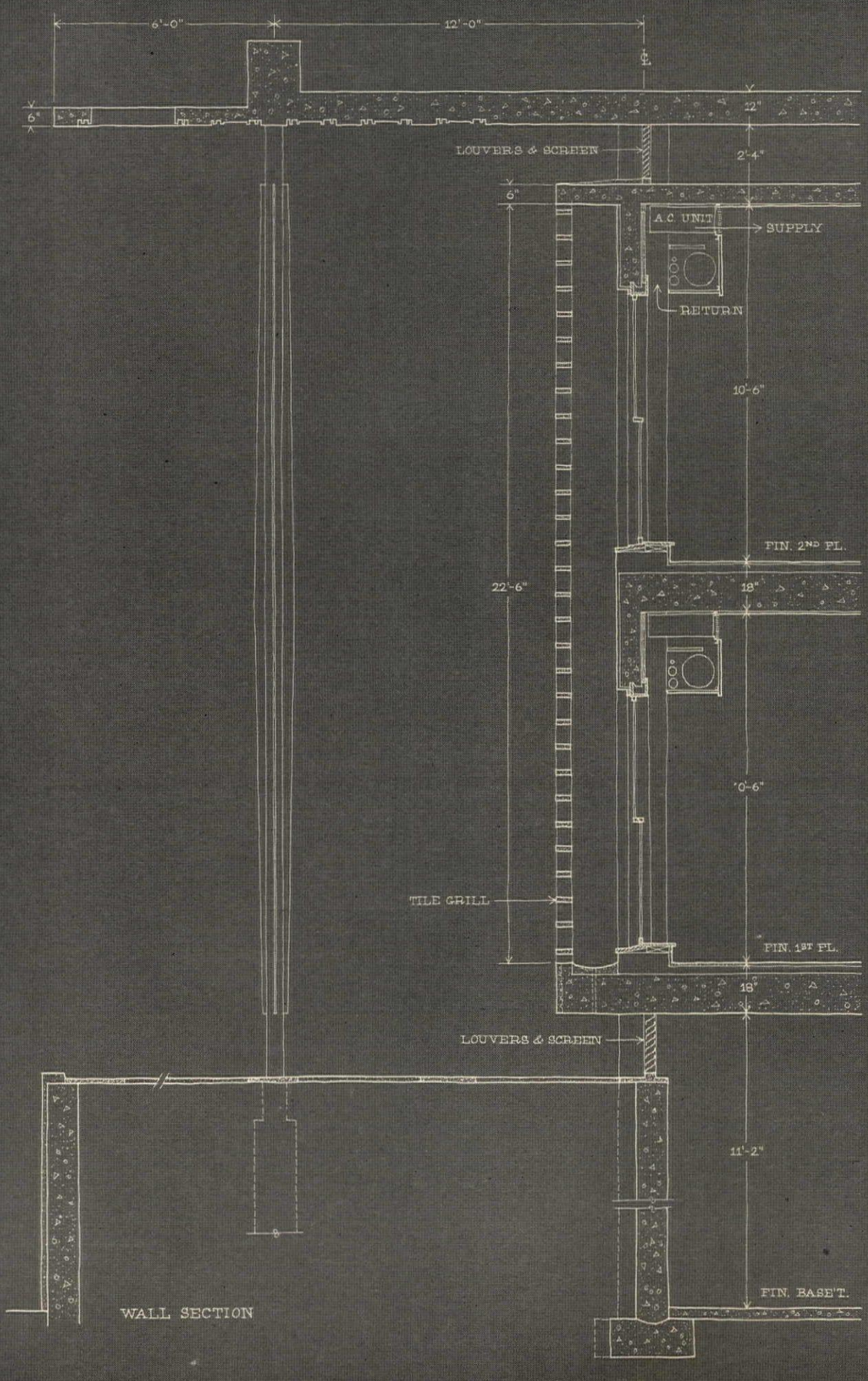
Architect Stone was one of the first Americans to comprehend and practice in the modern movement of architecture; in this design he demonstrates that he has the poise to appreciate the past of another culture too.



GROUND FLOOR

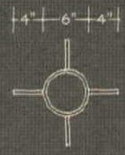


TRANSVERSE SECTION



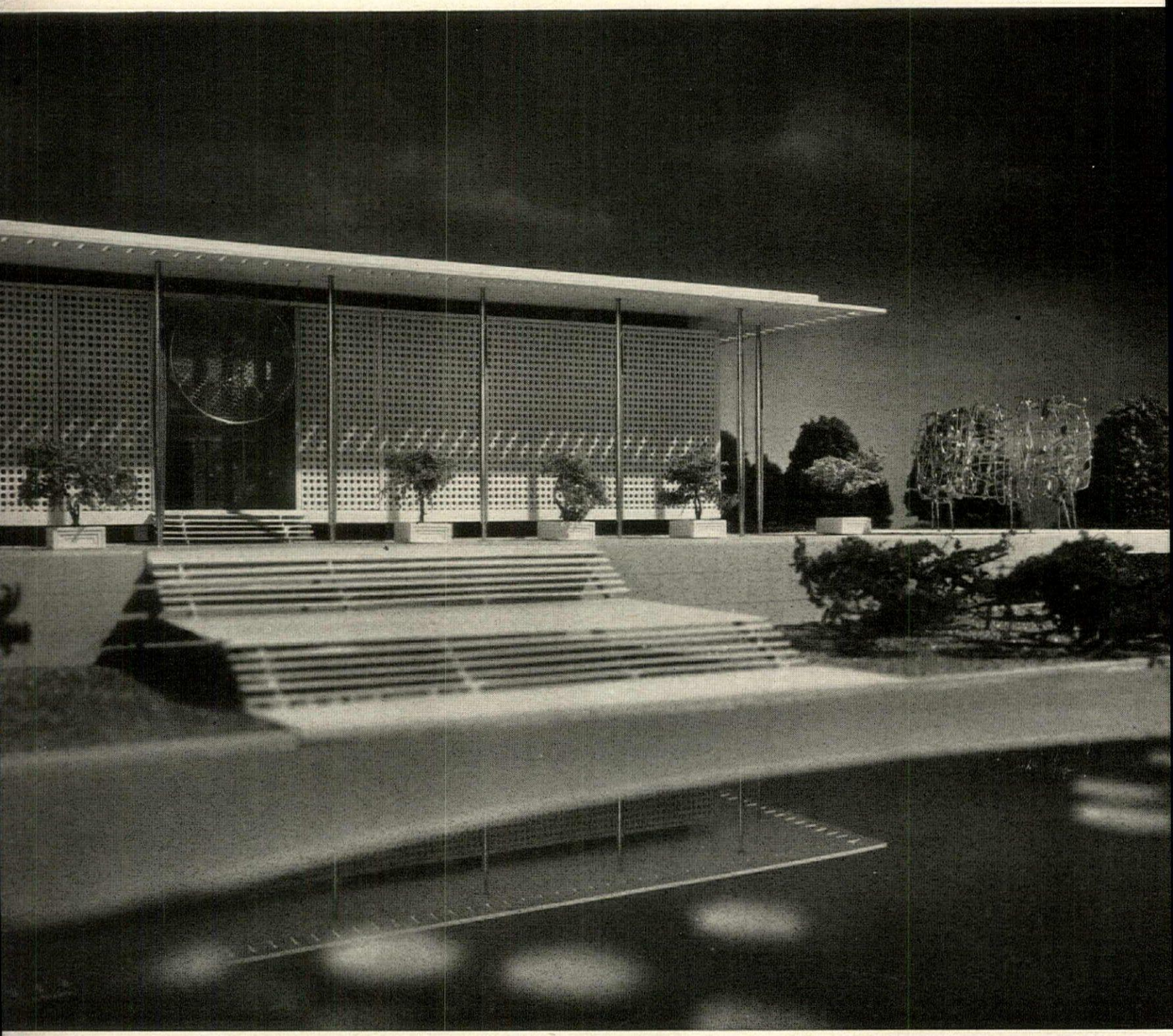
WALL SECTION

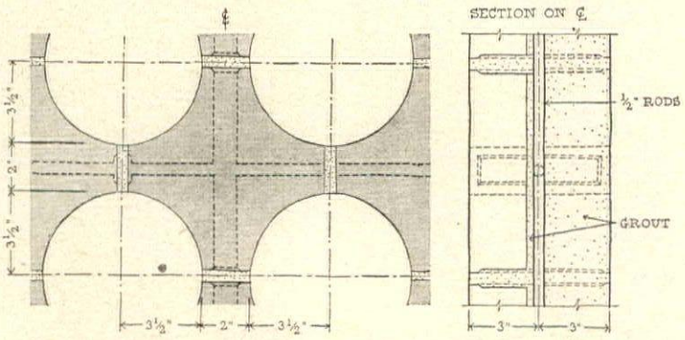
SIDE ELEVATION OF TYPICAL BAY



COLUMN PLAN
AT CENTER

Louis Checkman

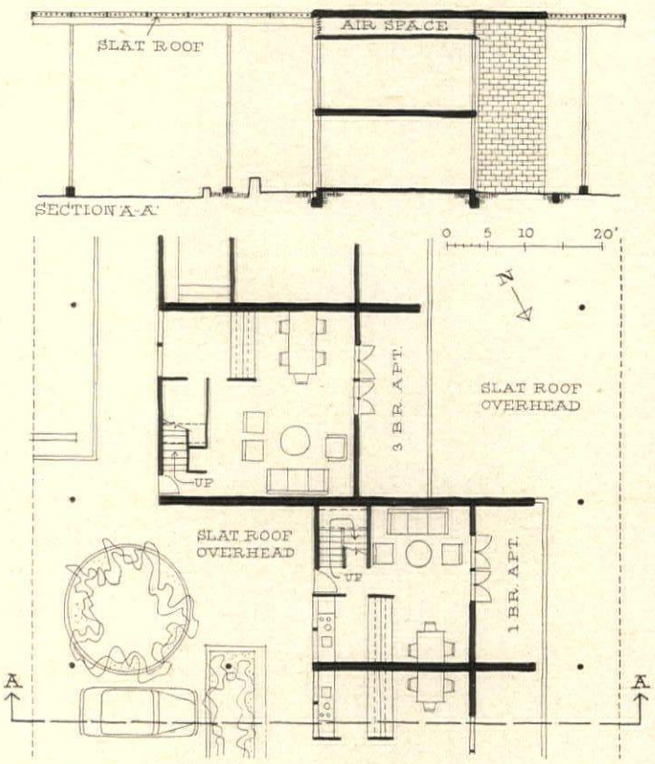




Grille to be used in embassy wall will not only shade double-hung glass windows inside but will also protect otherwise wide-open offices from burglars. To be set in grout on spot-welded rod frame, tiles are 6″ deep, and sturdy. Strength will be necessary also against earthquakes. Raised ridges cast in tiles will be colored gold to match sheathing on pipe columns standing outside them.

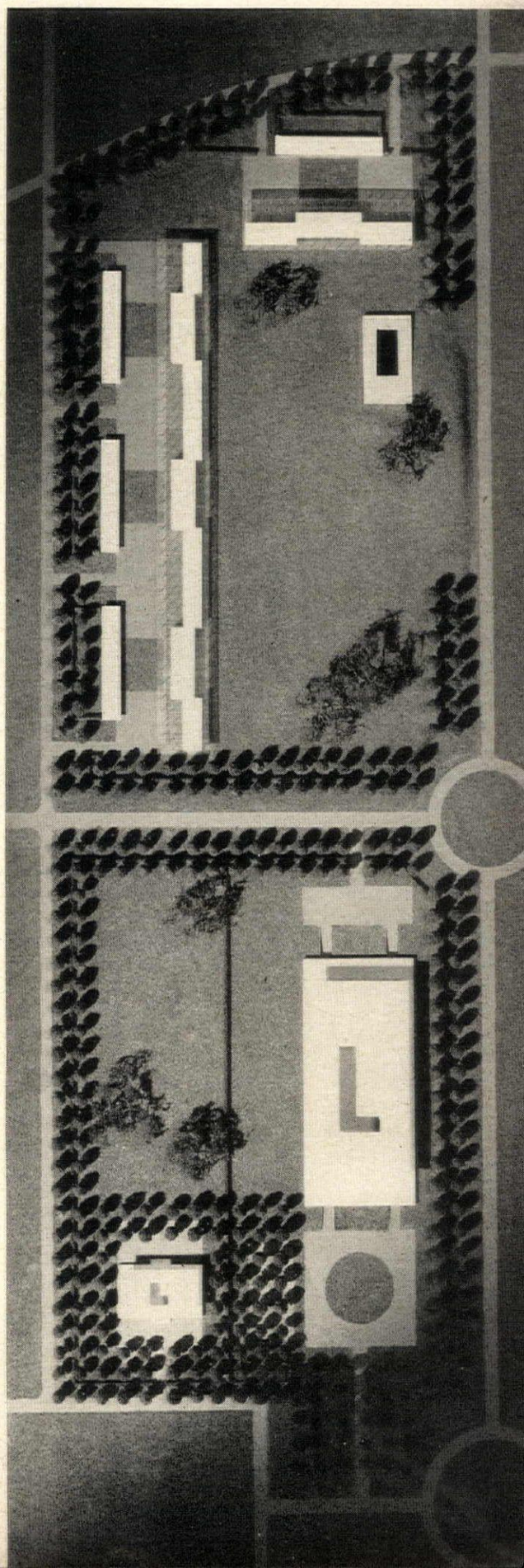
Ewing Kranin

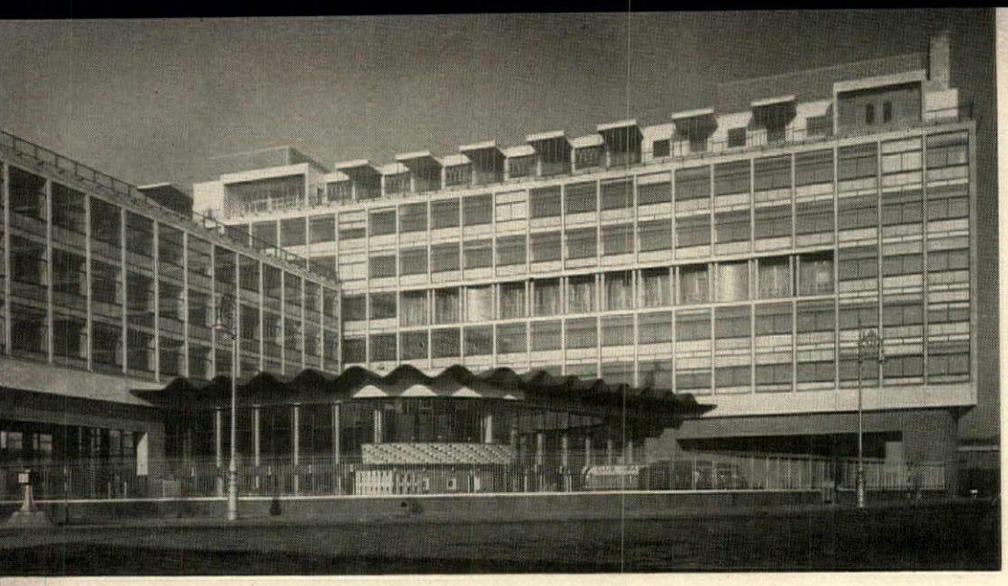
Estufa Fria, in the Parque Eduardo near Lisbon, Portugal, is an enormous cool greenhouse. Gigantic plants and trees flourish in the half-light created by the slat roof overhead. Designers of the New Delhi Embassy group visited Estufa Fria in 1952, later decided to use its cooling principal to help offset New Delhi's 115° summer temperatures.

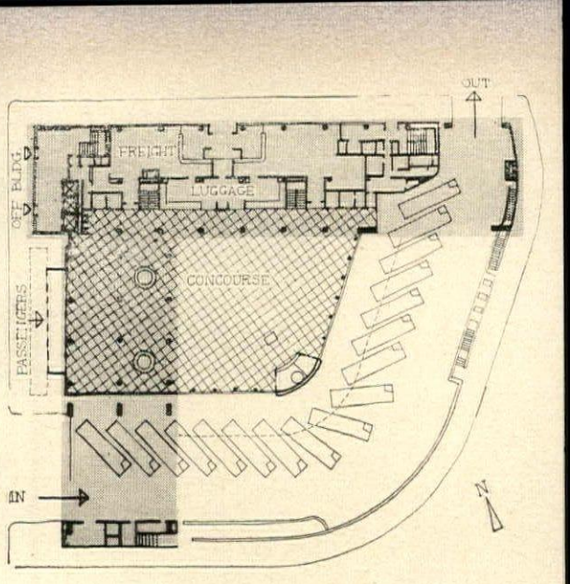


Staff housing (in top half of plan, right) is made up of apartments in offset rows. Over area near apartments extends two-story lathe roof similar to Estufa Fria greenhouse. Grid of teak beams will be filled in with small teak slats in rolls like snow fencing. Structure will be held up by steel columns, and will shade building walls and terraces, as well as automobiles parked under it in compounds on courtyard side. Apartments are in three sizes: one, two and three rooms.

© *Ezra Stoller*







Plan. Bus terminal sits between two office blocks, also utilizes their ground floors and basements. On second floor and mezzanine are a bar and restaurant, with a control room overlooking concourse and loading area.

BUILDING ABROAD

BUS TERMINAL AND OFFICE BUILDING

Modern Irish architecture

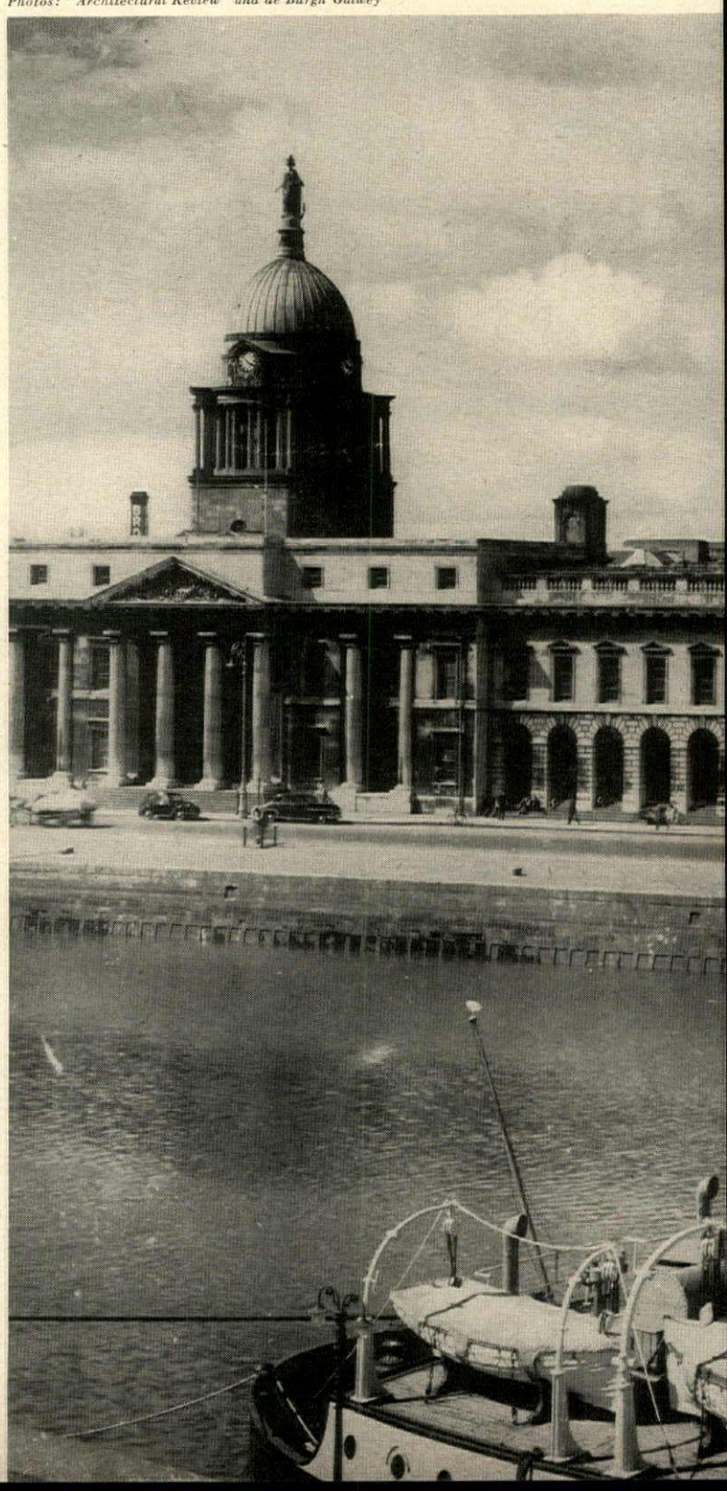
A block away from the River Liffey in Dublin, Ireland, and only a few feet from the 175-year-old, domed customs house which dominates the river shore, is a new harbor for a new fleet of transports. To load and dispatch the sleek motor-buses which roll unromantically (but on time) around the Emerald Isle, Dublin has built its first big modern building. To the further satisfaction of the Irish citizenry, the architect, Michael Scott, was cited early this year by the *Architectural Journal* of London "for completing Dublin's first contemporary office block before London had even started to build one."

Scott, a one-time actor, did not underdramatize his design. He used the familiar vocabulary of modern business architecture, but delivered it powerfully. The old customs house, built in 1781, dominates the commercial river traffic, asserting its importance with dignified masonry—a columned classic. In comparison, Scott's new building glints from glass and mosaic surfaces to match the brightness of the buses and draws its strength from large simple shaping. People are tired in bus stations; the architect here gives them a cheerful environment which makes few demands on them.

In plan the building is an L. Offices occupy the upper floors; downstairs, at the intersection of the L, a fanlike roof shelters the large waiting room (11,000 sq. ft.). The buses are parked sawtooth around the edge of the fan for loading, and passengers mount under the scalloped concrete shell of the protecting roof.

The structure is concrete, and looks it; the glass wall, including glass spandrels, is very evidently an insert. The office blocks, occupied by governmental employees, are planned on a standard unit of 10′ to allow flexible partitioning of space except for one suite designed for special use. This difference in offices is expressed on the façade by a setback of the exterior wall, forming a long balcony. This new building was designed in 1945, begun in 1946, and finished last year.

Photos: "Architectural Review" and de Burgh Galwey



Concourse is a large, high, free space, neatly furnished. In comparison with most US bus terminals this one is spacious and uncluttered. Note informal, pleasant spotting of concessionaire's booths.

Low wing. Cantilevered canopy, in corrugated outline, has an overhang of 20′. Underside of canopy is painted dark blue-gray and the glass mosaic panel below the control room window is four shades of blue-green.

PARTICIPANTS

Architecture

GEORGE HELLMUTH
Hellmuth, Yamasaki & Leinweber, St. Louis

JOHN MERRILL
Skidmore, Owings & Merrill, Chicago

OSKAR STONOROV
Philadelphia

Banking

ROLAND A. BENGE, vice president
Detroit Bank
Treasurer, Citizens' Redevelopment Committee

R. STEWART RAUCH JR., president
Philadelphia Saving Fund Society
Member, City Planning Commission

Civic development

CLIFFORD A. RANDALL, treasurer
Greater Milwaukee Committee

Commerce

SIDNEY R. BAER, vice chairman & treasurer
Stix, Baer & Fuller, St. Louis
Treasurer, Civic Progress, Inc.
Chairman, Urban Renewal Committee
National Retail Dry Goods Assn.

ALOYS P. KAUFMANN, president
Chamber of Commerce, St. Louis

PHILIP TALBOTT, senior vice president
Woodward & Lothrop, Washington, D.C.
President, National Retail Dry Goods Assn.

Construction

RAYMOND MILLER
Research and Development Dept.
George A. Fuller Co., New York City

Entertainment

CHARLES E. McCARTHY, director of information
Council of Motion Picture Organizations

Government

CARL FEISS, consultant
Planning and Urban Renewal, Washington, D.C.
Observer for James Follin, commissioner
Federal Urban Renewal Administration

ROBERT E. SMITH
Office of the mayor
City of St. Louis

Industry

GIFFORD TILL, director
Industrial Research & Development Dept.
Missouri-Kansas-Texas Railroad
Trustee, Urban Land Institute

Planning

WALTER H. BLUCHER, consultant
American Society of Planning Officials

ERNEST J. BOHN, chairman*
Cleveland Planning Commission

Public information

AL FLEISHMAN
Fleishman-Hillard, St. Louis

JOHN OSMAN
Fund for Adult Education
Ford Foundation

* Although unable to attend the Round Table, he has endorsed its recommendations.

DOUGHTY WEHRLY FARR TURLEY

Real estate

WILLIAM H. DOUGHTY
Aldis & Co., Chicago
Chairman, Downtown Committee
National Assn. of Building Owners & Managers

NEWTON C. FARR
Farr, Chinnock & Sampson, Chicago
Past president, Urban Land Institute
Past president, National Assn. of Real Estate Boards

CLARENCE M. TURLEY, president
Clarence M. Turley, Inc., St. Louis
Vice president, Urban Land Institute
Past president, National Assn. of Building Owners & Managers
Past president, American Institute of Real Estate Appraisers

MAX S. WEHRLY, executive director, Urban Land Institute

Transportation

WALTER McCARTER, general manager
Chicago Transit Authority
Member, Chicago Safety Council
Chicago Street & Traffic Commission

ROBERT B. MITCHELL, executive director *
Urban Traffic & Transportation Board, Philadelphia

WILBUR S. SMITH, associate director
Bureau of Highway Traffic, Yale University

KENNETH C. WELCH, director
Grand Rapids Parking Authority

Presiding

DOUGLAS HASKELL, editor
JOSEPH C. HAZEN JR., managing editor
ARCHITECTURAL FORUM

ROUND TABLE BACKGROUND

This is the first major Round Table on rebuilding downtown that draws its members from every downtown activity and interest. It represents merchandising, banking, real estate, office management, entertainment, transportation management, highway planning, parking, government, architecture, planning, building, public education.

In proposing to depart from the usual custom of discussion within one business only, such as merchandising or real estate, President Philip Talbott of the National Retail Dry Goods Assn. and Chairman Sidney Baer of NRDG's Downtown Committee, initiators of the meeting, called on FORUM to act as cosponsor and to assure free collaboration of other groups. The Round Table met for two days in St. Louis.

ROUND TABLE REPORT:

HOW TO REBUILD CITIES DOWNTOWN

FLEISHMAN TALBOTT HELLMUTH BAER

THE CITIES' PROBLEM . . .

The shabby, dull, dingy condition that is overtaking our central cities can no longer be tolerated now that the people are being given a new vision of shopping in the country, living in the country, working in the country. Now that new outlying housing developments and indeed new towns spring up overnight, now that there is a migration not only of factories but of large office buildings out into the grass, now that the life-blood of the older center appears to be drained out along every superhighway, the time has come for a major decision whether or not to carry on with the central downtown district of the metropolitan city, and how.

Those who lightheartedly propose its abandonment are not quite aware what they would have to replace. They would have to replace a real estate investment of some $500 billion, which is roughly $3,000 for every man, woman and child in the US. On top of this they would have to replace the public investment in utilities such as streets, water lines, sewers, gas, electric lines, rebuilding them in new areas. Adding the private and the public investment together, this is like saying that every man, woman and child in the US can afford to buy a new Cadillac and throw it in the river. The gay anti-urbanists would also have to find new sources for four fifths of the nation's taxes, which are now collected from cities, and of which anywhere from 20% to 65% come in turn from the downtown areas of these cities. They would have to build up anew—and they are finding this out—the going institutions of the city: the institutions such as schools, hospitals, churches; the protective services such as police and fire departments; the cultural resources involving such things as organized opera, symphony orchestra, theaters and central libraries. Nor would the new construction be in the best location for such things as heavy industry—for the big economic activities of the US have settled where they are through no accident. Economic geography produced the sites for our cities before the cities produced anything.

Those who, with equal lightheartedness, think our existing cities can somehow just amble along and "survive as they always have" are equally mistaken. Though it is true that our cities are still growing in population and not declining and though it is true that the growth cannot be as fast in the center which is settled already, yet there are danger signals in new growth and traffic trends.

According to the Chicago Federal Reserve Bank, the "core areas" of our metropolitan districts in 1940 represented 50% to 80% of total metropolitan population, yet the *growth* of these core areas, from 1940 to 1950, was only 20% to 50% of the *growth* of the total areas. In the meantime satellite cities, villages, unincorporated areas doubled or tripled their share.

Again, spot traffic counts in Chicago, cited by panel member McCarter, showed an actual decline, between 1948 and 1952, among people entering or going through the central district. Checked between the hours of 7 A.M. and 7 P.M. on corresponding days, the four-year decline was 188,000, which comes close to 100,000 every two years in round numbers. If this is indicative, then downtown has an actual loss, not only retarded gain, sapping its vitality.

. . . AND 18 WAYS TO SOLVE IT

1. By correlating downtown and periphery

Though downtown rebuilding is the subject of this Round Table, there was not a single member present who did not desire health and prosperity equally for outlying areas. Bankers and businessmen present had investments in both places and agreed with the professional men present that each has its own characteristic functions. Without a focal point, without a center, the continued functioning of outlying districts or towns was considered as improbable as the continued functioning of the limbs of a body without a heart.

2. By conceiving something that will be inspirational as well as sound economically

Indeed the Round Table is agreed that downtown cannot be made sound unless it is made inspirational also. In the words of one of the members, "we cannot rebuild the centers of our cities unless we use the same kind of genius—technical and administrative and political—that is being used so often in the development of new towns and the newer shopping centers outside the central business districts. We must have a plan for more than retaining the status quo—a plan for new development, a plan for something inspirational, a plan that will encompass elements of beauty as well as overcome physical and psychological obsolescence."

Boldly aiming in this spirit for a clear slate, someone proposed that the brand-new shopping centers and office centers of the periphery be matched with brand-new shopping centers and office centers downtown by ripping out no less than 100 acres of old buildings for completely replanned rebuilding. Though the Round Table has not accepted this specific proposal, it highlights the fact that downtown cannot reestablish itself by half-measures and make-do, pursuing modern life only through a perpetual stern-chase. Downtown must make itself downright attractive and convenient, as beautiful and desirable and accessible as the new outlying districts are.

3. By forming an organization of top community leaders

Action sufficiently broad and comprehensive depends on generalship by a small group of the community's ablest citizens.

Action by individuals, action by local groups, is as necessary as ever but only at community scale can there be true civic progress. On small-town Main Street, an individual merchant keeping his own store trim and modernized can raise the standards of his neighbors. On Metropolitan Boulevard, individual smartness is rewarding too, and sets a good example. Yet the entire block may have its prosperity upset by a new parking facility three blocks away or even by a new shopping center 5 mi. distant. Or it may imperceptibly decline because of the failure of a mass transit system which only joint action of the business community can repair.

Models for voluntary associations of leading downtown citizens are found in such groups as Pittsburgh's Alleghany Conference, in the Civic Progress, Inc. group of St. Louis, in the Greater Philadelphia Movement and in the various committees for a Greater Milwaukee and a Greater Anytown.

Initiation may occur through a member of one of the city's influential families, like Pittsburgh's Richard Mellon, or it may start with a small group concerned for the central city's future.

Successful management demands that the group be small enough not to bog down, that it be composed of men not afraid to give personal time and to take personal responsibility, that it remain wholly unofficial and without encumbering legal status, that work be done by informal conferences and across-the-table agreement on the precedent of the president's administrative cabinet rather than by formal resolutions and votes on the precedent of legislative bodies.

Influence on other civic bodies is assured because their heads, e.g. the head of the Chamber of Commerce, will almost certainly be on the central committee. When any major move is in prospect it can thus be given the widest preliminary discussion.

Even where the prime mover is a large downtown private enterprise rather than a civic committee, it can expedite matters and be more certain of the wisdom of its own course after such an airing. Thus the Round Table notes with approval the part played in the Penn Center development in Philadelphia both by the Citizens' Council on City Planning —which carried the program back to the "grass roots" of almost 200 agencies of neighborhood planning—and by the Advisory Board of Design appointed directly by the forward-looking president of the Pennsylvania Railroad, owner of the property.

4. By soliciting the indispensable help of professionally trained planners and architects

Most of the city replanning projects that are gaining fame now were conceived on the boards of planning professionals, sometimes as many as 20 or 25 years ago. Thus today's Detroit civic center is built where it was first proposed by panel member Blucher in the twenties and was thereupon projected by Architect Eliel Saarinen; Washington's present project in the Southwest was projected in various forms by professionals including Architects Justement and Smith; Philadelphia's interconnected plans have been stimulated and often conceived by Planning Commission Director Edmund Bacon, with the assistance of AIA groups among others; the Pittsburgh Gateway scheme owes its concept as a skyscraper city in a park to propaganda published much earlier by the French Architect LeCorbusier.

To avoid trouble and mistakes it is wise to call in planning and architectural advice in the very earliest stages.

This is the more important now that plans must run such a complicated official gamut.

5. By making a dramatic approach to the public

Rebuilding can never succeed with the public on the basis of columns of figures. Rebuilding must revive the force by which cities put over their utility in the first place—the force of wonder and desire. Such was the appeal in their heyday of New York's skyscrapers, of Kansas City's ramifying parks, of San Francisco's white-clad hills, of Chicago's waterfront, and of other urban phenomena too many to mention. Such an appeal will help bring investors back downtown.

Drama—plus understanding—must be conveyed to the public in launching over-all plans like smoke-abatement.

Drama—plus understanding—must be conveyed through great displays of models for projected improvements, the outstanding example being the Philadelphia exhibition in 1947 at Gimbel's.

Drama—plus understanding—must be created at every phase of planning, execution, occupation; most important it must be expressed in the very nature of the undertakings.

No downtown rebuilding committee is complete without skilled public information direction, using not only newspapers, television, magazines and local meetings, but beyond that the resources of agencies such as the Fund for Adult Education of the Ford Foundation.

6. By taking advantage of eminent domain

Land in big parcels, parcels not of half a block or a block but several blocks, is essential to effective building today inside the city or out. It is obtainable only by eminent domain.

Land in big parcels, easily purchasable at reasonable prices, is the secret of large-scale outlying attractions that are pulling people away from central cities.

For lack of large parcels, such as London can still find in old inherited estates, a nineteenth-century scale of individual action is the limit downtown as compared with twentieth-century concerted action at the periphery.

Inability to control large parcels is due partly to uncooperative ownership. Today's ownership downtown is no longer the ownership that built our cities to their former glory. Ownership has drifted largely out of the hands of energetic individuals and responsible resident families into the hands of coupon-clippers, residual heirs, distant owners, who cannot be mustered for coordinated action however badly it is needed, because they simply do not care what happens to the city.

But today's twentieth-century city can no longer wait decades at a time for nineteenth-century methods of land assembly to produce adequate parcels. It cannot depend on windfalls in the way of large parcels held in individual ownership and strategically located to anchor downtown, as New York waited from 1903 until 1933 for the major action of the Grand Central District to be followed by the major action of Rockefeller Center, as Philadelphia waited from 1926 until 1954 for demolition at Penn Center to become practical, as Pittsburgh waited until its strategic Point could finally be assembled—assembled because in 1949 it could be taken at last under powers of eminent domain.

It is an error to believe that powers of eminent domain are dependent wholly on federal action. Courts have been increasingly favorable to the use of this device locally as well as federally for community improvement.

7. By making use of federal urban renewal funds even for nonresidential construction

Because land condemnation even in run-down or "objectionable" areas cannot be done at prices low enough to insure profitable reuse, the urban renewal act provides for a federal and local "write-down." The federal government thus underwrites two thirds, and the local city government one third, of the difference between the acquisition price of the land and the economic price for the type of reuse contemplated.

Hitherto, under the ramifications of the law, predominantly residential reconstruction has been the chief product. However, predominantly nonresidential reuses have not been uncommon.

Yet with adequate local legislation it is possible to undertake mixed residential and commerical projects such as Detroit's ambitious Gratiot-Orleans plan, mixed projects including civic elements, and even, under the hitherto unused 10% leeway provision, not yet put to use by any community, straight commercial ones.

The limit on the federal write-down procedure is its high total cost. Economists like Miles Colean have already pointed out that the cost to the taxpayer of absorbing the difference between acquisition price and use price is far outrunning anticipation; and only in exceptional cases can the federal government wisely participate through write-down where prices are highest in the very core of the city.

8. By realizing that "deplorable areas" are a boon to downtown rebuilding

Precisely because nobody wants the land in deplorable areas for individual investment before replanning, these areas alone can be obtained after replanning at feasible (though not always reasonable) prices. And because of the blight, courts will uphold communities in enforcing improvement.

A list of the most prominent downtown rehabilitations reads like a list of "deplorable areas": Pittsburgh's Point was deplorable; Philadelphia's Chinese Wall was deplorable; New Haven's railroad station surroundings are deplorable; and the open trackage above which there is so much building promise in Boston and a dozen other cities is deplorable.

Because the improvement of such deplorable areas can contribute the biggest results of any improvement to the downtown city, owners of office buildings, stores, and other facilities in today's improved areas should not oppose rehabilitation of deplorable areas but join in it and invest in it for the double profit it brings: once on its own direct income and again on enhanced income for all downtown.

SMITH WELCH FEISS

9. By coupling private initiative with comprehensive public planning to insure favorable financing

Planning is the indispensable common denominator in two different proposals, of exactly opposite character, tested by the Round Table. One approach involved the maximum of joint action by the downtown business community overcoming immense obstacles for a tremendous objective. The other approach involved limited joint action, requiring not even the right of eminent domain, for a limited objective. It is the conclusion of the Round Table that progress must be made as rapidly as possible toward the maximum objectives since limited measures, though immediately practical, will not be adequate.

The lure of the proposal we shall call "Downtown Inc." is that it seeks to create an enormous credit pool based on the combined resources of nothing less than the downtown area as a whole. In sketch outline such a scheme would involve: 1) a determination by the planning board what the boundaries are of "downtown"; 2) formation of a private-enterprise corporation to which all real estate within these boundaries would be subordinated by its owners in exchange for participation in Downtown Inc.; 3) borrowing on the strength of the total, for the sake of selected improvements. In brief, this would be a total private-enterprise mobilization on the basis of a terrifically comprehensive total visualization, yielding credit in proportion so that on a value of $400 million some $80 millon might be obtained for a revolving fund of improvements. The Downtown Inc. proposal was not offered as a plan for immediate use but as one which might prove acceptable at the end of the five-to-ten year period always required to develop any big plan.

It is scarcely necessary to review all the obstacles which caused rejection of this plan by the Round Table as a working proposition for today.

Yet never again can the problem of downtown be viewed any less comprehensively, for only by having a goal for the whole area can we avoid compromising and defeating all by short-term conflicting moves. To finance the up-dating of a complete city downtown, in the handsomest manner, would cost less than an atom plant and could be done with less strain on the economy—if only we knew how to grab hold of it all at one time under private enterprise direction. That time must come.

The lure of the opposite proposal, which we call the "risk capital" plan, is its immediate practicality. It demands individual action only, but depends for its success on over-all planning of the area as a safeguard made dependable by a local ordinance with real teeth in it.

Here an experienced realtor gathers together an investment pool subscribed to by successful property owners in the area. It is invested in individual building or modernization projects, not necessarily requiring any condemnation proceedings, not necessarily requiring land assembly. Its aim is a business profit and it gets its protection and therefore its added incentive out of the fact that there is a plan for the area as a whole, preventing upsets.

The practical redevelopment corporations working with or without federal write-downs are more advanced than the risk capital pool but less comprehensive than Downtown Inc.

Especially commended is the Citizens Redevelopment Committee of Detroit, which is handling the 120-acre Gratiot-Orleans tract with minimal capital. It raised $1 million capital from industrialists, bankers, merchants, trade unions and others, on the specific plea that the plan would bring back into the automobile city the people which the automobile had been taking out of it. With merely an option on the tract as a whole, the committee works in installments, through subsidiary corporations set up with private redevelopers, who can buy out the citizens only on completion. By this device the directors and architects of this wise committee can control the esthetic quality and over-all performance and still keep their fund intact as a revolving fund for further operations. Detroit works with federal write-down.

Redevelopment without federal write-down can be carried out under local ordinances like Chicago's Neighborhood Redevelopment Act and her Neighborhood Conservation Act which permits use of eminent domain and special assessment for the area.

10. By combining civic building with private building

Study must be made of conditions under which civic centers are economically helpful, as against conditions where their helpfulness is dubious.

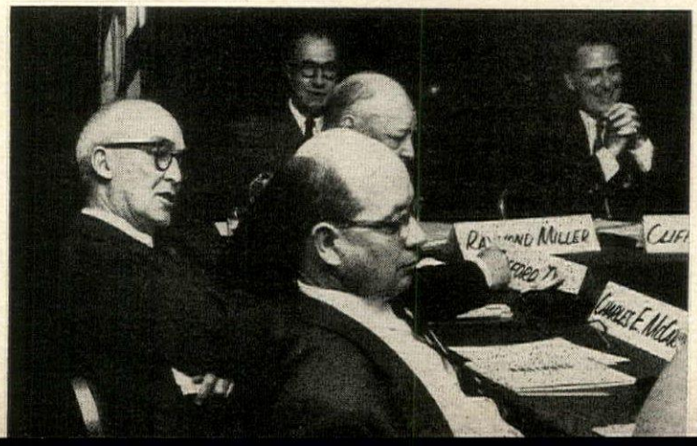
The Round Table recommends especially those projects where civic and economic facilities are developed in correlation, enhancing one another.

Recent examples of helpful civic development are found in Detroit, where the river-front civic center, started with a Soldiers Memorial, has set off a chain reaction of mixed civic and commerical character, involving a large exhibition hall, convention hall, large bank, bus terminal; a proposed large hotel and large office building; the widening of boulevards and bringing in of expressways—and the end is not yet.

The Round Table commends the kind of thinking being undertaken in Portland, Ore., where there are active proposals to lump together a whole series of undertakings that had been started in a scattering way by enterprise private and public. These include a hotel, central bus terminal, a public exhibition hall and other features adding up to $50 million which may be related with one another in an area of six square blocks enhancing one another and creating an impact.

The architectural appeal of a fine civic center must not be overlooked. If the advertising value of a fine building is worth money to Alcoa or Lever Brothers or General Motors, how much more is it worth to a city!

McCARTHY MILLER (top), TILL, BLUCHER RANDALL



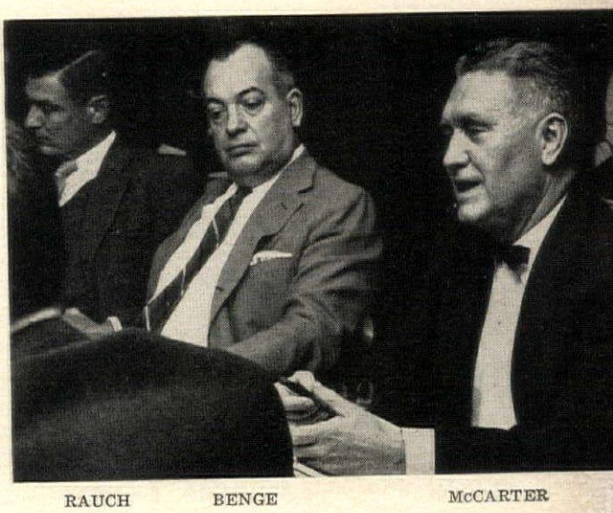
11. By conceiving of downtown centers as correlated centers

How long can haphazard groups of stores, cut apart into blocks by a gridiron of heavy traffic, compete with correlated outlying shopping centers?

Though other things may have to be done first, the time has come when groups of merchants large and small must be prepared to create genuine downtown shopping centers. Just as an outlying shopping center consists typically of two department stores with small stores strung between, so a downtown shopping center might be built up between two existing department stores taking in the stores intervening.

Functionally and visually such centers must be unified—be not six blocks strung together but one superblock.

Architectural imagination can produce something downtown that would be unprecedented even in the outskirts: using arcading of various kinds, blocking the short cross-streets, possibly roofing them over, to create a kind of "bazaar."



RAUCH BENGE McCARTER

12. By undertaking slum clearance and better residential building around the business core

The Round Table thoroughly agrees that although the downtown core itself rarely contains residential quarters except in transient hotels, the removal of slums and residential blight immediately surrounding the downtown core is an integral part of the problem. A better residential occupancy close-in helps the downtown retail market. And any step which provides better residential quarters for racial and other minorities which have been hitherto badly undersupplied with new housing relieves intolerable congestion, diminishes delinquency and crime, increases safety and welfare. The Round Table especially commends those recent efforts which have sought to avoid isolation of various groups in so-called "ghettos" and to encourage dispersal of different income groups, different nationalities and races.

13. By studying a better municipal tax system

Serious tax inequities today are of two kinds. One kind arises where outlying towns or villages assess commercial or industrial properties far below the known recent purchase price, in a desperate effort to attract business activity and obtain a modicum of tax support for the schools, etc., that they need because of their headlong residential development. The opposite kind of inequity is found in excessive assessments downtown. To analyze all the reasons for this is beyond the scope of this report, but one ludicrous result is that property condemned for urban rehabilitation purposes must be paid for in consonance with these assessments. Then the city must turn around and pay in services for its share of a major write-down before a price can be reached at which anybody can afford to put the property to use. And responsible economists are concerned over the drain on the taxpayer of absorbing this difference between the nominal value (attested by assessments) and the market value (attested by what reasonable use can pay).

14. By using law enforcement to bring occupancy standards up to par

Not many commercial properties have fallen so far below reasonable standards of spaciousness and safety as slum housing has. Consequently the progress to be made by better enforcement of building regulations may be less in the downtown core than in the blighted area surrounding it. Yet examples exist where a building inspector insisting on conformance in such details as for example parapets has indirectly brought about other improvements. While the contractor was on hand to remove the violation many an owner has decided to go ahead and do a more complete job, resulting in a much more attractive building. Where a whole series of owners goes ahead in this way the result is impressive.

15. By providing access to downtown for masses of people

Letting the people in is the traffic problem downtown—not letting in cars or trains or busses.

Since people are the problem, a most encouraging aspect of the Round Table was readiness of the highway representatives, the mass transportation representatives, the parking representatives, to work with one another toward a correlated solution.

Indeed each traffic facility benefits surprisingly from the better handling of the others, so it is possible through related action to set up a beneficent upward spiral.

16. By considering mass transportation in relation to the great numbers it moves

Defeatism is mass transportation's only genuine enemy.

Against a hang-dog attitude, which sticks with low rates and deteriorating service, mass transportation where aggressively well-managed has operated in the black and increased its service.

Being faster is the primary basis of mass transportation without which nothing else will sell it.

To move faster, mass transportation must be given its own right-of-way—some streets all its own (or shared with trucks only), street lanes all its own (wholly unhampered with vehicles either parked or moving into curb parking), and even separate lanes all its own on express highways. Cleveland's shining example of rapid transit is its nonstop streetcar coming all the way downtown from the suburbs. This has its own track. A similar "track" of their own for busses would rapidly cut down that 40% standing time which cuts down so many bus schedules to only 5 mph.

Incentive plans must replace today's discouraging attitudes to mass transit. In place of costly street franchises (based on an obsolete monopoly theory) and low fares, there must be incentive arrangements. Higher fares are paid readily when coupled with speedy service.

Intelligent mass transport managers will reciprocate by encouraging, not discouraging, growth of terminal parking, by running shuttle service where possible among big parking terminals.

17. By treating pedestrians as people

Today's contemptuous attitude toward the man on foot goes back to feudal days when he was an inferior person.

Unnoticed by experts, the force of events has already actually converted many downtown passageways to footways. Unnoticed by experts, some of these pedestrian areas are greatly enjoyed by the people even despite the fact that nothing is done deliberately to make them attractive. Thus in New York, Times Square in the evening is predominantly a pedestrian area and is enjoyed most on gala occasions such as election nights and New Years. Fifth Ave. along its sidewalks is a heavy pedestrian area, enjoyed most when roped off entirely for pedestrian use on Easter morning. The Rockefeller Plaza is again a delightfully pedestrian area.

Philadelphia in particular is to be congratulated for its deliberate inclusion of shaded pedestrian walks in redevelopment projects. With skill such walkways can be used, paradoxically enough, to increase access by large numbers; they are the cheapest way to bring these large numbers through some areas; and soon they can be equipped, in many instances, with inexpensive overhead cover and moving sidewalks.

18. By realizing that the automobile is the people's preferred vehicle but that its handling is not insoluble

The notion that better traffic conditions will simply "invite in an endless flood of automobiles" and will upset any solution is contradicted by new evidence. The importance of this new evidence cannot be exaggerated.

Whereas Chicago's new off-street parking facilities at present exceed demand, and whereas this surplus of parking would be expected to bring in a prompt new flow of cars on the streets, actual figures show that the proportion of people coming downtown by automobile has declined during the corresponding period. (See p. 192.)

Again, whereas the new off-street parking facilities would be expected to decrease the number of passengers coming in by mass transportation, the opposite has been true and the proportion of mass transportation passengers has been greater.

An improved highway pattern is the first essential for handling people coming downtown by automobile. This must include peripheral expressways, along with peripheral parking terminals, so a change-over can be made to mass transportation. It must include through expressways *not* going through the downtown core to keep traffic off the streets that will do no business downtown; it must include ring expressways placed well within the city but directly outside the downtown core—this being once again a good location for parking garages and for interchange with the mass transportation system. It must include other expressways that do spill directly into the core. In this way the express highway system can be made to keep off the streets of the central district that 50% to 65% of automobiles that has neither its origin nor its destination in the district, and simultaneously to expedite the remaining 35% to 50% that have business there.

In other words, a good highway pattern must correlate with a parking pattern, with the rapid mass transportation system, with the downtown street use pattern. An excellent example of a ring highway is abuilding in Kansas City.

The street pattern must serve graded usages. No longer can the city afford to jumble together all sorts of traffic in every sort of direction at all sorts of hours. Some streets must be especially adapted to trucks and busses, others to passenger cars, others exclusively to pedestrians, and changes must be possible with the clock.

A planned street pattern must be operated under wise city traffic regulations. Smartly contrived regulations such as one-way traffic, limited turns, prohibition of curb parking (possible only where enough off-street parking is available), lights synchronized to favor one kind of traffic (e.g. busses) over another (e.g. passenger cars) can be made to seem mainly regulatory rather than prohibitive. They will accordingly get better acceptance than outright prohibition of automobiles in various areas where they are not wanted. The principle is to set up obstacles to misuse—to make it too much of a nuisance for anyone to be a nuisance.

Blackstone Studios

OSMAN: Downtown must be redeveloped with something dramatic, something significant, something inspirational.

TALBOTT (l): It would benefit downtown business to have through traffic bypass the city. BAER (r): We must teach everyone that without a virile downtown, the whole metropolitan district will die.

MERRILL (l): No matter what we do, we have to have a profit motive to make it successful. STONOROV (c): We have got to think in the image of the future and not in the image of the present or past. HELLMUTH (r): Perhaps a little shift in the center of downtown would help.

SOME OF THE THINGS THEY SAID—

(excerpts from the Round Table transcript)

What is the downtown problem and what is the most logical way to tackle it?

BAER: To have a strong and stable downtown district, four things are necessary: adequate highways, adequate traffic regulation, adequate off-street parking and adequate mass transportation. You can't get highways and off-street parking unless you sell the citizens the justification of a bond issue, because you can't get those things out of current revenue. You have to get them out of capital improvement or a bond issue.

FEISS: You must also have a plan—more than simply a plan to retain the status quo, but a plan for new development, a plan for something inspirational, a plan which encompasses some of the elements of beauty and esthetic considerations and a plan to overcome psychological obsolescence. Unless you have that kind of a plan, I don't think these other devices are worth a hoot. I feel very strongly about that. We cannot rebuild the centers of our cities unless we use the same kind of genius—technical and business and administrative and political—that is being used in many instances in the development of the new towns and the newer shopping areas outside the central business districts.

OSMAN: There are certain centrifugal forces at work that tend to lead away from the city. There are certain centripetal forces we should set at work that will bring business back toward the center of the city. If we could achieve an equilibrium so that the centrifugal forces would at least be matched by the centripetal forces, then we could hold our own in the downtown parts of the city. What is this gravitational pull needed at the center of the city to attract people to it? Perhaps we can learn something from new shopping centers such as Northland, outside Detroit. Here sculpture has been added to architecture to provide a charming center for shopping that will draw millons of dollars of business from downtown.

The new civic center being developed in downtown Los Angeles is exciting. They are not reconstructing the plaza which was the center of old Los Angeles; it is something which belongs to a century ago. They are leaving the old plaza where it is, but a few blocks away will be the new civic center, a contemporary expression of the old plaza. This is going to help reconstruct the very nebulous downtown area of Los Angeles.

What other kind of ideas are going to lead to a downtown renaissance? Adequate highways, adequate trafficways, adequate off-street parking and adequate mass transportation work both ways. They can provide for centrifugal activity as well as centripetal activity. I don't think they are the solutions. We have to do something really new and different.

I agree with Mr. Baer that a great city has to have a heart and mind downtown. You cannot hold together a bunch of satellites without having a main body that exerts the gravitation. I suggest that every city ought to have a civic center. It ought to be a dramatic civic center, the kind that people will want to visit. There ought to be many reasons to go there, and the civic center itself should help to make the city a work of art, like Florence or like Venice. Cities need to have vertical shopping centers. It would seem that single stores downtown are a luxury that downtowns cannot afford. I would think that little shops, one-story or two-story affairs, are going to have to be rebuilt into an architecture that integrates them something like the old arcades did; but instead of being horizontal arcades, they will be built into vertical arrangements that intrigue and delight.

There should be pedestrian malls downtown. Perhaps some cities will tear out five or six blocks and put fountains and flowers in them and let people walk around downtown. Perhaps an urban architecture along the order of the Lever House or the proposed Seagram's building in New York can help restore the human scale to downtown.

The redemption of the downtown demands all the imagination and ideas of which we are capable, but perhaps, most of all, it needs to be understood not only as the economic center of a city but as the heart and mind of the city as well. And such understanding is the task of an educational program of a kind never been tried.

A bold plan to consolidate downtown properties and interests in a single corporation with a high credit rating

STONOROV: The downtown operation is really a single operation of distributing goods and services in the most efficient way. Therefore, after the core of the city has been defined by the planning commission, the core should be made a unified business operation. One way or another, a corporation could be created by the participating interests. Most owners would voluntarily subordinate their real estate to a general

WELCH (l): Trees and benches don't sell merchandise. FEISS (r): Whether you are thinking in terms of mass transit or private vehicles, you end up with a pedestrian at one end and the other.

FARR (l): The central districts are carrying more than their fair share of the tax burden. DOUGHTY (r): In Chicago the downtown area pays about one seventh of the city's taxes, yet there are less than 1,700 registered voters there.

corporation so that the corporation would benefit from the over-all credit that such an instrumentality would enjoy. The corporation would do a job which the individual participant today could not even think of attempting. The rules of the game would be no different than the rules of a corporation that is now controlling, say, a 200-acre suburban development. If one fellow doesn't toe the line and keep his property up and behave according to a general predetermined plan, his lease is canceled.

If the total downtown is worth $1.6 billion, let us say that the core, which is a very valuable piece of property, is worth $400 million. If this $400 million were pledged by a corporate body as security, you could walk into a bank and say how much will you give us to fix up this piece of property, and I wouldn't be surprised if you could get a loan of $80 million. With $80 million, I think you could go a long way in improving downtown St. Louis or downtown Philadelphia. Take, for example, the Greater Philadelphia Movement. It is creating a nonprofit corporation of citizens who will consider themselves trustees of a project in excess of 100 acres and build a $100 million produce terminal which that corporation will control exactly in the same way as a group of citizens get together to put up a shopping center. I don't think that any individual could get the next fellow and say come on, Mac, let's go down and build a produce terminal. Such things are now the concern of the business community at large, and I think the core of the city is a concern of the business leadership at large. You have got to have a solution which is big financially, planningwise, architecturally and esthetically. The people who are your customers are much more appreciative of an esthetic or an attractive solution and a big, bold financial solution than a little solution.

"Downtown Inc." might have its properties pledged by the owners for considerations of $1 and then that same property would be released to the same owners for $1 again, but this time covered by a covenant arrived at with a comprehensive plan.

Although the corporation would be in business, the individual owner would have a democratic way to express himself and insist on his rights proportionately. The big property owners would be all right and the small ones would have an opportunity to come into their own right and become the adjuncts and supporters and the real beneficiaries of the entire operation. The corporation would be interested in the upkeep, maintenance, attractiveness, public relations and all of the other operations that would contribute to the success of "Downtown Inc."

BAER: I don't agree with Mr. Stonorov. I think we have got to be more realistic about it. You have to make it profitable for private industry to spend money downtown. I don't think you can set up a public corporation to do that.

CHAIRMAN: A public corporation is not proposed. It would be a private corporation.

BAER: I don't think you need that. If you can solve the problems of downtown, private industry is going to spend money to develop the downtown district because it will be profitable for it to do so.

STONOROV: What I propose is nothing revolutionary. It is a practical way by which big business does big jobs.

CHAIRMAN: Mr. Benge, do you have an opinion on whether this plan would release large sources of credit?

BENGE: Yes. But when you put this property together downtown you have to remember there are large amounts of debt against it to start with, so you can't tell how much of a loan you might be able to get. You couldn't borrow additional money on a second mortgage basis, so you would have to refinance all of the underlying indebtedness, as well as finance the additional amounts. That would amount to a lot more than $80 million. I would say that debts of an area worth $400 millon might run as high as $100 million or $150 million and they would have to be taken care of along with the $80 million.

Mr. Stonorov has given us a good mental massage, but from a practical standpoint, how are you going to get all of those people to give their rights to property for a period of 99 years, and then to let someone tell them what to do?

CHAIRMAN: It wouldn't be one man. It would be a corporation.

BENGE: Someone will have to run it.

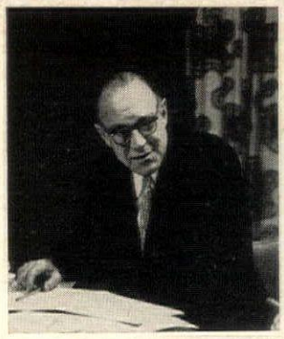
STONOROV: I think the business community shows good sense for leadership, and I don't see that is in any way different from the delegation of advisory power that large communities are now giving to their planning commissions. I don't say that this idea that I am suggesting here is finished. I offer it simply as a means of getting thinking started on a much larger scale. Maybe the instrumentality, the tool, the procedure, the idea, the final way in which such a thing could be done would barely resemble such an oversimplified proposal as I have made.

CHAIRMAN: I am curious what the building owners think of that sort of thing.

DOUGHTY: Mr. Benge has pointed out a great practical problem: the waiving of autonomy. In Chicago about 50% by value of the property is represented by office buildings; 10% by department stores. You have got to have a common meeting ground among those two groups. I don't think either one would want to take over the functions of the other in their planning. They have to meet on equal ground in their planning.

I don't think there is any fundamental disagreement about the necessity of having the leading business interests assume the responsibility of directing the betterment of the downtown area. I think it comes down to a consideration of a practical approach.

Let's consider a scheme that is being discussed quite actively in Chicago. It received the endorsement of a number of local neighborhood organizations, although



TURLEY: The greatest single factor that has moved tenants from the downtown district is the question of parking.

RAUCH (l): The taxpayer is having to absorb more of the write-down cost than anybody anticipated. BENGE (r): The problem is the cost of land. Someone is going to take a terrific loss on that cost.

KAUFMANN (l): Vigorous enforcement of traffic ordinances always improves the accessibility of streets. MERRILL (r): The downtown needs more than a solution to its traffic problem.

not all of them. It would be a downtown commission established initially through legislation at the state level authorizing the mayor of the city to appoint a commission. It would not limit the membership of that commission to residents of the city proper, recognizing the fact that a good many leading citizens live outside of the city in the suburbs. They would have power to supervise and make suggestions in connection with plans proposed by the planning commission or other planning bodies, and they would have at their disposal funds made available through bond issues to handle the improvement of downtown areas. They would have the power of eminent domain. It's a more limited approach, but I think it is perhaps a little more practical than the corporation proposed by Mr. Stonorov.

TURLEY: I think Mr. Stonorov is a long, long way from the completion of a scheme such as he suggests. We manage seven major properties in our office and a large number of minor properties, the total value of which might be about $20 million. So, we have roughly 5% of the $400 million downtown core in our own shop. In our properties alone there are 52 different personalities involved, and they vary all the way from department store owners, like Mr. Baer, to some widows that are looking for income and nothing else. They run the entire gamut of human individuals. I don't think my grandsons can live long enough to convince those 52 people that they should turn their property over for administration to a corporation and take back either a lease or paper or some evidence of ownership. There are just too doggone many rugged individualists.

Our experience in the last 25 years has been that we have no difficulty whatsoever in obtaining major financing. For a sound business proposition, whether it's a new building or whether it's a remodeling job, the major financing is available in large amounts and at good interest rates and for long periods of time. Where we find ourselves short is in the risk capital.

A more modest plan to provide a fund of risk capital to help finance downtown construction and reconstruction

TURLEY: A modification of Mr. Stonorov's plan might be the creation of a fund of risk capital much less than the $80 million he speaks about. Ten million dollars would go a long way in an area as limited as the core of St. Louis. It would pay for development in specific locations according to a master plan which would be for the benefit of the entire district, and at the same time it would permit someone to make some money.

There has to be some prospect of making money out of these things or, at least, preserving money.

The major properties managed by our office produced in 1954 a gross revenue of $2,504,800, and after paying operating expenses, insurance and taxes, had left $1,374,500. Roughly, about 6½% on the conservative value of $20 million. There is about a $10 million total of major indebtedness involved in the properties. It would not be too difficult to raise $50,000 here and $25,000 there and $100,000 there among the 52 owners for the use of a private enterprise group, if there were some opportunity to make money with it or to preserve what they have. The risk capital is what is badly needed, and somebody who has the energy and time and know-how to go out and get it.

CHAIRMAN: Do I understand you to mean that risk capital will be easier to get if there is a plan?

TURLEY: Yes.

STONOROV: I am very, very happy. I didn't expect to get that much support for my proposal. I will buy what Mr. Turley has suggested, because that is the essential first step.

CHAIRMAN: Who exercises this planning power, and who carries it out?

TURLEY: It should be a city plan deal, I think, on the basis of the master plan—probably by an ordinance that would give it some teeth.

A plan to increase the impact of new construction on the downtown area by integrating private and public activity

MERRILL: A piecemeal renewal of downtown is not enough. Some big shot in the arm is needed; something dramatic has to be done. I think there is a danger in solving a traffic problem or a parking problem if it is not integrated in an over-all plan. After all, there is nothing so unattractive as a parking lot. In our efforts to revitalize our downtown area there is the danger of doing it the wrong way and freezing what most of us consider an obsolete land-use pattern and street pattern.

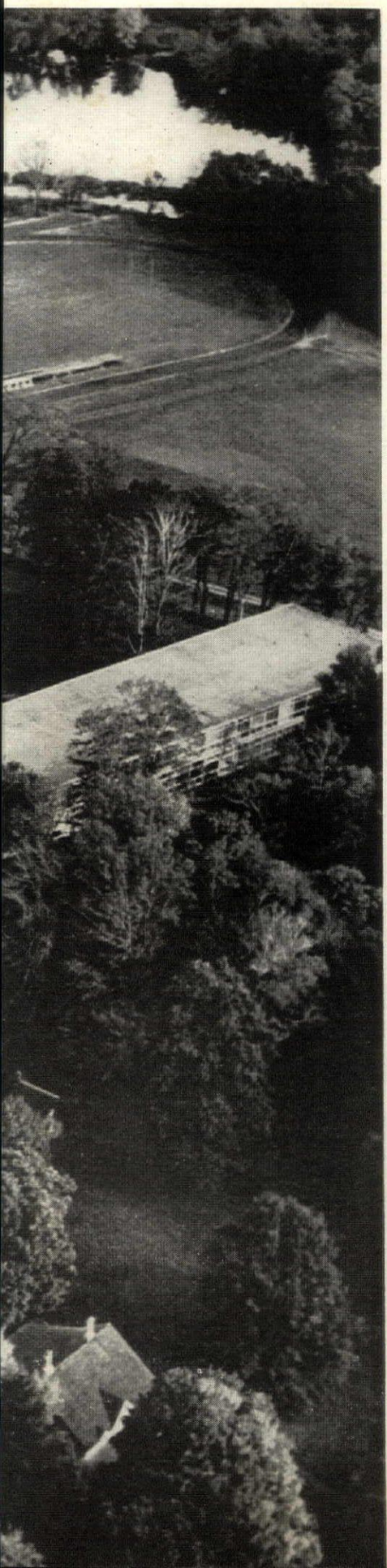
One form of insurance against this is a coordinated pooling and integrating of proposed new construction, both public and private. We have made a preliminary study at Portland, Ore., to show businessmen and others interested in the downtown area the advantages of this type of planning in connection with a $30 million bond issue for various municipal facilities, including a new bridge and exposition-recreation center. At the same time there are some private developments of considerable size proposed for the downtown area. If these various projects are built in scattered locations, the expenditure of such large sums of money would

continued on p. 164

SENIOR HIGH SCHOOL, EAST HARTFORD, CONN.
ASSOCIATED ARCHITECTS: Nichols & Butterfield; Perkins & Will
ENGINEERS: Marchant & Minges
GENERAL CONTRACTOR: A. F. Peaslee, Inc.

COMMUNITY BUILDINGS

EXTROVERTED; SCHOOLROOMS INTROVERTED

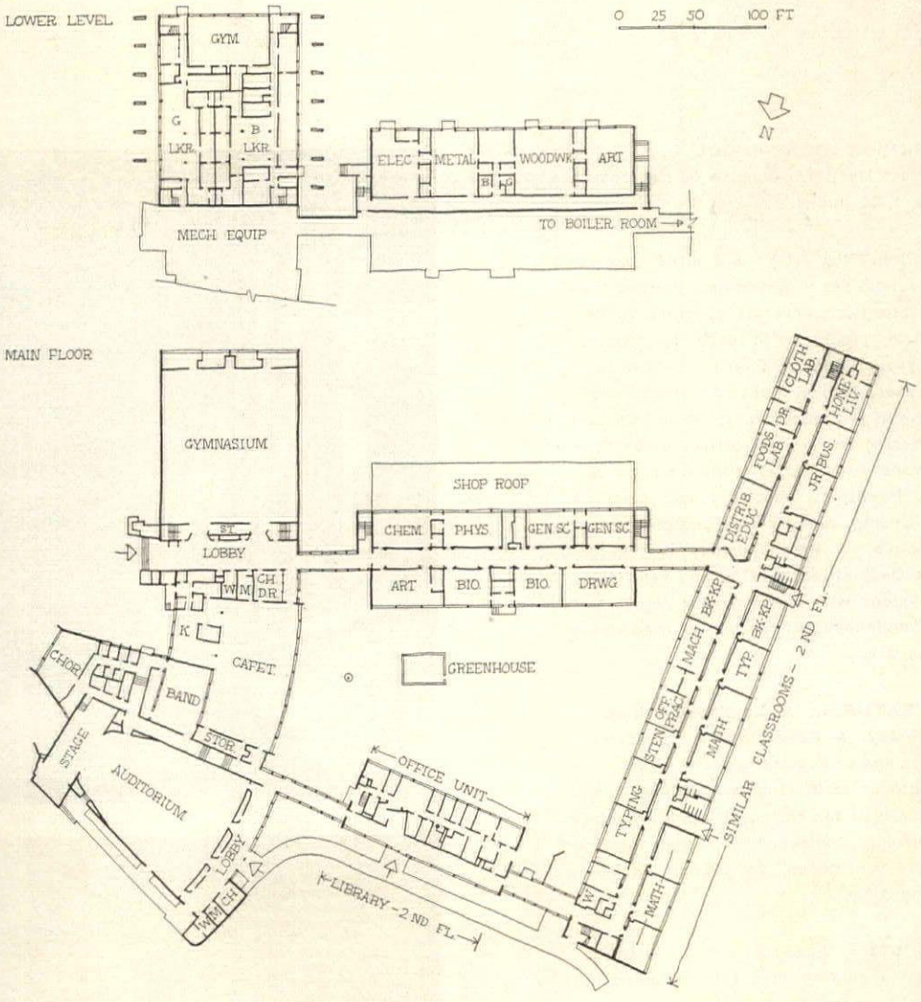


This is a high school of two distinct and complementary miens. Its auditorium and gym say plainly that they are community institutions; the outside world, epitomized by the automobile, all but surrounds them. Its classroom buildings, the students' own domain, focus onto an intimate inner court. The photographs overleaf show how startlingly different the two aspects are.

The school shows to best advantage from court and rear; its inner directed elements have architectural coherence.

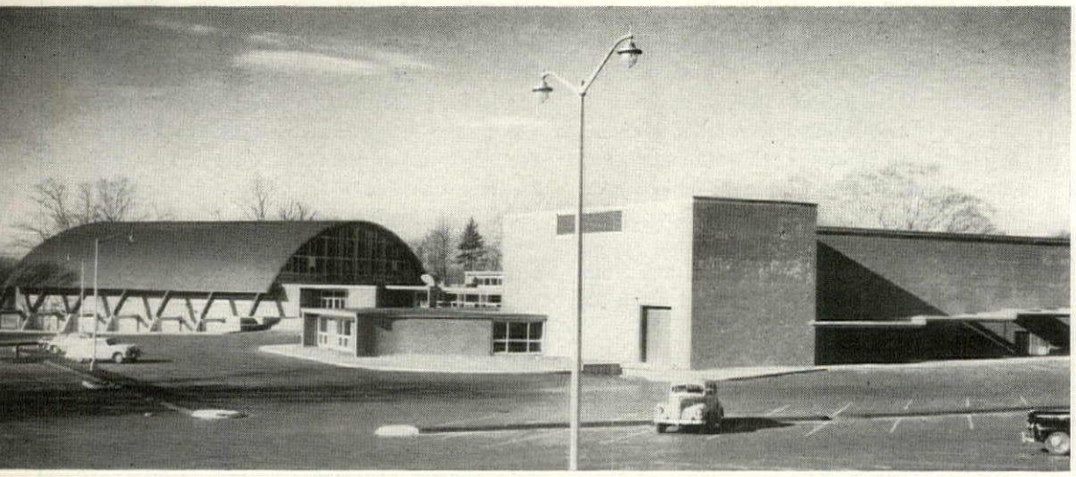
An interesting technical feature is the school's double-duct heating and ventilating system. Hot and cold air supply ducts run in corridor hung ceilings. Air returns through the cores of the cellular concrete floor, then enters corridor ducts beneath the floors. Each room has only four operating sash.

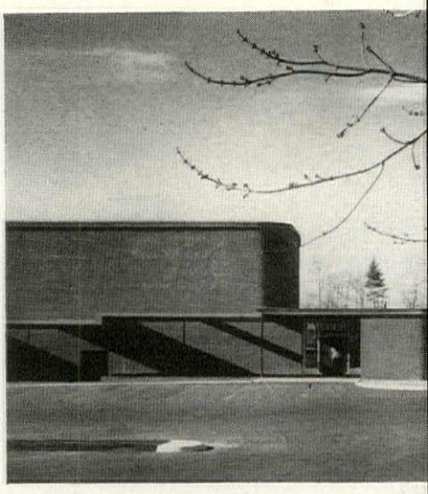
Architects Nichols & Butterfield report the system has worked well, except for the fact that in hot weather the occupants get an erroneous idea of the ventilation they are receiving. This is because they feel only the secondary movement of air (the primary movement is overhead). So in subsequent schools, the architects have added more operating sash and specified faster fans. They also emphasize that a satisfactory double-duct system must have wrapped ducts and individual room controls, as in this school, and that air filters cut heating costs.



Plan puts shops under main floor, on lower portion of site; library and second tier of classrooms are over main floor.

High school with a public side and a family side





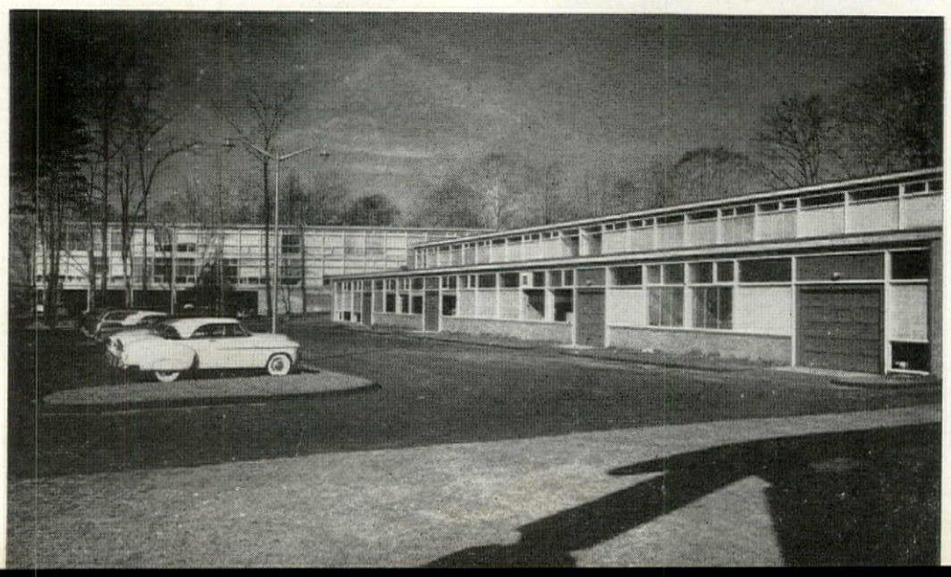
Public face, extending to administration wing at far right, shares almost universal flaw in campus-plan high schools: lack of visual coherence among gym, auditorium and classroom wings.

SENIOR HIGH SCHOOL
East Hartford, Conn. ▲ 56 classrooms. ▲ 1,500 pupils.

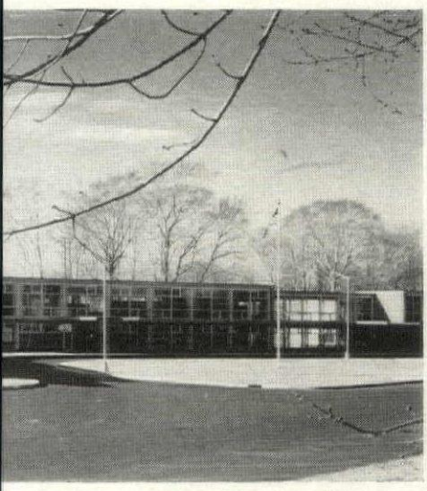
CONSTRUCTION: ▲ Poured concrete foundations and columns, precast concrete joists, precast concrete cellular floor planks with concrete topping, gypsum deck roof on glass-fiber form boxes. ▲ Steel arches and metal decking in gym; steel trusses in auditorium; steel joists in cafeteria. ▲ Exterior walls, brick; steel sash, wood frames. ▲ Partitions, painted cinder block. ▲ Flooring, asphalt tile, ceramic tile or maple. ▲ Plastic domes over shops. ▲ Double-duct heating and ventilating system with carbon-reactivation and individual room control; oil-fired steam boilers.

FEATURES: ▲ Luminous ceiling in library. ▲ Easy outdoor access from art and shop classrooms. ▲ Alternative outdoor traffic routes. ▲ Glass corridor wall for shops. ▲ Long corridors visually "widened" by high glazing and "shortened" by changes in flooring color.

COST: ▲ $2,765,000; $14.94 per sq. ft., not including fees but including all built-in and fixed equipment and site grading. ▲ Paving and seeding, $77,000 additional.

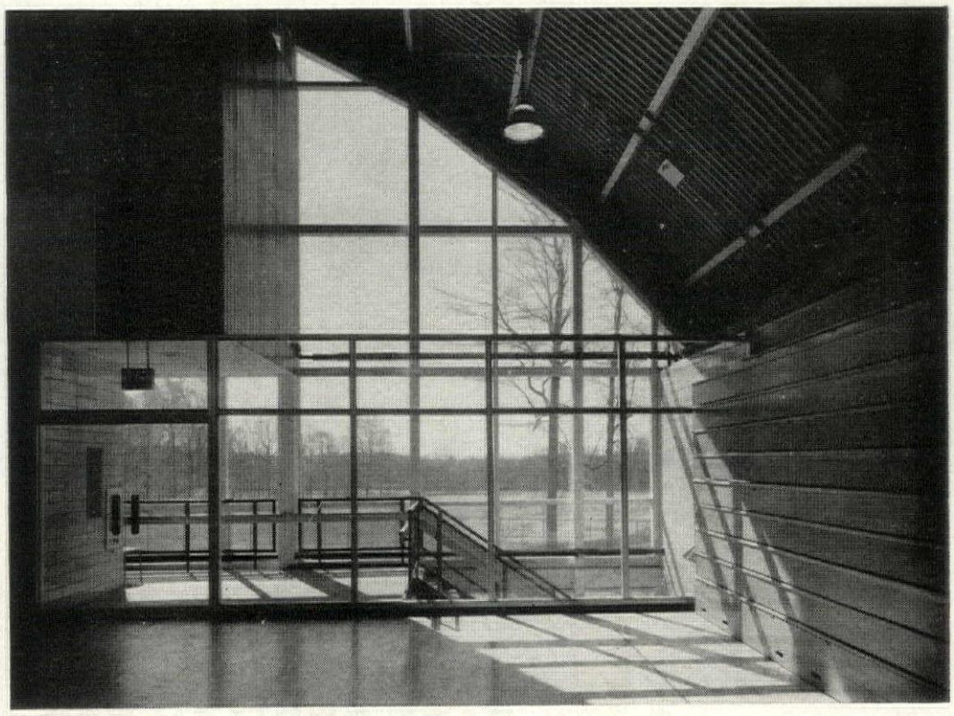


Gymnasium lower end exhibits handsome pattern of glass and heavy wood frames, with wood louvers at air ducts. Lower floor has lockers, with direct access to outdoor playing fields, also includes small gym for special instruction.



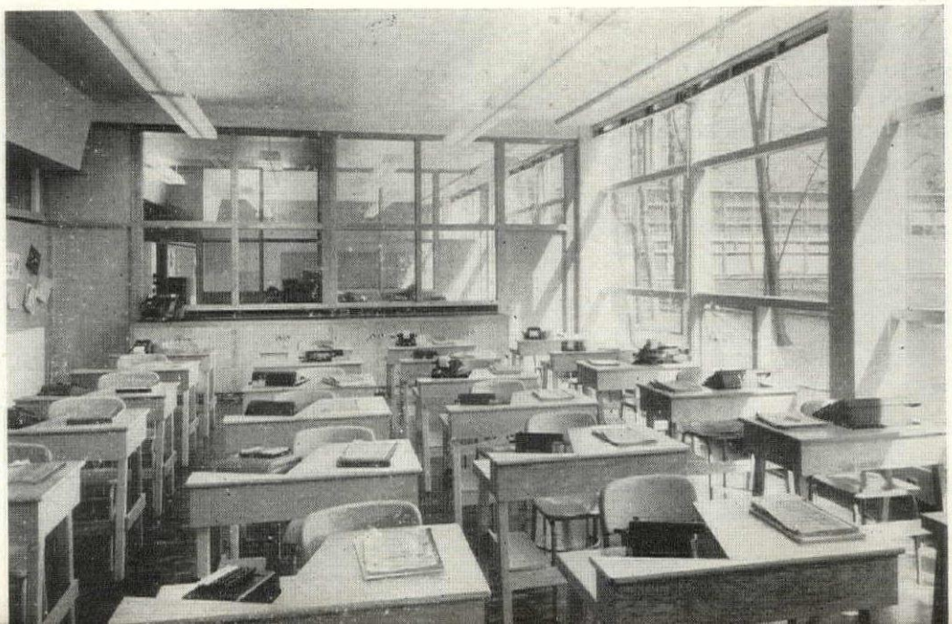
Photos: Ben Schnall

Court view shows portion of academic wing at left, administration-library wing at rear. Glazed linking corridors complete envelopment of court yet give glimpses beyond its walls, a nice play between sense of enclosure and sense of openness.



Stair well at end of gym is created on either side of wood air duct housing. Stairs lead to girls' and boys' locker rooms below. Gym divides with rolling walls into four areas, each 50′ x 55′, seats 1,500 in folding bleachers.

