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DECEMBER 1956

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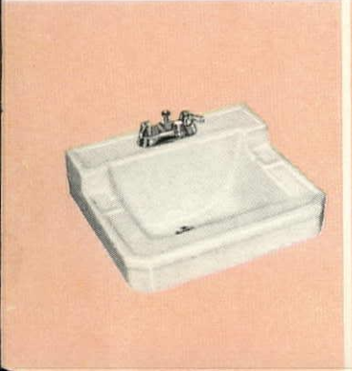

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DECEMBER 1956

Cover: Cafeteria ceiling, Administration building, Lockheed Aircraft Service, Inc. Architects: George Vernon Russell & Associates Photographer: Ernest Braun

VOLUME 105, NUMBER 6

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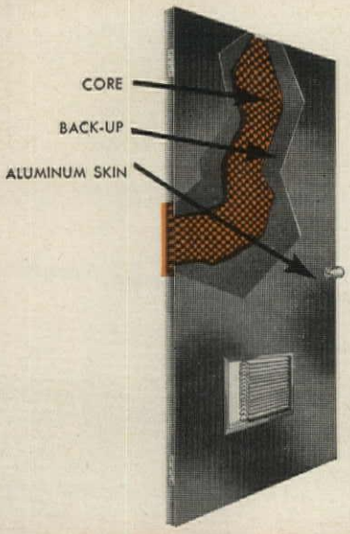

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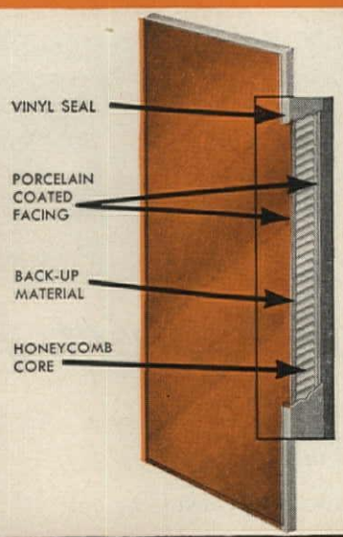

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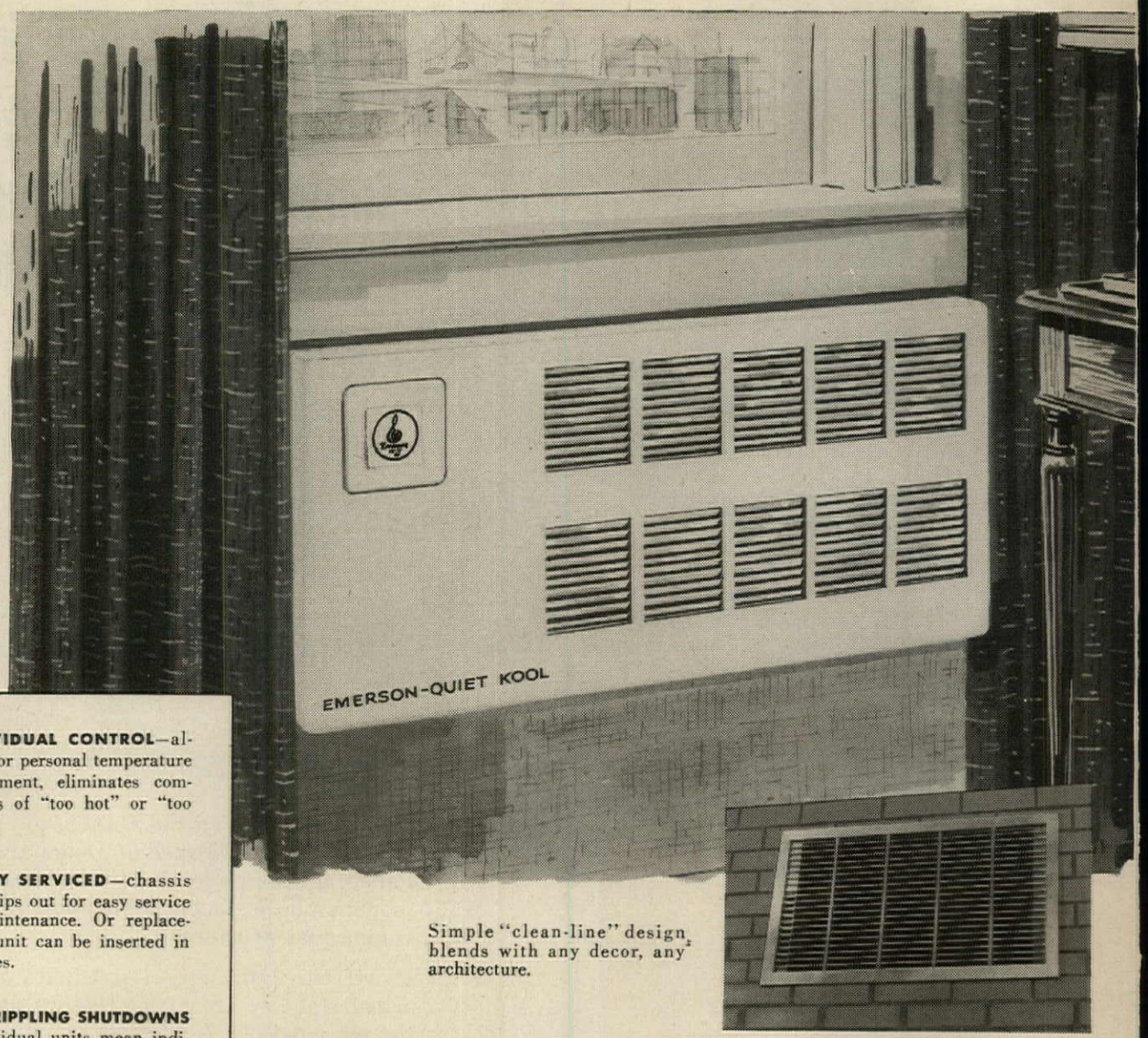

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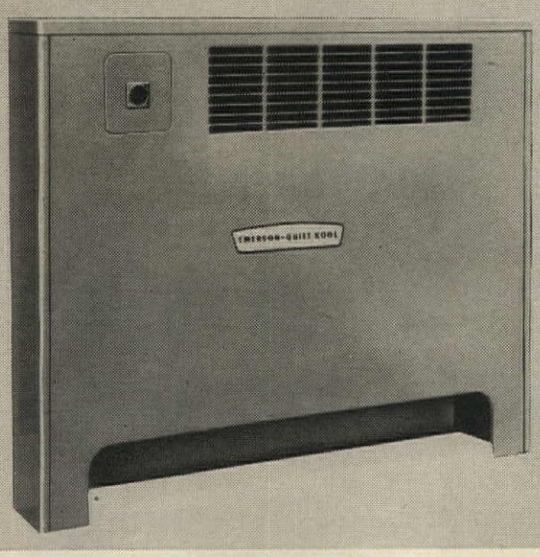

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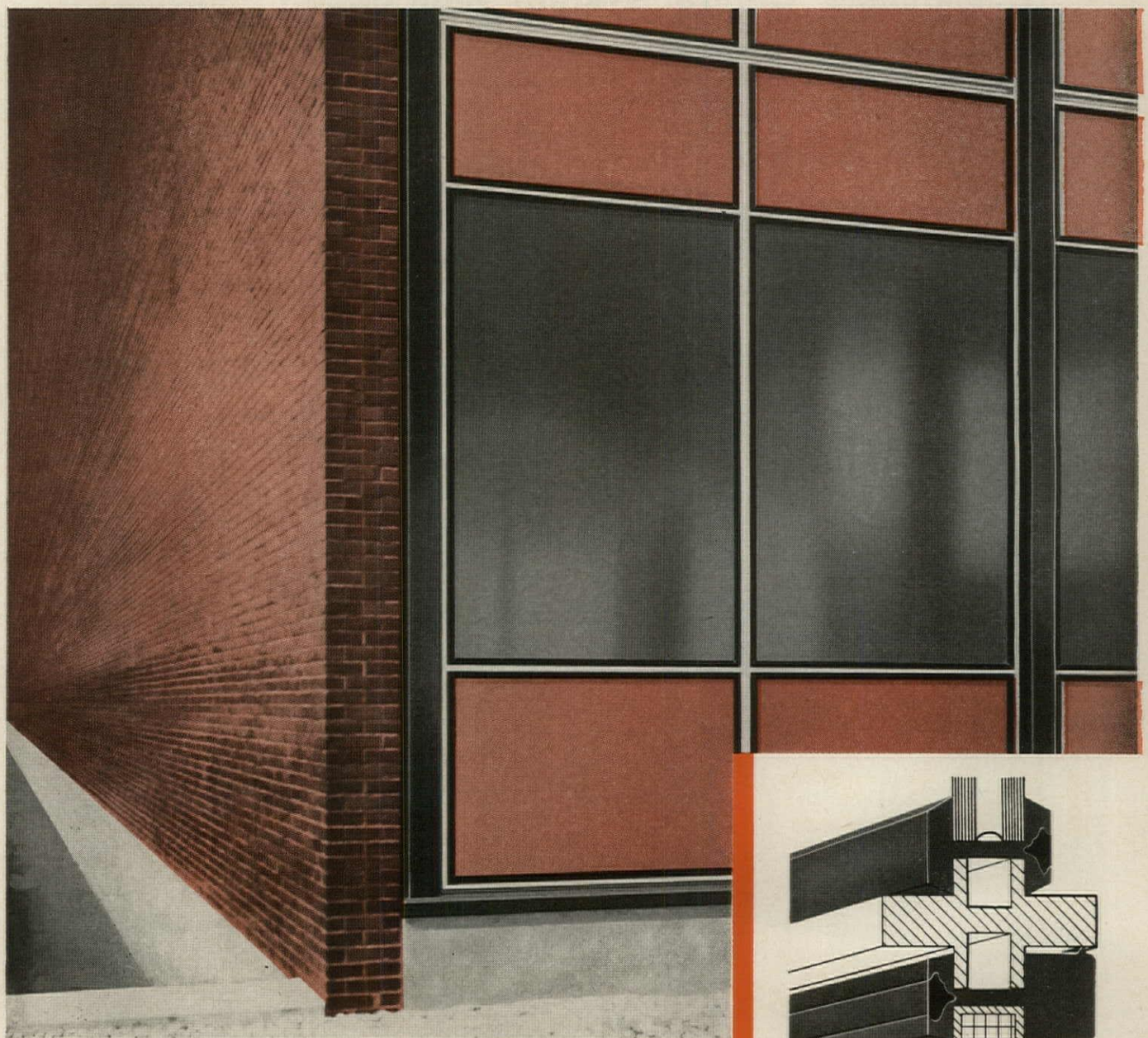

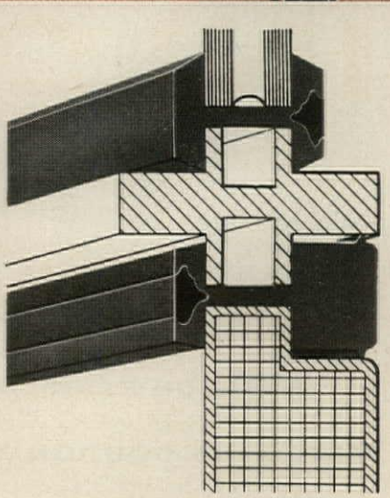

A typical installation at General Motors Technical Center, where Inlock Structural Weather Strip has been installed to permanently glaze and seal curtain wall units. Note (cross-section at right) glass was installed from inside the building, panels from outside.

Here's the answer to watertight glazing of windows and sealing of curtain wall units.
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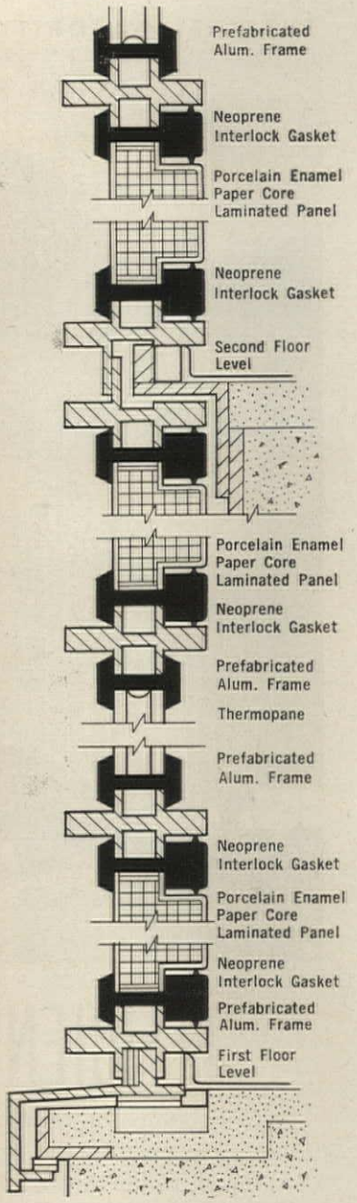

Cross-section showing vertical wall view of building shown at left.

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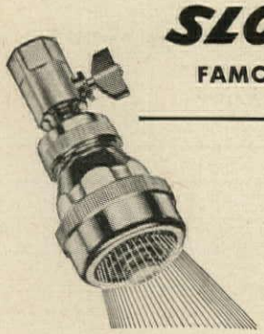

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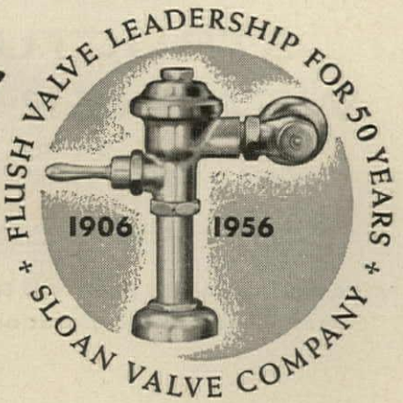


Election effects: no national change; California architects lose battle

"More of the same" was the best summary of the national outlook so far as construction was concerned after the re-election of President Eisenhower—and another Democratic Congress. Business and building prospects continued bright; on housing and other construction legislation there was no resolution in sight to a continued half-stand-off-half-compromise between the White House and Congress; for the immediate future there was no prospect of any major changes in the administration's economic policies, especially its current anti-inflation credit restraint program.

(A more portentous cloud on the horizon that shrewder observers were watching for possible major effects on construction was the international situation. If the Egyptian-Israel and eastern European situations worsened, they wondered, would steel and other building materials be restricted again as during the Korean crisis? At month's end it was too early to venture any guesses what might be in store for building in this respect.)

In one sidelight of the national campaign, Labor Secretary James P. Mitchell in a speech shortly before Election Day said the President had directed him to name a special committee to study Taft-Hartley labor relations law changes to help solve some of the "peculiar problems" of the construction industry. Late last month the group he appointed held its first organizational meeting. Its labor members were the carpenter's President Maurice A. Hutcheson, the plumber's President Peter Schoemann, and President Richard Gray of the AFL-CIO building trades department. Industry members were National Constructors Assn. President C. H. Haxby; AGC Labor Relations Advisor Edward T. Kelly, and Paul Geary, executive vice president of the National Electrical Contractors Assn.

California architects lose. In state and local elections, Californians voted on the largest number of matters of concern to architects and builders.

Despite a vigorous campaign and support from engineering and other groups, California architects failed by a wide margin to carry a proposition that would have authorized the hiring of private architects and engineers "for the performance of work which the available staff of a state agency is unable to perform within the time the public interest requires such work to be done." Under present law the state's Division of Architecture has a virtual monopoly on design of state buildings and has grown into an agency of some 900 persons. But the state's private architects, less than 3,000, were far outnumbered by the State Employees Assn, 60,000 strong, which blasted the proposal as an attack on the civil service system. Opponents raised over $200,000, spent $120,000 on newspaper ads attacking the measure in most exteme fashion. Supporters only had available $90,000, including $10,000 contributed by architects from other states.

The California Council of Architects protested that State Architect Anson Boyd personally visted newspapers in the San Francisco area to oppose the measure, which had been proposed by a Senate committee that made a comprehensive public works study in 1953 To ease acute bottlenecks, Boyd's department does award some state work to private architects and engineers, but under a cloud of unconstitutionality—fees might be jeopardized if challenged in taxpayers' suits.

Also in California, Los Angeles voters approved a charter amendment that repealed the city's 150′ (13-story) building height restriction, while statewide voters approved a $200 million bond issue for new mental hospitals, colleges and other buildings; $100 million to continue the state's program of local school construction loans, and $500 million for veterans' home and farm purchase loans.

NY housing loans beaten. Although a $50 million program of direct state loans to builders of middle-income rental housing was voted in a 1955 referendum, last month New York state voters vetoed a proposal to provide another $100 million for this purpose. In New York City the new measure was approved by a wide margin, but heavy opposition by upstate citizens caused its defeat by more than 200,000 votes.

FHA "high cost" mortgages, HHFA harbor help OK'd

Two important precedents in HHFA-supervised urban renewal and planning aid programs were set last month:

▸ With conspicuous lack of fanfare, FHA started to approve "high cost area" construction costs up to $1,000 extra per room for urban renewal rental housing financed with Sec. 220 mortgages. Under "high cost area" calculations (approved in New York, Jersey City, Philadelphia, Chicago, and pending in Detroit), maximum Sec. 220 loans, based on 90% of replacement costs that include a 10% "profit and risk" allowance for builders, can range as high as $3,250 per room in walkups, and $3,700 per room in elevator projects if dwelling units average four rooms or more per unit.

▸ HHFA's Community Facilities Administration, which makes planning loans to state and local agencies, announced advances for two types of projects that have not figured in its previous activity—usually local roads, water and sewer works, schools, hospitals and other public buildings. For Erie, Pa. it approved a $147,500 loan to prepare final plans for expanding its harbor facilities through a proposed $2.7 million dredging, land reclamation and wharf construction program. For the Sabine River Authorities of Louisiana and Texas it approved a $150,000 loan to prepare preliminary plans for a $30.6 million dam, reservoir and electric generating plant project.

Los Angeles pays $115,000 for judges' water fountains

In the west a man will shoot his mother over "water rights," they say. The judiciary, it would seem, also can be fussy about their water, judging by an item that leaked out last month concerning the new Los Angeles court house.

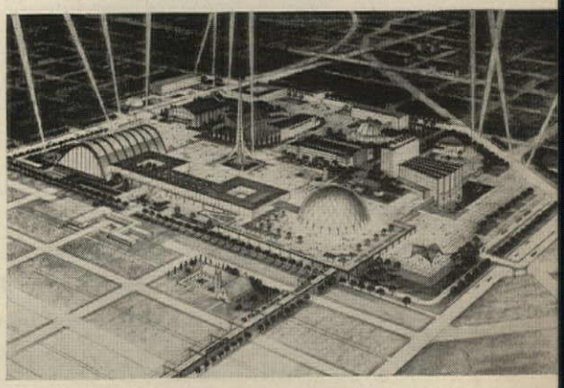
This building, designed by a team consisting of Architects J. E. Stanton, Paul R. Williams, Austin Field & Fry and Adrian Wilson, was planned with corridor water fountains for every 1,400 sq. ft. of floor area. But despite such provision for almost conspicuous consumption, by usual standards, judges who will occupy the building decided they wanted individual fountains in their chambers. The matter was explored by the county supervisors, who were given a preliminary extra cost estimate of $157,000. Architectural team spokesman Wilson suggested it should cost about $90,000, but after dickering, the contractors would not budge below $115,000. There it ended, and the judges will get their own fountains, fit for champagne but in blind justice fated only to gush water.

Seattle architects help swing bond issue for civic center

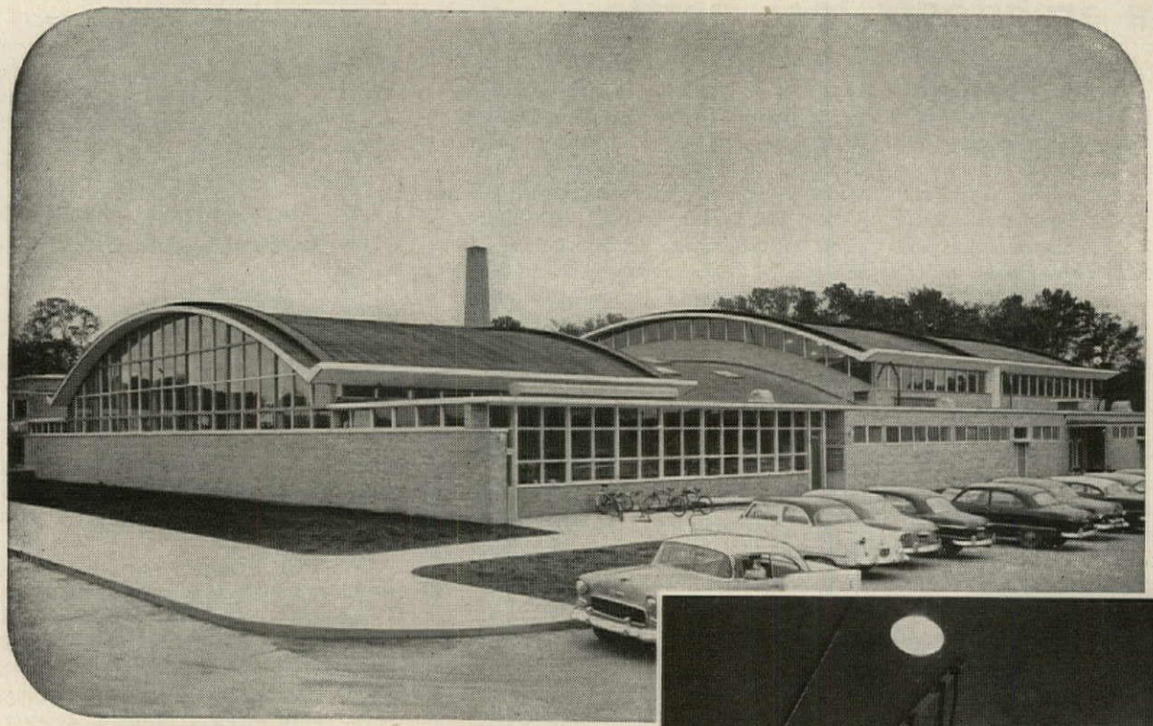
When Seattle voters handsomely approved a $7.5 million bond issue for major enlargement of their civic center, the AIA Washington State chapter could take credit for a large role in spurring adoption of this community program.

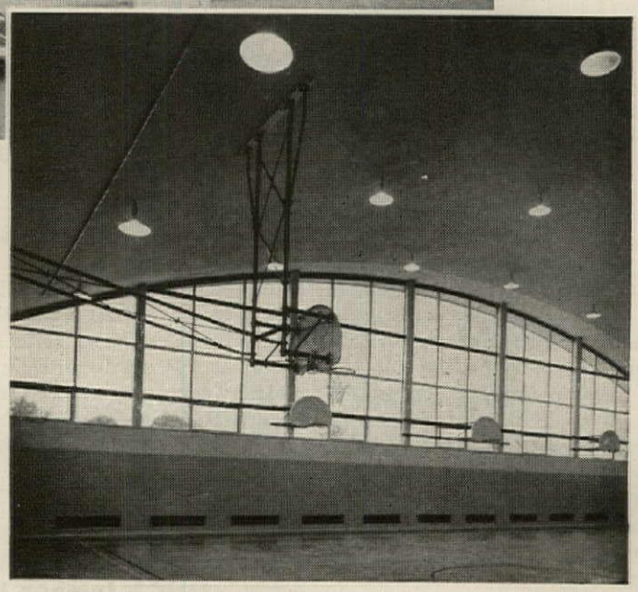
Several months ago a chapter committee of 16 practicing architects collaborated on the accompanying sketch (produced in the offices of Naramore, Bain, Brady & Johanson) to help the public visualize what a bond issue "yes" vote would buy. Committee chairman was energetic, versatile Architect John Stewart Detlie,

continued on p. 12



SEATTLE ARCHITECTS' CIVIC CENTER SKETCH





Design of Edsel Ford High School features distinctive, economical

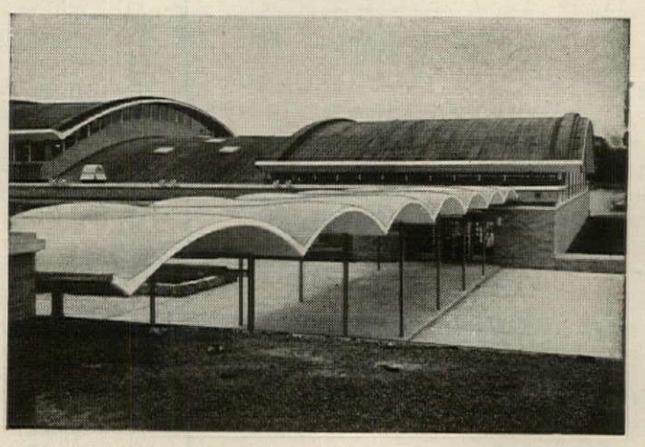
Concrete Shell Roofs

The first concrete shell roofs constructed in Michigan were used in the Edsel Ford High School in Dearborn. Four shell units were built: two over the boys' gym, one over the girls' gym, and a fourth over an intermediate building housing the swimming pool and locker rooms. All four roofs have spans of 100 ft. and identical arches of 121-ft. radius and a rise of 13 ft.

Concrete shell roof construction was selected because (1) it provided unobstructed interiors, (2) it was adaptable to the architectural design and (3) it was economical to build.

Concrete shell roof construction is gaining rapidly in popularity with architects and engineers for buildings requiring large unobstructed floor areas. Roofs with spans up to 300 ft. and more can be built without interior columns. They are ideal for auditoriums, exhibit halls, hangars, train sheds, repair shops and warehouses.

Concrete shell roofs are economical to build, need little or no maintenance, have long life and low insurance rates. They are true *low-annual-cost* construction. Write for free illustrated literature. Distributed only in the United States and Canada.



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Cookson "Alumilited" Counter Door provides attractive and durable closure for Hillsdale High School student store.

1956 Top AIA Award School Has All 4 COOKSON DOORS Specified

Eyes of architects have been focused on an outstanding new school in San Mateo, California. Hillsdale High, featuring a host of design and technical innovations, took top 1956 honors among schools in the A. I. A. Annual Awards for Non-Residential Buildings. Examples of foresighted planning are found in the various types of Cookson Rolling Doors shown here.

Of special interest is the Cookson Extruded Aluminum Counter Door, preferred among architects for their design which permits full, unobstructed opening; for their durable construction; for their permanent, lasting beauty. No paint or maintenance is required on the distinctive "Alumilited" finish. They roll up and out of sight, yet require no costly between-wall recesses.

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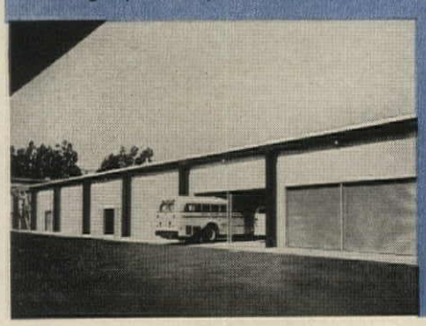
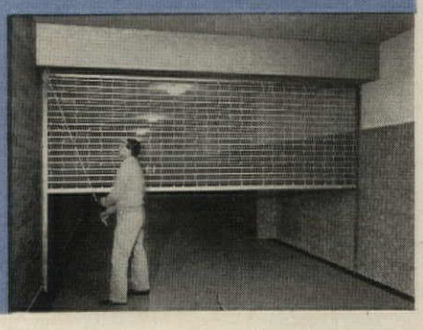


Cookson "Servire" Fire Door, Underwriter labeled, is used between auditorium stage and control booth.

Crank-operated Cookson Grilles combine strength, visibility and ventilation for school's corridors.



former chapter president, who also has been spear-heading the city's Allied Arts program and serving as first chairman of the city's new Municipal Art Commission.

Of the $7.5 million voted last month, $2.5 million is earmarked for purchase of 28 acres near the present Civic Auditorium; $4 million for a concert and convention hall; $750,000 for a multipurpose auditorium. In 1950 a $1.5 million civic center land purchase bond issue was defeated, mainly because of controversy over site. But the AIA chapter kept working for the project, pointed out that if it was not approved this year, rising land costs and commercial use of the proposed site would make it impossible to obtain later.

The existing Civic Auditorium, ice arena and High School Memorial Stadium, and the proposed concert-convention Hall, multipurpose auditorium and parking facilities are shown in the upper half of the accompanying sketch. Foreground buildings are simply imaginary structures, to show the possibilities of staging a world's fair on the site some day.

Big St. Louis redevelopment stalled; city land bid is only $1.56 per sq. ft.

Was choice downtown civic center area land in St. Louis worth only $1.56 a sq. ft. for better-quality, middle-income high rise apartments?

That was the bid for cleared property in a Title I redevelopment site by the nonprofit Urban Redevelopment Corp., organized by St. Louis civic leaders to combat city decay and spur rejuvenation. But last month the Urban Renewal Administration in Washington refused any such bid because it thought the property, after allowing for a substantial federal and city subsidy, still ought to bring about $3.20 or more per ft.

The land in question was 6.6 acres in the area of Union Station, the Municipal Auditorium and War Memorial. Three of its blockfronts faced full-block parks. Only five blocks away was Scruggs-Vandervoort-Barney, and at eight blocks Famous-Barr, two of the city's biggest department stores in the very heart of downtown.

After acquiring this so-called Plaza project site, and razing its many old slum buildings at a cost of roughly $5 million, the city's Land Clearance for Redevelopment Authority called for re-sale bids last spring. Its redevelopment site plan, prepared by Architect George Hellmuth, provided for construction of about 1,100 apartments in seven elevator buildings, plus parking and neighborhood stores.

Lone bidder requests changes. Although several potential redevelopers requested bid specifications, the only bid submitted was an offer of $450,000, or $1.56 per sq. ft., from the civic leaders' corporation, which engaged New York Builder Paul Tishman as technical advisor, Hellmuth, Obata & Kassabaum, in association with Harris Armstrong, for preliminary plans.

This group proposed some modifications in the general plan, and also appropriate modfication of its bid price if these changes were approved. It suggested 1,087 apartments in only four or five buildings, and sought permission to add an office building to the project. The housing it proposed (as of last May) would have consisted of 300 efficiency units to rent from $74 to $83 (depending on whether optional air conditioning was included), 637 one-bedroom units at $98 to $110 and 150 two-bedroom units at $119 to $131. To achieve these rents the project also would be given considerable real estate tax concessions under the state's urban redevelopment corporations law.

All others out of step? As soon as they were able to get their eyeballs back in their sockets, after receiving the surprisingly low lone bid of $450,000, the local redevelopment agency officials faced up to some extraordinary facts:

- URA headquarters in Washington had previously indicated it would not approve a re-sale price below $920,000. (Washington still insists on this figure, as a matter of fact, and a higher sum if more intensive utilization of the property, with an office building, is permitted.)
- Further wincing came when the business leaders' bid of $1.56 per sq. ft was compared with prices totaling $205,000 (or $3.73 per sq. ft.) that two churches left in the overall site already had agreed to pay for a little under 1.5 acres, to enlarge their plots.
- For land alone in the project area, not counting the cost of the old buildings on it, or the expense of their demolition, the city had paid more than $3.25 per sq. ft.
- Compared with prices from $1,000 to $2,000 per house for suburban homebuilding tracts, this $450,000 bid worked out to only $415 per dwelling unit for 1,087 apartments—for land fully developed with all utilities, and not even a local bus or trolley fare needed to reach most downtown employment and shopping points.
- In New York, for comparison, redevelopers of Title I middle-income housing sites were paying as high as $2 per sq. ft. for land in Harlem, $7.25 in the Coliseum "housing" project at Columbus Circle, and $10.50 a block below Washington Square—areas requiring at least a subway or bus fare to get to main office and shopping districts.

Construction write down? Apartment plans of the civic leaders' corporation, said the *Post-Dispatch*, provided for extra large rooms, dishwashers, recessed in-the-wall air-conditioning units, balconies that would be "not merely decorative ledges but full size and usable sitting areas." The bidder, it reported, urged that in evaluating its $450,000 offer "consideration be given to the effect of land cost on the quality of accommodations which can be furnished at rent levels within the means of middle-income families." The bidder estimated, said the newspaper, that these various "extras" would add more than $1.3 million to its construction costs.

In some respects, these statements could easily be interpreted as suggesting that land costs should be given a second, special subsidy or write-down to offset or compensate for certain more-than-ordinary construction cost factors—or that federal funds be used, indirectly, to reduce a redeveloper's land and *building* costs.

In view of the fact that federal law authorizes US subsidies only for reducing redevelopers' *land* costs, and not construction costs, it was no wonder URA officials in Washington appeared hard put to approve this $1.56 St. Louis bid. And looking over their shoulder was the General Accounting Office, which after an earlier scrutiny had asked for clarification on another aspect of this project, to assure itself there had been no conflict of interest in the role of one of the supporters of the redevelopmnt corporation who also happened to have handled an assignment for the local redevelopment agency.

No informed curiosity. St. Louis' two leading newspapers were both subscribers to the $2,330,000 the civic leaders' corporation raised to help advance the Plaza project and other renewal efforts. Through last month, however, neither had given their readers any thorough appraisal of the reasons for delays on this project, or the adequacy or inadequacy of the $1.56 bid. Nor had the fact that only a single bid been made for such a choice downtown site of such tremendous potential stirred their curiosity to any particular printed exploration or discussion of such factors as: why no local builders put in bids for the project; whether no local builders were big enough to handle it; whether division of the project into smaller pieces might have developed competition in the bidding, or brought total resale prices that would have reduced the ultimate federal and St. Louis subsidies for it.

Actually, the local redevelopment agency was still negotiating last month with the civic leaders' corporation, which, theoretically at least, might still "modify" its bid all the way up to $920,000, or even more if the plan could also be modified to everyone's satisfaction. If these negotiations failed, the local redevelopment agency could then decide whether to call for new bids on the original plan, or some modification of it, or perhaps divide the project into smaller bites.

Excluding any commercial allocation, but applied against only 1,000 units, an additional $470,000 for land, at FHA apartment interest and amortization rates for 40 years would boost average apartment rents only $2.19 per month, over 30 years $2.45 per month.

NAREB convention: more emphasis given to city, regional planning needs

Most significant at the annual convention of the National Assn. of Real Estate Boards in St. Louis last month was the recurring emphasis on the need for better planning and design in the constant building and rebuilding of all communities, large and small.

For easier, pleasanter, more economical living and working, speaker after speaker dwelt on the necessity for designing not only better structures, but over-all planning for better neighborhoods, better cities, better roads and transit facilities and better metropolitan areas.

Discussions were not limited to the narrow confines of urban renewal projects or NAREB's valiant, voluntary Build America Better rehabilitation and conservation campaign. More often speakers were striving to assess the impact the multibillion dollar federal highway program will have on real property of all types, the effects downtown if mass transit continues to slowly contract and disappear, and other aspects of the pulling and tugging between cities and suburbs.

Planning financed by industry. Among the scores of discussions in a week of meetings, several outstanding sessions of the Society of Industrial Realtors set the pace.

It was at an SIR panel on Building for Industry, for instance, that San Francisco Architect John Bolles described a significant industry-financed city and county planning program about to be inaugurated in California. In one previously rural area near San Jose, in Santa Clara County, he explained, IBM will soon open a new plant employing 7,000 workers, GM another with 5,000, and Lockheed a third with 3,000. Roads will be inadequate for all of them. There is a dangerous railroad grade crossing in the area. There will also be all sorts of other growth problems.

But in this case the three leading firms that are mainly responsible for thus "upsetting the whole community—and countryside" are coming to the rescue of the desperate county and local communities. Taking the lead, they have agreed to put up $100,000 (to be matched with $100,000 of county and community funds) for a planning program drafted by Bolles. The County Planning Commission and State Highway Division have agreed to do the actual planning work, and the approval of necessary local appropriations is expected this month.

Other SIR highlights:

- At a session on means of attracting industry to a community, San Francisco Bay Area Council General Manager Frank Marsh said too many towns issue gaudy "seven-color brochures" of a huckster nature. By offering too many "special" inducements to get a plant "on the hook," he said, they often scare away thoughtful companies who fear there may be long-range disadvantages hidden behind overgenerous, overglamorized immediate bonuses.
- St. Louis Planning Commission Member William H. Harrison, SIR, and two staff members gave the first report on a new system for rating the physical conditions of industrial and commercial buildings on a standard numerical scale. This index-figure system, being developed as an urban renewal "demonstration" project with a $26,000 HHFA grant, scores a structure's deterioration and obsolescence, age, conformity to modern standards of size, zoning, fireproofing, parking and rail facilities, neighborhood trends, etc., as a guide for gauging whether it should be rehabilitated or demolished in connection with slum clearance and conservation programs. If perfected and adopted universally, it could also be used effectively by buyers, sellers and brokers as a standard to indicate the condition of regular industrial and commercial properties on the market.

PETER FERMAN

PLAN COMMISSION PERSONNEL who described URA-St. Louis "demonstration" project to develop standard numerical index of physical condition of nonresidential buildings at SIR-NAREB convention (l to r): Commission Member William H. Harrison, Director William Colbain and Research Director John Polland.

Good and bad highway effects. It was at another SIR luncheon that Acting Federal Highway Administrator John A. Volpe, in describing road program effects on realty, said: "Both by choice and necessity, realtors, builders and developers now reckon with factors more fundamental than profits and commissions . . . with values that concern a way of life. You are dealing with urban and suburban areas, with entire communities and their development. . . . The planning of Interstate highway route locations in cities and elsewhere presents a rare opportunity for those interested in industrial zoning. . . . Conflict [with residential areas] may be minimized by locating a controlled-access highway between industrial and residential areas."

Not disputing the overall benefits of the new road program, however, at least two speakers at other NAREB sessions pointed to one possible detrimental effect. At a preconvention NAREB education committee conference at Washington University, Dr. Ernest M. Fisher, of the Columbia University Institute for Urban Land Use Studies, said it also was likely that throughways would "greatly extend areas of blight in cities." Heavy auto and truck traffic are one of the major causes of blight, said Fisher, so in existing built-up areas, particularly residential sections, strips several hundred feet wide on each side of new superroads will probably slip into blight of some degree.

Former NAREB President Henry Waltemade made a similar observation while presiding over another panel on highway acquisition problems. Also at this session, former SIR President Thomas McCaffrey,

continued on p. 17

Realtors elect Miami's Kenneth Keyes as '57 president

For 1957 president, to succeed St. Louisan Clarence M. Turley, NAREB elected Michigan-born but Florida-adopted management and sales expert Kenneth S. (for Scofield) Keyes, former Brokers Institute president, Management Institute vice president, and currently NAREB first vice president

Chunky, broad-shouldered Keyes, born in Morenci, Mich. in 1896, enlisted in the Army after graduating from the University of Michigan in 1917 and left service as an infantry lieutenant. He was a salesman, Alabama manager and district sales promotion manager for B.F. Goodrich until he opened his own advertising agency in Atlanta in 1922. Three years later the Florida real estate boom lured him to Miami, and promptly exploded in his face. But from then on he was wedded to realty, built his Keyes Co. in Miami into one of the largest in the South, with a staff today of some 220 persons. Corporations he heads for investor-clients (many from Cuba and South America) own four large New York office buildings, Montreal's Insurance Exchange Building, and hotels and other large properties in many other cities.