Classroom view parallels exterior court view; it was taken at close to same point. High glazing on inner wall is to eliminate endless tunnel effect in corridor, which is longer than football field. Air inlets are above this glazing.



Shops have overhead doors opening on paved yard which is used both as shop service court and outdoor classrooms. Teachers' parking is beneath end of academic wing (at far left). Every large tree on entire 30-acre site was retained.

Photos: Lionel Freedman

Physicians' offices fit into residential area. Panel-like treatment of solid wall removes any threat of grimness.

OPEN-FACE PRIVACY FOR A CLINIC

LOCATION: Detroit
ARCHITECTS: Leinweber, Yamasaki & Hellmuth
STRUCTURAL CONSULTANT: Richard McClurg
LANDSCAPE ARCHITECT: Edward A. Eichstedt
GENERAL CONTRACTOR: Trowell Construction Co.

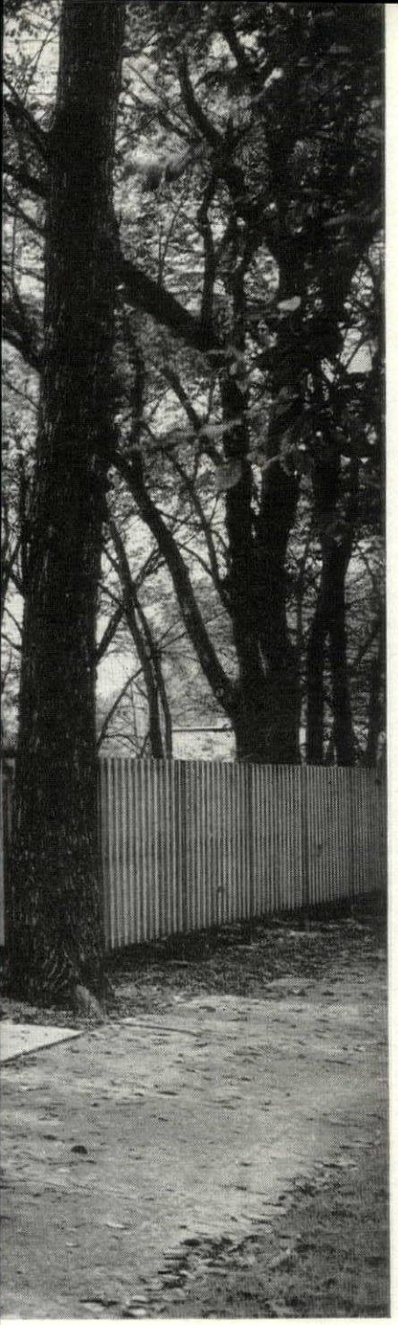
This office for three physicians represents a building type now blossoming throughout the country. This is a fine example because the architects have so well reconciled the requirement of privacy with the desideratum of friendliness. Instead of closing most of the exterior, they put six examining rooms deep inside a thrifty square and used fences and translucent glass to screen other rooms.

The beautifully detailed wall is steel stud, with glass stopped in the columns by square bar stops. The steel members thus serve simultaneously as mullions, sash and columns, a remarkable simplification of a bearing wall. The cost of steel and iron was $4,741; glazing and entry doors, $1,465.

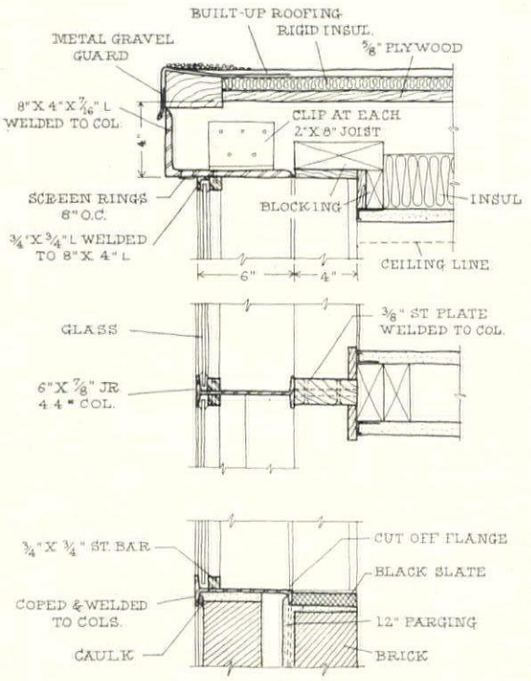
The brick outer wythes of the cavity masonry run between studs; interior wythes of slag block run past studs.

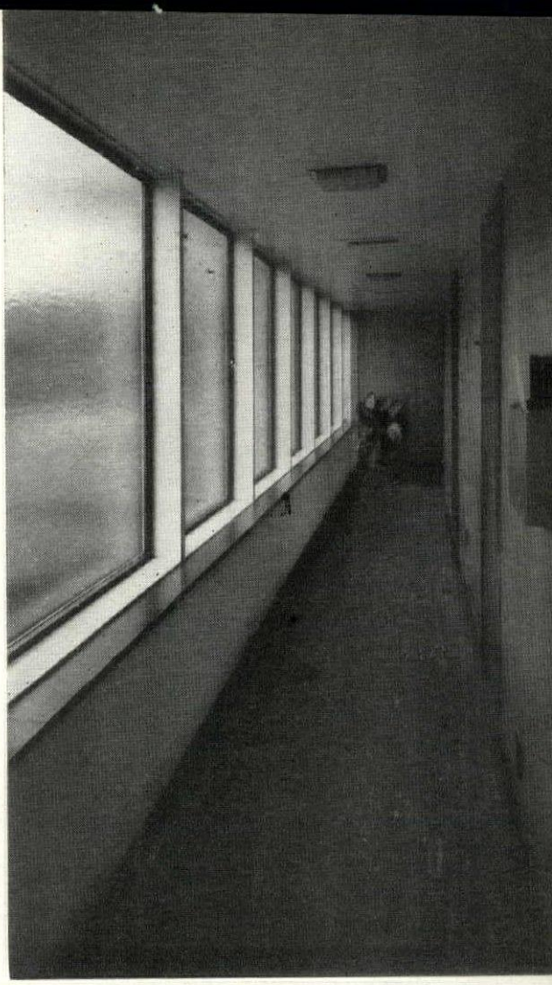
The sun problem was not difficult because of tree shade. No protective devices are used other than draperies hung close to the glass. Cost of heating, ventilating and air-conditioning equipment was $12,867. Total cost was $63,924, or $22.83 per sq. ft., a creditable figure for clinic-type facilities.

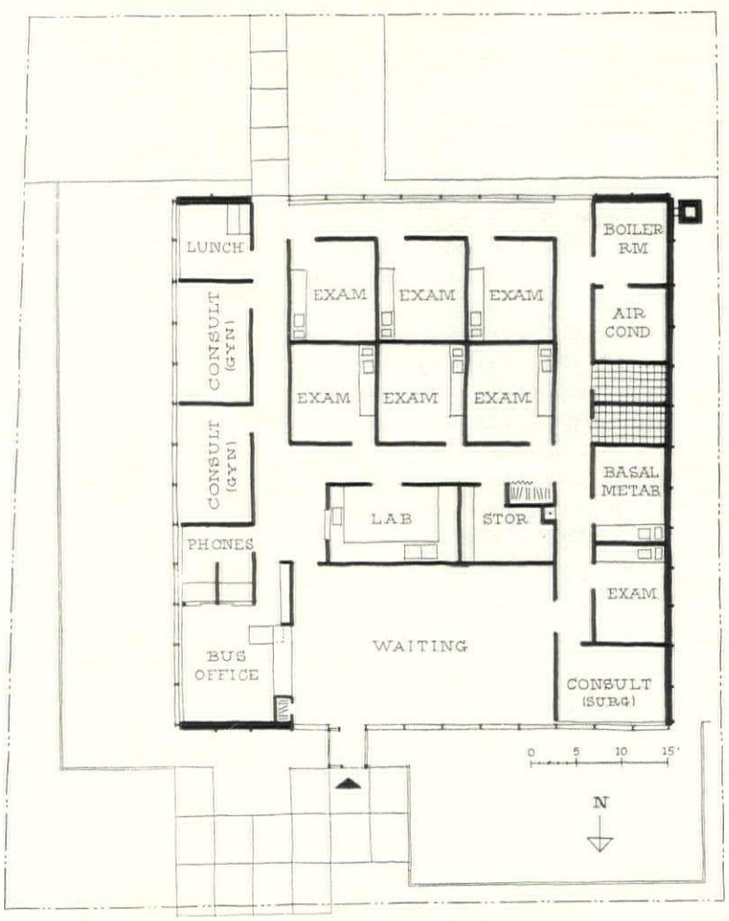
The clients report they not only got a building they like, but also "a fascinating architectural education."



Rear corridor, running past inside examining rooms, shows nice use of steel studs as glazing members. Sill member has no top flange.







Reception room is placed so surgical patients can take door to the right (see plan), obstetrical-gynecological patients to left.

Consulting office has fence-protected garden outlook. Only feature of building which clients would change by hindsight is too-small kitchen-lunchroom.

EXCERPTS

Opinion and comment
on the building industry
from the rostrum
and the press

Opinions expressed in these excerpts are not necessarily those of FORUM's *editors*

Architectural vision

Excerpts from an address by Architect Walter H. Kilham Jr., before the 1955 convention of the Wisconsin Architects Assn.

In planning Radio City Raymond Hood thought something should be done to relieve the piled-up masses of office space. To him, the man in the street ought to get something back. He suggested that with all these stories, walls baking in the sun, stifling the streets below, maybe the sound of a little running water, the splash of a fountain might be enough to take the curse off the asphalt jungle.

Dedicated, practical, prosaic men ran the enterprise and as usual they came down on him like a ton of bricks. After about 20 minutes of sputtering, they ended up saying "a fountain—running water? Why—do you know what this means; this means recirculating 30,000 gallons of water a day."

"And how much," said Raymond Hood in a tired voice, "does it cost to recirculate 30,000 gallons of water a day?" They scratched and figured and finally came up with the answer—$8.30 a day. The fountain went in.

Air-conditioning costs

Excerpts from an article by Heating Engineer Lewis Smith in Heating, Piping & Air Conditioning

No longer a luxury, air conditioning is an integral part of practically every new office building. For, when the advantages aside from cooling are considered, they are found to be mainly economic.

An air-conditioning system adds to the cost mainly because it adds something new —cooling. Too often, the figures used also include the cost of heating which would have to be paid for in any event. (While a fairly large volume of outdoor air is brought in, infiltration is practically eliminated except at night; so, the cost of heating is much the same as before.) Cooling is carried on for more hours than the outdoor temperature or humidity seem to call for. An investigation by the New York steam utility of eight office buildings using their steam service during 1953 for either turbine-driven compressors or absorption refrigeration shows that:

1. On the average, the air-conditioning plant was first started on April 13 and turned off on November 21, but one building ran from Jan. 14 to Dec. 28. This is all due, no doubt, to the need for cooling interior spaces and those affected by the sun.

2. All these buildings used air conditioning for full office hours during July, August and September of 1953, about 85% of this time in June and 50% to 60% in May and October.

3. Six of these buildings have reheaters and used them whenever the air conditioning was used.

How much this all adds in dollars and how much is really chargeable to air conditioning is much discussed. There are two costs involved.

First there is the owning cost. A lot of machinery is involved. This is subject to charges for amortization, interest, taxes and insurance. A life of 15 years is commonly used and this makes the rate 6⅔% per year. Interest at 4% and insurance and taxes at about 3⅓% make a total of 14%. This should be applied to the extra cost of an air-conditioning system above the heating system, which is a basic cost of the building; that is, to about 84% of the total added cost of air conditioning. The net owning charge would, therefore, run about 12%, although different accounting methods will produce quite different results. In any event, these owning costs usually exceed the operating cost and commonly amount to from 20¢ to 40¢ per sq. ft. of rentable area.

Second, there are the actual costs of running the plant. In New York City, the figure of 15¢ per sq. ft. of rentable area is used by one of the largest management companies, based on their experience with a group of postwar air-conditioned buildings. Some of these have perimeter heating and cooling units with motors and filters, and it is admitted that the cost of cleaning these filters has not been determined, so that this 15¢ cost may be increased. The manager of one of the earlier large air-conditioned buildings who keeps accurate records says the cost is 25¢. On the other hand, the manager of a very large office building wholly occupied by the owner uses a figure of 13¢, based on accurate accounting. It is safe to take 20¢ as a fair figure, but this would be subject to wide variations. There is, for instance, no uniformity in the method of calculating rentable area, and variations could be 10%.

The total owning and operating cost of air conditioning comes to about 50¢ per sq. ft. of rentable area as an average.

What about the extra rental charge for air-conditioned space. Some authorities do

put this figure at 50¢ per sq. ft. but other equally good authorities say it is as high as $1. Let's take a premium of 75¢. It is customary, and in some cities compulsory, to allow at least 100 sq. ft. floor space per average occupant. At 75¢, the tenant is paying $75 per year extra. At present rates of pay, it takes very few hours of office labor saving to wipe out that premium. The other benefits, such as cleanliness, quietness, lower humidity, etc., are all "velvet." The landlord has a benefit too. Because of the cleanliness of the air, much less redecoration is needed. Night cleaning can be done faster because of the small amount of dust (thanks to closed windows), and that can mean a reduction in the force employed. Ample studies have been made to prove these points, and it is well accepted that air conditioning promotes not only comfort but efficiency for both tenant and landlord.

World's greatest architecture

Excerpts from an address by Frank Lloyd Wright before the 1955 convention of Wisconsin Architects Assn.

America is going to have an Architecture, the greatest the world has ever known, to which Rome's will not compare. . . .

A genius is that man who understands what other men only know about. Architecture is an expression of human beings for human beings. You can see painting, you can hear music. No word is sufficient to describe Architecture. Literature tells about man. Architecture presents him. . . .

Don't be afraid to devote your time and love for years and years to a single building. Make an honest and beautiful thing out of it. It is better than having a big practice. . . .

Merely putting the entrails on the outside of the skin doesn't mean Architecture. You can find entrails in any butcher shop.

Better schoolhouse design

Excerpts from a letter to the state of Indiana from the state of Washington, written by Pearl A. Wanamaker, Washington's state superintendent of public instruction, and Harold Silverthorn, her consultant in school building facilities

A number of states, and particularly those on the East Coast, have published standards for their schoolhouse construction or have statutory regulations. We have never favored this practice because, in our opinion, guides are very definite restrictions on improved design and technology that we feel should be used as soon as valid test results are available.

In our judgment, there is no substitute for a good, well-trained, competent architect. We believe that the progress we have made in schoolhouse construction in the state of Washington can be attributed very largely to the architect, school administrator, interested lay citizens in the community and the State Department of Public Instruction working cooperatively to produce the best building that we can possibly design. A good architect makes use of all the technical advice and skill that he can secure. In our school buildings the architect on every school project makes use of competent licensed structural engineers, mechanical engineers, electrical engineers and testing laboratory detail. Many times an acoustical engineer is brought into the planning of the school buildings so that we can be sure of the acoustical effects that we are getting in the classrooms, corridors and auditoriums.

Guides produced in many of the states contain material relative to structural engineering detail that can be supplied by any competent structural engineer. We question why it is necessary for us to print a guide when this material, and even superior data, is supplied by the engineers. Actually, when one analyzes the technical detail contained in most of the guides, it is information that could be supplied by any third-rate engineer.

Most of the guides used by the various state departments of education have become very quickly obsolete. Several states have attempted to revise their guides every two or three years. This is a very expensive operation because it requires several men working full time to keep all the technical research data up to date, and by the time the revised guide is printed, it is obsolete.

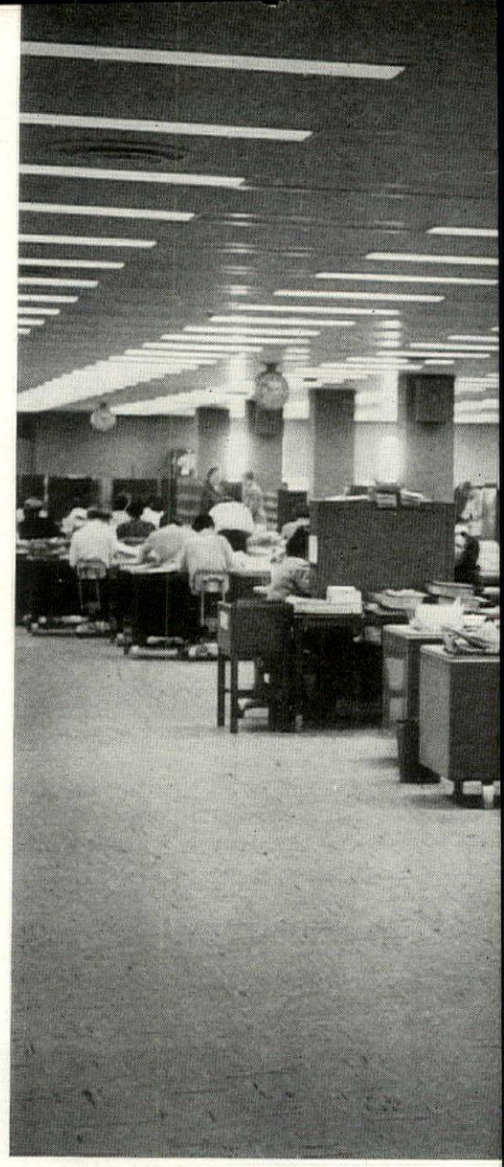
The most important service a building division in a state department of education can render to any community is to assist the architect and responsible school officials in designing the most modern and best buildings that can be produced by a creative designer and the best technological skill of engineers. State regulation does more to interfere with this activity than it does to promote the design of modern facilities.

The design and layout of classrooms and school buildings is changing so rapidly that we have not endeavored to put out standard classroom designs or classroom layouts. If you were to examine the more than 400 school building projects that are in our current files, you would find that significant changes are made in the designs of these buildings every six months or so.

Our architects are encouraged to secure the very best scientific research on the preliminary design. Many of our building plans are sent to Massachusetts Institute of Technology or to Texas A. & M. for tests for natural lighting characteristics. Many effective ideas for sun and glare control and for distribution of natural light in the classroom have been found through the architect's working with these different testing laboratories.

During the preliminary stages of the development of a school building plan, the architect, superintendent, engineers and lay people may visit our office many times for conferences on some of the ideas the architect wishes to incorporate into the building. If an idea is a radical departure from generally accepted plans and if it is impossible to get engineering tests to see how this particular design will function, we may reject the idea until a model has been made or other tests have been run on a particular idea.

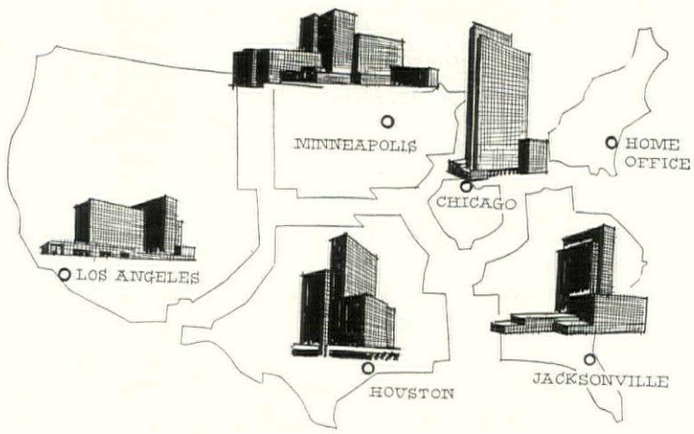
Our rather unique approach is responsible for the progress that has been made in schoolhouse design in the state of Washington in the last few years. We think, too, that our approach to the problem is in keeping with the best democratic procedures.



Eighty years ago the Pru started in a tiny basement. Today its long production lines, like those in the new Minneapolis office at right, are well-lighted, air conditioned, treated for color and sound. Loudspeakers bring in music announcements.

In 1892, the company built itself an elaborate castle on Newark's Broad St. Still the nerve center, it has seen the addition of five big buildings beside and behind it, and, more recently, five monumental headquarters across the nation (see map).

THE PRU DECENTRALIZES:



Reynolds Photography Inc.

A BUILDING PROGRAM FOR AN OFFICE STAFF OF 6,200

The Prudential Insurance Company of America should know a lot about locating, building and running big office buildings. By the end of this year it will have had the unique experience of building and occupying five of them around the country (see map) and bringing the results home for comparison.

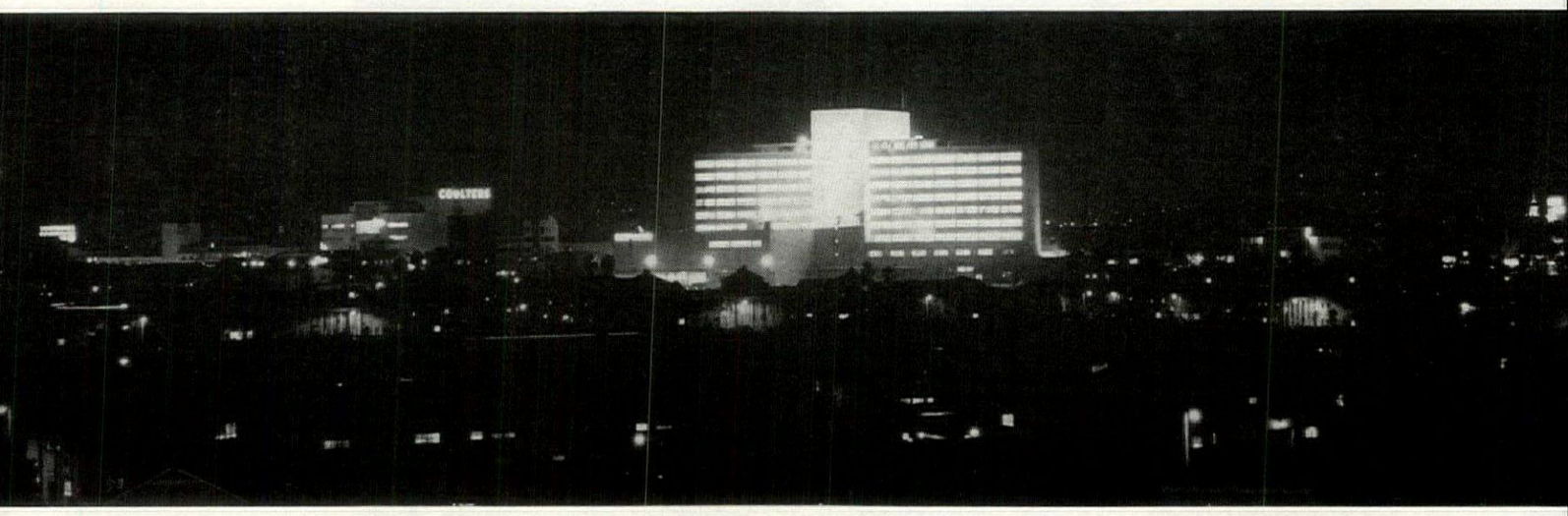
In 1948 the company opened a Western Home Office in Los Angeles to lighten the load on its bulging Newark, N.J. headquarters. As it turned out, this was just the first step in a 3.7 million sq. ft., $75 million program of decentralization and expansion. The Los Angeles building (AF, May '49) soon proved its worth, and in 1952 the Pru opened another regional home office in Houston to serve the Southwest. Last month marked the official debut of a new South Central headquarters in Jacksonville. When the AIA convenes in Minneapolis this month, the company will be snipping the ribbon on a North Central office there, and about the same time employees will be moving into the lower floors of the Mid-America office in Chicago (AF, Aug. '52). The Los Angeles headquarters, enjoying a boom, is already scheduled for a new third wing.

These five new headquarters, and a rented Canadian head office, are primarily tools for dividing up the Pru's vast job of serving 31 million policyholders, administering close to 50,000 employees and $11.8 billion in total assets.*

Each new building, the company has found, brings it closer to its policyholders for more efficient service, closer to its 1,300-odd field offices for more frequent contacts, closer to its investments (almost half local real estate) for supervision and new opportunities. Officers residing in the field can know their regions better, can inform themselves at first hand and can make spot decisions or recommendations to Newark. Smaller departments in the regional home offices have brought officers, supervisors and clerks closer together, generating higher morale and efficiency, permitting experimentation and development of new systems, new breadth of experience for management.

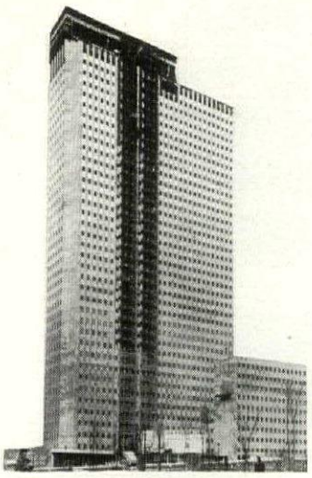
With the exception of the giant 41-story Chicago building, an income property with 28 floors for rent, each regional headquarters is so planned that the Pru can eventually occupy the whole building. In its 21-story Houston and 22-story Jacksonville structures, the company now uses the lowest eight and nine floors, and can move slowly up into the smaller tower floors, now rented. The 12-story Los Angeles and Minneapolis headquarters, longer and lower to meet local height restrictions, are primarily Prudential-occupied, with central service cores designed to receive new third wings. These four buildings range on either side of the half-million sq. ft. mark and are among the biggest buildings in their regions. The Chicago skyscraper, more than three times as large, is the fifth largest office building in the country, the tallest in Chicago.

*Next to Metropolitan Life ($13.1 billion assets) and the Bell System ($12.8 billion), the Pru is the largest corporation in the US. Its bigger competitor has two older regional office buildings: in San Francisco (built in 1909) and Ottawa (built in 1924.)



Allan Grant—LIFE

Los Angeles: to many critics, the Pru's first regional headquarters still looks best. Designed by Wurdeman & Becket, it is handsome by day, striking by night.



Chicago Architectural Photo Co.

Chicago: outwardly reminiscent of New York's RCA building, latest and largest building nears completion; Grant Park in foreground. Architects: Naess & Murphy.

Jacksonville: next biggest to Chicago building (588,130 gross sq. ft.), South Central office is region's tallest. Architects: Kemp, Bunch & Jackson.

Aero Pic

On the fringe of each city

Prudential's building policy, governing five buildings in seven years, has been a consistent one. Its buildings, like its salesmen, sell solidity and permanence, and sell it by strong personal contact with the community.

First, the company has followed a fairly consistent policy of location. In keeping with its new creed of staying "close to the people," it has made each of its headquarters highly accessible: on a major artery outside of congested areas, where it can be reached easily by employees from residential sections, yet close enough to downtown to welcome visitors and the all-important stream of mail trucks from a large post office. At the same time each site is chosen so the building will be strikingly visible: in a high or open position on a heavily traveled route.

Three of the buildings make good use of a park to gain visibility and prestige as well as recreation, light and air for employees. The Chicago skyscraper is off Michigan Ave. right next to the business district yet spectacularly open to adjoining Grant Park and the lake, offering employees and tenants convenience plus a magnificent view. The Houston headquarters can be seen some distance

Reynolds

Minneapolis: reinforced concrete building dominates little Brownie Lake, big Wayzata Blvd. Architects: Magney, Tusley & Setter.

a new "Rock of Gibraltar" dominates the sky line

out on Main St., just beyond Hermann Park and the dignified, open campuses of Rice Institute and the Texas Medical Center. (It is also right across the street from the big Shamrock Hotel.) In Minneapolis, the Pru actually bought a chunk of public park on the city limits, now enjoys prominence and green space on the major highway west. (The company thus relieved the city of landscaping and maintenance expenses and kept the building height down to conform to a residential area.) The home office in Los Angeles, with its big Ohrbach's store below, stays just under the 150′ zoning ceiling on Wilshire Boulevard's Miracle Mile, which it helped develop and still dominates visually. The Jacksonville headquarters, towering on the South bank of the St. Johns River, is hard to miss from the main business district or from the main highway and seaboard railway bridges that pass its base.

The Pru has chosen a highly methodical policy on architecture as well. Each building capitalizes on the strength of its location to advertise the strength of its product. Like its favorite Rock, the Pru's last four buildings in particular are massive in shape, solidly imbedded in the ground, with a permanent-looking face of local limestone set off by granite or marble accents. A utility tower is emphasized as a rocklike slab, labeled with the Gibraltar emblem and the company's name in letters big enough to be seen the desired distance. At night signs and tower are lighted, and sometimes the bands of office lights nearest the windows are turned on, at about $5 or $6 a night, to make the building stand out even more. The desired impact: the Pru is *big*, but *local*.

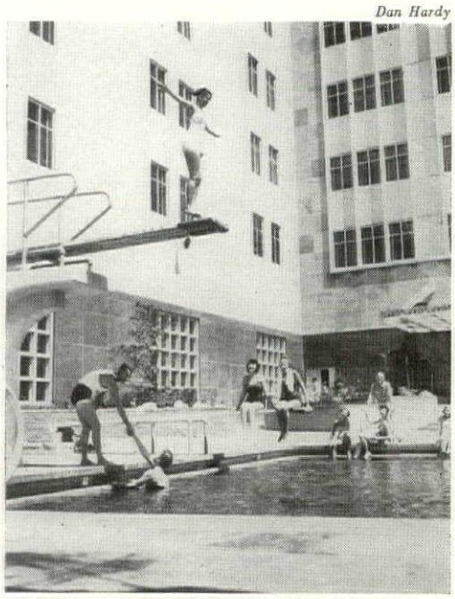
The Pru always invites several local architects to submit sketches before picking one, takes the low bid among several local contractors, supervises closely through its own large building department.

Despite their obvious success in many respects, no Prudential building since the first one in Los Angeles is likely to win any really first-rank architectural awards. By now there are perhaps more knowing ways of achieving the desired impact with the same excellent functional program and the same fine materials. The problem of how a large corporation gets really distinguished architecture is still a difficult one.

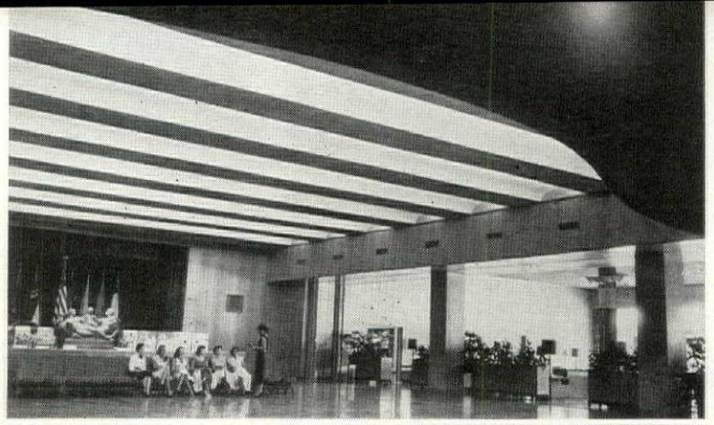
Houston: 21-story limestone tower on 27-acre site. Tenants look across parkland to city. Architect: Kenneth Franzheim.

A. Y. Owen—LIFE

Dan Hardy

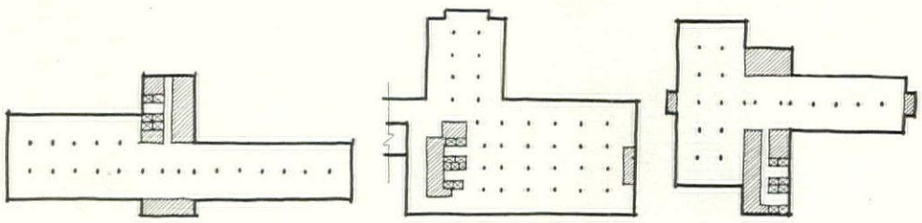


Pru's pool, now famous, plus tennis and softball help company meet tight labor situation in Houston. Jacksonville office has shuffleboard, croquet, putting.



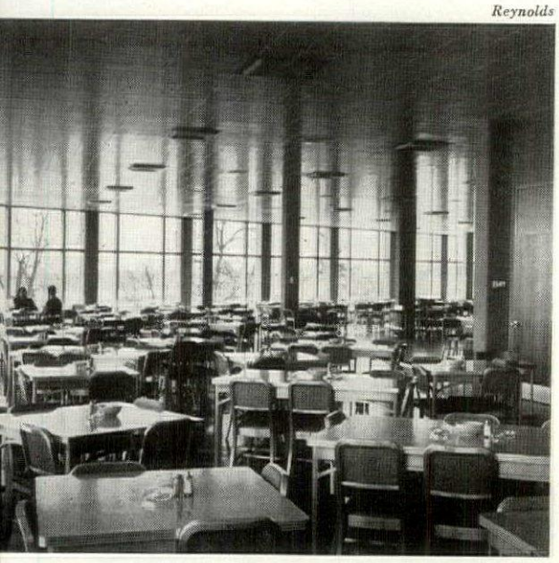
A. Y. Owen—LIFE

Assembly hall of 500 up to 1,000 seats is provided in each building for employee, community and sales meetings. Adjacent are employee lounges, card or billiards rooms.



LOS ANGELES JACKSONVILLE HOUSTON

Reynolds



Cafeterias like this one in Minneapolis serve free lunches to shifts of 350 up to 800. Home office staffs, which range from 1,000 to 1,500 (two thirds female) can also go to well-equipped employee health centers for minor ailments and checkups.

Prudential builds its employee facilities for high

In setting up five smaller, more streamlined headquarters in various regions, the Prudential has had many opportunities to learn about the efficiency of office buildings and employees. The bulk of its work, processing thousands of insurance and investment transactions daily, is done on long white-collar production lines, with paper as the raw material and more paper as the end product. An application for ordinary life insurance, for example, must go through highly specialized operations in three major divisions—medical, underwriting and issue—before a policy can be mailed back. In the regional offices big, related divisions like these, which require some 10,000 to 12,000 sq. ft. each at 100 sq. ft. per employee, are linked for continuous work flow in spaces as large as a small factory: 35,000 to 40,000 sq. ft. (floor plans above). These groups of divisions are stacked vertically for building economy and linked to the mail room below by continuous conveyors. (For contrast, see Connecticut General's long, low plant—AF, Sept. '54.) Elevators are planned so the buildings can be filled and emptied in ten minutes at rush hours: every Prudential floor has its own car, which runs a shuttle service to that floor only at starting and quitting time. (Lower floors of some headquarters have escalators instead.)

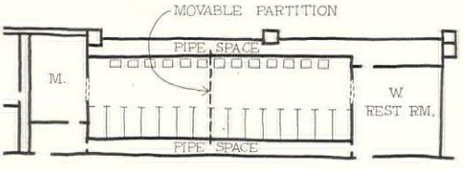
The big loft floors, which occupy the lower stories of the building, are broken in shape to reduce their psychological vastness and allow variations in the building's exterior mass. Column spacing is as wide as possible (average bay: 25′ x 30′) without paying a premium for long-span structure. Floor slabs are beefed up with reinforcing rods slightly larger than normal, will carry live loads of 150 to 200 psf so that groups of filing cabinets or the company's increasingly heavier business machines may be placed at will.

To divide its loft spaces, the Pru uses movable steel partitions so that reorganizations can be made without debris and delay. (In the older Newark offices some of these partitions have been reused for 30 years, found to pay for themselves after one move.)

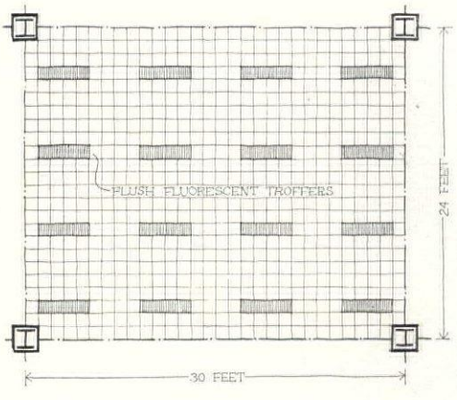
Windows in all five buildings are aluminum folding or pivoting types that can be economically washed from inside by regular night clean-up crews. Percentage of window

Julius Shulman

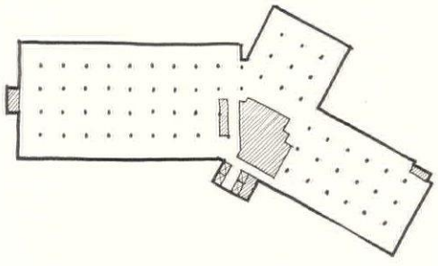
The public is welcomed in large, marble-clad lobbies like this one in Los Angeles, may go on guided group tours or look at murals or a piece of real Gibraltar rock.



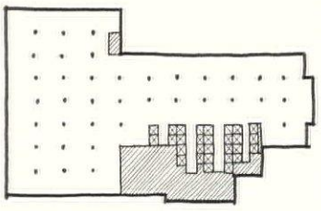
Flexible washroom is standard throughout new office buildings. Soundproof partition can be moved as ratio of men to women changes on any floor.



Typical column bay is 25′ x 30′ in Los Angeles and Houston, 24′ x 30′ in Jacksonville, 24′ x 31′ in Chicago. Minneapolis has reinforced concrete, 24′ square bays.



MINNEAPOLIS



CHICAGO

Service core is on or near exterior of each building to leave large interior free and flexible. Note core location in plans of typical floors (left) on "back" side of Chicago building (below).

Chicago Architectural Photographing Co.

efficiency and high morale

area in exterior wall increases as buildings are located farther south: Minneapolis 19.3%, Chicago 28.3%, Jacksonville 35.5%, Houston 38.2%, with Los Angeles' 55% the greatest.

Lighting has improved from hanging fluorescent fixtures maintaining 30 to 35 foot-candles at desk level in the first two buildings, to flush fluorescent troffers maintaining 40 to 45 foot-candles in the last three. The newer flush ceilings are finished in acoustical tile with a noise reduction coefficient of .85, keeping noise down to about 50 db, and are demountable for future installation of pipes or wires.

The three newest buildings incorporate high-pressure cooling and heating units under windows, ceiling distribution for interior bays (high pressure in Minneapolis, low pressure in Chicago, low pressure cooling only in southerly Jacksonville). Flooring in all clerical areas is asphalt tile for economy and durability, in pale greens or browns to help lighten office interiors. Walls are painted washable, pastel shades; columns are stronger, gayer colors, sometimes varying from row to row.

OFFICE OF MERIT: a regular department devoted to new ideas in finishes, fixtures and furnishings—this month from the conveyor-belted sales headquarters of a textile firm

Cylindrical showrooms have sample storage and display built into walls

OFFICES OF M. LOWENSTEIN & SONS, INC.

DESIGNERS:

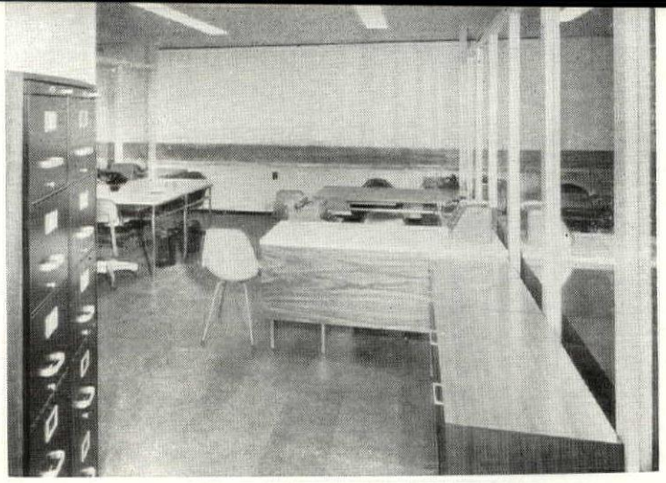
Maurice and Joseph Mogulescu and G. Luss of Designs for Business, Inc. (Virginia Kelly, colorist)

GENERAL CONTRACTOR: Cauldwell-Wingate Co.

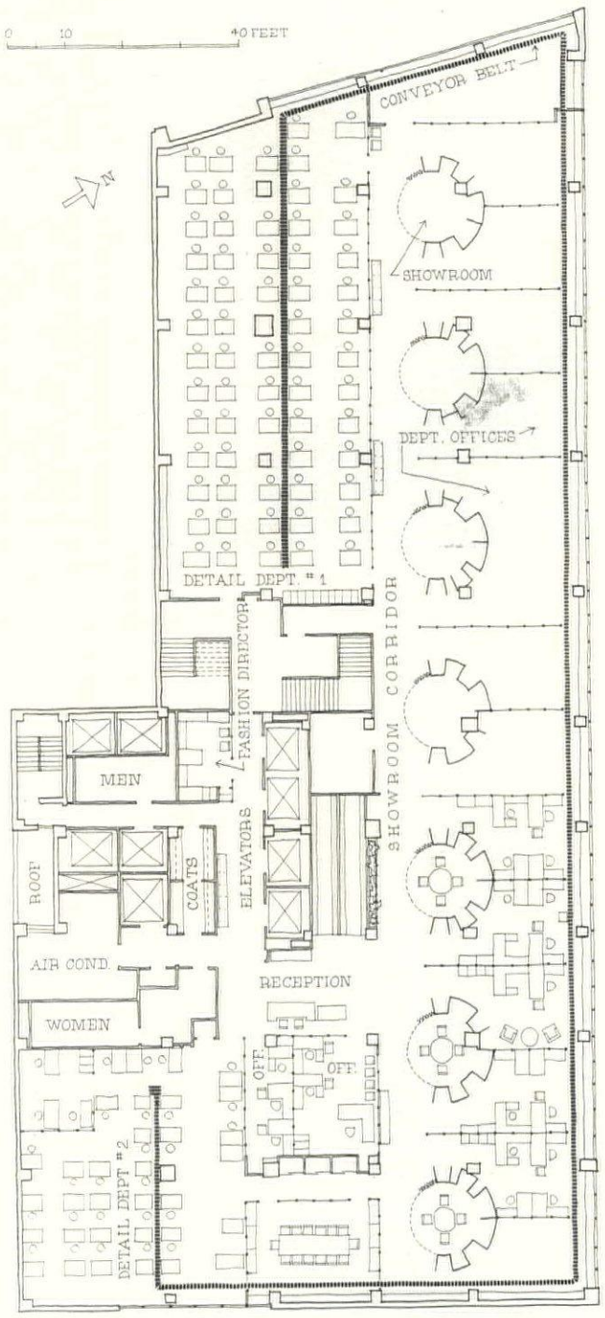
In this midtown Manhattan office, orders for 2½ million yd. of textiles are handled every day. A large proportion of the actual sales are made here too. It takes three shifts for the company to manufacture that much cloth, but it has to be sold in one shift.

To handle the torrent of paperwork, the designers worked out the six office floors on factory principles, treating the orders as raw materials, and shipping instructions to the mills as finished products. High-speed, multilaned conveyor belts carry the paperwork from its points of origin on the lower floors, through processing departments and finally to the teletype room on the sixth floor. The conveyors, plus centralizing of service departments (formerly attached to each sales and merchandising department), have cut the time from receipt of order in New York to receipt of instructions at the mills to anywhere from 15 minutes to four hours. In the old offices, with the same staff, it took one to two days.

Knit into this scheme are many ingenuities. Examples: the 16 circular showrooms (on three floors), each serving two sales and merchandising departments set up to curl around the showrooms; luminous ceilings of identical daylight quality wherever cloth is pondered, from the design department, to conference rooms and showrooms; a communications system that flashes the name of a just-arrived customer to every sales office in the place.



Office space for departmental merchandising and sales staff is to rear of showrooms. Files at left are built into showroom's storage wall.



High-speed conveyor ties together all operations. It carries orders from departmental offices (and recorded telephoned orders) to inventory, credit, accounting and finally to teletypes. Belt runs vertically through six floors. Plan shows typical showroom floor with conveyor.

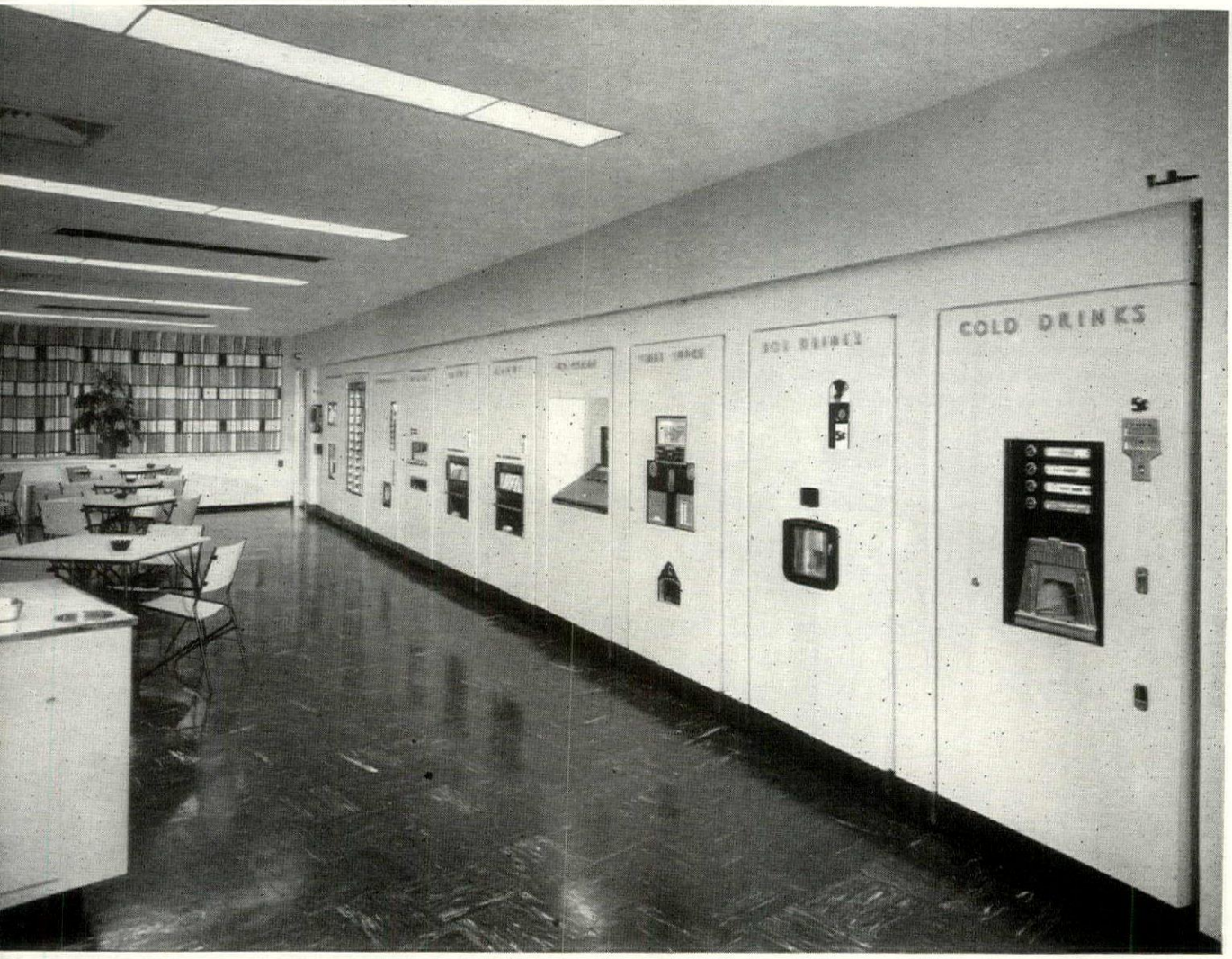
Specifications

FINISHES: Floors—cork, Dodge Cork Co. Inc.; vinyl tile, Robbins Rubber Tile Co.; asphalt tile, Kentile Inc. Walls—plastic sheeting, Joanna Western Mills Co., and L. E. Carpenter & Co.; grass cloth, Charles R. Gracie, Renverne Corp. Ceilings—acoustic plaster or tile US Gypsum Co.

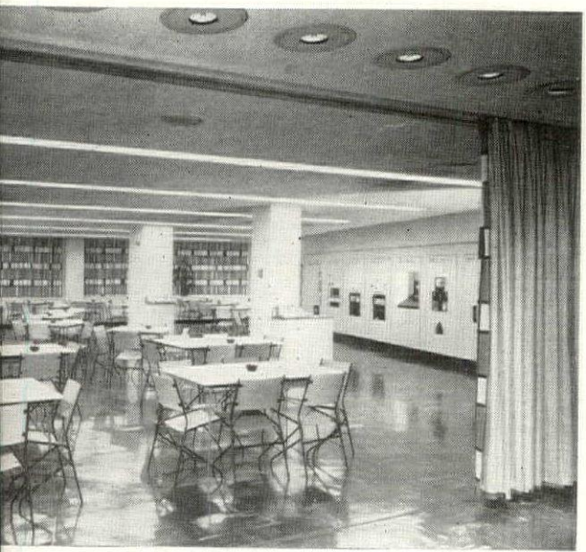
FIXTURES: Lighting—Luminous Ceilings, Inc. and Lightolier, Inc. Vending machines—Vendime Corp. Communications—conveyor belt, Novak Co.; Gray Audograph Co.; Telautograph Corp.; sound systems, Dukane Corp.; central dictating, Ediphone Corp. Drinking fountains—Sunroc Refrigeration Co. Partitions—movable metal, E. J. Boyle Div. of Aetna Steel Products Corp.; others, designed by G. Luss and executed by Jaff Bros. Woodworks. Metal doors—Aetna Steel Prod. Corp. Hardware—Schlage Lock Co.

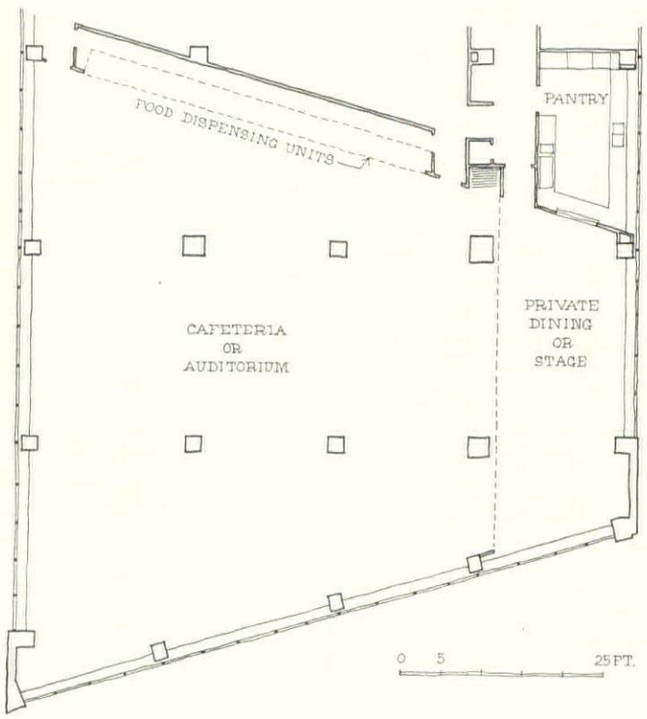
FURNISHINGS: Steel desks and chairs—Security Steel Equip. Corp.; all other furniture designed by G. Luss, executed by Lehigh Furniture Corp. Desk tops—Formica Co. Vertical blinds—Cumberland Furniture Co. Carpets—W. & J. Sloane and Cabin Crafts Inc. Drapery fabrics—Jack Lenor Larsen, Isabel Scott, Stroheim & Romann, Wolfin Associates, Dux Co. Upholstery fabrics—Herman Miller, Marie Nichols, Knoll Associates, Jack Lenor Larsen, Isabel Scott, Boris Kroll Arundell Clarke, Dan Cooper.

Photos: Ben Schnall



Cafeteria is entirely serviced by vending machines. Service wall is of gypsum block and plaster, with recess left for machines. After installation, machines got 20-mm-thick coat of white plastic spray. Recessed toe space got asphalt tile "baseboard." Two vending machine employees—a manager and a matron—take care of lunch and coffee breaks for close to 1,000 employees. Photo (below) is from curtained "stage" end of room, which can also be shut off with folding wood wall.



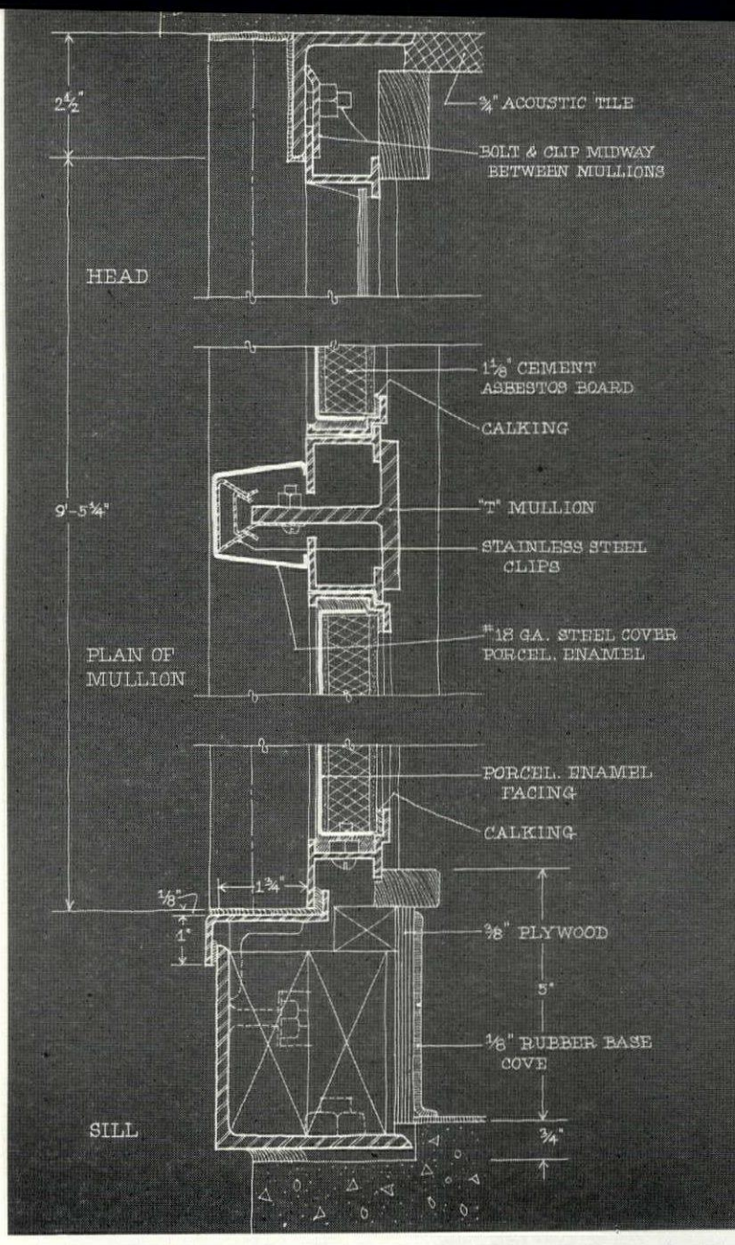


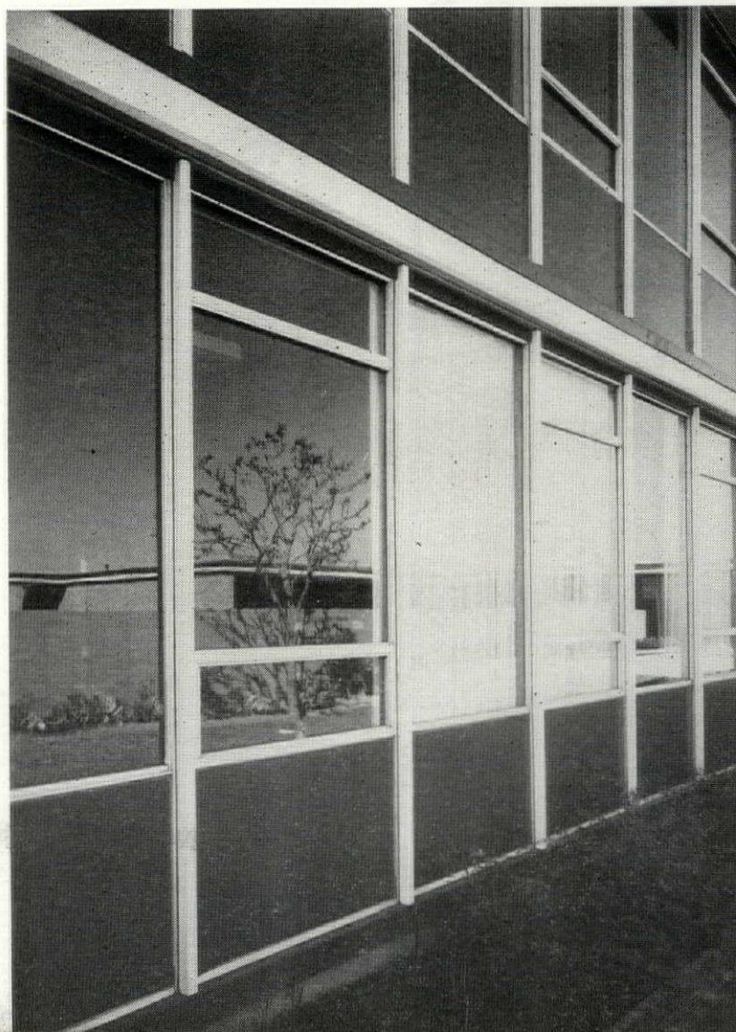
PREFAB OFFICE WALL

combines with lift slab to speed erection, lower costs

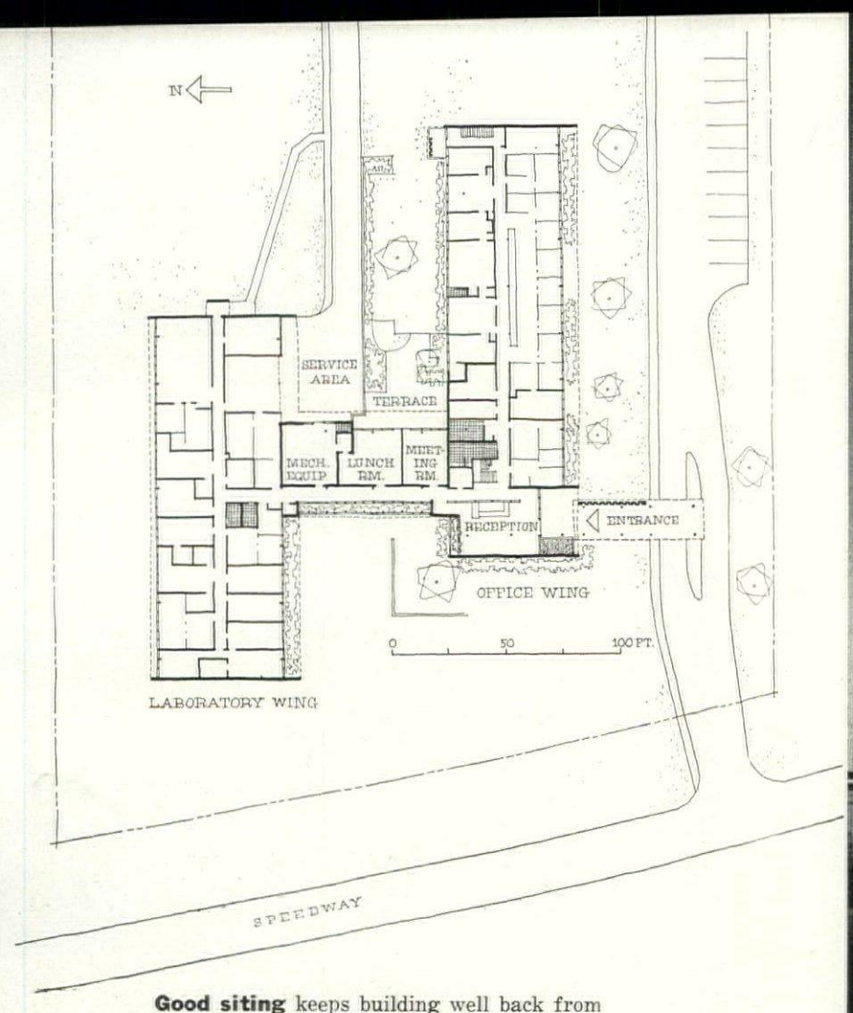
By cutting on-site labor to a minimum, the architects of this small office-laboratory building in Houston were able to bring in its final cost at a low $13.90 per sq. ft., compared with a budget of $15 per sq. ft. and an average of $17 to $22 for similar buildings in the area. Chiefly responsible were simplified planning on a 4′ module, lift-slab construction and the curtain wall (shown at right). Structural steel tee mullions (an insurance against slab deflection which has proved unnecessary in later jobs) are mounted on steel angles shot to the slabs and fitted with preassembled aluminum sash. Locally fabricated panels, of 18-ga. porcelain enameled steel glue-bonded to 1⅛″ cement asbestos board, are quickly set in place—as many as 50 or 60 panels by one man in a day. These panels are 3′-8″ x 2′-5″, have a U factor of .28, weigh 6.4 lb. per sq. ft. and cost $2.48 per sq. ft. installed. Contrasting with the dark blue-green panels are pale yellow mullion covers of 18-ga. porcelain enameled steel, spring-clipped to the exposed tees. Calking and asphalt paint prevent electrolytic action at all aluminum-steel contact points.

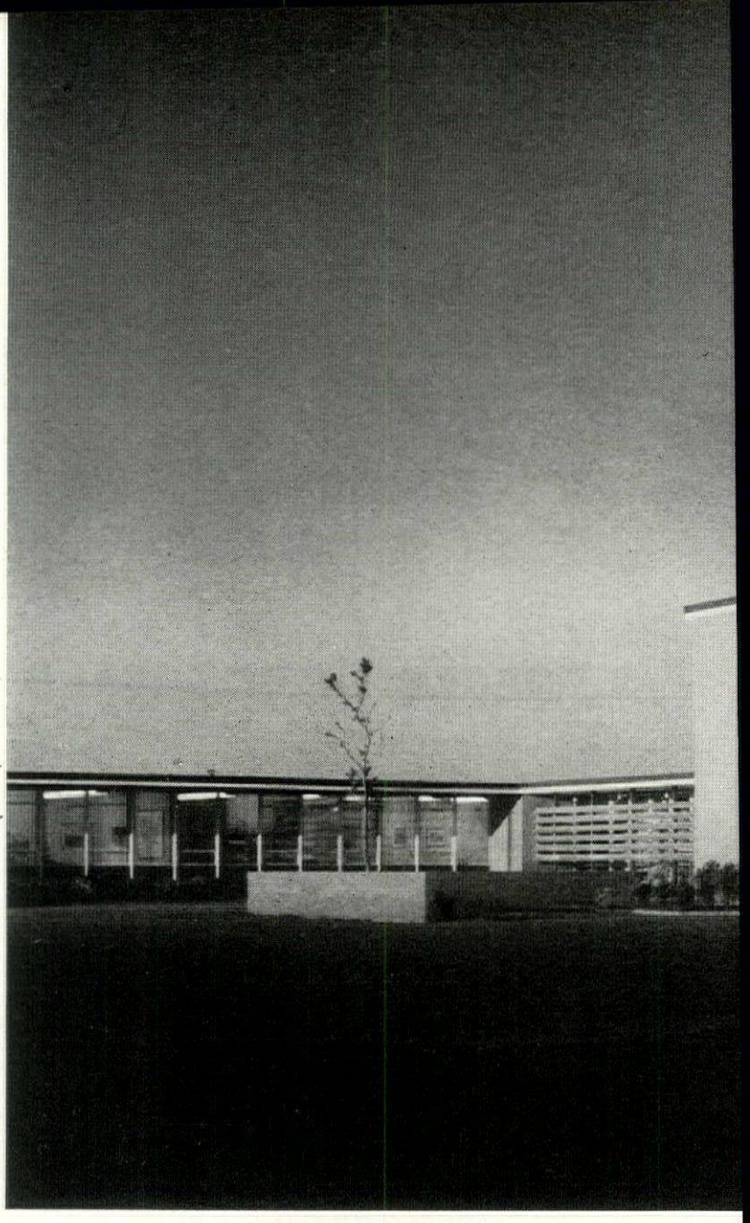
OWNER: Magnet Cove Barium Corp.
ARCHITECTS: George Pierce, Abel B. Pierce
CONSULTANTS: O'Neil Ford, Richard Colley, architects
H. E. Bovay Jr., mechanical engineer
Walter P. Moore, structural enegineer
LANDSCAPE ARCHITECTS: Bishop & Walker
CONTRACTOR: Linbeck Construction Corp.



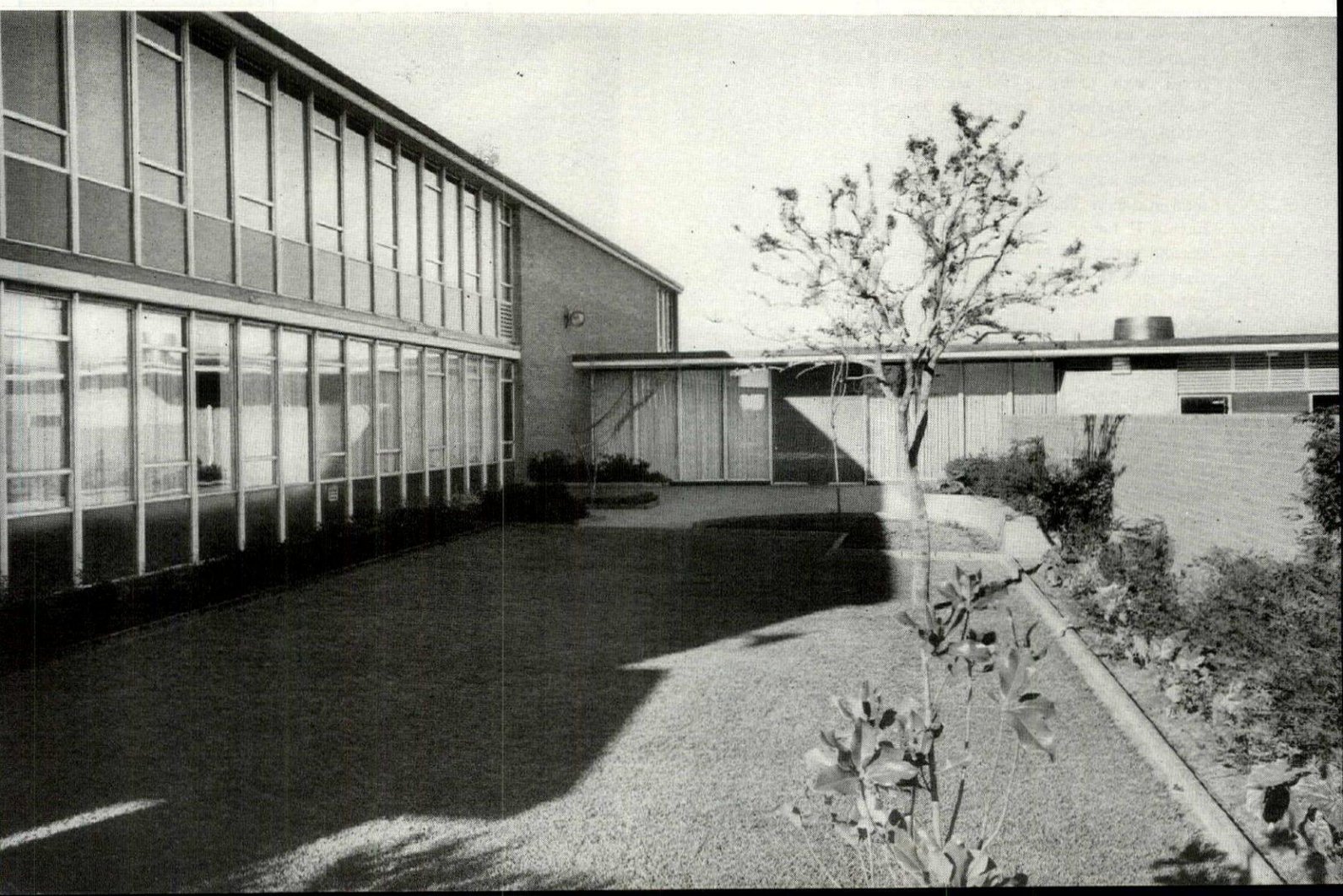


Mullion covers, pale yellow against dark blue-green panels, cost $1.46 per lin. ft. installed, make an attractive wall detail.





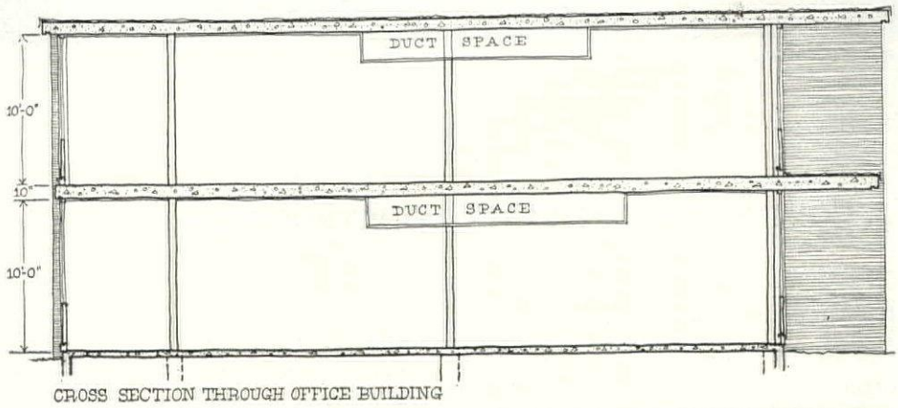
Good siting keeps building well back from property line behind attractive landscaping. Walls facing west are windowless or shielded by fixed louvers, reducing glare and air-conditioning loads and shutting out distractions of busy highway.



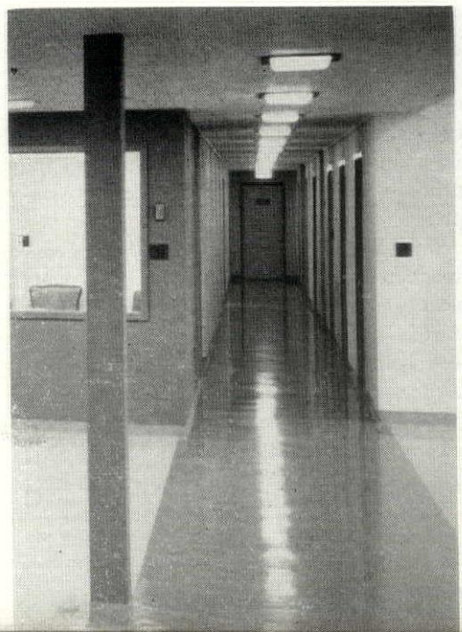
Photos: F. W. Seiders

Main entrance is under freestanding lift-slab canopy, in front of "corrugated" screen wall of pierced brick. South-facing offices are shaded by 7′ overhangs.

Employees' terrace is intimately enclosed on three sides by two-story office wing, one-story link, low brick wall shielding service area at right. Paired doors to coffee shop and meeting room can be seen in background. Housing 110 employees, building serves as headquarters and research center for "mud engineers" who sell and service drilling mud additives to oil industry. One of chief components of "mud" is barium sulphate, found in Magnet Cove, Ark. deposits from which company takes its name.



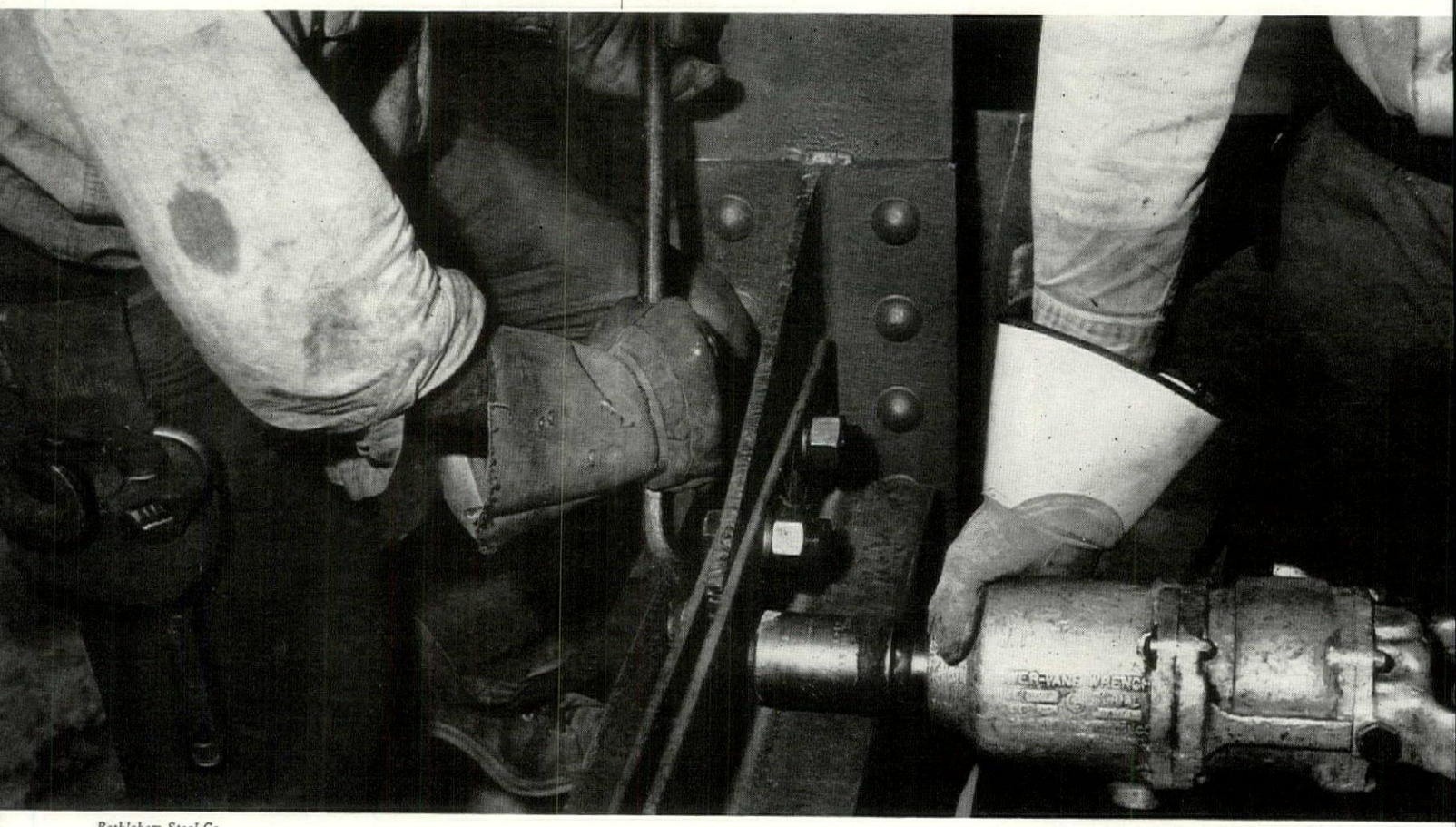
CROSS SECTION THROUGH OFFICE BUILDING



Office interiors have dropped duct space acoustical tile ceilings, rubber tile floors. Lift-slab columns are four steel angles welded together, left exposed and painted.

BUILDING ENGINEERING

1. *High strength bolts for framing economies*
2. *Groined steel vaults for floor plenums*
3. *Well water for low-cost summer cooling*
4. *High frequency fluorescent lighting for greater efficiency*
5. *Engineering notes—brief reviews of* ***six*** *other developments*



Bethlehem Steel Co.

BOLTING OPERATION is done by two men, one to hold bolt while other uses air wrench.

1. BOLTING SPEEDS STEEL CONSTRUCTION

High tensile steel bolts replace rivets for stronger connections and faster erection at up to 40% less cost

Faced with a growing scarcity of riveters, leading steel erectors are turning to high strength bolts for their field connections; and the new bolts are proving so efficient and economical that a major trend to bolting is under way, a trend likely to spell the ultimate end of riveting in steel construction.

Since their first application to bridge construction in 1950, high tensile steel bolts have been used to connect over 600,000 tons of steel framing. Some 80 structures have been bolted, including a 19-story addition to Rockefeller Center in New York City (where building codes are being modified to permit bolting in tall structures), several industrial plants and numerous railway bridges which are subject to severe vibrational loading. In all these installations not one high strength bolt has shown any tendency to back off.

High strength bolting has several advantages:

▸ Greater strength. Tests by the Industrial Fasteners Institute show that two bolts have the shear strength of three rivets of the same size. And the strength of the bolts is more precisely controlled permitting semi-rigid framing. On the 14-story University of Oregon General Hospital in Portland, Engineers Cooper & Rose developed 47% of full continuity to cut the framing weight by 7% and save 80 tons of steel.

▸ Smaller crews, faster erection. At the huge AEC plant in Pike Co., Ohio, two process buildings are bolted while a third is riveted. The two-man bolting crews fastened 350 to 450 high strength bolts per shift, while four-man riveting crews averaged only 175 rivets per shift, including 15% cutouts. The larger riveting crews also have the expense of moving and operating a furnace, estimated at $3.50 per hour.

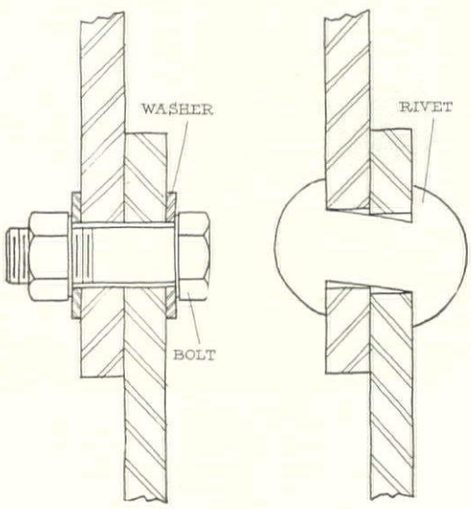
▸ Easier work. Bolting can be taught quickly to unskilled men. The bolts are inserted during erection of a frame and tightened in a second pass over the structure when the members are lined up. In riveting, the frame is bolted together temporarily, the members lined up, then the riveters have to remove the bolts and drive in rivets, making at least three passes over the structure. The pneumatic wrench used in bolting is lighter than a rivet gun and is easier to hold since it does not recoil. Bolting is safer, too, eliminating the fire hazard of furnaces and the flying snaps that sometimes break off as the rivets are driven.

▸ Less noise. The air impact wrench used

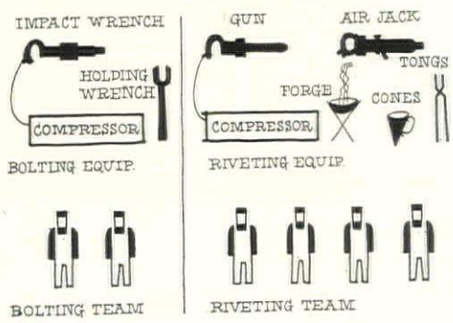
SPOT CHECK is made with manual torque wrench. Only every tenth bolt is checked.

Photos: (above) Town & Country; (left) Russell, Burdsall & Ward

WRENCH CALIBRATION is done daily by tightening standard bolt to refusal against hydraulic jack. Air pressure is adjusted to give desired tension in bolt.



BOLTING VS. RIVETING. Bolts (left) create positive controlled frictional force between contact surfaces to resist shear, while rivets clamp surfaces by contraction alone. Sketch (at right) dramatizes manpower and equipment advantages of bolting over riveting.



in bolting makes less than half the noise of a rivet gun and for less than half the time. Several steel-framed hospitals are being bolted for this reason.

▸ Easier inspection. Every single rivet has to be inspected for tightness compared to an average 10% of the bolts. Of the 260,000 rivets used on the Ohio AEC plant 15% were loose, so had to be replaced. Of the 1.5 million high strength bolts used on the same plant, only ½ of 1% were off more than 10% from the specified torque values.

▸ Lower cost. While high tensile steel bolts cost more than rivets (25¢ vs. 5¢) the structure goes up faster and at a total lower cost. The use of high strength bolts on the Springfield, Pa., high school by Steel Erectors Max Corchin & Son Inc. saved two weeks in erection time and cost only 60% of the estimated erection cost of riveted construction.

Against these advantages of bolts must be set the extra shopwork required to remove punching upsets and burrs; also the need for beveled washers on flanges having slopes greater than 1 in 20 (standard wide-flange beams). This requirement is a recent amendment to AISC specifications on high strength bolts. (Other amendments: contact surfaces need no longer be free of paint and the required torque tension has been raised 15% to 105% of the minimum proof load of the bolt.)