KEYES

Hobby? As a Presbyterian Church elder he has travelled more than 100,000 mi. at his own expense to deliver a businessman's spiritual address, *In Partnership with God,* before more than 400 lay and church groups of almost every denomination. Devotional services are held in the Keyes offices every Monday morning, and the company's income every year is tithed to church and charitable organizations.

4

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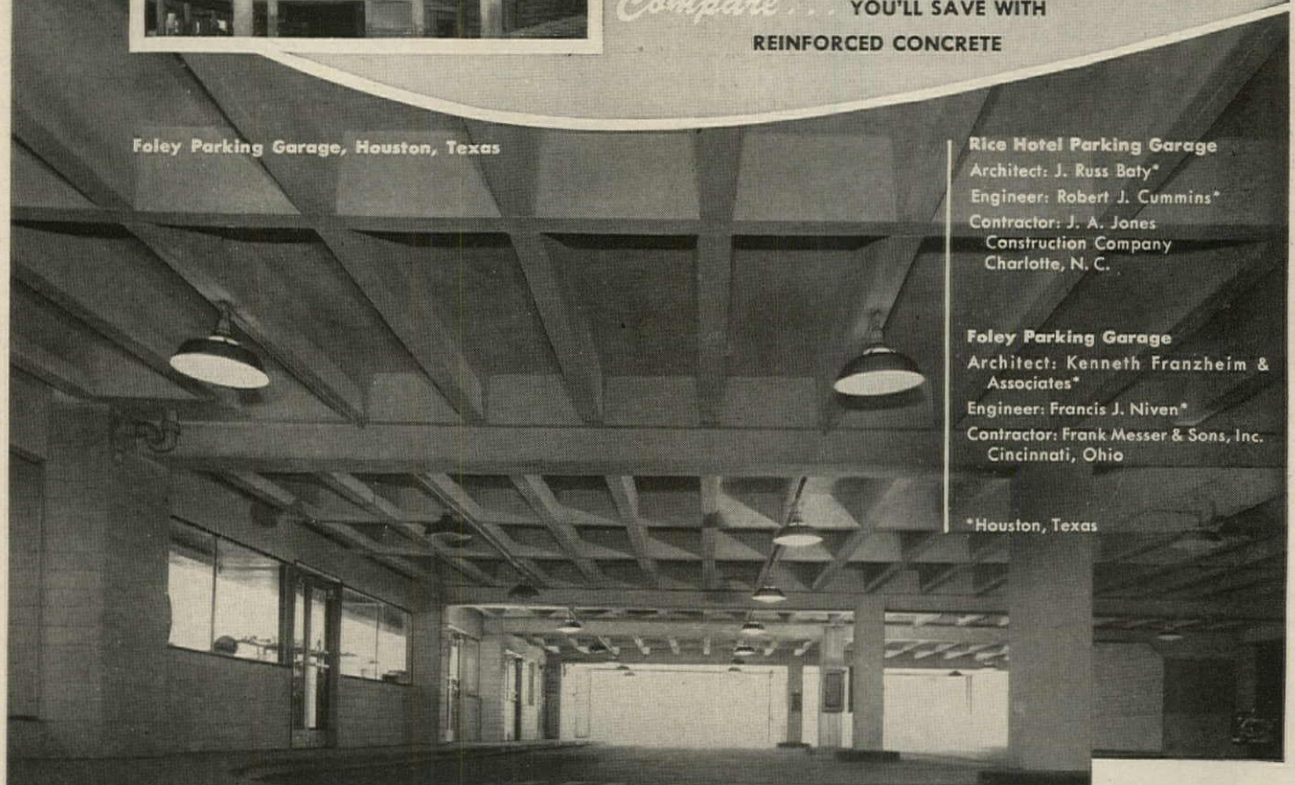

Rice Hotel Parking Garage
Architect: J. Russ Baty*
Engineer: Robert J. Cummins*
Contractor: J. A. Jones Construction Company
Charlotte, N. C.

Foley Parking Garage
Architect: Kenneth Franzheim & Associates*
Engineer: Francis J. Niven*
Contractor: Frank Messer & Sons, Inc.
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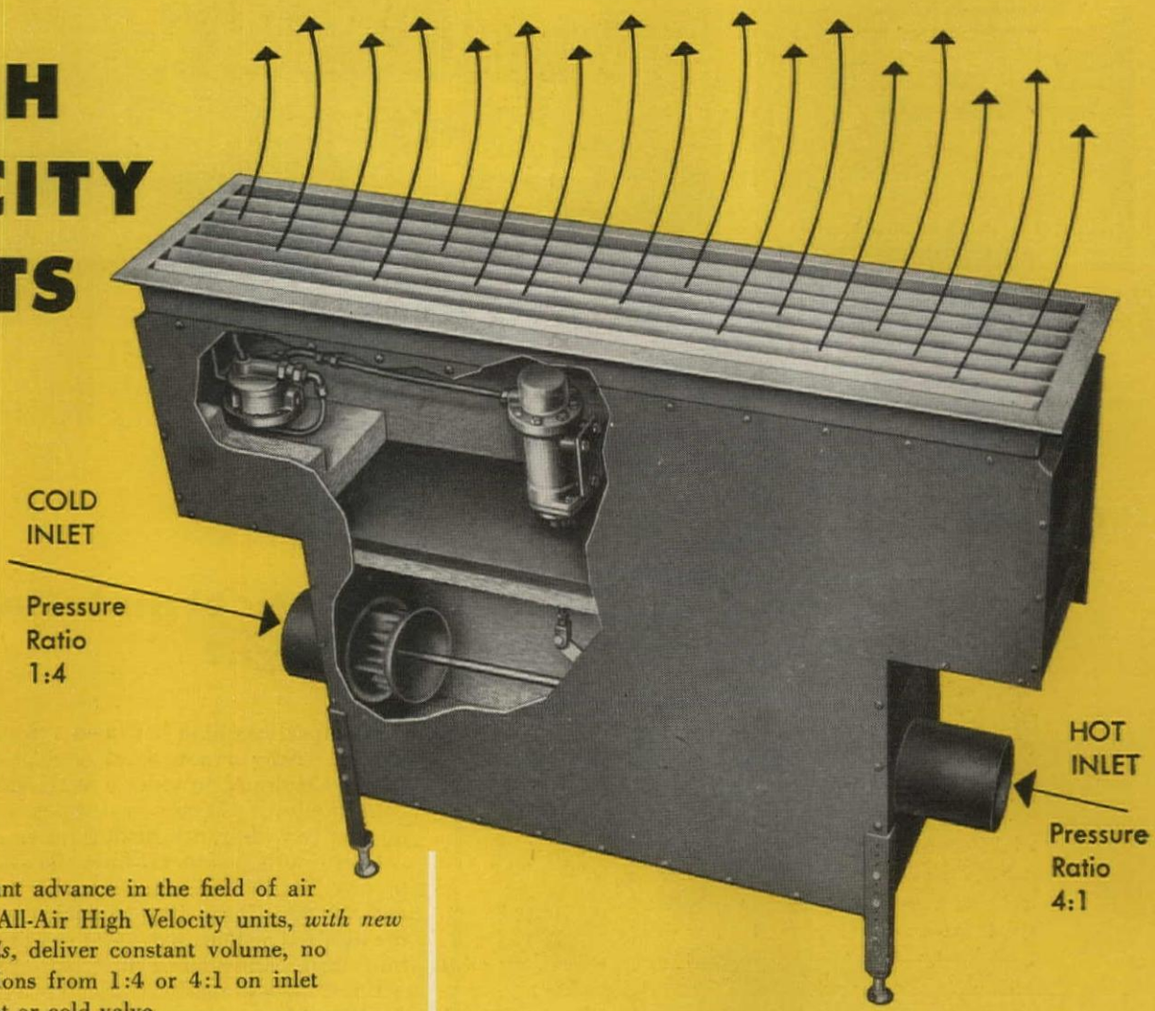

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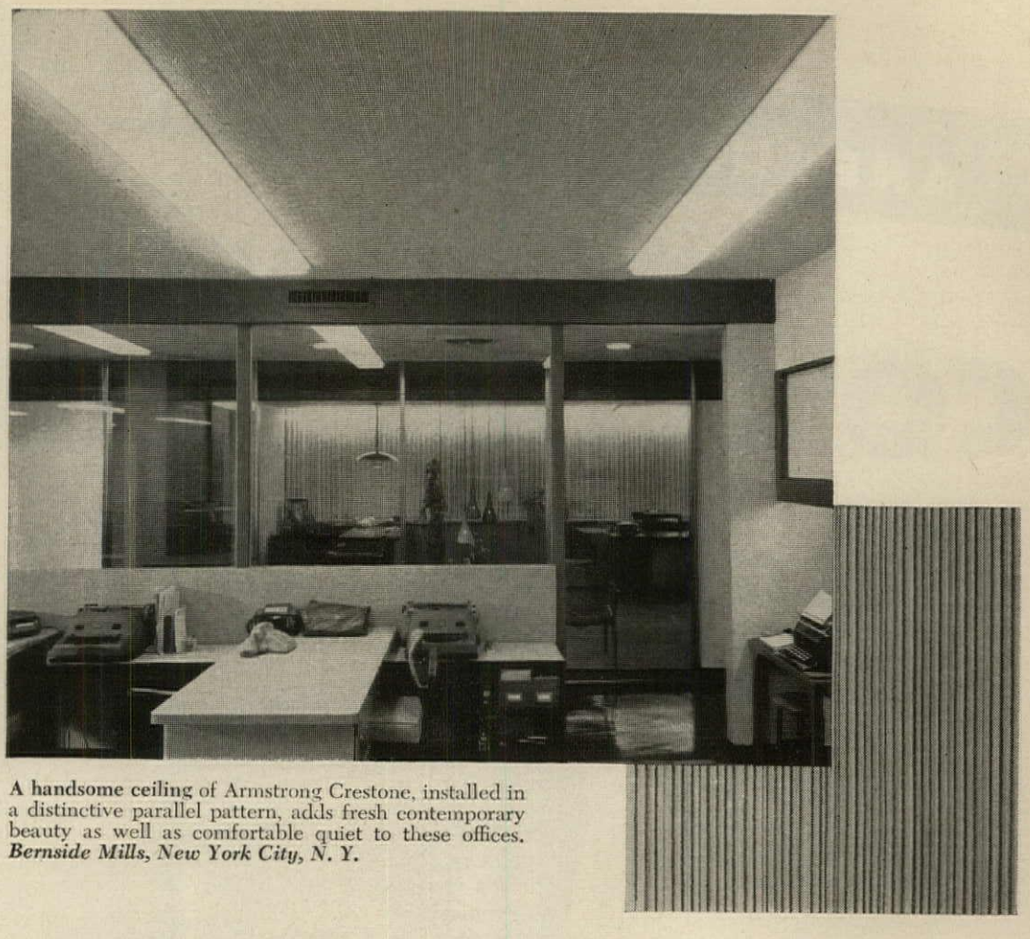
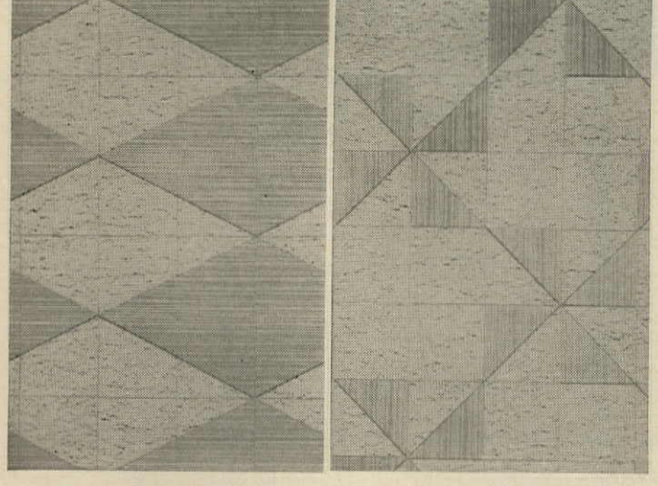
The parquet design of this church school ceiling is achieved with Crestone. Easy to maintain, Crestone can be cleaned or repainted without loss of efficiency.
Community Reform Church, Manhasset, L. I., N. Y.



A handsome ceiling of Armstrong Crestone, installed in a distinctive parallel pattern, adds fresh contemporary beauty as well as comfortable quiet to these offices.
Bernside Mills, New York City, N. Y.

CRESTONE . . .

How does this new acoustical material aid interior design?



Attractive custom ceiling patterns are easy to create with Crestone. This new material can be effectively used in combination with other textured acoustical tiles, such as Armstrong Travertone.

For years the ceiling has been a minor factor in interior design. Now a new kind of acoustical ceiling, Armstrong Crestone, provides a fresh, modern look in sound conditioning. Crestone's distinctive styling permits an unusually wide range of decorative ceiling possibilities.

Crestone is a mineral-fiber tile, striated to achieve a textured surface of contemporary beauty. The ridges and valleys on the face of each tile form strong directional lines of high light and shadow, allow great flexibility in creating interesting patterns.

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of Pittsburgh, said the Pennsylvania Turnpike had shown how an expressway exerts an influence on realty values from 2 to 10 mi. away. While small towns never could have survived the traffic if the turnpike had been routed "through" them, said McCaffrey, towns 3 to 10 mi. away all thrived and prospered tremendously. Along access roads serving the turnpike, he noted, land that sold for $500 an acre ten years ago has now soared as high as $5,000 a front foot for industrial sites.

Cities vs. suburbs. The new Realtors-Planners committee, composed of NAREB members of planning and zoning commissions, held its first formal discussion meeting, heard three papers on planning for city-county areas, for recently annexed areas, and for urban renewal. In the first, Detroiter John A. Dodds described the spreading urbanization of southeastern Michigan and the need "to determine what steps should be taken now on a regional basis to preserve some natural features for future generations." Of more immediate concern to Detroit on another score, he noted that a recent survey by his commission revealed that "23% of the plants within Detroit city limits have some intention of moving outside the city."

Another view was expressed at a City vs. Suburban round table two days later, when St. Louis SIR Robert Saunders suggested that industrial migration to the suburbs to escape city taxes has started to boomerang in some localities—where suburban taxes are now "gradually being increased so they almost equal city taxes."

Other high points of this panel:

▸ Former Management Institute President Henry Beaumont said boom homebuilding around Los Angeles pushed apartment vacancy rates to 10% at one point, deterred new apartment building and depressed apartment site land prices. Within the last six months, however, he has observed what seems to be the start of a recentralization movement of people "tired of fighting the traffic" to and from the suburbs.

▸ Philadelphia's Richard Seltzer reported a comparable recentralization demand for new luxury apartments in his city, but soft spots in its industrial and store rentals. As former occupants leave multi-story in-city industrial buildings, said Seltzer, new tenants soon replace them, but at rentals around 80¢ per sq. ft., compared with $1 to $1.25 the departees were paying.

▸ Appraiser Joseph Kuehnle, whose firm has maintained downtown Chicago data for 30 years, said business volume in State St. stores over the last ten years practically levelled off (soft goods actually declined about 15%). Recently, however, it has started to pick up, he added, because the people involved "have been doing something about it"—through improved traffic and transit planning and facilities. For lack of business growth, downtown land values hardly changed over this period either, he added.

NAHRO sessions hear "red tape blues," cities want more US aid, fewer rules

Formal speeches and informal talk at the annual convention of the National Ass'n of Housing and Redevelopment Officials in New York late in October centered on three subjects:

▸ The conspicuous need for URA and HHFA to develop some "workable program" of their own to remove enough of the bureaucratic hobbles from the urban renewal program so it can really grow and work.

▸ Municipal desires for larger federal subsidies for urban renewal (along with less burdensome federal controls).

▸ Increasing vacancies in public housing—now averaging close to 3.5% nationally—and their possible relation to: 1) integration, and 2) a flight of capable, honest, ambitious "normal" families to escape from a growing percentage of disruptive public housing "problem family" tenants.

Industry in renewal. An encouraging session opened the convention, with top officials of three giant corporations explaining why "industry" was entering the "urban renewal picture."

Clayton P. Fisher Jr., "business climate development consultant" in General Electric's public and employee relations services division, described the leadership many general managers of GE's 143 plants in 112 cities are contributing to local ACTION campaigns as part of their standing assignment to support and participate in community improvement programs. He also frankly acknowledged a second "selfish" motive: "If ACTION's objectives over the next ten years are only 10% realized, the increased sales potential in the electrical industry will be $2 billion for appliance manufacturers, and $300 million increased annual residential revenue for electric utility companies . . . [Besides appliances] GE manufactures turbines for utility companies as well as all of the related apparatus for transmitting and distributing electric power."

Vice President Norris Nash described the part Henry J. Kaiser Co. played in sparking a redevelopment program in Oakland, Calif., its headquarters city. Other local industrialists, he said, also were cooperating "to provide leadership in helping solve Oakland's No. 1 economic and social problem—urban deterioration. Like the nation—Oakland's economy and its people—our people—cannot expand or prosper in the midst of slums."

Molasses impasses. Lifted out of context from his own favorable report, Nash's opening remarks practically summarized the vexation so many other speakers and delegates voiced at almost every other session over frustrating delays, confusion and interagency cross-purpose policies that have become a trait of urban renewal. Said Nash, referring to industry entering the "urban renewal picture": "While 'picture' in this case is a pure colloquialism, may I be literal for a moment and examine this . . . picture? As we look at it, it appears to be a weird, grotesque and unhappy scene as Dali might have created it. The background is studded with anguished multitudes, as in those old horror engravings found in an ancient edition of Dante's *Inferno* . . . masses of naked humanity going through the tortures of fire, serpents or fantastic monsters. Perhaps in the center background is a city hall spire with crumbling masonry beneath. In the foreground we see several busy groups using many different tools in building a variety of improvements—to help the unfortunate horde in the background—and to add a preservative to this city hall's base."

A tally of some of the real, in context, complaints about the tortuous, glacial federal administration of urban renewal was not heartening:

▸ At a press conference, 1956 NAHRO President Robert D. Sipprell said renewal was proceeding "at a snail's pace," and older sections of some cities becoming slums faster than earlier slums were being rebuilt. This was not so much the fault of local authorities, he said, but as a result of excessive federal regulations that are

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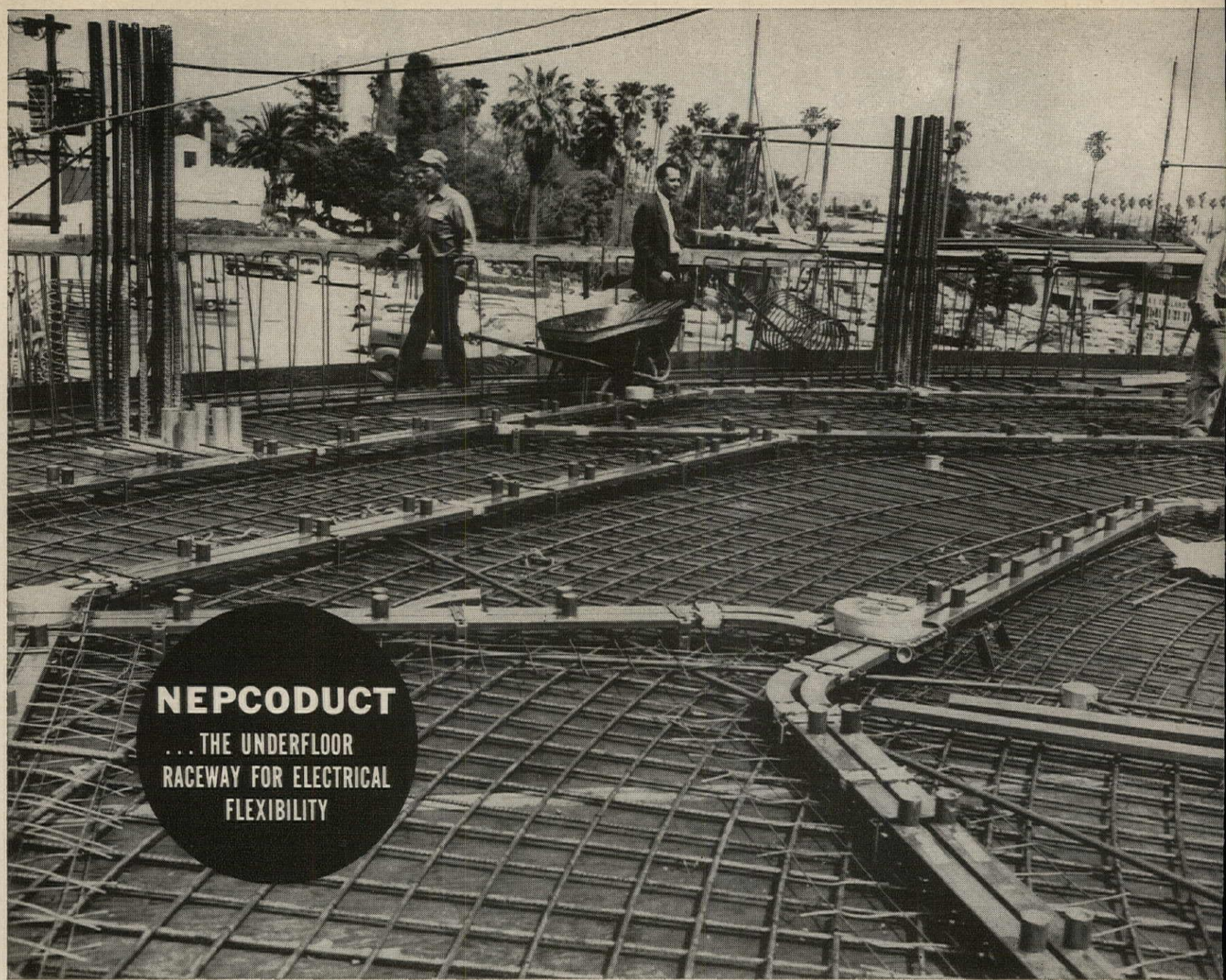
PHOTOS: WALTER DARAN

"CUSTOMERS" who "met" ranking URA, PHA and FHA officials on an agency-and-client cross-examination panel included Philadelphia's Mayor Dilworth (l) and Chicago Builder-Redeveloper Herbert S. Greenwald. Dilworth rapped the federal program of only 35,000 units a year of new public housing as "a disgrace in an enlightened country." Greenwald, who recalled that he once got about a 3.5% premium for an FHA Sec. 608 mortgage, disclosed that he was "playing the market," because he has no take-out so far for the Sec. 220 mortgage for his huge Lafayette Park-University City (formerly Gratiot) redevelopment project in Detroit. Ground was broken for this a month ago. If credit conditions don't ease by the time buildings are completed, he explained, he may have to fall back on Fanny May, absorb a discount of about 2.5%.



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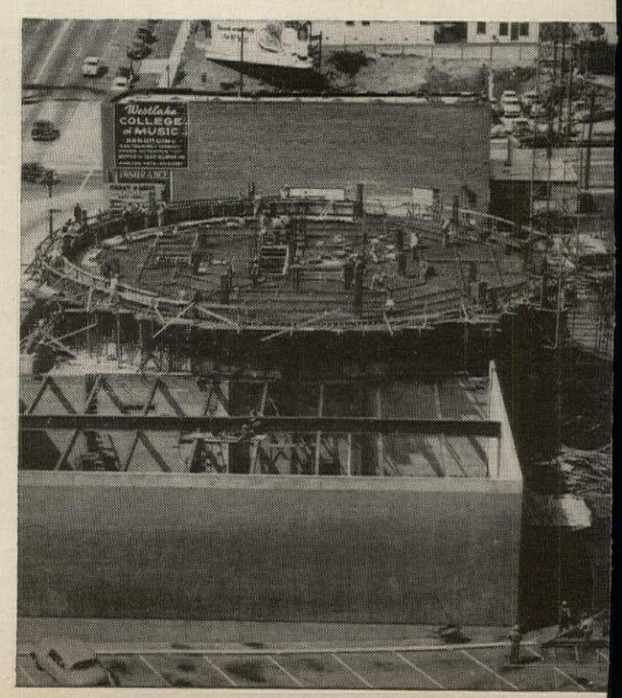

The University of Texas M. D. Anderson Hospital & Tumor Institute. Architect: MacKie and Kamrath.

We wish we could pin a sample of Kalistron's new Shadowline pattern to this page. Then you could see its beauty of design, feel its deep texture, conjure up dozens of new decorative ideas and applications it makes possible. There's absolutely nothing like it on the market — certainly nothing with such a rich texture that will yet stand up to brutal punishment, careless use or hard wear.

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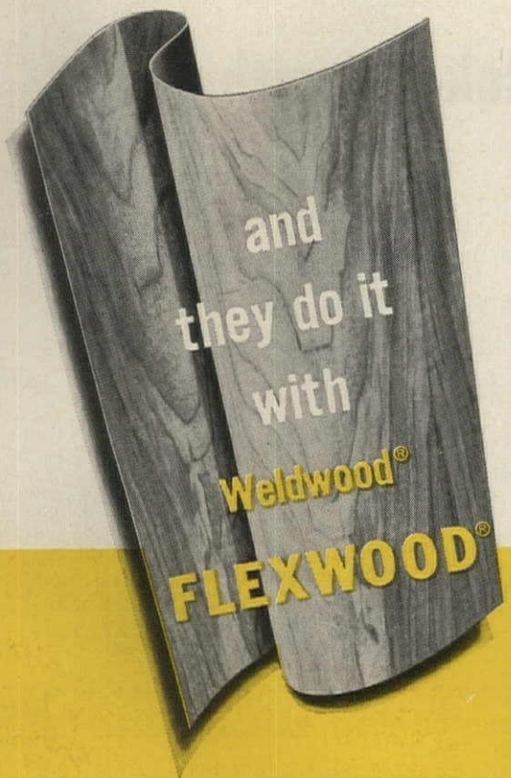

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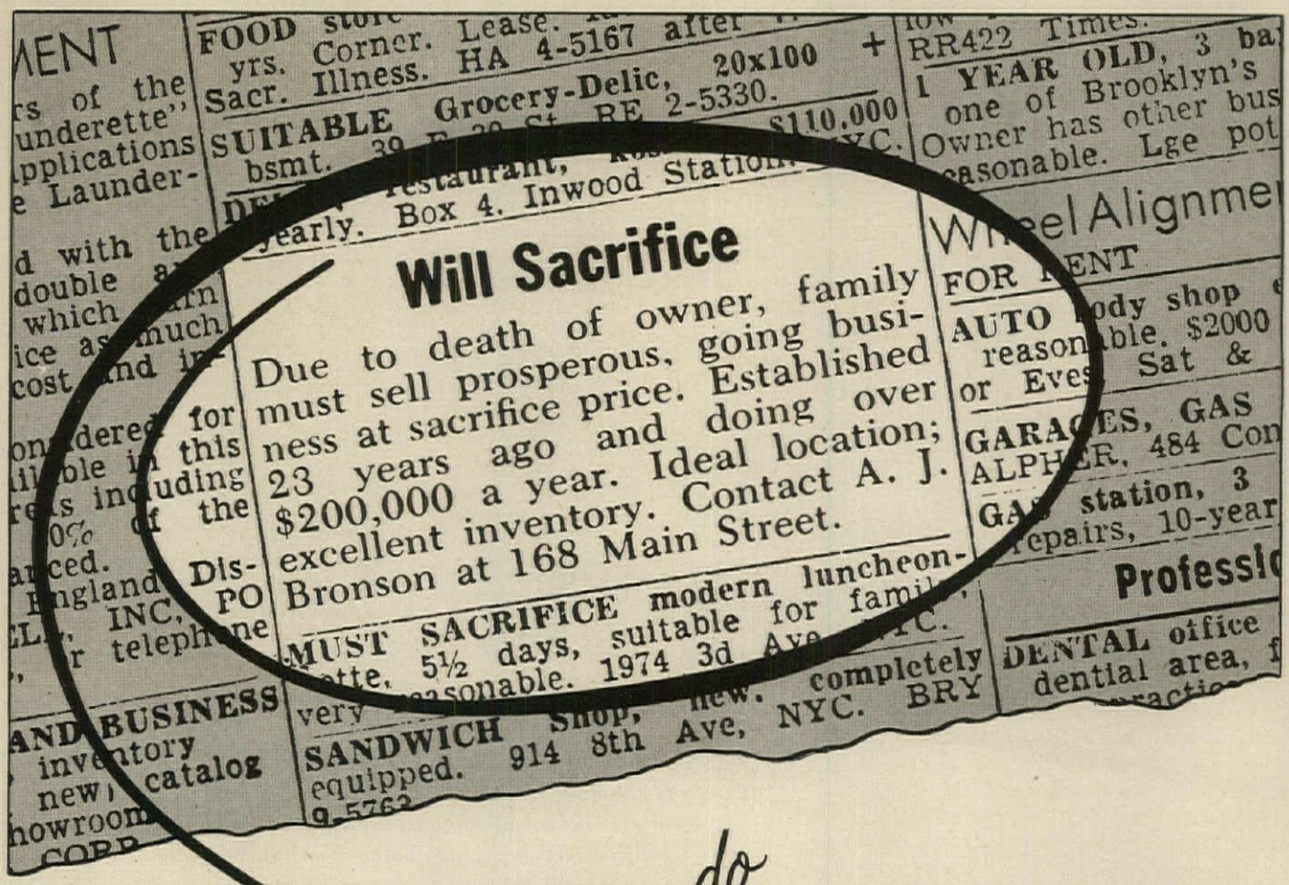

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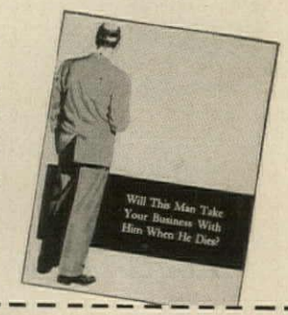

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so narrow and complex that local officials are unnecessarily hampered.

▸Former (1953) President Brown Nicholson, of Atlanta, protested that inconsistent federal rules were blocking construction of low-income multi-family renewal housing in his city. For 18 years, PHA approved nonfurred public housing structures that proved entirely satisfactory. But now FHA refuses to approve identical construction for FHA Section 220 urban renewal mortgage financing. Result: rents would have to be about $65, rather than $45 to $50 a month, and the higher charge is just too far above the reach of the nonwhite market for which the city would need to spur the construction of new housing as a key part of its renewal program.

▸Another session was told about two peculiar, intricate rules covering FHA Sec. 221 urban renewal houses for persons displaced by slum clearance or public works. FHA will not approve such houses in another municipality unless the latter's governing body consents (regardless of the fact the houses would have to conform to all the building or zoning rules of the community anyway). And, if the second community generated some displacees of its own, they could not buy any of these houses in their own town on Sec. 221 terms unless this community also had an official, Washington ratified "workable program" for urban renewal.

▸Another warning sounded at this session: Washington is now reported to be disallowing credit for local community facilities that serve an urban renewal area if they are started or finished ahead of an approved schedule for the project. Municipalities can apply the costs of such projects toward the two thirds to one third federal-local division of renewal project costs. Previously completed public works obviously should not qualify for credit retroactively. But now it would appear foolhardy for a city to proceed with any otherwise-eligible supplementary renewal facilities until Washington has crossed every T and sanctioned every possible flagstop on the timetable.

▸New President Knox Banner expressed the hope that HHFA would soon put into effect a series of special "task force" recommendations to eliminate considerable renewal red tape, mainly by giving regional offices much greater authorty. Other delegates, however, feared that regional officials would seldom use proposed "permissive" powers of approval, but still refer all matters of judgment to Washington.

All in all, it was no wonder the final convention resolutions 1) reiterated last year's protest against "the accelerating trend toward federal domination of local public housing and renewal programs" at the expense of "local autonomy," 2) suggested that the newest, supposedly liberalized URA tenant relocation payment rules may really be "more restrictive" than the previous rules, and 3) urged HHFA to give "special attention" to the warning in the report of its advisory task force that "unless the federal government is willing to take the risk that local public agencies will make mistakes, it cannot adhere to the concept of urban renewal as a local activity, locally administered, nor can it permit the experimentation out of which can come progress in urban renewal as a whole."

Larger subsidy appeals. Another resolution urged further study of the ability of local communities to swing broad renewal programs within their own "financial limitations," and the feasibility of increasing the present two thirds federal contribution toward net public costs.

On this score, Mayor Dilworth proposed an 80-20 cost division, because the US and state governments have usurped most taxing powers. Banner likewise blamed limited municipal tax sources for their inability to "afford" big renewal programs, and suggested study of the 90-10 federal-aid formula adopted for highway aid.

Lawrence M. Cox, of Norfolk, elected chairman of NAHRO's redevelopment section, also said it was very hard for cities to pay one third of these costs, and thought Congress would be found in a "receptive mood" to increasing the US share.

Mayor and architects clarify report on big estimate error

Early last month Detroit officials were dismayed when latest estimates for their huge civic center convention hall soared to $49.4 million, almost $7 million over spring estimates of $42.5 million. After talking to reporters, Mayor Albert E. Cobo was quoted in wire service reports published in many cities as attributing $6 million of the increase to "an architect's error," including "a $2,245,000 blunder" from underestimating the required amount of structural steel. Increased labor costs and higher post-strike steel prices were blamed for the rest of the boost, with some reports giving an erroneous impression that these were some fault of the designers.

Subsequently Mayor Cobo told FORUM that he had never used the word "blunder," and in no way had intended to disparage the reputation of Giffels & Vallet, Inc., architects for the structure. He had been "very careful," he said, not to accuse the architects of anything but misjudgment in the amount of steel that would be required. "Somebody did make a mistake, that's obvious," said Cobo, "and as mayor it was my job to question it."

Giffels & Vallet had promptly requested the mayor to help correct the "misconception" that arose from some reports and interpretations of his widely publicized remarks. Said Executive Vice President Raymond F. Giffels in a detailed letter denying it had made any errors that cost the city anything: "In February, from very preliminary plans . . . we estimated the structural steel at 17,500 tons . . . we also estimated the cost per ton at $320 . . . We later . . . because of the steel strike . . . advised [that] this estimate should be increased by $52 per ton . . . . Our February estimate was low by about 1,500 tons, or about 8.5%. Any architect or engineer will tell you that no greater degree of accuracy can be expected in an estimate made from preliminary designs. We at no time represented our estimate to be a maximum or exact figure."

DESIGN AUTHORITIES who spoke on the challenges and problems of large scale redevelopment projects at NAHRO meeting were (l to r): Planning Consultant Maurice E. H. Rovital, who described New Haven's proposed central city rejuvenation; New York AIA Chapter President Robert M. Cutler, of Skidmore, Owings & Merrill, coordinating architects for New York's immense, proposed $175 million Lincoln Square project, and Engineer Edgardo Contini, of Victor Gruen & Associates, who described plans for redeveloping downtown Ft. Worth.

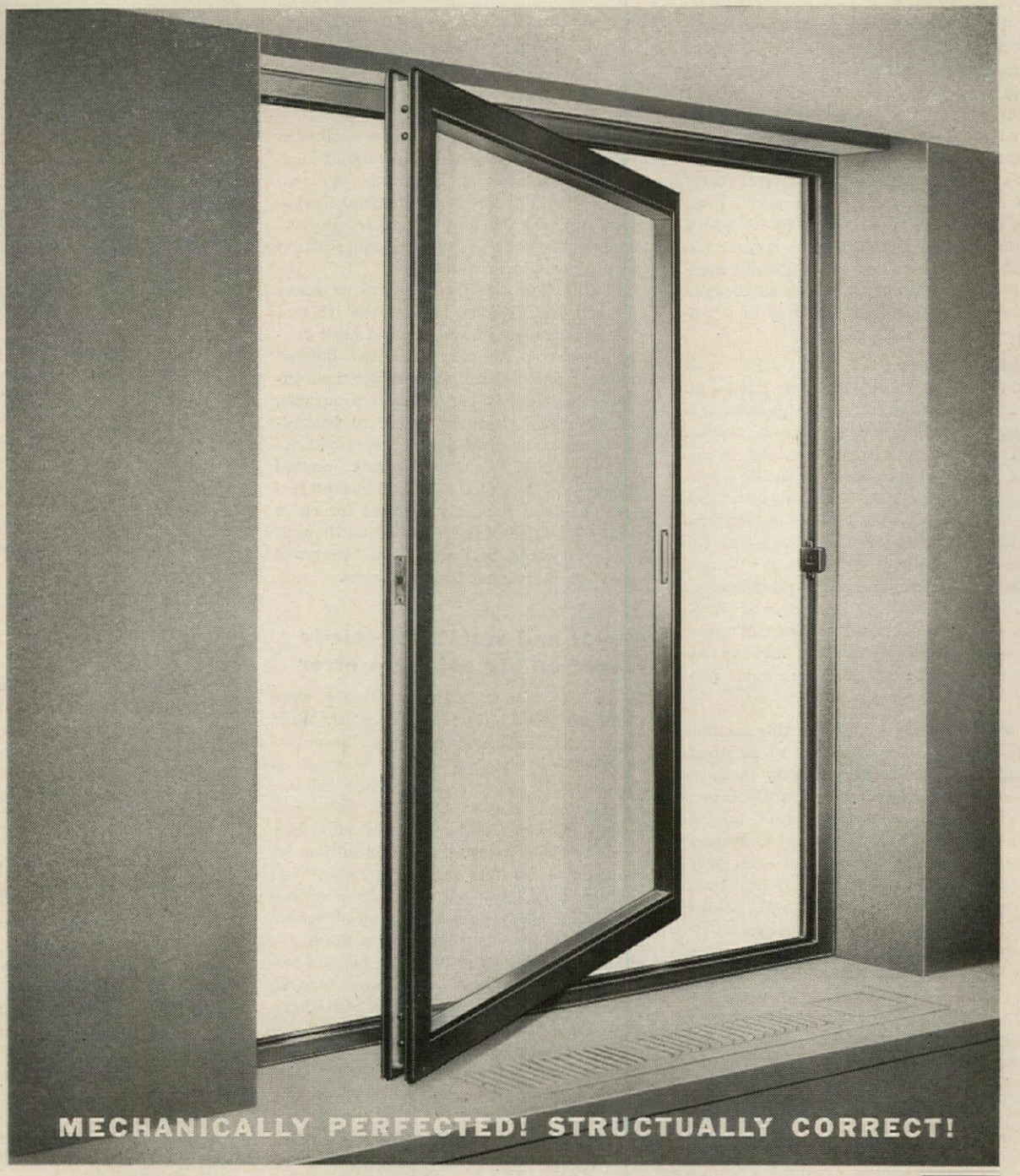
Milwaukee orders refilling of $4.5 million building hole

In 1955 Henry M. Blume, president of Beacon Federal Savings & Loan Assn., announced a $100 million redevelopment plan for 24 downtown Milwaukee blocks, including a $4.5 million Beacon S&L building at one of the principal street intersections.