High tensile steel bolts clamp adjoining members together under high pressure, creating sufficient frictional force between contact surfaces to resist shear. The bolts are made of quenched and tempered carbon steel having 110,000-psi tensile strength, more than double that of the standard rivet. Each bolt is fitted with two hardened washers and tightened to develop a unit stress on the mean thread area of 80,500 psi. Tightness is controlled by the operating air pressure; the wrenches are calibrated daily so that full torque is applied when the nuts are driven to refusal. The tightness is checked by manual torque wrenches.

Too meticulous attention to the upper limit of prestress in a bolt is unnecessary and only increases erection costs. Recent AISC studies show that half a turn from the "finger-tight" position produces the minimum tension specified. They recommend giving each bolt one full turn, putting a high prestress in the bolt which improves performance, especially under vibrational loading. Failure due to breakage of stripped threads only occurs after two to three turns. Thus bolts can be tensioned by large hand wrenches where air is not available; using impact wrenches the air should be adjusted to give one full turn in about 10 seconds.

2. PANEL HEATING USES METAL FORMS

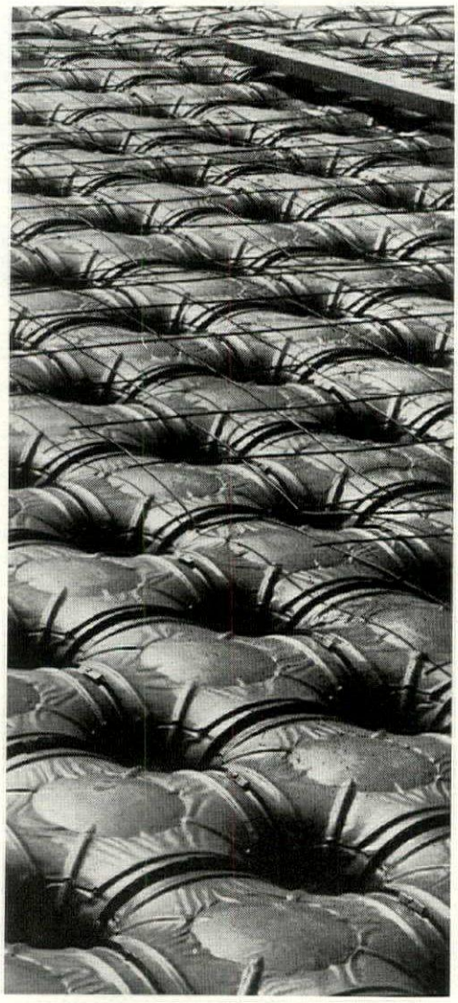
Hollow floor slabs double as radiating and ventilating panels for schoolrooms, cost $1.03 per sq. ft.

This unique floor construction system provides radiant panel and perimeter convection heating that can also be used for cooling and positive classroom ventilation. Covering heating and ventilation alone, the mechanical contract came to $1.03 per sq. ft. including fans and two counterflow furnaces, only 9½% of the total construction cost of the school. Other advantages: redundant concrete at the midsection of the floor slabs is eliminated; zone control is achieved on opposite sides of the double-loaded corridor and the building's thin 1½" top slab reduces the time lag in temperature control of the radiating surface.

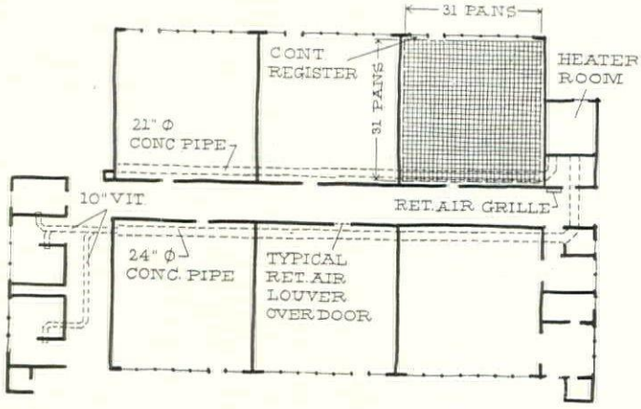
Key to the integrated plenum construction is a 26-ga. steel form, 1' square and 3½" high, in the general shape of a groined vault. The squares are shop-assembled in sections of eight and locked together atop a 4" reinforced bottom slab poured over a rock fill and rough finished. The metal forms cover the entire floor area except for 3"-diameter vertical openings at the intersecting corners of the steel forms. Over this is poured a 1½" thick top slab. The result is two relatively thin concrete slabs, of 9" total thickness, separated by a 3½"-high catacombed air space and joined by 3"-diameter columns spaced 12" on center each way. To reduce heat loss each slab has ⅝"-thick edge insulation.

A heater room at one end of the school supplies up to 10 cfm of warm air per student (six air changes per hour) at up to 106° F. through two 24"-diameter insulated concrete pipes laid underground on either side of the central corridor. The air passes into the floor plenums through sheet metal sleeves spaced 3" o.c., then enters classrooms through continuous perimeter registers at about 85° F. Return air passes through louvers above classroom doors into the corridor and back to the heater room. (Air from the toilet rooms is not recirculated.) Control is by motorized mixing dampers at the head of each duct, thus opposite sides of the school are zoned. About 30% to 40% of the heating is by radiation and convection from the floor slabs; 60% to 70% from the ventilating warm air. In summer, the school is partially cooled by 100% outside air ventilation.

The Alta Heights School, in Napa, Calif., is designed by Donald Macky, architects, and G. L. Gender, mechanical engineer.



STEEL FORMS, stamped 12" square, are locked into position on lower slab, covered with reinforcing mesh, and are then ready for pouring of top slab.



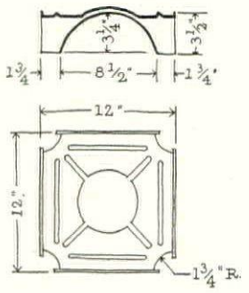
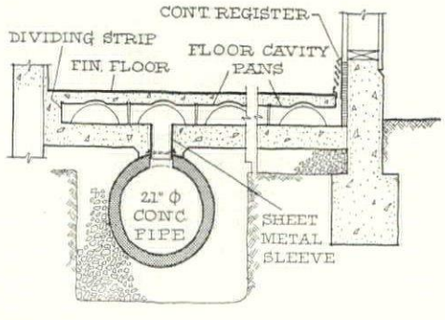
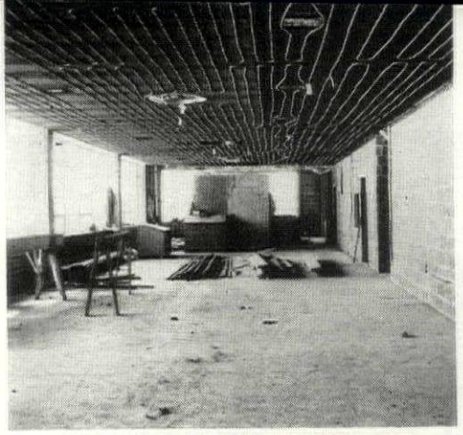


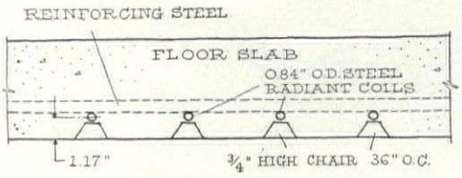
Photo: Pictorial House; (opp. p.) Bennett



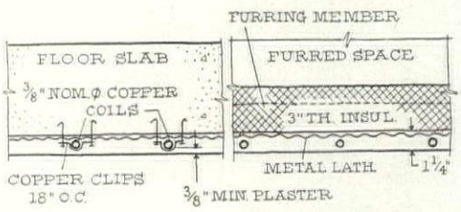
FLOOR SECTION (above) shows metal sleeve which delivers air from supply pipe to floor plenum. Photo (left) shows slab being poured.



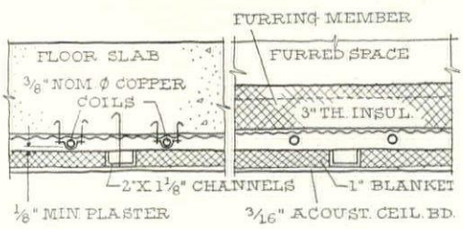
RADIANT COILS, here shown in hung ceiling, are installed in five different ways:



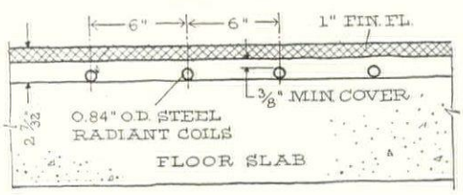
1. IN SLAB CEILING coils are set 1" deep and are steel to withstand casting pressures.



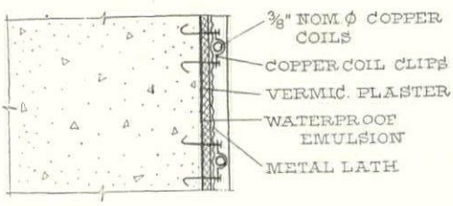
2. IN HUNG CEILING, with or without furring, copper coils are set ⅜" deep in plaster.



3. IN ACOUSTIC CEILING coils are set only ⅛" deep and only 50% covered with tile.



4. IN SLAB FLOOR steel coils are covered with ⅜" of concrete and 1" finished floor.



5. IN WALL copper coils are set ⅜" deep in 1" plaster backed by lath, ½" insulating plaster and vapor barrier.

3. PANEL COOLING USES WELL WATER

Radiant heating system for 214-bed hospital is modified to provide summer cooling for only 30¢ per sq. ft.

Well water at 50° F. provides low-cost cooling at the Long Island Jewish Hospital in Glen Oaks, N.Y. Eliminating the usual refrigerating equipment, well water chills the water circulating in radiant panels set in the walls and ceilings and tempers the outside air brought in to ventilate the building. Installed cost of the additional pumps, piping, controls and heat exchangers was $55,000 or 30½¢ per sq. ft., and only 6½% more than the $840,290 mechanical contract.

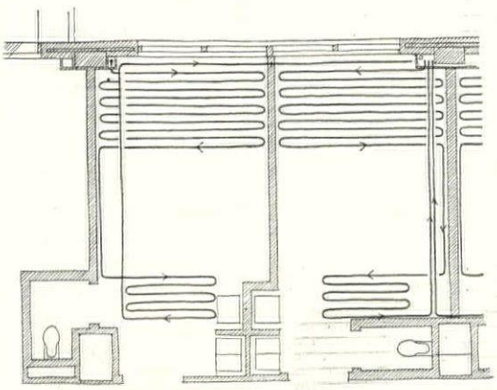
The system uses 1,350 gpm of well water (compared to 600 gpm for heating) and produces the equivalent of 550 tons of refrigeration for the 180,000 sq. ft. building, enough to cool the interior to 79° when outside dry bulb temperature is 90° F. Use of well water was permitted by the State Water Power Commission only on condition that the water be pumped back into the ground.

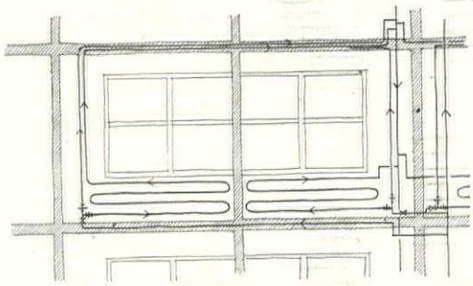
Radiant coils around the perimeter of the five-story, 214-bed hospital are set in the bottom of the floor slabs wherever possible, using 250′ long runs of ½" diameter steel pipe laid 6" o.c. No pipes are laid in the center third of the spans to avoid reducing compressive strength in the reinforced concrete structure. When two thirds of the slab area provides insufficient radiant surface, a ceiling is hung from the slab and the coils are embedded in the entire area of the ceiling. Additional cooling capacity is provided by economical type L copper coils set into the walls beneath the windows.

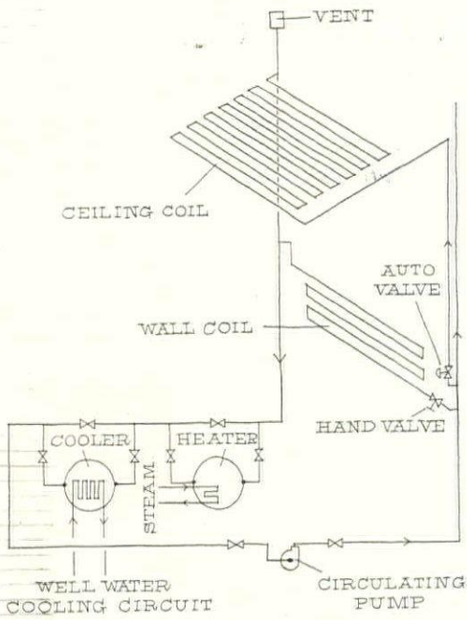
The building's mechanical ventilation system is modified by adding cooling coils (for humidity control) to the basic air filters and heating coils used for winter warming. Tempered air is delivered to the corridors on each floor. Exhaust is by two duct systems, one from the central service areas, the other from the toilets of the perimeter bedrooms.

To avoid condensation in the building, a control system of indoor and outdoor thermostats with several hygrostats on each floor keeps the chilled water in the cooling panels above dew-point temperature. When the average humidity in the building becomes excessive, the well water may be heated or the cooling system shut down. In between seasons low dry bulb and high wet bulb temperatures might render the system ineffective, but the 100% outdoor ventilation would still keep the hospital reasonably comfortable.

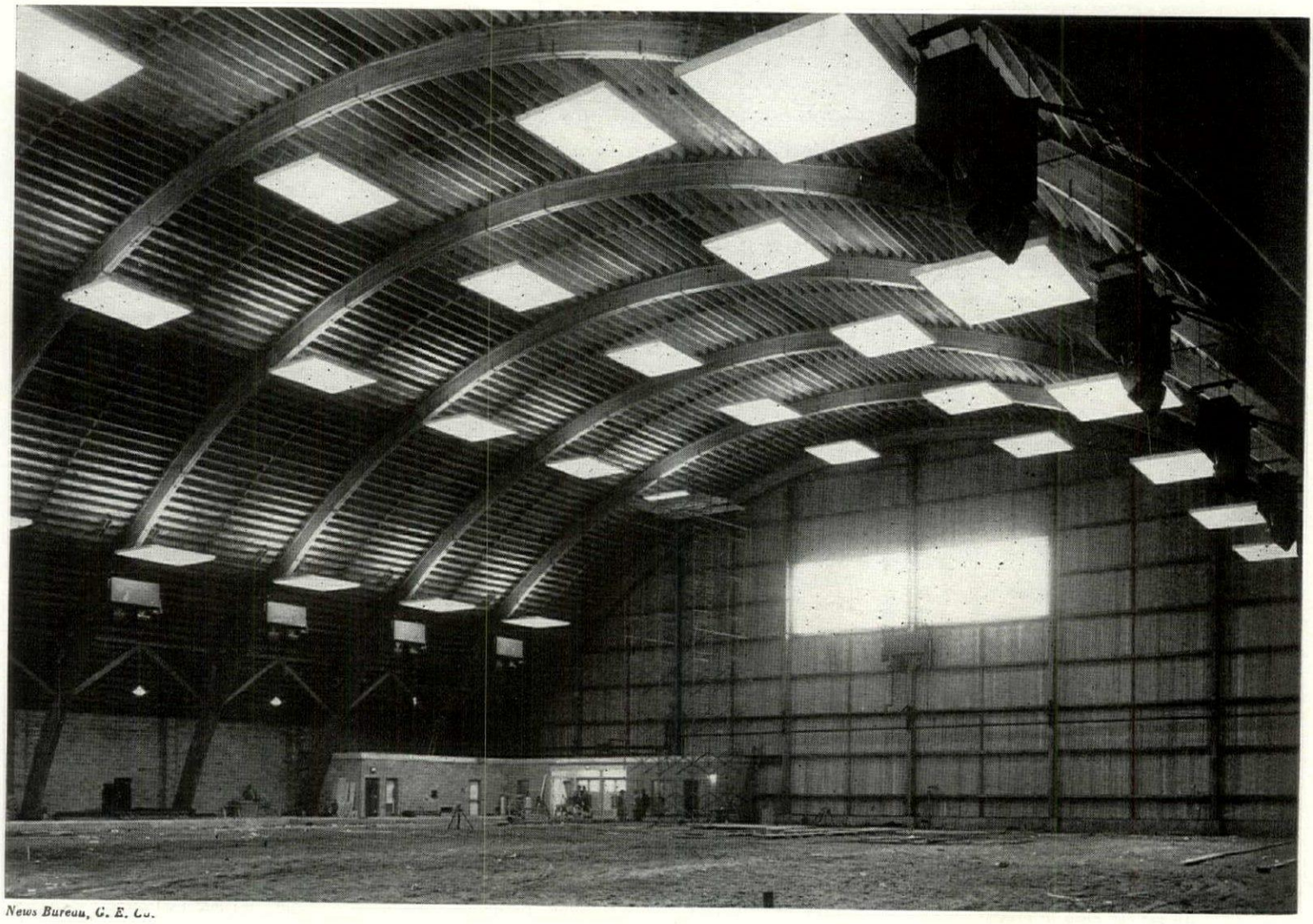
Louis Allen Abramson, architect; Hoffberg & Ateshoglou, structural engineers; Slocum & Fuller, mechanical engineers.







PANEL DESIGN allows 50° F. for cooling and 120° F. for heating with temperature rise and fall between flow and return mains of 6° and 20° F., respectively. System is designed for summer duty, resulting in slow winter circulation when control becomes sluggish. Better control could be obtained with separate heating and cooling coils but would be costly.



News Bureau, G. E. Co.

BRIGHT LIGHTING at 46 foot-candles, almost twice that of standard arenas, fills 190'-wide Union College field house.

4. HIGHER FREQUENCIES IMPROVE FLUORESCENT LIGHT

400-cycle, 600-v. lighting cuts installation costs 10%, operation cost 50% and gives 20% more light

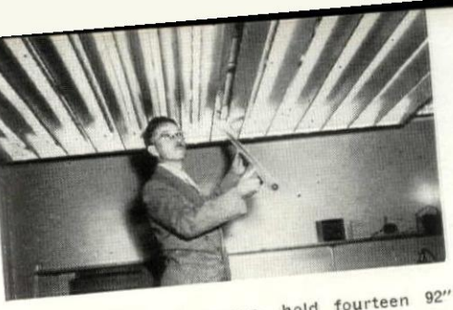
Because current reversal in a.c. circuits takes place faster at 400 cycles per second than at the standard 60 cycles, a fluorescent lamp at the higher frequency does not deionize after each half cycle. Consequently it gives a more constant light having considerably greater output for the same power consumption. Other advantages: 1) lower heat loss, with consequent savings in air-conditioning load; 2) lighter, cheaper fixtures, since high-frequency lamp ballasts are 90% lighter and 50% cheaper than 60-cycle ballasts; 3) fewer circuits, with consequent savings in installation and wiring; 4) less noise, since the 60-cycle hum is eliminated; and 5) better light, with a considerably reduced stroboscopic effect.

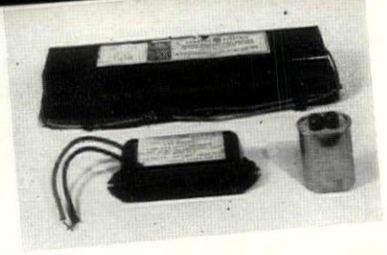
Already used for lighting in aircraft and buses, and for growing plants under artificial light, higher frequencies have at last been applied to buildings by General Electric engineers at the Union College Alumni Memorial Field House, in Schenectady, N.Y. Here 35 high-bay fluorescent lighting fixtures only 8' square, and operating at 400 cycles and 600 v., provide 46 foot-candles of light over a 190' x 206' indoor arena. Power consumption is only 1.36 w. per sq. ft.

Compared to the best alternate solution considered for the arena (high output, incandescent mercury lamps), the new high frequency lighting proved economical. It cost 10% less to install, in spite of the extra cost of two 30 kw. motor-generator sets to boost the 60-cycle, 208-v. supply current up to 400 cycle and 600 v.; it is expected to cost 50% less to operate and maintain, due largely to lower power consumption and fewer circuits; it provides 20% higher lighting levels, 46 foot-candles vs. 38; and it avoids the undesirable glare that occurs with single filament mercury lamps. Though in its infancy, this 400-cycle, 600-v. system promises to provide better lighting at less cost in similar high-bay areas—factories, stores, etc.—where the lighting load is large enough to warrant the expense of motor-generator sets. It may prove even more advantageous when the expected cheaper magnetic frequency multipliers become available.

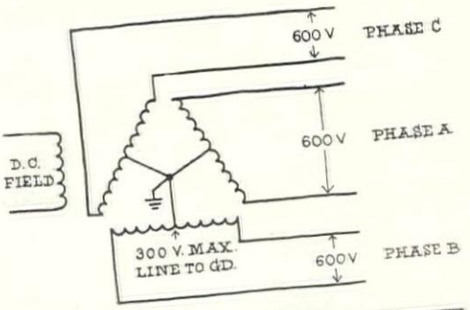
The field house is supplied with 4,160-v., 3-phase power through a 208Y/120-v. secondary distribution center. Three feeder breakers supply the 208-v. motors of the heating equipment and the 120-v. incandescent lighting used in the halls and locker rooms. Two other feeder breakers supply the two motor-generator sets, which are regulated so that the voltage will not exceed plus or minus 5% and the frequency plus or minus 3%. Each generator is wired to supply three 600-v. phase circuits with the midpoint of each phase grounded to meet the National Electrical Code requirement of 300-v. maximum line-to-ground.

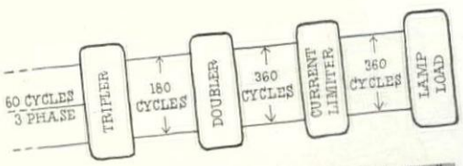
Each motor-generator set feeds half the lighting fixtures through two 7-circuit panelboards. Thus the 44,000 sq. ft. arena has only 14 distribution circuits compared to 84 required for standard 60-cycle lighting. Each circuit supplies alternate fixtures,

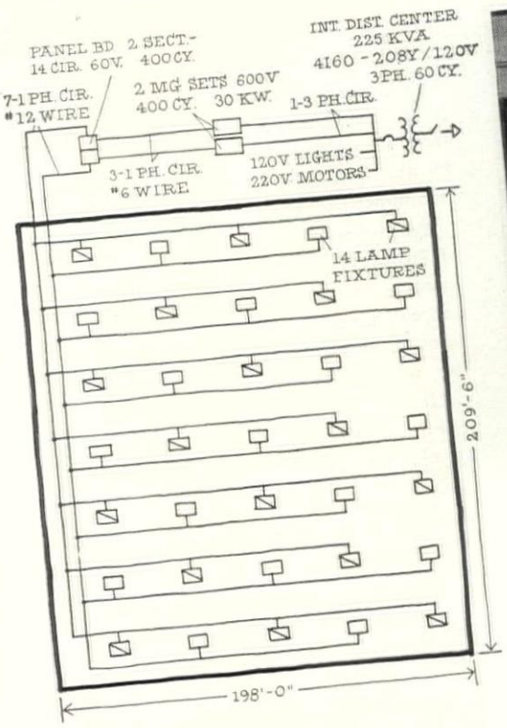




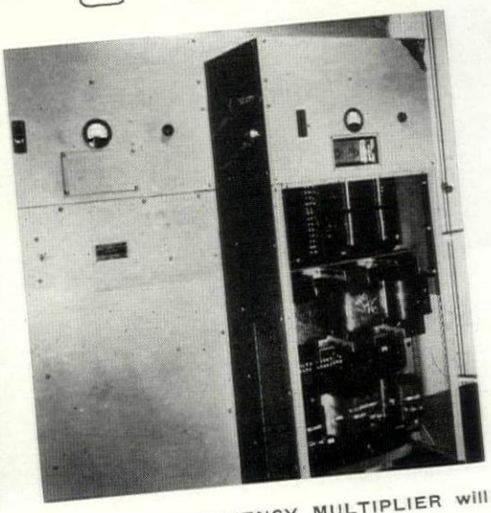
FIXTURES are 8′ square, hold fourteen 92″ lamps (above) which will be changed every two years under group replacement program. Right above: 400 cycle ballasts are 3-oz. capacitor and 2-lb. choke coil units, both much smaller than the 8-lb., 60-cycle ballasts. Below: only 14 circuits (vs. 84 for conventional lighting system) and two panel boards are used for 198′ x 209′ area.







MOTOR-GENERATOR produces 600-v. 400-cycle power. Wiring diagram shows how lines are grounded for 300-v. line-to-ground limit.



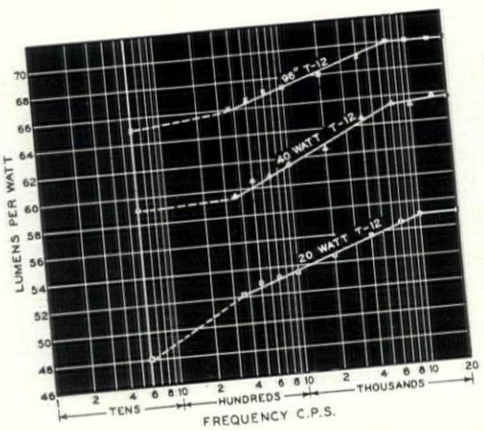
MAGNETIC FREQUENCY MULTIPLIER will do same job without moving parts but is now too costly. Flow diagram is above.

either two or three, on each five-fixture arc (see fixture wiring diagram above), to assure even light distribution with only one generator in operation.

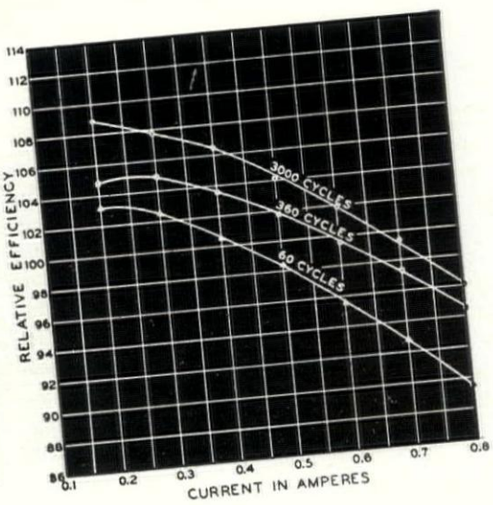
Although the circuits are long (up to 700′), they have no appreciable voltage drop because of the high voltage and the low current, only 2.3 a. across each fixture with a maximum of 6.9 a. in the three-fixture circuits. Branch circuits consist of No. 12 wire in steel conduits (in which the impedance due to 400-cycle flow is insignificant).

Each fluorescent lamp requires a ballast. At 400 cycles tiny capacitor or choke coil ballasts can be used, which weigh only 3 oz. and 2 lb., respectively, compared to 8 lb. for standard 60-cycle ballasts. One capacitor or choke coil ballast is connected in series to alternate lamps, thus balancing out capacitance and inductance to give a power factor of unity in the circuits and maximum utilization of the generators.

Architects: McKim, Mead & White. General Electric Engineers John H. Campbell and Howard D. Kurt designed the lighting.



LIGHT OUTPUT from low-wattage lamps increases more sharply with frequency than high-wattage lamps. Higher frequencies permit use of higher currents with no loss of lamp life.



LAMP EFFICIENCY is maintained by higher frequencies when amperage is increased, due to smaller power losses at electrodes and improved wave shape (less deionization).

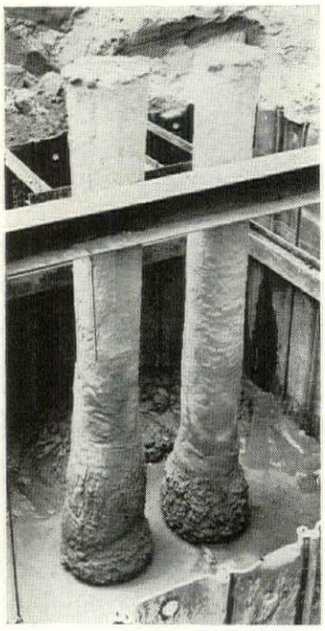
5. ENGINEERING NOTES

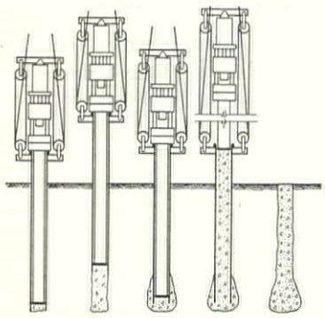
PRESTRESSED GIRDERS

Warehouse construction costs are cut to $3.87 per sq. ft. by prefabrication

Precast concrete design cut costs and contruction time in this 68,000 sq. ft. warehouse for the Charlotte Mutual Grocers Corp. in Charlotte, N.C. Designed both in precast concrete and in steel (structural steel columns with bar joists and a 2″ concrete roof deck), the concrete design came out the cheaper by 24.1¢ per sq. ft. at $263,210, or $3.87 per sq. ft. including air conditioning of 2,600 sq. ft. of office space. Further economies are expected since the fireproof concrete building won a low insurance rate (6 mils per hundred) and will require little maintenance.

The precast columns, 14″ square, are set 45′ and 25′ apart, spanned by 45′ long, 30″ deep, posttensioned girders which in turn are joined by 24′ long, 24″ deep purlins, also posttensioned (being raised into position in photo above). The roof planks, 18′ x 18″ and 1¾″ deep, are pretensioned, with the prestressing wires anchored by bond with the concrete. Adjacent planks butt together with recesses for grouting, and the deck is topped by a standard built-up roofing. The structure is tied together by welded reinforcing angles and grouted. Daylight is provided by a 14″ x 46″ plastic bubble skylight in each bay. J. N. Pease & Co., architects and engineers; J. A. Jones Construction Co., general contractors.





PEDESTAL PILES

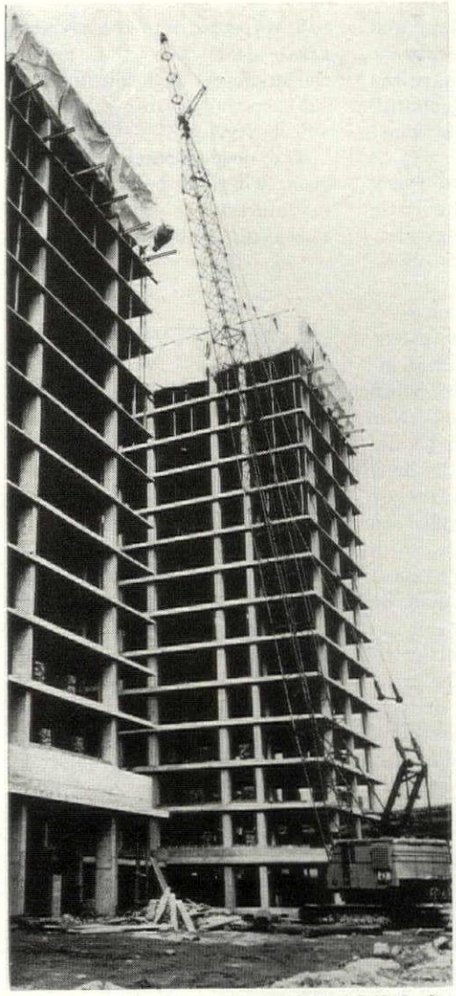
High capacity compressed concrete foundations support housing project

For the first time, compressed concrete pedestal piles take full advantage of New York City's revised 1948 Building Code which allows the maximum load on non-end-bearing (friction) piles to be raised from 30 to 60 tons under certain soil-bearing conditions. Such piles support four 20- and 21-story flat-plate concrete apartment buildings at the Corlears Hook Cooperative Housing Development. Consisting of 3,784 60-ton pedestal piles, averaging only 21.13′ long, the foundations cost about $500,000, $250,000 less than an alternate design of 60′-long tapered friction piles.

Borings at the site showed rock at a depth of 80′ to 100′, overlaid by sandy soil of too loose a consistency in the upper strata to support heavy unit pile loads. The economical solution proved to be cast-in-place piles having a 17″ diameter compressed concrete shaft atop a 30″ diameter pedestal base. The pedestal at the base of the pile is made by placing a dry mix concrete in a steel casing and compacting it with 26,000 ft.-lb. blows of a steam-hammer as the steel shell is extracted. The result is a dense concrete bearing pile, that bulges outward at the base, thus compacting the granular soil between and beneath adjacent piles and upgrading the bearing capacity of the strata. Two such piles are shown above, exposed for inspection.

The revised New York City Code demanded 1) a soil boring of each 2,500 sq. ft. of building coverage; 2) at least three test piles driven in each area in which soil conditions are substantially the same; and 3) a test loading of a typical pile for each 15,000 sq. ft. of building coverage. Under a test loading of 120 tons, twice the 60-ton working load, these pedestal piles showed a maximum *gross* settlement (before removal of the test load) of ¼″, only a quarter of that permitted by the Code and a maximum *net* settlement (after rebound following removal of the load) of 9/64″. The average net settlement was 7/64″, only one eleventh of that permitted by the Code. The maximum settlement after completion of 20 stories was ¼″ and the greatest differential settlement between columns was ⅛″ (the designers allowed for ⅜″).

The buildings are designed by the late George W. Springsteen, architect, and Herman J. Jessor, associate. The structural engineers are Farkas & Barron; Western Foundation Corp. designed and built the foundations.



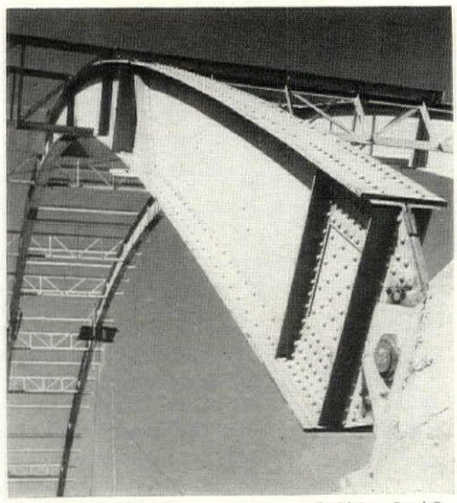
American Chain & Cable Co. Inc.

TALLEST CRANE BOOM

230′ crawler crane raises height of low-cost concrete construction

Another unique feature of the Corlears Hook Cooperative Housing Development (left) is the appearance of crawler cranes with 230′ booms, the world's longest. Working in pairs, these cranes move 50,000 cu. yd. of concrete and 6,000 tons of reinforcing steel directly from delivery trucks to the point of use in about 25% less time than conventional elevators and skip hoists. Further, on these four buildings they replace eight elevators, eight towers and eight skip hoists. Previous cranes only reached about 14 stories and thus limited the use of low-cost concrete construction to buildings that height.

The long crane booms are made of high-strength steel tubing welded into cigar-shaped boom frames, a 190′ basic boom and a 40′ jib that can be added as necessary. Load capacity is 7,000 lb. at 80′ radius with a hoist rate of 202 fpm. The project is being built for the East River Housing Corp. by the Knickerbocker Construction Corp.



Bethlehem Steel Co.

LONGEST STEEL SPAN

Riveted arches for hangar are tied together with prestressed tie bars

Spanning 296′-7″ with a rise of 80′, the built-up riveted steel arches in the new American Airlines hangar at Boston's Logan Airport are believed to be the world's longest. The structural framing weighs only 12½ psf. Including purlins and an insulated steel roof deck, the hangar weighs 17½ psf. Total cost of the 240′-deep hangar was $2.2 million, about $18.50 per sq. ft. including air-conditioned office space and radiant heating in the hangar floor. Erected cost of the 1,100 tons of structural steel in the hangar: $375 per ton.

The two-hinged arch design was allowable thanks to excellent clay foundation conditions and is cheaper than a more flexible three-hinged design. Arches spanning only 268′ atop 22′-high concrete buttresses were also considered, but came out $46,000 more expensive. The eight arches, 50½″ deep and weighing 280 lb. per ft.-run., are spaced 40′ o.c., 20′ in the end bays. Lateral thrust and uplift forces due to wind are carried by 20″ square prestressed concrete tie bars set in the hangar floor and having a live load elongation of 0.41″ compared to 1.53″ for mild steel and 7.65″ for high-strength bars used alone. Samuel Glaser Associates, architects; Goldberg, LeMessurier & Associates, structural engineers.

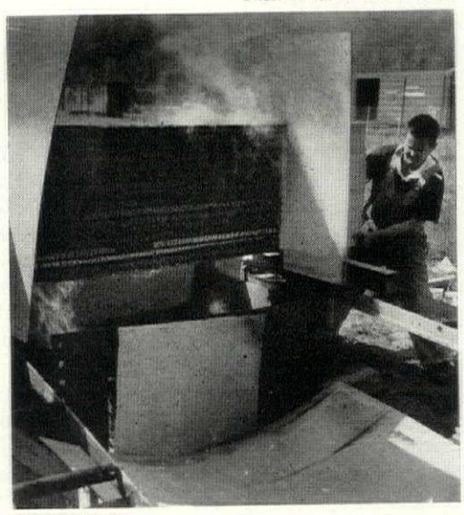
PRESS BASE

Prestressed girders cut weight 42%, halve cost of 8,000-ton supports

For the first time the high strength and lightweight advantages of prestressed concrete have been adapted to foundation problems.

In designing an 8,000-ton aircraft forging press, the Aluminum Co. of America, at their Cleveland plant, encountered two foundation problems: 1) the 14′ x 25′ press, with a design weight of 2,300 tons, had to be carried on foundations only 28′ wide; and 2) the allowable bearing capacity of the underlying soil was only 3,200 psf. The solution: two 86′-long posttensioned prestressed concrete girders, each 9′-6″ x 6′-9″ in section, to transmit the weight of the press to a 2′-thick foundation slab beneath a 14′-6″ wide access pit enclosed by the two girders. This foundation weighs 3,285,000 lb. compared with 7,800,000 lb. for a customary reinforced concrete mat, and was built for half the cost.

Photo-Art Commercial Studios



TIMBER FIRE TEST

Laminated timber beam only 25% burned after one hour at 1,270° F.

An 8′ length of 9″ x 27⅝″ glued laminated beam was recently subjected to an open flame in an open-topped crucible by Timber Structures, Inc. Pyrometer observations showed the temperature along the sides of the beam rose from 500° F. at the beginning of the test to 1,600° F. at the end. Average during a full hour of exposure was 1,270° F.

Results, obtained by measuring a sawed section: the fire penetrated an average depth of 1⅝″ (the thickness of one lamination) beneath the beam and ⅞″ at the sides, but was stopped by the charred wood, which did not drop off to any great extent. The remaining uncharred section measures 7¼″ x 26″ and is 75.8% of the original section. Thus the beam would still be serviceable given a safety factor greater than 2:1.

for all concerned

CONGRATULATIONS

The medal and award season is on again, meaning that a goodly number of architects, planners and others connected with building are at the receiving end and a great many more are not. FORUM wishes to congratulate all good men—those who made it because they made it, and those who did not even though they did not, or (*shush*, my friends) in some few cases because they did not.

The AIA gold medal is to be conferred on that fine gentleman and humane Architect-Planner Willem Dudok, who won by a whisker over that other fine gentleman and creative Architect-Planner Clarence S. Stein (see *News*). Congratulations to both. AIA's top architectural honor awards are to go to Eero Saarinen (two of them), Ernest J. Kump, Ralph Rapson and Pace Associates (AF, May '55). Our congratulations to all, and to the 22 merit award winners as well—and to all others among 22,000 registered architects and uncounted associated designers and draftsmen, to the degree that they worked for architecture and to the degree that they did their rising best.

Renewed congratulations to the whole list whom AIA gold-medaled in recent years—Frank Lloyd Wright, Sir Patrick Abercrombie, William Delano, Bernard Ralph Maybeck, the late Auguste Perret, the late Charles Maginnis, the late Eliel Saarinen. — And congratulations, just as hearty, to those whose work was too strong or too controversial for the dear old AIA, and who, unlike Wright, may not outlive all efforts to bury them. For example, there is another list, among whom Wright alone is shared by the AIA, that Eero Saarinen nominated in FORUM as the "form-givers" of our age (AF, July '53). They were LeCorbusier; Mies van der Rohe; Aalto and the Scandinavians; Gropius; Clarence Stein; Wurster and Belluschi; Nervi, Bucky Fuller and the engineers. Betting on history is risky but in those great sweepstakes Saarinen's ticket would carry our money—if it had to be a straight-ticket choice.

History itself may of course even now be nominating somebody whose genius not one of us has the wit to recognize.

An award is something which is less blessed to give than to receive—the giver is the one who is really judged.

LIMITS OF CRITICISM

One reason architectural criticism gets little attention is the flu-flu critic. The flu-flu critic delivers judgments on buildings whose requirements he has not studied and whose conditions of erection he does not know. They are indeed buildings he has not seen at all and must judge by the same photographs and drawings that he gives to his readers, who in turn cannot check him as they check a drama critic by witnessing the original performance.

Before a critic of architecture is allowed direct positive comment on the practical aspects of a building, he should be required to depose: "I have studied the program, the costs and the conditions." Before he is allowed direct positive comment on the esthetics of a building, he should be required to depose: "I have seen the building itself inside and out." Before he makes direct positive comment on the building's operation: "I have questioned the occupants"; and before direct positive comment on the social effect: "I have the dope from the neighbors." Otherwise his comments must be qualified.

It is not essential to every critical purpose that the critic be able to design buildings himself. Architects like to make this demand but they forget that many a shrewd lender exercises quite remarkable judgment on buildings, for purposes of investment, without ever being able to draw a stroke. Nor would architects like to be debarred from criticizing the lines of automobiles — which they themselves are not trained to design.

Again, if the critic does have design experience, the skill or clumsiness of his results is no guide to the quality of his criticism. He may be a better critic than he is a designer, or vice versa. Some clumsy designers speak with great illumination; some sharp-eyed observers are all thumbs on the drawing board.

Pictures are a needed tool of architectural criticism but a tricky one. Photography meets undue skepticism as often as undue credence. Some photos are "better than the building" but many buildings are "better than the photograph."

Most of the small group of men trained in architectural photography are excellent critics themselves—they go through so many buildings with a studious eye. The photographer's dilemma is this: shall he try for exact justice to the building as such, for the sake of even-handed fairness, or shall he ignore imperfections and extract the architect's essential ideas in the most attractive way to inspire others? Honest men have tended either way.

Models are most deceptive when best executed. There is charm in the miniscule scale, and the freedom of viewpoint, which the eye must be trained to make allowances for.

Architectural editors are trained to "see through the photographs" better than most but must sometimes choose between an unvarnished record and a beautiful magazine calculated to lure people into the architectural ideal. The more mature the audience, and the finer the subject, the greater can be the objectivity.

The deeper reaches of criticism, where it begins to share in the very act of creation, are a separate subject.

ACCIDENT

As we go to press the best available interpretation of the accident in the New York Coliseum, where 51 men were injured and one man was killed by the collapse of a concrete floor pour, lies in the domain of form engineering. Concrete forms are among the many temporary auxiliary structures that contractors use to produce the main permanent structure of the building. Here was a concrete floor being poured in wooden forms held up 22′ in the air by wooden shoring and steel jacks. Apparently no more cross-bracing was used among the posts than was used at the more conventional height of 12′ to 14′. Though strong enough otherwise, the posts were free to bend. As someone observed: "They apparently had too high an l/r."

Considering the complexity and speed of today's building it is remarkable not how many but how few such collapses there are—the contractor in question had suffered none for 40 years. Yet in view of a recent series, perhaps the time has come when contractors must be given a more formal engineering training by which to check their quite remarkable empirical knowlege. The art is developing so fast that unexpected situations must be regularly expected. No architect can be expected to supervise the construction of the contractor's own service structures as well as the construction of the building. Greater knowledge among engineers results in complexity which makes necessary greater knowledge among other members of the team.

Douglas Haskell

JOB: Newton Free Library Addition, Newton, Mass.
ARCHITECT: W. Cornell Appleton & Frank A Stearns, Boston.
ENGINEER: Thompson Engineering Company, Boston.
ELECTRICAL CONTRACTOR: Norfolk Electric Co., Boston.
AREA: Approximately 2,400 square feet.
FIXTURES: Luminous Lens Panels as follows:
4 10'-3¾" x 8'-0" each w/11-96T12 slimline lamps.
10 2'-9¾" x 8'-0" each w/3-96T12 slimline lamps.
2 2'-9¾" x 4'-0" each w/3-48T12 slimline lamps.
WATTS PER SQUARE FOOT: 2.9 approximately.
AVERAGE INTENSITY: On table tops, 75 footcandles in service. Average over room, 57 footcandles in service.
BRIGHTNESS READINGS: Walls .045 candle per square inch. Floor .019 candle per square inch. Table top .069 candle per square inch. Fixture—Across lamp axis: At 45°, 0.72 candle per square inch. At 30°, 0.29 candle per square inch.

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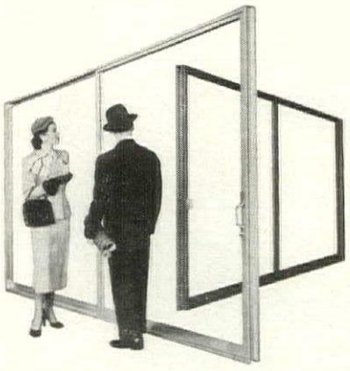

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HARDWARE & FITTINGS—Positive Night Latch • Non-corrosive, cad-plated Lock Mechanism • Schlage cylinder lock available • Smooth-rolling, large diameter Nylon Sheave, adjustable and replaceable without dismantling door.

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IMPOTENCY OF FHA POLICIES

Continued from p. 111

trol; it deprives the skillful builder of the possibility of a borrowing advantage that would otherwise be his; and, in doing all this, it simply detours venture investors into areas where such artificial restrictions do not exist.

"Yield insurance" resurrected

In face of the decline of its mortgage insurance program, FHA is trying to breathe life into a forgotten feature of the National Housing Act commonly referred to as "yield insurance." This feature again presupposes substantial equity investment in rental housing on a long-term, restricted yield basis, and it assumes that such investments can be induced by offering the investor a guaranteed income (available for only a limited period) at a rate not in excess of 2¾%, and, if the property continued to produce a smaller return than that, relieving the investor on the basis of the unamortized part of his investment.

Investors may exist who would wear such a financial strait-jacket in return for the dubious security it offers, but their existence has not been apparent. And it can certainly be taken that such unusual characters do not exist in sufficient numbers to be significant.

These facts remain: An investor who is content with a long-term, low-yield investment does not care to assume the risks of construction and establishing a going concern. The investor who is willing to assume these risks must see the chance of a quick recovery of capital at a relatively high profit —a fact particularly pertinent at a time when many such opportunities are available in other areas. So long as government insists on taking no nonsense from the facts, it must run the risk of having its programs flop.

Daring income property to succeed

The present disabilities to rental housing investment do not all stem from the direct impacts just described. Government, again no doubt inadvertently, has taken other means to turn venture capital in other directions.

Primarily among these are the special financing and tax advantages provided for housing for sale. Through the federal government's dual system for insuring and guaranteeing mortgages (FHA and VA) the acquisition of a house has been made almost as painless financially as entering into a lease, while at least the apparent costs of ownership under a 30-year mortgage are less than rent on comparable accommodations. This circumstance, at the same time as it has stimulated home purchase, has reduced the demand for rental quarters. Since this may end in imperiling some existing investments, it certainly is no spur to new ventures.

Builders, too, are able to get favorable financing terms for house construction compared to what is available to them under insured mortgage loans for apartments; they are subject to less onerous impositions during the construction period; and they are unmolested in recovering their venture capital. It is small wonder that the entrepreneural type of builder (entirely aside from the unpleasant repercussions from past participation) now gives rental housing a wide berth.

The federal tax laws, by permitting the deduction for mortgage interest (which under present financing arrangements is practically a perpetual deduction), give the home owner a special break, while the provision for deferral of a capital gains tax in connection with sale followed by a new purchase also adds to the attraction of home buying. Local property taxation usually favors individual home property (of which the most part is owner-occupied) as compared with apartments and other classes of income-producing property; and in some states special tax advantages such as homestead exemptions are offered to home owners.

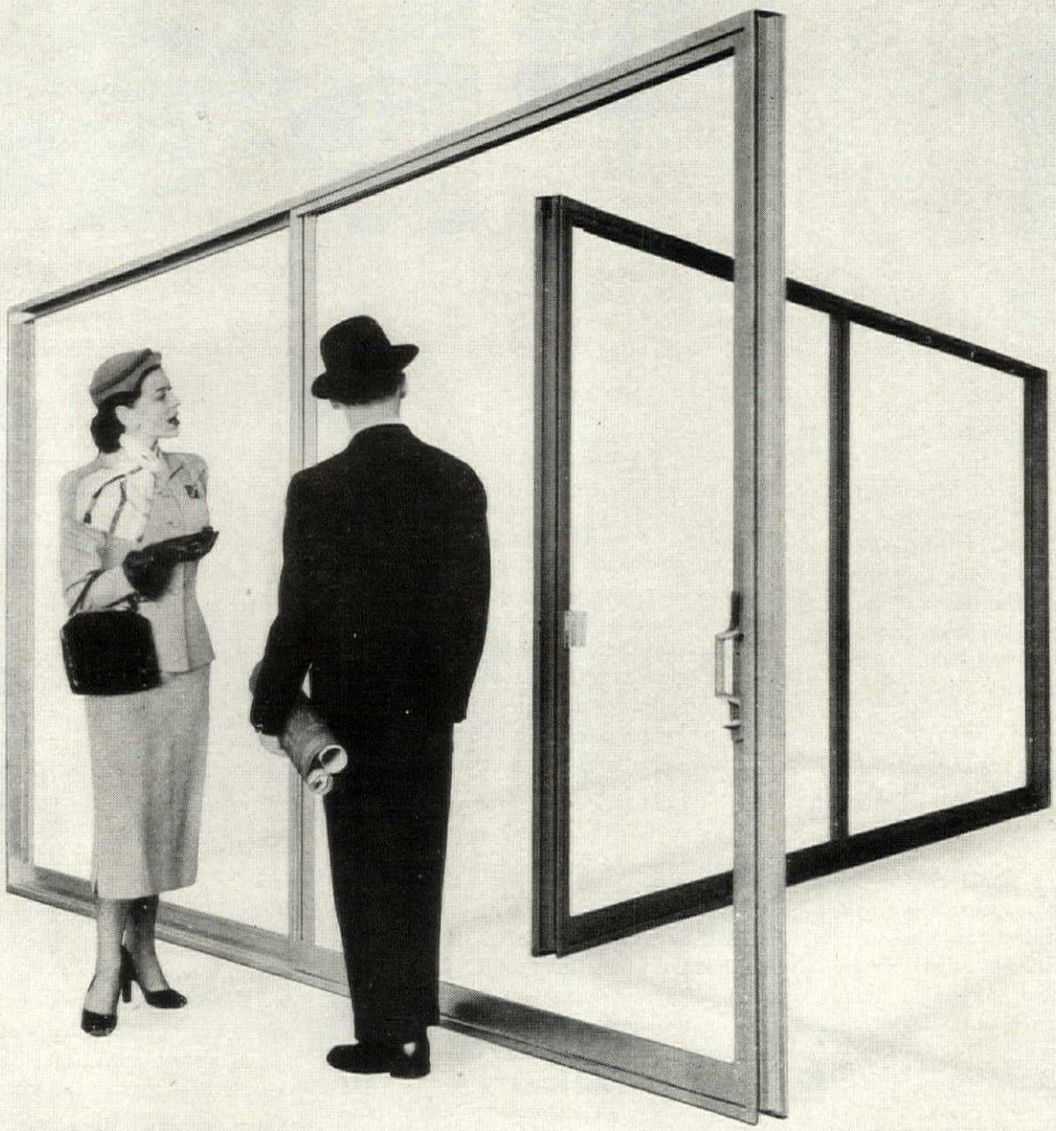
On a broad front, therefore, both taxation and financing provisions are currently stacked against rental housing investment, to such an extent that they might be said to constitute a dare which only the hardiest, or perhaps the foolhardiest, investor would accept.

A question of policy

Again, and finally, a question of high policy is raised. If government desires to favor home ownership as against rental tenure, that is one thing. Its present forms of assistance and obstruction are well designed to that end. If, however, government desires and expects a considerable amount of rental property to be built, it should recognize that it could not have purposely created a set of circumstances so sure to destroy such expectations.

If the desire for more rental housing is serious, then it will be necessary, first, to permit rental housing to attract investors on the same basis as do other forms of venture enterprise, that is, a chance for a quick recovery of capital at a satisfactory profit. It will also probably be necessary to reduce some of the special inducements to home ownership, particularly as embodied in the 100%, 30-year loan.

The purpose here is not to advocate this or any other course, but simply to point out some of the facts of investment life and to plead for a sense of reality. As long as government and the public insist on holding to the prevailing myths about investment in income-producing property and in adopting policies accordingly, just that long will investors exercise their free choice to center their attention on more untrammeled kinds of activity.



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ROUND TABLE

Continued from p. 131

TURLEY: Beautification and good planning are somewhat synonymous.

RANDALL (c): Attractiveness seems to me to be a plus factor which merchants and office building owners might well consider. Miller (l); Robert Smith (r).

McCARTER: If people are going to come to the business district, they are going to use the fastest form of transportation.

freeze the pattern in these locations. If the bond issue project were used as a nucleus for a coordinated project, the over-all effect on the downtown area would be tremendous; and the public funds would not only serve to provide much needed facilities, but would also have a rejuvenating effect on the central business district as well, which would be to everyone's advantage.

CHAIRMAN: Is this under way now?

MERRILL: Our studies have been shown to various civic leaders, and I think that the advantages of coordinated planning have been accepted. Whereas any one project of $4 million or $5 million would be just another building on an expensive lot, the lumping of private projects together with needed municipal projects might create something dramatic and integrated along the lines of what we have been talking about.

CHAIRMAN: The business community of Portland is doing that?

MERRILL: Various groups in the city are studying where the bond issue projects are to be located and this will determine whether or not a coordinated project would be possible.

CHAIRMAN: If various public agencies will go with these groups and support a unified plan, it will give it safety, won't it? Won't they, therefore, be able to attract additional risk capital on their own?

MERRILL: Yes. This is one device that is being talked about. If private enterprise in Chicago is going to spend $100 million downtown next year or the next year the planning commission is probably aware of most of what is going on. They have an opportunity to try to concentrate that expenditure by private capital where it would count for something and do the most good.

BAER: Isn't it a fact, Mr. Merrill, this whole thing has to start with the city appropriating money for bond issues to develop these civic centers?

MERRILL: Not necessarily. It's conceivable that the whole thing could be done as a pooling of private money. I mean that if a hotel or two hotels are to be built in the downtown area, and another office building is to be built, maybe a new store and a bus terminal, the plan commission might persuade the developers, instead of going their own separate ways, to get together and plan a single development which would include all of these buildings. It would be for the benefit of everybody concerned. They would then be a part of a dramatic new large-scale project and just not another fine new building on a corner lot.

A review of the opportunities and limitations of existing urban renewal legislation—state and federal

FARR: We now have in Chicago two redevelopment acts: the Neighborhood Redevelopment Act, and the Neighborhood Conservation Act. The programs are being used in outlying Chicago areas, but either could be used downtown. Under federal plans the federal subsidy is two thirds of the amount of the write-down in the value of the acquired property. That is to say, if a property were to be acquired at $50 per sq. ft., for instance, and had a use value of $10 a sq. ft., the federal government would pay for two thirds of the $40 write-down. But I doubt that Uncle Sam is willing to subsidize the write-down of properties in our central business districts.

Under our neighborhood conservation act we can organize an area, whether it is downtown or in an outlying area, with the power of eminent domain. That is a great weapon—the ability to purchase property at its fair cash market value as against being held up by obdurate owners who are not willing to sell at a reasonable price. If that land is in the central business area and costs more than its ultimate use value, and we are not allowed any write-down from the government, then it should be possible to provide the funds for that purchase under some kind of special assessment covering the area. That can be done under our Neighborhood Conservation Act. I don't think we need a subsidy in the central business district if we have the proper means of prorating that cost among the owners within the area. I would certainly urge that we consider for that purpose some form of special assessment which I believe is available in most states.

CHAIRMAN: That sounds very promising. The whole temper of this gathering is against federal subsidy if it can be avoided.

FEISS: The federal government is right now involved in some instances with redevelopment and renewal in downtown business areas and is actually spending a good deal of money in the acquisition of extremely expensive property for renewal purposes.

FARR: Not in the central business area.

FEISS: Immediately peripheral to the central business area. However, the administration is very much interested in assisting such central business district problems where it's necessary—where a write-down is necessary.

FARR: There must be residential building.

FEISS: Under the present law, with the exception of a 10% clause in the act which is not yet invoked by any locality, all areas being considered for redevelopment or renewal must either be predominantly residential at the outset or the reuse must be predominantly residential. The word predominant means 51%. Congress has been very obdurate on that, and, I think, correctly so. However, the government financing agencies which have responsibilities for renewal are open-minded on the question of 10%, and I think they would like to have a few experiments in the use of this 10% fund. Government officials certainly are not going to say "no" to a request from a locality for a very complete study of a problem such as we have been discussing.

continued on p. 170

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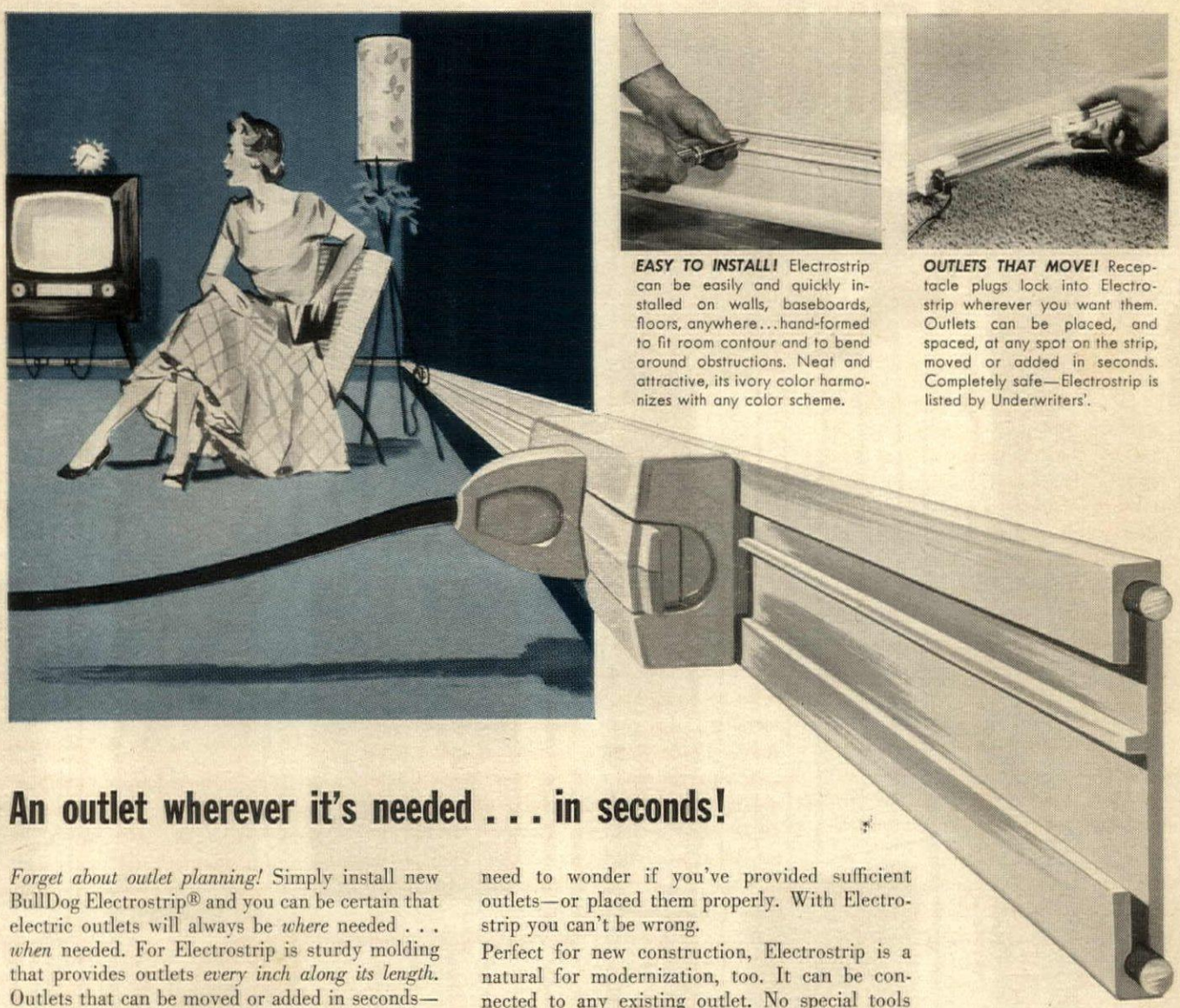

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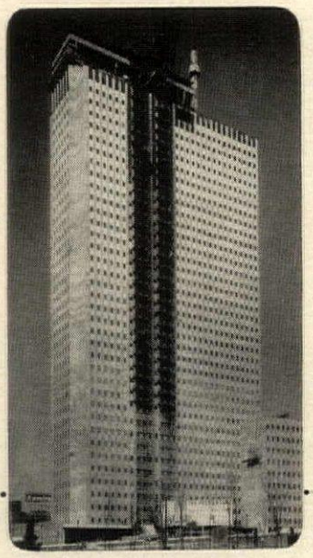

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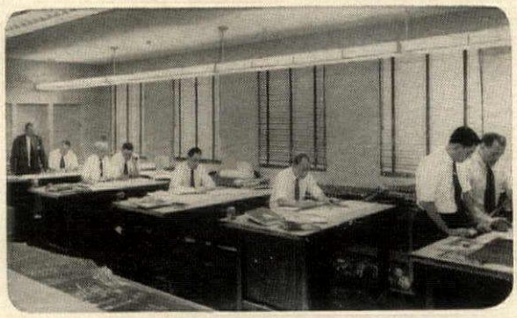

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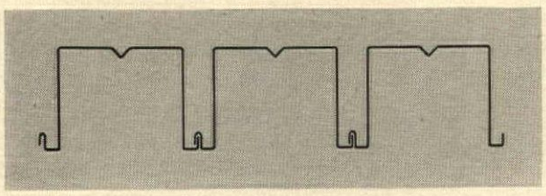

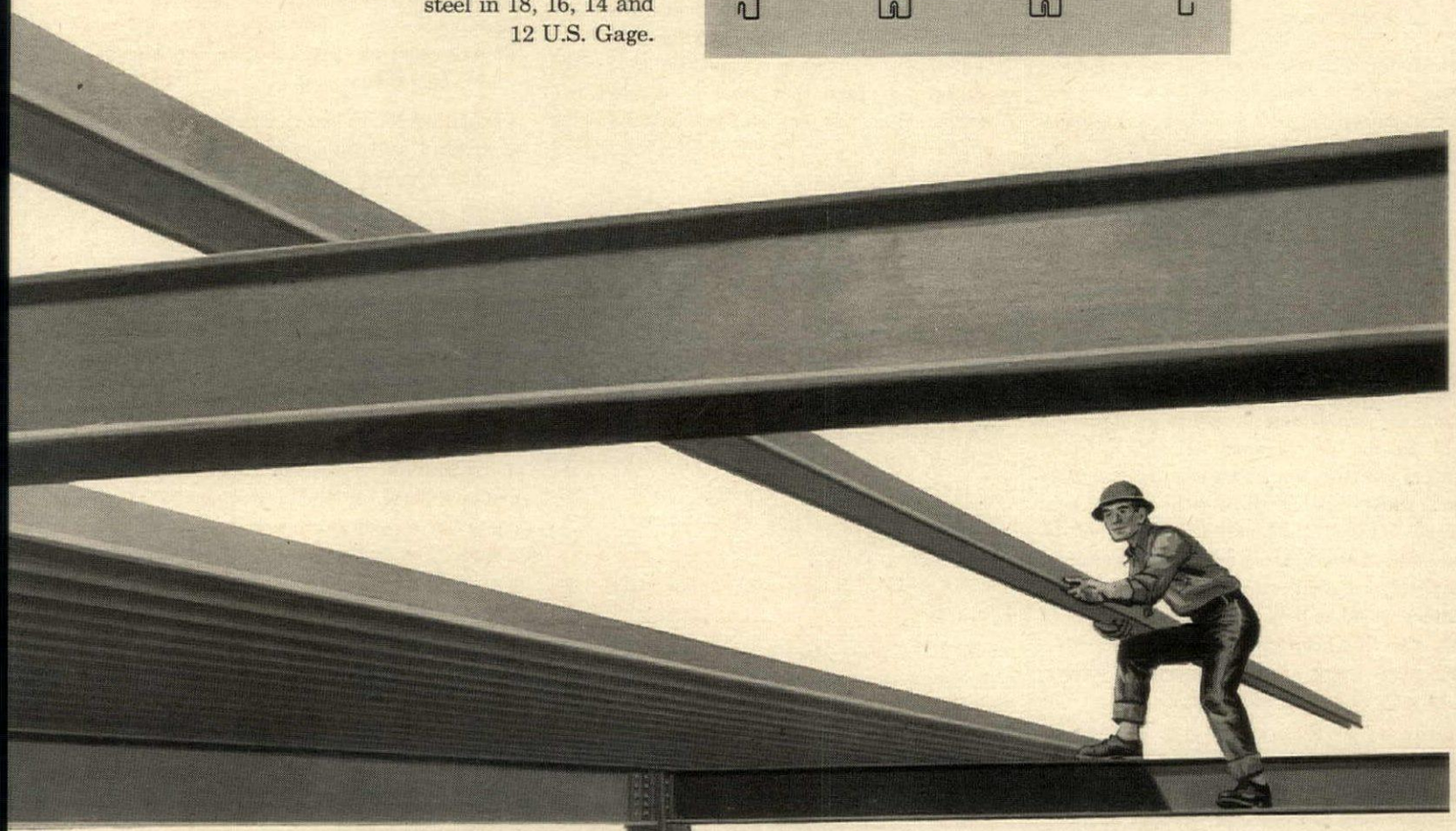

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NAME TITLE

FIRM

ADDRESS CITY

ROUND TABLE

Continued from p. 164

KAUFMANN (c): You can't get highways and off-street parking unless you sell the citizens the justification of a bond issue. Ferris (l); Merrill (r).

RANDALL: To rebuild the downtown district requires something that is bold and big and dynamic and congenial and attractive.

FLEISHMAN (r): An important part of the things we plan must be the understanding of the people for whom we plan them.

CHAIRMAN: This is very encouraging. If there were a situation where there were two department stores separated by two or three blocks of small business, the department stores in collaboration with a majority of the owners in between could plan a correlated shopping center and dramatize that something is happening downtown.

FARR: That can be done under the Illinois law with the consent of the city council.

CHAIRMAN: You would not have to have every owner in that gap between these two major stores, but if you had a majority you would be ready to go.

FARR: That is right.

FEISS: I would like to add that federal funds would be available only where blight is definitely identified. That is commercial blight as well as residential blight or slum conditions. Unfortunately, blight is a very difficult thing to define in commercial areas. Vacancies downtown are not like vacancies in residential sections. They may exist on the upper floors of commercial buildings whose lower floors are well occupied. When the upper floors are vacant or used for storage purposes, that may be evidence of serious blight as far as the downtown is concerned.

A plan to create downtown shopping centers with all the amenities of the competing suburban centers

BAER: From what I have heard from life insurance companies, investors are growing cold on the development of big shopping centers because the experience seems to be that, while the big stores—the department stores—do well, the small stores are not doing well. I don't know what the reason is. Maybe these small stores in these shopping centers would be better off downtown. I know that the life insurance companies are getting very leary about financing big shopping centers with a lot of small stores.

CHAIRMAN: Where the small stores have done badly in outlying shopping centers, it has been because faulty planning left them stranded out at one end of the shopping center instead of being properly bracketed by bigger stores.

I wonder if there is a group of small stores contiguous to your large downtown department store that would benefit if some of the small side streets were converted into pedestrian streets by widening sidewalks, planting trees and putting in park seats the way the outlying shopping centers do.

McCARTHY: I don't think people will be lured to a department store by trees or benches. They are lured there by the merchandise. They go there to buy things.

CHAIRMAN: The biggest shopping attraction on Fifth Ave. is the mall in Rockefeller Center. More than anybody would ever dream, it makes Fifth Ave. an attractive shopping street.

McCARTHY: It was a shopping street before that.

MERRILL: I think that small open areas for relaxation are essential in our congested areas such as the Loop in Chicago. The Loop would be a much pleasanter place if it had some small parks. If we had a few small open areas, a quarter of a block say, with a little green and a place to sit down, they would take away the feeling of claustrophobia when you walk up the miles of building canyons which characterize our downtowns. Pedestrian amenity in a congested shopping district has to be considered.

WELCH: I certainly agree with Mr. McCarthy that trees and benches don't sell merchandise. Malls that cost over 25¢ a sq. ft. of rentable area to maintain put an extra burden on distributing goods. Our current thinking on shopping centers is to have 30 or 40 stores practically in one building with an air-conditioned pedestrian promenade. We speak of it as Main Street. We have several trees—they might be only preserved trunks —to hang ornaments on at Christmas and to put bunnies around at Easter. That will give them a little feeling of outdoors. In the center of Main Street are impulse-type retail concessions. We estimate that will pay $20 a sq. ft. in rental. One of the most important concessions is the sidewalk café. They have very comfortable chairs and you sit down and pay 10¢ for your cup of coffee while you get your rest.

CHAIRMAN: If you can get rent out of it, fine, but I still think that John Merrill has a point when he says it's a lot of fun to sit down.

WEHRLY: On this point of attractivesess in shopping centers, a considerable number of studies show fairly conclusively that the general attractiveness of the area accounts for less than 25% of the reasons why people go to that particular location to shop. The other 75% is a wide selection of merchandise. I will agree that attractiveness is important, and I think a downtown area can very well emulate some of the developments of the suburban shopping center. But, as much as I would like to believe the attractive quality and parking are major factors, it would appear they only represent about a quarter of the actual reasons for shopping in a particular location.

CHAIRMAN: That quarter may make the difference between success and failure.

WEHRLY: That may be true, but I don't think we should overemphasize the qualities which are really in the minority.

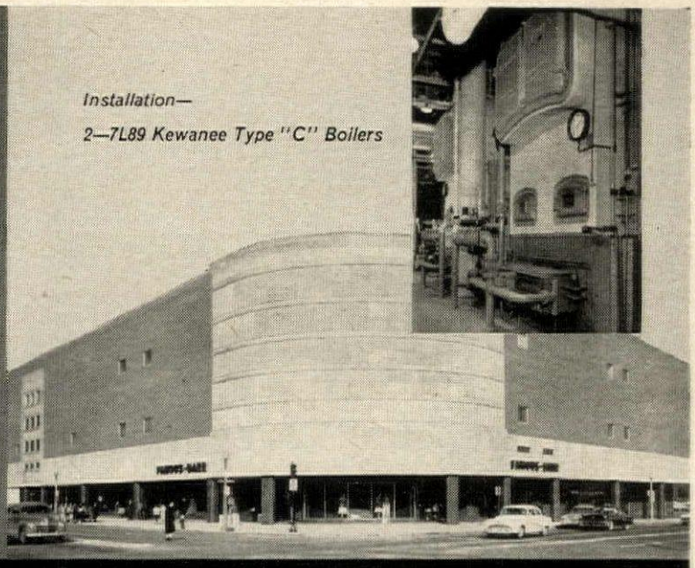
CHAIRMAN: If you add 25% to the pulling power of the downtown area, you almost solve the downtown problem.

RANDALL: This attractiveness seems to me to be a plus factor which the merchants and office building owners might well consider. All the discussion has indicated that, where it's being done, this beautification and ease of getting around and taking care of the pedestrian is being done by a single en-

continued on p. 176

"Operating-Maintenance Costs Cut with Kewanee Boilers"

Noel Spannagel, Chief Engineer, Famous-Barr Company



Installation—
2—7L89 Kewanee Type "C" Boilers

Here are 3 installations of Kewanee Boilers at Famous-Barr Company

Heating Contractor: Eichler Company; Architect: P. J. Hoener; Engineer: John D. Falvey

Installation—
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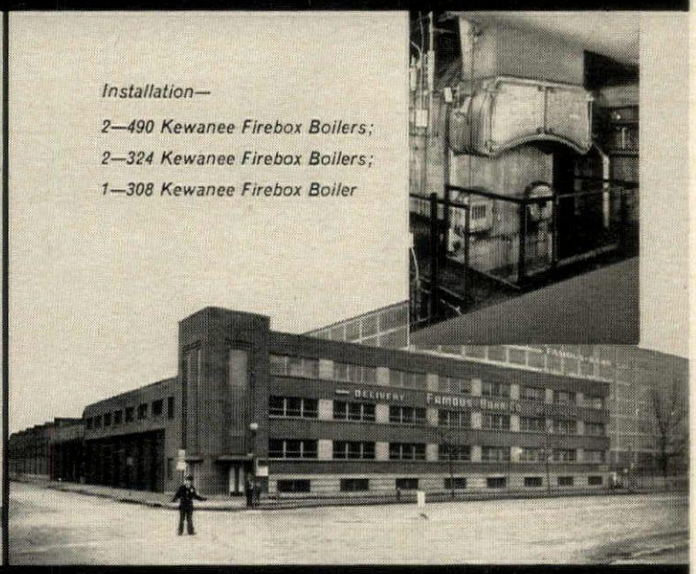
Heating Contractor: Eichler Company; Architect: Russell-Mullgardt-Schwarz-Van Hoefen; Engineer: John D. Falvey



Installation—
2—490 Kewanee Firebox Boilers;
2—324 Kewanee Firebox Boilers;
1—308 Kewanee Firebox Boiler

Heating Contractor: Eichler Company; Architect: Will Levy

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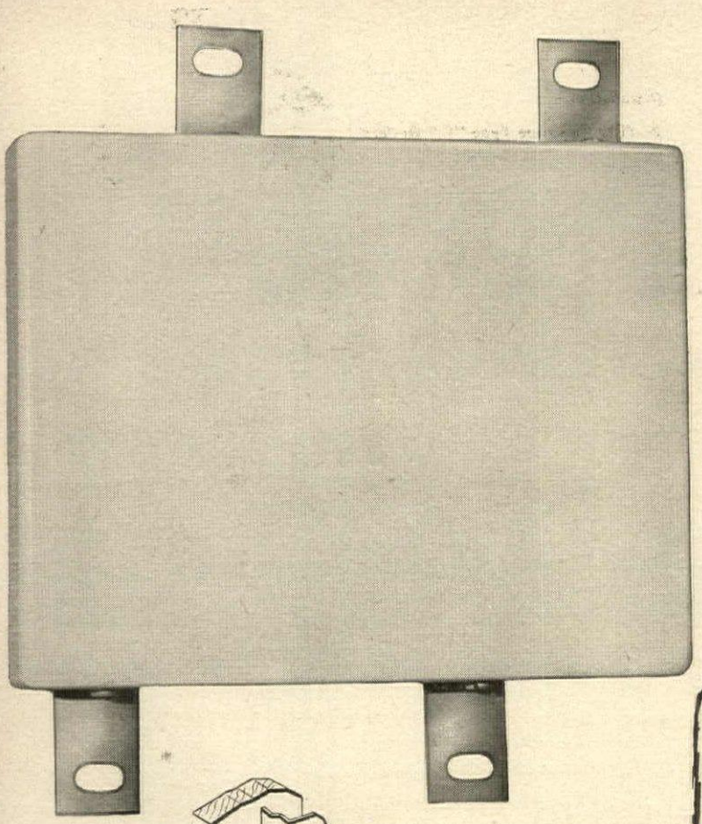

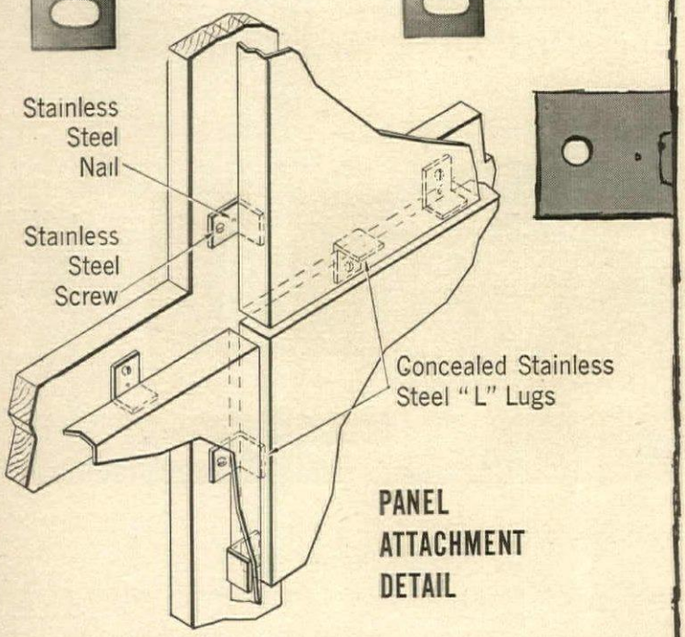

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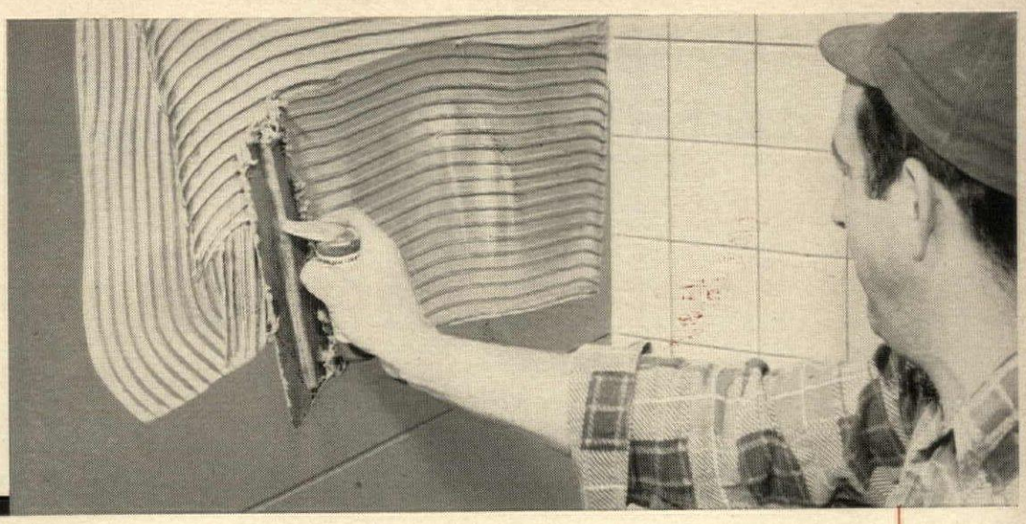

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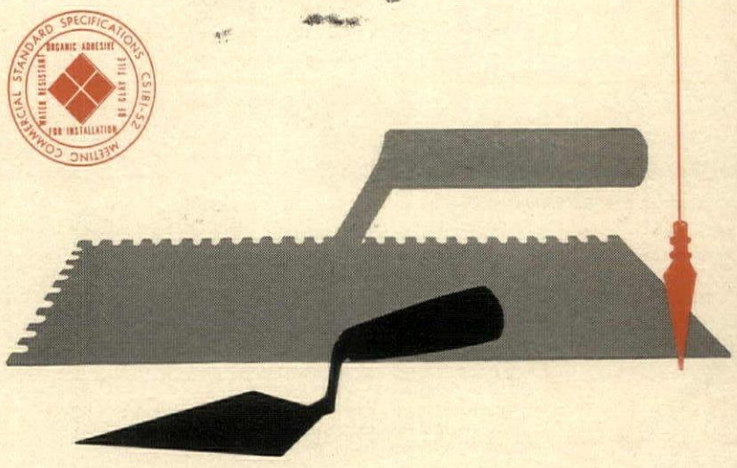

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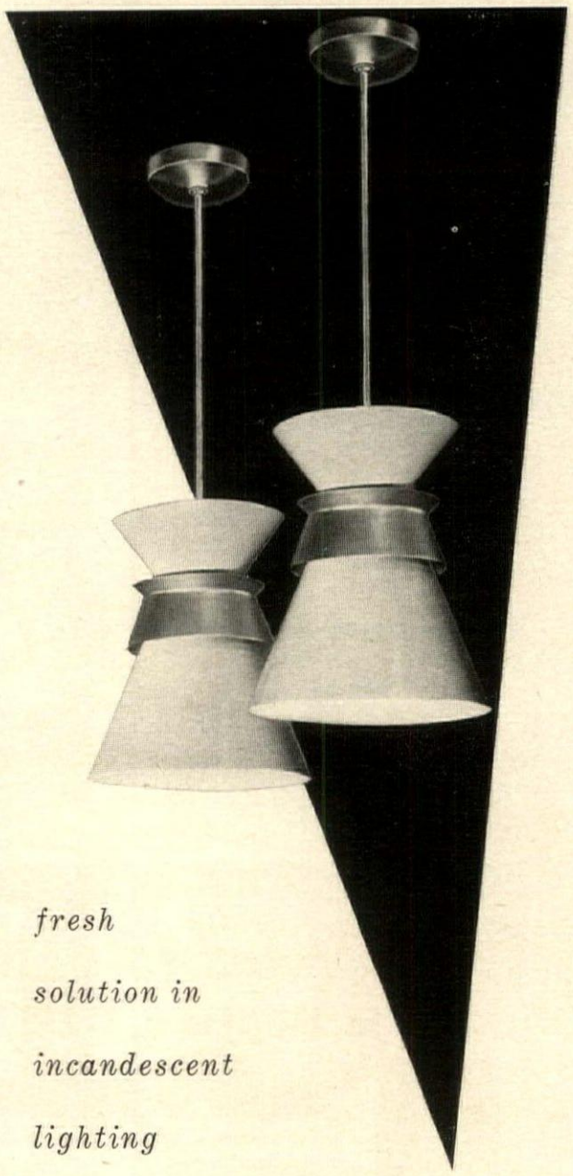

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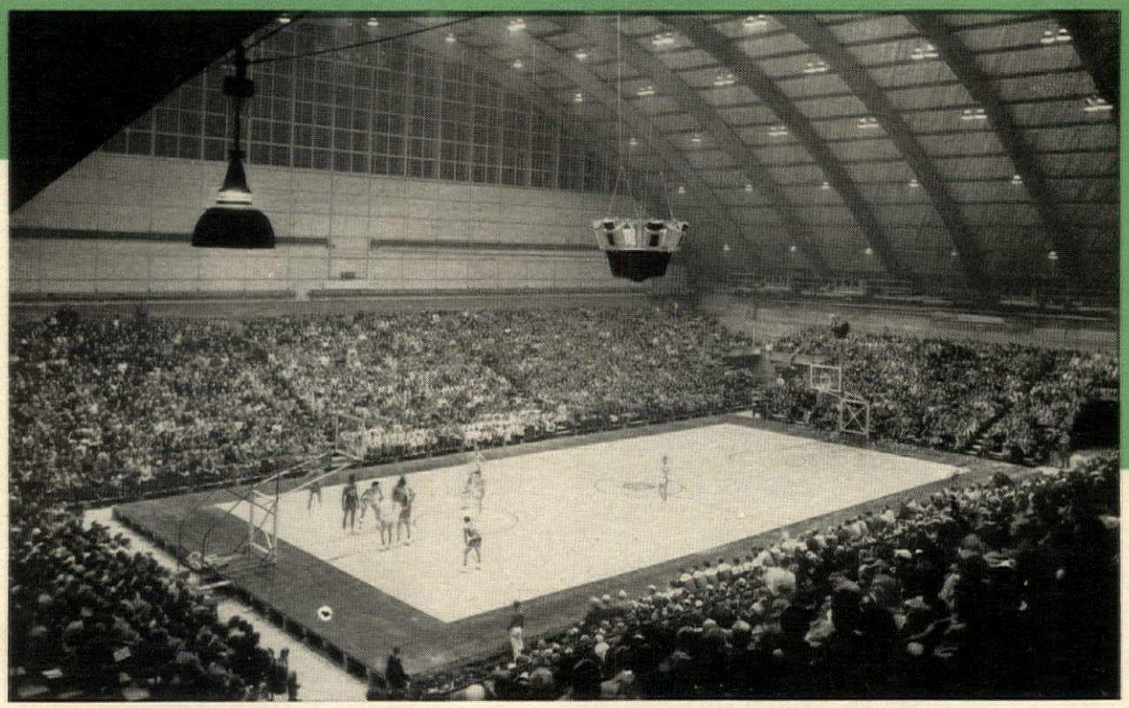

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MADE-TO-ORDER COMFORT FOR 6,000 in MONTANA STATE'S *WEATHER-PERFECT* FIELDHOUSE

Keeping every one of 6,000 people comfortable is quite an accomplishment. The size of the building itself—nearly 3 million cubic feet—is an important factor. So is the effect of powerful lighting equipment and the large glass areas.

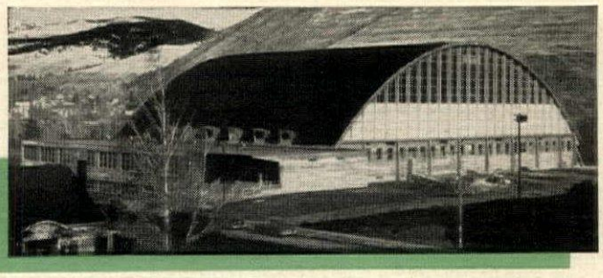
All of these problems, and more, are solved successfully in Montana State's new Field House by an up-to-the-minute system of Johnson Automatic Temperature Control. Supersensitive Johnson Thermostats, controlling valves and dampers on the heating and ventilating system, insure refreshing, even temperatures at all times.

To illustrate the remarkable degree of comfort achieved by Johnson Control in this building, the temperature variation between the floor level and the press box, 46 feet above, is a maximum of 2° F., *even with a capacity crowd of 6,000!*

To insure maximum fuel savings, the arena, offices, entries, locker and shower rooms are equipped with Johnson *Dual* Thermostats. When not occupied, any or all of these areas can be maintained automatically at reduced, economy temperatures. Yet any room or area that is occupied can be kept perfectly comfortable without disturbing the economy settings of thermostats serving the rest of the building.

How about your clients' buildings? Remember, Johnson brings to each building over 70 years' experience in solving every conceivable type of temperature control problem. *Every* Johnson System is specially planned to meet the exact needs of the individual building and its occupants. Only Johnson's *own* full-time engineers and mechanics plan and install Johnson Control Systems—your assurance that each installation, small or large, is made exactly as planned.

Johnson Control Systems are *not* limited to new buildings. They may be installed in existing buildings regardless of the type of heating, ventilating or air conditioning system employed. Ask an engineer from a nearby Johnson branch office for his recommendations on your next control problem. There is no obligation. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.



Field House, Montana State University, Missoula, Montana. Brinkman & Lenon, architects, Kalispell, Montana; William Heinecke, mechanical engineer, Kalispell; Fullerton Plumbing & Heating Co., heating contractor, Hamilton, Montana.

JOHNSON CONTROL

TEMPERATURE ⇕ AIR CONDITIONING

PLANNING • MANUFACTURING • INSTALLING • SINCE 1885

For Greater Strength
Uniform Thickness and Color

FILON

The First Fiberglas and Nylon Reinforced Plastic Panel Ever Produced

FILON Gives You Greater Strength

After many months of research, FILON is now produced with Fiberglas and Nylon strands for greater strength and uniformity. Actual tests show that an 8 oz. per sq. ft. FILON panel can support over 200 lb. load per sq. ft. on a 4 ft. unsupported span. (U. S. Navy standards are only 100 lbs. per sq. ft.)

FILON is Produced by a Unique Method

FILON is produced by a fully automatic, electronically controlled process, in the world's largest and most modern plant in its field. This method makes possible continuous lengths as well as all standard sizes of panels. Lengths are limited only by convenience in handling.

FILON is Uniform in Thickness and Color

Better impregnation and dispersion of pigments make FILON more uniform in thickness and color. Every FILON panel bears a label stating *type, grade,* and *color* ... your assurance of getting the quality you specify.

Write for our New A.I.A. Folder containing detailed drawings and technical data. Distributors and Dealers coast to coast, Canada, and other foreign countries.

FILON PLASTICS CORPORATION
Formerly PLEXOLITE CORP.

2051 East Maple Ave., El Segundo, California, ORegon 8-7651
270 Park Ave., New York 17, New York, PLaza 5-5758
228 North La Salle Street, Chicago 1, Illinois • State 2-7444 ©

ROUND TABLE

Continued from p. 170

terprise that has control of the shopping center. For example: Rockefeller Plaza. You want to do the same thing in the downtown area where you have a variety of merchants involved, and I would like to know how this beautification and this taking care of the pedestrian is going to come about.

CHAIRMAN: By voluntary association of those particular merchants. They would undertake it themselves in the same way that the Fifth Avenue Assn. believes in setting a tone and an appearance for Fifth Ave. Over a long period of years, it has policed that avenue very carefully.

FARR: It is a merchant's problem, I think. On North Michigan Ave. there is a group that did it by contributions. Marshall Field did it on State St. by itself. It controls that block and put in trees. It stimulated conversation, and I think it has brought some business.

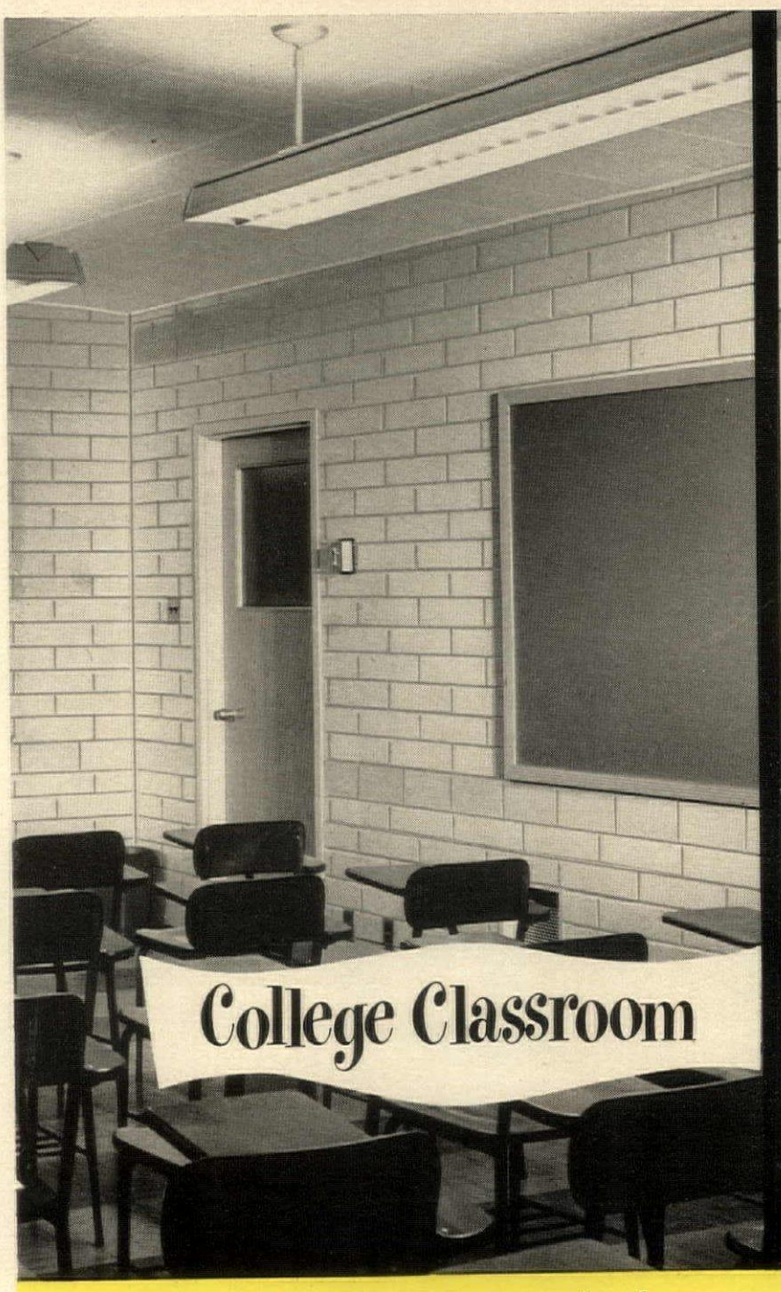
TURLEY: Beautification and good planning are somewhat synonymous today and good planning has very definite benefits.

CHAIRMAN: It must be worth something or the outlying commercial centers wouldn't be doing it. They are the new developments that have taken advantage of today's planning, and they have the green areas and the benches and the other amenities.

STONOROV: What would be the consequence if six blocks would be considered as one block downtown and their economic requirements in terms of delivery and traffic and whatnot were to be considered? It is conceivable that you could take a street in that area and rope it off, roof it over and air condition it. That might seem to be ridiculous, but you have got to have a bold approach. We have been talking in Philadelphia about running a trolley car down Chestnut St. and up Walnut St., and about the possibility of extending the sidewalk to the trolley car, making it a jitney. We would have no automobiles in those two shopping areas and allow no deliveries or no traffic

continued on p. 182

RAUCH (c): We must find a way to acquire some of the blighted areas in the central business district at figures which make it economically practical to put them back into use. Turley (l); Benge (r).



For sound-conditioned classrooms

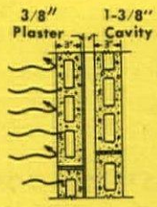
Concrete Masonry — *cuts costs, too!*

Designers of classrooms for colleges and elementary schools face some common problems these days: both must keep costs to a minimum, yet supply classrooms that have a low noise level and are easily maintained. Concrete masonry offers several important savings:

Save on interior finishing: Attractive wall patterns, textures, and colors in today's concrete masonry units make possible decorative interior walls that need no expensive plastering or dry wall treatment — a big saving in cost.

Save on construction cost: Concrete masonry usually costs less installed in the wall than any other permanent building material; modular size units eliminate costly cut and trim.

Save on acoustic treatment: Concrete masonry walls and partitions combine strength, durability, and fire-resistance with efficient, "built-in" noise reduction values (see detail below). Usually exposed block classroom, gymnasium, auditorium, and corridor walls need no additional acoustic treatment.

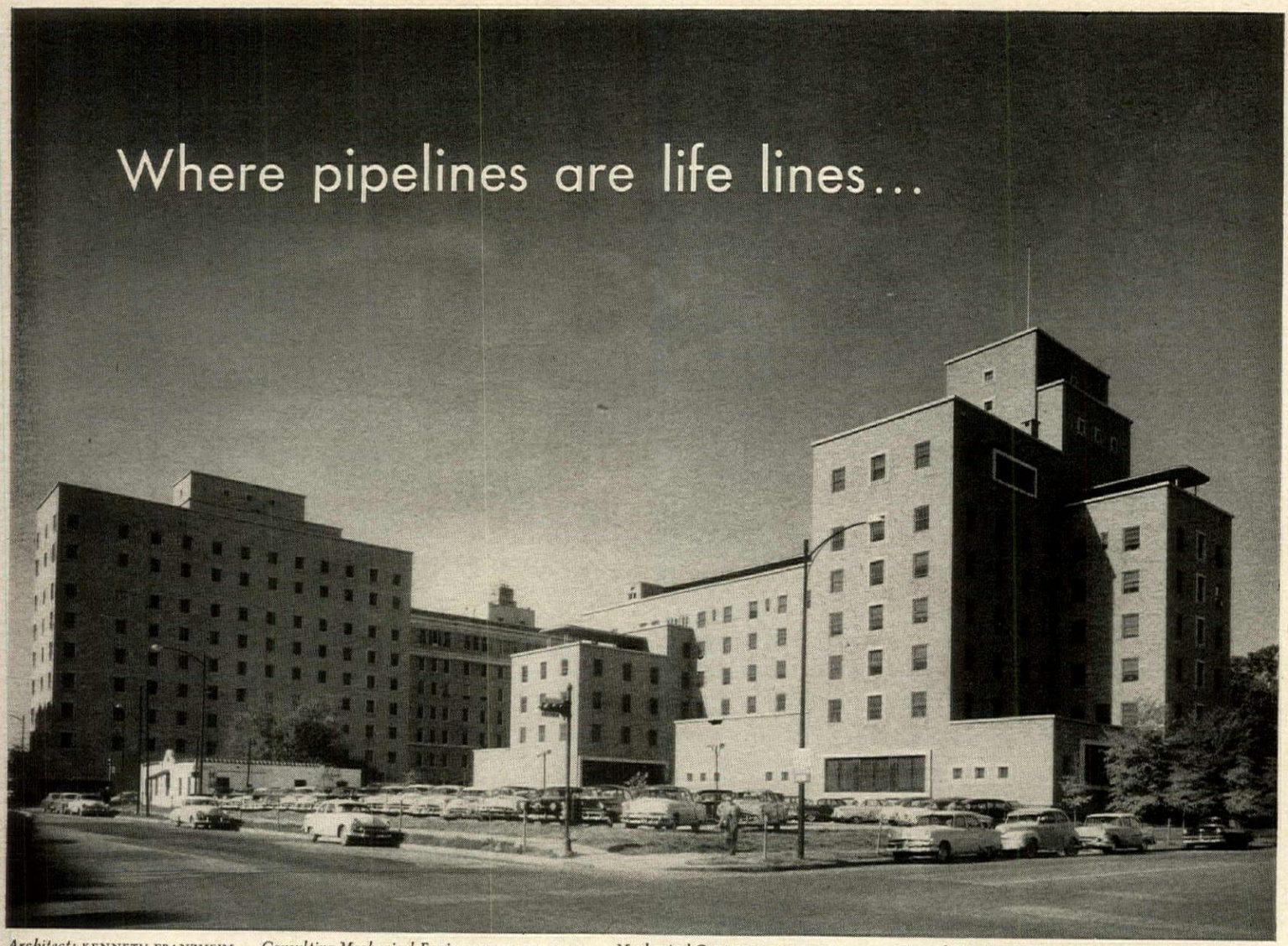


Lightweight concrete masonry cavity partition wall will absorb up to 55% of sound striking wall, and reduce sound transmission from room to room about 55 decibels.

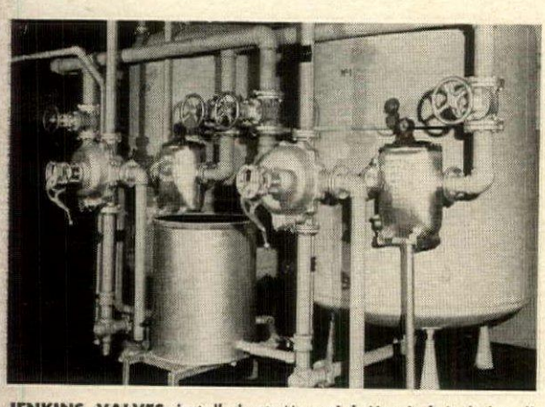
Hard plaster or glass absorbs only about 3% of incident sound—97% "bounces back."

National Concrete Masonry Association
38 South Dearborn Chicago 3, Illinois

Where pipelines are life lines...



Architect: KENNETH FRANZHEIM *Consulting Mechanical Engineer:* REG. F. TAYLOR *Mechanical Contractors:* BARBER, INC. *General Contractors:* THAD DEDERICK CONSTRUCTION CO.



JENKINS VALVES installed at Memorial Hospital include all types of bronze valves, as well as iron and steel valves up to 14". Above are valves on lines serving water softeners in the central power plant. Here, also, three 250 hp boilers generate steam for all needs, and pumps and condensers serve a refrigeration and air-conditioning system of 700 tons capacity.

Houston's MEMORIAL HOSPITAL depends on JENKINS VALVES

In a modern hospital, any interruption in the many facilities served by pipelines can be a serious threat to life itself. For the $2,000,000 annex to Memorial Hospital in Houston, Texas, all components of the complex piping network were chosen with the same regard for safety and dependability that was applied in the selection of professional equipment. Jenkins Valves were installed at hundreds of control points in plumbing-heating, air-conditioning, and refrigeration lines, and in the ventilating and fire protection systems.

This confidence in the extra measure of efficiency and economy of Jenkins Valves is shared by leading architects, engineers, and contractors in every field of construction.

Despite this extra value, *you pay no more* for Jenkins Valves. For new installations, for all replacements, let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.

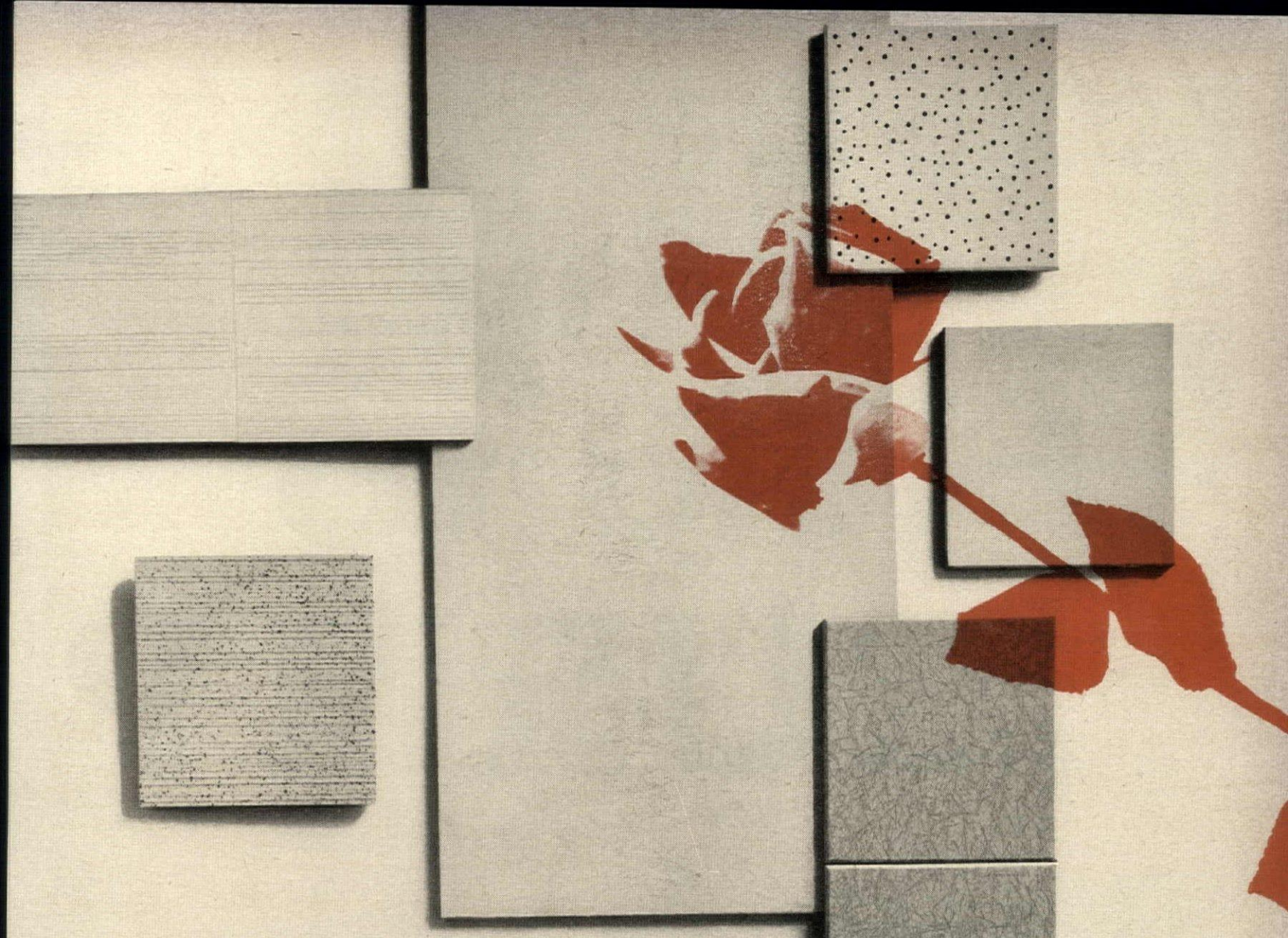
JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND

SINCE 1864 TRADE JENKINS MARK

Jenkins Bros.

SOLD THROUGH PLUMBING-HEATING AND INDUSTRIAL DISTRIBUTORS



beautiful overhead...

with the fire department built in!

Not only do Fiberglas* Acoustical Tiles soak up sound, they reflect beauty and brightness too. Naturally inorganic, they're certified fire-safe, they won't shrink or swell, they keep their good looks through long, carefree years of service.

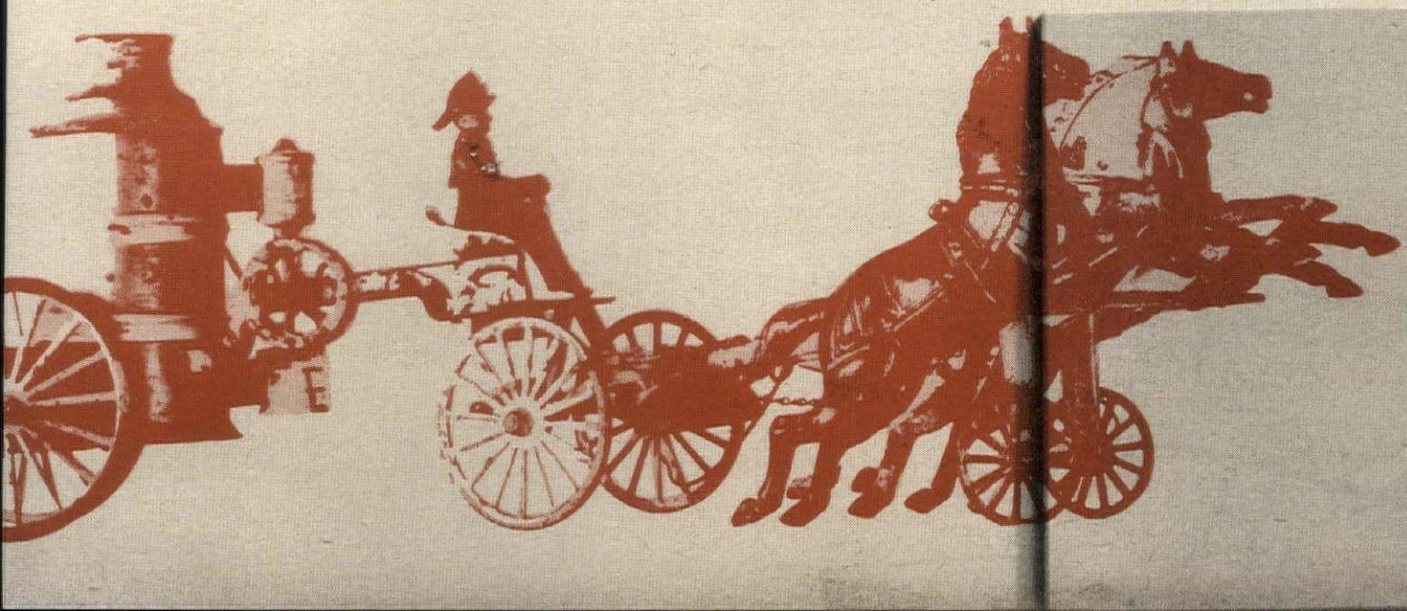
But here's the clincher . . . Fiberglas Ceilings are the lowest cost fire-safe acoustical ceilings you can specify. What more could you ask for? If it's more information, just write: Owens-Corning Fiberglas Corporation, Dept. 68-D, Toledo 1, Ohio.

*T.M. Reg. O-CF Corp.

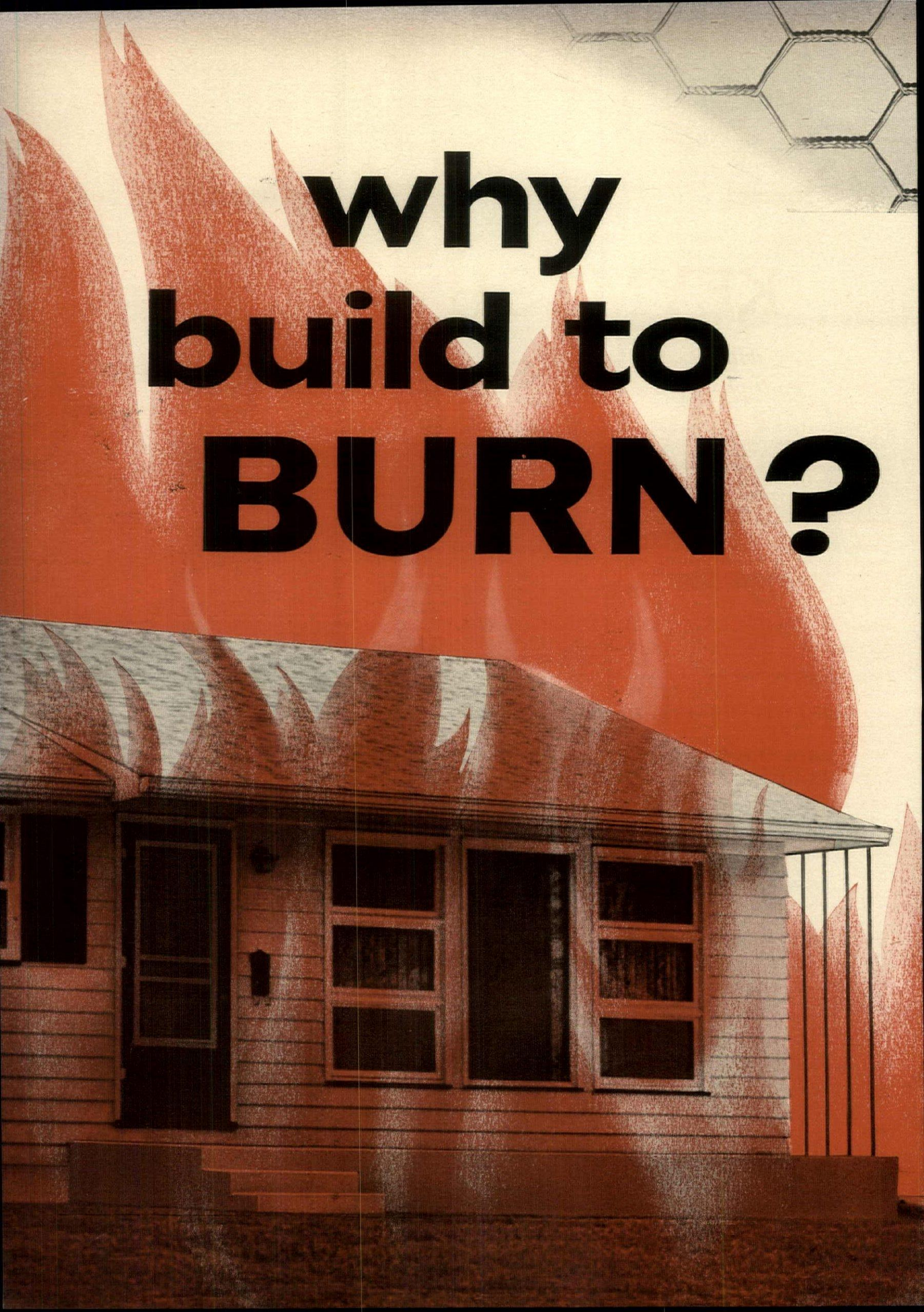
OWENS-CORNING
FIBERGLAS

SOUND CONTROL PRODUCTS

- Textured, Perforated, Sonofaced*, Stria* Acoustical Tile
- Textured, Sonofaced Ceiling Board • Noise-Stop* Baffles



why build to BURN?



KEYMESH

GALVANIZED REINFORCING LATH

with gypsum lath and plaster multiplies fire resistance of buildings

Fire safety costs so little.

Actually, walls and ceilings of gypsum lath and plaster, reinforced with Keymesh, cost less than most substitutes. Just see how they *multiply* fire safety.

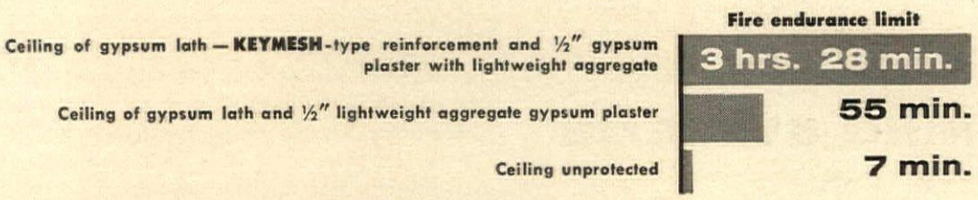
Take open-web steel joist floors and concrete slabs with gypsum ceilings, for example. With ½ inch of lightweight aggregate plaster, reinforced with Keymesh-like lath, a fire endurance limit of 3 hours and 28 minutes was obtained.*

Without reinforcement, the limit was 55 minutes. *Keymesh* adds 2 hours and 33 minutes to the fire endurance limit because it holds the plaster in place. When lath and plaster were omitted, the fire endurance limit was only 7 minutes.

You'll find equally important protection when simple columns and beams of buildings are protected in this same way. It's so good that insurance companies cut their rates because of the greater fire safety. Actually, these lower rates quickly pay the cost of the lath and plaster.

Think of it. Greater fire safety. Acoustical properties, if you wish. Durability. Low maintenance. Beauty. Takes any decoration. Yet . . . this fire safe construction costs less than most substitutes. And it can slash insurance rates enough to quickly pay for the plastering.

*Actual Fire Test Shows Amazing Value of Keymesh-Type Plaster Reinforcement**



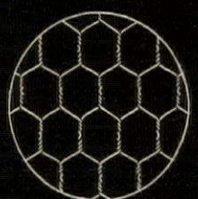
*See Building Materials and Structures Report 141, National Bureau of Standards: "Fire Endurance of Open-Web Steel-Joist Floors with Concrete Slabs and Gypsum Ceilings"

KEYSTONE STEEL & WIRE COMPANY

PEORIA 7, ILLINOIS

makers of Keymesh • Keybead • Keycorner • Keystone Welded Wire Fabric
Keystone Nails • Tie Wire • Keystone Non-Climbable and Ornamental Fence

Use these three keys to stronger plaster



KEYMESH lath for over-all reinforcement. Made of galvanized woven wire. Especially recommended for ceiling construction.

KEYCORNER strip lath, preformed to fit snugly in corners. Lies flat when applied to joints. Galvanized to prevent rust streaks.

KEYBEAD corner lath for outside corners. Open mesh fills solid with plaster. Galvanized nose, or solid zinc nose (Key Z Bead).

WEHRLY (r): General attractiveness of an area accounts for less than 25% of the reasons why people go to that particular location to shop. Doughty (l).

ROUND TABLE

Continued from p. 176

in those areas. Deliveries would be permitted up until nine o'clock in the morning.

McCARTHY: I am for such a bold, long-range program as he suggests. True, there are a lot of pressing problems of the moment, but if we plan for next week, we will be outmoded two weeks from now.

We have to go further than that and be quite revolutionary and base our plans on the fact that we have had some extraordinary revolutions in our problems in the last 10 to 20 years.

The private automobile—although it may be the preferred means of transportation, its use can be discouraged

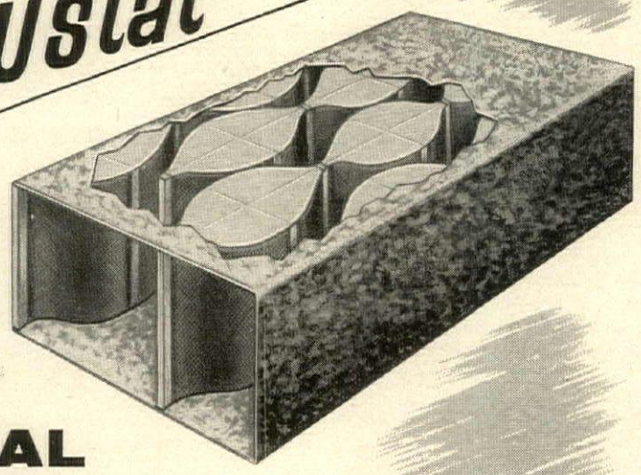
WILBUR SMITH: Whether or not the private automobile is a sound means of providing access into most of our cities, whether it is good or bad, economical or uneconomical, we seem to have developed in the last 25 or 30 years a very strong preference for the private form of transportation. People do not appear to make logical decisions or economical decisions when they select the private automobile, but it still appears to be the preferred form of transportation to our central business district. The use of mass transportation in most cities has been declining rapidly and the use of private transportation has been growing rapidly. We hear a lot of conflicting views as to whether or not we are simply defeating our basic purpose in providing more and more access facilities for the private automobiles, both in terms of routes and parking and terminal facilities. Certainly this appears to be the case to the average municipal leader, because as soon as we provide greater capacity for auto movement and storage, that particular capacity is quickly used. This increase of highway and parking capacity may not be improving the over-all problem of traffic congestion, but we probably are improving downtown business because we are bringing more people into the downtown area.

We have learned over the years from various traffic studies that most of the people approaching our large cities want to go into the cities and not around them; this blasted some of the bypass theories of the twenties. However, in most of our downtown districts we quite frequently find that 50% to even 65% of the automobiles have neither origin or destination in the central district. This proves that we need to bring traffic approaching a city into the city, but we do not necessarily need to bring it into the central or core area. That is one of the main things taken into account in modern planning of expressways.

I believe that there is increasing agreement that we must think today in terms of integrating our various types of transportation rather than in terms of preferring any one form of transportation. We can bring people into central districts by their preferred form of travel if we can merge mass transportation and private transportation with other forms of movement and with terminal facilities into a single transportation system. We have not done this in any city. It means the strong entry of

continued on p. 188

Aircoustat

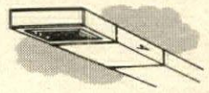


PRACTICAL SILENCING for AIR CONDITIONING SYSTEMS

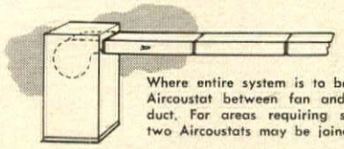
Aircoustat is a compact, *completely packaged* unit for silencing fan and air noise in air conditioning systems. Easily installed directly into the duct work, Aircoustat eliminates the need for costly, extensive duct lining. And results are astonishing: one *7 foot* unit reduces noise level below what *100 feet* of commercial duct lining could accomplish.

Engineered to provide broad band attenuation with low pressure drop, Aircoustat is available in 14 standard sizes for use with all styles and sizes of duct, and 8 types to meet any desired conditions. Selection is no problem: ***if it fits geometrically, it fits acoustically.***

Where to install Aircoustat



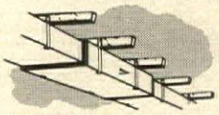
Aircoustats are incorporated as part of the duct work. If only selected areas require quiet, install above individual diffusers.



Where entire system is to be silenced, insert Aircoustat between fan and first length of duct. For areas requiring special silencing, two Aircoustats may be joined in series.

How to install Aircoustat

Aircoustat requires no special tools for installing. It is constructed to be joined to ductwork with a lock seam.



If ductwork and Aircoustat differ in size, a canvas or asbestos coupling may be used. If ductwork is hung, support Aircoustat similarly.

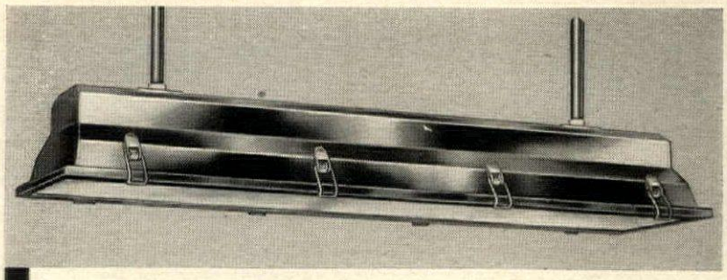
SILENCE SERVICE

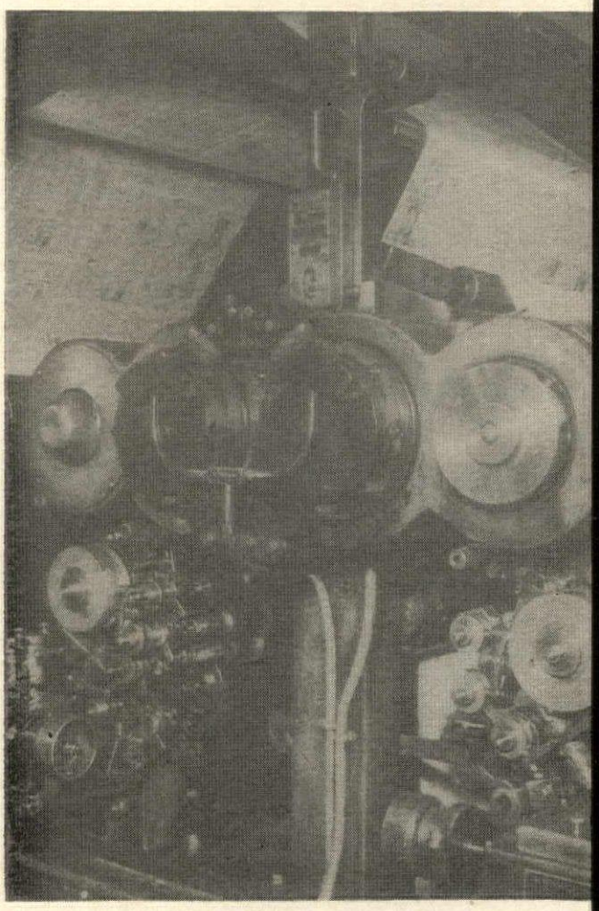
Industrial Sound Control Inc.

45 Granby Street, Hartford 12, Conn.

engineered lighting

for hazardous and specialized locations





Wheeler VAPOR TIGHT

These specialized Wheeler fixtures combine superior lighting efficiency with extraordinary resistance to moisture and vapors. Insurance against costly product spoilage from lamp breakage or falling lamps is provided by the heavy cover furnished with each of these carefully engineered units. Equipped with plain clear glass, or with tempered plate glass where required to withstand shocks and impacts.

USES

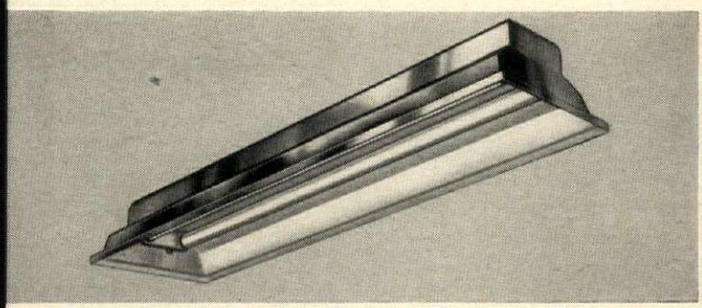
- PRESS ROOMS
- FOOD PLANTS
- LAUNDRIES
- MEAT PACKERS
- DYE HOUSES
- CAR WASH GARAGES
- BOTTLING PLANTS

Wheeler "SERIES II" DUST-TIGHT

Fully comply with all Underwriters' requirements for installation in Class II, Group G, Class II, Group F and Class III locations. These hazardous locations involve the presence of atmospheres containing combustible dusts or ignitable fibers or flyings.

USES

- GRAIN ELEVATORS
- SUGAR MILLS
- WOOD-WORKING PLANTS
- WAREHOUSES
- BOILER ROOMS
- MINES



Wheeler TEXTILUME

One-piece construction and seamless porcelain enamel finish makes these specially designed units ideal for textile mills or any other industry where severe moisture and humidity conditions exist. Engineered for long, trouble-free service. Accessory glass covers available.

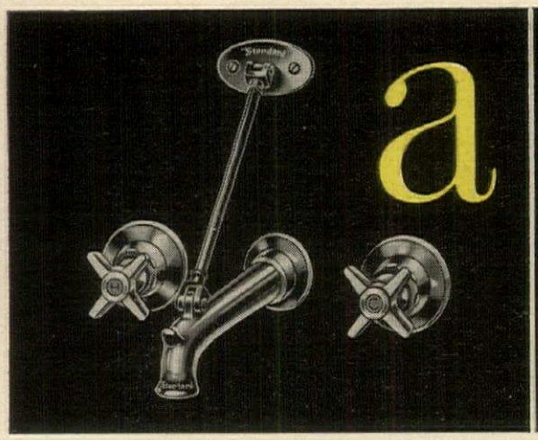
USES

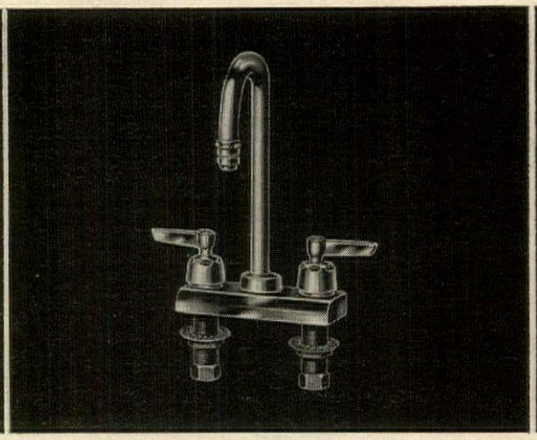
- TEXTILE MILLS
- PAPER MILLS
- TANNERIES
- RUBBER PLANTS
- DAIRIES

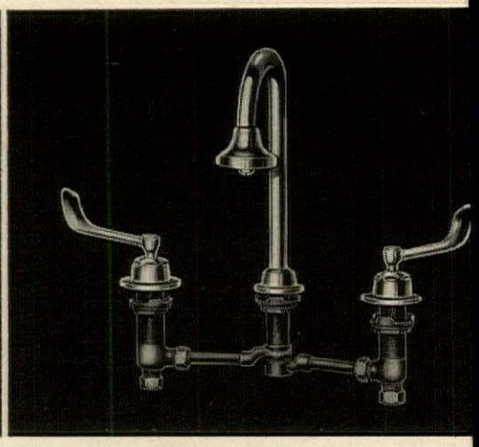
Wheeler REFLECTOR COMPANY

275 Congress Street • Boston, Mass.

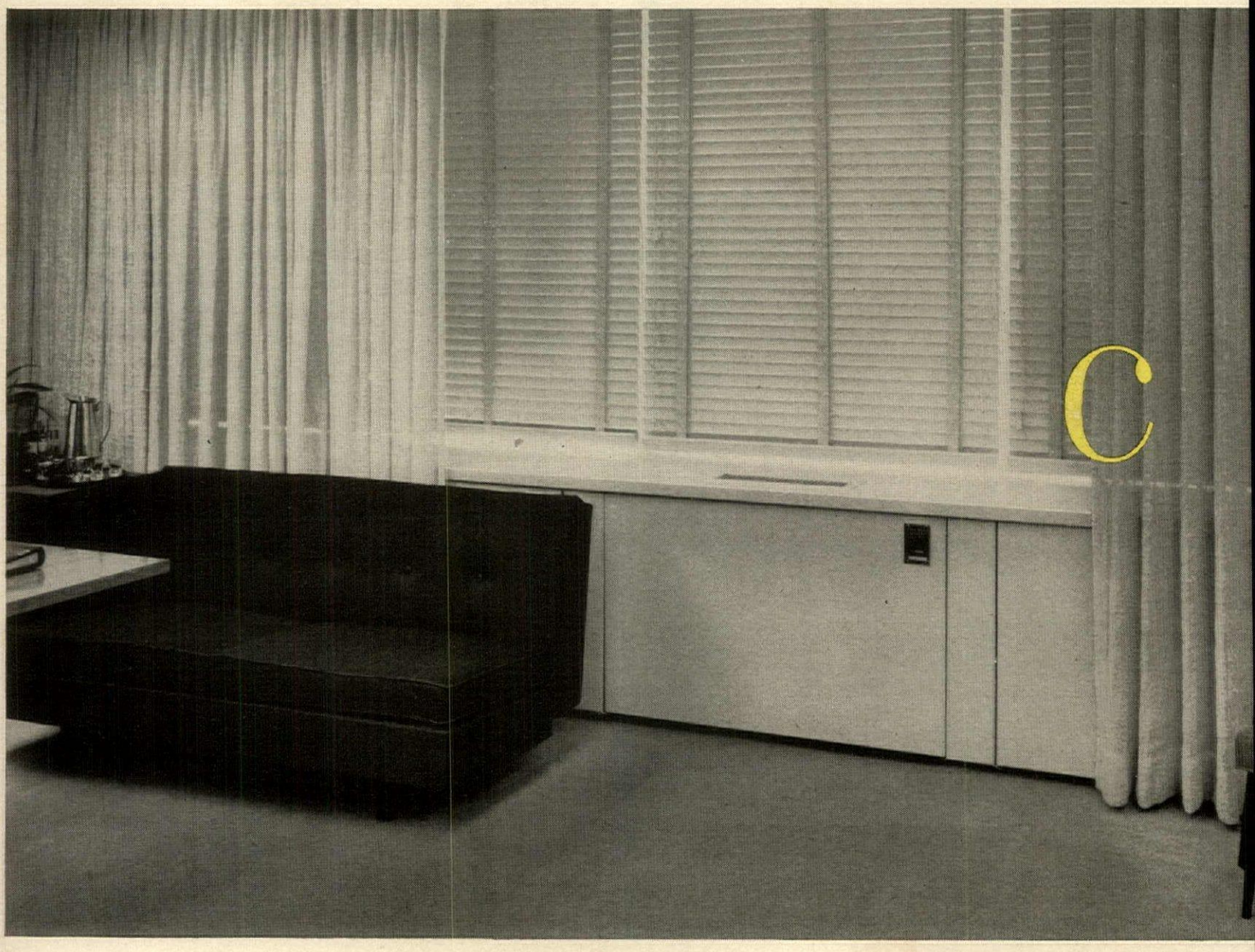
DISTRIBUTED EXCLUSIVELY THROUGH ELECTRICAL WHOLESALERS

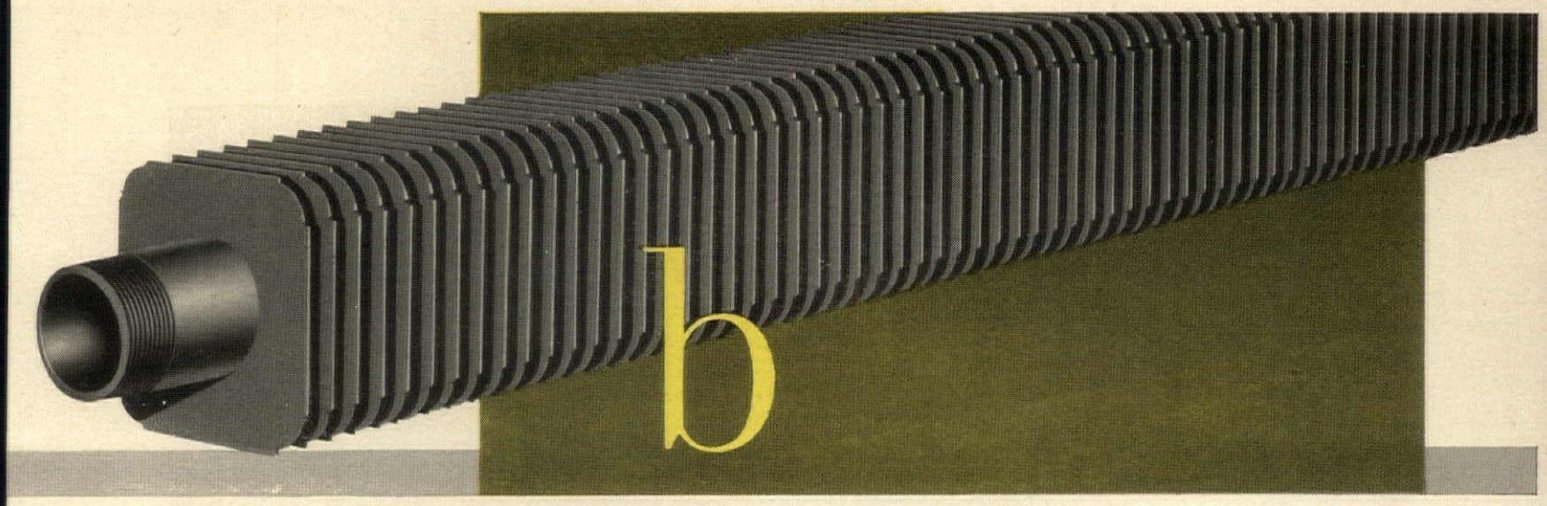




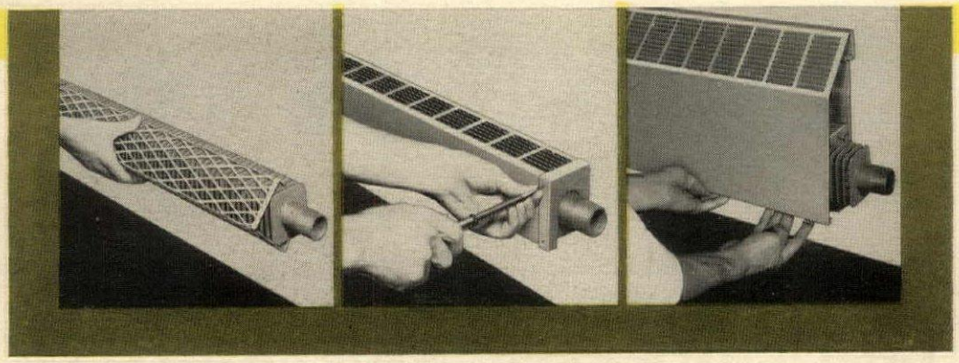


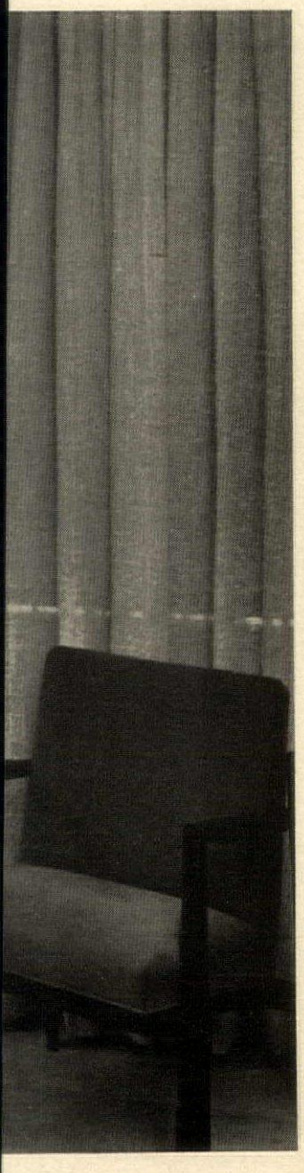
Picture studies in function and





design by American-Standard





a

New Hospital Fittings. Specially designed to meet the rigid requirements of hospitals and institutions, these modern fittings are made of durable brass and finished in sparkling, non-tarnishing Chromard. Shown left to right, at top left, are: built-in service sink fitting with spout, top brace, bucket hook and easy-grip handles; center-set lavatory fitting with gooseneck spout and aerator; combination lavatory fitting with gooseneck spout, spray and wrist-control handles.

b

Temtrim Finned Tube Radiation. Hundreds of steel fins bonded to a steel pressure tube make Temtrim one of the most efficient, economical types of radiation ever built. Temtrim can be used with forced hot water or two-pipe steam systems. Lengths of Temtrim are installed on simple wall brackets. It can be installed with fins exposed or with any one of three attractive covers—shown left to right above: a snap-on expanded metal grille, a flat top cover, a sloping top enclosure.

c

Air Conditioned Skyscraper. The 22-story 1430 Broadway Building, owned by M. Lowenstein & Sons, Inc., New York City, is equipped with an American-Standard Remotaire System for winter heating, summer cooling. For greater operating efficiency, the Remotaire System was divided into an interior zone, where the load is constant, and an exterior zone, where the load varies with outside conditions such as solar radiation. Temperature can be individually controlled in all rooms equipped with Remotaire units. Fresh air for ventilation is supplied to each room through ducts and wall registers. *Architects:* Emery Roth & Sons. *Consulting Engineers:* Sears & Kopf, John Anselmo, Associate. *General Contractor:* Cauldwell-Wingate. *Air Conditioning Contractor:* Raisler Corporation.

American-Standard makes *complete* heating-cooling systems— Remotaire room units, water chillers and boilers—for use in commercial, public and industrial buildings.

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

AMERICAN-Standard

Serving home and industry: AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS & WALL TILE
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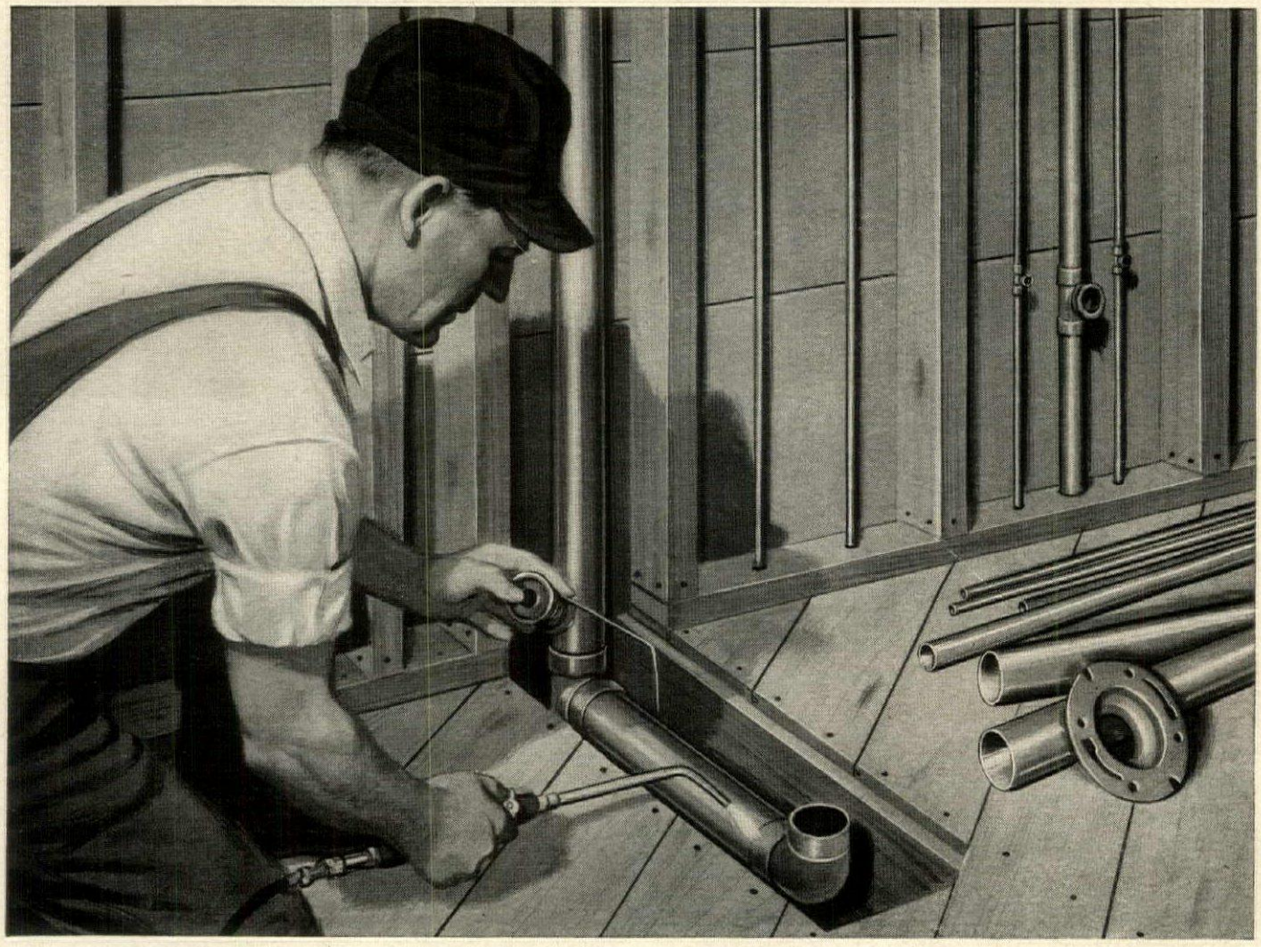

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Remarkable how inexpensive it is to give drainage lines *two-way extra quality*, with Chase copper drainage tube (DWV). *Far longer* service life and greatly *improved* efficiency are assured.

Drainage lines of Chase copper tube *resist* corrosion—*can't* clog with rust—*stay efficient* over the years! Their interior is smoother; flow is unobstructed at joint connections—*larger volumes* of waste water can pass through them because friction is *reduced!*

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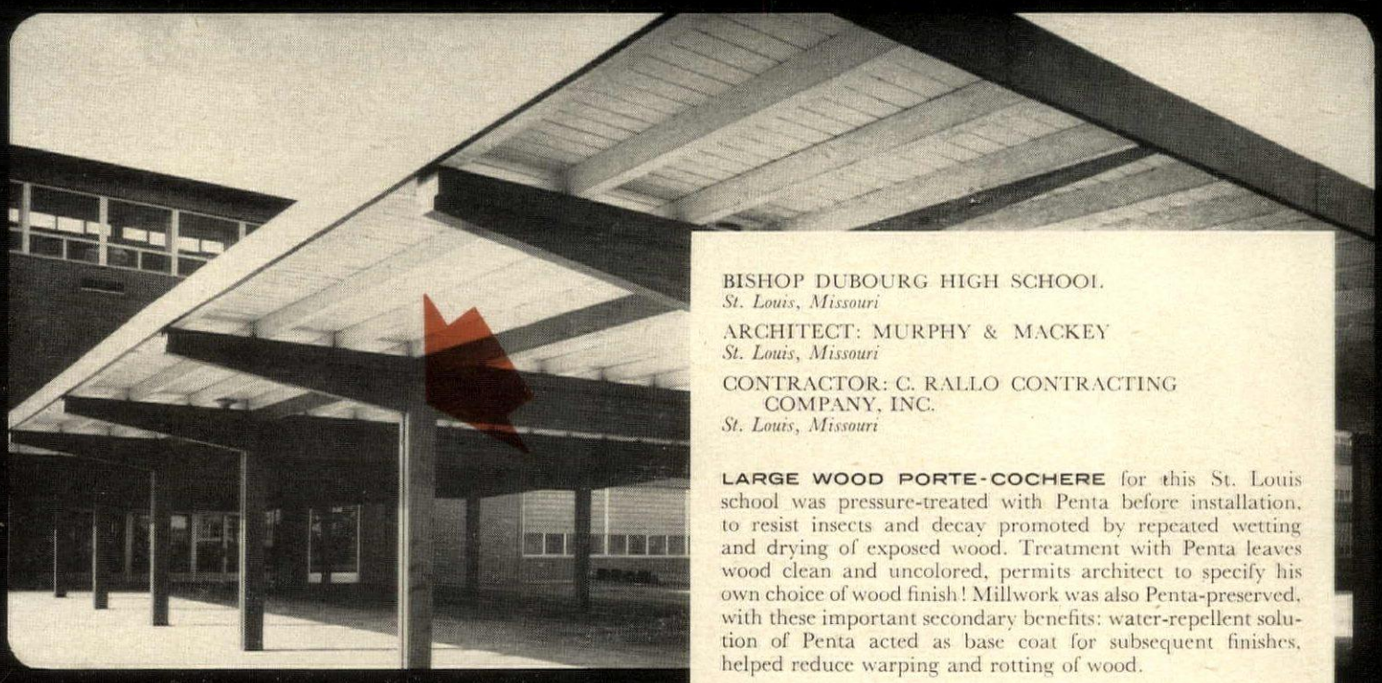
ON-THE-JOB PROOF:

Penta gives wood new life, preserves without soiling

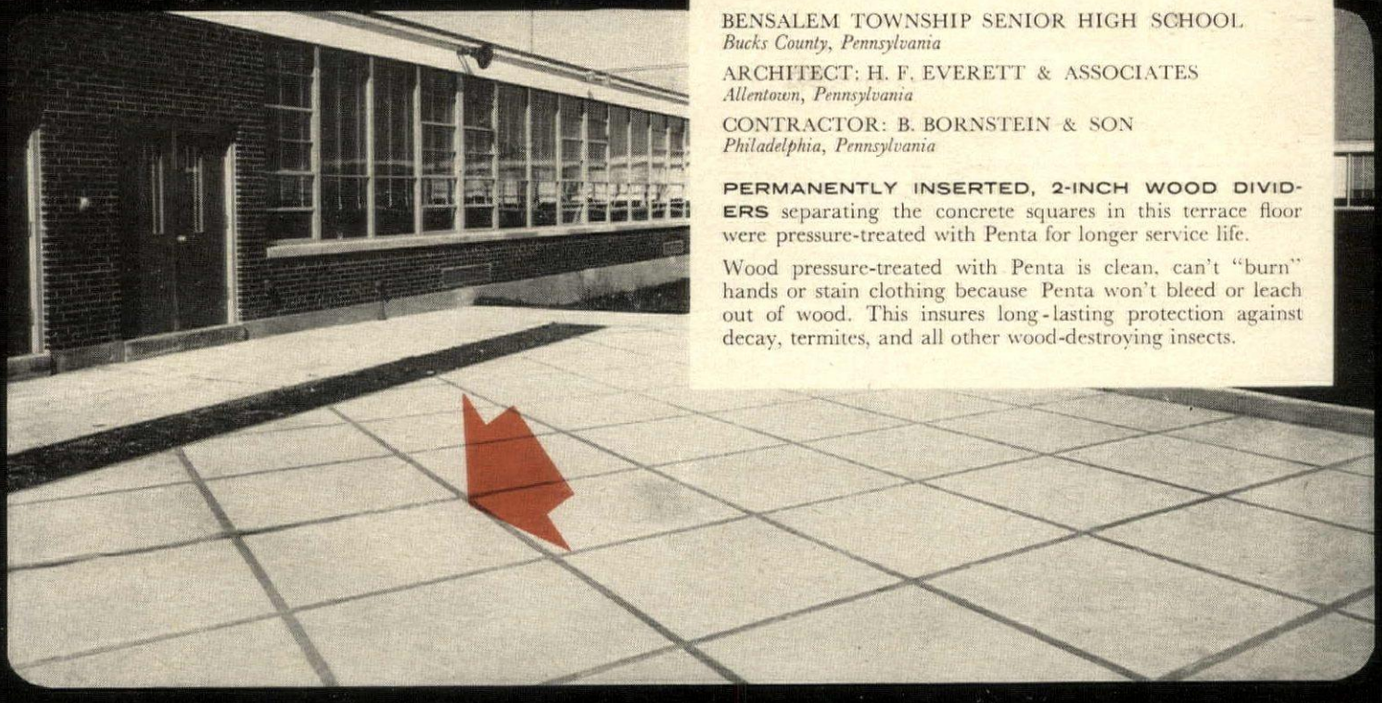


BISHOP DUBOURG HIGH SCHOOL
St. Louis, Missouri

ARCHITECT: MURPHY & MACKEY
St. Louis, Missouri

CONTRACTOR: C. RALLO CONTRACTING COMPANY, INC.
St. Louis, Missouri

LARGE WOOD PORTE-COCHERE for this St. Louis school was pressure-treated with Penta before installation, to resist insects and decay promoted by repeated wetting and drying of exposed wood. Treatment with Penta leaves wood clean and uncolored, permits architect to specify his own choice of wood finish! Millwork was also Penta-preserved, with these important secondary benefits: water-repellent solution of Penta acted as base coat for subsequent finishes, helped reduce warping and rotting of wood.



BENSALEM TOWNSHIP SENIOR HIGH SCHOOL
Bucks County, Pennsylvania

ARCHITECT: H. F. EVERETT & ASSOCIATES
Allentown, Pennsylvania

CONTRACTOR: B. BORNSTEIN & SON
Philadelphia, Pennsylvania

PERMANENTLY INSERTED, 2-INCH WOOD DIVIDERS separating the concrete squares in this terrace floor were pressure-treated with Penta for longer service life.

Wood pressure-treated with Penta is clean, can't "burn" hands or stain clothing because Penta won't bleed or leach out of wood. This insures long-lasting protection against decay, termites, and all other wood-destroying insects.

PENTA MULTIPLIES SERVICE LIFE OF WOOD UP TO 4 TIMES, lowers maintenance cost, insures client satisfaction with the buildings you design and build. Mail coupon at right for FREE Penta booklet, and list of 75 Penta pressure-treating plants.

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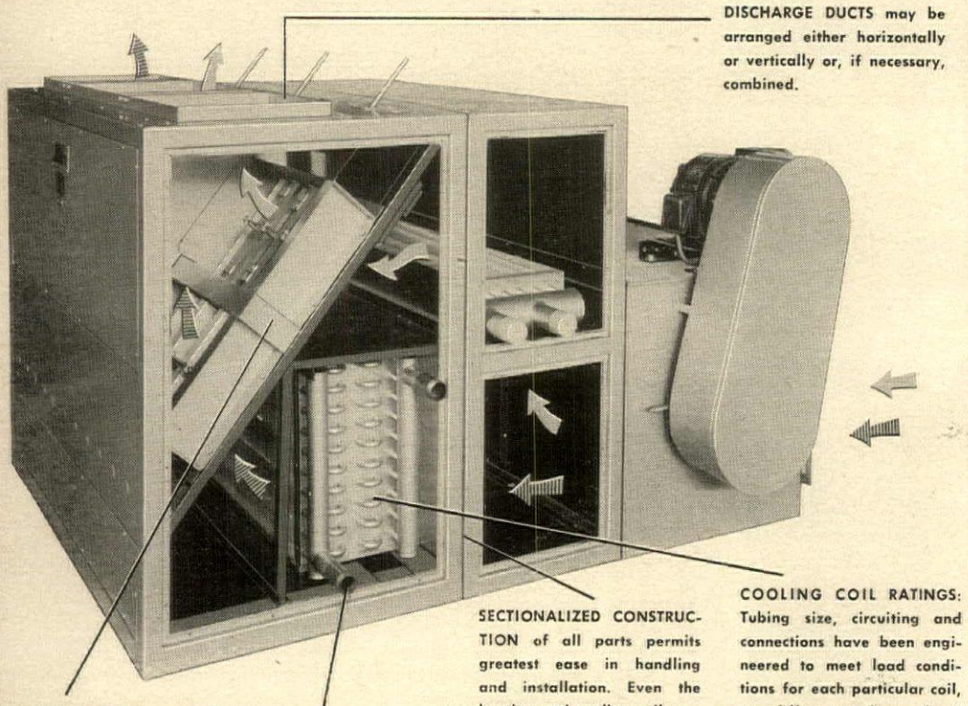

DISCHARGE DUCTS may be arranged either horizontally or vertically or, if necessary, combined.

DAMPER SECTION: Multiple mixing dampers regulate proportion of warm and cold air for each zone.

CONNECTIONS: Only one set of connections (heating and cooling) required by each unit regardless of number of zones.

SECTIONALIZED CONSTRUCTION of all parts permits greatest ease in handling and installation. Even the heating and cooling coils are in separate sections.

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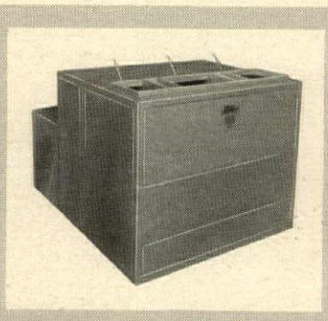

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RIVERSIDE · CALIFORNIA

ROUND TABLE

Continued from p. 182

government into transportation, but we must have expressways, we must have more parking, and we must have mass transportation. Just how much of each is the question.

CHAIRMAN: What community in your opinion has progressed furthest in their integration, if there has been any progress at all?

WILBUR SMITH: I don't know of any. I think Philadelphia is ahead in its thinking and planning.

CHAIRMAN: If we build garages and bridges and tunnels and highways downtown, aren't we inviting more automobiles downtown and thereby compounding our problem downtown? On the other hand, more autos presumably mean more business for the downtown area.

WILBUR SMITH: By actual count in cities which appear to be saturated with autos, like Manhattan Island, each year the number of persons entering the Island by private automobile increases. Whether it's the sound or economical way to travel is not the question. I think it's a deep-rooted urge in the average Amerian which we have to accept and try to work with rather than trying to change. I think there are going to be ways of changing it, but they will be so slow and long coming about that we are apt to miss opportunities to improve downtown if we wait for normal processes to develop.

BLUCHER: What are the limits, if any, on the number of autos you can bring downtown?

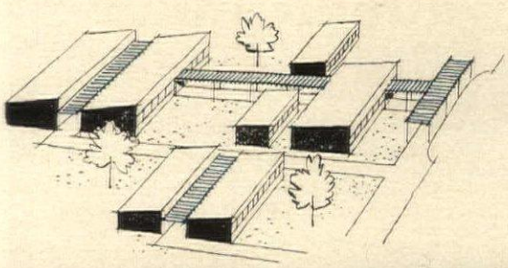
FLEISHMAN: One of the limits will be when people get discouraged and disgusted with coming downtown.

BLUCHER: Perhaps Mr. McCarter has an answer.

McCARTER: I am not prejudiced against an auto—I own one. I think the auto is here to stay. But I disagree with Mr. Smith.

In Chicago there is a cordon count of the people who enter and leave the central business district on a certain day each year—it's always a day in May. The maximum number of people entered the central business district on that day in 1948—970,000 people between 7:00 A.M. and 7:00 P.M. The maximum year for people brought into the central business district by auto was in 1951. That year the private auto brought in 292,000 out of a total of 900,000 people. Mass transportation in various forms (suburban railroad, rapid transit and street transportation, busses and streetcars) in 1948 brought in 73% of the total people coming into the central business district; in 1951, 67%, and in 1954, 70%. The private auto in 1948 brought in 27% with an average of 1.7 people per auto. In 1951, it brought in 33% with 1.7 people per auto.

continued on p. 192



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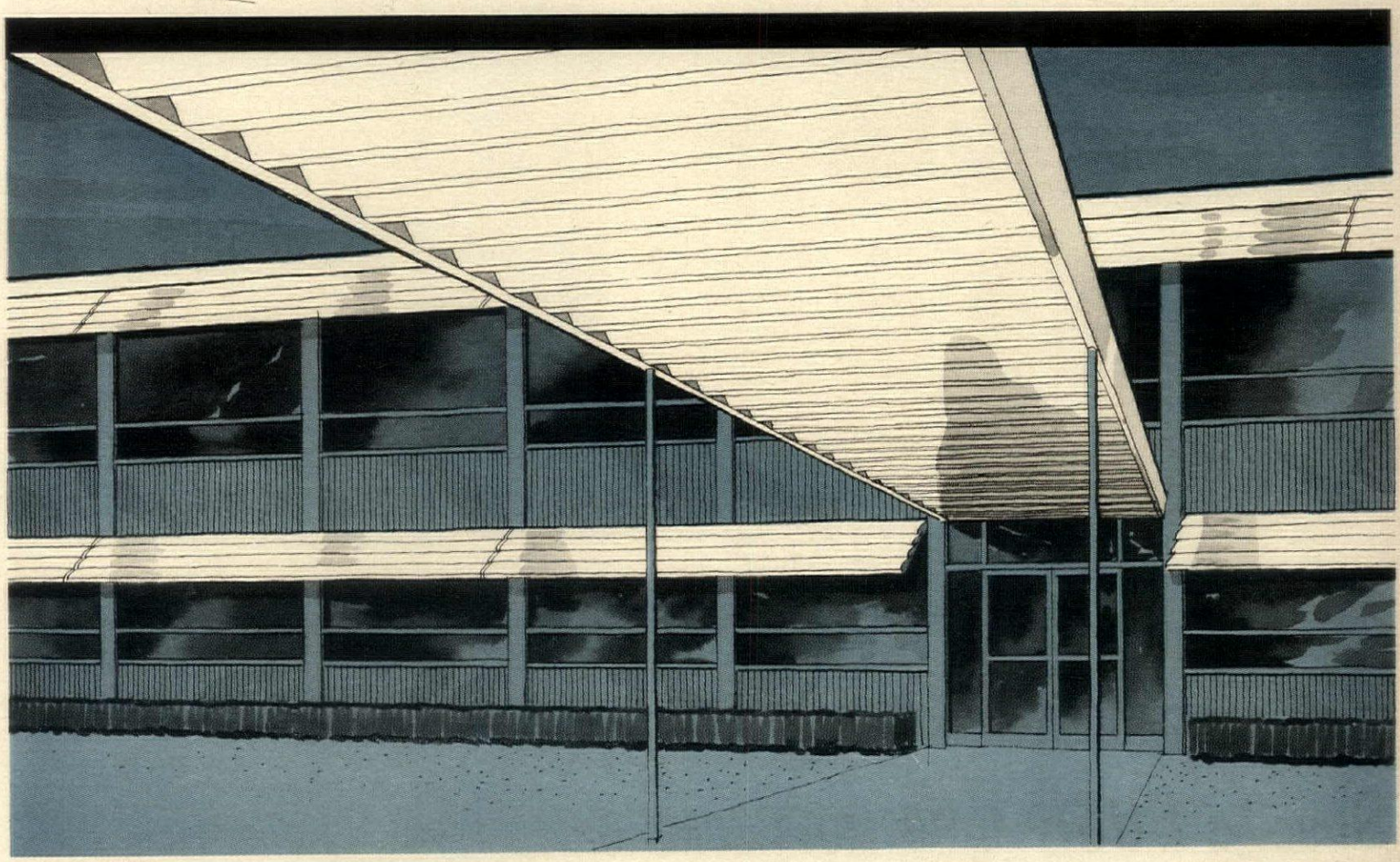

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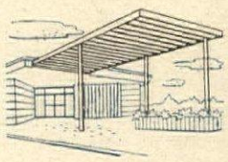
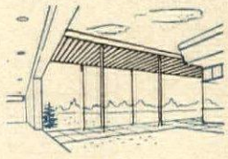


entrance protection



walk protection

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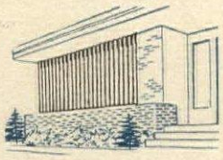

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The above illustration is a completely unretouched photograph, showing how this unusual lighting equipment highlights the remarkable architecture of the building.

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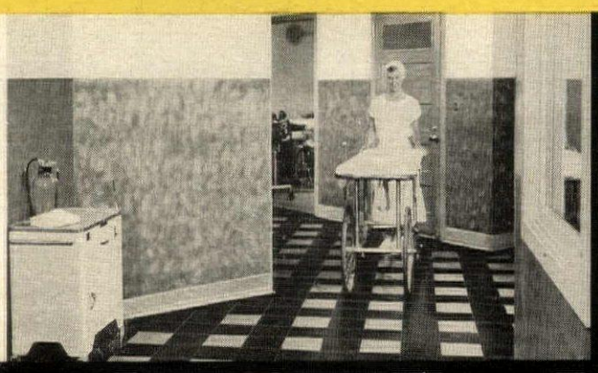

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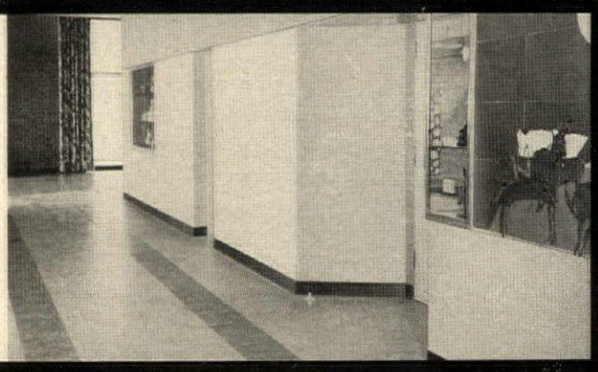

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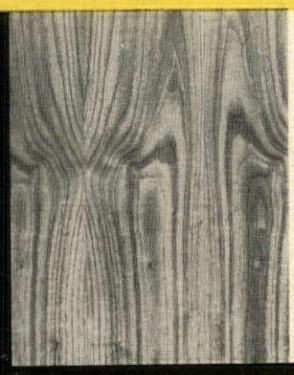

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In 1954, it brought in 29.8% with 1.5 people per auto. I say it brought these people into the business district, because, as you know, a cordon census counts everybody who enters even though all of them don't stop there, but go in and through. Now what has happened to the various ways people get in? Between the peak year 1948 and 1954, when 180,000 less people entered, there seems to be a gradual decrease of about 45,000 people per year entering or going through. In 1954 there were 789,900 who entered the central business district. In 1954 the streetcars and busses carried 60% of what they carried in 1948. The rapid transit (subway and el) brought in 98.7% of what they brought in in 1948—very little change. The suburban railroads brought in 85.8%. The auto brought in 89.9%. (Compared with its maximum in 1951, the auto brought in only 80.4% in 1954.)