Blume engaged the Bank Building & Equipment Corp. of America, with Grassold-Johnson & Assoc. of Milwaukee, as associate architects. A foundation was dug, but in Dec. '55 work was halted while a NABOM building service panel reviewed the plans. Last March, the Federal Home Loan Bank Board took control of Beacon, and began a study of its books. The board charged that Beacon had made unsecured loans, exceeded maximum loan limits, and had been careless in safe-guarding assets.

Through last winter, spring and summer, the excavation collected beer cans, trash and storm water. Finally last month city Building Inspector Harry S. Glisch invoked a rarely used state law that prohibits leaving an excavation open more than six months. He ordered Blume to proceed with his building, or fill the hole. By month's end it was being filled, and, said Blume, it will be used as a parking lot. Added a Milwaukee sage: sic semper grandiloquence.

NEWS *continued on p. 24*



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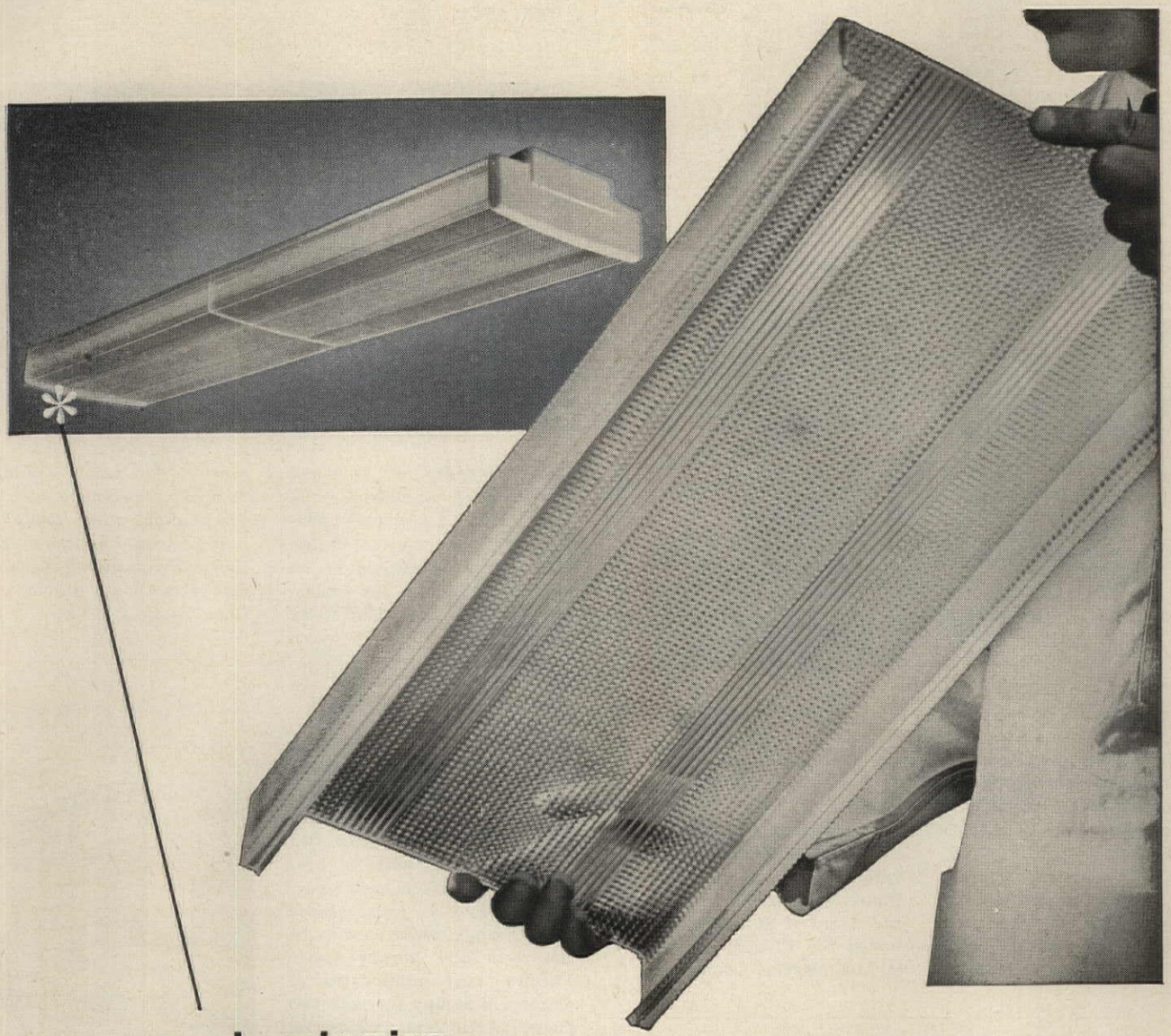

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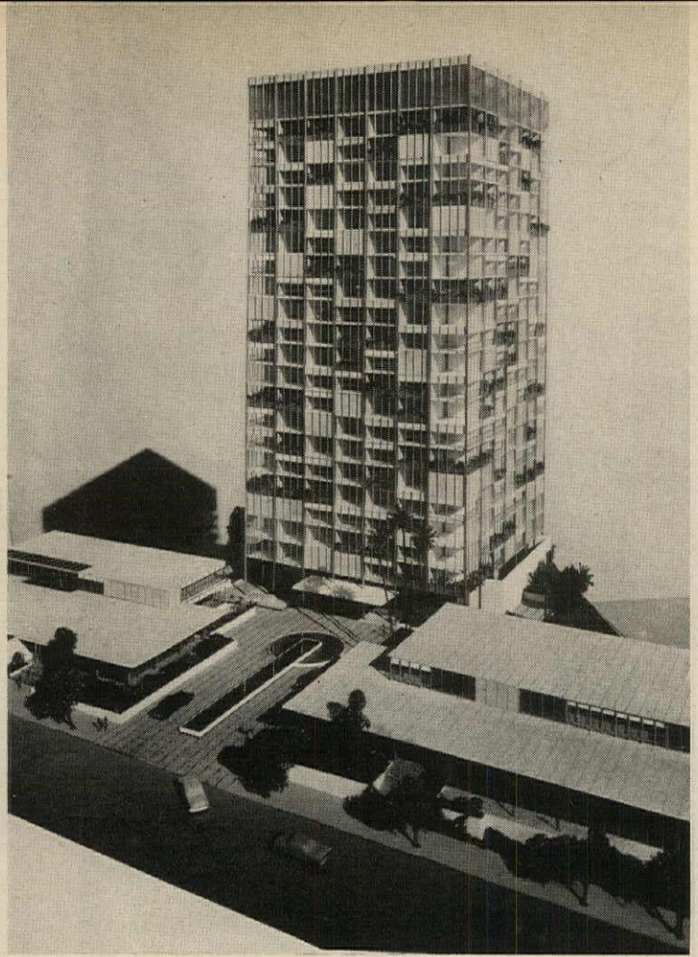
A roundup of significant proposals



ERWIN LANG

TERRACED "HOUSE IN THE SKY"

Architects Pereira & Luckman have included such luxuries as a swimming pool, cabanas, private gardens, and a health club in their plans for a $10 million, 102-apartment cooperative in Beverly Hills. The Beverly Tower will be topped by a Sky Club, with a dining room, bar and private room for dances and parties. Each of three levels of the garage under the 22-story tower will have a separate entrance from the street and a private elevator to tenants' apartments. Plans were announced after the Board of Supervisors eliminated the 13-story restriction in Los Angeles County.

MASTER PLAN FOR ROCHESTER, N.Y.

Voorhees, Walker, Smith & Smith of New York and Faragher & Macomber of Rochester designed this $45 million civic center for the city and county of Rochester. The tower is a city-county office building. Behind it (l. to r.) are city and county public safety buildings, courts, and the existing War Memorial Auditorium. Structural steel construction with limestone façades will be used for all buildings. Large white building (upper right) is existing Genesee Trust Co., also designed by Voorhees, Walker, Smith & Smith,

IRA WRIGHT MARTIN

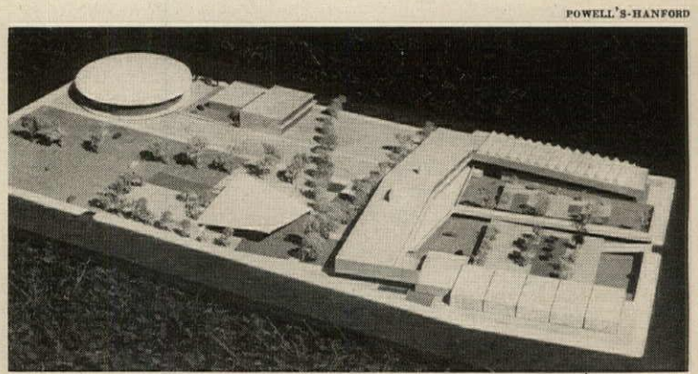
INFORMAL UNDERGRADUATE LIBRARY

The University of Michigan commissioned a Detroit firm, Albert Kahn associated Architects & Engineers, to design a library which would be an intellectual center for undergraduates of all University schools. The result is a highly flexible arrangement of rooms for reading, group study, typing, discussion and audio facilities. Freestanding bookcases can be moved to provide additional space.

TEN-STORY BUSINESS SCHOOL

New York's Wall Street area is the site for a $3 million Graduate School of Business Administration for New York University. The exterior will be gray brick with a grid pattern of darker cast stone. The windowless area (floors two through seven) will be classroom and library space. Faculty and administrative offices will occupy the next two floors. Architects: Skidmore, Owings & Merrill.

POWELL'S-HANFORD

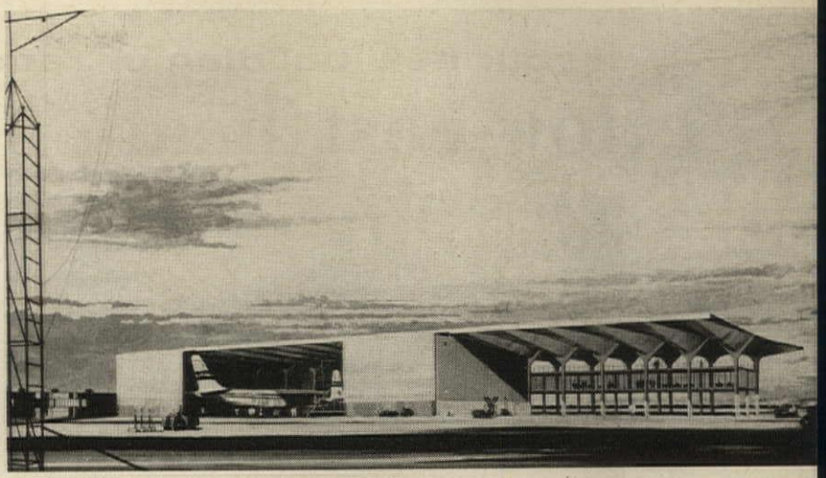


COMBINATION CITY-COUNTY CENTERS

The City of Hanford and County of Kings in California joined forces to have a government center study made by Architect Lawrence B. Alexander and Engineer Albert Dorman, both of Hanford. The plot plan proposed (l. to r.): a round auditorium, police department, two-story office building, and library with curved roof for Hanford. County office buildings, jail, and library are at right.

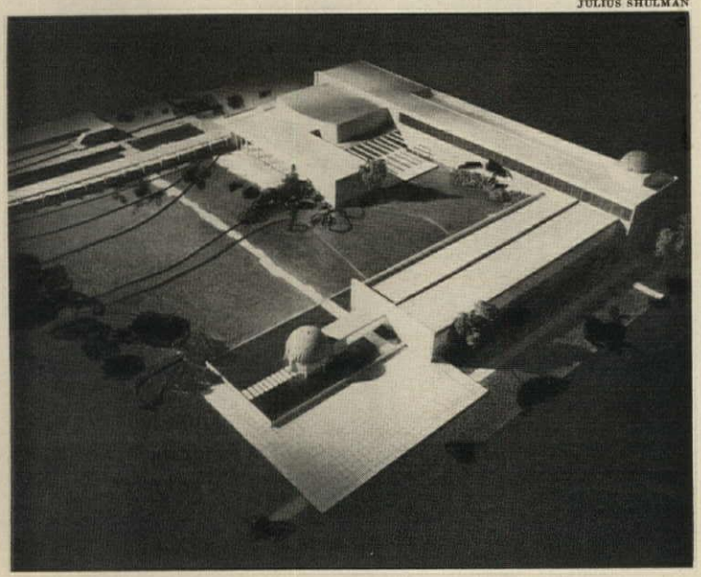
announced last month

JET-AGE HANGAR IN MIAMI



Six DC-8 jets can be serviced at once in this hangar being built in Miami for National Airlines. Ammann & Whitney of New York designed the self-supporting 105′ cantilevers of thin-shelled corrugated concrete slabs. A special problem was how to protect 42′ high tail sections of DC-8's. A combination of sliding doors, independent of the roof, and inward overhangs, will make the work area weathertight. Planning and control departments can oversee progress from the elevated, glass-enclosed midsection offices (r.). National will lease the hangar from the Dade County Port Authority.

JULIUS SHULMAN



MODERN NEIGHBOR FOR IVIED WALLS

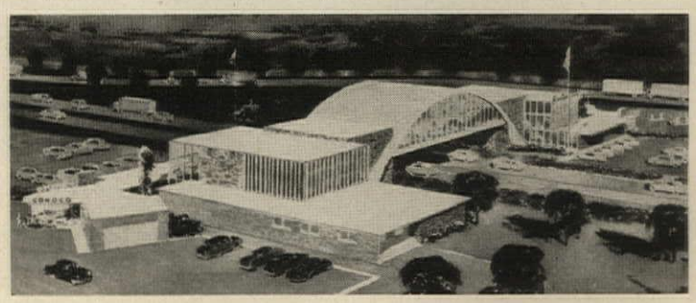
Architects Richard Neutra & Robert Alexander of Los Angeles designed a $2 million campus for venerable St. John's College, Annapolis, which reflects the changes made in its curriculum. The design for the new buildings, across the street from the old State House, has already provoked comment from Annapolis residents accustomed to the ivied walls of the 260-year-old campus. The auditorium (upper center) will honor Francis Scott Key, class of 1796.

BLUE-AND-GOLD SHEATH

Color-conscious students and faculty of the New York Fashion Institute of Technology should approve the modish sheath of anodyzed aluminum in two-toned blue, gold trimmed, on their new building, started last month. Cost: $7.7 million; Architects: de Young, Moscowitz & Rosenberg.

TURNPIKE STOP-OVER IN OKLAHOMA

Motorists on the Will Rogers Turnpike will be able to dine in a glass-enclosed restaurant suspended over the roadway with a minimum loss of travel time while their cars are being serviced. This car and passenger oasis at Vinita, Okla., was designed by Hudgins, Thompson, Ball & Assoc., of Oklahoma City. It will cost $1.3 million.



SUBURBAN HEADQUARTERS FOR CHICAGO FIRM

HEDRICH-BLESSING

Architects Perkins & Will of Chicago designed the general headquarters of the International Minerals & Chemical Corp., expected to cost $3.5 million. The largest building (center) will house corporate administrative offices; three-story building at left is for staff and operating divisions. The cafeteria (r.) is connected to the administration building by a lounge-auditorium. The new buildings will add 120,000 sq. ft. of floor space to thec ompany's research laboratories on the same Skokie, Ill., site.

for news about TRENDS—*p. 29*

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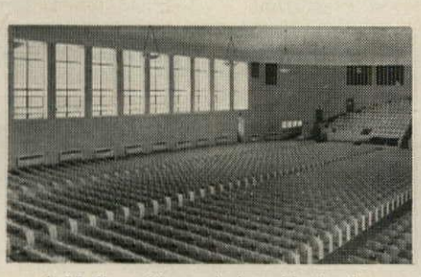

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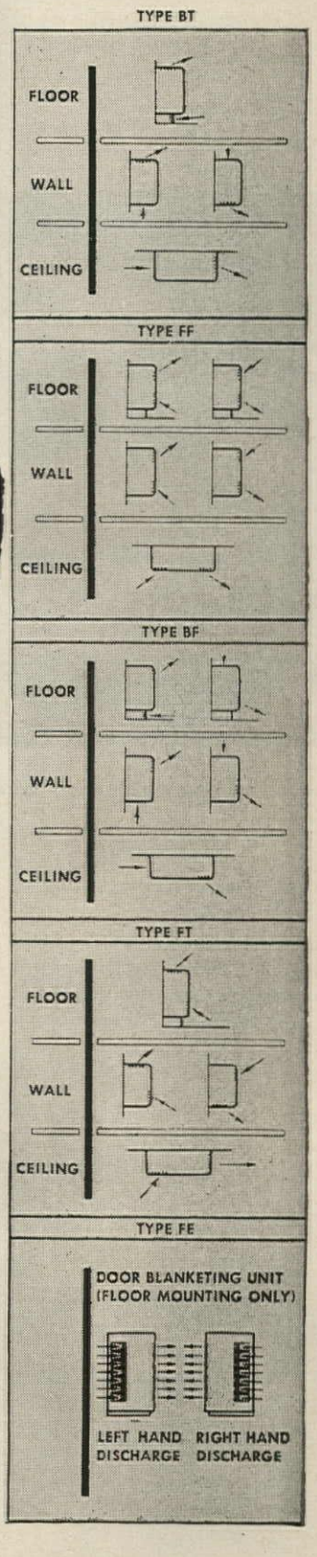

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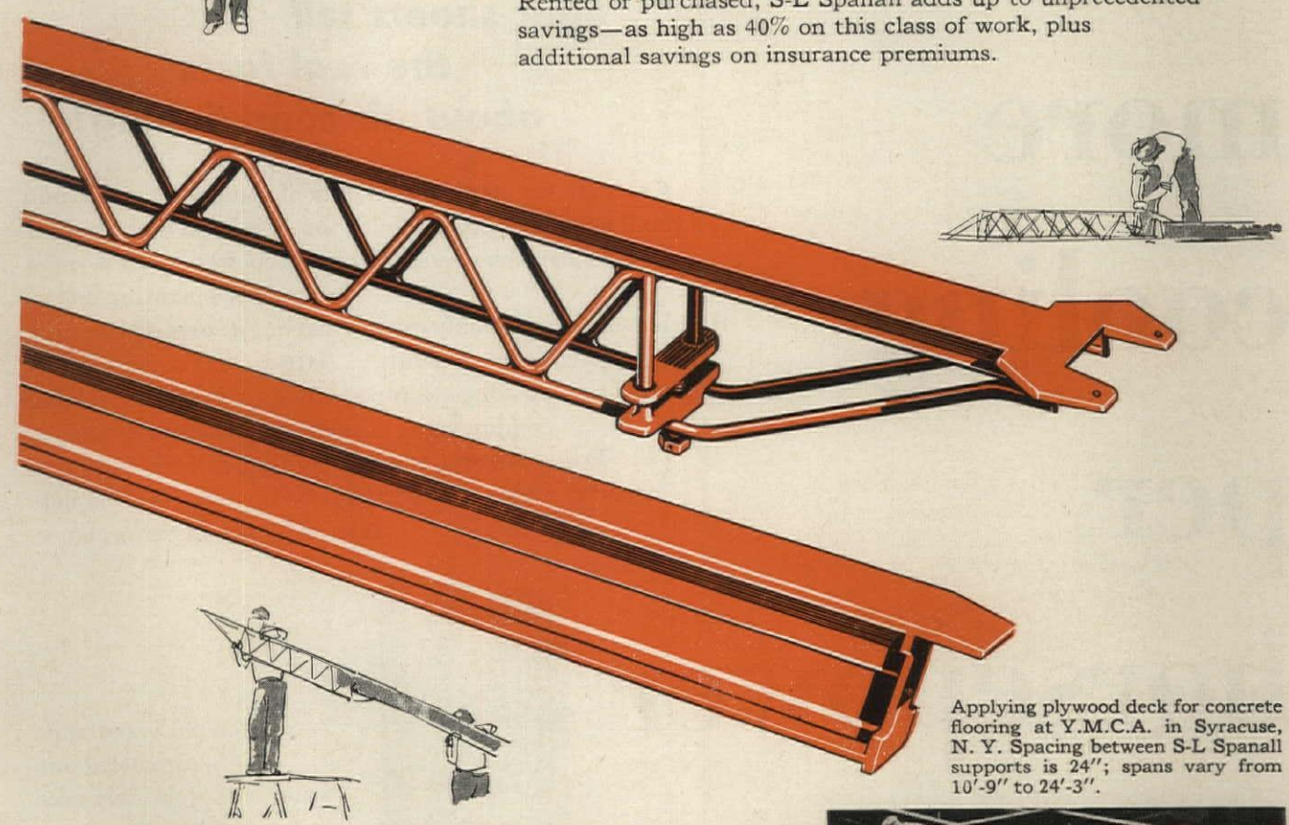
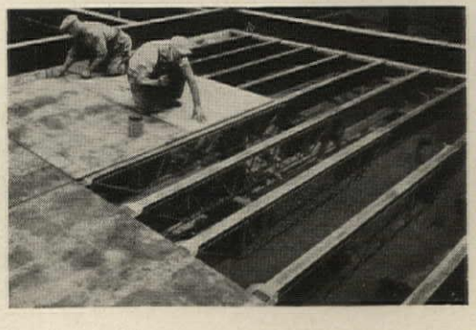


Applying plywood deck for concrete flooring at Y.M.C.A. in Syracuse, N. Y. Spacing between S-L Spanall supports is 24″; spans vary from 10′-9″ to 24′-3″.