An analysis of the 1949 count is of interest. At 2:30 in the afternoon, just one third of the people who entered or went through the downtown district were still there, 310,000. Of the ones who entered by street-level transportation, 35% were still there. Of those who came by the elevated and subway, 44% were still there, and of the suburban railroad group, 78.8% were still there, but of the automobile group only 13.4% were still there. Now of the 310,000 who were still in the central business district at 2:30 in the afternoon, 102,000 came by street-level transportation and 99,200 came by rapid transit, and 112,000 came by suburban railroad and only 36,900 came by private auto, which would indicate to me that the downtown working population and at least a very large percentage of the shoppers must have come by public transportation, and that possibly a very large percent of the private autos were just passing through.

Rapid transit—if it can be kept rapid, the public will use it. A solution: transit lanes on busy streets and expressways

McCARTER: The form of public transportation in Chicago that is still bringing as many people downtown as it did before, and is ever increasing, is rapid transit. The maximum number ever brought by rapid transit in Chicago was 238,000. In 1954, rapid transit still brought in 235,800, or 98.7% of this maximum.

It's my theory that if people are going to come to the central business district, they are going to use the form of transportation which is the fastest for them. Comfort is a factor, but the biggest factor is speed. Use of street-level transit is decreasing because it is no longer a fast way to get into the central business district. Whereas some years ago a bus was stationary 20% of the time for its entire trip, either loading or in traffic, our most recent studies indicate that it is now stationary up to 40% of the time. The difference is due to traffic delays. We have

continued on p. 200

HELLMUTH (r): An over-all plan is needed and a spark plug to get it started and keep it rolling. Stonorov (l).

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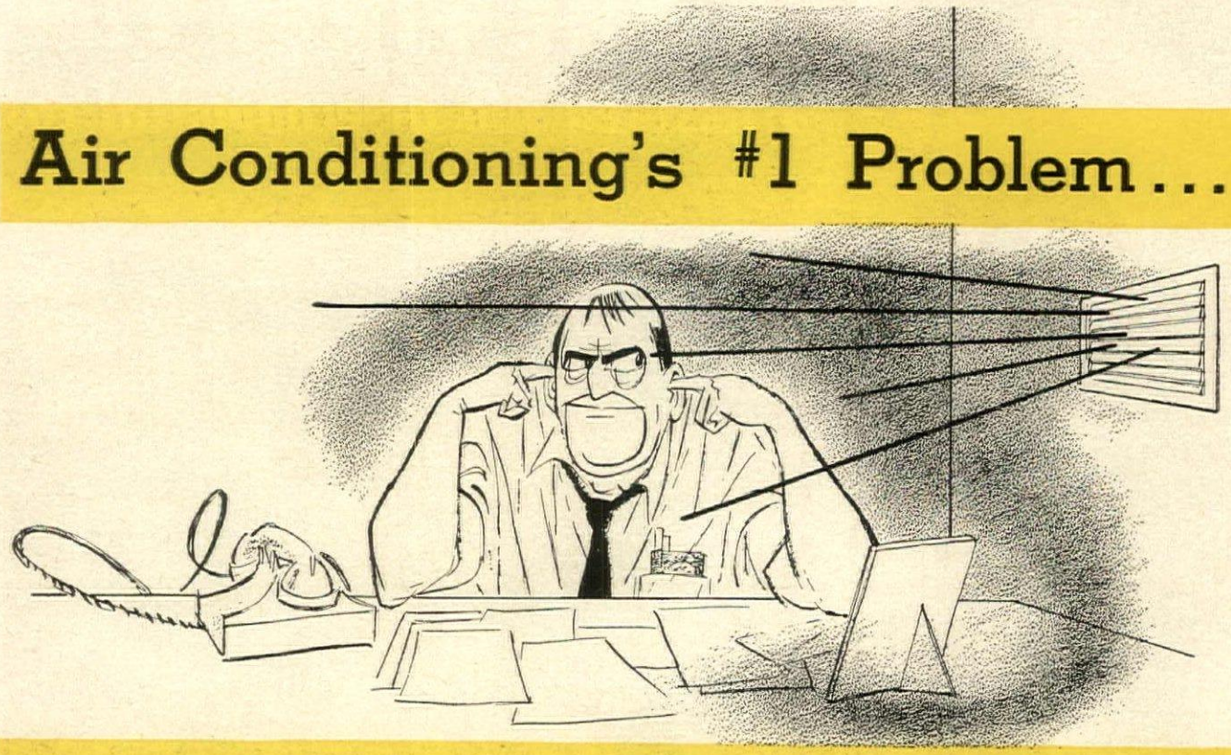

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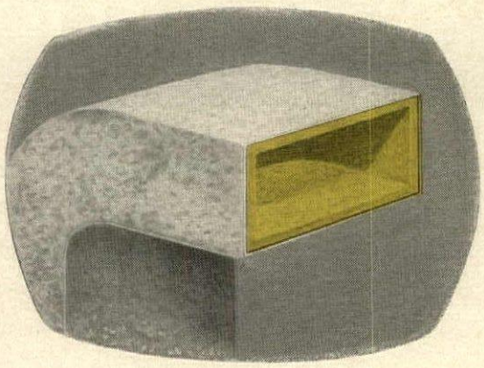

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In stores, restaurants, hotels, institutions...

New, Versatile Consoweld 10

assures interior walls that please clients!

Color and beauty, style, easy maintenance, low first cost—you get these advantages with Consoweld 10 on interior walls. Consoweld 10—the new 1/10-inch-thick plastic laminate—can be applied directly over sheathing-grade plywood, gypsum lath, even over cement or cinder block. Carpenters can easily handle a Consoweld 10 installation using mastic-type adhesives and . . .

Consoweld Twin-Trim® Matching Mouldings, which make possible unbroken expanses of pattern and color in large areas.

For horizontal surfaces, use either Consoweld 10 or Consoweld 6, the widely used conventional 1/16-inch laminate.

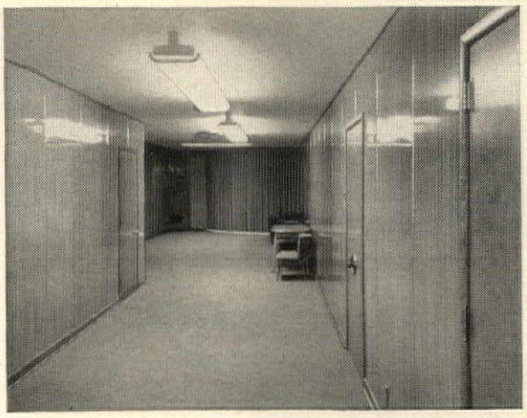
Consoweld is a high-pressure thermosetting laminated plastic manufactured in a wide selection of patterns, colors, wood grains, and marbles. Consoweld is produced in two thicknesses and a wide variety of panel sizes.

Mail coupon below for folder showing the complete range of Consoweld patterns, color-tuned and preference-tested by Color Research Institute of America.

CONSOWELD®

the nation's finest plastic surfacing

...good for a colorful lifetime



Consoweld Corporation
Wisconsin Rapids, Wisconsin

AF-65

Please send me new Architectural File insert, reproducing all Consoweld colors and patterns and giving additional technical data.

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CITY_____ ZONE____ STATE_____

Sinclair uses Day-Brite lighting . . .

The new 10-story Sinclair Oil Building in Chicago is completely lighted with Day-Brite glass-enclosed recessed Troffers — nearly 4,000 of them! Their over-all performance fully justifies the confidence of Architects Holabird & Root & Burgee.

As is amply evidenced by the photographs, Day-Brite Troffers provide lighting at its best. Evident, too, is the fact that Day-Brite Troffers are extremely flexible, both in terms of architectural design and in maintaining required illuminating intensities. They give employes high work-level visibility without eye strain. Can be quickly and economically installed in virtually any type ceiling—are easy and inexpensive to maintain.

SEE! EXAMINE! COMPARE! Many architects, before final decision, are making point-by-point and side-by-side lighting-fixture comparisons. More and more, they are choosing Day-Brite on the basis of their many superiorities.

CALL YOUR DAY-BRITE REPRESENTATIVE! He is thoroughly qualified to consult with you on any lighting problem.

Day-Brite Lighting, Inc., 5471 Bulwer Avenue, St. Louis 7, Missouri.

5438

In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.

"DECIDEDLY BETTER"
DAY-BRITE®
Lighting Fixtures

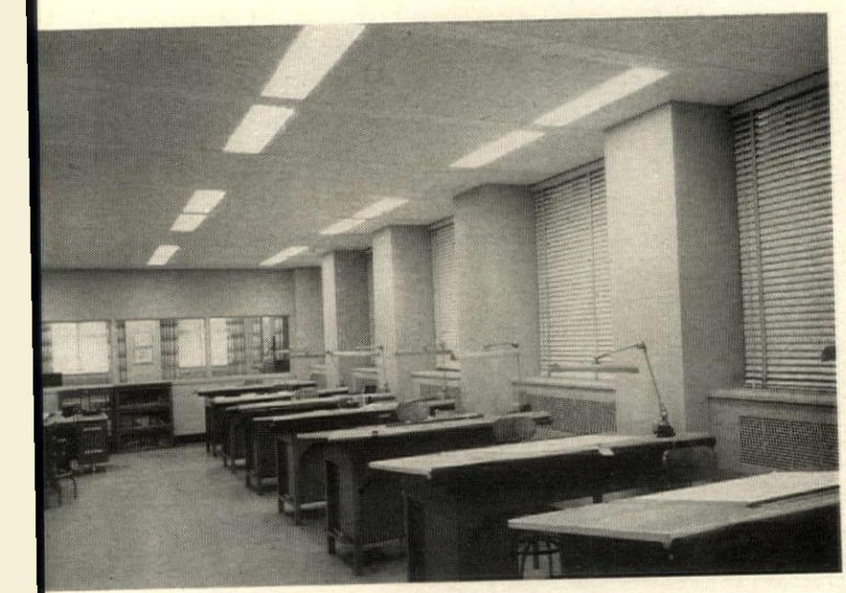
Designed by Holabird & Root & Burgee

Installed by Fishbach, Moore & Morrisey, Inc., for John W. Galbreath & Co., Inc.

A STRIKING EXAMPLE of the over-all illuminating possibilities with Day-Brite Troffers in large areas is illustrated in this general office expanse in the Sinclair Oil Building. Note the uniformity of desk-top illumination throughout.

gets "see-ability" plus design

THE DIGNIFIED EFFECT and comfortable illumination in Sinclair executive offices are typified by this view. The fixtures are unobtrusive, harmonious in design and completely functional.



ADEQUATE LIGHTING is certainly an essential "tool" in any drafting room. Here again, the versatility of Day-Brite Troffers is apparent—placement of the fixture runs provides a most satisfactory degree of visibility on the boards.

THIS CONFERENCE ROOM again illustrates the flexibility of Day-Brite Troffer placement. Note especially the ample illumination provided throughout the room area by placing fixtures parallel to the narrow dimension.

How To Specify An Abrasive Tread

that will last the life of your building

clip and file

There are four factors that make an abrasive metal tread safe *and* durable: (1) Weight of the abrasive granules per square foot, (2) size of the granules, (3) uniformity of distribution, (4) average number of granules per representative square.

Feralun abrasive metal treads are quality-designed and made. They have a full measure of non-slip granules. And they are cast to last the life of your building. For handy reference, here's a simple short form specification:

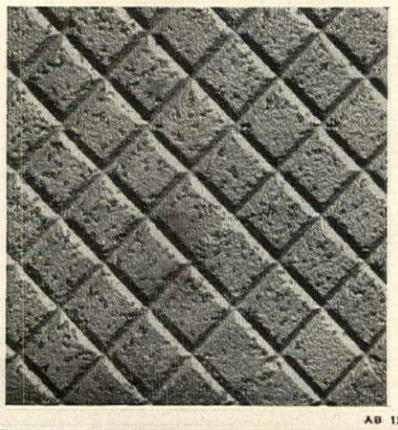
Treads, Thresholds, Elevator Door Sills, Floor Plates, Trench Covers – Exposed wearing surface to contain not less than two (2) ounces per square foot of abrasive granules embedded in the top metal surface not less than 1/16 inches while the matrix is in a molten state. Size of non-slip granules shall range from #16 to #24 and distributed uniformly over the surface in such a manner that not less than an average of ninety (90) individual granules can be counted in any three representative 1/2" x 1/2" squares of any portion of the finished surface.

Pattern of finished abrasive surface shall be either "hatched", "fluted" or "plain", as required. Of (Feralun, Alumalun, Bronzalun, Nicalun) non-slip abrasive metal, as fabricated by the American Abrasive Metals Company, Irvington, N. J., or of approved equivalent in kind, quality, function and characteristics.

Why FERALUN provides lasting safety

Here is an unretouched photograph of a *Feralun* tread taken after acid treatment. (Paint is removed and acid is used to eat away the metal base so as to isolate the actual abrasive content of the tread.) Note the full and even distribution of abrasive—for greater safety, longer wear.

Here is an unretouched photograph of an abrasive tread, purchased on the open market of the type often offered as an equal of Feralun, after the identical acid test. Note the meager amount of abrasive and spotty distribution.



SEE SWEETS CATALOG—12b/Am.

FERALUN

AB 125

AMERICAN ABRASIVE METALS CO. • IRVINGTON 11, N. J.

ROUND TABLE

Continued from p. 192

made several proposals in Chicago to favor the riders of mass transit. (If the community is going to keep people coming into the central business district, mass transit has to receive some favors in so far as getting through traffic is concerned.) We proposed a transit lane on Washington St. downtown. Our studies show that if we had a special transit lane, it would take a bus just half the time to go through that short distance in downtown where it's now fighting for street space with all the rest of the traffic. We operate enough busses on that street so that we would completely use one traffic lane. We argue: "Why can't street space be zoned functionally just the same as other spaces are zoned functionally, and benefit the maximum number of people?"

We also encourage a combined use of the automobile and rapid transit by having parking lots where the motorist can freely go and then get a faster public transit ride into the central business district. We have four such lots. Three of these are free lots. One is 9 mi. out at the end of our poorest rapid transit line. Yet, by 8:30 every morning there are over 400 automobiles parked there. We have a 300-car free lot at the end of another rapid transit line that takes a roundabout way to get downtown. Yet that is filled every morning by 8:30. We are now trying a pay lot.

RAUCH: Would your proposal for a transit lane mean blocking off some of the streets from auto traffic entirely?

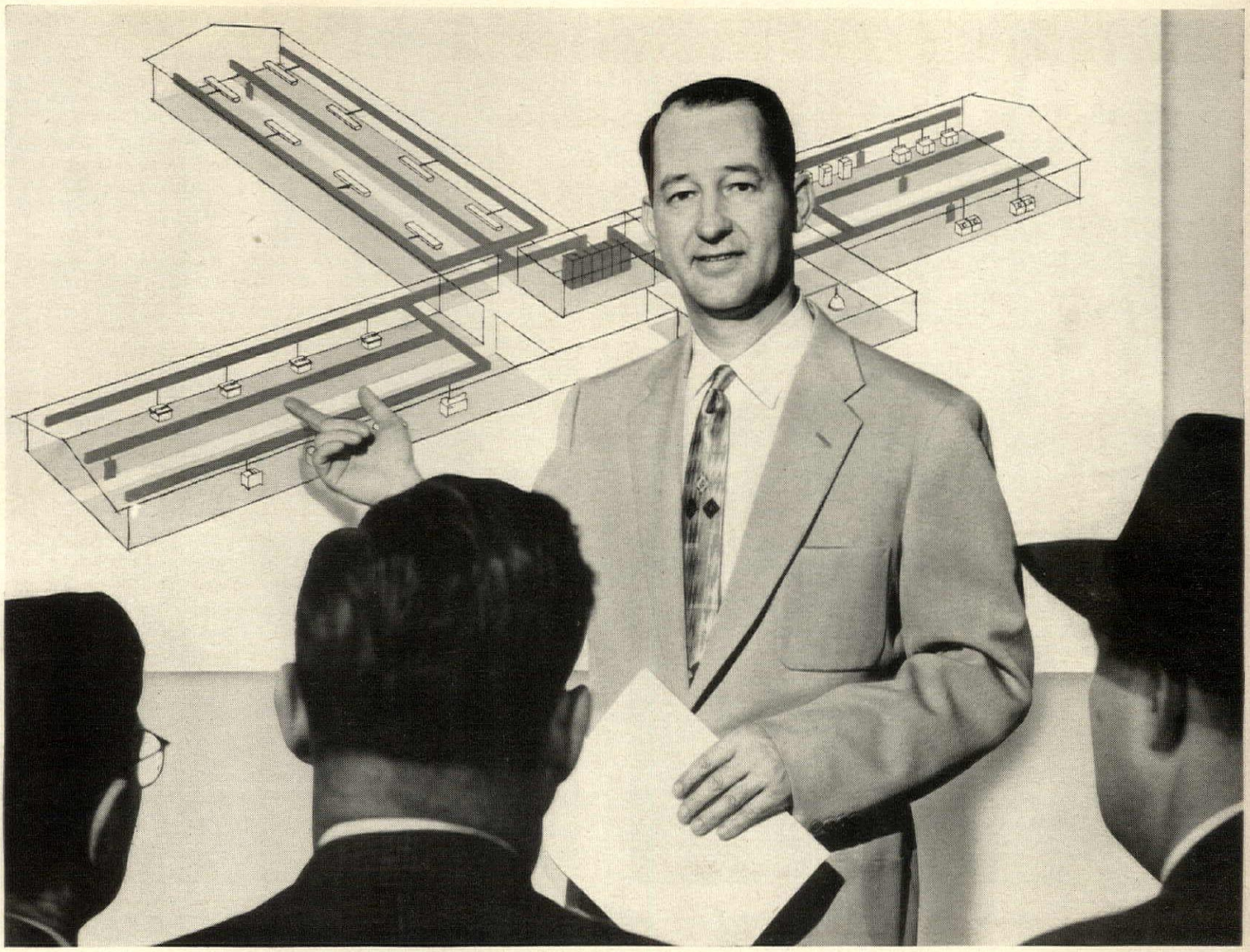
McCARTER: No. I am talking about a one-way street downtown which has the capacity for five lanes of traffic or two parking lanes and three moving lanes. We ask for the center lane.

RAUCH: How do you get the people from the busses to the sidewalk?

McCARTER: Safety islands. We have found that in either of the curb lanes, the turning movements of other traffic and parking so delay public transportation that the people would be much better off using a safety island in the middle of the street. On a five-lane street, people should have a safety island in the middle of the street anyway to help them get safely across.

TILL: Both Dallas and Houston have built a great deal of downtown parking and fringe parking. They have secured the cooperation of the public transit which has put on what they call shopper's busses. In both cities where 20¢ is the prevailing bus fare these particular shopper's busses charge only 5¢ because they haul large numbers of people a short distance. They cover the perimeter parking lots and the Union Station on a circle that goes within at least a block of every major downtown store. They are very popular. A lot of people use their private autos

continued on p. 206



FACT: FROM SCHOOLS TO SKYSCRAPERS YOUR ELECTRICAL PROBLEMS ARE OUR ASSIGNMENT

Westinghouse men like these are working with architects throughout the country on all types of building construction.

They are electrical specialists.

Their assignment is to help you solve electrical problems—from classroom lighting in a school to a complex electrical system for an industrial plant.

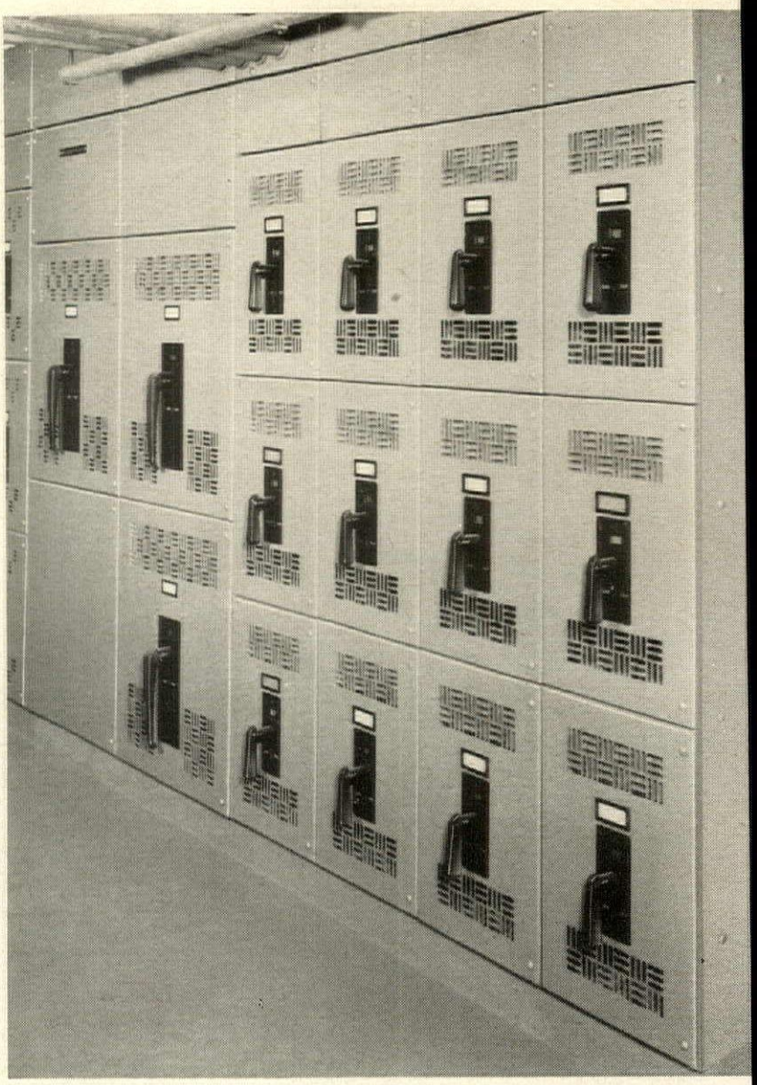
Check the examples on the next three pages.

THE MAN WITH THE FACTS

He's the construction sales engineer in your nearby Westinghouse office. His assignment is to analyze your electrical problems, then quarter-back the team of specialists that help you solve them. We call him *The Man With The Facts*. Why don't you call him? DP-5010-A

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

Genesee Hospital, Rochester, N. Y. Architects (for new section): Waasdorp & Northrup. Consulting Engrs: Crocker, Cherne & Dickason, Associated Consulting Engineers.



Building-type switchboard is a factory-assembled unit containing modern circuit breaker protective devices. Switchboard is compact and completely safe.

FACT: THEY ASSURED DEPENDABLE SERVICE THROUGH CIRCUIT BREAKER PROTECTION

Dependable electrical service, to insure trouble-free operation of patient services, was a paramount consideration when the Genesee Hospital extension was planned. Proper protection of valuable equipment and operating personnel was a necessity.

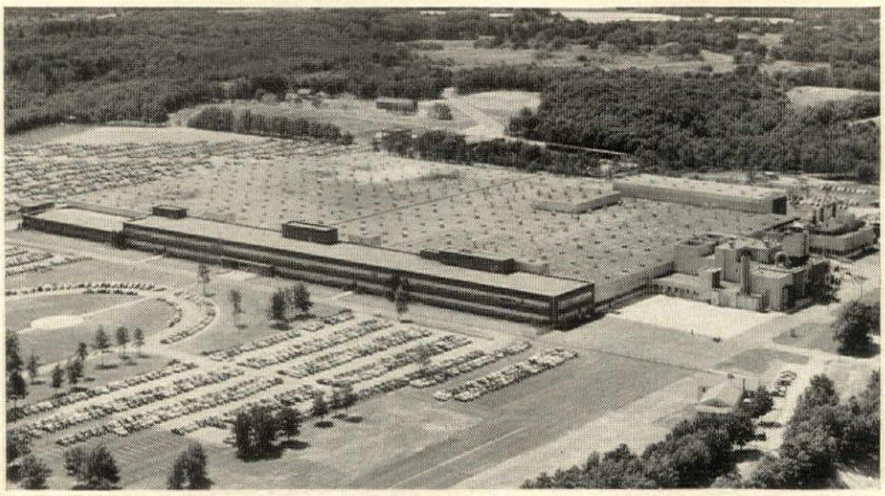
A Westinghouse apparatus specialist was asked for advice on an electrical system that virtually eliminates outages. The foundation is a Westinghouse building-type switchboard with circuit breaker protection for the 24 feeders. In case of a fault or overload, service is restored quickly. A flip of the breaker handle does it.

Why not have your Westinghouse specialist help you with similar problems?

DP-5010-B

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

Westinghouse



Hamilton Standard Division of United Aircraft Corp., Windsor Locks, Conn. Architects and Engineers: Albert Kahn Associated Architects & Engineers, Inc.

FACT:

THEY MET RIGID PRODUCTION REQUIREMENTS WITH HIGH-VOLTAGE DISTRIBUTION

For efficient operation of a plant's production line machines, voltage must be held constant.

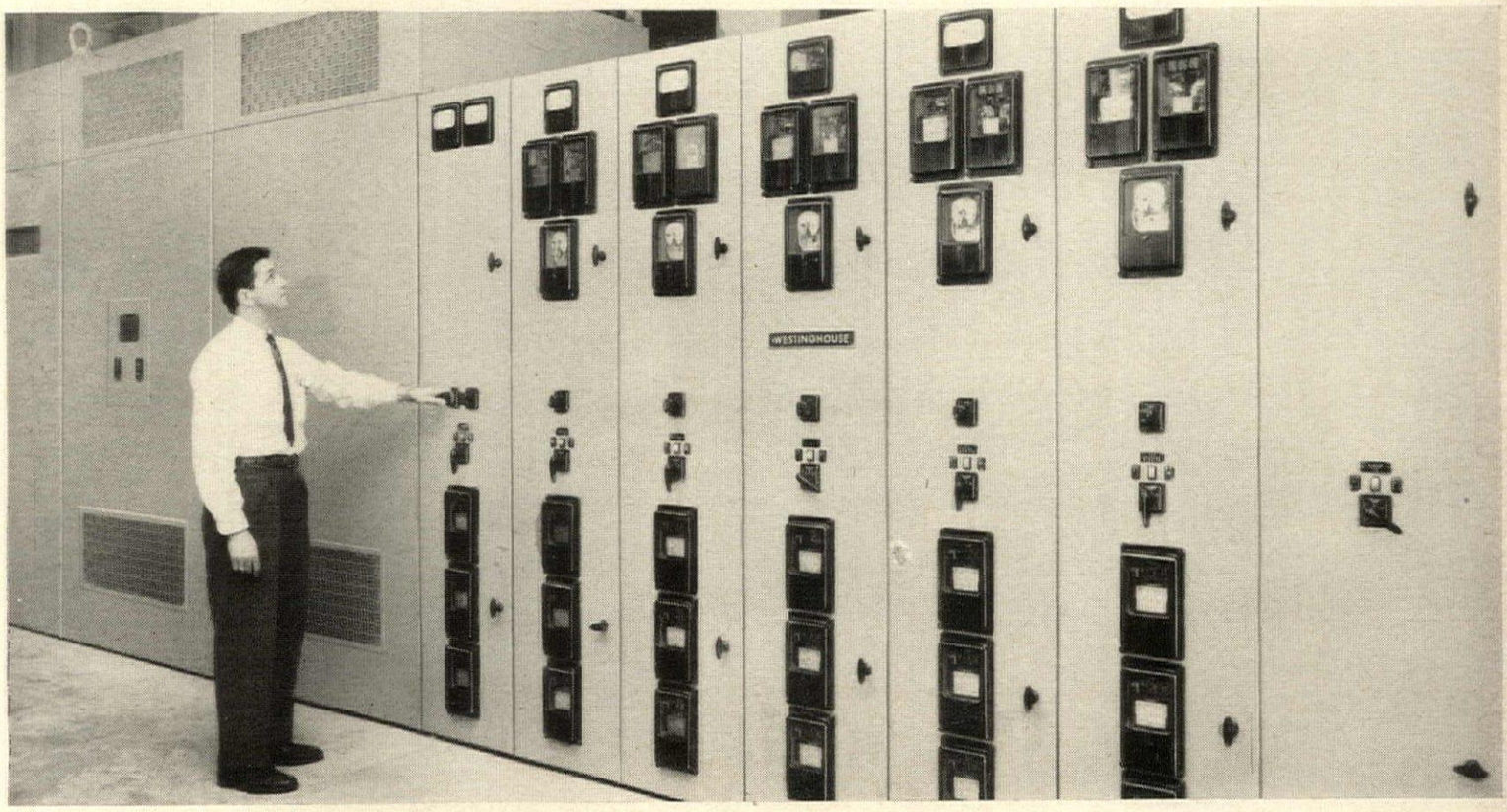
This Westinghouse installation incorporates an electrical system that utilizes a main high-voltage switchgear station. Each high-voltage circuit breaker in the switchgear line-up protects a feeder to a production load area.

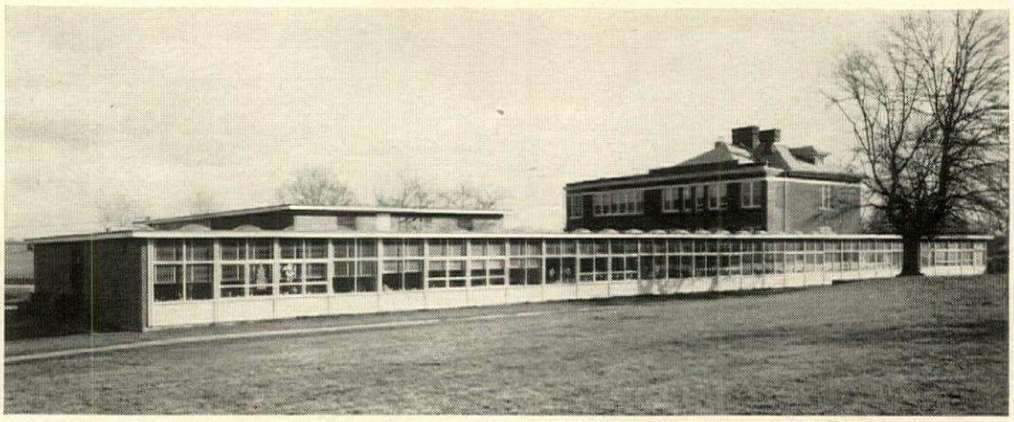
At each center of load, a step-down power center provides operating voltage, distributed in short runs. Voltage variations are minimized.

Your Westinghouse specialist can work with you on similar electrical problems. Call him in through your Westinghouse construction sales engineer.

DP-5010-C

High-voltage switchgear station is the hub of the electrical system. It provides maximum protection and efficiency.





Elm Hill School, Newington, Conn. Architects (for new extension): Carl J. Malmfeldt & Associates, Hartford, Connecticut. Consulting Engineers: Henri B. van Zelm & Associates, Hartford, Connecticut.

FACT: THEY SOLVED SHADOW PROBLEMS CAUSED BY LOW CEILING JOISTS

Main support joists in this new classroom created a lighting problem: the possibility of shadows due to the broken ceiling surface.

The architect and consulting engineer approved the new Westinghouse LC luminaire, mounted in continuous rows perpendicular to the ceiling joists.

Shadow problem: solved. In fact, 50 foot-candles of shadowless, direct-indirect illumination were provided—a result you, too, can secure.

Why don't you call your Westinghouse specialist to help you solve similar problems?

DP-5010-D

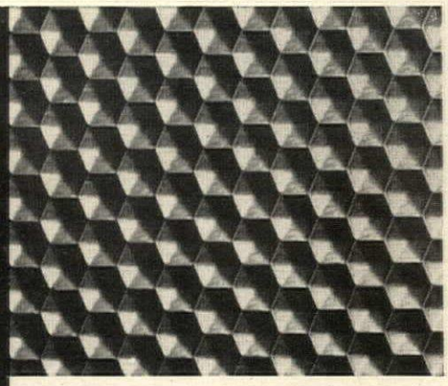
LC fluorescent luminaire, a direct-indirect type, provides high illumination in all parts of the room.

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

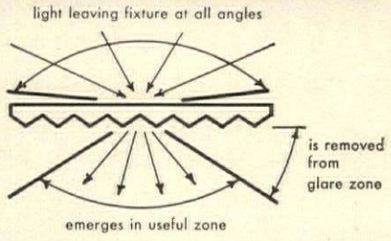
Westinghouse

ARCHITECT'S AND ENGINEER'S FACT SHEET

Photo—Ezra Stoller. Pattern 70 installation at the Manufacturers Trust Company's new Fifth Avenue Office in New York. Architects—Skidmore Owings and Merrill.



Close-up view of Pattern No. 70, a prismatic crystal lens panel. You can get Pattern No. 70 in widths up to 34 inches, lengths up to 100 inches.



Working diagram. Light enters panel from fixture (top) at all angles. Prisms gather light, transmit it to useful zone.

CORNING PATTERN No. 70

Lightweight . . . Low-Brightness Lens Panel

You use Corning Pattern No. 70 to deliver maximum light in the useful zone with low brightness in the glare zone.

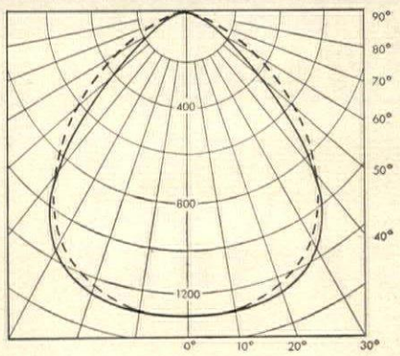
A pattern of hexagonal prisms on one surface controls the light. These prisms bend light rays downward creating more useful illumination. Light in the near horizontal angles is reduced so that surface brightness of the panel is low at normal viewing angles.

Result is a distribution of emitted light in a pattern of even illumination on the working surface.

Lightweight—just 1.75 pounds to the square foot. You can get panels up to 100 inches long—for one-piece fixtures that eliminate dust- and light-leaking seams. Water-white crystal, dimensionally stable glass. Won't warp, fade, discolor, or show age. Has no dust-attracting static charge. Cleans easily.

Recommended for luminous elements, troffers and fixtures in schools, banks, offices — *wherever* you want low brightness.

For free information about this interesting and useful lightingware, please use the coupon.



Candle power distribution

——Across axis ---Thru axis

Two 40-watt 3500° lamps (4960 lumens). White Enamel Reflector, 80% R. F., 11" x 48" segment. No. 70 Low-Brightness Lens Panel.

White Reflector and Pattern No. 70 Low-Brightness Lens Panel.

CORNING GLASS WORKS
CORNING, N. Y.

Corning means research in Glass

CORNING GLASS WORKS, 65-6 Crystal Street, Corning, N. Y.

Please send me Bulletin LS-47A: "New Corning Pattern No. 70 Low-Brightness Lens Panel."

Name.....Title.....

Firm.....

Address.....

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

TILL (r): It seems to me that it's a question of the chicken and the egg, and we have determined we want both the chicken and the egg simultaneously. McCarthy (l).

ROUND TABLE *Continued from p. 206*

and the steam railroads, and then use the shopper's busses to get to the stores. The system seems to be working.

WILBUR SMITH: I agree with every statement Mr. McCarter made about public transportation. We have to have all forms of transportation in the central business district. I don't think there is a person with any vested interest in the central business district today that would dare say that we can afford to exclude the private vehicle. We should strive for balance and not try to exclude one to benefit the other. One economic segment of our population will always be dependent on mass transportation. We have to provide mass transportation for them regardless of how much it costs us and how much it has to be subsidized. But, to a large portion of our population, mass transportation is attractive only when it can save time, and to a lot of people it isn't attractive even then. I think the transit companies and transit officials are missing a good bet by not insisting that private rights-of-way for mass transit vehicles be provided on expressways. It would be one means of having motorists subsidize mass transportation, because most expressways are paid for by direct use of taxes.

McCARTER: I don't recommend that you bar the private automobiles from any street. All I say is zone certain primary streets so that one lane is for public transit exclusively. Legal opinion from the city of Chicago puts that within the police powers of the municipality.

FLEISHMAN: Will that be done in the city of Chicago?

McCARTER: We have a committee working on it.

WILBUR SMITH: There are other devices that can be used to aid rapid transit. For example, on key retail streets in some cities, they have made it unattractive to drive autos. They don't say you can't, but if you drive on the street, you have to go many blocks before you can turn off. They prohibit parking on the street, and they time the signals to favor transit vehicles. We can favor transit in central districts and I think we should where it can be done without completely disturbing the over-all traffic pattern.

We might go even further. We should consider having the motorist help subsidize transportation. It has been suggested that people who still elect to drive their vehicles into the central areas of the city should pay a special fee for that privilege, and the money would be used to build more attractive and better parking. There is profit to be made in parking downtown. Maybe it's possible to control municipal parking facilities so that the profits can be used to aid mass transportation. We need an integration of the whole downtown transportation system so that the price mechanism, rather than arbitrary regulation, can be used. Regulations and controls won't work because, regardless of how important downtown is to the businessmen and public officials, there isn't a thing sacred about the business district of our cities to the average citizen, and we won't ever convince the average citizen that there are things to be saved and protected downtown even though we know there are.

continued on p. 212

More and More...

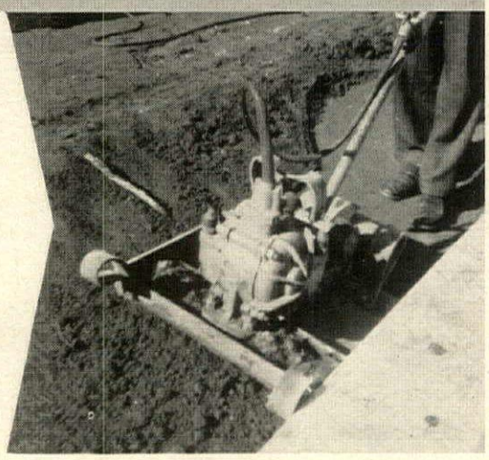
PROPER DENSITY of SOILS

UNDER FOOTINGS . . GROUND FLOORS . . IN BACKFILLS, ETC.

IS BEING SPECIFIED

. . . as progressive architects discover how quickly and inexpensively desired soil stabilization in any job, large or small, can be achieved with

JACKSON VIBRATORY COMPACTORS



The manually guided, self-propelling JACKSON VIBRATORY COMPACTOR is widely and very successfully used for consolidating granular soils, such as gravel, sand or crushed rock in concrete floor sub-bases, under footings, close to abutments, in trenches, bridge approaches and many other applications. Meets or exceeds specified densities as determined by Proctor and other methods . . . at the rate of 1800 to 2000 sq. ft. per hour using a single JACKSON COMPACTOR, and where twin units are employed (operated by one man) production is practically doubled. In very large projects, including the consolidation of granular soil sub-bases for parking lots, ramps, drives, large fills, and macadam highway construction, the JACKSON MULTIPLE VIBRATORY COMPACTOR, tractor-mounted and having a working width of 13′, 3″, has been proved by far the most advantageous means of achieving desired densities.

JACKSON VIBRATORY COMPACTORS

are available to contractors on either a purchase or rental basis from equipment dealers throughout the nation. Specify their use on your next project. It's good assurance that your requirements will be met quickly and thoroughly. Fully descriptive literature gladly sent on request.

JACKSON VIBRATORS, INC.

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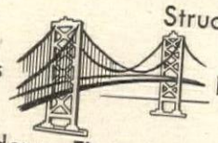
Bayley

76 years of participation in the design, use and fabrication of metals in the building field...

BAYLEY'S wide range of experience

Structural steel, bridges, buildings. **1879**

Bridge railings

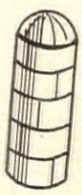


New York under Roebling. **1900**

1890

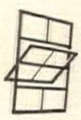
Ornamental iron fences for parks, estates. Fire escapes. Bronze windows.

Steel windows. First glazing springs. Steel doors. **1906**



Steel silos — sheet metal fabrication. **1910**

First modern design in steel windows. Flat faces, parallel contacts. Forerunner of today's quality windows. Double glazing. **1912**



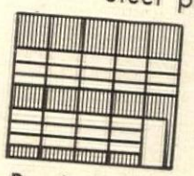
1915 Galvanized windows.

Mechanical operators; (1923—electrically controlled). **1916**

Window inserts for concrete buildings. **1920**

1918 Wrought iron windows. War production; steel windows, screw posts.

Steel projected windows. **1923**



First curtain wall design in steel. **1928**

1925 Aluminum projected windows; insect screens.

1929 Guard windows for prisons.

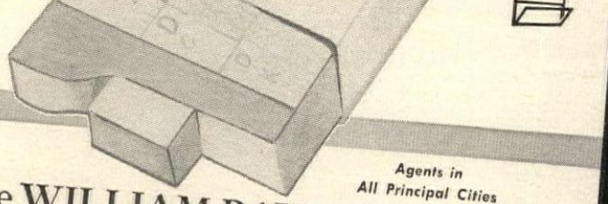
Bomb shelter doors. Recoil mechanisms for anti-aircraft guns. Hangars, USAF. **1941**

1940 Steel detention awning projected windows. Doors for liberty ships.

Bomb Shackle releases—USAF. **1953**

1950 Steel detention curtain wall systems; 1954—Aluminum.

1955 Steel intermediate projected windows.



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Comfort story of new 24-floor building—the Second National Bank of Houston

Honeywell Electronics saves

The Second National Bank building of Houston, now under construction, will have the world's most advanced temperature control system—Honeywell electronic.

thousands of dollars

Central control room is key to more efficient temperature control

THE NEW ERA of electronic efficiency and comfort is coming of age in the southwest. Completion of the new home of the Second National Bank of Houston sometime next year will mark an important step in this era.

The reason for the new efficiency in the Second National Bank is the master control center. Here, a single operator has at his finger tips control over temperatures throughout the 24-story building.

The reason for the new comfort is the flexibility and fast response of the electronic controls. The purpose is to create for the client a more productive environment where people feel, think, and work more energetically and efficiently.

Strategically placed Honeywell thermostats will compensate for every possible occupany, exposure and use comfort factor. The thermostats concealed in ducts will control 318 individual comfort zones, making the new building super-comfortable for employees, clients and tenants.

The *techniques* used in solving these comfort problems can help you provide the Indoor Weather required for your clients' facilities—for a Honeywell Electronic Customized Temperature Control installation is *designed to fit the needs of the building and its occupants.*

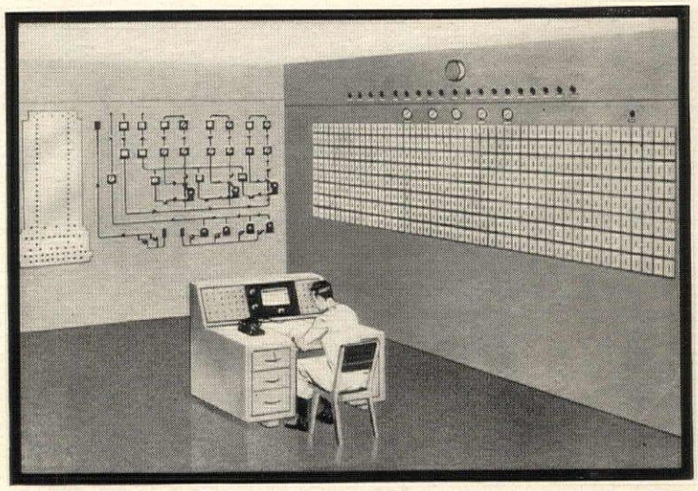
For comfortable, more productive temperature in new or existing buildings—of any size—specify Honeywell Electronic Temperature Control

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

Your clients have more comfort, efficiency and maintenance economy—and they'll save fuel, too.

For full facts on Honeywell Electronic Customized Temperature Control, and the economical Honeywell Periodic Maintenance Plan, call your Honeywell office. Or write Honeywell, Dept. MB-6-76, Minneapolis 8, Minnesota.

Kenneth Franzheim, architect. H. E. Bovay, Jr., consulting engineer. Reg F. Taylor, engineering consultant. W. S. Bellows Construction Corporation, general contractor. Straus-Frank Co., mechanical contractor.



Master Control Center gives quick service to tenants and reduces daily building operating costs.

Proudly displayed before the public on the first floor of the building will be the master control center. The Colorgraphic panel at the rear shows at a glance and records the operating conditions of the basic heating and air conditioning plant to insure peak efficiency and economy.

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With this master control center, maximum service is given to the building occupants at a minimum cost. Many thousands of dollars are saved by eliminating trips through the building to check temperatures and adjust thermostats. Only Honeywell can provide this coordinated electronic control and recording system.

Without Honeywell Electronic Control, 318 check points

318 points would have to be checked at the thermostat.

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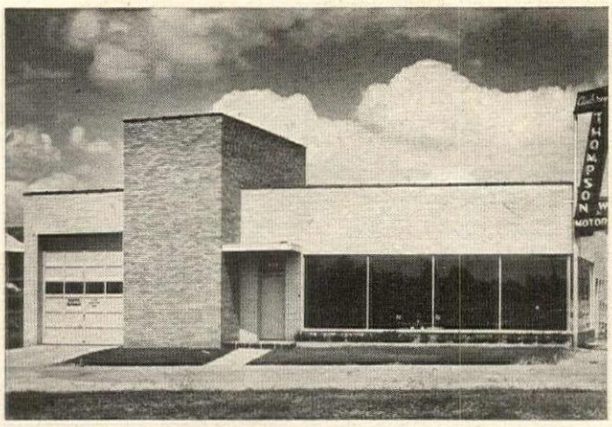

UNIFORMLY GOOD COLOR of Atlas Mortar helped produce this attractive masonry for the Aubrey Thompson Motor Co., Tyler, Texas. Designer and builder: Hobart Plunkett, Tyler, Texas.

EXCEPTIONAL WORKABILITY – Contractor Frank Scheck, working on Oswalt Company's concrete block plant at Broadview, Ill., says, "Atlas Mortar holds its plasticity... does a better job—faster."

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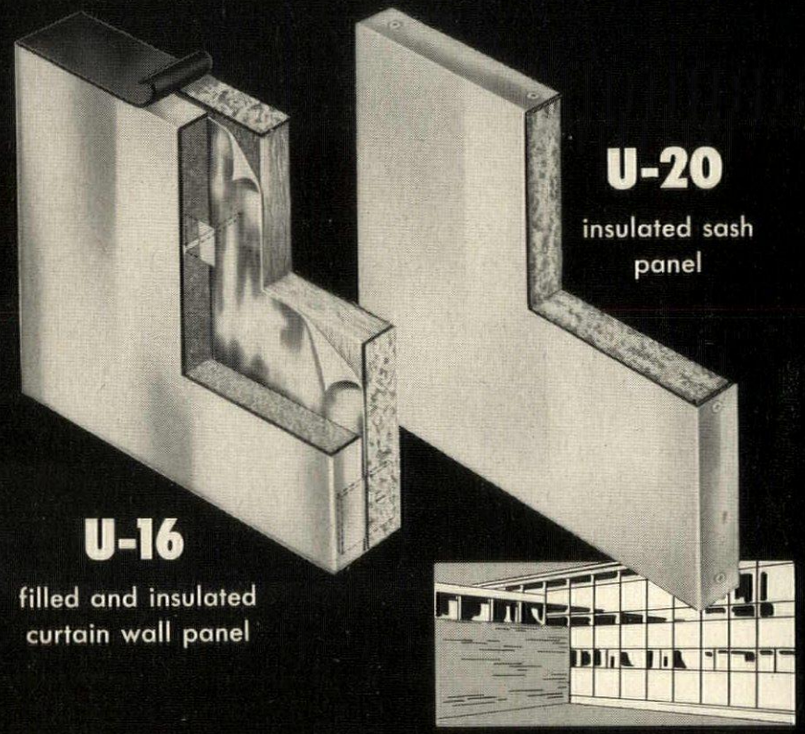

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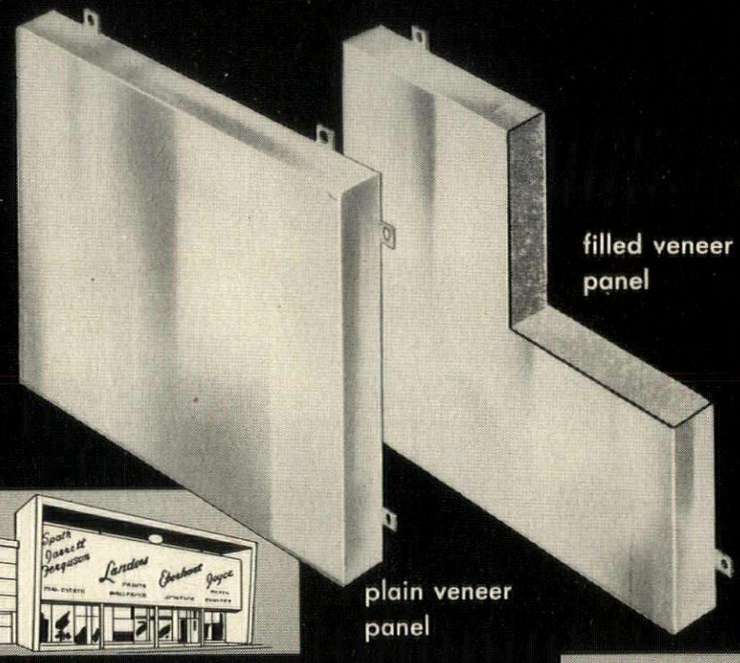

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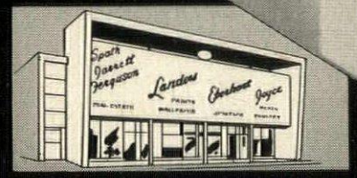

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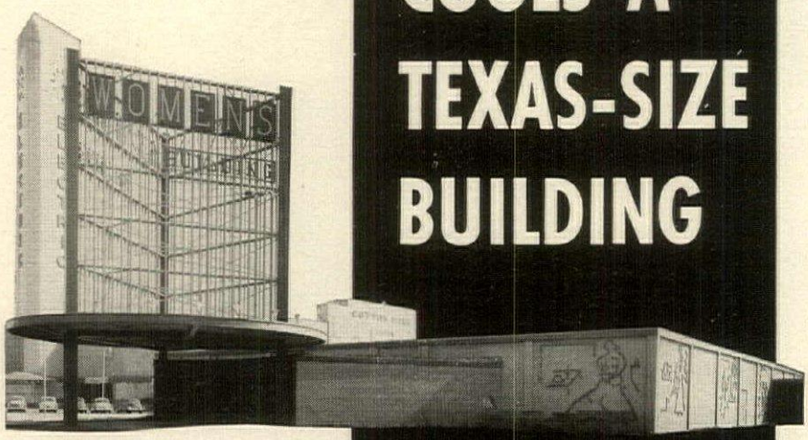

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ROUND TABLE

Continued from p. 206

Express highways—the newest idea is a traffic ring immediately around the downtown business district

BLUCHER: How far can you go in providing for the movement of automobiles in the central area? In the city of Chicago at the present time there is a suggestion that the Calumet expressway be brought into the heart of the city as part of a $245 million program, and it is proposed that the entire county be bonded for that. There is some talk of using motor fuel tax. This expressway may bring 30,000 vehicles (30,000 to 45,000 people) into the central business district. When you compare that with the number of people that come into the city of Chicago on mass transit, does the $245 million sound like a reasonable investment? How much more could you get if you spent the same amount on mass transit facilities? In Philadelphia the Delaware expressway is going to cost $17 million per mile in built-up areas. The engineers' survey shows that, if you ask people to pay for its use, only 50% will use it; the other 50% will use it only if it's a free facility. The engineers' survey also pointed out that in order to finance this thing there are three alternates, all of which involve a subsidy of some kind. It has to be subsidized. How far can we go in providing for the movement of automobiles into the center of the city when they bring in so few people comparatively?

FEISS: One other question. The Philadelphia survey shows that the amount of time expected to be saved by that expressway will be somewhere around 25 minutes from the outlying end of the expressway to the downtown area. Considering the fact that a good many people won't be starting that far out, the average saving will run somewhere between 15 and 18 minutes. Again, is it worth it from that standpoint?

RAUCH: In addition to bringing the passenger automobiles into the central city, the Delaware expressway is to be used by high-speed busses. The local trucking which now goes up and down the industrial area along the Delaware River will also be able to use it, thereby freeing city street capacity for public transportation.

McCARTHY: I understand the Port of New York Authority is considering the advisability of building a vast parking space out on the Jersey Meadows where all drivers of private cars will have to park their cars, get in busses and use this facility which all of us are paying taxes on to support. I am surprised there is not more daring of

continued on p. 216

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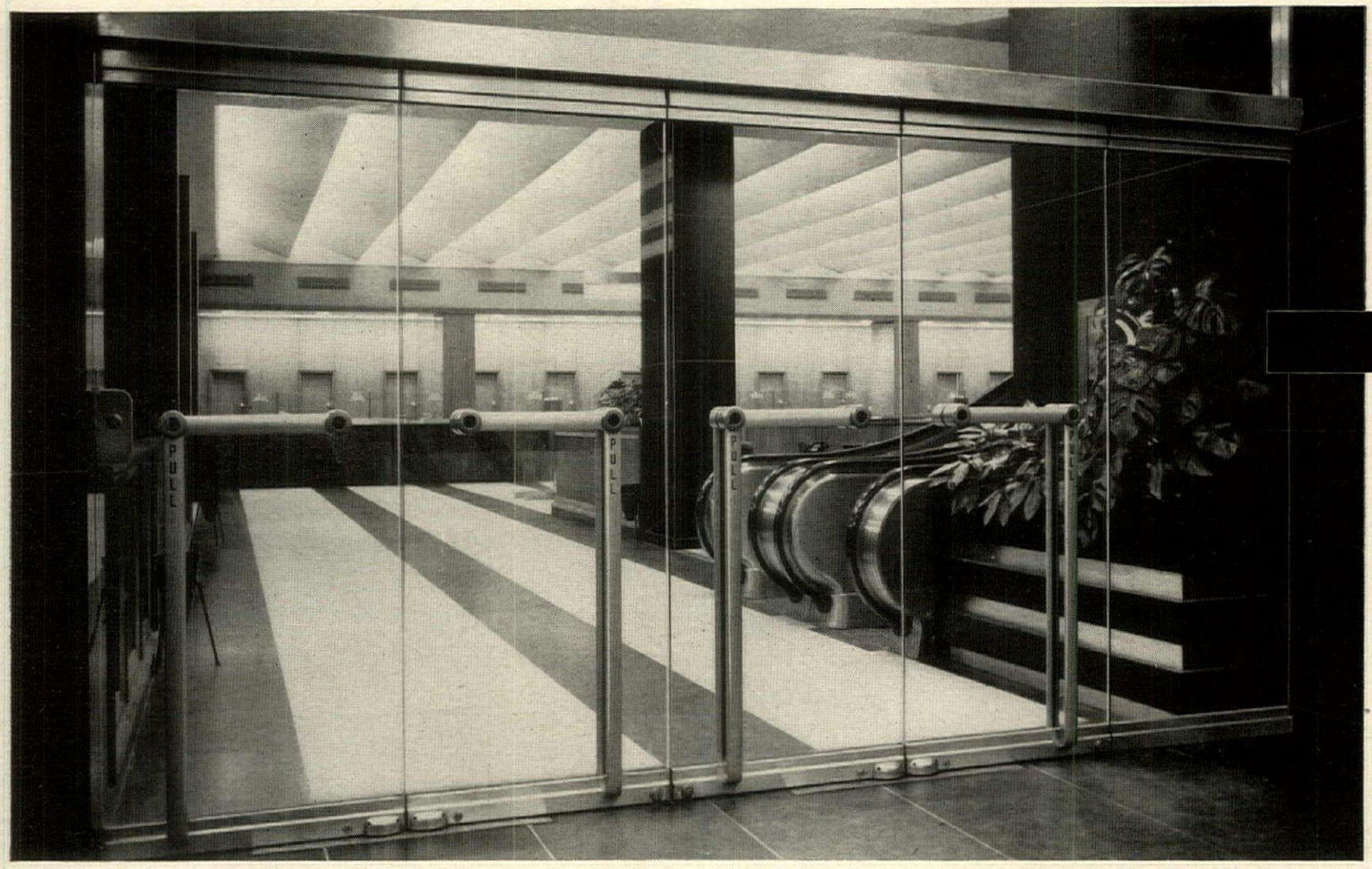

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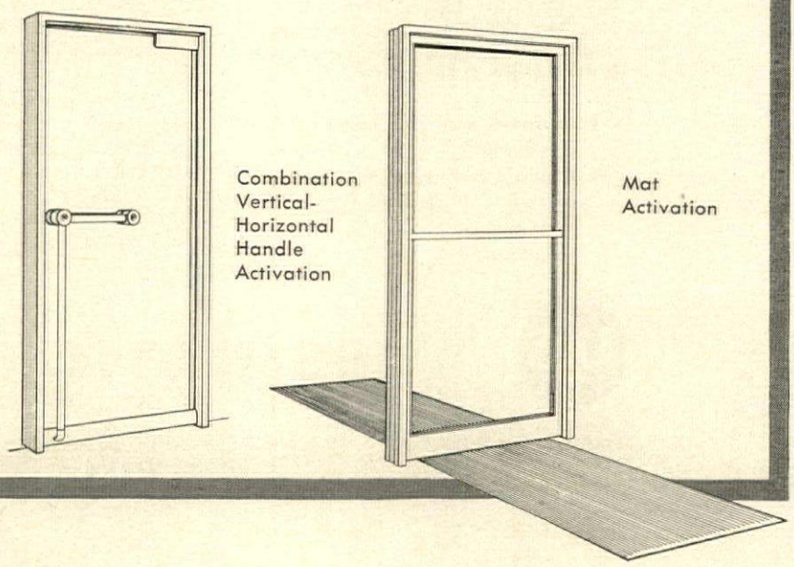

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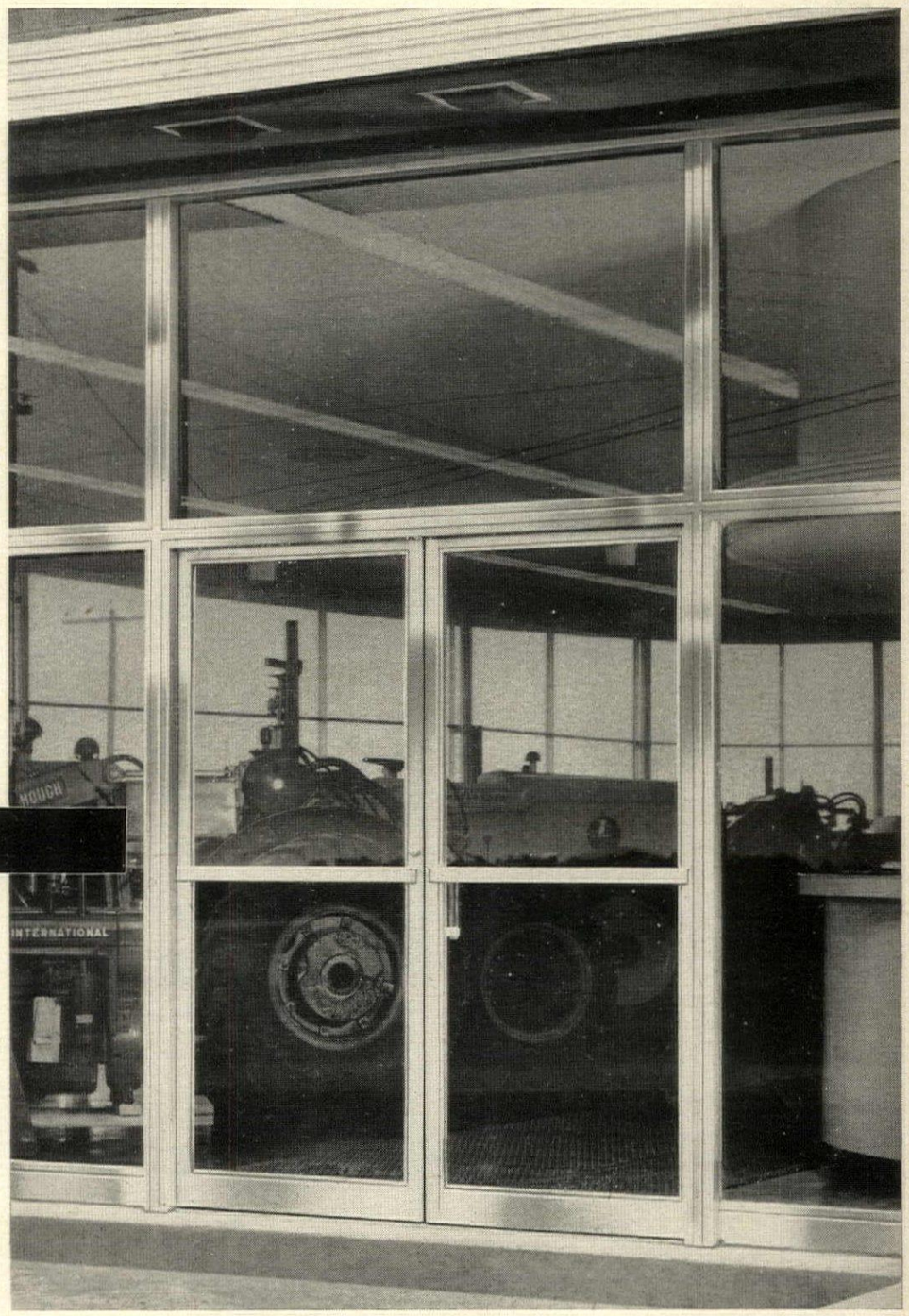

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BLUCHER: Any time a community zones unneeded commercial property in outlying areas, it's competing with downtown.

ROUND TABLE *Continued from p. 212*

this kind shown about the private automobile, because it is quite obviously choking your cities to death. If the Port of New York Authority can bar it from that tunnel, why can't many of your municipalities bar it from the downtown streets and compel people to use mass transit?

CHAIRMAN: Can they bar it from the tunnel?

FLEISHMAN: If it's privately owned or semiprivately owned and the Authority has the power to make the rules and regulations, I think they can. The Port of New York Authority is an independent body, not elected.

McCARTHY: That is right.

FLEISHMAN: If it were a city street department which tried to keep the cars out of the tunnel, I don't think they could.

FLEISHMAN: The Third St. expressway in St. Louis alleviates, but does not solve, the problem because it fails to take into consideration anything other than automobiles. Until it does, then you have to come to Mr. McCarter's suggestion that, unless mass transit which moves people and expressway which move vehicles are somehow merged, this is no answer. I was on the highly touted Los Angeles expressways at 5 o'clock in the evening and it wasn't an expressway anymore. It was a traffic jam as far as I could see. So, obviously the answer is not in the moving of vehicles, but in the moving of people *and* vehicles.

BAER: Don't you think there are going to be busses on Third St. as well as autos?

FLEISHMAN: There may be busses, but if they are tied up in the same traffic jam that ties up the autos, it's no answer. The answer lies partially in using a lane certain hours in the morning and in the evening exclusively for mass transit.

I am still waiting for the answer to the question: Is it worth $245 million to save about 15 minutes?

FEISS: The 15 minutes include only time on the freeway itself and not how long it will take to get off and on. We are only talking here about a very small part of the total journey to work.

FLEISHMAN: We were discussing downtown.

FEISS: Whether you are thinking in terms of mass transit or private vehicles, you end up with a pedestrian at one end and the other. Part of your congestion problem is involved in moving people from whatever vehicle they may use to their particular destinations. We must consider origins and destinations. It's not just a question of going through or bypassing a particular city.

A tremendous ring superhighway system is being developed in Kansas City. It is to be one of the largest of all of downtown peripheral bypasses.

McCARTHY: There is one around Boston.

FEISS: This is more concentrated. This is an inner ring immediately around the downtown business center. The planners envision a circulation of traffic all the way around with access to the downtown business district at three-block intervals, or something like that. They are providing

continued on p. 220

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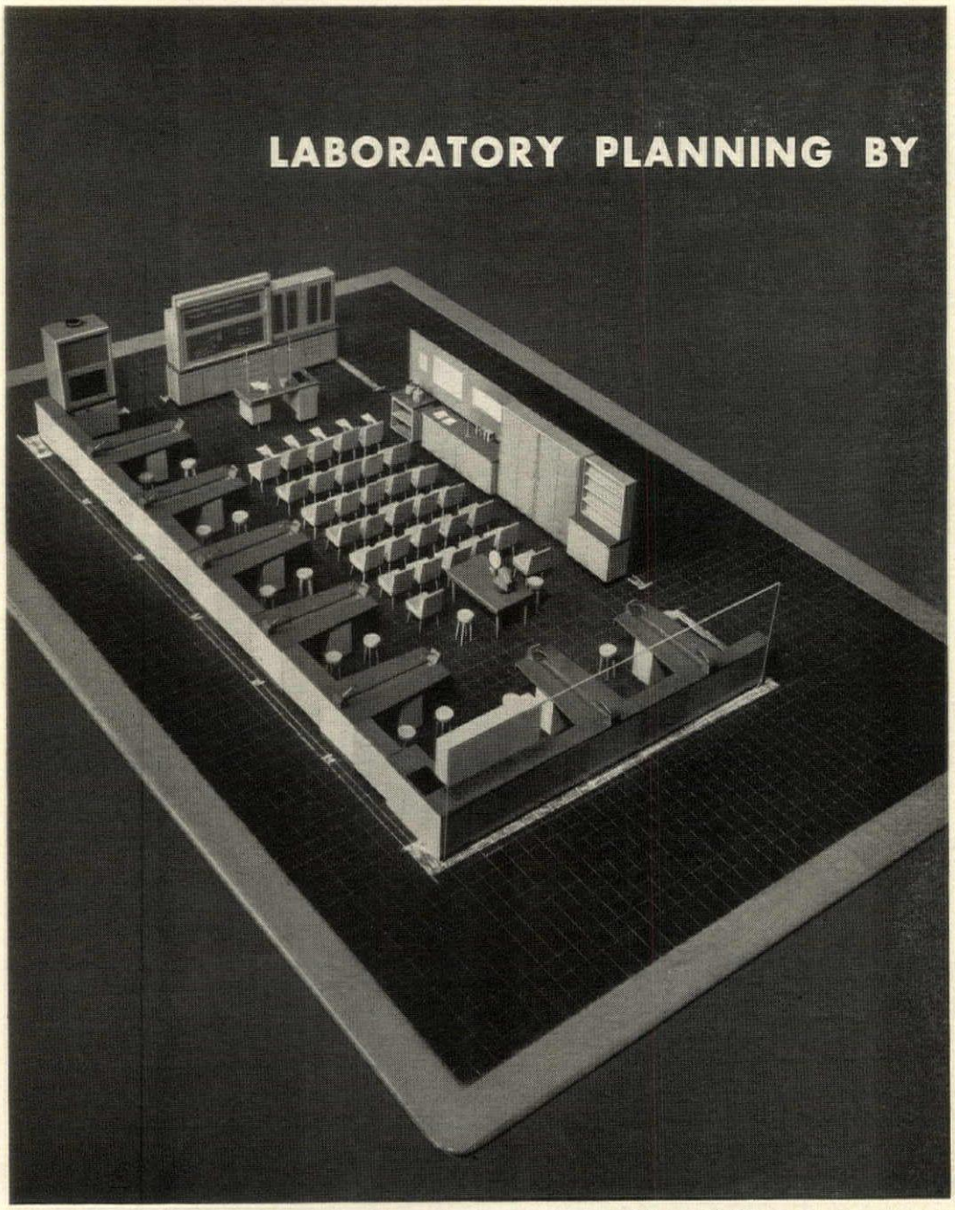

Typical "Life-Like" planning of a multi-purpose laboratory, 24'0" by 48'0", executed with exact scale models at Sjöström's Imagineering Department.

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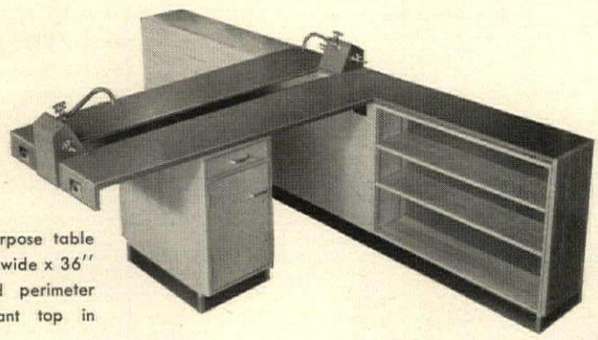

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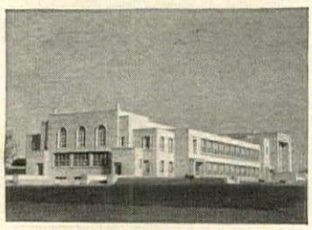

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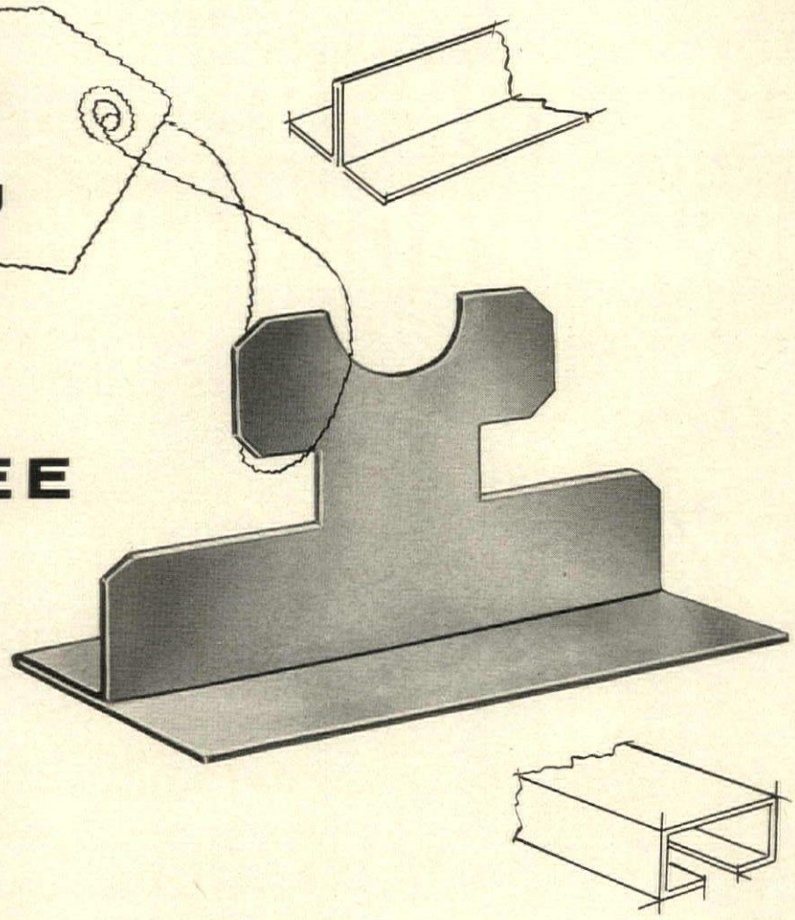

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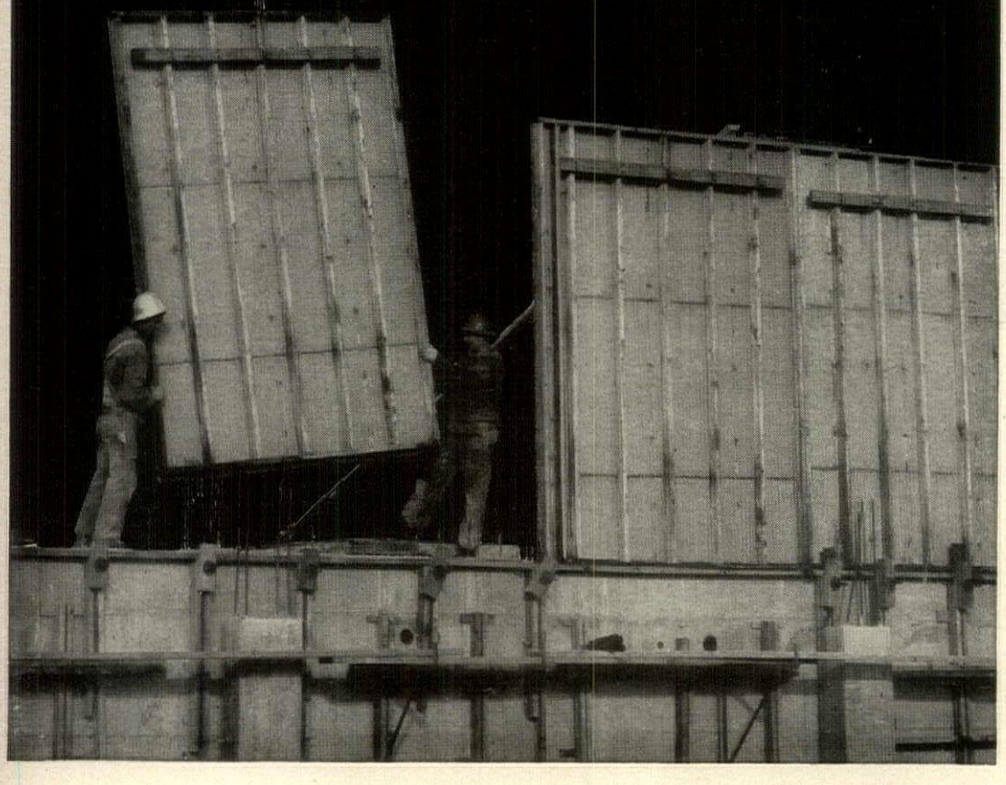

ROUND TABLE

Continued from p. 216

the kind of flexibility that the downtown business district needs.

FLEISHMAN: About this pedestrian that ultimately ends up on his feet and has to wait 10 to 40 minutes at parking garages to get his car? The vaunted saving of the 15 or 18 minutes at a cost of $245 million for bringing a vehicle downtown would seem to me to be offset by how long it takes you to get it parked and how long it takes you to get it out again.

FEISS: In addition, the loading and unloading of a big downtown parking garage in the rush hours immobilizes one or two lanes of street traffic. That occurs over and over again in downtown parking structures, particularly where you get a high concentration of automobile storage in a large structure on a street that hasn't the capacity to take care of it.

STONOROV: That ring around the center of Kansas City is a first attempt to limit the size of the downtown area. If you limit the downtown area by a ring of expressways, then you can ultimately control the ingress into the area more easily. There would be parking facilities on two sides of the ring expressway for some 1,800 cars.

CHAIRMAN: Do you mean that the presence of parking garages would control it, or would you control it by law?

STONOROV: By law. Shut off the traffic. If you have this ring around the place, you can control it.

FEISS: That doesn't add up. Actually, unless you impose rather careful zoning on the outer periphery of the ring, the ring will have an external influence as well as internal. It might extend the area by a considerable amount which could be used for commercial or industrial purposes because of the new accessibility to property that is on the other side of the ring from the downtown business district.

STONOROV: I don't know if it was the intention of the Kansas City planners, but it might be construed that outside of that circle might be industrial activity and within that circle only a new mode of downtown living combined with commercial activity.

BLUCHER: It isn't that simple. The dominating factors in the location of the highway around the city were topography and land costs. You couldn't bring it in as close as you would like to because of the land costs.

HELLMUTH: In the future location of office buildings, I wonder if it might not be in a slightly different relationship to the core than at present. They might be located nearer that fringe so that the executives would have their parking right where they wanted it, and shoppers could use the short-

continued on p. 224

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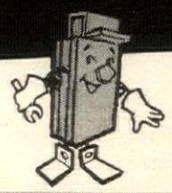

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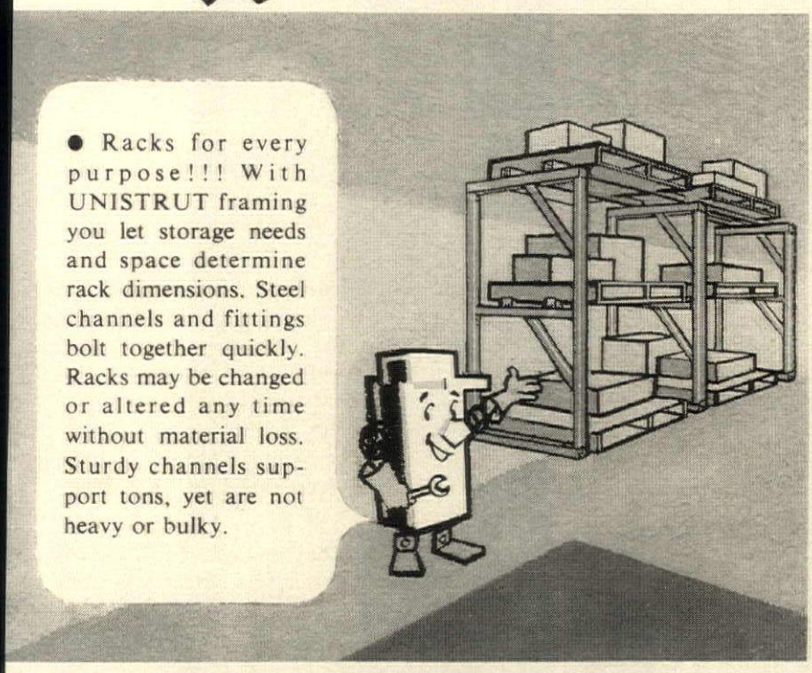
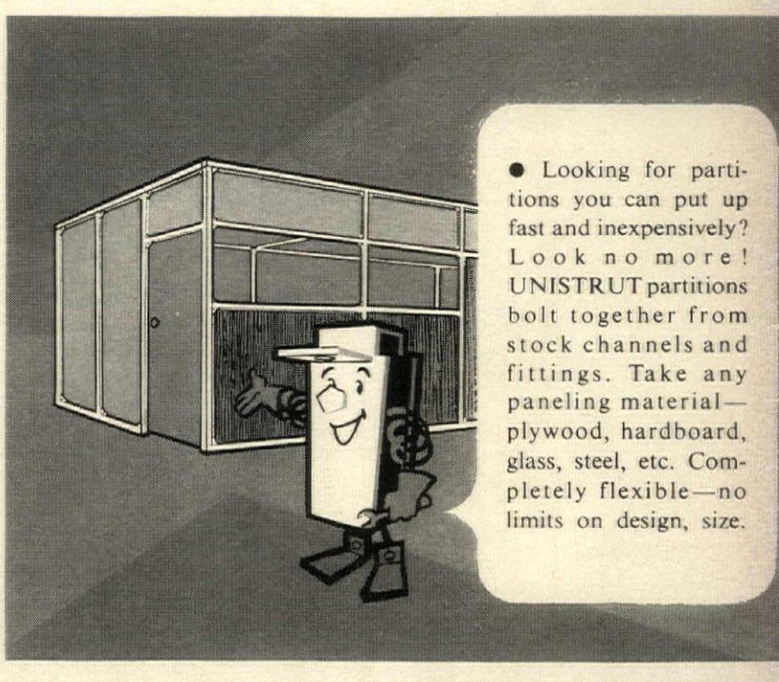
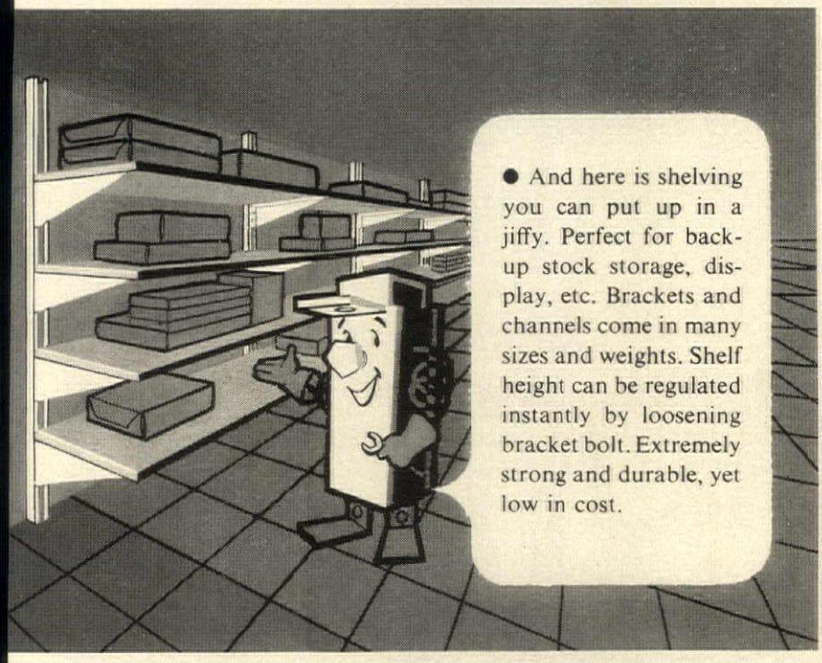


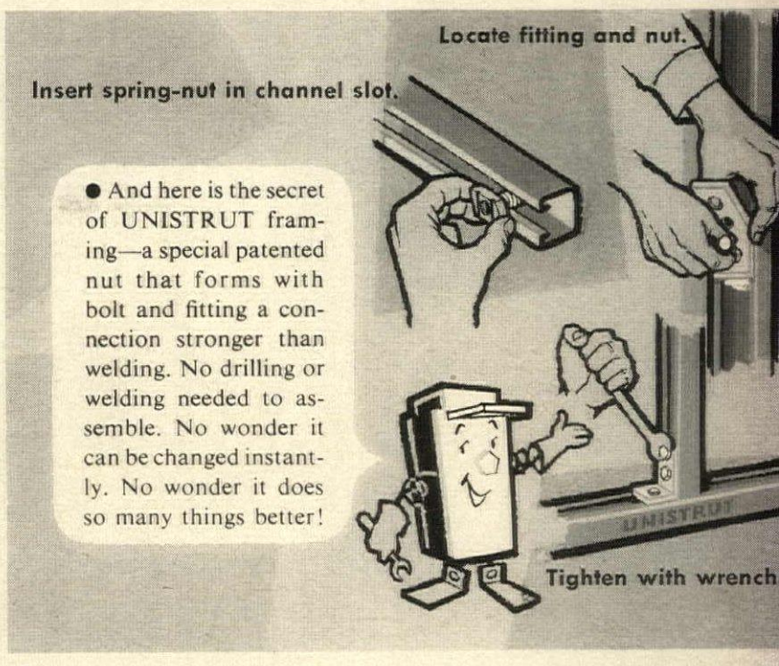
● Racks for every purpose!!! With UNISTRUT framing you let storage needs and space determine rack dimensions. Steel channels and fittings bolt together quickly. Racks may be changed or altered any time without material loss. Sturdy channels support tons, yet are not heavy or bulky.



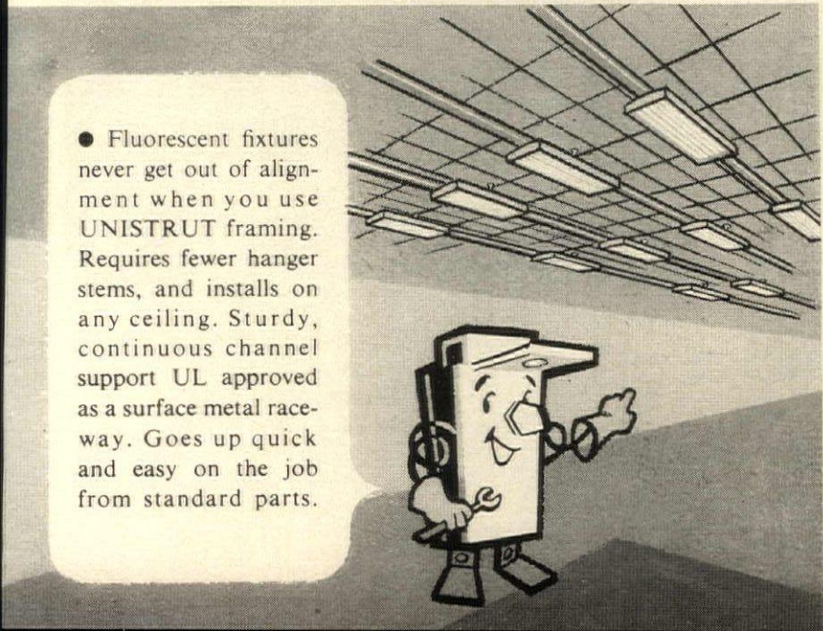
● Looking for partitions you can put up fast and inexpensively? Look no more! UNISTRUT partitions bolt together from stock channels and fittings. Take any paneling material—plywood, hardboard, glass, steel, etc. Completely flexible—no limits on design, size.



● And here is shelving you can put up in a jiffy. Perfect for back-up stock storage, display, etc. Brackets and channels come in many sizes and weights. Shelf height can be regulated instantly by loosening bracket bolt. Extremely strong and durable, yet low in cost.



● And here is the secret of UNISTRUT framing—a special patented nut that forms with bolt and fitting a connection stronger than welding. No drilling or welding needed to assemble. No wonder it can be changed instantly. No wonder it does so many things better!



● Fluorescent fixtures never get out of alignment when you use UNISTRUT framing. Requires fewer hanger stems, and installs on any ceiling. Sturdy, continuous channel support UL approved as a surface metal raceway. Goes up quick and easy on the job from standard parts.

UNISTRUT framing is an imaginative system made to eliminate the need and expense of special construction on all types of metal frames or supports. Its uses are innumerable, limited only by your imagination.

Your UNISTRUT Distributor is an expert on the use and application of UNISTRUT framing. He will be glad to help you in any way he can. Send the coupon for informative literature and information on our new idea-packed film "The Sky's The Limit"—now showing at your UNISTRUT Distributor. Ask about our new low prices, too!

Complete warehouse stocks in all principal cities. In Canada, Northern Electric Company.

U. S. Patent Numbers
2327587 2380379
2329815 2405631
2345650 2541908
2363382 2696139
Other patents pending

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Illinois

Dept. F-6

- ☐ rack catalog No. 600
- ☐ fluorescent fixture catalog No. FF-4
- ☐ mechanical and electrical catalog No. 700
- ☐ information on UNISTRUT film, "The Sky's The Limit."

Name.....

Address.....

Company.....

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

Do glass blocks GLARE?

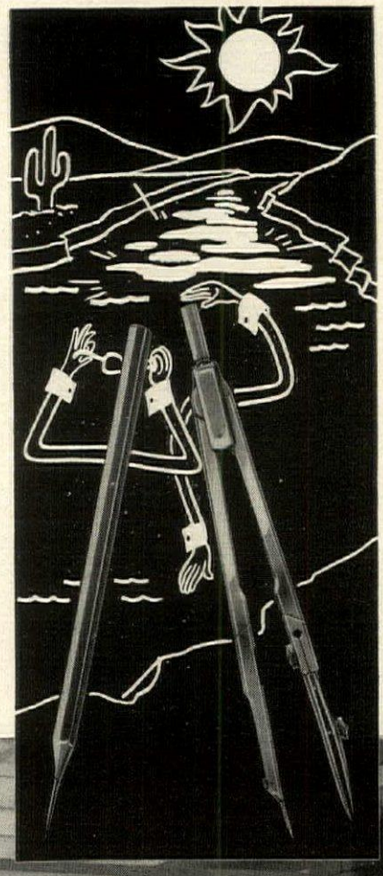
We have seen glass block panels that were so bright you could not look at them. In one school, the glare was so bad that the teacher was actually wearing sun glasses. But . . .

Whenever there has been a glare complaint, we have found the blocks were either improperly used or something else was at fault.

Capable men worked for many years to evolve the present line of PC Functional Glass Blocks. They designed special patterns for above eye level to throw the light up onto the ceiling away from the eyes; special patterns to diffuse the light in all directions; special patterns for elevations that will be struck by the sun. When these patterns are properly selected and installed, glare is no problem.

Actually, the glare *reduction* properties of PC Glass Blocks can cause trouble! Glass block panels are frequently installed above a clear glazed vision strip. The contrast between the bright vision strip and the softly glowing glass block panel is often so great that discomfort results. In high brightness locations, we frequently recommend tinted glass for the vision strips as a solution to this problem.

If you have an important design coming up, and you want the advantages of low maintenance, insulation and controlled daylight—without glare—then specify PC Glass Blocks. Just follow the recommendations in our catalog. It's in Sweet's. Your PC representative will be glad to help.



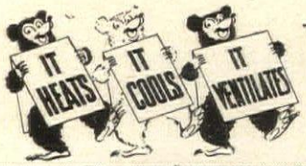
Low brightness contrasts between floor-to-ceiling glass block panels *and* adjacent surfaces create soft, pleasant *and glare-free* daylight in this plant of The Mennen Company, Morristown, New Jersey. Architect: A. M. Kinney, Inc., Cincinnati, Ohio.

PC Glass Blocks

PITTSBURGH PC CORNING®

Pittsburgh Corning Corporation, Pittsburgh 22, Pa. • *In Canada: 57 Bloor St. W., Toronto, Ontario*

ALSO SKYTROL® AND FOAMGLAS®



Year 'round comfort for institutional or commercial installations . . .

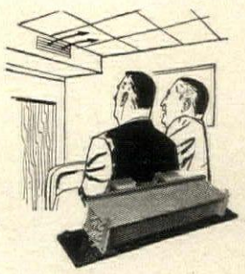
without costly duct systems!

Modine AIRditioners are the modern, economical way to air-condition old or new buildings

Modine AIRditioners eliminate expensive duct systems and structural alterations. Cold water from a central chiller is piped to each unit for summer cooling. Heating water is supplied by a central boiler. The same piping — water supply and drain — serves for both cooling and heating. Yet, AIRditioners are individually controllable by room occupants.

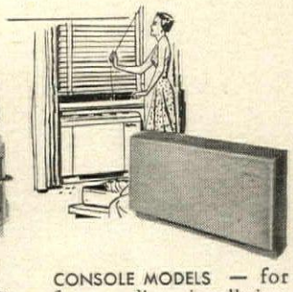
Choice of four distinct types. Contact the Modine representative listed in your classified phone book or write for Bulletin 754-D — MODINE MFG. CO., 1507 DeKoven Ave., Racine, Wisconsin.

CEILING MODELS — deluxe units for exposed overhead installation. Save floor and wall space.



OVERHEAD MODELS—available with or without plenum and filters for use in furred overhead space.

CONCEALED MODELS — (front panel cutaway) Designed for easy, in-the-wall installation.



CONSOLE MODELS — for free-standing installation. Can also be recessed so only 6 inches of cabinet shows.

Modine Airditioners*

*Trademark

A-1262

McCARTHY (l): If we plan only for next week, we will be outmoded two weeks from now. Till (r).

ROUND TABLE

Continued from p. 220

haul bus to get into the other areas for shopping.

CHAIRMAN: If we do as Kansas City does—ring the downtown area with a highway—aren't we going to draw the downtown out around the ring? The problem spot may then be in the center of the ring.

HELLMUTH: Yes.

CHAIRMAN: Everybody will want to get out around the ring.

Parking—perhaps office building owners should provide it as a building service—for old buildings and new ones

CHAIRMAN: We are beginning to get the highways—they are planned anyway—but we haven't solved the problem of what to do with the traffic that is coming off the highways into the downtown area.

TURLEY: I have just recently had the experience of losing a 20,000 sq. ft. tenant to a suburban location, and the controlling factor was that new landlord will provide 70 free parking spaces. Free parking space for 70 cars in the downtown district on today's market would cost $16,800 a year—a total translated into office rental of 84¢ a sq. ft. That happens to be too great an amount. Had we been able to say to this tenant, we will provide you with, not 70, but 35 or 40 parking spaces near your location, which will cost us $9,600, or about 48¢ a sq. ft., we could probably have sold that tenant the advantages of being downtown.

The auto brings into the district three classes of people. 1) It brings in the shopper, who is downtown on a short-term basis. Parking their cars is the problem of the department store or the merchants. 2) It brings in the employee, who comes in in the morning and goes home at night. Most of those who come in cars ride in car pools and require cheap parking space—probably some distance from where they work. 3) It brings the group of people who make the decisions, the business executives and their visitors.

We are coming to the time when office building owners (and to a large extent, department store owners) must provide off-street parking as a part of the building service in the same manner as they provide air conditioning, janitor service and elevator facilities.

CHAIRMAN: In the same building?

TURLEY: Not necessarily. However, I wish that at least 30 years ago somebody had enacted the ordinance that now exists which would have required me and every other building owner to provide a minimum number of car spaces for every 500 or 600 sq. ft. of office space. We would have had a very different downtown than we have today. Sooner or later we will have to come to it and the owners are going to have to pay the bill.

continued on p. 228

FOR SPECIFIC STRUCTURAL REQUIREMENTS

architects, engineers, contractors

Macomber has JOB ENGINEERED four distinct Steel Joist types.

Each type serves some specific structural purpose to your advantage from a cost standpoint.

When you see Macomber Nailable Steel Joists specified and going into job after job, it becomes obvious that definite time, labor and material advantages are dominating the thinking of specification writers today.

THIS IS WHY. Since Macomber originated the Steel Joist Industry, there are a great many more years of engineering and manufacturing analysis concentrated on Macomber Steel Joists than on those which came along years later.

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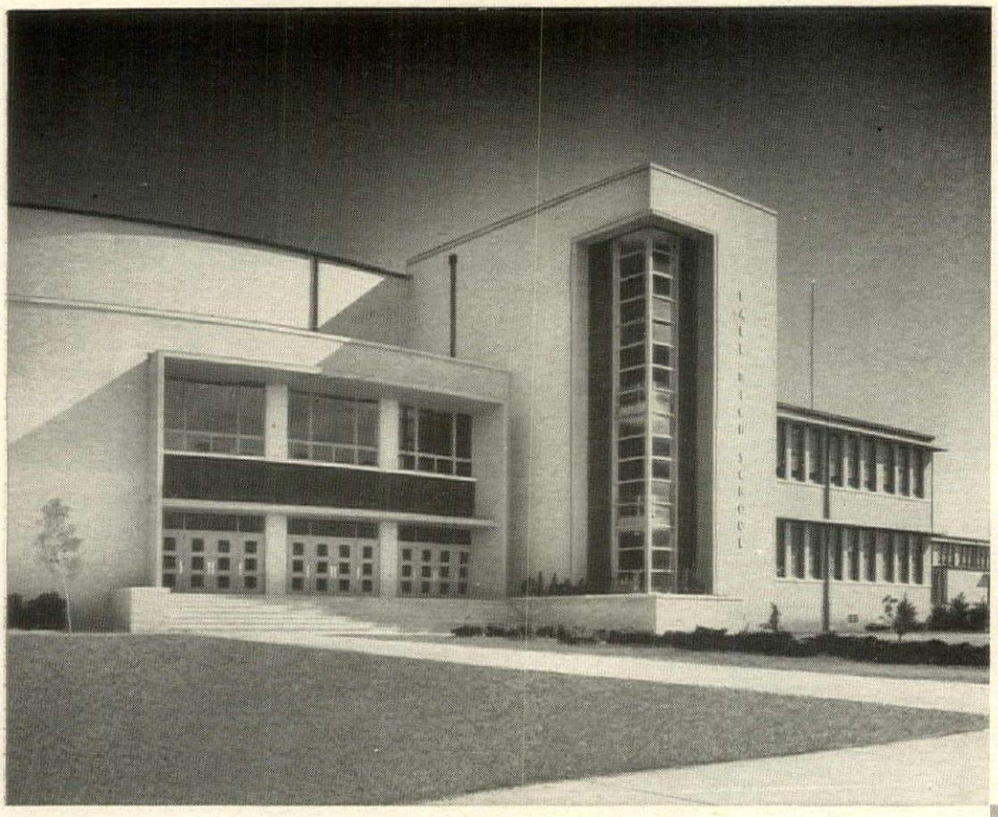


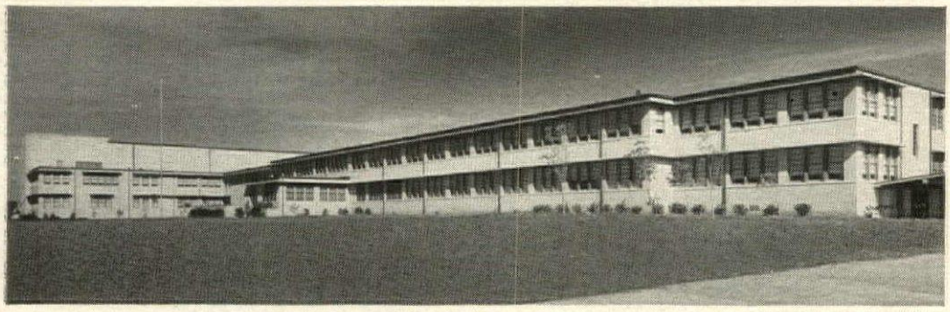
BALL HIGH SCHOOL, GALVESTON, TEXAS • See Rear View Below

Architects for both buildings
PRESTON M. GEREN,
Fort Worth, Texas
R. R. RAPP,
Galveston, Texas

Mechanical Engineers
YANDELL, COWAN & LOVE
Fort Worth, Texas

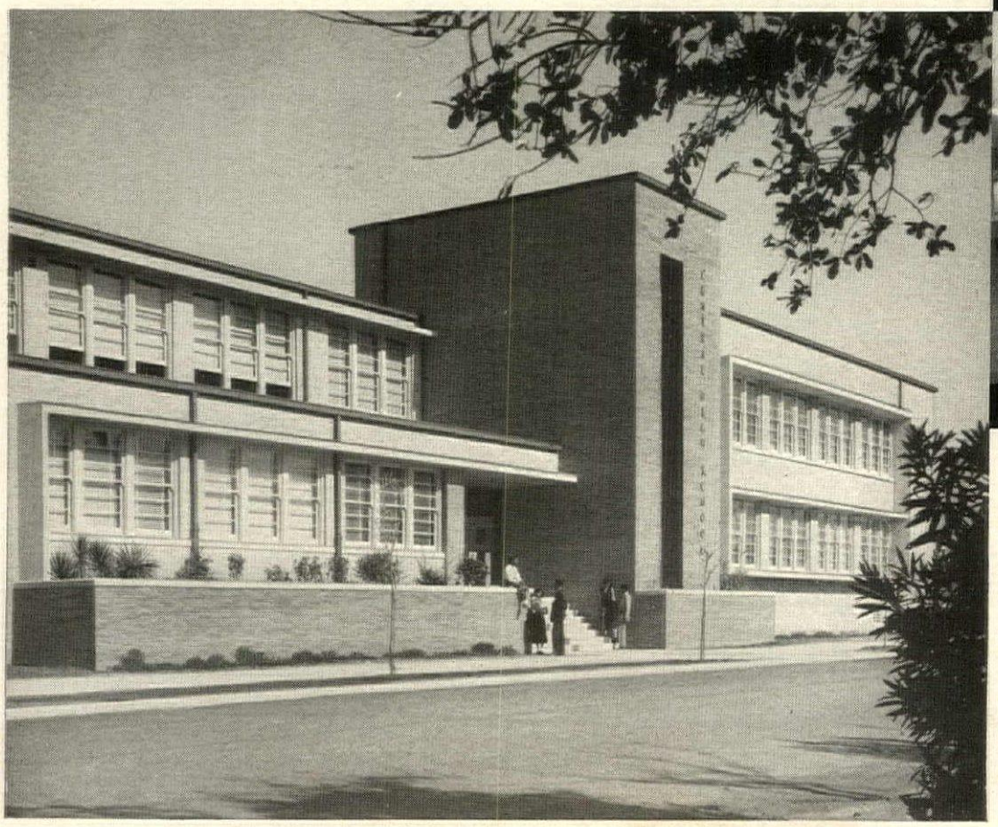
Plumbing and Heating Contractor
A. J. WARREN
Galveston, Texas

Powers automatic temperature control is used throughout both schools which are alike in facilities and general design. Both have modern gym, cafeteria, swimming pool and showers. Photos below indicate excellence of interior design.



Below: CENTRAL HIGH SCHOOL, GALVESTON, TEXAS

Drama and Public Speaking Classroom



Relaxation Area near Cafeteria Entrance

Maximum
Schoolroom Comfort and
Fuel Economy is
Assured by Powers Control

(c-15)

They kept it simple... in these modern Galveston schools

Heating . . . Ventilating . . . Showers . . . Water heaters are all regulated by

POWERS

Temperature Control

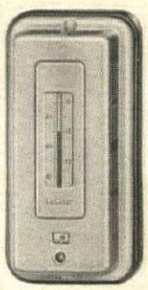
One dependable Source, one responsibility, for satisfactory performance and service if required, is one of the many reasons why so many buildings are equipped throughout with Powers temperature control.

Chemistry Lab

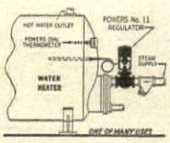
Auditorium

Civics and History Classroom

Home Economics Classroom



Each School has Individual Room Control of heating and ventilating.



Powers No. 11 Regulators Control Domestic Water Heaters also Swimming Pool Heaters.

Boys and Girls Showers also are Thermostatically controlled by Powers

When you want automatic temperature control with the time-tested-and proven-dependable features of Powers regulation, call our nearest office or write us direct.

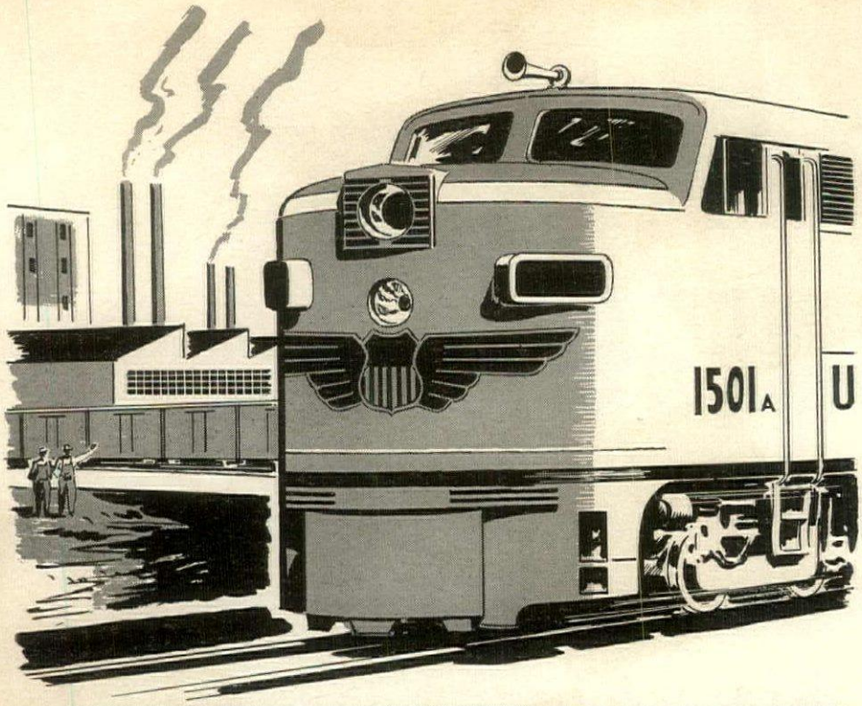
POWERS CONTROL

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*

See your phone book

Over 60 years of Automatic Temperature and Humidity Control



movement
ESSENTIAL TO INDUSTRY

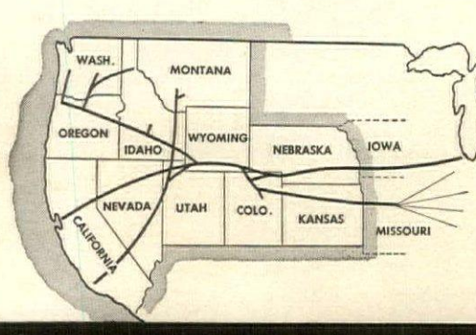
The nature of an industrial project determines its requirements but *"movement"* is always a big factor.

There's the *movement* of materials and equipment necessary for plant operation . . . the *movement* of unfinished products and of finished goods to markets . . . even the *movement* of executives on business and vacation trips.

So, in many ways, *movement* translated in terms of rail transportation, is very important when selecting an industrial site.

That's one reason why so many concerns have established plants in the "Union Pacific West" where the finest of rail service is conveniently available.

For complete and confidential information about available sites, see your nearest U.P. representative or contact Mr. W. H. Hulsizer, General Manager of Properties, Dept. 369, Union Pacific Railroad, Omaha 2, Nebraska.



UNION PACIFIC RAILROAD

Map at left shows states served by Union Pacific Railroad

UNION PACIFIC RAILROAD

ROUND TABLE

Continued from p. 224

FARR: There have been nine new parking facilities provided or in the process of being provided in the downtown Chicago district. With one exception, they are on the fringe of the Loop district, the purpose being to keep the cars from going into the Loop or through the Loop. They have been publicly built over the strenuous objection of the owners of the private parking garages. They are financed with revenue bonds, and are being successfully operated. Thanks to this program, today in Chicago there are adequate downtown parking facilities at rates that are economical.

CHAIRMAN: That is a very significant statement.

TILL: Is there any transportation provided from the perimeter parking to the downtown area?

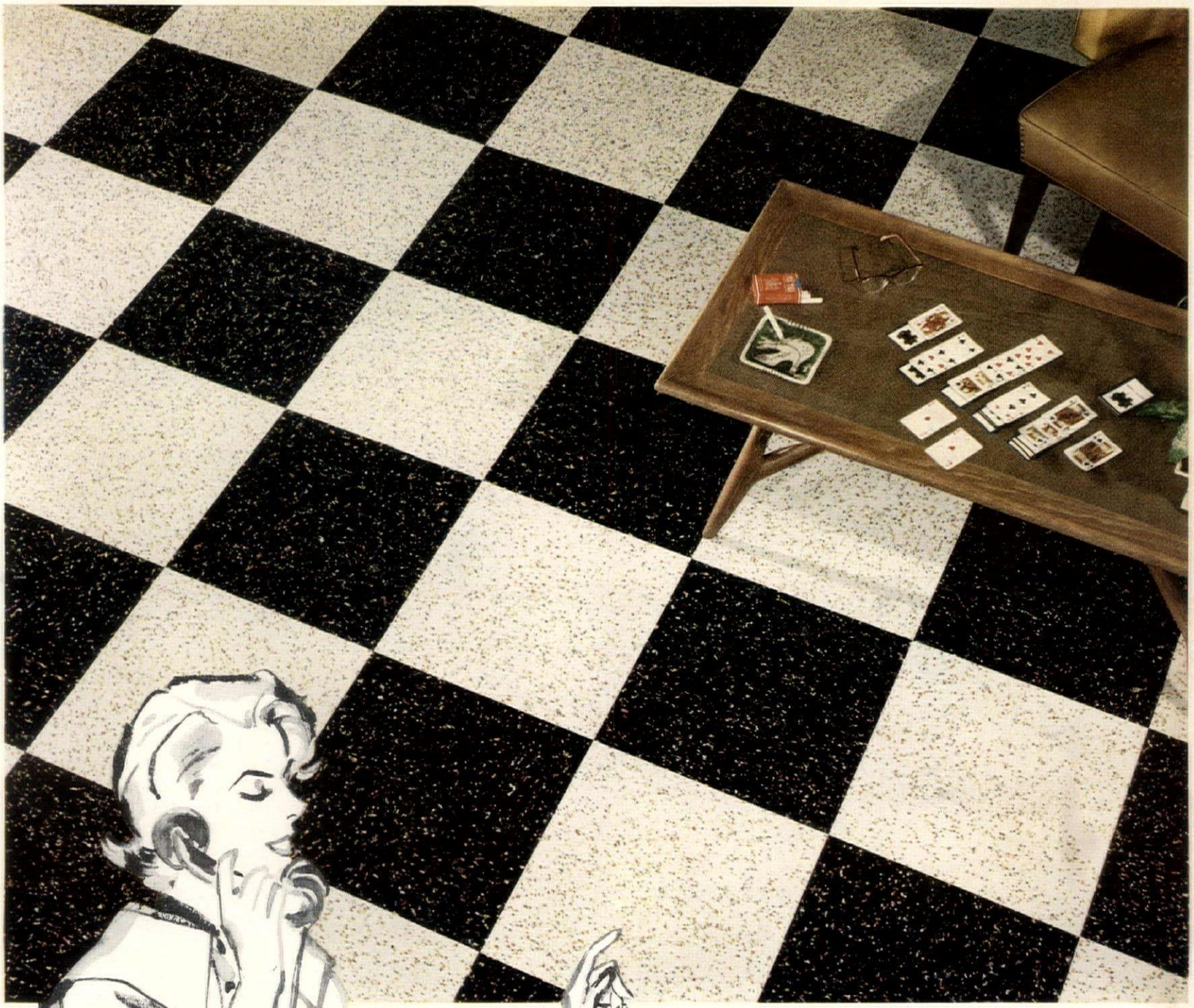
FARR: Yes, Chicago was one of the early examples of shuttle bus service. It has been highly successful. Originally that shuttle bus service was provided for a nickel, but with inflation and all of those things, it's now a dime. Mr. McCarter operates it and he can tell you more about it than I can, but I understand that that service has been self-supporting practically from its inception, and it does provide a good modern bus from the fringe parking lot up and down State St. Also, incidentally, it provides transportation for people going from one part of the downtown district to the other at the same low rate.

McCARTER: Shuttle bus service from periphery parking lots won't support itself if it only carries parkers. But if you can combine it with something else, connecting two parts of the downtown, for instance, where people want to go back and forth, then it's very successful. The line Mr. Farr is talking about is extremely successful. That is because the Merchandise Mart is one end of it and State St. stores are in the middle and the parking lot is on the other end. The real money is made between the Merchandise Mart and State St. But, by attaching the parking lot on the end of it, the combination makes it a very successful operation. A good many transit operators failed with shuttle buses because they try to operate a service just from a parking lot to the central business district.

TURLEY: The greatest single factor that has moved tenants from the downtown district is the question of parking.

DOUGHTY: I do not feel so strongly as Mr. Turley on the subject of building management providing parking directly as part of their service. Office building owners do have to take an interest in the provision of downtown parking, but I think our problem

continued on p. 232



Inexpensive Luxury!

modernizes an old art, terrazzo in resilient type tile

There's a joy in possessing an unusual floor covering and this is true of Poly-Krome in a superlative degree . . . especially a gay floor tile with toughness built into it. You're never at a loss for a festive floor tile of many exciting colors and interesting terrazzo design possibilities if you remember Poly-Krome in Vinyl or Asphalt. Poly-Krome Vinyl is resistant to grease, fats, oils, alkalies, gasoline, and naphtha and can be used anywhere. The smooth surface keeps dirt from wearing in and an occasional waxing keeps it sparkling bright.

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IN VINYL OR ASPHALT

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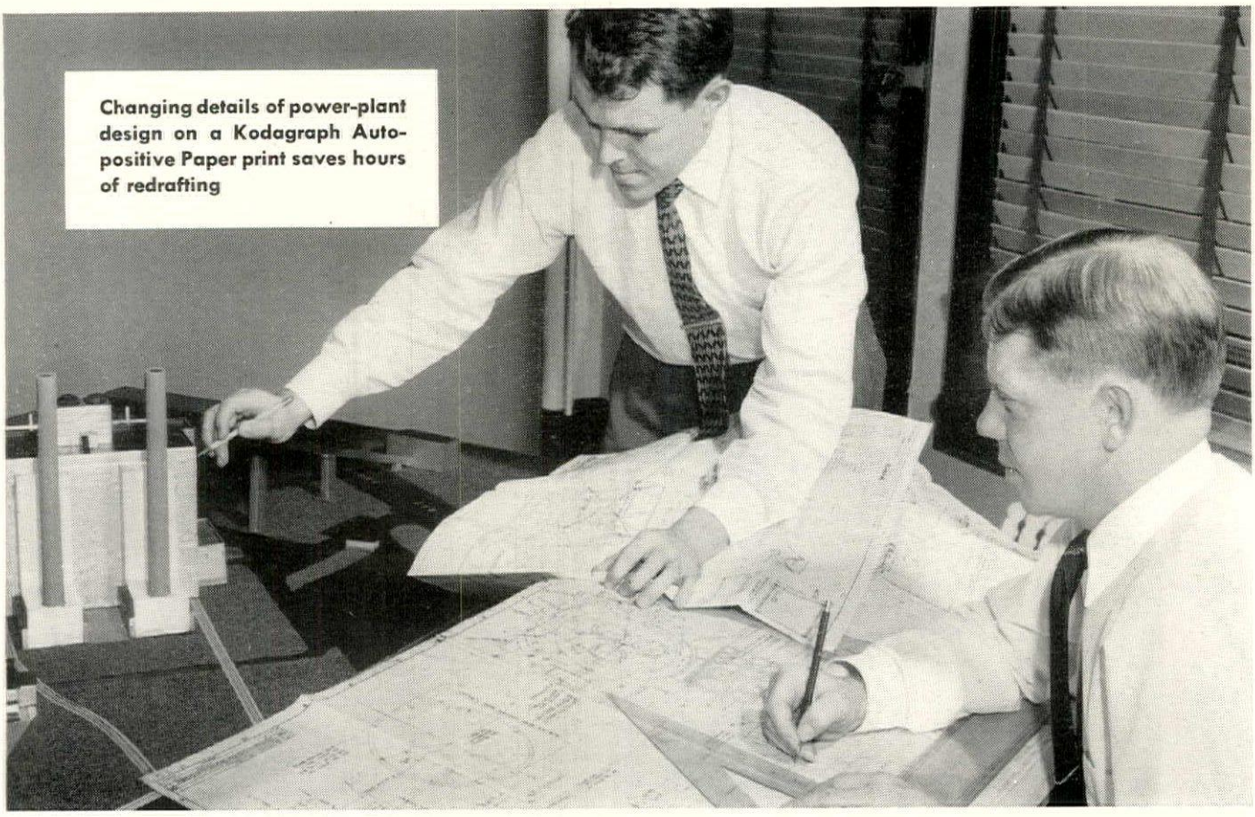

Changing details of power-plant design on a Kodagraph Autopositive Paper print saves hours of redrafting

Toledo Edison Company reports on its use of Autopositive—

"One saving after another since 1947"

Shortly after Kodagraph Autopositive Paper was introduced, the Toledo Edison Company, Toledo, Ohio, began exploring its possibilities for engineering drawing reproduction.

Here was a revolutionary photographic intermediate paper which produced positives directly from positives—no negative step. It could be exposed in standard print-making equipment . . . processed in standard photographic solutions. *Entire operation in ordinary room light, too.* Jobs which had been difficult and costly became easy and economical—Kodagraph Autopositive Paper costs only a few cents a square foot. Some typical savings at Toledo Edison *which you can duplicate* are listed here.

☐ **Old prints and intermediates reclaimed.** No time lost retracing. Autopositive Paper strengthens weak line detail, cleans up backgrounds. Toledo Edison now can get intermediates which have dense photographic black lines on an evenly translucent paper base. *Original quality or better!*

☐ **Opaque originals no problem.** Many of Toledo Edison's forms, charts, operating maps, etc., are on opaque stock—some two-sided. Data is added to these in pencil or by typewriter. Then Autopositive reproductions are made and used to produce the direct-process prints needed for distribution. The 1954 Annual Budget, for example, was reproduced in this manner. *Autopositive saves time and dollars for all departments.*

☐ **Print-making simplified.** Toledo Edison runs Autopositive intermediates at uniform, practical speeds in its direct-process machine . . . gets sharp prints time after time. *Autopositive lines do not smear, smudge, or lose density.*

☐ **Drafting shortcuts.** An Autopositive print is made of a drawing which has to be altered. The obsolete detail is eradicated or scissored out, and another Autopositive is made. New design is then added, and the job is completed without redrafting.

☐ **Photo-lasting file copies.** Toledo Edison also finds that Autopositive intermediates will not turn yellow or become brittle . . . are ready to produce sharp, legible prints whenever needed.

Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in engineering drawing reproduction

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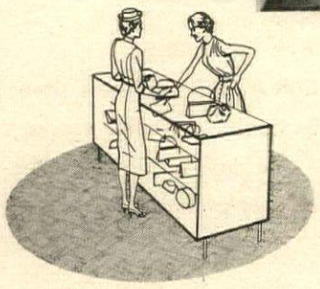
Vina-Lux floors..fashioned for fifth avenue

Sak's Fifth Avenue, White Plains, New York • Kahn & Jacobs, Architects, New York City, N. Y.



Upper bracket stores throughout the country are finding Vina-Lux Reinforced Vinyl Tile the perfect answer to their flooring problems. Its beauty of color, smooth, easy-to-clean surface, and foot-safe resilience qualify it without question as a superior sales back-drop for top-level merchandise.

Vina-Lux matches its own brilliant beauty with outstanding performance day-in and day-out. Regular cleaning and dry buffing enhance its lustrous built-in surface . . .without the use of costly waxes or floor finishes. Customers like its sure-footed comfort . . . and sales clerks find a welcome lessening of leg and foot fatigue at the end of the day's work.

Vina-Lux can help solve your clients' flooring problems. Why not ask us to have a qualified representative present the full story to you on America's leading vinyl-asbestos tile?

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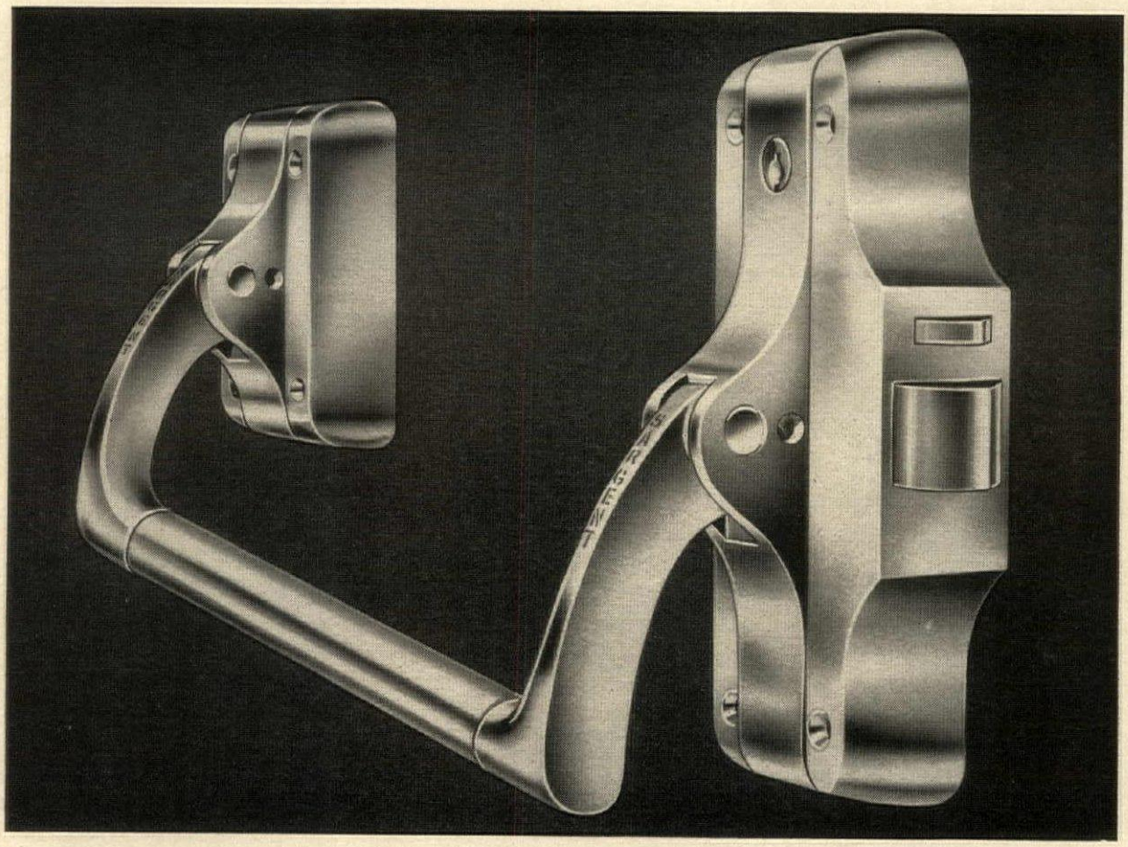
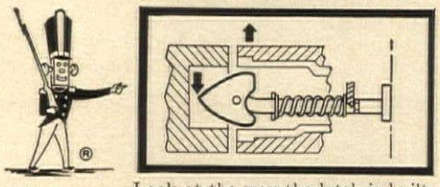


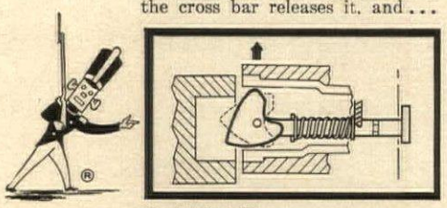
It cannot jam!

—either opening or closing

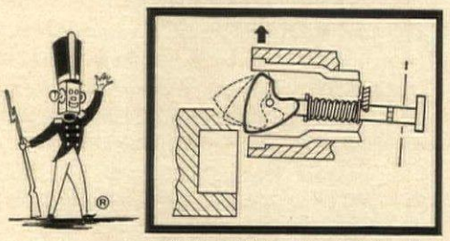
Outward pressure on a door *can't* bind this Sargent latch.



Look at the way the latch is built to pivot. Just a ¼" movement of the cross bar releases it, and . . .



the latch *rolls* . . .



and then *folds* out of the way. Pressure actually helps to open it.

The function of a panic device is to *prevent* panic! To open doors *instantly* and *easily* in every emergency.

So, when human lives are at stake . . . specify the *safest*. Sargent Quick Exit Devices.

The diagrams will show you *why*.

Study them. You'll see *why* they cannot jam. *Why* the Sargent latch does not have to be retracted by the bar. The slightest bar movement releases the locking mechanism, making the latch bolt free-floating. This same easy, roll-fold action works in reverse to *close* doors smoothly, too. (Contrast this with devices that require *complete* movement of the latch by crossbar . . . latch bolts that may bind when pressure forces the bolt against the strike.)

Here's another plus . . . *stainless steel* is used for crossbar bearings, latch bolt pins and springs to give your clients *lasting* protection.

These exit devices come in Rim, Vertical Rod and Mortise Types. With or without mullions and thresholds. And all three types of bolts harmonize when used together . . . and with other Sargent hardware . . . in the same building.

Play it *safe* . . . with Sargent Quick Exit Bolts. Write for full details. Dept. 8F

SARGENT of New Haven

Sargent & Company

New York · NEW HAVEN, CONN. · Chicago

TURLEY (l): Office building owners must provide off-street parking as a part of their building service. Rauch (r).

ROUND TABLE *Continued from p. 228*

in Chicago is probably solved for some time to come by the peripheral city garages. In fact, I think we are a little bit ahead of ourselves with parking. The garages aren't filling up and until our superhighway program is completed and until people become used to using these services, we will have an abundance of parking—more than we need for some time. As a matter of fact, this year the proposal came up in our city council of forcing new office buildings to provide inside parking, and the local office building association took a firm stand against it. They were opposed to it not only on the grounds it greatly complicated office building design on the ground floor if you had to provide ingress and egress for cars, but also it would tend to increase traffic problems in the streets because of cars turning in and coming out.

McCARTER: I shall watch the Chicago parking situation with great interest. I doubt having adequate parking is going to bring any more automobiles downtown, because I think the problem is not so much the lack of downtown parking as it is the difficulty of getting to that parking. If we in public transit can get people downtown faster, I think we can win them even in competition with those garages.

People have asked me all over the country why didn't we in public transit oppose the building of those garages. I said that the only way they can fill them is to eliminate illegal parking and get automobiles off the street so that the streets will be useful for moving traffic. Right next to the merchandise mart is one of those garages. It's a four-floor garage, and it was only half full to begin with. So the city went around and put up a lot of no parking signs on the street. It's speeding up traffic near this location.

FARR: It's pretty well filled up now, within four months of its opening.

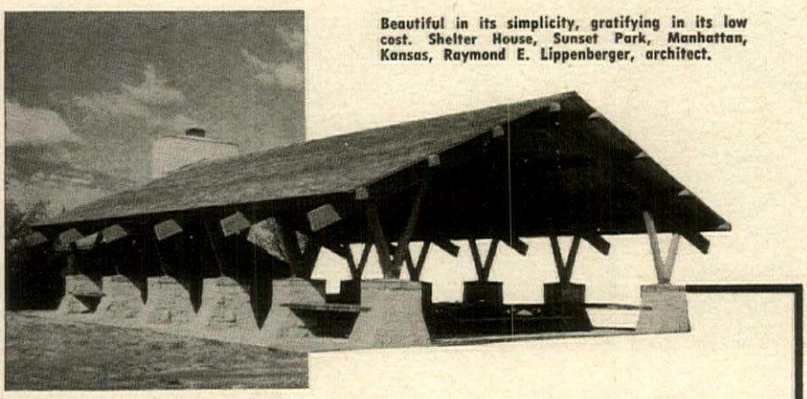
McCARTER: Enforcing traffic regulations did it. I don't believe it has brought any new cars downtown, just taken some cars off the street and put them in garages.

FARR: It has cleared the main streets for your public transit.

Organization—the active backing of influential citizens is a prerequisite to any program of downtown rebuilding

BAER: I think the important thing is to develop an organization to accelerate the making and realizing of plans which otherwise takes years and years. You have got to develop a strong, tight, small leadership of citizens who not only have influence, but who control enough money to get things done. The Allegheny Conference for Community Development in Pittsburgh, and Civic Progress Inc. in St. Louis illustrate how that can be done. That is the essence of the whole thing. These men have to develop some sort

continued on p. 236



Beautiful in its simplicity, gratifying in its low cost. Shelter House, Sunset Park, Manhattan, Kansas, Raymond E. Lippenberger, architect.

"ONE *of the finest materials...*"

Raymond E. Lippenberger, architect, of Manhattan, Kansas, writes "One of the finest materials that the architect has to use as a medium of expression is laminated wood as a structural material . . . Since the development of wood laminates it has extended the use of wood as an economical structural material . . . keeping a simplicity of line and form."

Rilco arches, beams, rafters or trusses add beauty and strength, offer economy and fire safety. Because of the complete freedom of design offered, Rilco glued laminated wood structural members are rapidly becoming the favorite with architects for school, church, gymnasium, store, industrial or commercial structures.

For complete information write:

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works wonders with wood

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Wilkes Barre, Pa., Fort Wayne, Ind., Manhattan, Kans., Tacoma, Wash.

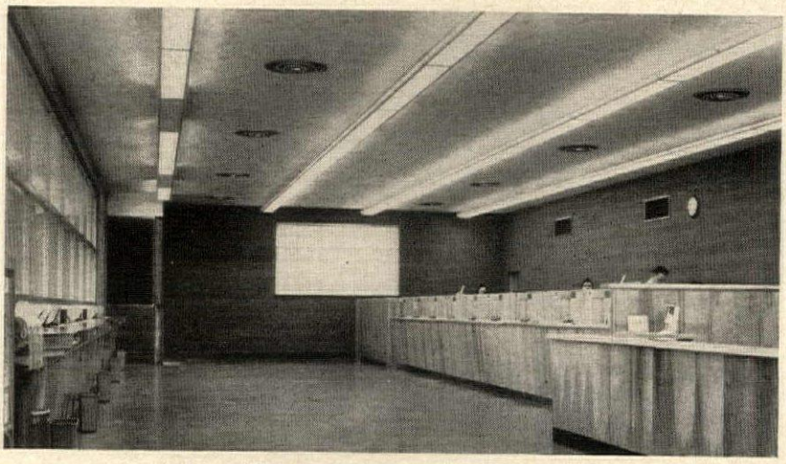
See how All-Air High Velocity units

lower the roof

The National Bank of Detroit, which is equipped with an Anemostat All-Air High Velocity distribution system.

This photograph shows the high velocity ducts installed *through* the open web joists. Note how the Anemostat sound attenuation unit is also placed *inside* the open web joist area. As a result, the architects and engineers were able to save *nearly two feet in a one-story building* . . . also make comparable savings in construction costs.

Completed interior with the Anemostat High Velocity units installed in the ceiling.

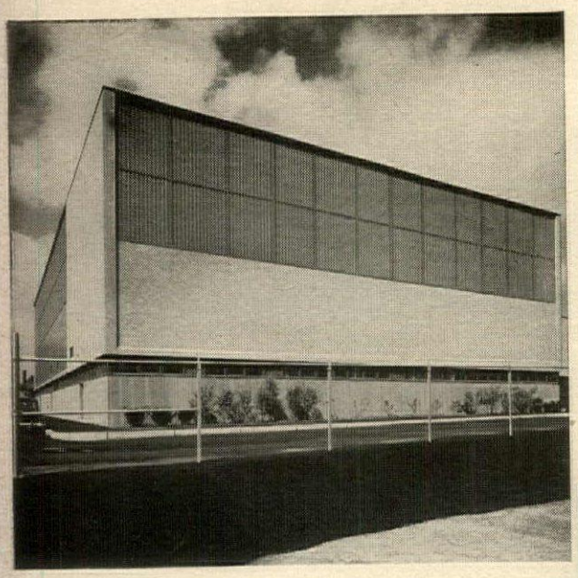


- *Architect:* W. ROY AKITT
- *Engineer:* F. A. SANDO
- *Mechanical Contractor:* JOHN M. CAMPBELL, INC.
- *Ventilating Contractor:* AUTOTHERM CORP.

• *For latest data on All-Air High Velocity units,* write on your business letterhead for *new Selection Manual 50* to Anemostat Corporation of America, 10 E. 39 Street, New York 16, New York.

Facts about All-Air HV units

- Can be used with smaller than conventional ducts.
- Can be installed through open web joists (as shown here) and in many other space-saving applications.
- Can be installed faster and with less cost.
- Require no coils, thus eliminate clogging and odors.
- Round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.



OWENS-ILLINOIS GLASS BLOCK* PANELS daylight this huge gymnasium... INSULATE LIKE AN 8" WALL

Gymnasium at Northeastern University, Boston, Massachusetts. Shepley, Bulfinch, Richardson and Abbott, Architects. Volpe Construction Company, Contractor.

Panels of Owens-Illinois light-directing Glass Block provide even distribution of daylight throughout the gymnasium area. They eliminate "hot spots," glare and harsh contrasts.

The insulating efficiency of glass block makes designs like this possible. Glass block permit use of large glass areas without excessive heat loss.

BECAUSE Owens-Illinois Glass Block insulate as effectively as an 8" thick brick wall, huge expanses of glass block are practical even in a cold climate.

Glass block are strong and hard to break—perfect for a gymnasium use like this. They need no maintenance—perfect when panels are put in inaccessible places.

The complete Owens-Illinois Glass Block story is yours for the writing. Send for it and see how glass block can mean better sight, better light, lower maintenance and great new design freedom in school planning. Address Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-6, Toledo 1, Ohio.

**Formerly known as INSULUX*

OWENS-ILLINOIS GLASS BLOCK
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

for problem floors

When you select flooring materials for unusual or severe conditions, look into the unusual combinations of properties offered by the five types of resilient tiles made by Kentile, Inc. In practically every case, one of them will be just right for the job, whether conditions call for serviceability under heavy foot or industrial traffic, ease of maintenance, or resisting alcohol, acids, alkalis, oils and greases, chemicals and foodstuffs. All of them help to create an impressive decorative composition. Uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness and built-in durability—all of these qualities make this the world's most popular line of resilient tile floorings.

KENTILE, INC.

America's largest manufacturer of resilient floor tiles

KENTILE: Asphalt Tile . . . Carnival . . . Corktone • KENCORK: Cork Tile for Floors and Walls • KENRUBBER: Rubber Tile • KENFLEX: Vinyl Asbestos Tile . . . Carnival • KENFLOR: Vinyl Tile . . . also available by the yard • SPECIAL KENTILE: Grease-proof Asphalt Tile • THEMETILE, KENSERTS: Decorative Inserts • KENCOVE: Vinyl Wall Base • KENBASE: Wall Base

Hospital Speeds Patients' Records from Entry to Discharge

Woman's Hospital, Detroit

Nursing Stations

Station at Clinic Laboratory

Station at Business Office

Plus . . .

Stations At: Clinic Office • Entry • Out-Patient Department • Maintenance

with a LAMSON AIRTUBE AUTOMATIC SWITCHING SYSTEM

Lamson eliminates all inconvenience to patients caused by delay in records handling. Relieves busy personnel from message carrying. Around the clock, it automatically delivers laboratory test reports, time cards, nurses' reports, correspondence and other intra-hospital communications.

For automatic discharge at a pre-determined station, the station number is dialed by turning two bands near the carrier's top. An electrical circuit is opened between two of the metal rings on the carrier. When brushes at a station contact these rings, the circuit is closed. This actuates a switch which throws a deflector across the carrier's path . . . discharging it.

A Lamson Airtube Automatic Switching System can be installed quickly . . . with low initial and operating costs. Localized wiring saves space and expense. Eliminates wiring leading from a central location. Station controls consist of switch, power unit and deflector. The number of stations can be expanded as the need arises. For complete details, mail this coupon today.

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Please send me a copy of "Lamson Airtube Automatic Switching System."

NAME_____ TITLE_____

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ADDRESS_____

CITY_____ ZONE____ STATE_____

ROUND TABLE

Continued from p. 232

of leadership and not be afraid to talk plain English to anybody that must be talked to, whether it's the city administration or the citizens. There must be a close working relationship and cooperation between the city administration and this group. In St. Louis there is a very close relationship—the mayor attends every meeting Civic Progress Inc. holds, even though he is not a member of the Civic Progress board. If that kind of organization could be developed in the cities throughout the country, the accomplishment of plans would be speeded up.

You must also sell to the whole citizenry that, unless you have a virile downtown district, the whole city will go bad. They must learn that the great proportion of the revenue that flows into the city treasury and on which the city is operated comes from taxes levied on downtown real estate. I believe that 43% of all real estate taxes are levied on the high-value real estate in the downtown district. If the downtown district goes to pot, those taxes will have to be shifted to other sections of the city less able to bear them. When the citizens begin to realize that, without respect to whether they have any particular interest in the downtown district, they are going to realize how important it is to stabilize the downtown district. You can't make capital improvements, whether they are highways or eleemosynary institutions, parks and playgrounds or whatever else there is, unless you are able to raise money under bond issues, and unless the citizens vote for that bond issue you are simply stymied. The best way to sell this philosophy to everybody is to develop some sort of a very strong organization such as Pittsburgh's Allegheny Conference or St. Louis' Civic Progress Inc.

RANDALL: The Greater Milwaukee Committee is another example.

RAUCH: The Greater Philadelphia Movement is another.

CHAIRMAN: This is very significant. The business community in each of these cities is trying its best to call the shots, to lead the cities so that the office managers' interest, the merchants' interest and industrialists' interests, and the railroads' interests alone are not considered, but so that all are.

BAER (l): The important thing is to develop an organization to accelerate the making and realizing of plans which otherwise takes years and years. Fleishman (r).

THE GLASS THAT HALTED A HOLOCAUST

LaSalle Street Fire

"As in most serious fires, exposed buildings were threatened by the raging fire in their midst. That these buildings were not involved is a tribute to the efficient work of the Chicago Fire Department and to the *effectiveness of wire glass windows in metal frames.*"

April 1951, NFPA Quarterly, published by National Fire Protection Association

Skylights of Coolite Wire Glass combine controlled daylighting, heat absorption and protection.

The distinctive pattern of Polished Misco Wire Glass, in metal frames, is ideal for window openings.

Polished Misco brings beauty and clean, functional, modern design to a proven safety standard.

Mississippi Wire Glass Affords Approved Fire Protection From Within or Without Your Plant

The roaring flames that reduced this structure to a smoldering ruin never spread to endangered nearby buildings. The holocaust was halted in its tracks with the help of wire glass windows in metal frames. Although heat cracked the lights, the woven wire mesh held the glass in the sash . . . prevented the blaze or errant embers from igniting new fires. The ability of Mississippi Wire Glass (Approved Fire Retardant No. 32) to remain in an opening after cracking or accidental breakage, makes it especially suitable for skylights, lot line windows, vertical shafts, partitions, doors or at any point where fire protection plus good daylighting is required.

Give your buildings the finest protection. Mississippi Wire Glass will not only prevent damage from exterior causes, it also tends to bottle up small, internal fires, keep them from spreading into costly conflagrations. Specify Mississippi wire glass, the original wire glass upon which the Underwriter's Standard was based, the standard today by which all others are judged.

Available in hexagonal or Misco wire mesh in types for clear vision or diffusion wherever quality glass is sold.

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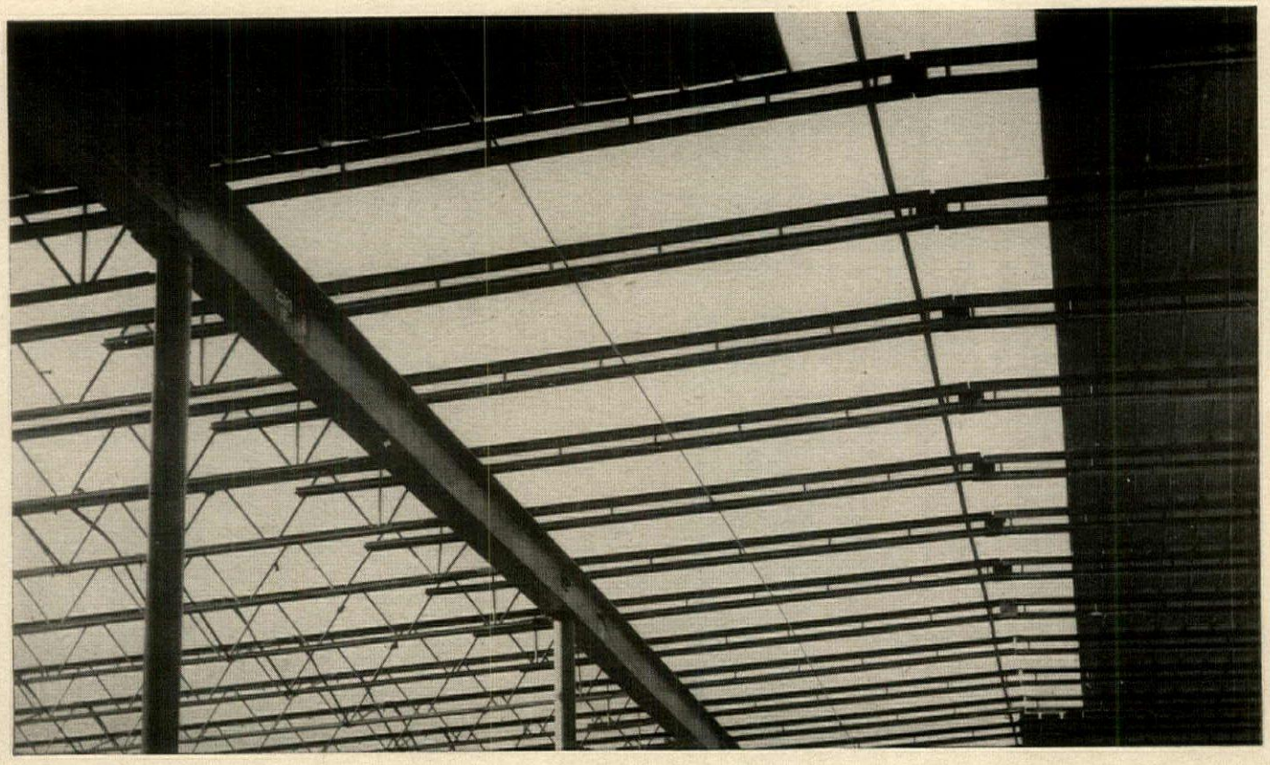
SAINT LOUIS 7, MO. FULLERTON, CALIFORNIA

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



Unique use of LACLEDE STEEL JOISTS

saves building time and cost for new Missouri high school

PACIFIC HIGH SCHOOL
Pacific, Mo.

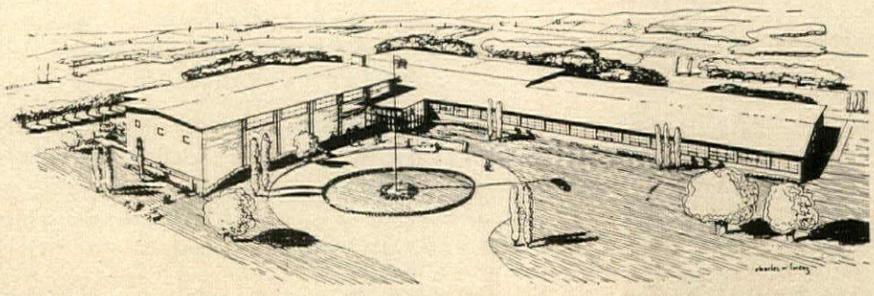
Contractor:
Juengel Construction Co., St. Louis

Architect:
Charles Lorenz, Kirkwood, Mo.

The new Pacific High School provides an excellent demonstration of the versatility of Laclede Straight Chord Steel Joists and their adaptability to specific architectural requirements.

By using two single joists with cantilever extended ends on each side of a three bay roof design, the number of joists required on the project was reduced by one-third and substantial saving resulted in material, time and labor.

Other Laclede Steels, too, including Multi-Rib Reinforcing Bars and Welded Wire Fabric, were used in this modern new building.



LACLEDE

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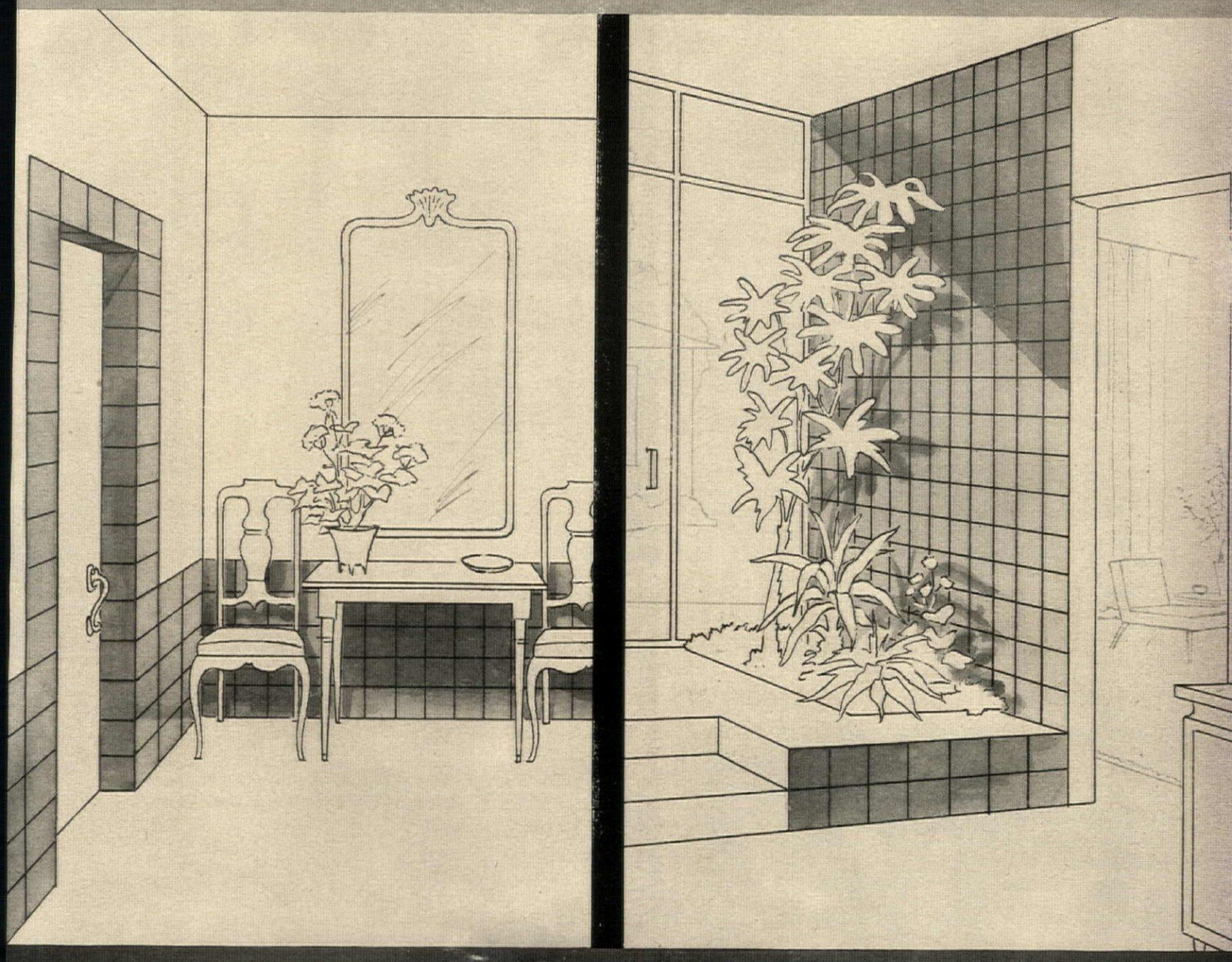
SAINT LOUIS, MISSOURI ◆ Producers of Steel for Industry and Construction

Preview by Monsanto

Styrene wall tile suggests new treatments for an entrance hall



A unique combination of qualities has long made styrene plastic tile a preferred surfacing material for bathroom and kitchen walls.

Today these same characteristics—low water absorption, durability and lightweight—natural luster, wide color range and low cost—are extending the application of styrene wall tile into other parts of the house.

Suggestive of its new decorative and functional possibilities are these sketches for two entrance halls.

In the traditional foyer (left), styrene tile creates a dado and door frame that will not be damaged by rain-soaked coats and umbrellas. Its rich coloring can be harmonized or contrasted with wall paper, floor and appointments.

In the contemporary entrance hall (right), styrene tile faces an entire wall without reinforcement. This material needs no special care or attention. Damp-cloth cleaning will preserve its lustrous beauty year after year.

Wall tile made of Lustrex styrene plastic is carried by most tile contractors in solid pastel colors, deep tones and marbleized effects. Standard tiles are 4¼″ x 4¼″ and 8″ x 8″. Special molded pieces are also available for corners. Permanent installation is quick and easy over wood, plaster or wallboard, and similar wall surfaces.

Monsanto Chemical Company, Plastics Division, Dept. AF 6. Springfield 2, Mass.

MONSANTO

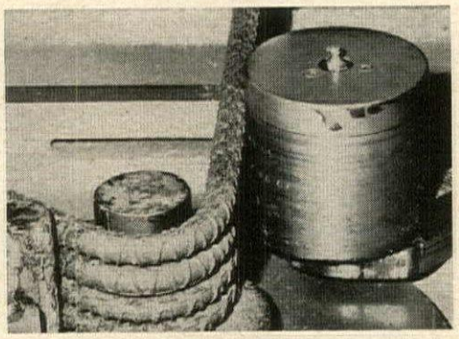
For lasting satisfaction, specify wall tile made of LUSTREX® Styrene Plastic

POLYSTYRENE PLASTIC

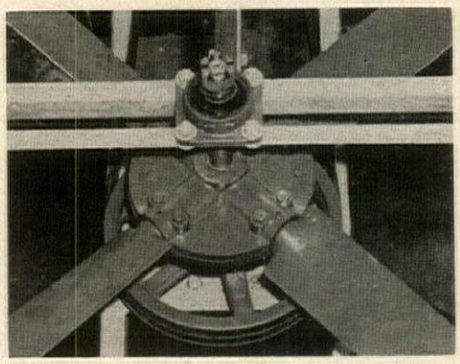
THIS SEAL IDENTIFIES TILE THAT MEETS THE STANDARDS SET BY THE WALL TILE INDUSTRY

PRODUCTS

A tape for smoother concretework (248)

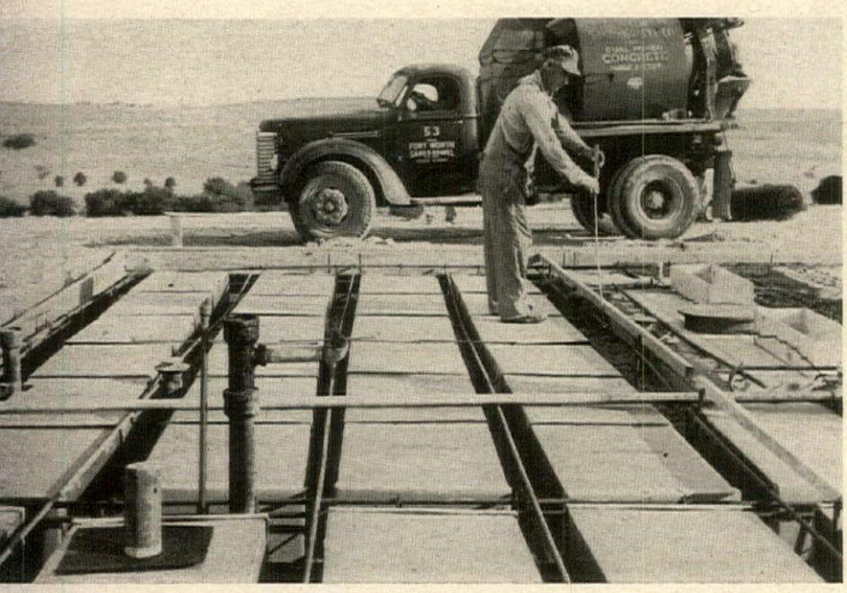


A machine for on-the-job bending (244)

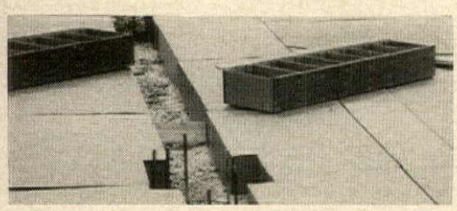


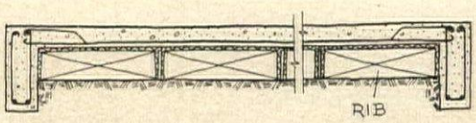
A cooling tower for a low silhouette (252)

Corrugated cardboard cartons are expendable forms for concrete floor construction

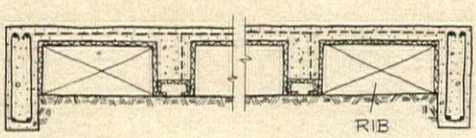


CARDBOARD BOXES are set upside down to raise slab above fill. Cardboard ribs inside boxes maintain shape during pouring.





CONCRETE SLAB ON FILL



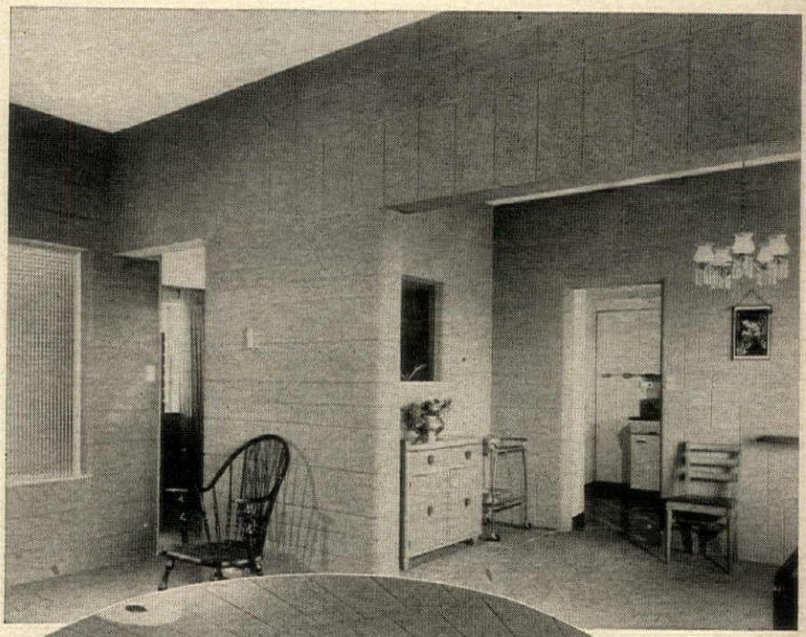
SLAB ON FILL- JOIST CONSTRUCTION

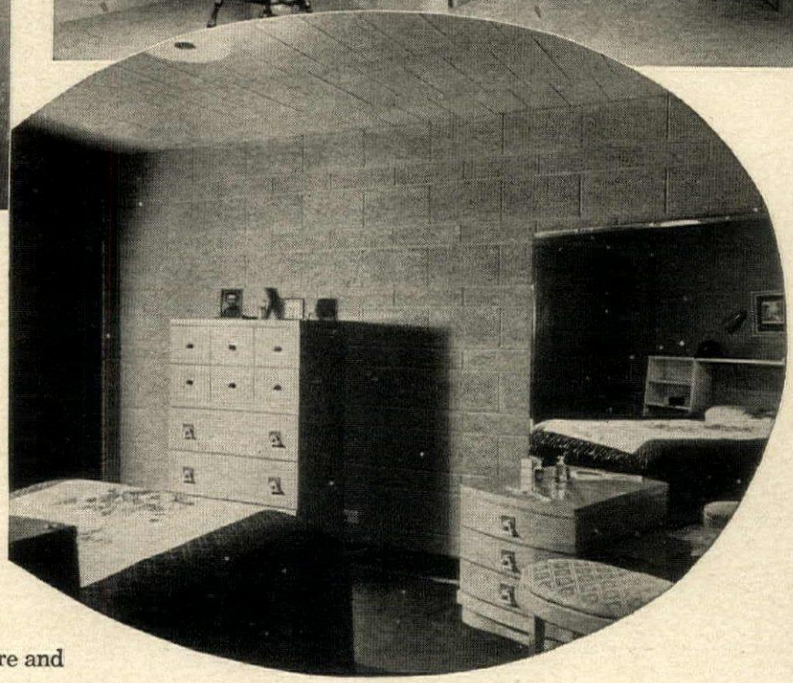
Inventor Buckminster Fuller set a cardboard building pace with dome structures of the hardy, low-cost and water-resistant material. Now the industry may be catching up to the avant-guardesman by building around corrugated fiberboard; that is, using cartons as concrete formwork. Although only a few hundred thousand of the 82 billion sq. ft. of fiberboard consumed in the US last year found its way into direct building uses (not counting packaging of materials), the 50 custom-order applications as forms—disposable and permanent—for poured roof decks and floor slabs proved impressive enough to turn Hoerner *Carton Forms* into a standard building product.

First experimental uses of the easily assembled 4′ x 2′ x 1′, 12½-lb. forms were in ceiling construction where they were left in place below concrete joists. To eliminate a separate hanging procedure, plaster lath was put on the centering boards before the forms were situated. Other cost savings afforded by the Hoerner units were that holes for plumbing and conduit could be cut quickly with a pocket knife after placement, and no fee for form repair had to be paid to a contractor; the forms belong to the builder. Recently the cardboard boxes were put to novel and notable use in the Southwest where heaving soil conditions sometimes cause buckling of a floor slab on fill. *Carton Forms* were applied to suspend the concrete above the ground in both joist and slab type construction.

continued on p. 244

Build Better with VIBRAPAC Block





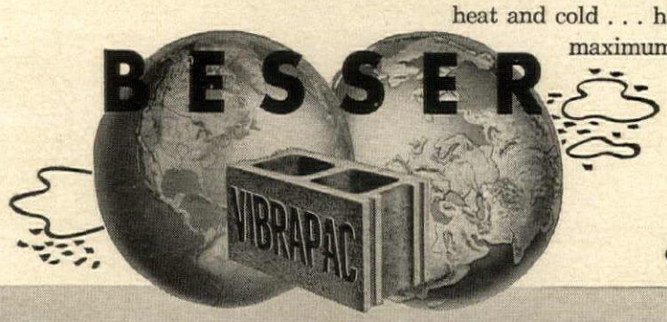
for magnificent INTERIORS, too!

EVERLASTINGLY beautiful

Vibrapac Block, used extensively for *exteriors* of buildings, is equally adaptable to *interiors*. No other building material commands greater respect. In homes, and other structures, large or small, you know the colorful beauty, unique texture and ruggedness of Vibrapac Block is everlasting. Here is modern, practical, permanent construction that reflects good judgment and wins prestige.

plus UNEQUALLED Low Cost and many other advantages

Obviously, Vibrapac Block are firesafe and stormsafe, vermin and rodent proof. They insulate effectively against heat and cold . . . have great acoustical and soundproofing qualities . . . assure maximum economy in both first cost and maintenance cost.



Vibrapac Block are produced only on BESSER Automatic High-Production Block Machines. There's a plant in your area equipped to produce Vibrapac Block in a variety of styles, sizes and colors. Ask for literature and other helpful data, or write directly to Besser Mfg. Co., Box 179, Alpena, Michigan, U.S.A.

World's Largest Manufacturer of Concrete Block Machinery

BETTY FURNESS SAYS:
"No elevator operator . . . but in this full water-glass test I didn't spill a drop!"

New Westinghouse Elevator Control Ends Annoying "Door-Scare" Forever

Delighted passengers in heavy-traffic buildings report complete confidence in Westinghouse Operatorless Elevators with Exclusive New TRAFFIC SENTINEL.

The last objection to heavy-duty operatorless elevators has been overcome once and for all by exclusive New Westinghouse TRAFFIC SENTINEL. This remarkable elevator door control forever eliminates frightening, irksome, premature door-closing movements which can startle passengers.

Proved by Water Glass Test

On Westinghouse Operatorless Elevators, equipped with exclusive new TRAFFIC SENTINEL, the car and corridor doors remain completely motionless while passengers are entering or leaving.

There is positively no movement of the open doors—a full glass of water held next to them will not spill a drop.

Gone is any trace of passenger anxiety, worry, or "door-fright." TRAFFIC SENTINEL guides Westinghouse Operatorless Elevator doors with its "electronic hand" far more expertly than the most highly trained operator.

Invisible Beams Control Doors

Invisible infra-red beams "watch" passenger movement and synchronize door closings automatically according to traffic flow. They adjust door-open time differently for passengers entering and leaving the car and close doors only after the last passenger passes safely through.

Tenants—to a man, woman, and child—are delighted and amazed at this mind-reading marvel.

Cuts Door-Open Time

TRAFFIC SENTINEL not only inspires complete confidence among passengers *but* speeds traffic movement by eliminating all unnecessary door-open time.

If you are thinking of new building or modernization, we'd like to show you TRAFFIC SENTINEL and discuss elevatoring in general. Call our nearest office today, or write Westinghouse Elevator Division, Dept. SPX, 9 Rockefeller Plaza, New York City.

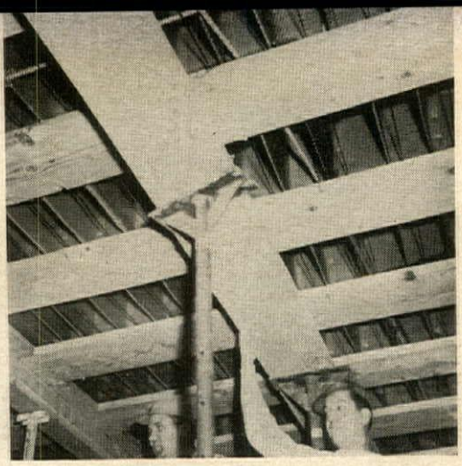
Westinghouse Elevators

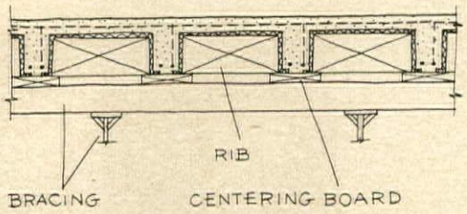
YOU CAN BE SURE...IF IT'S Westinghouse

J-98717

PRODUCTS

Continued from p. 240





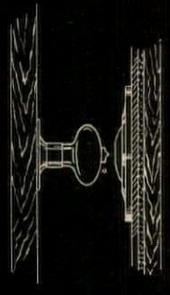
Carton Forms are chemically impregnated to prevent the fibers from pulling moisture from the concrete and getting rain-soaked to a pulpy mush.