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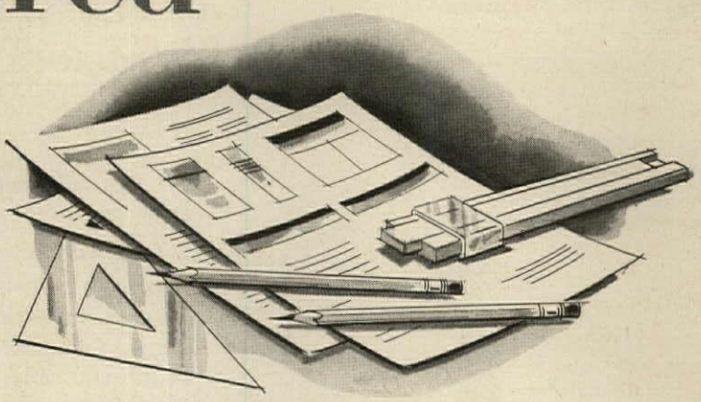

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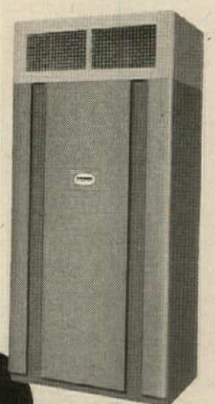

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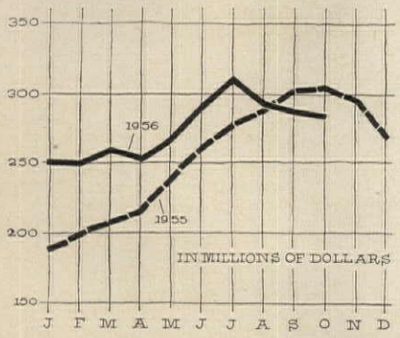
BUILDING VOLUME: Government predicts $46.4 billion spending next year, 5% gain; commercial outlays dip

Commerce and Labor Dept. officials last month predicted that new construction in 1957 would total, $46.4 billion, a 5% gain over this year, and just a shade under the FORUM forecast (AF, Oct. '56).

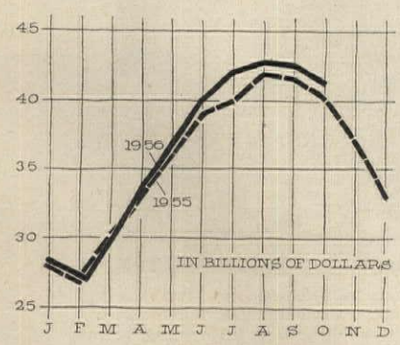
The government agencies predicted private expenditures would reach $31.4 billion, compared with FORUM's higher $31.9 billion forecast. In public construction, however, the agencies foresaw outlays totalling $15 billion, compared with this magazine's slightly lower $14.7 billion forecast.

According to the government forecast all types of nonresidential building will increase next year except commercial, which will repeat this year's final volume of about $3.3 billion. Within the commercial category outlays for warehouse, office and loft buildings are expected to increase, but only to be offset by declines in spending for stores, restaurants and garages.

1956 closing strong. As 1956 drew to a close, new construction expenditures totalling $36.9 billion for the first ten months of the year represented a gain of $946 million, or 3% over comparable 1955 spending.



PRIVATE COMMERCIAL construction outlays in October were $287 million, compared with $306 million in Oct. '55, the second month in a row they failed to exceed spending a year earlier. For the first ten months of the year, however, they exceeded comparable 1955 expenditures by 11%.



TOTAL CONSTRUCTION EXPENDITURES in October were $4,126 million, compared with $4,037 million in Oct. '55, according to Commerce and Labor estimates. Despite a seasonal decline, private nonresidential outlays were $793 million, still just a shade above September's $788 million.

The disappointing big drag in new homebuilding expenditures had grown into a $1.1 billion decline for the year in that category by the end of October, which was just about offset by an increase of $1.0 billion in private nonresidential building. Helping put total private outlays $178 million ahead of their 1955 volume were big increases in spending by public utilities firms.

Another important mainstay in pushing 1956 total construction volume ahead of 1955 was public spending, up $768 million in the January-October period.

Commercial building slide. In private construction, outlays for new commercial buildings dipped below comparable 1955 spending in September and October (see chart). Nevertheless, they were still $260 million or 11% ahead of last year for January-to-October, and could claim to account for more than the total $178 million advance in all private nonresidential building in this period.

For the first ten months of 1956 in the commercial field, outlays of $1.1 billion for warehouses, office and loft buildings were $188 million, or 21% ahead of comparable 1955, spending, and expenditures of $1.6 billion in the stores, restaurants and garages subcategory were up $72 million, or 5%.

EXPENDITURES BY BUILDING TYPES

(millions of dollars)

	Oct. '56	First 10 months 1956	1955	%±
PRIVATE BUILDING				
Residential (nonfarm)	1,350	12,789	13,897	—8
Nonresidential	793	7,239	6,218	+16
Industrial	274	2,524	1,952	+29
Commercial	287	2,736	2,476	+11
Offices; lofts; warehouses	130	1,103	915	+21
Stores; restaurants; garages	157	1,633	1,561	+5
Religious	76	625	606	+3
Educational	49	443	403	+10
Hospital; institutions	31	264	295	—11
Public utilities	474	4,218	3,828	+10
*PRIVATE TOTAL	2,751	25,652	25,474	+1
PUBLIC BUILDING				
Residential	25	230	221	+4
Nonresidential	371	3,404	3,620	—6
Industrial	41	362	653	—45
Educational	227	2,136	2,056	+4
Hospital; institutions	30	258	286	—10
Military	143	1,166	1,084	+8
Highways	585	4,365	3,852	+13
Sewer; water	122	1,072	916	+17
*PUBLIC TOTAL	1,375	11,325	10,557	+7
*GRAND TOTAL	4,126	36,977	36,031	+3

**Minor components not shown, so total exceeds sum of parts.*
***Less than one per cent.*

BUILDING MONEY: New rules for GSA lease-purchase bids

The General Services Administration capitulated to tight money last month. Having failed to obtain any lease-purchase financing bids in September for a $1.6 million Post-Office-Court House in Council Bluffs, Iowa, and a $12.3 million communicable diseases center in Atlanta (AF, Nov.), it issued a revised set of bidding rules and called for new bids on Dec. 20. It likewise rescheduled bid openings on six other projects to that date (federal structures in Abingdon, Va., Albuquerque, Burlington, Iowa, Green Bay, Wis., Huntington, W. Va., and Kansas City, Kan.), and also made these subject to the liberalized rules.

The three main changes by GSA in its effort to obtaining financing within the equivalent of a 4% interest rate on a federal lease-purchase agreement:

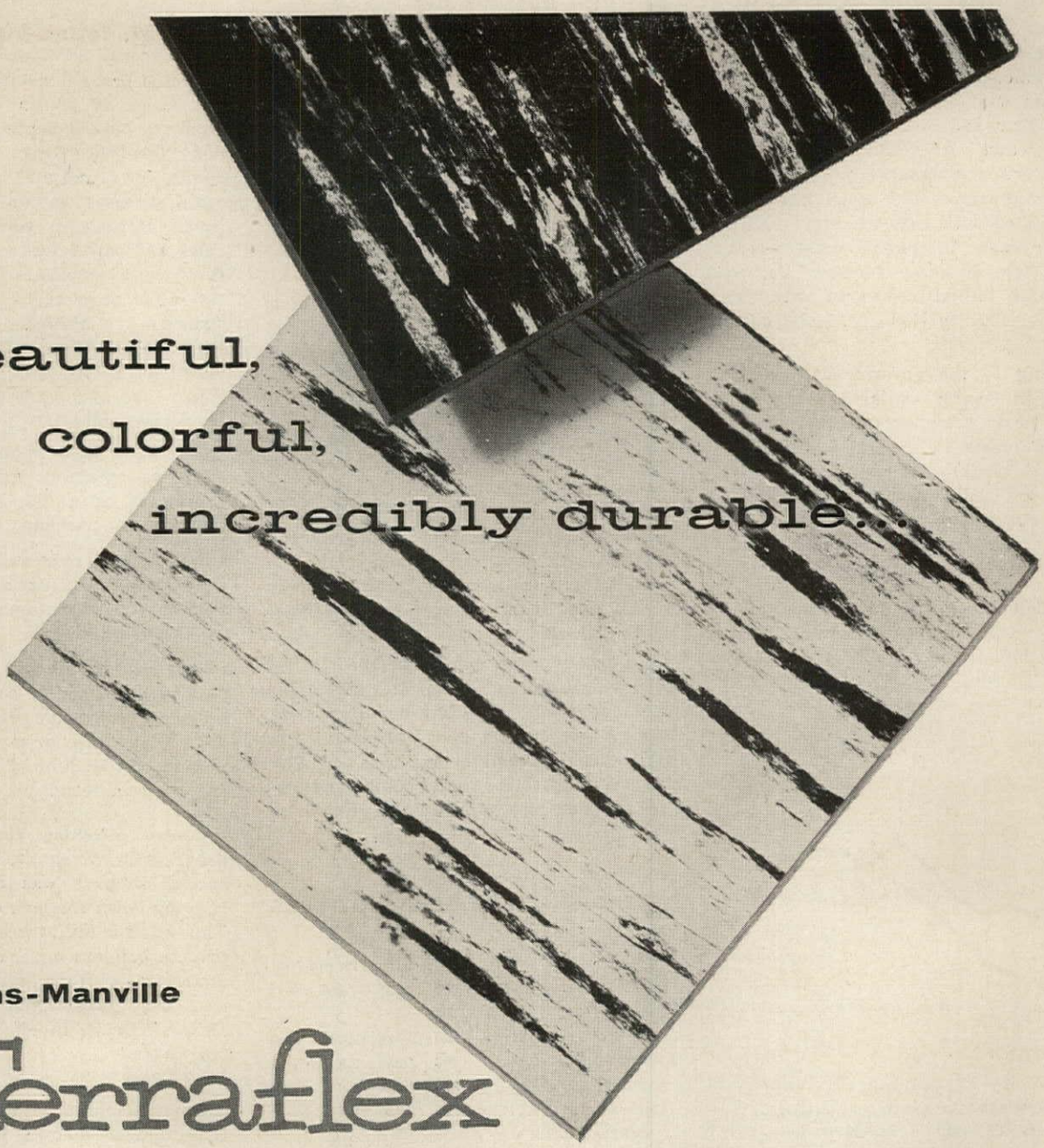
- Bids will be requested only on a "package" basis for construction and financing together (no more separate alternate bids on either building or financing).
- Bids will be allowed on either 10-year or 25-year terms, or both.
- The government's right to repay the unpaid purchase price (at a penalty premium) will be limited to the last half of the contract term.

Pentagon recruiting Fanny May. Another program in which the government had a special interest was also in danger or bogging down for lack of mortgage funds. This was the military housing program by private builders under Capehart act FHA financing (with the builders acting as owners, but under guarantees from the Defense Dept., in effect really only contractors).

Because of increasing difficulty in finding permanent mortgage lenders to make these defense housing loans, the Pentagon has asked Fanny May to reconsider its purchase price policies on such paper, and issue commitments to buy it at par, rather than at discounts and fees that make its net price 97.5%. Some time ago, before the market was so tight, Fanny May refused a similar request, but the growing concern of the Pentagon that defense housing may soon come to a halt without such aid, it is felt, may now lead Fanny May to reverse its position.

Public works financing. During the past year a considerable volume of local public works projects was deferred in the hope of obtaining better financing terms in the future. In many of these cases, however, the pressure of necessity is now so great that the projects must go ahead regardless of conditions. Despite a rise in the average yield on tax-exempt issues from 2.64% a year ago to 3.12% and higher at present, the volume of new state and local flotations rose from $3.97 billion in January-September, 1955, to $4.05 billion in the corresponding period this year.

TRENDS *continued on p. 32*



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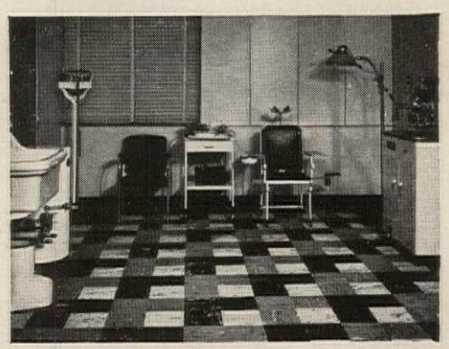

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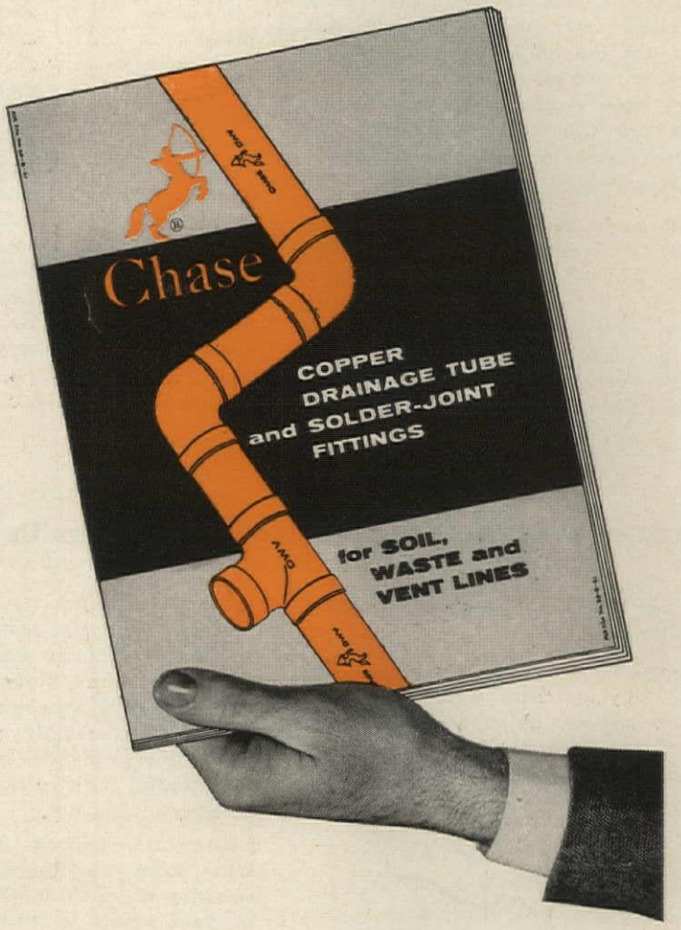

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TRENDS

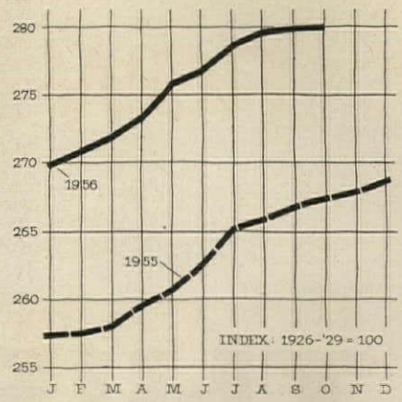
BUILDING COSTS: Uptrend levels off temporarily; New York shows biggest increase, 7.7%

Nonresidential building costs advanced only 0.1, from 279.8 to 279.9 from September to October, the smallest increase since February-to-March 1955, on the index compiled by E. H. Boeckh & Assoc. (see chart). One stabilizing factor: the continued steadiness in building materials costs, which stood still from September to October on the BLS index (see chart).

This temporary leveling off was considered only a lull in the continued uptrend in costs, however. At the NAREB convention in St. Louis last month, Chicago Realty Analyst James Downs reiterated a prediction that the increase for the 18 months from last January to next June would reach 15%, and pointed out that they have already gone up 7%. Pressure on costs will be increased next month, when the ICC will consider appeals for a complicated new series of freight rate boosts. On top of 7% "emergency" increases obtained by southern, eastern and western lines almost a year ago, eastern and western roads have now petitioned for another general 15% boost on top of the "emergency" hike.

Highest rise in New York. Cost data compiled by the Boeckh organization shows an average gain of 6.4% in 20 cities in a comparison of costs in September with average costs for all 1955, for brick and steel apartment, hotel and office buildings. But there were wide variations in the cost increases for such structures in a total of 27 separate cities, ranging from a low of 4.8% in Denver and New Orleans to 7.7% in New York. The city-by-city comparison, with the index figures based on average 1926-29 prices as 100:

	Average 1955	Sept. '56	% change
Atlanta	231.6	249.0	+7.5
Baltimore	247.0	265.2	+7.4
Boston	267.8	286.2	+6.9
Buffalo	268.3	282.9	+5.4
Chicago	267.6	283.3	+5.9
Cleveland	272.6	289.7	+6.3
Dallas	244.3	259.8	+6.3
Denver	264.7	277.3	+4.8
Detroit	272.7	290.3	+6.5
Houston	247.3	261.2	+5.6
Kansas City	260.4	273.8	+5.1
Los Angeles	265.5	281.2	+5.9
Memphis	230.7	246.0	+6.6
Miami-Miami Beach	250.3	262.5	+4.9
Milwaukee	251.9	267.1	+6.0
Minneapolis-St. Paul	262.4	281.0	+7.1
New Orleans	240.1	251.6	+4.8
New York	290.9	313.4	+7.7
Omaha	250.5	265.1	+5.8
Philadelphia	264.9	278.7	+5.2
Pittsburgh	264.1	280.0	+6.0
St. Louis	265.7	282.1	+6.2
Salt Lake City	250.3	264.8	+5.8
San Francisco	269.5	287.4	+6.6
Savannah	226.8	242.3	+6.8
Seattle	266.3	282.8	+6.2
Washington, D. C.	260.2	275.9	+6.0

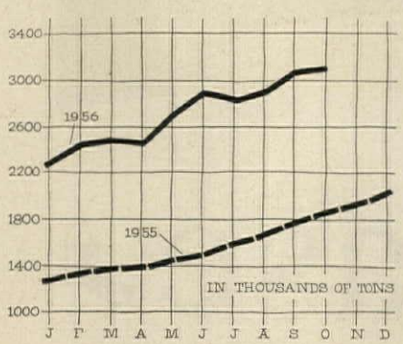


CONSTRUCTION COSTS for nonresidential buildings advanced almost imperceptibly, from 279.8 in September to 279.9 in October, on the index of E. H. Boeckh & Assoc.