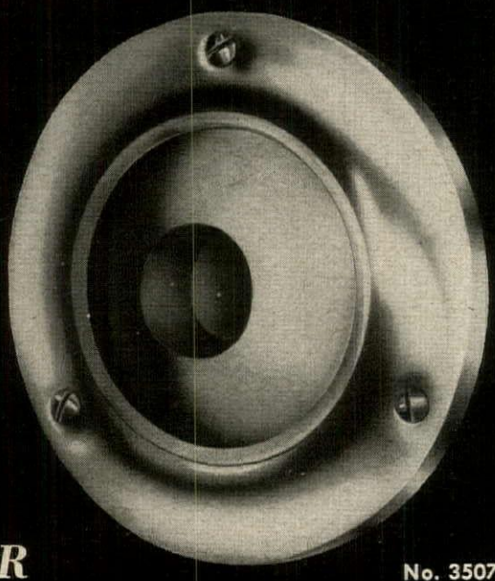
Surprisingly strong, the fiber material provides ample support for workmen and equipment such as buggies and agitators.

Because bids have to be figured on the specifications for the individual job, Hoerner, specialists in shipping containers, wisely has elected not to handle the forms in its regular packaging distribution but to channel them through a firm which is completely familiar with this aspect of construction: Safway Scaffolds Co. Quotations are made on forms shipped knockdown or set up and in place.

Manufacturer: Hoerner Boxes, Inc., 1900 Windsor Pl., Fort Worth, Tex. *Distributor:* Safway Scaffolds Co., Dallas, Tex.

NEW WALL
BUMPER

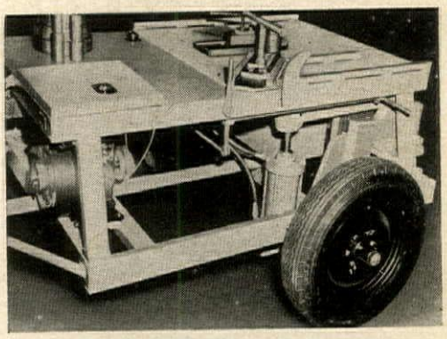


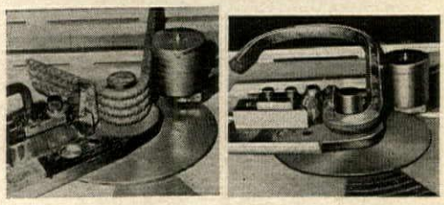


FOR
No. 3507
Cylindrical Lock Sets....

A new 4" wall bumper made for cylindrical lock sets with inside set buttons. Set button enters recess in grey rubber. Body of knob takes shock. Furnished in all natural and plated finishes with wood screws, or toggle bolts.

SARGENT & GREENLEAF, INC.
ROCHESTER 21, N. Y. • SINCE 1857





MOBILE BENDER shapes heavy reinforcing rods at the building site

Bending and shearing reinforcing rods on the job as they are needed and in shapes and lengths required, Acme's *Iron Man* can help contractors maintain close control in concrete construction. The powerful bender is basically a 40" square steel table topped with ½" steel plate. Its mechanism consists of a rotary disc with fixed lugs in appropriate positions for various operations. It will bend rod in 5° increments up to 190°, and can handle five bars of No. 2 stock (¼") at a time. It will make precision shears on three ½" bars in one stroke. Its slide bar and gauging scale permit fast positioning of stock. Fabricating reinforcement at the rate of 6 tons an hour, the hydraulic unit should cut down waste, hauling and handling of materials, and permit smoother integration of construction procedures. One contractor who

continued on p. 248

RUSCO

HOT-DIPPED GALVANIZED

STEEL PRIME WINDOWS

Engineered to help you PLAN better buildings!

Rusco Prime Windows — an entirely new concept in window engineering — were developed to make it practical for Architects and Builders to plan and construct better buildings while working with complete, finish-painted, ready-to-install window units.

Rusco hot-dipped galvanized steel Prime Windows are made in Horizontal Slide, Vertical Slide and Fulvue Vertical Slide models in all standard sizes and shapes. When you specify Rusco—you eliminate costly, time-consuming on-the-job painting, glazing, refitting and adjusting! And there are no sash cords, weights or balances to get out of order. They're *complete* the minute they go into the window opening!

The NEW RUSCO SCREEN and STORM DOOR COMBINATION
(Model No. 55 RSD)

Made of hot-dipped galvanized steel —this new low-cost door has a full-length Fiberglas screen, removable insulating sash optional, attached hardware, vinyl sill sweep, kick-plate and adjustable closer. Attractive, protective grille and house number or initial available at extra cost.

Check these RUSCO advantages!

Made of Hot-Dipped Galvanized Steel for strength, long life and minimum maintenance. Zinc-treated, Bonderized and finished with baked outdoor-type enamel for protection against weathering.

- **AVAILABLE WITH INSULATING SASH** and Fiberglas screen, as an integral part of the unit. Insulating sash gives Rusco's exclusive MagicPanel® year 'round, rain-proof, draft-free, ventilation.
- **BUILT-IN WATERPROOFED FELT WEATHERSTRIPPING . . .** Makes Rusco Windows completely weathertight, eliminates metal-to-metal contact, noise and rattling.
- **POSITIVE AUTOMATIC LOCKING** of vertical slide units in all open and closed positions. Springbolt action.
- **SMOOTH, EFFORTLESS OPERATION** Rusco sash sections slide in a felt cushion—easily, quietly, without effort.
- **SLIDING GLASS PANELS REMOVABLE FROM INSIDE FOR EASY CLEANING** Sliding glass inserts slip out in an instant for safe, convenient, inside cleaning.

"Hello there! I'm Sally Steele from the Rusco Service Department. We have your free copies of literature, describing these fine Rusco products, ready to mail as soon as you write to me at the address below."

THE F. C. RUSSELL COMPANY

World's Largest Manufacturer of Windows, Doors and Home Comfortizing Products.

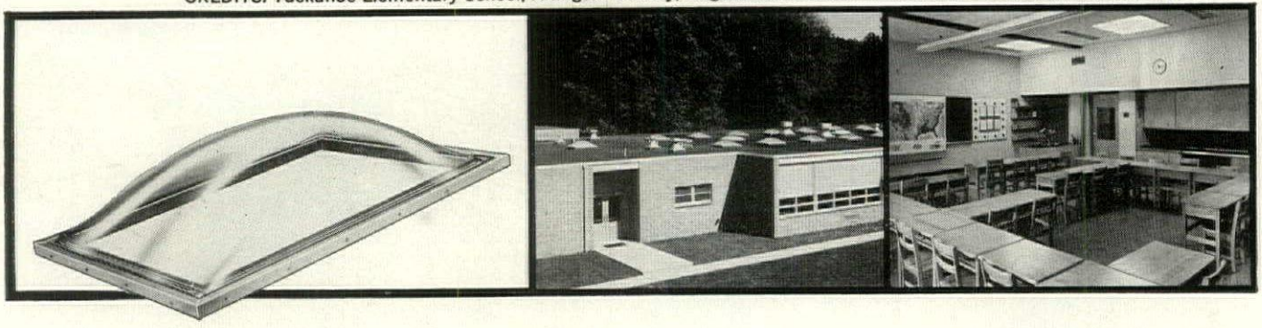
DEPT. 7-AF 65 • CLEVELAND 1, OHIO
In Canada: TORONTO 13, ONTARIO

"Always one step ahead of the weather" with RUSCO

BY INVITATION MEMBER

WARRANT OF QUALITY

CREDITS: Tuckahoe Elementary School, Arlington County, Virginia. Architects: McLeod and Ferrara, A.I.A., Washington, D. C.



uniform daylighting at very low cost

The even distribution of overhead daylight, through WASCOLITE SKYDOMES, makes the classrooms in the Tuckahoe School ideal for study. It also permits functional use of corridors and gives other areas a new cheerfulness and utility.

Overhead daylighting with WASCOLITE SKYDOMES is a proven technique for lighting schools economically. It provides abundant, glare-free daylight . . . at very low construction costs. And the units require no maintenance.

Write today for free booklet Daylighting Your Schools.

WASCOLITE SKYDOMES

• TOP SPECIALISTS IN DAYLIGHTING AND FLASHING PRODUCTS

WASCO PRODUCTS, INC., 89-F Fawcett Street, Cambridge 38, Mass. Pat. Nos. 2610593, 2693156 and pats. pend.

NOW...

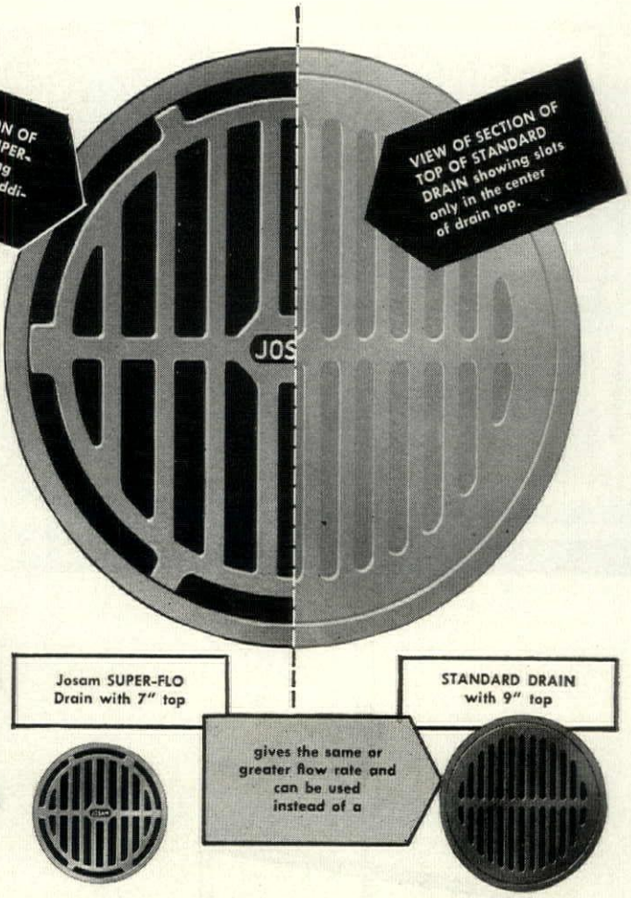
the greatest drain development in years!

Josam

SUPER-FLO

FLOOR DRAINS

(PATENTED)

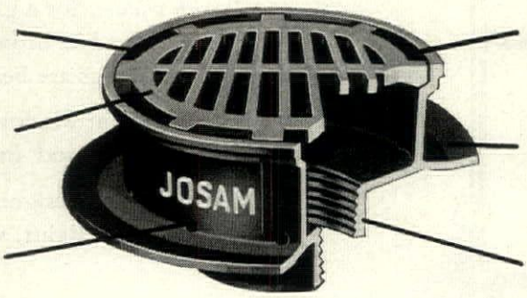


Through Josam pioneering, a great new advancement in drains is presented to the industry

Perimeter slots increase free area of top and permit greatly increased flow rate (GPM).

Standardized bodies permit interchangeability of grates, sediment bucket, round or square brass tops, etc.

Size and number of weepholes provide positive double drainage action.



Constant flushing is obtained by drainage flowing over inside surface of body.

Flat surface of shallow sloped flange eliminates bending or pre-forming water-proofing.

Female threaded outlet, standard. Inside caulk, optional.

GREATER FLOW. Josam SUPER-FLO Floor Drains are designed with perimeter slots in the grate which increase the free drainage area of the top and permit greater flow into the drain. In SUPER-FLO Floor Drains, waste water enters the drain at the very edge of the drain top instead of flowing over the wide rim of conventional drains before it reaches the grate openings. Because of this, water friction loss in Josam SUPER-FLO Drains is greatly reduced, and the flow rate (GPM) into the drain is greater than the flow rate in standard drains of the same or larger size top.

SAVINGS IN COST. Because of the increased flow rate in Josam SUPER-FLO Drains, a smaller top size Josam SUPER-FLO Drain can be installed to service the same drainage condition as a larger top size standard floor drain.

GREATER SANITATION. Since waste water enters Josam SUPER-FLO Drains through slots at the very edge of the rim, the water flows over the inside surface of the drain body, thereby constantly flushing the inside walls and keeping the drain body free from an accumulation of foreign deposits.

GREATER INTERCHANGEABILITY. Josam SUPER-FLO drains permit various styles of grates and tops, buckets and other features to be added or substituted even after drain is on the job. This also effects an economy in case of alterations in specifications or future requirements because of change in operations.

Josam SUPER-FLO Floor Drains set a new standard for quality and service wherever drains will be specified and used. Get the complete details by sending coupon below.

JOSAM MANUFACTURING COMPANY

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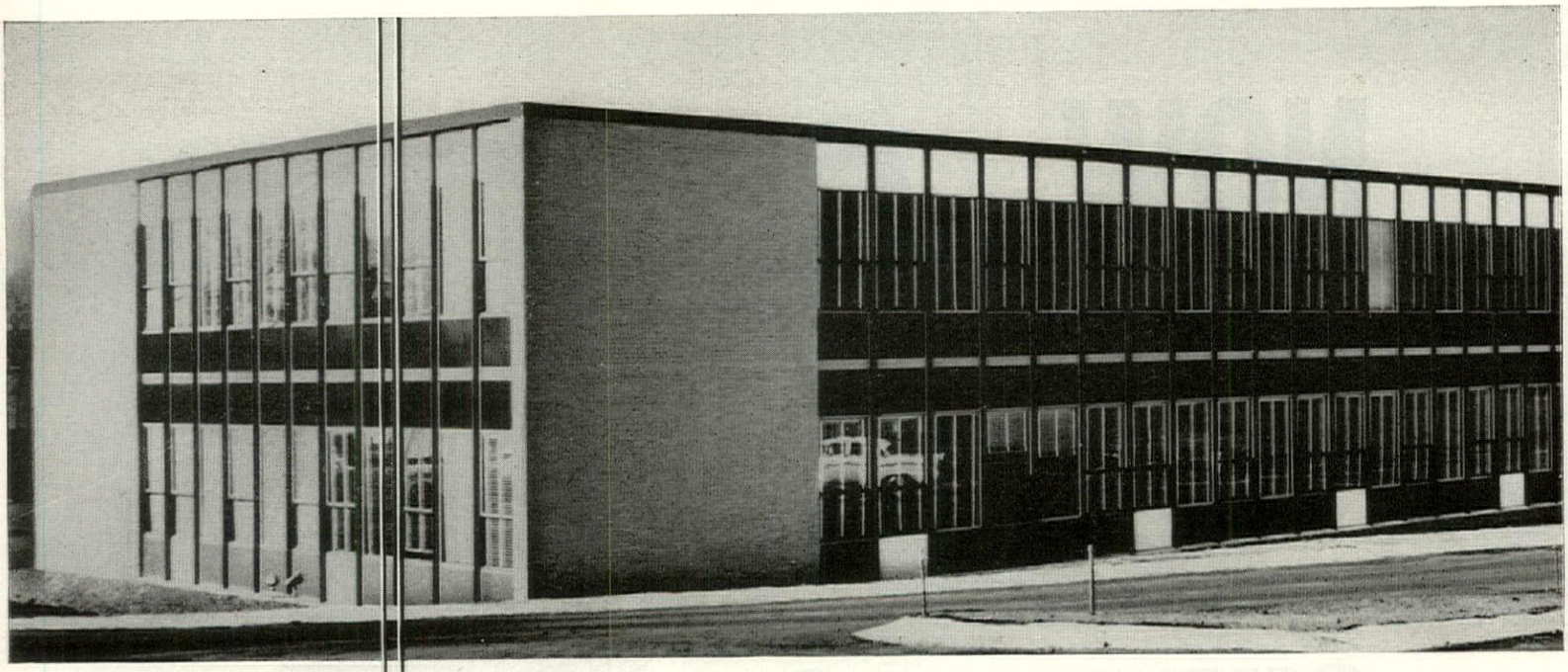
JOSAM MANUFACTURING CO.
Dept. AF, Michigan City, Indiana
Please send 8 page Booklet on new Josam SUPER-FLO Floor Drains

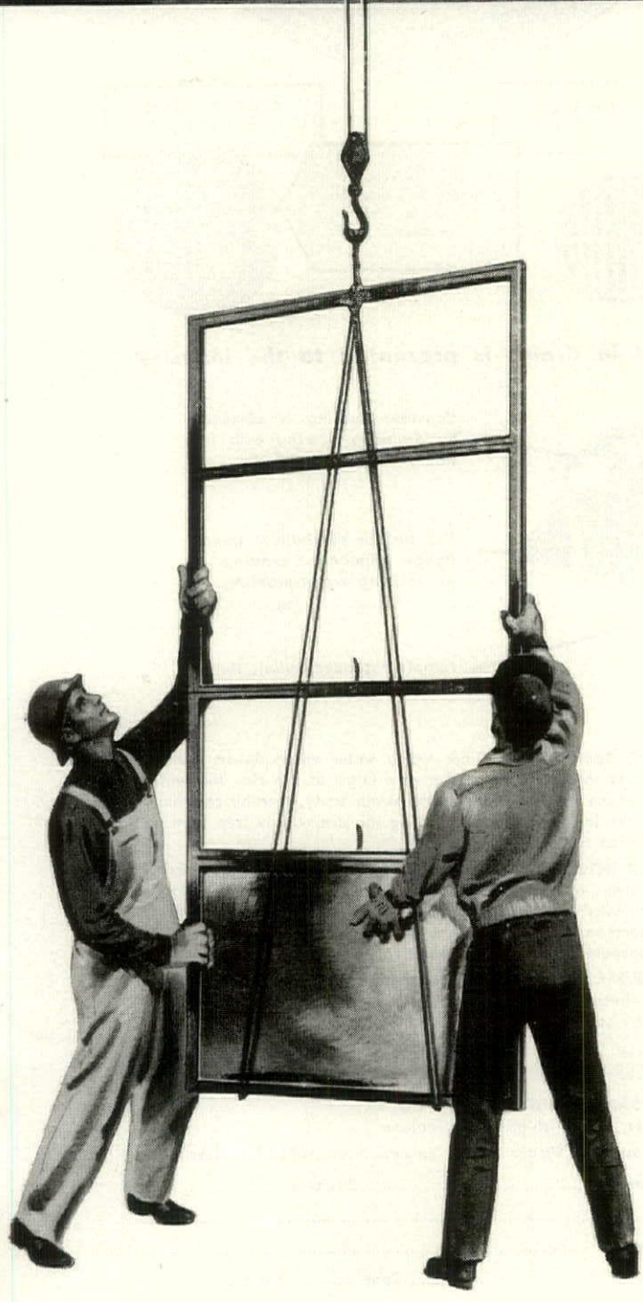
Firm ..... Business .....

By .....

Address .....

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





TRUSCON VISION-APPLIES TO ALL

More new Vision-Vent applications are turning up daily!

Republic's Truscon Steel Division originally developed this complete *wall with window* for a group of hospitals. Immediately, designers and builders realized its economies and construction advantages. Now, all types of buildings are being designed around Vision-Vent.

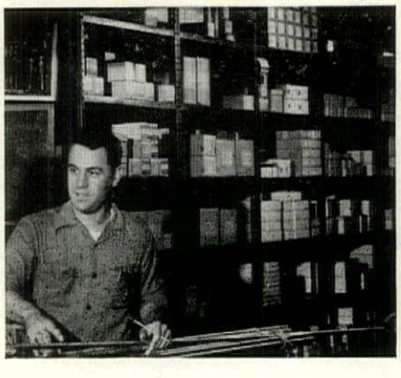
In Vision-Vent window walls you get a building system with all the mass-production and installation economies of standardization.

Vision-Vent is designed to enclose entire walls. Each unit is complete, with fixed lights, ventilators, and insulated steel panels. Panels

REPUBLIC

World's Widest Range of Standard

REMEMBER REPUBLIC FOR



NEW BUILDINGS NEED SUPPLIES; AND SUPPLIES NEED STEEL SHELVING for most efficient storage. Republic's Berger Division pioneered in the manufacture of high-quality steel shelving and in "storage engineering". Berger offers exclusive "Wedge-Lock" — world's strongest steel shelving — capable of carrying heaviest loads. New Berger Clip-Type Convertible Steel Shelving gives you fast, easy shelf adjustment.

VENT ECONOMY BUILDING TYPES

can be either colored porcelain enamel or stainless steel. They have a "U" factor equivalent to that of masonry spandrel walls.

Since Vision-Vent offers a minimum wall thickness—less than 1½"—you gain extra floor space. Light weight is reflected in structural savings. Erection is done from inside and can average a floor-a-day rate. Vision-Vent is weathertight.

This exciting new Truscon development is recommended for all types of single and multi-story buildings. Truscon window engineers will be glad to study your requirements and develop specific design details and costs. See Sweet's File for more facts, or send coupon.

Typical VISION-VENT applications

HOSPITALS

Memorial Hospital Ass'n. of Kentucky, Inc.
Sherlock, Smith and Adams, architects;
J. A. Jones Construction Co., contractors.

Memorial Hospital Ass'n. of Kentucky, Inc.
Office of York and Sawyer, Kiff, Colean, Voss and Souder, architects;
J. A. Jones Construction Co., contractors.

Memorial Hospital Ass'n. of Kentucky, Inc.
Isadore and Zachary Rosenfield, architects;
J. A. Jones Construction Co., contractors.

Hebrew Home for the Aged, Hartford, Conn.
Kane and Fairchild, architects;
South New England Construction Co., contractors.

Bel-Park Medical Bldg., Youngstown, Ohio
P. Arthur D'Orazio, architect;
Emanuel Katzman & Co., contractors.

SCHOOLS

Clemson College Dormitories
W. G. Lyles, Bissett, Carlisle and Wolf, architects;
Daniel Construction Co., Inc., contractors.

Holy Cross School and Convent, Bronx, N. Y.
Office of York and Sawyer, Kiff, Colean, Voss & Souder, architects;
James King & Son, Inc., contractors.

Animal Science Bldg., University of Arkansas
Ginocchio, Cromwell and Assoc., architects;
Harmon Construction Co., contractors.

Eastern Jr. High School, Greenwich, Conn.
J. Gordon Carr, architect;
Alfonso Alvarez, cons. school architect;
A. Barbaresi & Son, Inc., contractors.

Elementary School for Retarded Children, Columbus, Ohio.
Richard Hawley Cutting, architect;
Sever-Williams Co., contractors.

Classroom and Office Bldg., Univ. of California at Los Angeles.
Austin, Field & Fry, architects;
Robert E. McKee, contractors.

COMMERCIAL BUILDINGS

United Airlines Finance and Property Bldg., Chicago, Ill.
Skidmore, Owings and Merrill, architects;
Algot B. Larson, Inc., contractors.

Fram Office Building, East Providence, R. I.
The Architects Collaborative, architects; Gilbane Bldg. Co., contractors.

Michigan Bell Telephone Co., A.M.A. Office Bldg., Port Huron, Mich.
Smith, Hinchman & Grylls, Archts. & Engrs.;
E. J. Kahmann, contractors.

Penn Controls, Inc., Goshen, Ind.
The Austin Co., architects and contractors.

INDUSTRIAL BUILDINGS

Fermenter Room Bldg., Brown Forman Distillers Corp.
Joseph & Joseph, architects;
F. W. Owens Construction Co., contractors.

PUBLIC BUILDINGS

City Hall, Bakersfield, California
Robert N. Eddy, architect;
William T. Wheeler, engineer;
Brooks-Williams-Macco, contractors.

STEEL

Steels and Steel Products

MORE BUILDING SPECIALTIES

NEW BUILDINGS MEAN PEOPLE; AND PEOPLE NEED STORAGE FACILITIES. Republic's Berger Division is world's leader in lockers. You can use Berger Steel Lockers wherever clothing is changed or stored. Trim and tidy locker rooms are great employee morale builders, too. Write Berger Division for assistance in planning, engineering, and installing complete locker systems.

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I'm interested in further details of Republic products checked:

☐ Truscon Vision-Vent Walls

☐ Berger Steel Shelving ☐ Berger Steel Lockers

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K-8619

ideas

from Blickman-Built award-winning food service installations

wall-mounted kettles and steamer cut cleaning time

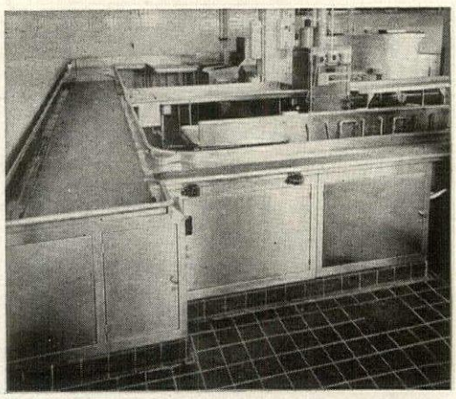
at DUPONT HOTEL, WILMINGTON, DELAWARE

WALL-MOUNTED KETTLES AND STEAMER, main kitchen, eliminate leg obstructions, facilitate cleaning. Supporting structure is faced with sanitary stainless steel panels. Drippings fall to pitched floor beneath kettles and are easily flushed down drain.

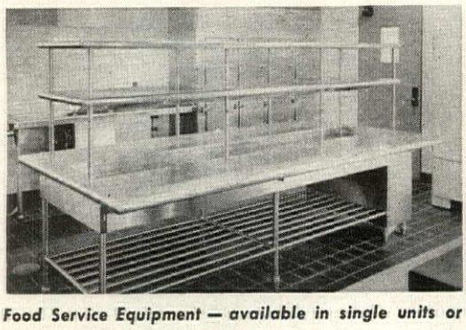
STAINLESS STEEL CAFETERIA COUNTER. Note absence of horizontal or vertical trim. This eliminates dirt-collecting ledges, assures rapid, thorough cleaning. At left are Tri-Saver urns which brew delicious coffee without urn bags or filter paper.

• This prize-winning food service installation at DuPont Hotel has many time and labor-saving features. For example, stainless steel kettles and steamer are wall-mounted to eliminate the usual understructure. Therefore, drippings fall to the pitched surface below the kettles and are readily flushed down the drain. The cafeteria counter, too, is designed for rapid cleaning. Dirt-catching vertical and horizontal trim is entirely eliminated. Work tops and sinks are of polished seamless construction to eliminate crevices that trap food particles. Carefully planned layout assures efficient work-flow. Throughout its service life, this Blickman-Built installation will save endless hours of waste motion in both food service preparation and in maintenance required for sanitation. It pays to specify "Blickman-Built".

S. BLICKMAN, INC., 5806 Gregory Ave., Weehawken, N. J.



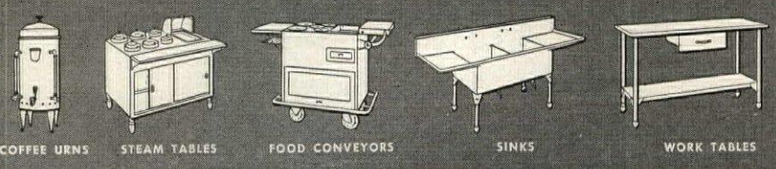
DISH PANTRY, showing conveyor belts which automatically unload soiled dishes and glasses from vertical conveyor descending from upper pantries.



SOUND FUNCTIONAL DESIGN, typified by this stainless steel salad preparation table. Mechanically cooled cold pan in center is convenient to work surfaces on both sides of table. Fluorescent lights on lower shelf provide glareless illumination.

Send for illustrated folder describing Blickman-Built Food Service Equipment — available in single units or complete installations.

Blickman-Built
FOOD SERVICE EQUIPMENT
EST. 1889



244-F

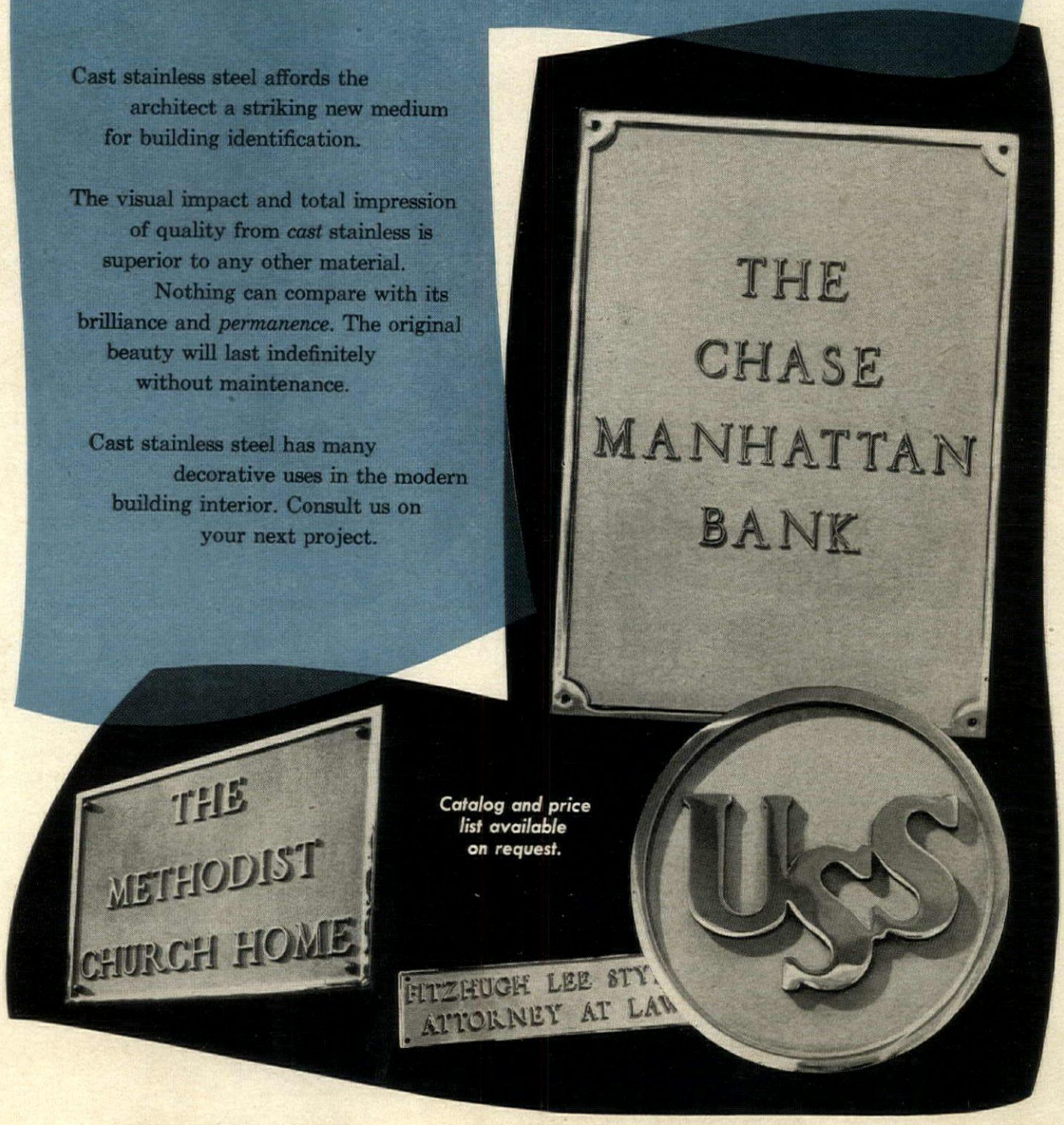
The newest, most beautiful, most permanent identification...

Lebanon stainless steel plaques

Cast stainless steel affords the architect a striking new medium for building identification.

The visual impact and total impression of quality from *cast* stainless is superior to any other material. Nothing can compare with its brilliance and *permanence*. The original beauty will last indefinitely without maintenance.

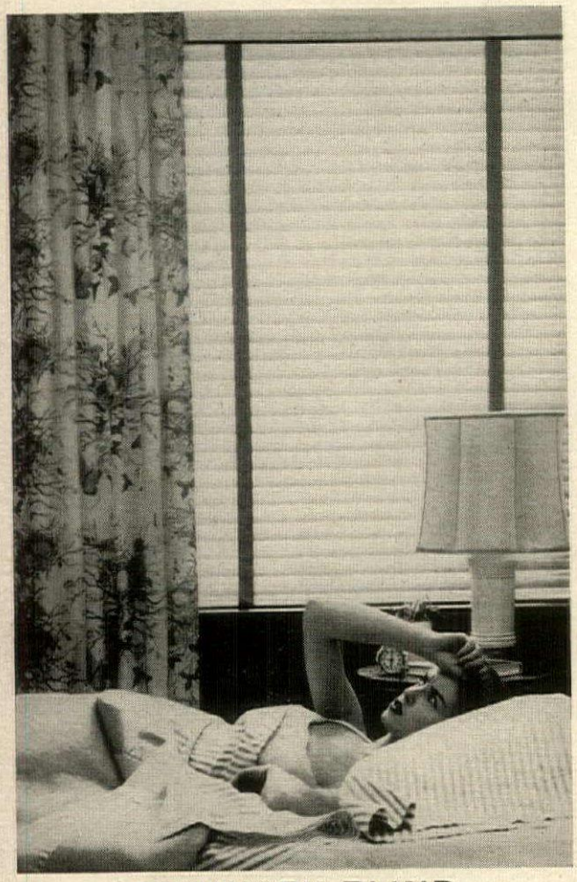
Cast stainless steel has many decorative uses in the modern building interior. Consult us on your next project.



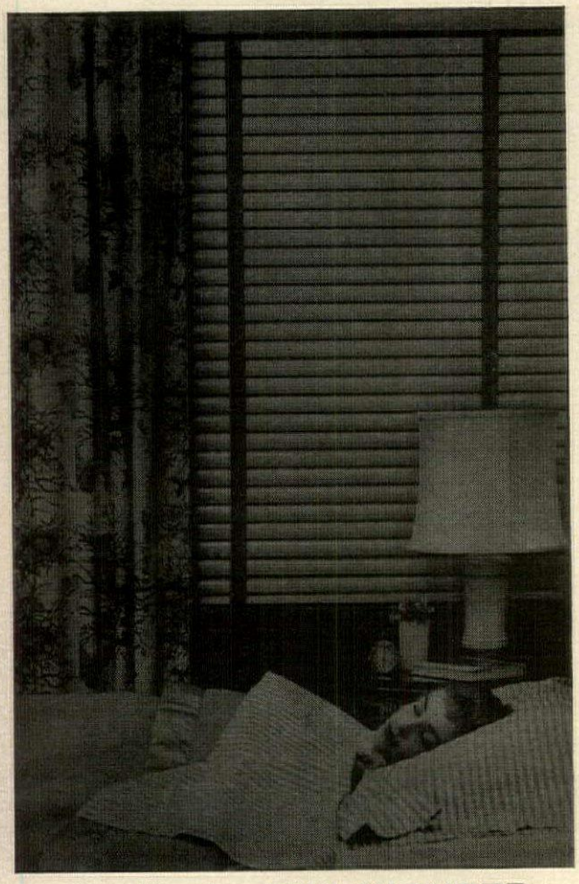
Catalog and price list available on request.

LEBANON STEEL FOUNDRY *177 Lehman Street, Lebanon, Pennsylvania*

NEW BLIND MAKES ROOMS NOT JUST DIM, BUT DARK!



ORDINARY BLIND



New Flexalum **TWI-NIGHTER**

Flexalum TWI-NIGHTER assures complete light...ventilation control ...and privacy...at no extra cost!

A remarkable blind that makes rooms not just dim—but dark—has just been introduced by Hunter Douglas Corp. The new blind, called the Flexalum Twi-Nighter, shuts so tight that it can turn day into night with a flick of the cord. Yet it permits complete ventilation, too.

CUSTOM-MADE FOR EVERY TYPE OF INSTALLATION

This development opens up many new opportunities in light control. Apartment house owners can promote the fact that it assures complete privacy . . . lets residents sleep later in the morning, and helps along baby's afternoon nap. In hospital rooms, it is more conducive to daytime rest. In schools, it makes regular classrooms ready for audio-visual education in a few moments. *Yet, amazingly enough, the Flexalum Twi-Nighter does not cost your client a penny more than any other custom blind.*

Here is the secret of the Twi-Nighter: a double ladder tape that "sandwiches" each slat more firmly in place, and a special notch in every slat, for tighter closure. *Only the Flexalum Twi-Nighter has them.*

PLUS LOWER-MAINTENANCE COST, LONGER-LIFE FEATURES

WIPE-CLEAN PLASTIC TAPES

A damp cloth is all that's needed to wipe them clean. Even sticky jam vanished right off with a stroke. Flexalum tapes won't fade, fray, shrink or stretch.

SNAP-BACK ALUMINUM SLATS

You can bend them—abuse them . . . Flexalum slats are spring-tempered aluminum to snap back ruler straight every time. The mar-proof finish won't rust, chip, crack or peel.

Other famous Flexalum features include: non-slip tilter • crash proof cord lock • non-fray nylon cords completely color-matched or your choice of over 200 color combinations.

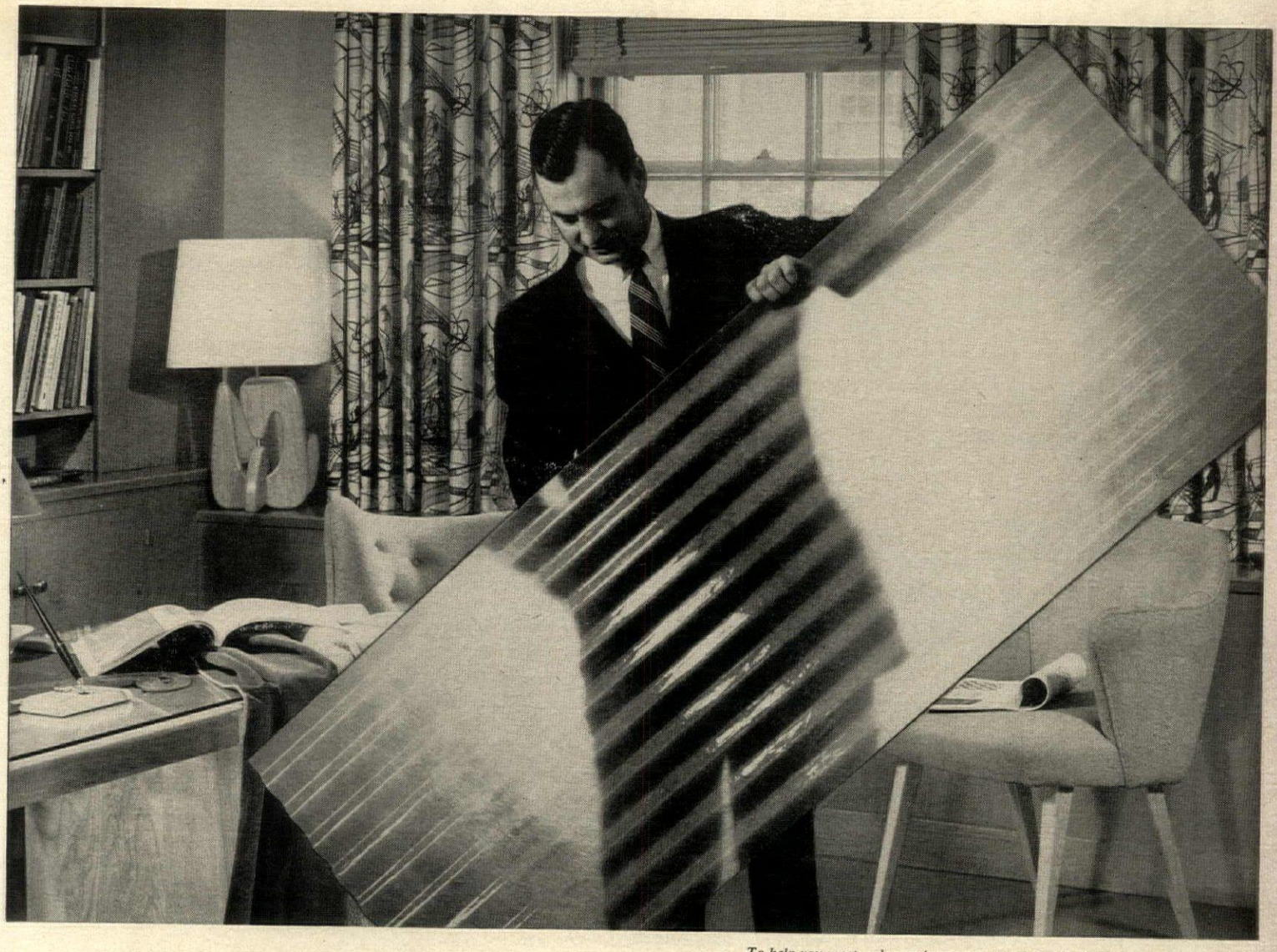
Remember: It costs no more to get complete light control . . . privacy . . . ventilation.

Flexalum

TWI-NIGHTER®

Guaranteed by Good Housekeeping

For complete information on the Twi-Nighter, contact your local Flexalum manufacturer or write: **Hunter Douglas Corp.**, Dept. 48, 150 Broadway, New York 38, N.Y.
(In Canada: Hunter Douglas Ltd., Dept. 48C, 9500 St. Lawrence Blvd., Montreal, Quebec.)



To help you meet code requirements, now and in the future, your fabricator can supply panels and sheets made with HETRON polyester.

Now—polyester-glass fiber panels with ***specific flame resistance***

Now you can specify polyester-glass fiber construction *to meet code requirements* that call for a definite flame spread rating.

This is important to you, because building officials and construction people are becoming increasingly aware of the need for specific flammability data on polyester-glass fiber panels and sheets to be used in coded areas.

Fire resistance "locked in"

Structural panels, sheets, and other shapes made with HETRON® are *permanently* self-extinguishing. Typical flame spread ratings of 75 or less (compared with 100 for red oak, and as high as 400 for ordinary polyester-glass fiber panels—by independent laboratory tests) place HETRON-based panels in a bracket equivalent to the BOCA* classification of "slow-burning." Specific flame resistance is permanently, chemically locked in.

You can get HETRON-based panels and sheets from leading fabricators now. They cost only a little more than panels and sheets made with standard resins. You can get them in a wide range of sizes, gauges, and colors—translucent or opaque. For applications where ultraviolet exposure will be severe, we suggest you consult with your fabricator or with us.

We do not make the panels, but will gladly send you complete information on where to get them. Write also for technical information and flame spread data on HETRON.

*Building Officials Conference of America

4-1428

HOOKER® CHEMICALS

From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

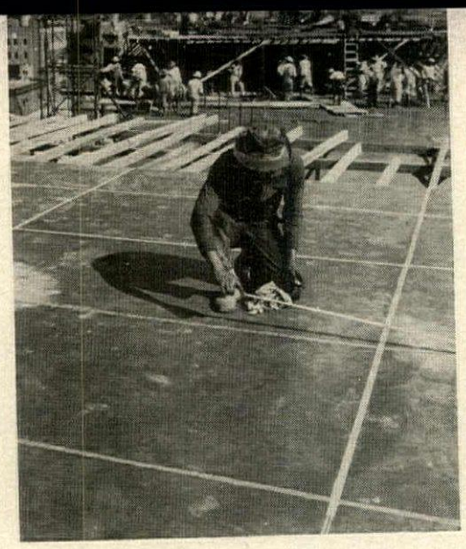
54 UNION STREET, NIAGARA FALLS, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

PRODUCTS

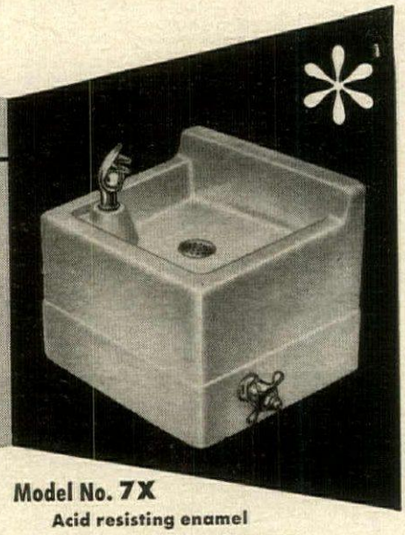
Continued from p. 244

used the *Iron Man* to bend and shear 1¼" round rods found the operation cost him a few cents apiece compared to the usual mill-work charge of 2¢ to 3¢ a lb. or up to $3 a rod. The machine comes with either an 8.4-hp gas or 10-hp electric motor or both. Its 600-16 tires are supplemented by support which can be lifted or lowered to fit the terrain. A stationary model is also available.
Manufacturer: Acme Equipment, Inc., 505 Central Trust Bldg., Altoona, Pa.



another *New* HAWS FOUNTAIN!

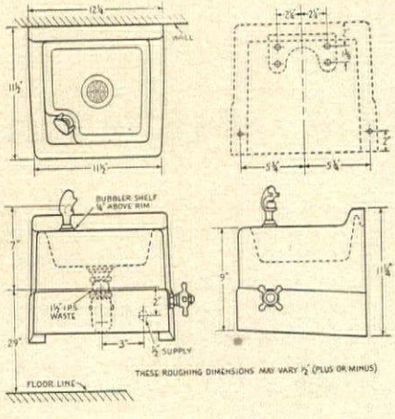
a product of modern styling



Model No. 7X
Acid resisting enamel
cast iron drinking fountain
Designed by CHANNING WALLACE GILSON
Industrial Designer

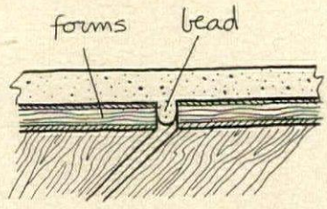
FOR PERFECT ADAPTATION to current architectural trends . . . and constructed of durable acid-resisting enameled cast iron to withstand the severest abuses of the school yard, this new HAWS drinking fountain assures lasting trouble-free service.

HAWS Model No. 7X drinking fountain contains HAWS *complete sanitation* features . . . with raised, shielded, angle-stream fountain head of chromium plated brass. Water pressure and volume is automatically controlled . . . it's anti-squirt!

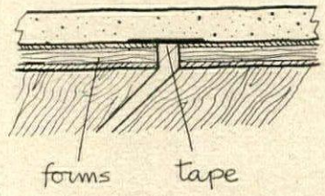


WRITE TODAY for full details of HAWS Model No. 7X...a complement to new construction...a vast improvement for modernization! *It's designed to meet ALL city, county and state material and operational sanitation requirements.* Specify HAWS with confidence!

HAWS DRINKING FAUCET CO.
1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA



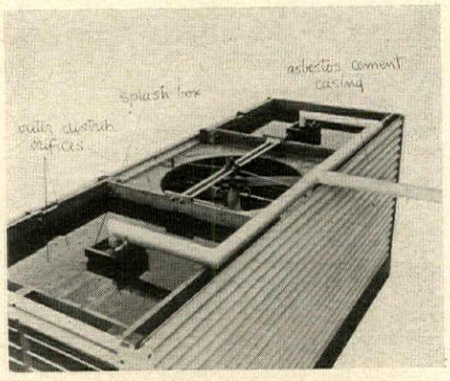
JOINTS in forms produce bead (above) unless taped (below).



PLASTIC TAPE leaves beadless joint between concrete forms

Uncomely fins of concrete that usually ooze into spaces between plywood forms and have to be ground down later are eliminated with this latest variety of *Scotch* tape. Numbered *471*, the pressure-sensitive plastic tape is applied by hand over each form joint before the pour and, afterward, comes off clean without discoloring the set concrete. Literally holding back the impact of the wet mix, the 5-mil. thick tape acts as a seal for the forms themselves, preventing moisture from penetrating the edges and deteriorating the plywood. Dallas Contractor Robert McKee, who used 26 mi. of 1"-wide *471* on ceiling forms for the 18-story Statler Hilton Hotel, found the form reuse dividend made possible by the tape's protection more than offset its cost. He also reported that in most places the ceiling surface was smooth enough for immediate painting.

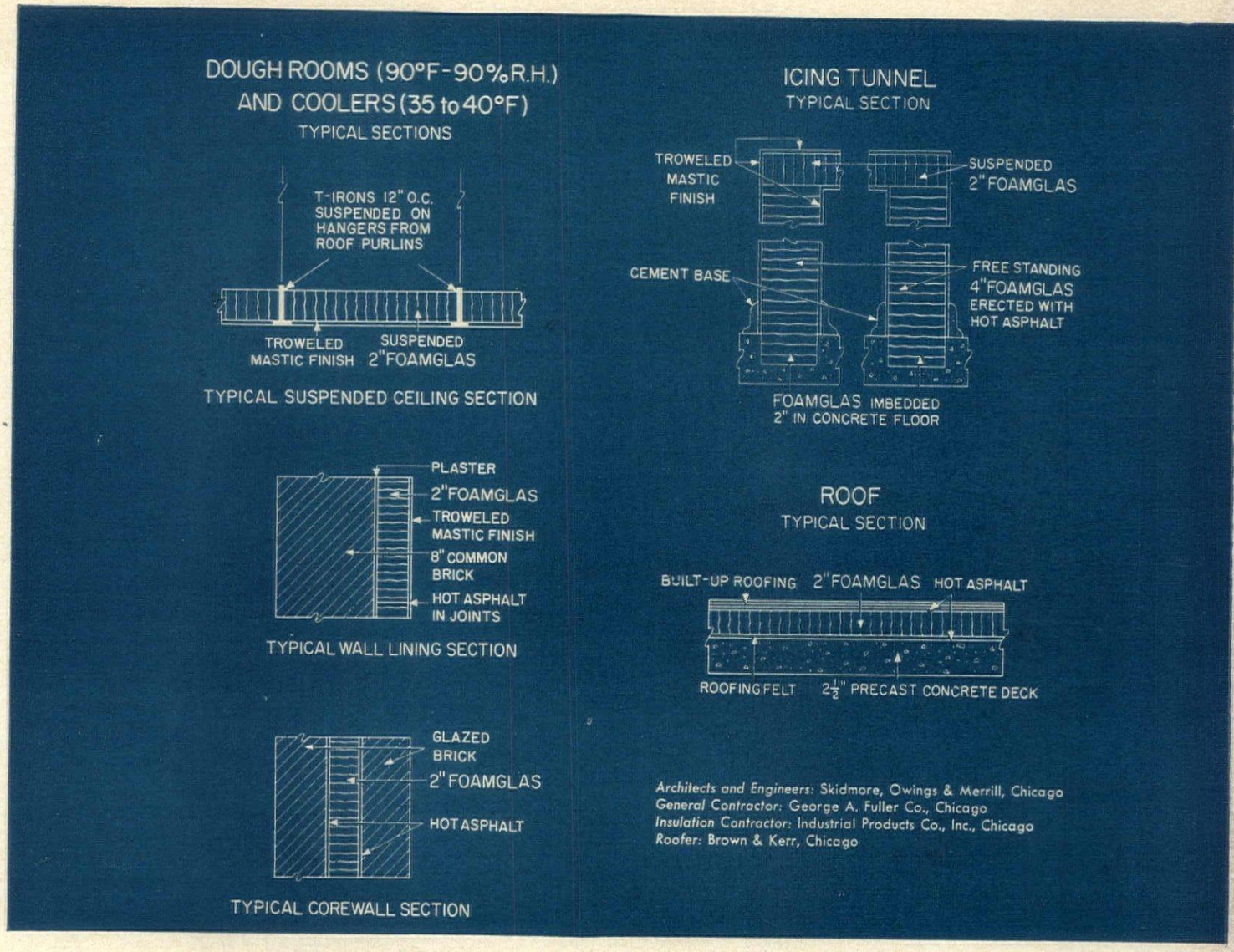
Manufacturer: Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn.



COOLING TOWER less than 8′ high lies low on rooftop

Acknowledging the prevalence of one- and two-story commercial structures in the suburbs and the interest in cleaner profiles for city buildings, Pritchard puts emphasis on the horizontal in its new cooling tower series.

continued on p. 252



Only moisture-proof FOAMGLAS can effectively insulate all these for United Biscuit . . .

hot, humid dough rooms . . . coolers . . . icing tunnels . . . roof

K. F. MacLellan, president of United Biscuit Company, tells how they benefited from the unique properties of FOAMGLAS insulation at their Sawyer Division's big new plant in Melrose Park, Illinois:

"To insulate the walls of dough setting rooms kept at 90° F.—90% relative humidity *and* coolers kept at 35 to 40° F. we picked FOAMGLAS. It stays completely dry, fully efficient in both locations to help control temperature and humidity. Also it is inorganic and doesn't support vermin life . . . that's particularly important, of course, in all food plants.

"The extra rigidity of FOAMGLAS enabled us to suspend it between T-irons to form dropped ceilings. That's cutting our operating costs by reducing the volume of air to be heated or cooled. Its unusual strength enabled us to erect free-standing tunnels in which we harden freshly applied cake frostings. The elimination of structural supports reduced construction costs."

Mr. MacLellan concludes: "We also insulated the entire roof area with fireproof FOAMGLAS. No other insulation could have given us such effective results on such diverse, difficult applications."

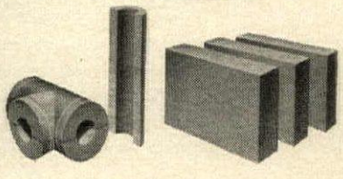
Find out today how *you* can save by using FOAMGLAS. Write for your choice of booklets on insulation for buildings, cold storage spaces, piping or equipment.

Pittsburgh Corning Corporation

Dept. D-65, One Gateway Center
Pittsburgh 22, Pennsylvania
In Canada: 57 Bloor St. W., Toronto, Ontario

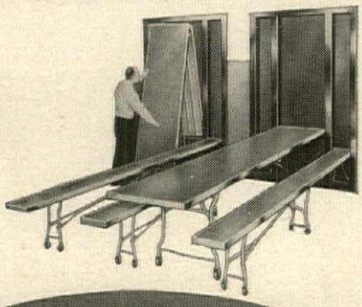
FOAMGLAS®

the cellular, stay-dry insulation



Specified everywhere and for good reasons!

Sweet's File 22i Sc



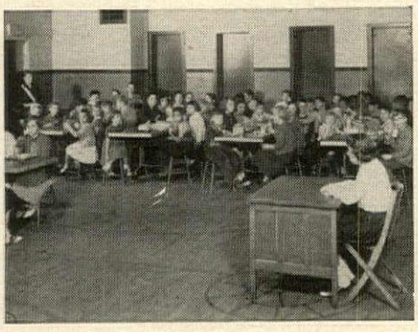
Schieber

FOLDING TABLES & BENCHES

over-engineered for protection of architects and users

Architects in every one of the 48 states, District of Columbia, Alaska and Canada have specified this multi-purpose-space equipment in the interest of economy in school design. Many are now specifying it for institutions, community halls, fire stations, industrial plants, etc.
Available in wall pocket models remain attached to the wall or detach. Also in portable steel carriers.

Schieber equipment is the original. The first installation made 24 years ago is still in daily use and in good condition.



Schieber SALES COMPANY

Detroit 39, Michigan

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PORT-A-FOLD
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In Canada
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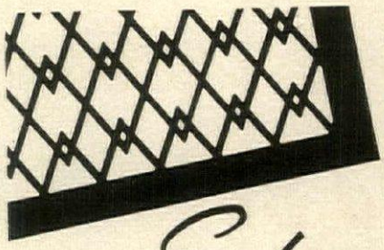

for *Enhancing* beauty

Add a touch of beauty and utilitarian design to your decorative motif with Hendrick Perforated Metal Grilles. Your clients will go for that extra elegance they add to a room.

Hendrick Perforated Metal Grilles provide more-than-ample open area for free passage of air and are available in over one hundred attractive basic designs to choose from. And they're easy to install because they always lie flat—they won't bend or warp. For more complete details write Hendrick direct.

Hendrick
MANUFACTURING COMPANY
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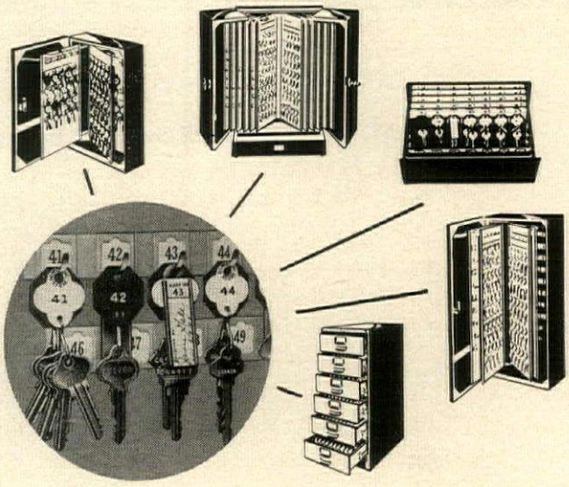
Perforated Metal • Perforated Metal Screens • Wedge-Slot Screens • Architectural Grilles • Mitco Open Steel Flooring • Shur-Site Treads • Armorgrids



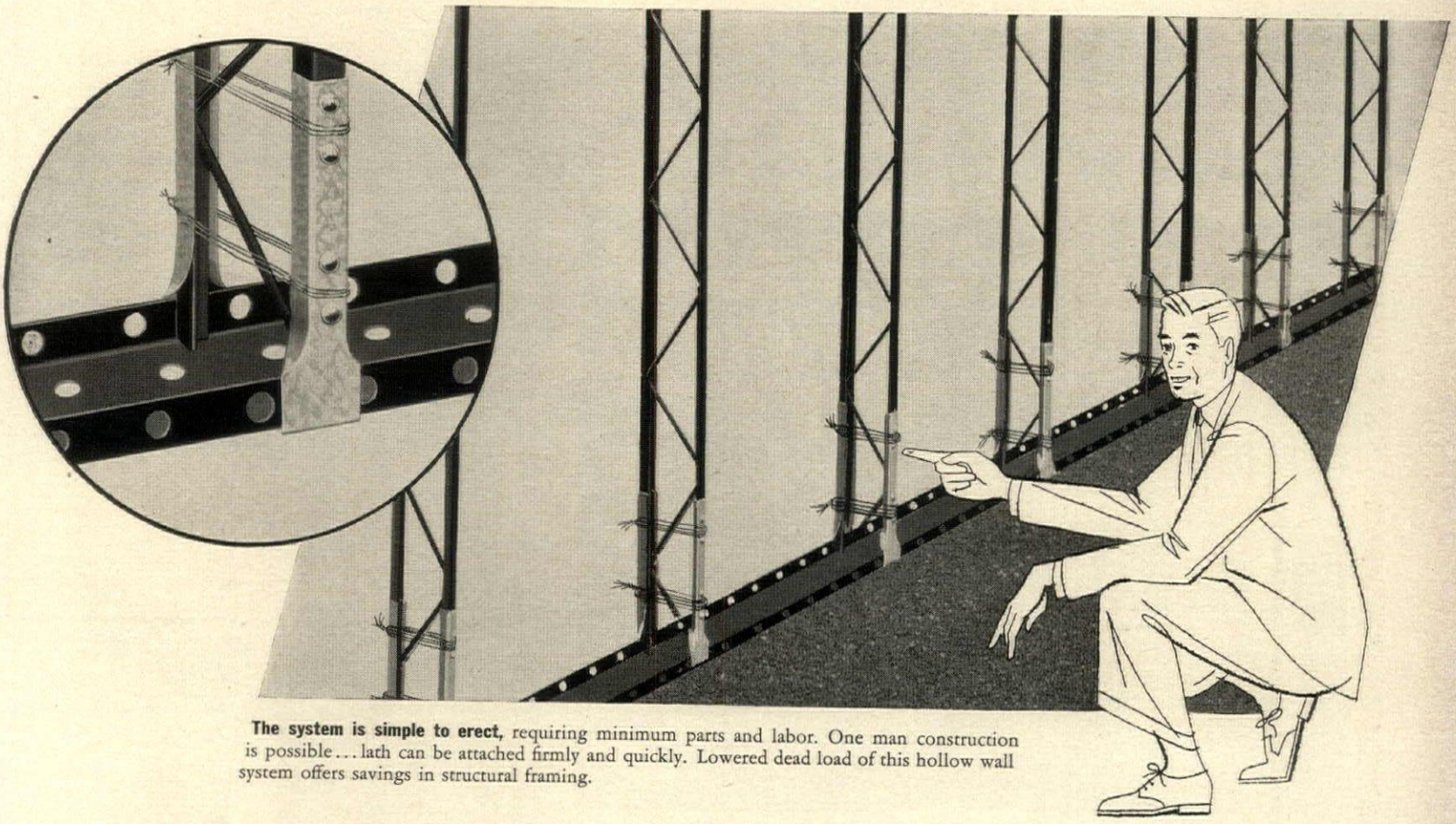
Not quite a complete picture...

Because we can't illustrate the unparalleled convenience and maintenance economy, plus the maximum security, offered by TelKee—the *only* really "complete" key control system—that's so easy to set up and operate as well. But we can give you all the facts if you send for our FREE catalog No. AF-20 today.

The **MOORE KEY TELKEE CONTROL®** *Systems*

P. O. MOORE, INC. 300 FOURTH AVENUE, NEW YORK 10, N. Y.

Announcing
Gold Bond HOLOSTUD Wall System



The system is simple to erect, requiring minimum parts and labor. One man construction is possible... lath can be attached firmly and quickly. Lowered dead load of this hollow wall system offers savings in structural framing.

NEWEST ADDITION TO THE GOLD BOND LINE—Gold Bond's *new* Holostud Wall System for non-load bearing partitions. In addition to excellent fire, sound, and shock resistive benefits, this strong, lightweight Holostud System is designed for fast construction and simplified routing of ducts, plumbing and electrical conduits. Made up of prefabricated Holostuds, steel tracks, and shoes, this low cost system is adaptable to either gypsum or metal lath application.

PREFABRICATED HOLOSTUDS—The open strut-type construction of Holostuds provides exceptional strength and rigidity to partitions besides allowing two-way accessibility for vertical or horizontal routing of utilities. The studs are fabricated with ½"x½" angles securely braced by struts welded at 8" intervals. Floor and ceiling tracks are one piece channel-shaped units with ½" legs, perforated for easy lath attachment. Holostuds are available in 2½", 3¼", 4" and 6" widths permitting use of the system in four different partition thicknesses.

For complete technical data on this new Gold Bond Holostud Wall System, write:

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Build better with Gold Bond®

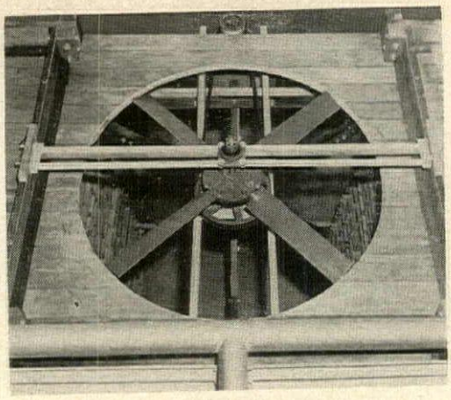
METAL AND GYPSUM LATH | GYPSOLITE PLASTER | GAUGING PLASTER | FINISH LIME | EXTRA-FIBERED PLASTER | ACOUSTICAL PLASTER | KEENE'S CEMENT

. . . METAL LATH AND PLASTER

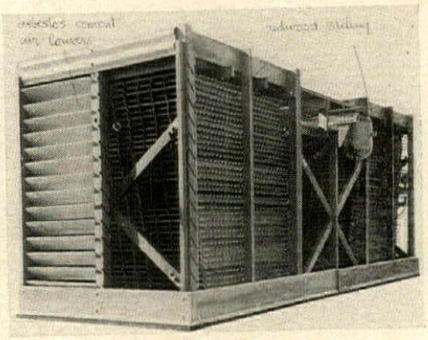
PRODUCTS

Continued from p. 248

These *LoLine* units have refrigeration capacity up to 300 tons, yet stand only 7'-8" high. Their corrugated asbestos cement casings and redwood inlet louvers run crosswise to play up the nontower look. Mechanical utility has not been slighted, however. *LoLines'* nailless filling of machine-slotted redwood batts break up water efficiently while offering minimum resistance to air flow. A simple gravity-type water distribution system is used: water piped up to the splash box drips down through holes drilled in the floor. There are no nozzles to clog or require service. Framework, made of precisely fitted redwood, is rigidly braced with special connectors that transmit wind forces in any direction. Any of the air inlet louvers on either side of the tower can be removed for inspection or maintenance of the tower. All steel fittings are galvanized.



FAN ASSEMBLY of Loline cooling tower is made of aluminum and driven by V-belt from enclosed motor outside air stream.

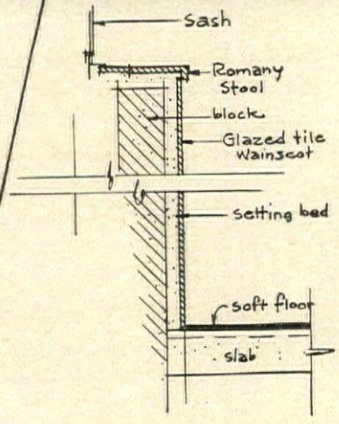


Easily installed, a 75-ton *Loline* which sells for about $1,380 F.O.B. factory requires about 110 man-hours to assemble, or less than $300 labor.

Manufacturer: J. F. Pritchard & Co., 4625 Roanoke Pkwy., Kansas City 12, Mo.

TILE FOR SCHOOL WINDOW SILLS AND WALLS

The new ROMANY Window Sill Tile makes possible, and economical, a surface of the same general color as other trim in a school room. It provides an exceptional cleanable flat smooth surface for exhibits. Available in all Buff Body colors and priced to readily compete with most permanent sill materials. The ROMANY Wall Tile will withstand the scuffing of children in the classroom, also the bumping and ramming of mops and polishing machines.



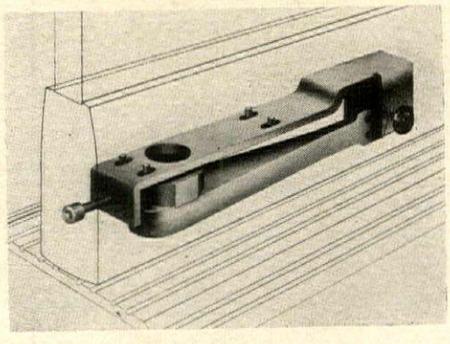
CLASS ROOM WALL

Every Architect should have our Sample Tile Chart No. 15. It's free.

UNITED STATES CERAMIC TILE COMPANY

Member: Tile Council of America and Producers' Council, Inc.

217-J FOURTH ST., N.E., CANTON 2, OHIO



DOOR MOUNTING reduces wear in floor hinge installations

Pittsburgh Plate's simplified heavy duty mounting is designed to improve the installation of all types of doors using checking floor hinges. Providing for adjustments toward and away from the jamb, the new unit holds the door firmly in place regardless of racking and hard use. Two basic pieces comprise the mount: a rugged steel base plate, which actually reinforces the door, and a forged arm. (For threshold installations, a steel spacing collar, available in various widths, is added.) The arm, grooved to lock to the base plate, rotates freely when adjustment screws at the tip are removed. The base attaches to an adaptor plate and fits snugly into the bottom channel of the door, taking the weight off the hinge and transferring it to the door itself. After 6½ million back-and-forth openings in a lab test, neither the arm nor adjusting screws showed wear. Retail price of the new mounting is $10.

Manufacturer: Pittsburgh Plate Glass Co., 632 Duquesne Blvd., Pittsburgh 22, Pa.

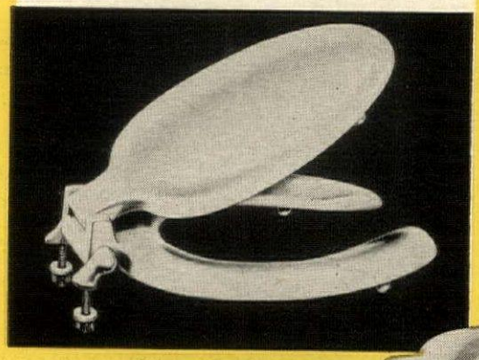
continued on p. 256

Throughout one of the World's newest and most luxurious hotels

The Fontainebleau MIAMI BEACH, FLORIDA

ARCHITECT: Morris Lapidus, Miami Beach, Fla.
General Contractor: Taylor Construction Co., Miami, Fla.
Mechanical Engineers: Sasnett and Bennett, Miami, Fla.
Mechanical Contractors: Markowitz Bros., Inc., Miami, Fla.

SOLID Olsonite SEATS



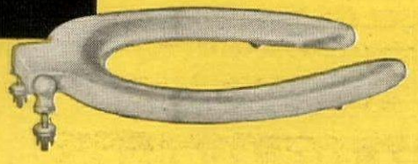
Olsonite model No. 56 Solid color seats were installed throughout the Fontainebleau Hotel.

For every deluxe and standard bathroom throughout Miami Beach's new Fontainebleau Hotel—one of the world's most fabulous—Solid Olsonite Seats were specified and installed.

Olsonite No. 56 open front seats with cover were specified in a variety of plain colors to match the pottery of the colorfully appointed bathrooms. Like all Olsonite seats, these plain color models are solid one-piece construction. There's no sheet covering or applied finish of any kind to crack, chip or peel.

Selection of Olsonite for the Fontainebleau is another indication of Olsonite's ever increasing popularity. Equally popular for hotels are Olsonite *white seats* both with and without cover. Unlike ordinary white seats, they will not fade or discolor even after years of use.

For a complete catalog of all Olsonite models, please write on your letterhead.



Olsonite models 5 and 10 (both with and without concealed check hinge) are also ideal for hotel installations.

A-3-55

SWEDISH CRUCIBLE STEEL CO. *(Plastics Division)* 8561 Butler Avenue, Detroit 11, Michigan

Workmen of the Johnson Insulation Co., Detroit, installing Super·Fine on heating ducts at the People's Outfitting Company's new store. The soft-textured blankets were quickly and easily wrapped around the large ducts and secured with light-gauge wire.

In big, new department store duct job—

L·O·F Super·Fine cuts heat loss—reduces installation cost

In specifying duct insulation for the new People's Outfitting Company store, in Lincoln Park, Michigan, highly efficient insulation and low-cost installation were basic considerations.

The architects, Wiedmaier & Gay & Maxwell Wright, selected ½-pound 1-inch Super Fine to cover the store's 45,000 sq. ft. of concealed hot-air ducts.

Insulation efficiency—Super·Fine's fine glass fibers form millions of tiny dead air cells, providing an effective barrier to heat loss. The "k" factor for ½-pound 1-inch material is .26 at 75° mean temperature. Glass fibers are inorganic; will not support combustion, absorb moisture, rot or decay; keep their high-efficiency insulating characteristics indefinitely.

Installation saving—The contractor reports that time-study figures for the People's Outfitting Company job, show that workmen averaged 500 square feet per man day. This was possible because blankets of strong, resilient Super·Fine can be pulled through narrow spaces close to the ceiling without tearing. It can be easily cut with an ordinary knife and is pleasant to handle. Precision measuring and fitting are not necessary. Furthermore, Super·Fine readily fills irregular and hard-to-reach spaces.

L·O·F GLASS FIBERS

L·O·F GLASS FIBERS COMPANY

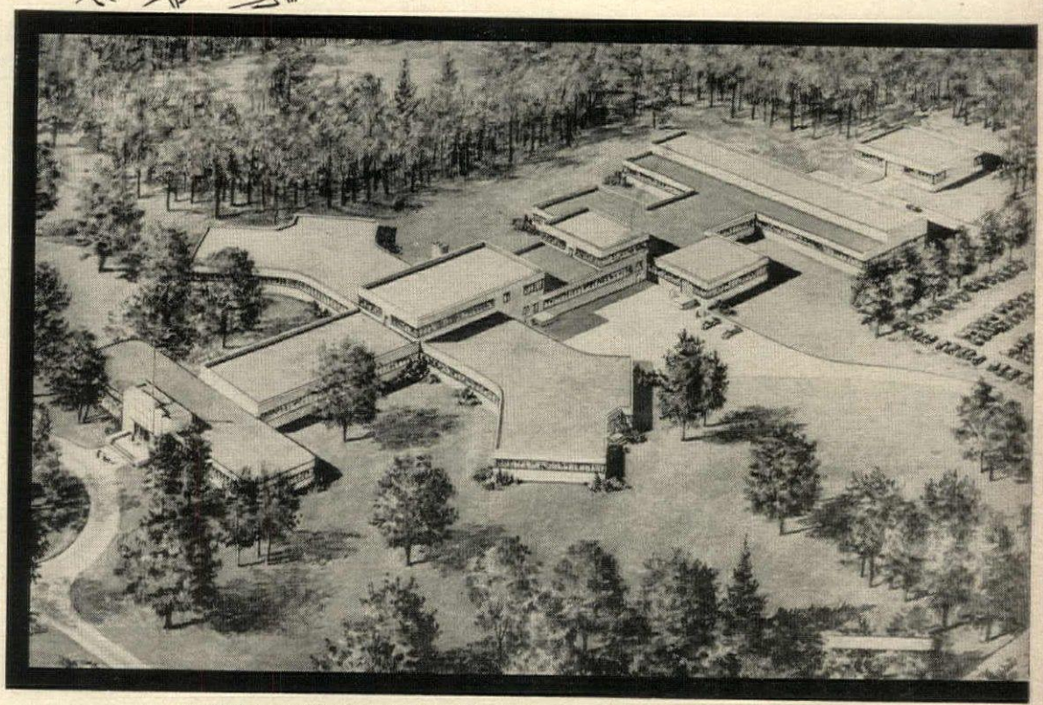
TOLEDO 1, OHIO

Makers of glass fibers by the exclusive "Electronic-Extrusion" process

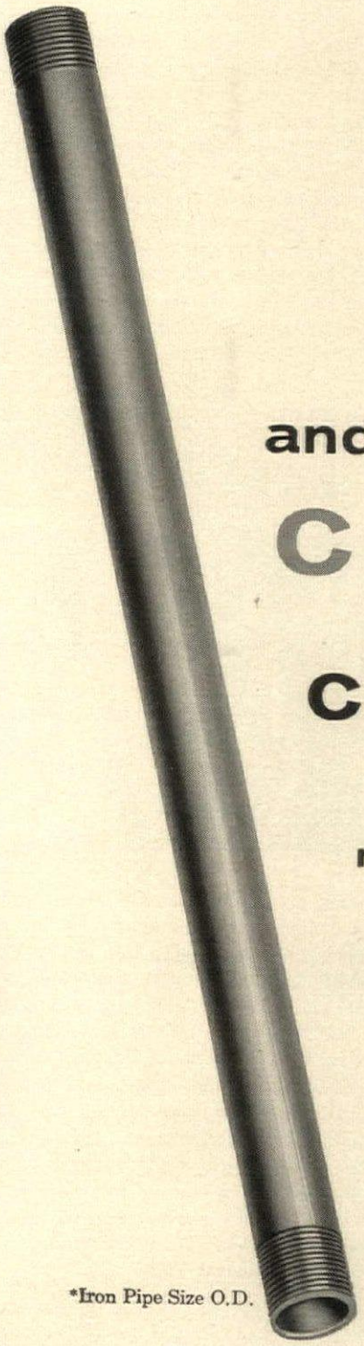
SEND FOR FREE FOLDER giving performance data and specifications on L·O·F Super-Fine duct wrap and liner. Write: L·O·F Glass Fibers Company, Dept. 60-65, 1810 Madison Avenue, Toledo 1, Ohio.

Industrial research will never end...

• The soon-to-be-completed Research and Development Center of the American Can Company in Barrington, Illinois, typifies modern planning for ever-continuing progress. Situated in attractive surroundings in the countryside northwest of Chicago, it will provide a new home for objective research and practical application for years to come.



AMERICAN CAN COMPANY'S NEW RESEARCH AND DEVELOPMENT CENTER, BARRINGTON, ILL.
PLUMBING CONTRACTOR: S. J. REYNOLDS CO., INC., CHICAGO.
GENERAL CONTRACTOR: LASALLE CONSTRUCTION CO., CHICAGO.



*Iron Pipe Size O.D.

and

CLOW "I.P.S."* CAST IRON PIPE

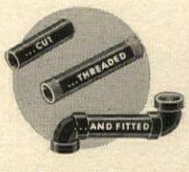
meets the demand for

permanence!

In this new Research and Development Center, Clow "I.P.S." (threaded) Cast Iron Pipe is used for downspouts, drains and waste lines and will last throughout the long, purposeful life of the building. Clow "I.P.S." Pipe is corrosion-proof, requires no replacement, no upkeep. Installation is fast, economical . . . permanent.

Clow (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8 and 10" sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain in 18' random lengths 4, 6, and 8" sizes.

Clow Cast Iron Pipe can be . . .



on the job, with ordinary tools of the piping trade.

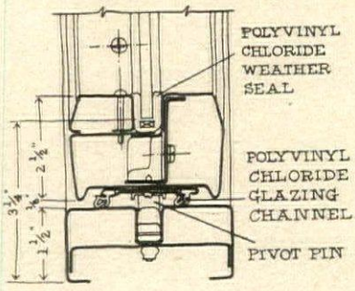
JAMES B. CLOW & SONS

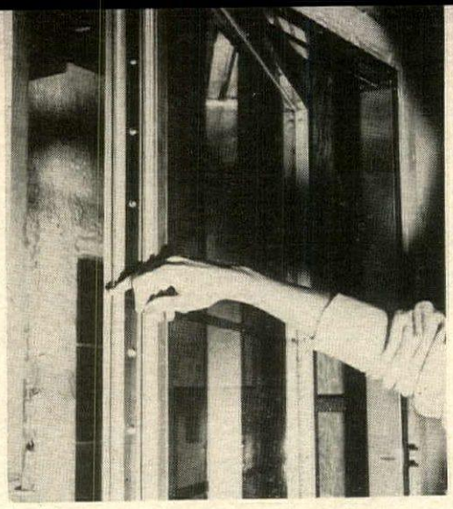
201-299 North Talman Avenue • Chicago 80, Illinois

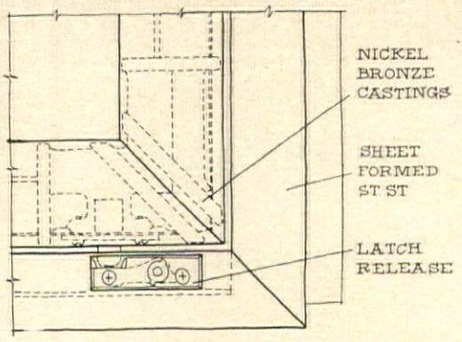
Manufacturers of Cast Iron Pipe
WHOLESALERS OF PLUMBING AND HEATING SUPPLIES

PRODUCTS

Continued from p. 256

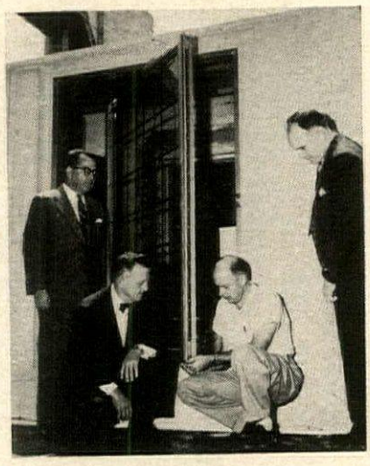






PIVOT WINDOWS framed in stainless steel withstand hurricane test

As the Atlantic hurricane belt has shifted inland, resistance to 100 mph gales and 4" driving rainstorms has become a vital engineering factor in building products and especially in large, operable windows. Other design influences on windows have been the mechanical function of buildings themselves. More than 90% of the commercial-type windows go into air-conditioned structures and so must be airtight as well as easy to clean —preferably from inside. Before Republic's *Truscon* windows were accepted for the Socony Vacuum building (AF, Jan. '55), they were subjected to tortuous hurricane tests at the University of Miami. Blasted with a propellor-induced tropical storm and gusts up to 145 mph, the fully reversible units came through bone dry. Air infiltration at 100 mph velocity for ten minutes amounted to .0870 cfm per lin. ft. of sash perimeter. This month, the center-pivoted windows, framed in stainless sheet over bronze castings, are

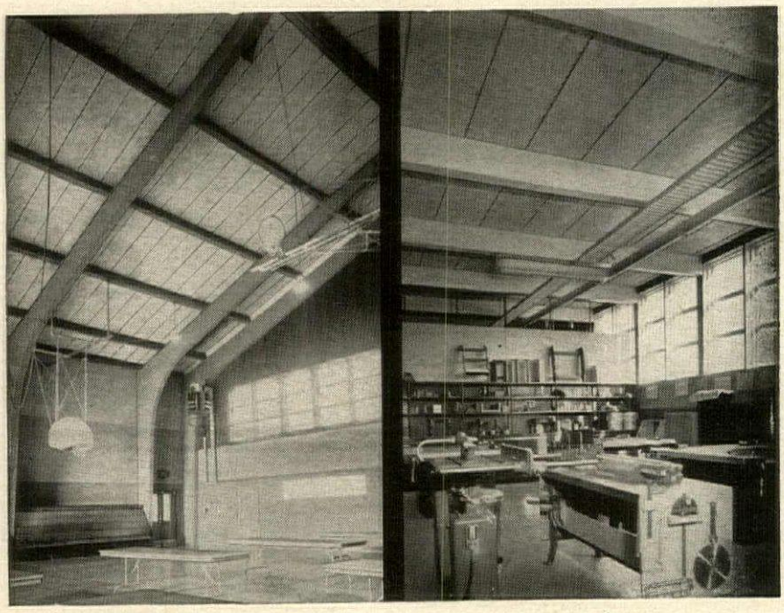


going into mass production and will be available at about $150 apiece for the 6'-7" x 4'-8" size. (The 3,200 units going into the 42-story New York building came to about 10% more because of modifications to the architectural design and to the off-site panel assembly method used on that job.)

One key to the window's exceptional wind and water resistance is that its stainless steel frame, dimensionally stable through wide temperature changes, can be fabricated with extremely close operating tolerances. Another of the metal's characteristics, its corrosion resistance, should make the window quite practical in seacoast areas.

Manufacturer: Republic Steel Corp., Truscon Steel Div., Youngstown, Ohio.

continued on p. 260



Junior High School, Keene, New Hampshire
3¼" Composite Porex
Architect: J. A. Britton
Gen. Contractor: MacMillan Co.

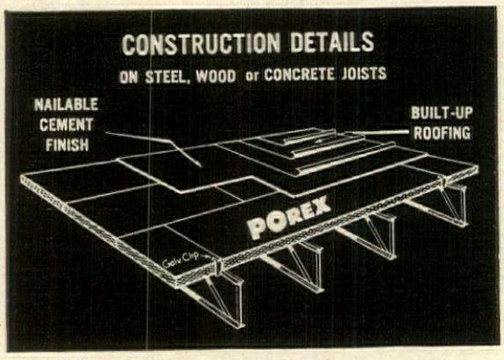
POREX ACOUSTICAL CEILINGS

Heat Insulation, Sound Control and Fire Protection ...all in one ROOF DECK!

When roof decks must provide maximum quality at minimum cost, architect after architect specifies POREX . . . because POREX combines all these properties:

- STRUCTURAL STRENGTH
- LIGHT WEIGHT
- NAILABILITY
- INCOMBUSTIBILITY
- HEAT INSULATION
- SOUND CONTROL

Plain POREX for short spans and Composite POREX for long spans are also ideal for Auditoriums, Gymnasiums, Armories, Churches, Factories and many others.

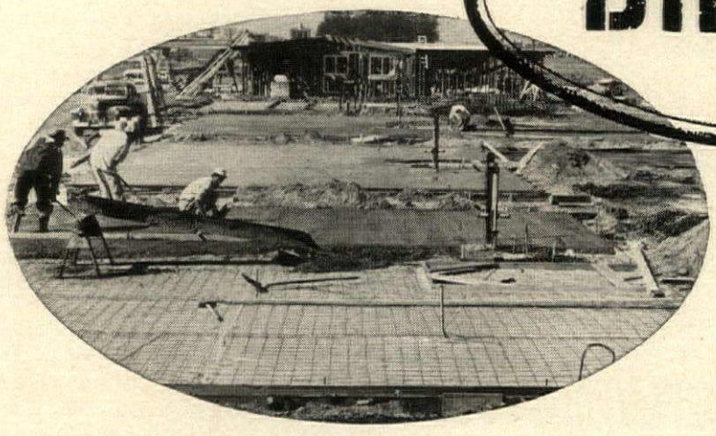


SAFE UNIFORM LOADS

Type of POREX	Thickness Slab	Thickness Finish	Weight lbs/ Sq. ft.	Safe loads lbs/ sq. ft. span 1'4"	2'8"	3'4"	6'	8'
Plain	2"	¼"	7	100	60	—	—	—
Plain	3"	¼"	10	—	90	50	—	—
Composite	3"	¼"	14	—	—	—	100	60

POREX MANUFACTURING CO., North Arlington, N.J.
Precast lightweight concrete products since 1920

for your protection every roll of genuine VISQUEEN® film is BRANDED



Use only VISQUEEN under the concrete slab. This permanent moisture barrier actually costs less in place than inferior, non-permanent types. Widths to 20 feet for economical handling. Get better protection and save on every house you build! For details, clip coupon, attach to your letterhead and mail.

important! *VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. Only VISQUEEN, produced by process of U.S. Patents No. 2461975 and 2632206, has the benefit of research and resources of The VISKING Corporation.*

VisQueen® film . . . a product of

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Plastics Division, Terre Haute, Indiana

World's largest producers of polyethylene sheeting and tubing

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Products_____

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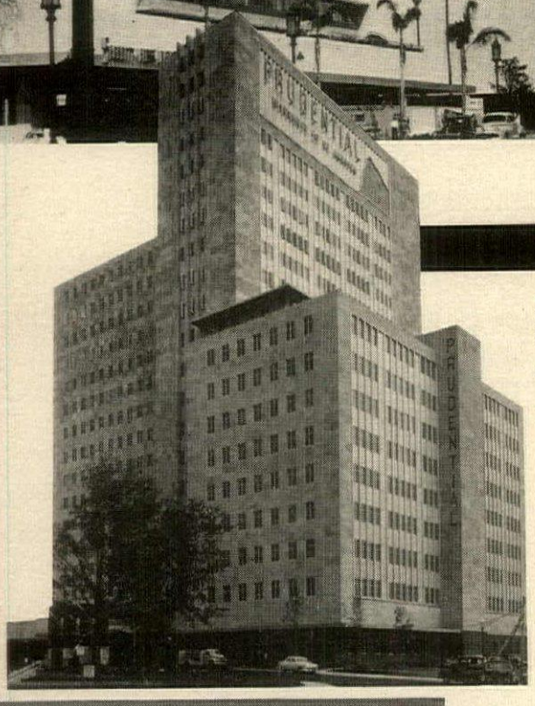
Sealuxe

BROWNE FOLDING FLUE WINDOWS

chosen by PRUDENTIAL

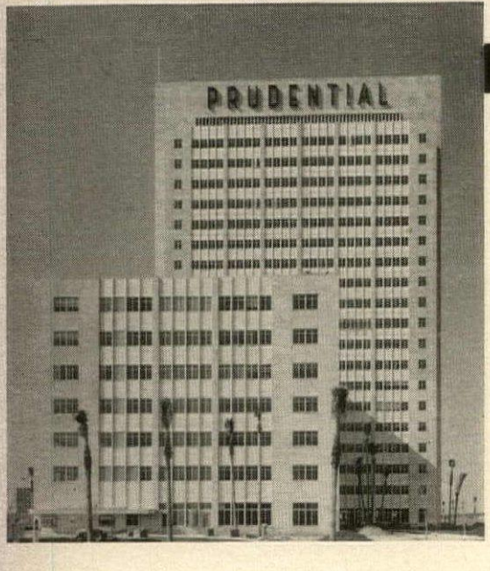
FIRST IN LOS ANGELES

Prudential Insurance Building
Los Angeles, California
Architects: Wurdeman & Becket



THEN IN HOUSTON

Prudential Insurance Building
Houston, Texas
Architect: Kenneth Franzheim



NOW IN JACKSONVILLE

Prudential Insurance Building
Jacksonville, Florida
Architects: Kemp, Bunch & Jackson

MONUMENTAL *windows*

for monumental buildings

The Sealuxe engineered Browne Folding Flue Window operates symmetrically to assure the architect of a harmonious appearance to his building. This, the KING of all high quality windows, remains unsurpassed in engineering, design and materials. Designed for inside cleaning and controllable, draft-free ventilation, the Browne Folding Flue Window retains its beauty and utility during the entire life of the building.

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BROWNE Folding Flue Window (Model 10)
BROWNE Folding Window (Model 10)
BROWNE Bi-Folding Facade (Model 11)
BROWNE Psychiatric Window (Model 15-P)
BROWNE Underwriters Labeled Window (22-U)
Ventilating Picture Window (Model 42-A)
Thermo-Vista Window (Model 51-A)
Uni-Core Panels
Uni-Fins
Cellular Spandrels and Facias
Dormer Surrounds
Horizontal Solar Shades
Vertical Weather Controls
Solar Canopies
Display Frames, Bulletin Boards and Directories

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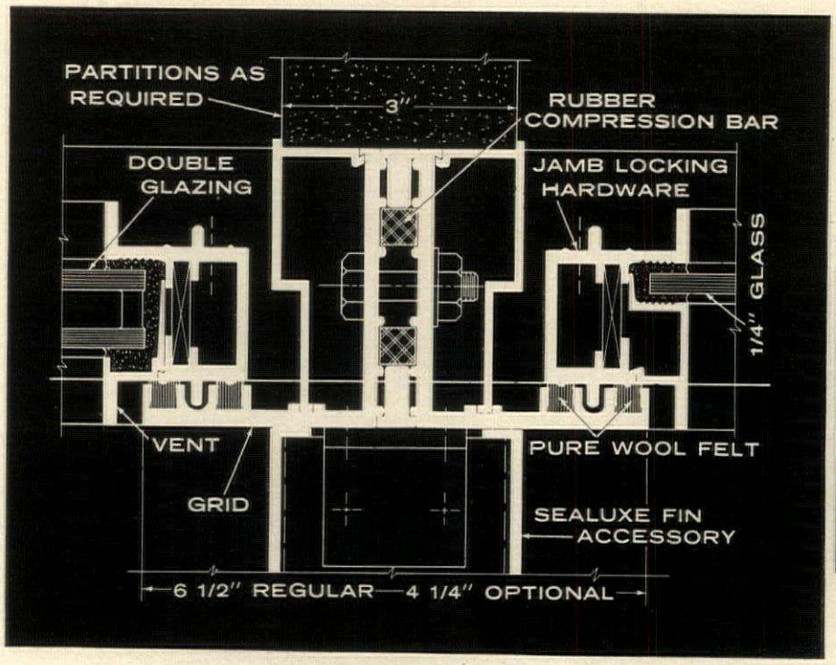
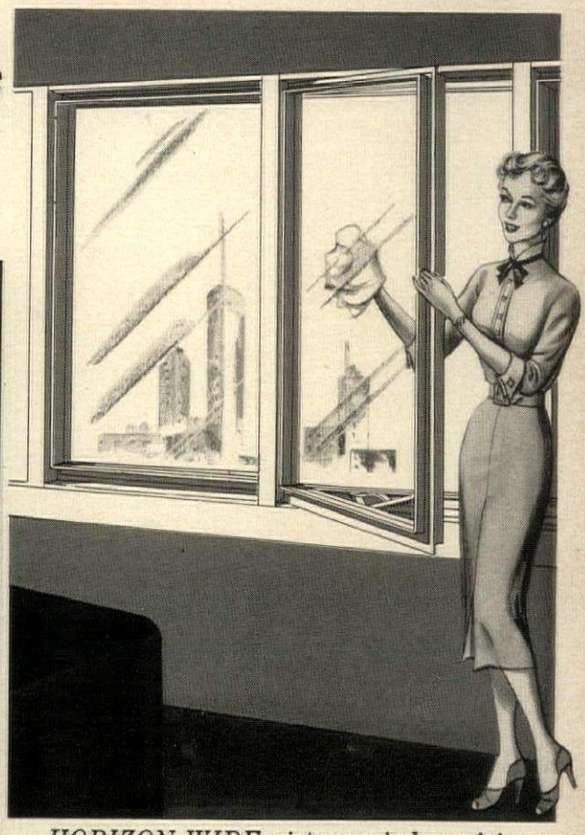
ONCE AGAIN Sealuxe ENGINEERING

PACES THE PARADE WITH THIS NEW DESIGN



VERTICAL GRID DETAIL



HORIZON-WIDE picture window vision

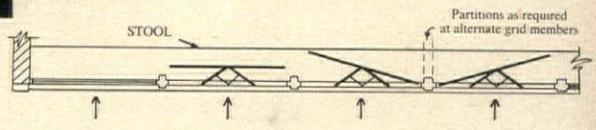
Gyrating FACADE (MODEL 60 SERIES 100)

NOW AVAILABLE FOR THE FIRST TIME

AFTER YEARS OF RESEARCH, DESIGN AND EXPERIENCE, UNIVERSAL INTRODUCES ANOTHER OF ITS NEW CONCEPTS IN HEAVIER, BETTER AND IMPROVED FACADES.

- Combines facade grid with window frame thereby eliminating window frame, which is now a part of the grid.
- Affords a water bar around the entire perimeter of the window. The weatherstripping is pure wool felt.
- Offers a conventional reveal.
- Eliminates caulking.
- Contains complete aluminum grid, no steel.
- Tests at 30 pounds per square inch under hydraulic pressure.
- Eliminates all screws.
- Opens for inside cleaning and directional ventilation.
- Equipped with special air conditioning locks for either manual or mechanical operation.
- Accommodates single or double glazing with removable glazing beads. It may be table glazed. Replacements can be made by building maintenance personnel without disturbing occupants.
- Custom made to maximum width of 6′0″.

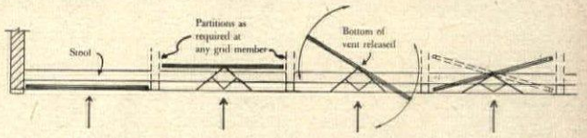
Available in aluminum, bronze or stainless steel.



Vent in normal closed position | Vent unlocked and moved to open position | Vent in position for cleaning or directional ventilation | Vent position reversed for cleaning or directional ventilation

SCHEMATIC PLAN OF OPERATION
(Model 60 Series 100)

ALSO AVAILABLE—FULL GYRATING



Vent in normal closed position | Vent unlocked and moved to open position | Vent swiveled at top hinge and may be rotated 360° for cleaning | Vent positions for directional ventilation

SCHEMATIC PLAN OF OPERATION
(Model 60G Series 100)

WATCH FOR

FULL GYRATING FACADE (MODEL 61 SERIES 100)

MODEL 43-A SERIES 300

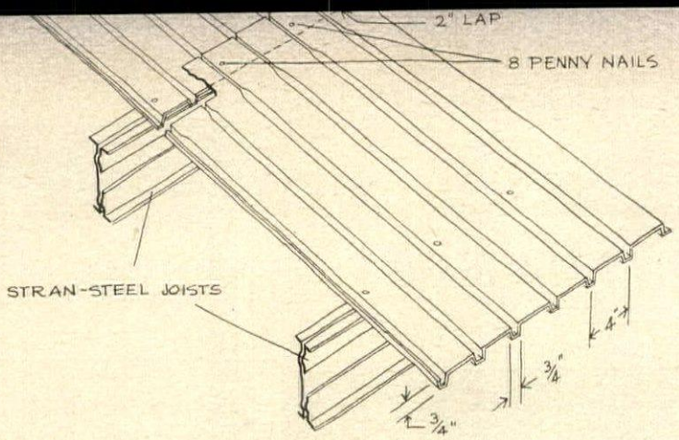
— SEALUXE ENGINEERED PRODUCTS

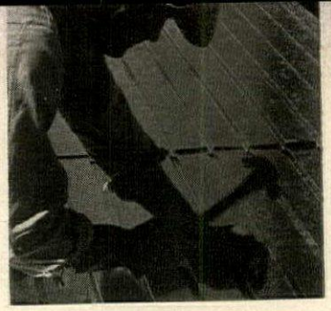
Sealuxe engineered
BROWNE
Windows

Pat. Pend. on Gyrating Facades (Model 60 Series 100 and Model 60G Series 100)

PRODUCTS

Continued from p. 256





LIGHT STEEL DECKING is made for use with nailable steel framing

Because heavy 18- or 20-ga. decking with its 2"- to 4"-deep ribs makes neither economic nor engineering sense if used over 2′ to 4′ frame spacing, Great Lakes Steel has introduced a galvanized ribbed sheet in 22, 24 and 26 ga. to complement its own lightweight *Stran Steel* framing system. Suitable for side-wall skin as well as roof deck, the new shallow rib (¾" deep) panel creates a dead load 8 to 10 lb. less than heavier decking. Its cost is about 16¢ per sq. ft.

In keeping with *Stran Steel*'s easy erection principle, the galvanized metal is fastened directly into the steel framing. (Mated sections of the carbon steel members are welded back to back to form nailing grooves.) A five-man crew can apply 11,000 sq. ft. of the new deck in one eight-hour day. To provide a flush surface for insulation board and built-up roof, rib ends are swadged to receive a 2" lap of the next sheet. *Stran Steel* deck is 2" wide and comes 8′-2", 10′-2", 12′-2" long.

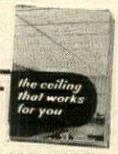
Manufacturer: Great Lakes Steel Corp., Stran Steel Div., Detroit 29, Mich.

will *your* specifications be outdated?...see the *newest!* **See an Acusti-Luminus Ceiling near you!** *Lighting, sound control, air flow combined!*

The trend is to allover ceilings of glareless, shadowless light that also provide sound control and a ceiling-wide plenum for air conditioning and heating. ACUSTI-LUMINUS CEILINGS are easy to maintain. They're made from unbreakable, corrugated LUMI-PLASTIC and labeled by UL for installation under sprinkler systems. Three essential elements for modern interiors are combined at a cost that's lower than conventional illumination and sound control alone.

over 4500 installations!

See the functional beauty of an ACUSTI-LUMINUS CEILING for yourself... *send the coupon below for free illustrated booklet and location of an installation near you.*



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Chicago 47, Ill.

Please send me your free illustrated booklet and tell me where I can see an ACUSTI-LUMINUS CEILING installation!

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WATER COOLER-HEATER bids good-by to office coffeepots

Latest addition to the Kelvinator line is a two-spigot water fountain. One spigot dispenses cold drinking water and the other, water hot enough (up to 185°) to brew instant coffee, tea and other beverages. The fountain model pictured sells for $325 and a bottle type, suitable for older buildings where plumbing connections may not be accessible, is $290. Both units are equipped with 500-w. automatic heaters, thoroughly insulated from cold lines, with 5 qt. capacity and a recovery rate of a cup a minute. Temperatures of hot and cold water can be regulated by a thermostat behind the removable front (or rear) panel. Both cabinets measure 40" x 15" x 15".

Manufacturer: Kelvinator Div., American Motors Corp., 14250 Plymouth Rd., Detroit 32, Mich.

continued on p. 264

Turns daylight into dollars

Paul H. Johnson uses Verticle siding, brick, and vast areas of insulating glass in loadbearing Fabrow Window Wall Frames . . . to achieve exciting contemporary architectural effects at lower costs . . .

Design for daylight drama

Fabrow Flexible Fenestration offers interesting modular styles in almost unlimited combinations . . . give your Professional and Office Buildings appealing individuality—Insulating glass reduces noise . . . air-conditioning and heating cost.

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New Electro-Polarized Ink

No shaking necessary. Particles electro-polarized to prevent settling. Uniform color throughout bottle . . . always. *Completely opaque, uniformly black.* No grey areas. No chipping or peeling.

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Send for these new 1955 Catalogs: "Alumiline" Store Front Construction and "Alumiline" Entrances and Doors

see our catalog in ARCHITECTURAL FILE or write for copy

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CAFETERIA COOLER

FOR EITHER WALL OR ISLAND LOCATION

This compact, attractive, all stainless steel cooler combines functional style and large capacity to meet heavy requirements of schools, restaurants, and cafeterias.

Only 36" high, comes factory equipped with either two glass fillers or bubblers. Top shelf and adjustable side shelf for glasses and trays available on special order.

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MILK DISPENSERS
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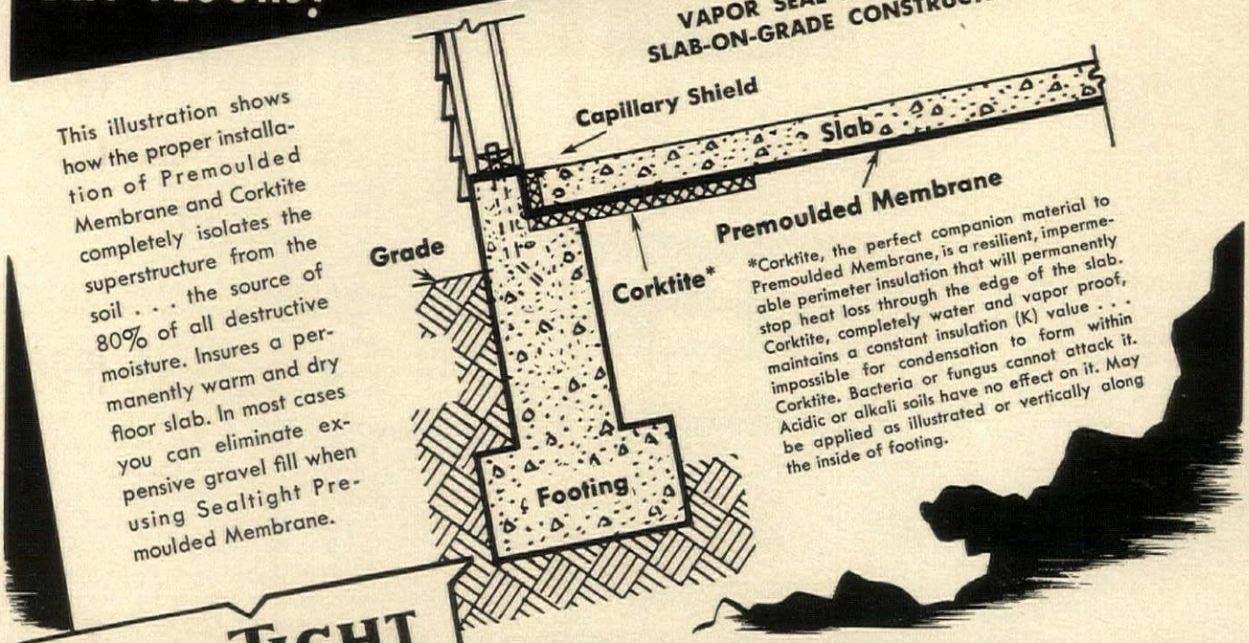
Write for literature and name of local representative

Division & Branch Offices in principal cities

SUNROC CORPORATION
GLEN RIDDLE, 54 PA.

YOU *CAN BUILD* SLAB-ON-GRADE CONSTRUCTION WITH PERMANENTLY WARM AND DRY FLOORS!

This illustration shows how the proper installation of Premoulded Membrane and Corktite completely isolates the superstructure from the soil . . . the source of 80% of all destructive moisture. Insures a permanently warm and dry floor slab. In most cases you can eliminate expensive gravel fill when using Sealtight Premoulded Membrane.



*Corktite, the perfect companion material to Premoulded Membrane, is a resilient, impermeable perimeter insulation that will permanently stop heat loss through the edge of the slab. Corktite, completely water and vapor proof, maintains a constant insulation (K) value . . . impossible for condensation to form within Corktite. Bacteria or fungus cannot attack it. Acidic or alkali soils have no effect on it. May be applied as illustrated or vertically along the inside of footing.

SEALTIGHT PREMOULDED MEMBRANE

the original *TRUE* VAPOR SEAL

Eliminates

- **Excessive Window Condensation**
- **Blistering of Exterior Paint**
- **Deterioration of Adhesives Bonding Floor Finish Materials**
- **Deterioration by Mildew of Rugs, Furnishings and Clothing**

The popularity and economy of slab-on-grade construction is a proven fact. Its feasibility, however, rests on the proper application of a true vapor seal to keep the slab dry plus a resilient, impermeable perimeter insulation to prevent heat loss.

Unfortunately the building industry has been guilty of the promiscuous use of permeable materials under the guise of vapor barriers. When purchasing any vapor seal material be sure it meets these Sealtight standards of quality: permeance rating of only .0066 grains per square foot . . . resistant to rot, mold and termites . . . strong enough to resist tearing and puncturing . . . expandable . . . quickly and easily installed—Premoulded Membrane has them all.

Don't risk your reputation by using an inferior "so-called" vapor seal material. We sincerely advise and invite your comparison of Premoulded Membrane against all other vapor barrier products . . . we're sure that once you do you'll also agree that there's only one *true* vapor seal on the market . . . Premoulded Membrane.

Equally effective for crawl-space or basement installation.

SEE OUR CATALOG IN SWEETS

"Guardian of the Home"

MANUFACTURED BY...

W. R. MEADOWS, inc.

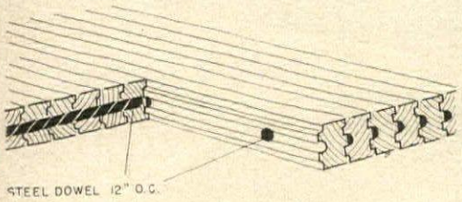
6 KIMBALL STREET • ELGIN, ILLINOIS

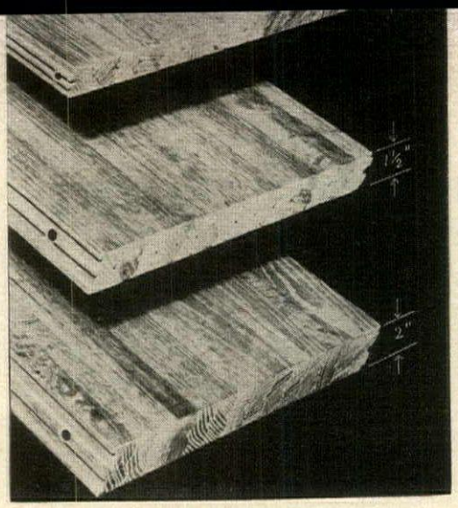
ARCHITECTS, BUILDERS, HOME OWNERS . . .

Remember, the time to "eliminate" destructive moisture is in the original construction, with the use of Sealtight Premoulded Membrane and Corktite . . . all other methods are merely temporary "stop-gaps". A complete set of structural recommendations (tech-tips) on the applications of Sealtight Products is available . . . WRITE TODAY for your copy.

PRODUCTS

Continued from p. 260





LAMINATED LUMBER makes shock-absorbent floor for rugged wear areas

Edge-grain hardwood strips of random lengths, tongued and grooved and locked together with spiral steel dowels 1′ apart, make up the extremely strong, dimensionally stable and low cost *Doweloc*. The glueless lumber laminate is assembled in 1′ widths in thickness of 1″, 1½″ and 2″, and can be specified in any length from 6′ up to 60′. Wood species of any hardness and moisture content are available to meet various requirements. (Moisture is figured a few percentage points higher than the surrounding atmosphere so that after installation the entire floor may shrink unnoticeably but will never swell or buckle.) In one laboratory test, *Doweloc* lumber was sprayed with water until its moisture content tripled. It was then dried in a heated building to its original 12% state and showed no sign of splitting, cupping or twisting. The material has made impressive showings on equally rigorous oil-soak and wheel load tests as well as in actual use in such tough spots as wharves, loading platforms and motor truck beds.

Stronger than flat grain planking, the doweled floor can be designed on the basis of a continuous beam. Each of the narrow wood pieces can take up change without affecting over-all dimensions. *Doweloc* in birch or hard maple makes an attractive load-bearing partition or resilient dance or gymnasium floor. Prices for *Doweloc* range from 46¢ to 66¢ psf, F.O.B. factory. In an application on joists spaced 25″ o.c., 2″ *Doweloc* would cost about 77¢ psf completely installed.

Manufacturer: Edge Grain Timber Products, Inc., Huntington Bank Bldg., Columbus 15, Ohio.

...when the terrazzo is made non-slip by ALUNDUM Aggregate

THIS long steep ramp in the Toronto subway is practical — even in wet weather — because the engineers specified terrazzo made permanently non-slip by Norton ALUNDUM Aggregate. And the hardness and toughness of the ALUNDUM Aggregate also provides exceptional durability to withstand the heavy subway traffic.

See our catalog in Sweets or write for a copy of No. 1935F.

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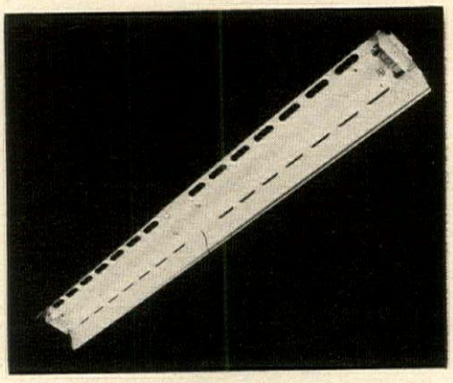
NORTON
NON-SLIP AGGREGATE



HIGH OUTPUT FIXTURE has holes in shield to keep it clean

Two rows of slots down the length of Sylvania's new 8′ rapid-start fluorescent fixtures not only dissipate heat but create a chimney effect, funneling away dust which otherwise would collect on the white baked enamel surface of the reflector. Designed principally for industrial use, the attractive troffers each take two 100 w. lamps needed in extra high locations. For safety's sake, lampholders are the plunger type with recessed double contacts. Reflectors are made of vitreous steel. Each unit costs $70.83.

Manufacturer: Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N.Y.

The Knoll Planning Unit, design consultants to the architect, simplifies his task by co-ordinating interiors with the total plan. Many noted architects have found this Knoll service invaluable in a wide range of major projects. Inquiries invited.

See our catalog in Sweet's Architectural File, 22o/Kn.

American National Bank, Austin, Texas

Kuehne, Brooks & Barr, architects.

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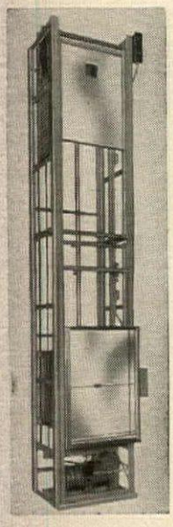
Relieve main elevator traffic . . . Stop costly truck and shipping platform tie-ups . . . Speed food, merchandise, parts, product and records handling with Matot Dumb Waiters.



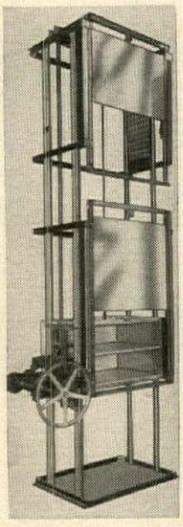
Man-hour costs, material costs, power costs—all are at record highs. Every possible avenue to increased speeds, decreased manual labor, slowdowns and stoppages must be explored at the planning stage.

Matot *not-so-Jumb* Dumb Waiters can play a major role in this planning.

Only Matot offers extra automatic features for faster service and trouble-free dumb waiter operation.

Leading institutions, hotels, restaurants, schools, banks, libraries, manufacturers, wholesalers and retailers use and recommend Matot equipment. Your clients will profit with Matot too.

Automatic electric and hand-powered dumb waiters now available. See our SWEET'S CATALOG FILE, or write for valuable 8-page catalog and specification guide.



Electric Dumb Waiters

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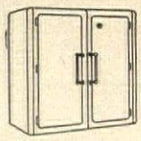
Representatives in most principal cities

Hand-operated Dumb Waiters



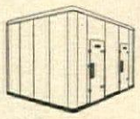
Sectional Storage Freezers

Reach-Thru Refrigerators

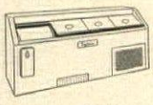
Stainless and white Slide-Doors

Stainless and white Reach-Ins

Stainless and white Freezers



Sectional Walk-In Freezers and Coolers



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Complete food refrigeration facilities for

Restaurants, Hotels

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The big, new and enlarged Tyler line meets every modern requirement for adequate, FLEXIBLE food-refrigeration facilities. *Leader in "Advanced Design" commercial food refrigeration for more than 25 years,* Tyler keeps line up-to-date. Big Storage Freezer line, for example, permits *any* establishment to take advantage of big swing to frozen foods to simplify and speed up kitchen work. Write Tyler for complete information.

Food store planning assistance available to Architects without charge or obligation.

NOW IN 23c Ty SWEET'S CATALOG

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The BIG name in commercial food refrigeration

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In Canada — write Tyler Refrigerators, 128 Avenue Road, Toronto, Ont.

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■ Rowe hydraulic dock levelling equipment is engineered for extra efficient, low-cost dock handling. And there are 84 models to choose from, to make it possible to meet your specifications, no matter what the problem.

See our catalog in Sweets Architectural File $\frac{32a}{Row}$ *and Industrial Construction File* $\frac{10b}{Row}$ *or write for your free copy.*

ROWE METHODS, INC.
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SHEET METAL CONTRACTOR OF BALTIMORE, MD., HAS USED

Revere Sheet Copper EXCLUSIVELY for 50 YEARS!

The Wm. F. Zeller Co., Inc. has been doing business in the same location for over 50 years. During that time it has built up an enviable reputation for its fine artistry and quality workmanship in the erection of many noted Baltimore landmarks.

When asked why his firm gets all of its sheet copper from Revere, Earl Zeller, President, said, "There are four reasons.—First, we have found over the years that we can always rely on the fine quality and uniform gauge of the sheets ordered. Second, the good delivery service. Third, the name Revere is so widely known and accepted that it adds prestige to our operation, and fourth, Revere's Technical Advisors. They are a great help when we are planning many of our more difficult jobs. Many a time their suggestions have resulted not only in our saving time and material, but in a more efficient installation as well.

"Even when copper was in short supply some years back we preferred to go along with Revere rather than change our source of supply, and believe me it paid off, because we've never had a complaint about materials.

"And as far as copper itself is concerned we prefer it to any other metal to work with. It is easy to solder, shape and cut. And as every sheet metal man knows, copper is the only metal to use on buildings that are built to last."

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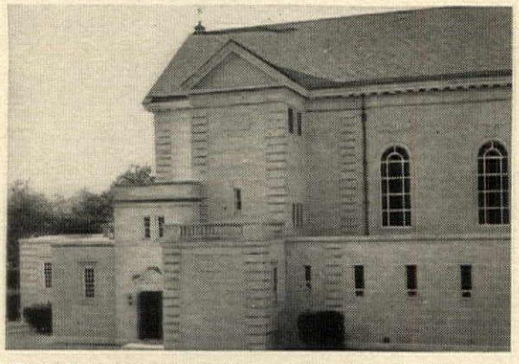

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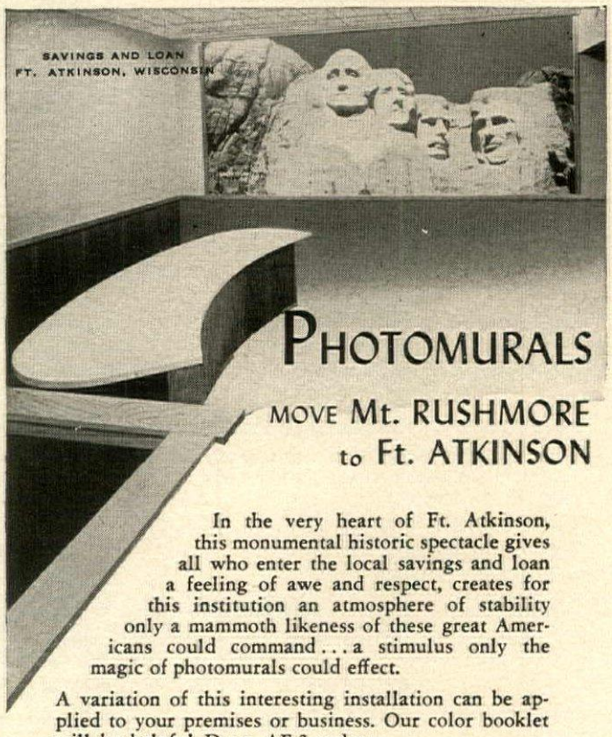

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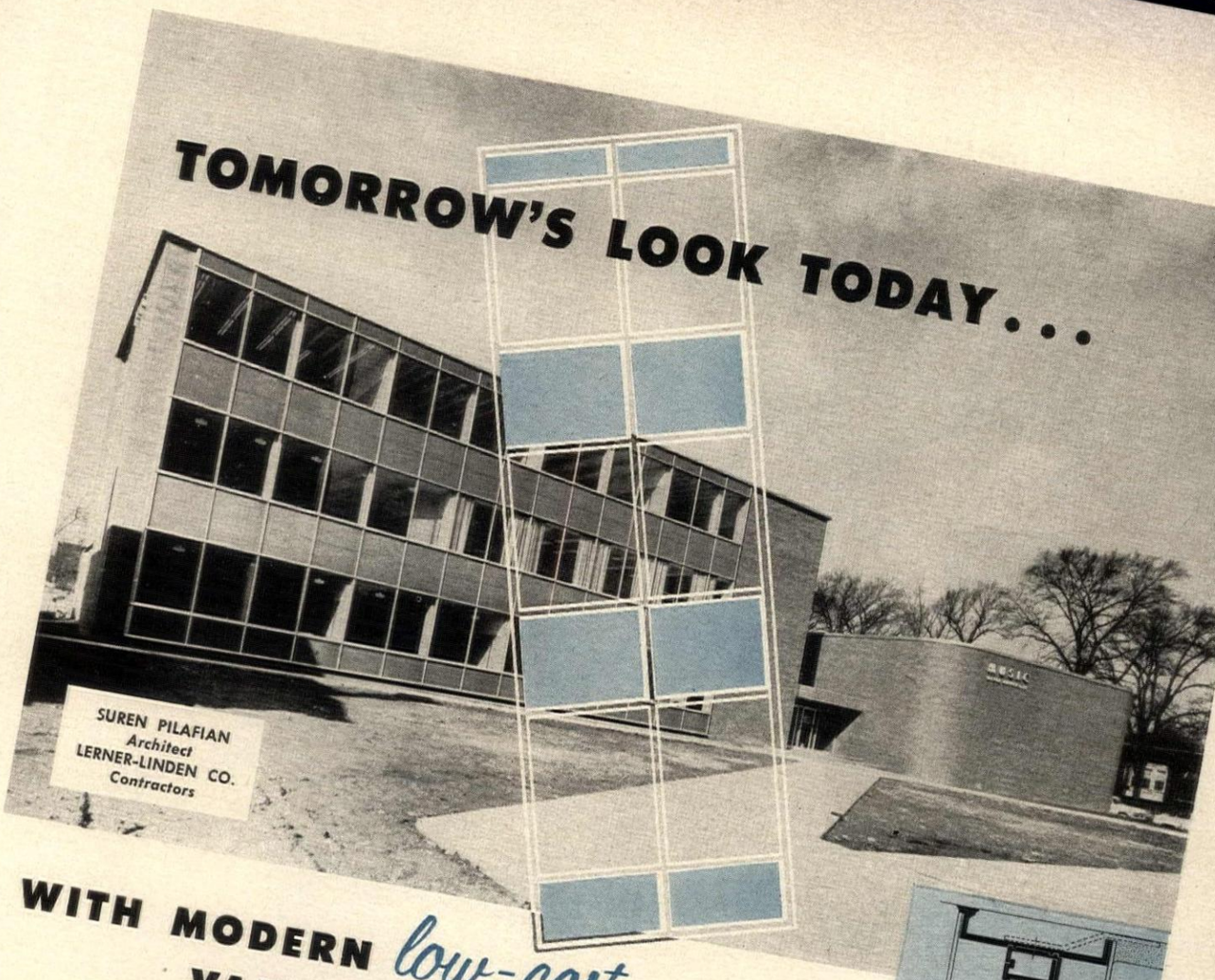

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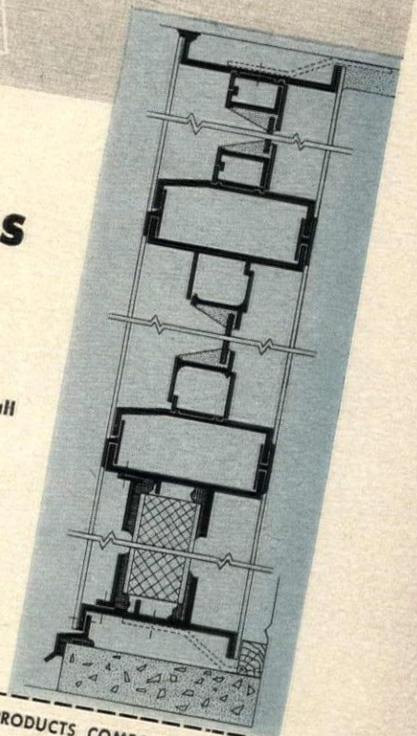

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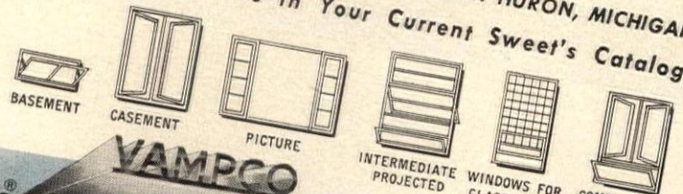

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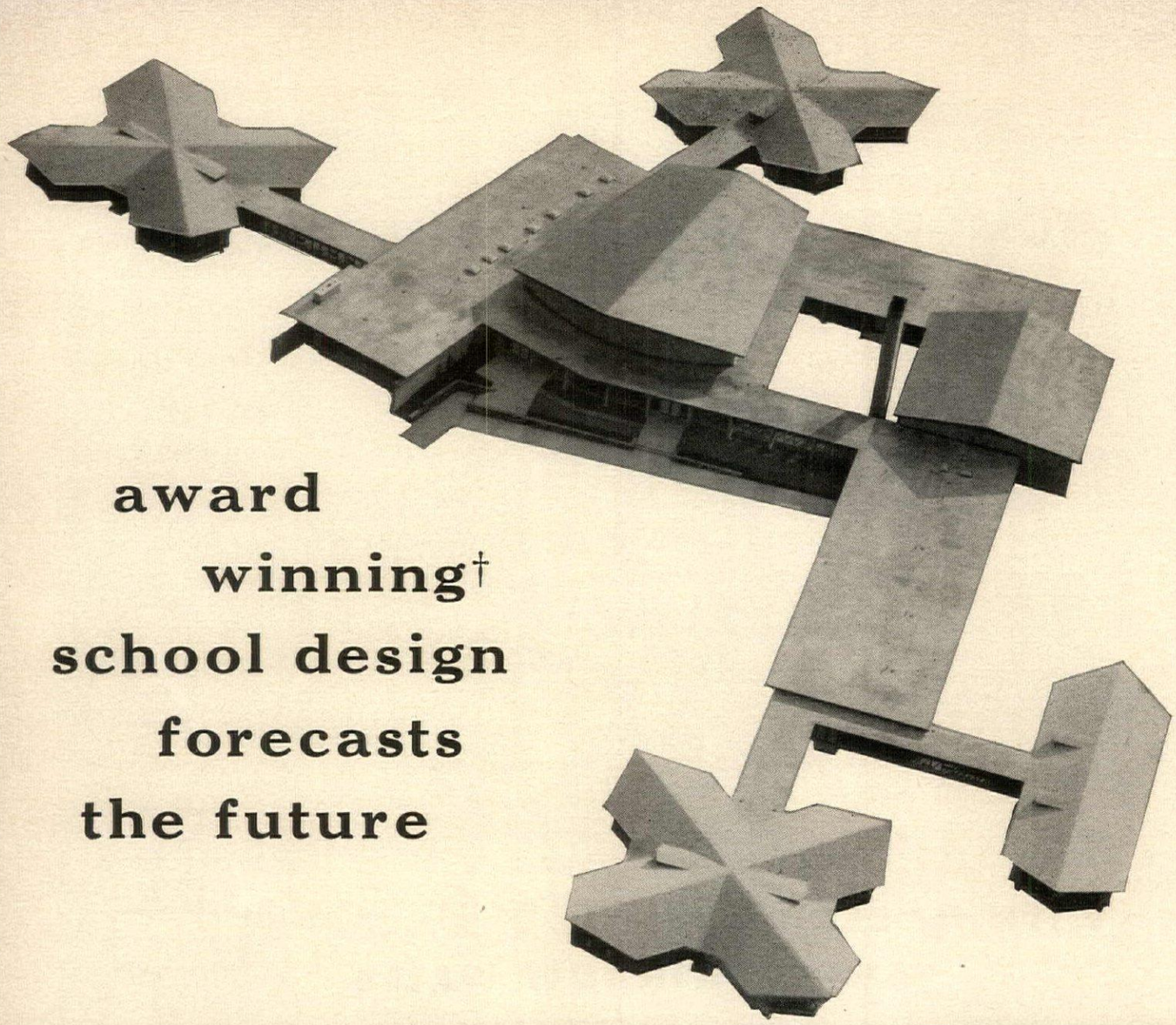

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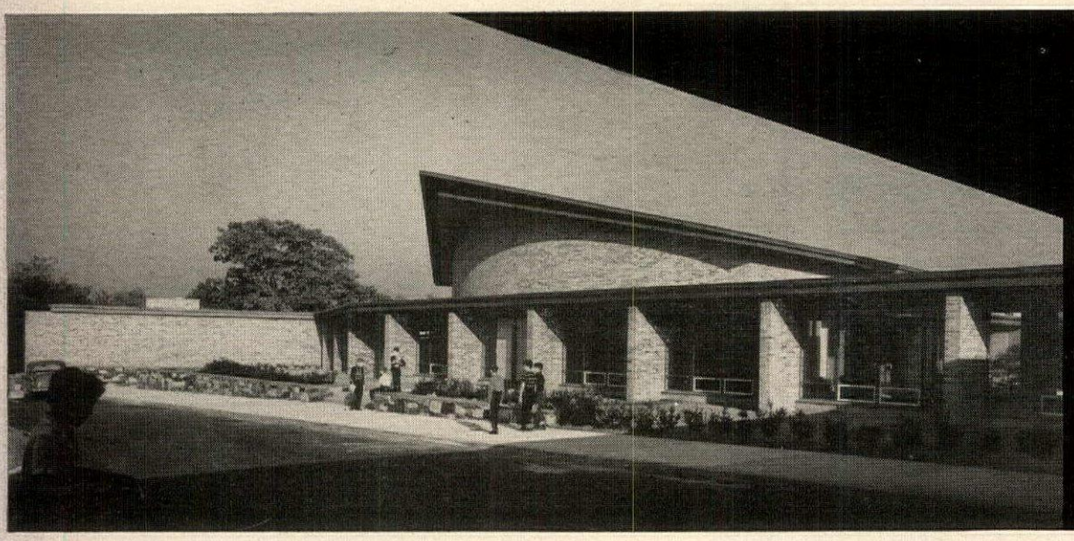

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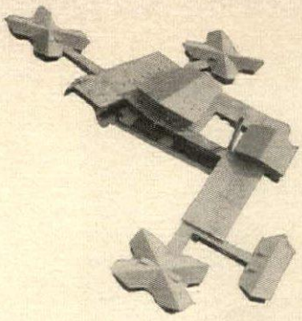

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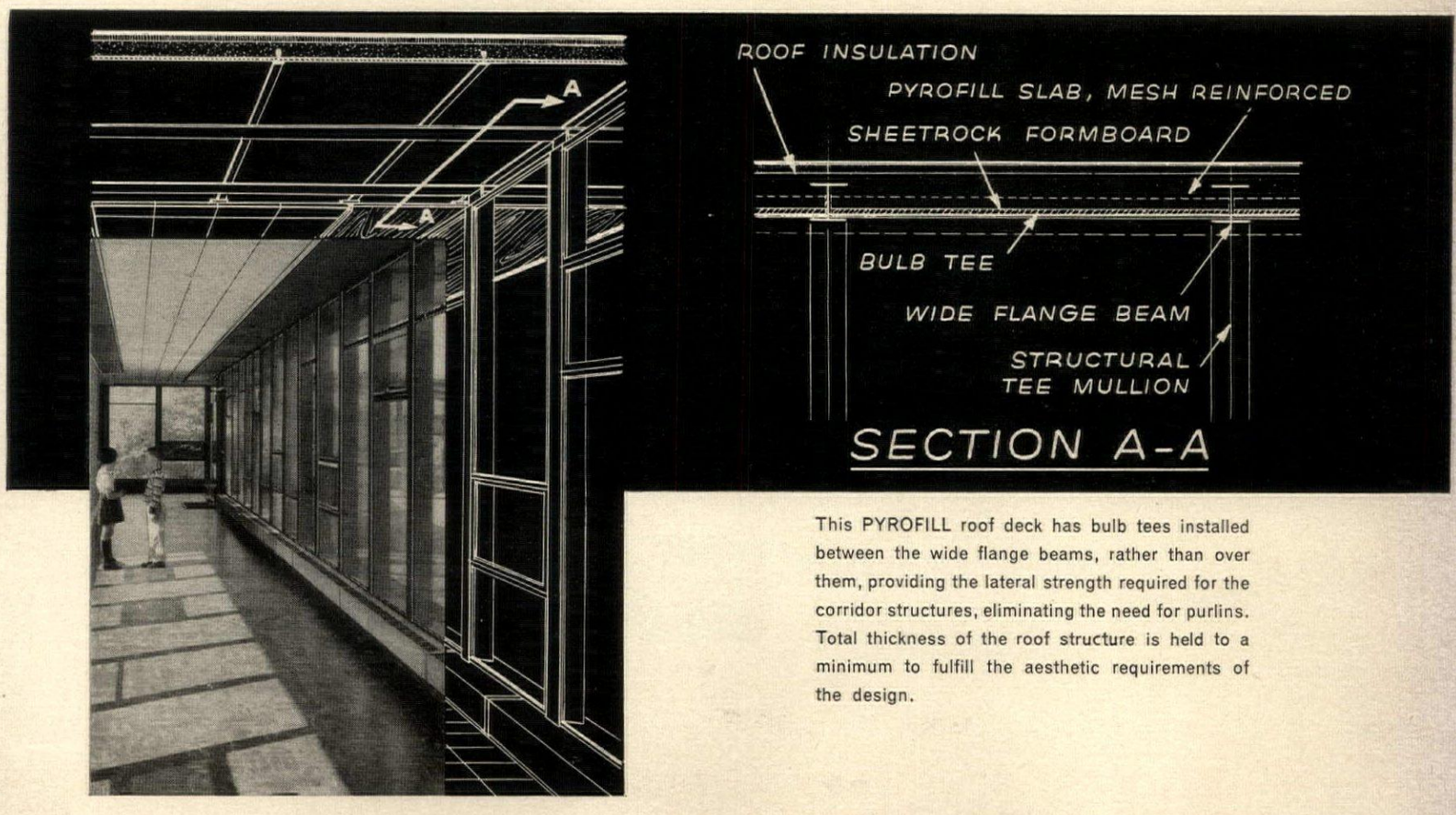

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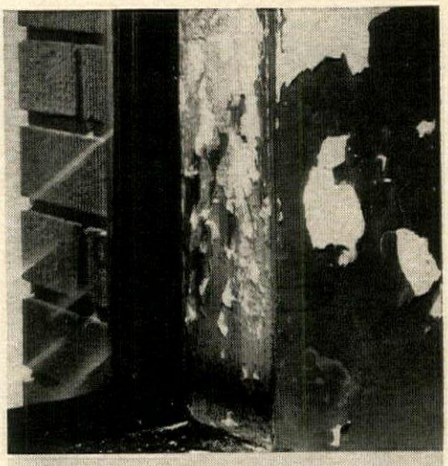
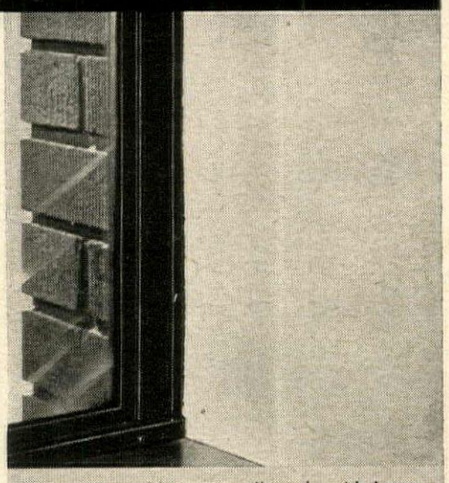


Here's the kind of damage to interiors that driving rain, soaking right through the wall, can cause inside of six months.



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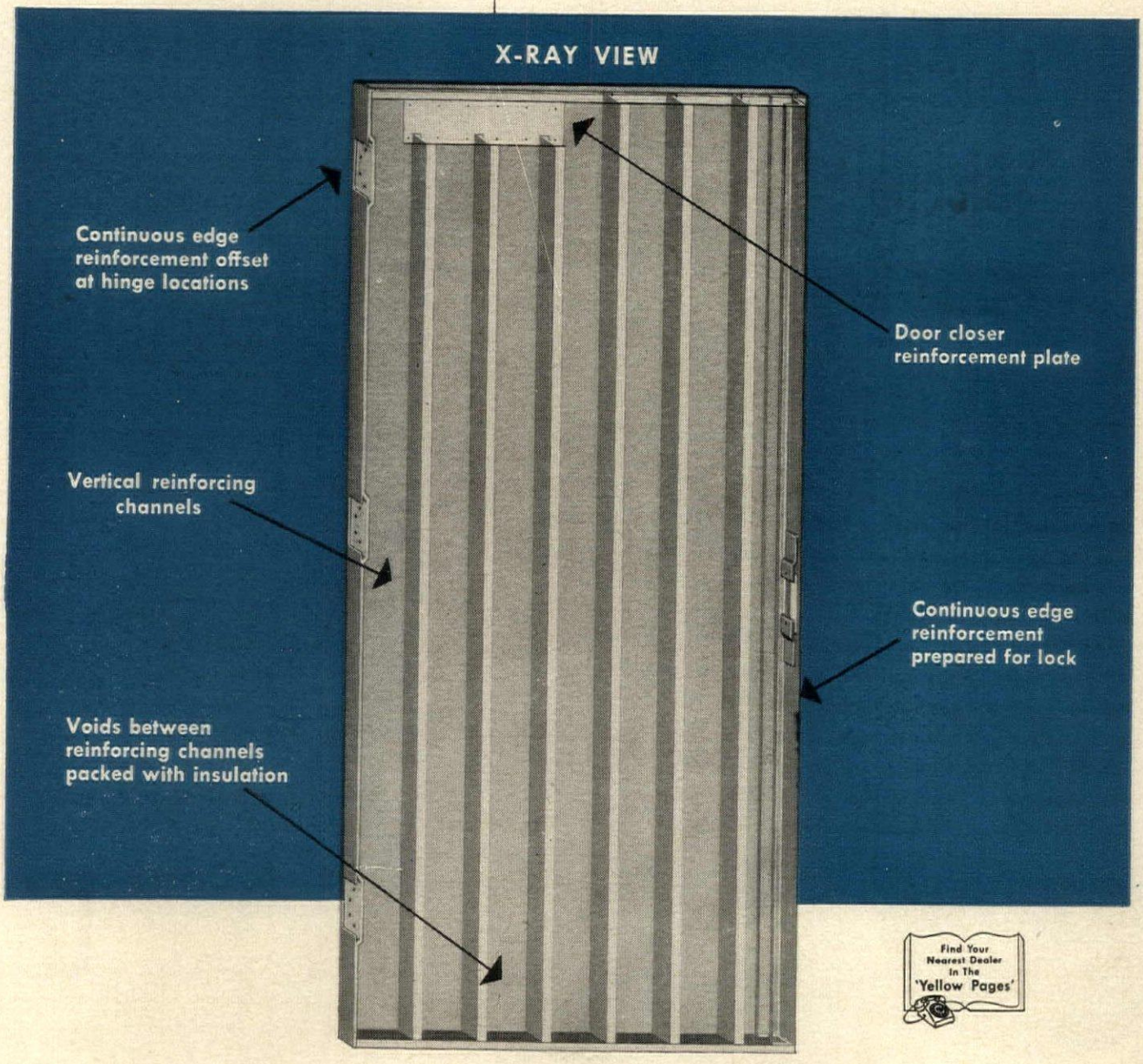

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Agency—Walker & Downing, General Agency
Alumiline Corp., The 262
Agency—International Advertisers
Aluminum Company of America 166, 167
Agency—Fuller & Smith & Ross, Inc.
American Abrasive Metals Co. 200
Agency—Michel-Cather, Inc.
American Air Filter Co.
(Herman Nelson Unit Ventilator Div.) ..86, 87
Agency—Doe-Anderson Advertising Agency
American Brass Co. 82
Agency—Kenyon & Eckhardt, Inc.
American Bridge Division
(U. S. Steel Corp.) 35
Agency—Batten, Barton, Durstine & Osborn, Inc.
American Machine & Metals, Inc. 80
Agency—The L. W. Ramsey Adv. Agency
American Radiator & Standard Sanitary Corp. 184, 185
Agency—Batten, Barton, Durstine & Osborn, Inc.
(J. A. Zurn Mfg. Co.) 74
Agency—Ketchum, MacLeod & Grove, Inc.
Anemostat Corp. of America 233
Agency—Michel-Cather, Inc.
Arcadia Metal Products 162, 163
Agency—Stiller-Rouse Advertising
Architectural Forum 266
Armco Steel Corp. 172
Agency—N. W. Ayer & Son, Inc.
Armstrong Cork Company 16, 66, 67, 81
Agency—Batten, Barton, Durstine & Osborn, Inc.
Art Metal Company, The 190
Agency—Foster & Davies, Inc.

Bakelite Company
(Div. Union Carbide & Carbon Corp.) 33
Agency—J. M. Mathes, Inc.
Bastian-Blessing Co., The 55
Agency—The Buchen Company
Bayley Co., William 207
Agency—Wheeler-Kight & Gainey, Inc.
Benjamin Electric Mfg. Co. 31
Agency—Van Auken-Ragland & Stevens
Besser Company 241
Agency—Paulson-Gerlach & Associates
Blakeslee & Co., G. S. 3
Agency—Lauesen & Salomon
Blickman, Inc., S. 244F
Agency—Jules Lippit Advertising
Blue Ridge Glass Company
(Libbey-Owens-Ford Glass Co.) 50A
Agency—Fuller & Smith & Ross, Inc.
Bulldog Electric Products Co. 71, 165
Agency—MacManus, John & Adams, Inc.
Burgess-Manning Co. 18
Agency—Merchandising Advertisers, Inc.
Bush Mfg. Co. 188
Agency—William Schaller Co., Inc.
Byers Company, A. M. 60
Agency—Ketchum, MacLeod & Grove, Inc.
Byrne Doors, Inc. 72
Agency—Gray & Kilgore, Inc.

Carrier Corp. 30
Agency—N. W. Ayer & Son, Inc.
Carter's Ink Company, The 262
Agency—Hoag & Provandie, Inc.
Chandler Mfg. Co. 18
Agency—The Callaway Associates
Chase Brass & Copper Co. 186
Agency—Cunningham & Walsh, Inc.
Chrysler Corp.
(Airtemp Div.) 218
Agency—Grant Advertising, Inc.
Clow & Sons, James B. 255
Agency—Henry M. Hempstead Co.
Concrete Reinforcing Steel Institute 23
Agency—The Fensholt Advertising Agency
Connor Engineering Corp. 63
Agency—Erwin, Wasey & Co., Inc.
Consoweld Corporation 197
Agency—Erwin, Wasey & Company, Ltd.
Continental Can Co. 20
Agency—Batten, Barton, Durstine & Osborn, Inc.
Corning Glass Works 205
Agency—Charles L. Rumrill & Co., Inc.
Crane Company, The 36, 37
Agency—Leo Burnett Company, Inc.
Crucible Steel Co. 7
Agency—G. M. Basford Co.
Cupples Products Corporation 65
Agency—Ridgway Advertising Co.
Cyclotherm Div.
(U. S. Radiator Corp.) 30
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Day-Brite Lighting, Inc. 198, 199
Agency—Gardner Advertising Co.
Detroit Steel Products Co. 40, 41
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Douglas Fir Plywood Assn. 220
Agency—The Condon Co.
Dunham Co., C. A. 48, 49
Agency—The Buchen Company
DuPont de Nemours & Co., E. I. 6
Agency—Batten, Barton, Durstine & Osborn, Inc.
Dur-O-Wal 263
Agency—Ambro Advertising Agency

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Agency—J. Walter Thompson Co.
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Agency—Ross Roy, Inc.
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Agency—Barton Alexander Advertising
Filon Plastics Corp. 176
Agency—Len Woolf Co.
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Agency—Yeck & Yeck
Flynn Mfg. Co., Michael 10
Agency—William Jenkins Advertising, Inc.

General Electric Company 47
Agency—G. M. Basford Co.
General Electric Company 64
Agency—Benton & Bowles, Inc.
General Tire & Rubber Co., The
(Textileather Div.) 14
Agency—D'Arcy Advertising Co.
General Woodcraft Co., Inc.
(Woodco Corp. Div.) 15
Agency—Krate-Basch Associates, Inc.
Georgia Marble Company, The 24
Agency—George & Glover Advertising
Glidden Company, The 50D
Agency—Meldrum & Fewsmith, Inc.
Gustin-Bacon Mfg. Co. 194
Agency—Valentine-Radford
Guth Company, The Edwin F. 77
Agency—H. George Bloch Advertising Co.

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Agency—James A. Stewart Co.
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Agency—Charles L. Rumrill & Co., Inc.
Hope's Windows, Inc. 89
Agency—The Moss-Chase Company
Hunter Douglas Corp. 246
Agency—Doyle Dane Bernbach, Inc.

Industrial Sound Control 182
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Inland Steel Products Co. 276
Agency—Hoffman & York, Inc.
Iron Fireman Mfg. Co.
(Selectemp Div.) 97
Agency—Joseph R. Gerber Co.

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Agency—Stevens, Inc.
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Agency—Horton-Noyes Company
Johns-Manville Corp. 43, 83
Agency—J. Walter Thompson Co.
Johnson Service Co. 175
Agency—K. E. Shepard, Inc.
Jones & Laughlin Steel Corp. 79
Agency—Ketchum, MacLeod & Grove, Inc.
Josam Mfg. Co. 244C
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Agency—Engel Advertising, Inc.
Kawneer Co., The 73, 189
Agency—Fuller & Smith & Ross, Inc.
Kellogg Switchboard and Supply Co. 174
Agency—Glenn-Jordan-Stoetzel, Inc.
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Agency—Ruthrauff & Ryan, Inc.
Kewanee-Ross Corp. 163
Agency—Charles O. Puffer Company
Keystone Steel & Wire Co. 180, 181
Agency—Fuller & Smith & Ross, Inc.
Kimble Glass Co.
(Subsidiary of Owens-Illinois Glass Co.) 234
Agency—J. Walter Thompson Co.
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Agency—Wheeler-Kight & Gainey, Inc.
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Laclede Steel Co. 238
Agency—Batz-Hodgson-Neuwoehner Adv. Agency
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Agency—Chapman-Nowak & Associates, Inc.
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Libbey-Owens-Ford Glass Co. 2, 46
Agency—Fuller & Smith & Ross, Inc.
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L.O.F. Glass Fibers Company 254
Agency—Brooke, Smith, French & Dorrance, Inc.
Lightolier, Inc. 174
Agency—Alfred Auerbach Associates
Linde Air Products Company
(Division Union Carbide & Carbon Corp.) ..272
Agency—J. M. Mathes, Inc.
Litecontrol Corp. 161
Agency—Sutherland-Abbott
Lone Star Cement Corp. 98
Agency—Cowan & Dengler, Inc.
Louisville Cement Co. 11
Agency—Doe-Anderson Adver.
Luminous Ceilings, Inc. 260
Agency—A. Martin Rothhardt, Inc.

Macomber, Inc. 225
(No Agency—Direct)
Mahon Company, The R. C. 75
Agency—Anderson Incorporated
Marlo Coil Company 212
Agency—Batz-Hodgson-Neuwoehner Advertising Agency
Mastic Tile Corporation of America ..... Cover IV
Agency—S. R. Leon Company, Inc.
Matot, Inc., D. A. 266
Agency—Arthur R. MacDonald, Inc.
McLouth Steel Corporation 229
Agency—Denman & Baker, Inc.
Meadows, Inc., W. R. 263
Agency—Connor Associates, Inc.
Michaels Art Bronze Co., Inc., The 216
Agency—Jaap-Orr Company
Minneapolis-Honeywell Regulator Co. 208, 209
Agency—Foote, Cone & Belding
Minnesota Mining & Mfg. Co. 173
Agency—MacManus, John & Adams, Inc.
Mississippi Glass Co. 237
Agency—Ralph Smith Advertising Agency
Modine Mfg. Co. 223
Agency—Klau-Van Pietersom-Dunlap Assoc.
Moen Valve Co. 268
Agency—West-Marquis, Inc.
Momar Industries 274
Agency—Bozell & Jacobs, Inc.
Monsanto Chemical Co. 187
Agency—Gardner Advertising Co.
Monsanto Chemical Co. 239
Agency—Needham, Louis & Brorby, Inc.
Moore, Inc., P. O. 250
Agency—Mrs. Doris Sarver Roland
Mosaic Tile Company, The 34A
Agency—Farson, Huff & Northlich
Moultile, Inc. 58
Agency—S. R. Leon Company, Inc.

National Concrete Masonry Assoc. 177
Agency—David W. Evans & Assoc.
National Electric Products Corp. 69
Agency—Ketchum, MacLeod & Grove, Inc.
National Gypsum Company 251
Agency—Batten, Barton, Durstine & Osborn, Inc.
National Tube Division (U. S. Steel Corporation) 213
Agency—Batten, Barton, Durstine & Osborn, Inc.
Nelson Unit Ventilator Div., Herman (American Air Filter Co.) 86, 87
Agency—Doe-Anderson Advertising Agency
Norton Company 264
Agency—John W. Odlin Company, Inc.

Otis Elevator Company 51
Agency—G. M. Basford Company
Overly Mfg. Co. 273
Agency—Walker & Downing, General Agency
Owens-Corning Fiberglas Corp. 179
Agency—McCann-Erickson, Inc.
Owens-Illinois Glass Co. (Kimble Glass Co., Subsid.) 234
Agency—J. Walter Thompson Co.

Phelps-Dodge Copper Products Corp. 96
Agency—Compton Advertising, Inc.
Pittsburgh Corning Corp. 222
Agency Batten, Barton, Durstine & Osborn, Inc.
Pittsburgh Corning Corporation 249
Agency—Ketchum, MacLeod & Grove, Inc.
Pittsburgh Plate Glass Co. 34, 214, 215
Agency—Batten, Barton, Durstine & Osborn, Inc.
Porete Mfg. Company 256
Agency—Lewin, Williams & Saylor, Inc.
Portland Cement Association 54
Agency—Roche, Williams & Cleary, Inc.
Powers Regulator Co. 53, 226, 227
Agency—Symonds, MacKenzie & Co.
Pyle-National Company, The 50B
Agency—Calkins & Holden, Inc.

Radio Corporation of America (Master Antenna Systems) 60
Agency—Al Paul Lefton Co., Inc.
Raymond Concrete Pile Co. 196
Agency—Needham & Grohmann, Inc.
Reflectal Corp. 68
Agency—Robertson, Buckley & Gotsch, Inc.
Republic Steel Corp. ..... 244D, E
Agency—Meldrum & Fewsmith, Inc.
Revere Copper & Brass, Inc. 267
Agency—St. Georges & Keyes, Inc.
Reynolds Metals Co. 85
Agency—Buchanan & Company, Inc.
Richmond Radiator Co. ..... Cover II
Agency—Buchanan & Company, Inc.
Rilco Laminated Products, Inc. 232
Agency—E. T. Holmgren, Inc.
Rixson Company, Oscar C. 78
Agency—Edwin E. Geiger
Robertson Company, H. H. 168, 169
Agency—Bond & Starr, Inc.
Rotary Lift Company 90, 91
Agency—Greenhaw & Rush, Inc.
Rowe Methods, Inc. 266
Agency—Dix and Eaton
Russell Co., The F. C. 244A
Agency—Gibbons-O'Neill, Inc.

Sargent & Co. 231
Agency—Marschalk & Pratt, Division of McCann-Erickson, Inc.
Sargent & Greenleaf 244
Agency—Hav Nash & Associates
Schieber Sales Company 250
Agency—Burke Bartlett Co., Inc.
Schumacher & Co., F. 34B
Agency—Lawrence Kane, Inc.
Sedgwick Machine Works 76
Agency—Geer, DuBois & Company, Inc.
SelecTemp Div. (Iron Fireman Mfg. Co.) 97
Agency—Joseph R. Gerber Co.
Simpson Logging Company 192, 193
Agency—Merchandising Factors, Inc.
Sjostrom Company, John E. 217
Agency—Harris D. McKinney, Inc.
Sloan Valve Company 8
Agency—Reincke, Meyer & Finn, Inc.
Smithcraft Lighting Division 26
Agency—Parsons, Friedmann & Central
Sparta Ceramic Co. 275
Agency—Roeding & Arnold, Inc.
Stromberg-Carlson 52
Agency—Charles L. Rumrill & Co., Inc.
Structural Clay Products Institute 50C
Agency—Wildrick & Miller, Inc.
Stylon Corporation 61
Agency—Copley Advertising Agency, Inc.
Sunroc Corporation 262
Agency—Willard T. Hine
Surface Coatings, Inc. 76
Agency—Allen, McRae & Bealer, Inc.
Swedish Crucible Steel Co. 253
Agency—Holden, Chapin, Larue, Inc.

Textileather Div. (General Tire & Rubber Co., The) 14
Agency—D'Arcy Advertising Co.
Tile-Tex Div., The (Flintkote Co., The) 70
Agency—Marschalk & Pratt Co., Inc., Division of McCann-Erickson, Inc.
Titus Mfg. Corp. 19
Agency—Weston-Barnett, Inc.
Todd Shipyards Corp. 262
Agency—Wendell P. Colton Co.
Trane Company, The 44, 45
Agency—Campbell-Mithun, Inc.
Tremco Manufacturing Co. 39
Agency—Lang, Fisher & Stashower, Inc.
Tyler Refrigeration Corporation 266
Agency—Jones & Taylor & Associates

Union Carbide & Carbon Corp. (Bakelite Co.) 33
Agency—J. M. Mathes, Inc.
(Linde Air Products Co.) 272
Agency—J. M. Mathes, Inc.
Union Pacific R.R. 228
Agency—The Caples Company
Unistrut Products Company 221
Agency—The Buchen Company
United States Ceramic Tile Co. 252
Agency—Roeding & Arnold, Inc.
United States Gypsum Co. 270, 271
Agency—Fulton, Morrissey Company
United States Plywood Corp. 191
Agency—E. T. Howard Company, Inc.
U. S. Steel Corp. (American Bridge Div.) 35
Agency—Batten, Barton, Durstine & Osborn, Inc.
(National Tube Division) 213
Agency—Batten, Barton, Durstine & Osborn, Inc.
Universal Atlas Cement Co. 210
Agency—Batten, Barton, Durstine & Osborn, Inc.
Universal Corp. 258, 259
Agency—Lannan & Sanders, Inc.
Uvalde Rock Asphalt Company 230
Agency—Rogers & Smith

Valley Metal Products Company 269
Agency—Stevens, Inc.
Visking Corp. 257
Agency—Weiss & Geller, Inc.

Ware Laboratories, Inc. 62
Agency—August Dorr Advertising, Inc.
Wasco Products Co. 244B
Agency—Henry A. Loudon Advertising, Inc.
Wayne Iron Works 27
Agency—Harris D. McKinney, Inc.
Westinghouse Electric Corp. 22, 94, 95, 201, 202, 203, 204, 242, 243
Agency—Fuller & Smith & Ross, Inc.
Weyerhaeuser Sales Co. 4, 5
Agency—The Alfred Colle Company
Wheeler Reflector Company 183
Agency—Ingalls-Miniter Company
Wiley & Sons, Inc., John 52
Agency—Waterson & Fried, Inc.
Wisco Aluminum Corp. 57
Agency—Whipple & Black Advertising Co.
Woodall Industries, Inc. 93
Agency—Schnell & Associates
Woodco Corp. (Div. of General Woodcraft Co., Inc.) 15
Agency—Krate-Basch Associates, Inc.
Woodward Iron Co. 42
Agency—Sparrow Advertising Agency
Worthington Corporation 50
Agency—James Thomas Chirurg Co.

Yates Company 88
Agency—Davies & McKinney Industrial Advertising Agency

Zurn Manufacturing Company, J. A. (American Radiator & Standard Sanitary Corp.) 74
Agency—Ketchum, MacLeod & Grove, Inc.

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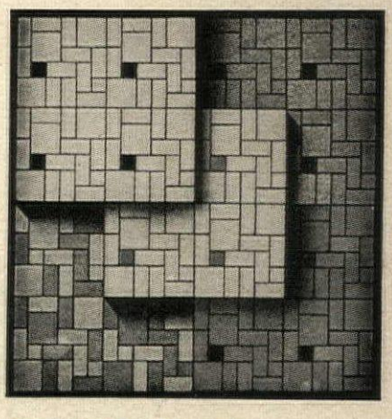

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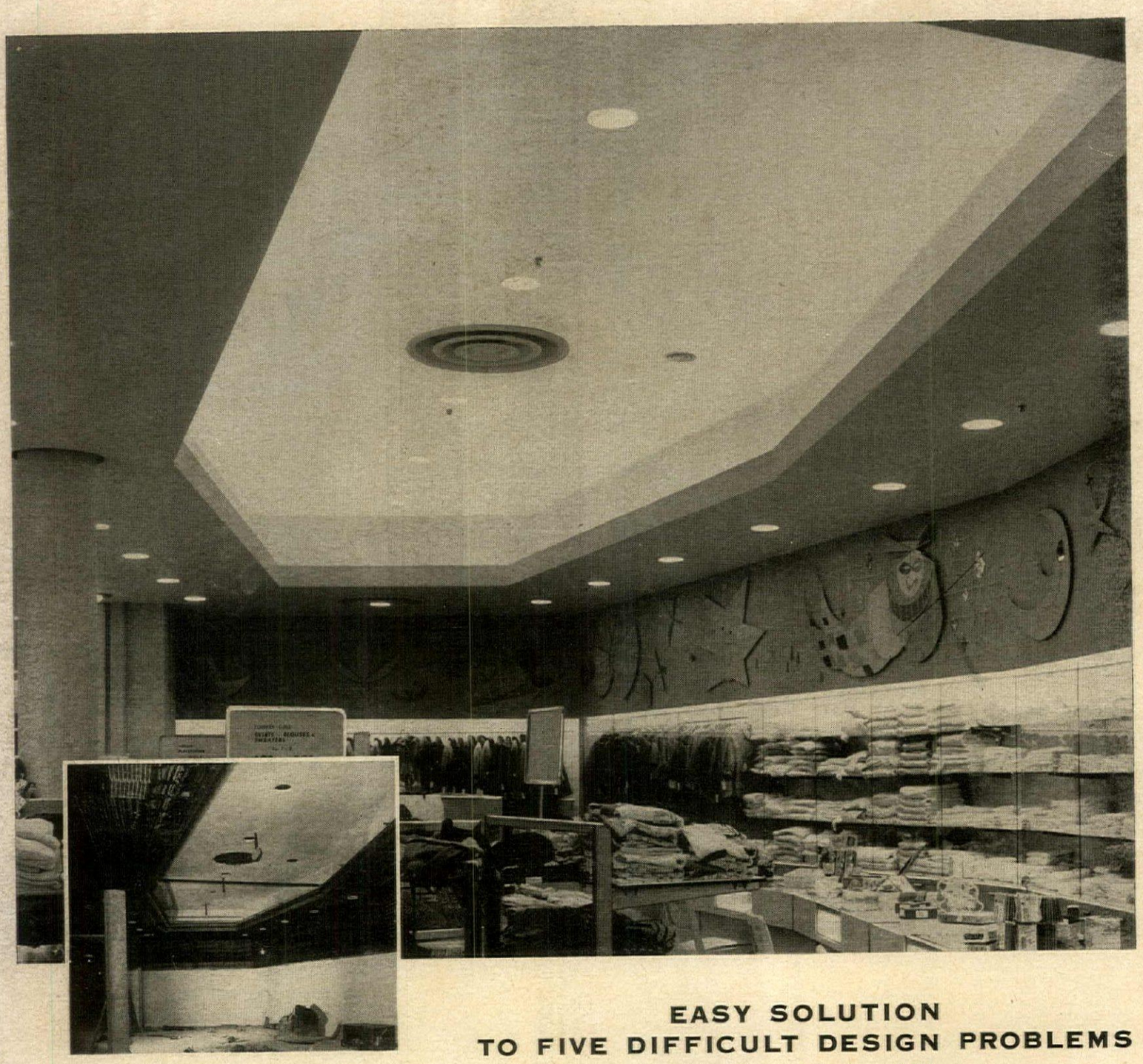

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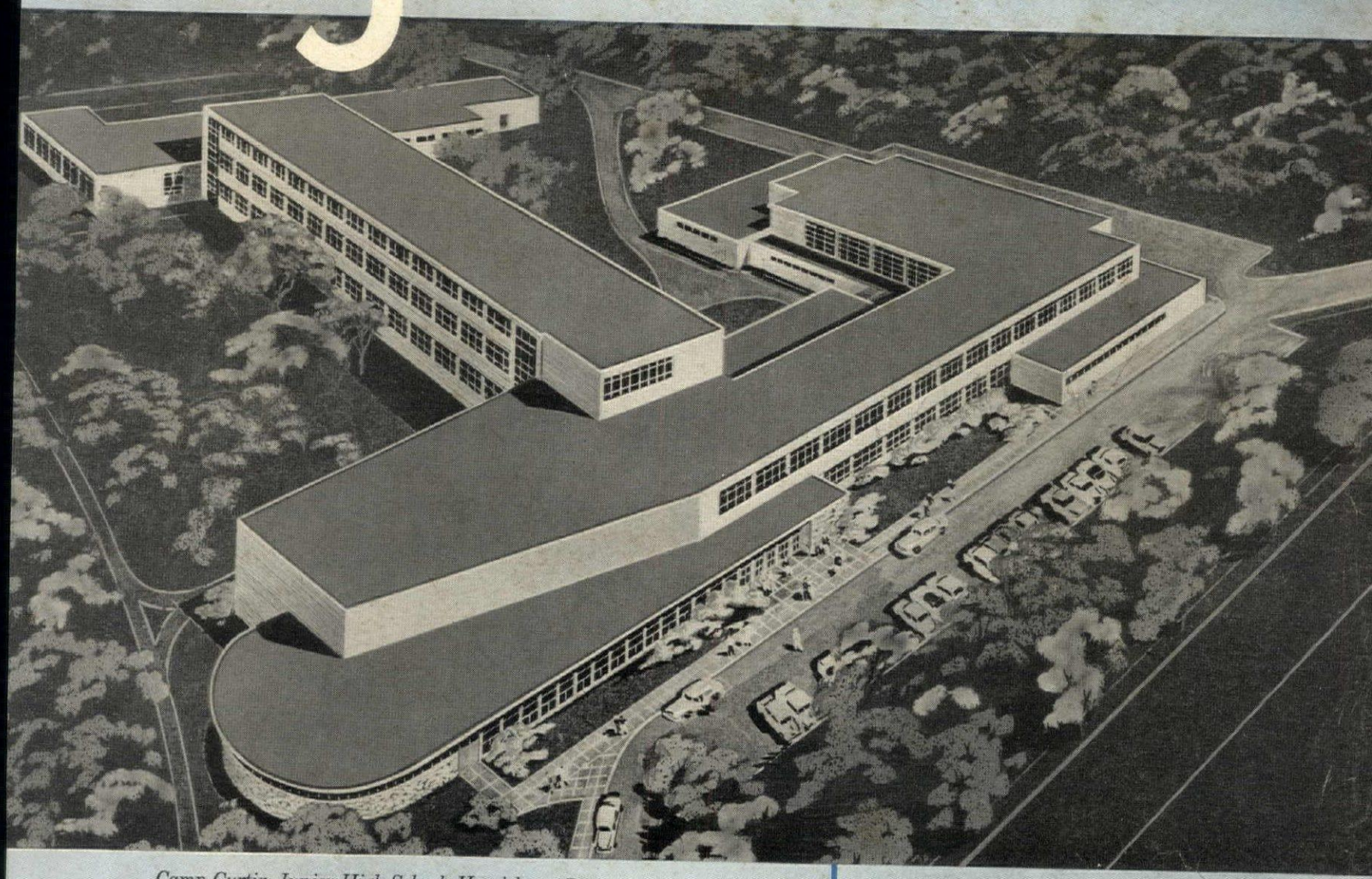

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