BUILDING MATERIALS: Steel industry ponders threats of defense restrictions, new price hike

Steel was back in the spotlight again last month on three counts:

▸ Although there were no signs of any real "scare" buying, there were more than discreet inquiries about heavier advance orders. As a result of the Suez crisis, Washington was considering a project for the speedy construction of 50 huge oil tankers that would crimp supplies. With no sign of an early easing of the highly volatile eastern European tension, industry leaders were discussing the possibilities of government regulation of steel distribution, or defense priorities, but were still hopeful such curbs would prove unnecessary.

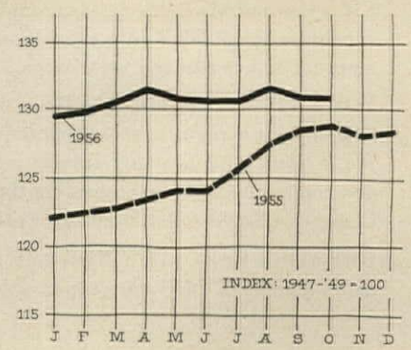


STRUCTURAL STEEL unfilled orders on Oct. 1 edged up to 3,108,000 tons, compared with 3,076,000 tons a month earlier, according to the American Institute of Steel Construction. Shipments in September rose to 240,858 tons, compared with 284,719 tons in June, the last month before the steel strike curbed output.

▸ Bethlehem Chairman Eugene Grace and some other steel leaders were publicly speaking about the need for another hike in steel prices to offset steadily rising costs. If it did not occur sooner, it was probably inevitable by July 1, when the second-year wage increases under last summer's steelworkers' contract would be due. The most persuasive market-leader holdout against an early increase was US Steel Chairman Roger M. Blough, who declared Oct. 30 that his firm "does not have in mind any plans for a general steel price increase at this time."

▸ While the backlog of orders for structural steel inched up to a new record of 3,108,000 tons on Oct. 1 (see chart), new contracts for structural shapes dipped in September for the fifth month in a row. For the first nine months of the year, however, structural orders totaled 2,978,000 tons, an increase of 11% over the 2,673,000 tons in the same 1955 period. And despite the steel strike, shipments for nine months were 2,344,000 tons, or 7% better than comparable 1955 shipments.

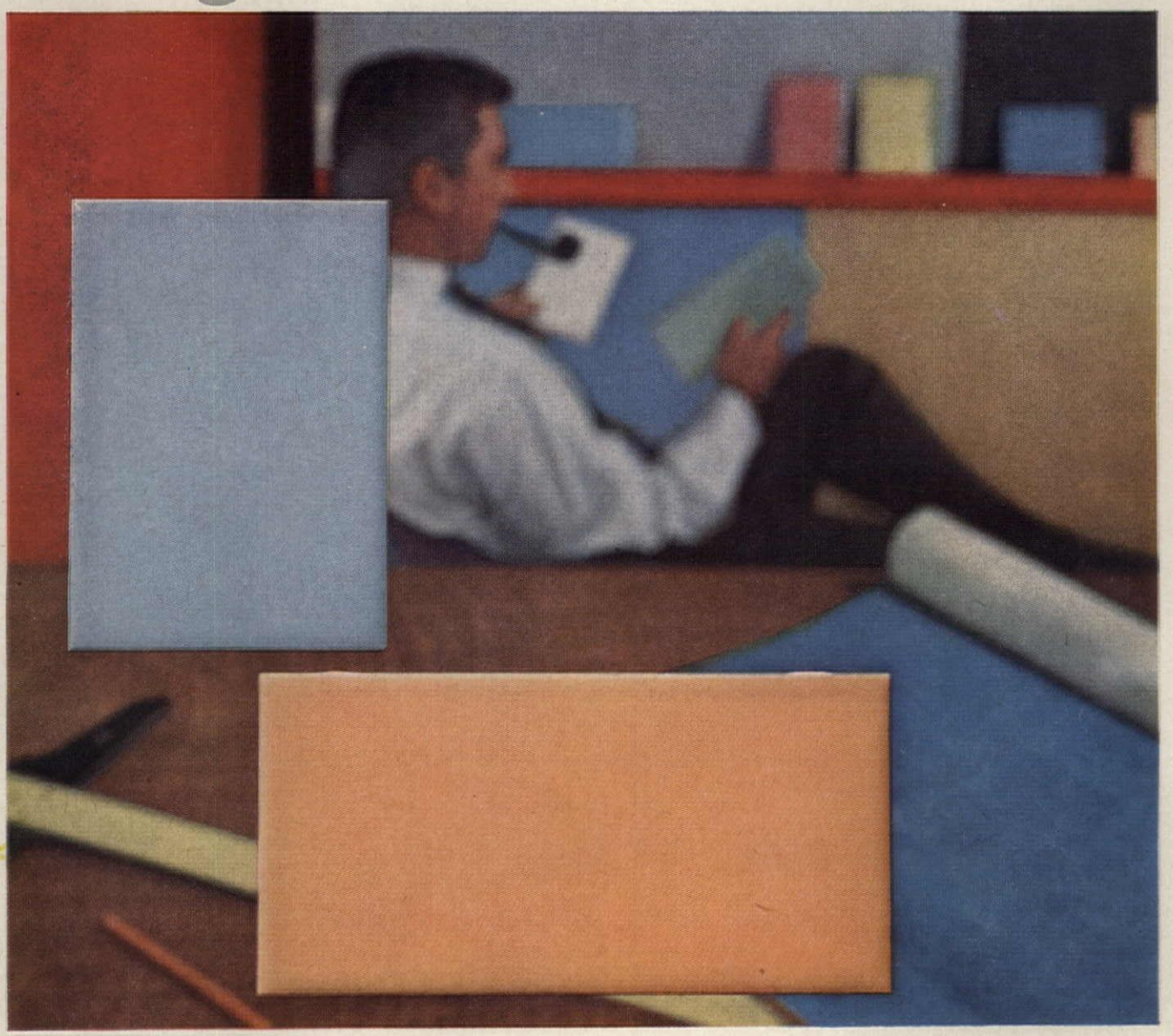
As lumber and copper prices continued soft, the BLS October index of average wholesale building materials prices remained unchanged from September (see chart).



BUILDING MATERIALS PRICES remained steady in October at 131.0, the same as the revised figure (originally 131.2) on the index of average wholesale prices compiled by BLS.

for news about PEOPLE—*p. 39*

now - large sizes in glazed ceramic tile



To give you additional design freedom, American-Olean now offers two large sizes in glazed tile: 8½ x 4¼ and 6 x 4¼. These new shapes are particularly useful in schools, hospitals and other buildings where large wall areas are involved.

Larger size tiles, since they may be installed either horizontally or vertically, lend themselves to attractive architectural treatments. Each may be used together with 4¼ tiles.

Careful color blending, precise dimensional control, and the self-spacing feature assure you of a handsome installation when you specify American-Olean Tile.

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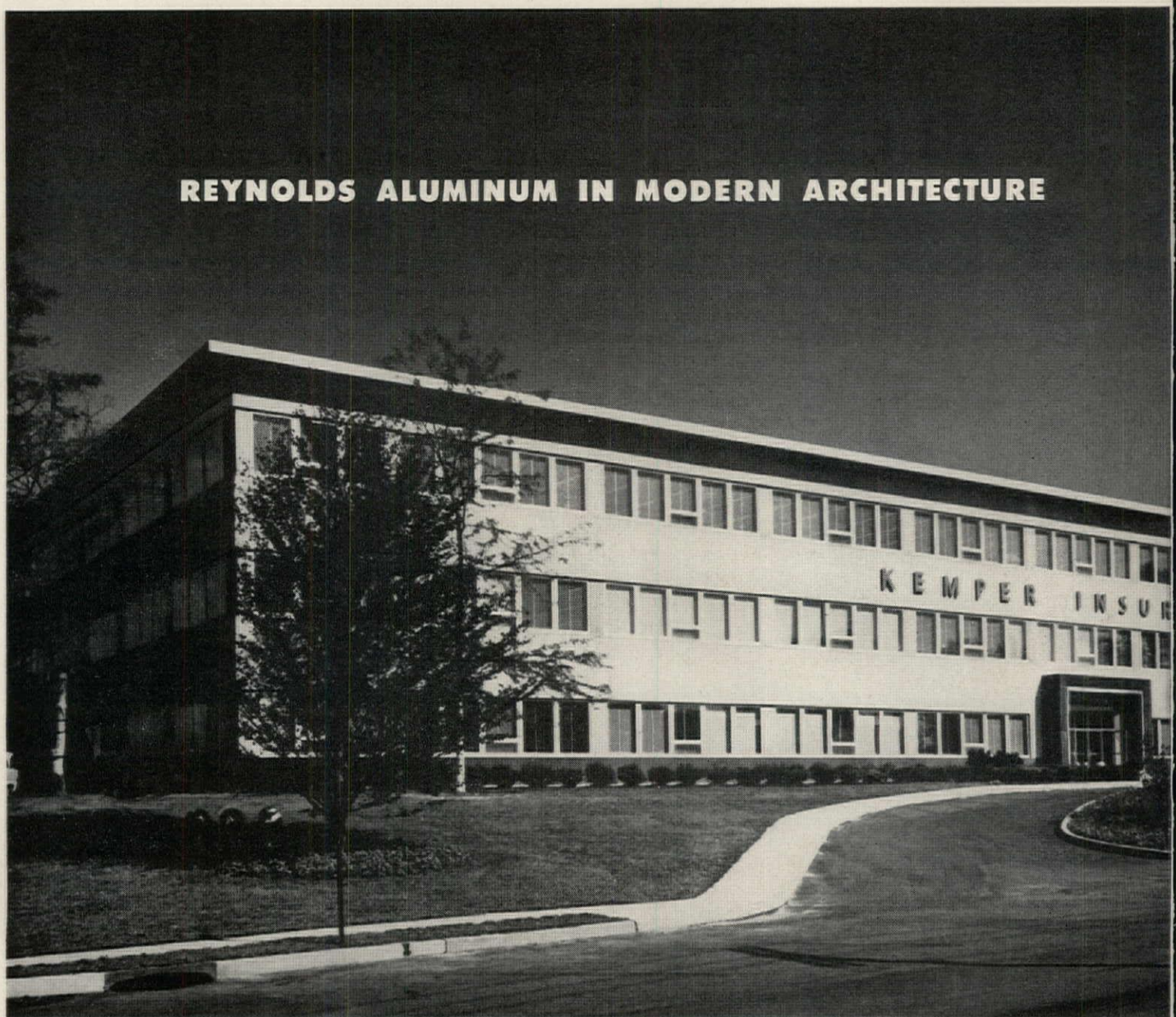


Lumbermens Mutual Casualty Company Building, Summit, N. J.

(Lumbermens Mutual Casualty Company, a division of Kemper Insurance)

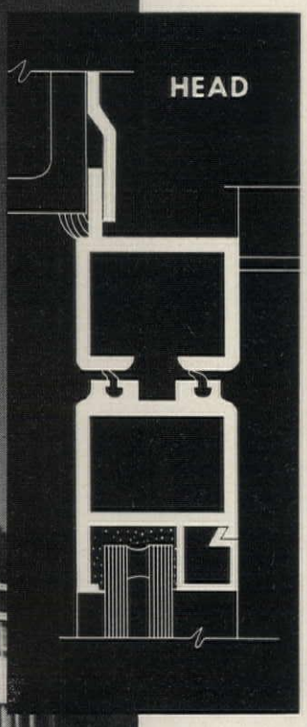
Architects & Engineers:
Childs & Smith, Chicago

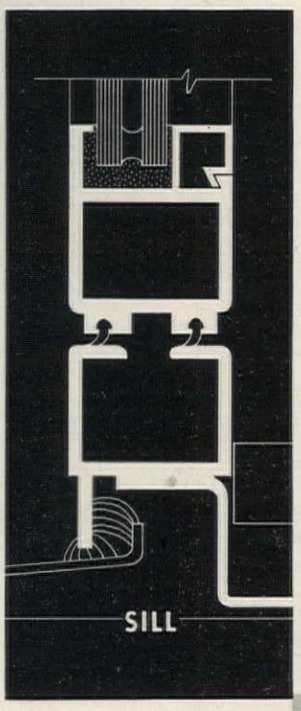
General Contractor:
George A. Fuller Company, New York

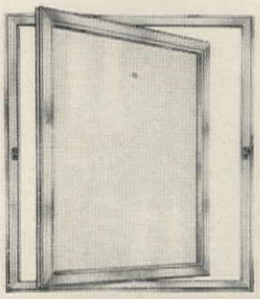
Erector of Windows and Mullions:
F. H. Sparks Co., Inc., New York

This building features Reynolds Aluminum Vertically Pivoted Windows Series 100, Reynolds Aluminum Mullions and Column Covers.

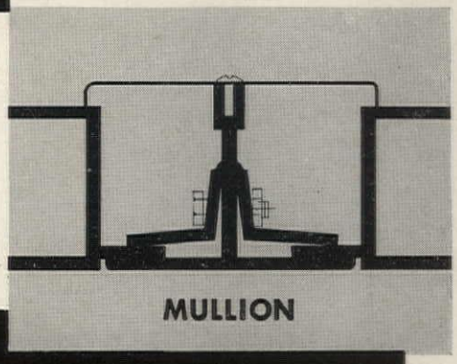
REYNOLDS

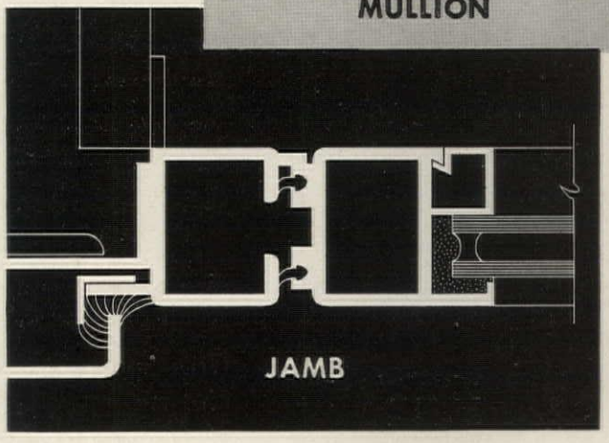






REYNOLDS SERIES 100 VERTICALLY PIVOTED WINDOW used in the Lumbermens Mutual Casualty Company Building. Provides minimum air infiltration, positive locking. Revolves for washing from the inside. All welded frame construction. Self-draining.





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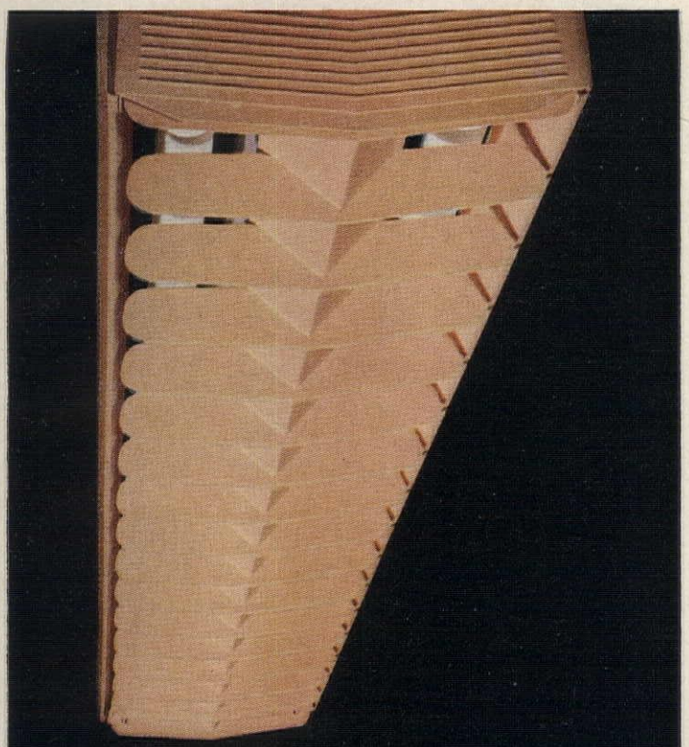
Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, on applications of standard aluminum mill products, and on the use of commercially fabricated aluminum building products. They can help to coordinate varied aluminum requirements for procurement efficiency and economy. Inquiries should be addressed to... Architect Service, **Reynolds Metals Company,** Louisville 1, Ky.

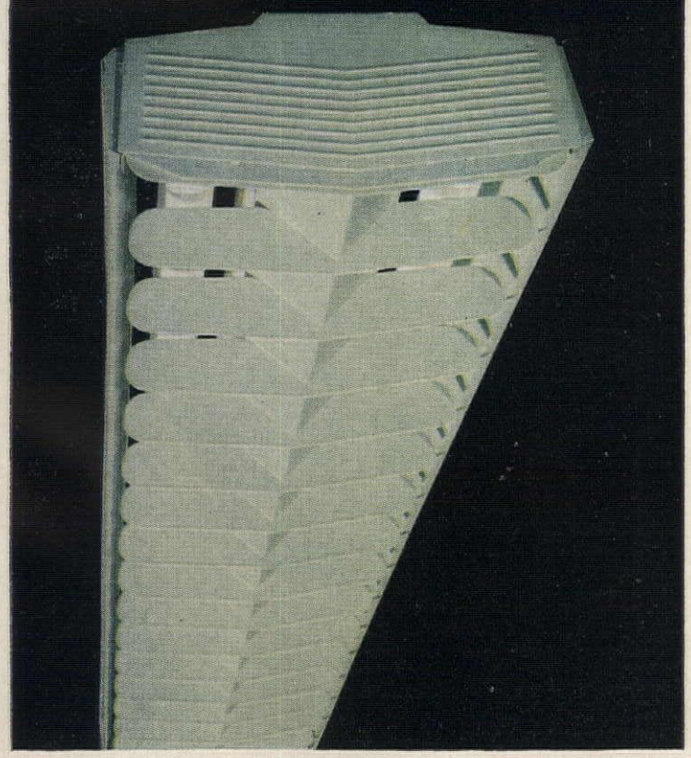
See "CIRCUS BOY", Reynolds great dramatic adventure series, Sundays, NBC-TV Network.

ALUMINUM



IN SUN-TAN BROWN for accentuating yellow and brown tones – bringing out elusive colors – to create a charming air of intimacy and surround a room with warm friendliness.

IN SEA-MIST GREEN for specifically emphasizing cool color schemes – highlighting greens and blues – and adding new dimension, airy spaciousness to small, confined areas.



New Westinghouse carousel luminaires

A new idea in color lighting to accentuate decor in offices, stores and schools

Color comes alive with new Westinghouse Carousel luminaires — snaps to attention for you in perking up office morale, sparking merchandise with extra sales excitement and appeal. You get the same animation in classrooms.

Colored metal side panels and all-metal louvers in the new Carousel luminaires diffuse a soft, smooth wash of light which emphasizes specific colors without repelling others.

With new Carousel lighting, colors literally sing in harmony to create exactly the working and seeing atmosphere you desire and need.

Carousel luminaires are comfortable to see by — equally easy to look at. They take the edge off annoying brightness — eliminate glare. And their colorful, smartly styled appearance adds a subtle touch of beauty to any decorating scheme.

Call your local Westinghouse lighting representative for *all* the colorful details on new Carousel lighting. Or, write Westinghouse Electric Corporation, Lighting Division, Edgewater Park, Cleveland, Ohio. J-04407

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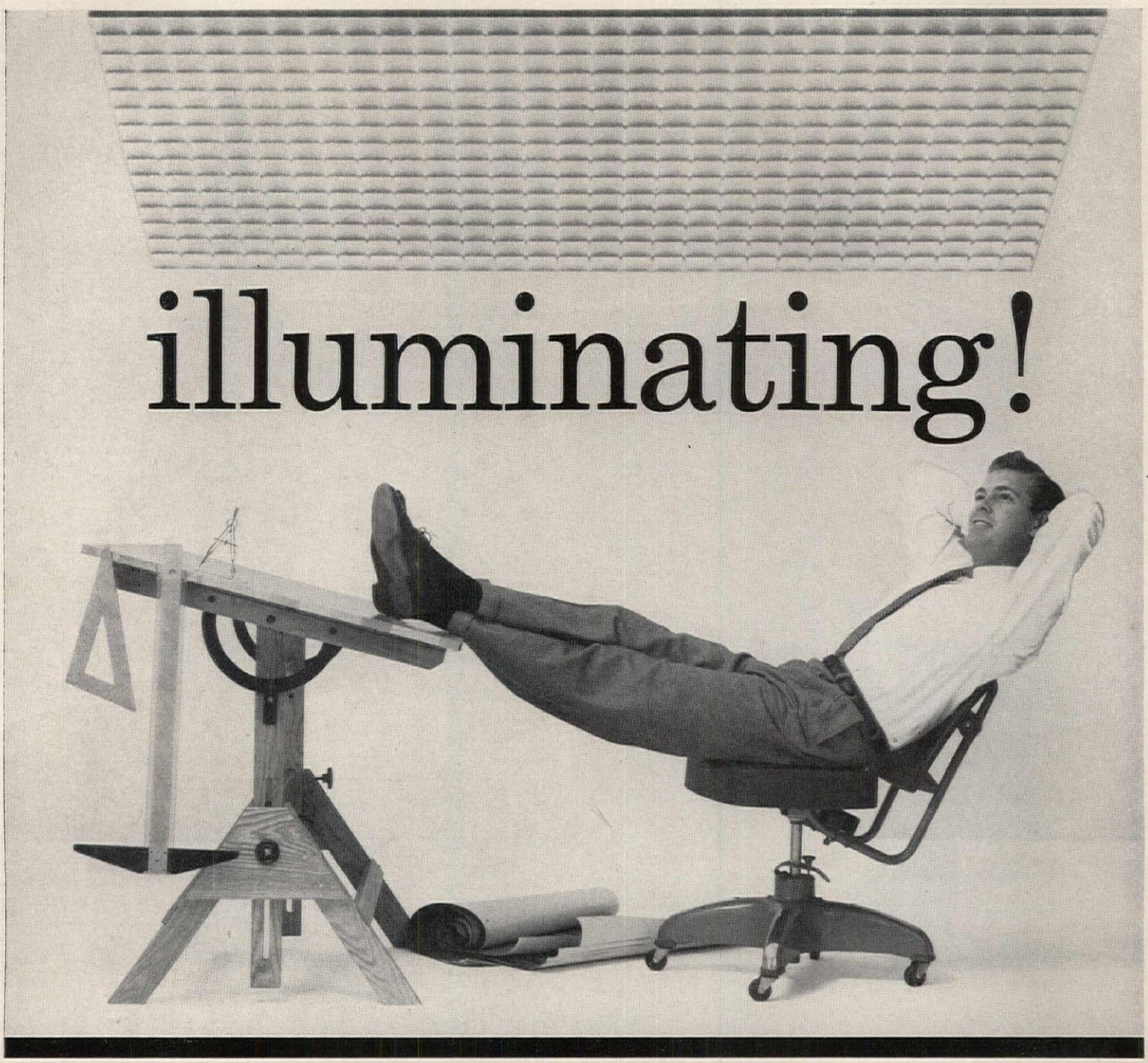


Styrene plastic louvers spark fresh ideas for decorative lighting effects

The emphasis that architects place on lighting as a source of beauty as well as function is speeding the development of many new fixtures with wide design flexibility.

The most adaptable of these fixtures are made of styrene plastic. For example: American Louver Company's (Chicago) "egg crate" louvers, made of Monsanto Lustrex® styrene.

These translucently white louvers provide maximum light transmission with a shadowless diffusion that eliminates sight fatigue. There's a minimum of maintenance... dirt or dust won't cling to de-staticized surfaces. Styrene plastic construction resists scratching or chipping, is light in weight with high structural strength and dimensional stability. Design possibilities are many for these louvers—as individual fixtures, luminous ceilings, and in modular patterns.

The over-all role of plastics in construction is the subject of a structural plastics engineering group at Monsanto. Architects and builders are invited to write for counsel on technical aspects of plastics for building and construction.

A New Report *"Plastics in Housing," has recently been published by the Department of Architecture of The Massachusetts Institute of Technology. The M.I.T. study was made possible by a Monsanto grant-in-aid. Copies are available at $2.00 each. Address Monsanto Chemical Company, Plastics Division, Room 227, Springfield 2, Mass.*

MONSANTO

Howard S. Cullman named commissioner and Edward Stone, designer for large Brussels Fair project

GENEROUS ALUMNI

Cornell University's College of Engineering apparently had perfected the specifications for ideal alumni. Twice in October it announced donations of entire structures for a proposed complex of nine new buildings for its Ithaca, N. Y. campus.

Alumnus **Maxwell Mayhew Upson**, '99, board chairman of the Raymond Concrete Pile Co. of New York donated $1.5 million for a mechanical engineering building, to be the largest in the complex, designed by Architects **Perkins & Will.**

Alumnus **Spencer T. Olin**, '21 of Alton, Mo., a director of Olin Mathieson Chemical, donated a civil engineering structure that will be a memorial to his father, **Franklin W. Olin Sr.**, '86. (Also to be by Perkins & Will).

PRIZE BRIDGES

Judges of the AISC competition for the most beautiful bridge opened in 1955 gave first prize in the 400′ or longer class to the Leavenworth, Kan., span over the Missouri River (see cut) "because the clean, simple repetitive design gives a feeling of gracefulness to the double arch." Designers: **Howard, Needles, Tammen & Bergendoff.**

Jury members were Architects **Henry L. Blatner**, of Albany, N.Y., **Howard Eichenbaum**, of Little Rock, and **Henry J. Toombs**, of Atlanta; Dean **Samuel S. Steinberg**, Maryland University College of Engineering, and **Mahonri S. Young**, director of the Columbus (Ohio) Gallery of Fine Arts. Their first-prize awards in other classes: Ohio Turnpike Cuyahoga River Bridge designed by **J. E. Greiner Co.**; Route 8 bridge over Ohio Turnpike also by **Howard, Needles, Tammen & Bergendoff**; East River Channel Bridge, from Queens to Welfare Island in New York City, by **Tippetts-Abbett-McCarthy-Stratton.**

LEAVENWORTH BRIDGE

JOE MUNROE

HEITSCHMIDT STONE

SUNDAY-BEST IN BRUSSELS

For participation in the 1958 Brussels World's Fair, the US was making no little plans. More than 35 million visitors are expected at the international exposition, the biggest since the 1939-40 New York fair. Its theme will be "a world built by and for people." To put the best US foot forward, the State Dept. and White House enlisted top construction and design talent to plan and execute an outstanding American exhibit.

A month ago The President appointed as the fair's US Commissioner General, or chief executive, **Howard S. Cullman**, who directed varied, multi-million dollar construction programs for the Port of New York Authority as its 1945-55 chairman, and has since been its honorary chairman. Also noted as a theatrical producer, Cullman will direct for the fair the production of an $8 million exhibition building, and expenditure of about $7 million more for site preparation, exhibits.

Racing against time—the fair is to open in April, 1958—the State Dept. last March asked the AIA to name an advisory committee to speed the planning for the US building. Chairing this group is Los Angeles Architect **Earl T. Heitschmidt.** Serving with him: former AIA President **Clair W. Ditchy**, of Detroit, New Yorker **Edgar Williams**, Philadelphian **Roy Larson**, and New Orleanian **Richard Koch.** At its first meeting this group engaged as architect for the project **Edward D. Stone**, whose contemporary local-idiom foreign buildings for the State Dept. have won acclaim around the world. Stone's preliminary Brussels plans, says Heitschmidt, provide for three interlocking circular buildings. The main exhibit hall would be 300′ in diameter, 85′ high with translucent, silver plastic walls —illuminated at night. In a dramatic, pivotal spot, the US building will be flanked by Vatican and Italian buildings on the east, Russian on the west, and French on the south.

NAMED: **Turpin C. Bannister**, FAIA, professor and head of the department of architecture at the University of Illinois, Urbana, since 1948, a founder and first president of the Society of Architectural Historians, editor of Vol. 1 of *The Architect at Mid-Century*, as Dean of the College of Architecture and Allied Arts of the University of Florida, Gainesville; **William N. Breger**, team winner of the 1954 Carson, Pirie Scott Chicago downtown redevelopment design competition (AF, Nov. '54), as chairman of the department of architectural design at Pratt Institute, Brooklyn, which he first joined as an instructor in 1945; Deputy HHFAdministrator **Frank J. Meistrell**, former FHA general counsel, as the first Federal Flood Indemnity Administrator, to direct the new subsidized, "temporary" flood insurance program that the government eventually hopes to turn over to private underwriters; **Albert B. Bauer**, building division director and senior architect of hospitals for the New York City Public Works Dept., as director of architecture for the department.

EXECUTIVE SHIFTS

Following his recent resignation as US Urban Renewal Administrator, **James W. Follin** joined De Leuw, Cather & Co., Washington engineers, as an urban renewal consultant; **Leland King**, former director and supervising architect for the State Dept.'s foreign buildings program, and recently associated with New York Architect **J. Gordon Carr**, joined Pereira & Luckman, Los Angeles architects and engineers, as the firm's director of architecture; effective Feb. 1 Vice President and General Manager **Charles Zadok**, of the Gimbels' store in Milwaukee, will fill a newly created post as vice president of expansion, in Gimbels' New York headquarters, with responsibility for all designing, construction and capital expenditures for its store in all areas.

TALBOT F. HAMLIN DIES

Congenial, puckish **Talbot Faulkner Hamlin**, FAIA, architecture's most authoritative historian, and one of its most warm and vibrant personalities, died Oct. 7 in Beaufort (S.C.) Memorial Hospital. The diminutive bearded architect, teacher and author, whose side interests ranged from water coloring to scholarly, historical research in burlesque, was stricken six days earlier aboard his 33′ cabin cruiser *Aquarelle* while enroute to Florida for the winter. (It was a 1952 sabbatical cruise from Maine to Florida in this craft that was chronicled in *We Took to Cruising*, written in collaboration with his wife, Jessica Walters Hamlin, and illustrated with his own paintings.)

It was only last spring, two years after retiring as professor

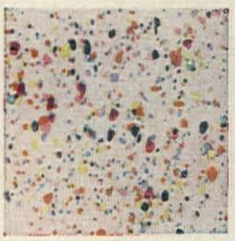
KAIDEN-KAZANJIAN

HAMLIN

of architecture at Columbia University at 65, that Hamlin won the 1956 Pulitzer Prize for biography for *Benjamin Henry Latrobe.* His most important work, however, was his monumental four-volume *Forms and Foundations of Twentieth Century Architecture* (1952), which FORUM's review characterized as "a scholarly accomplishment of the first magnitude, a compendium destined to find its way into most important architectural libraries, to be consulted and cited as a reference for many years to come."

Son of another 1883-1926 Columbia architectural professor, A.D.F. Hamlin, the younger professor received his degree in architecture from this institution in 1914. He published the first of his many stimulating critical works, *The Enjoyment of Architecture*, in 1916, and was one of the first outspoken champions of contemporary design, the debonair exponent of a brand of functionalism closely tied to humanity. A rarity among critics was Hamlin's ability to instruct coupled with care not to wound.

Here's a fresh new approach to decorator styling!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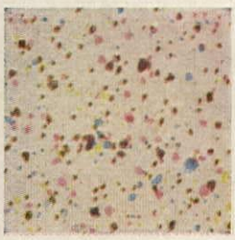
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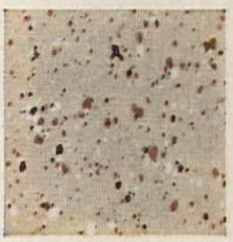
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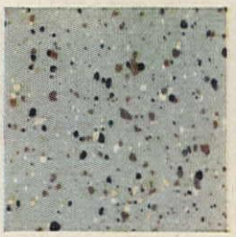
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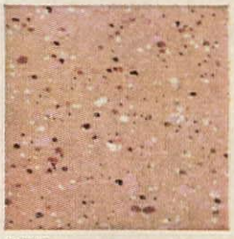
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Size: 9" x 9"
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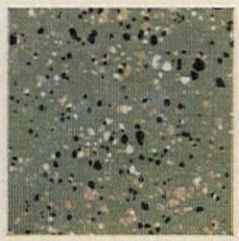
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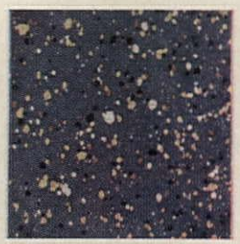
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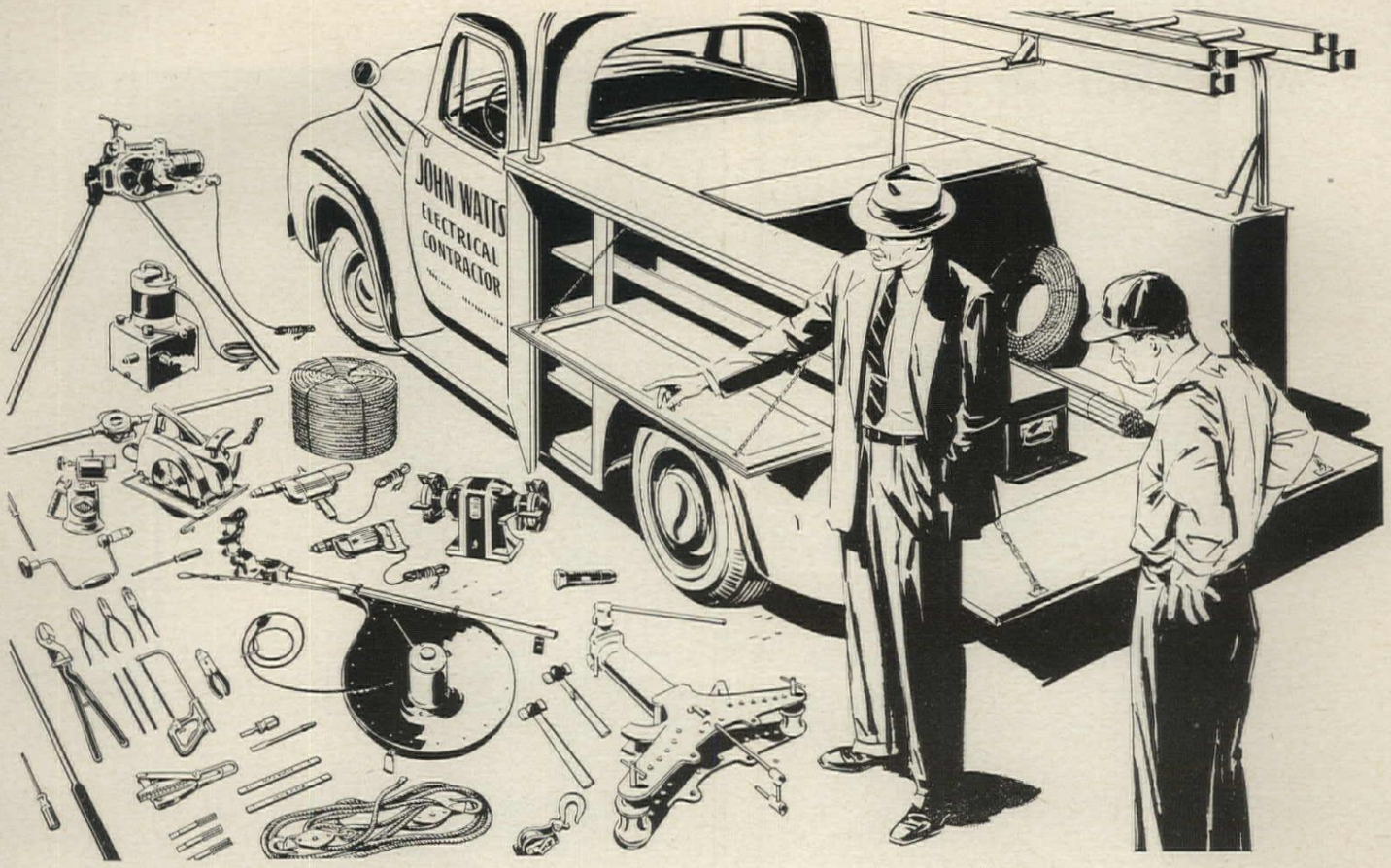

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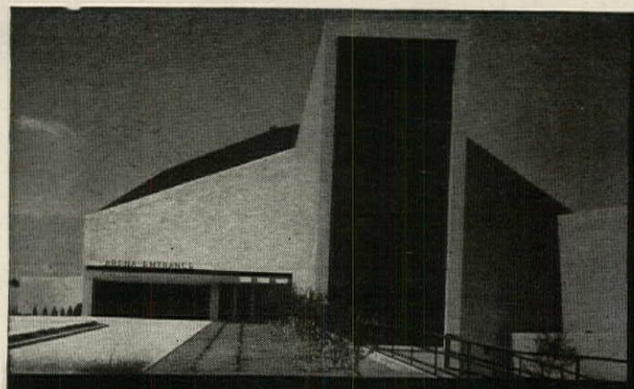
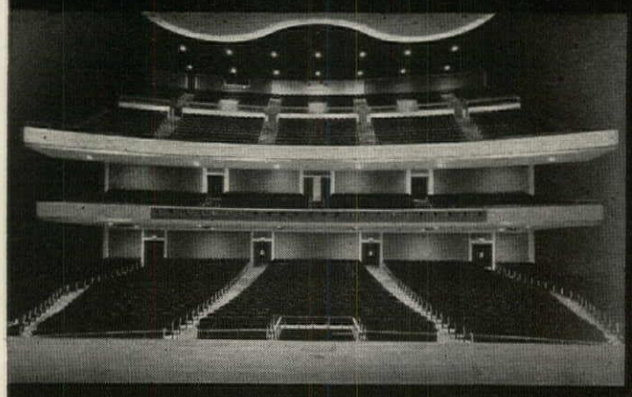
7. Using Graybar's nationwide warehouse stocks and facilities to deliver the smallest to the largest equipment anywhere, fast.

Graybar ... *serving the nation's building industry through electrical contractors*

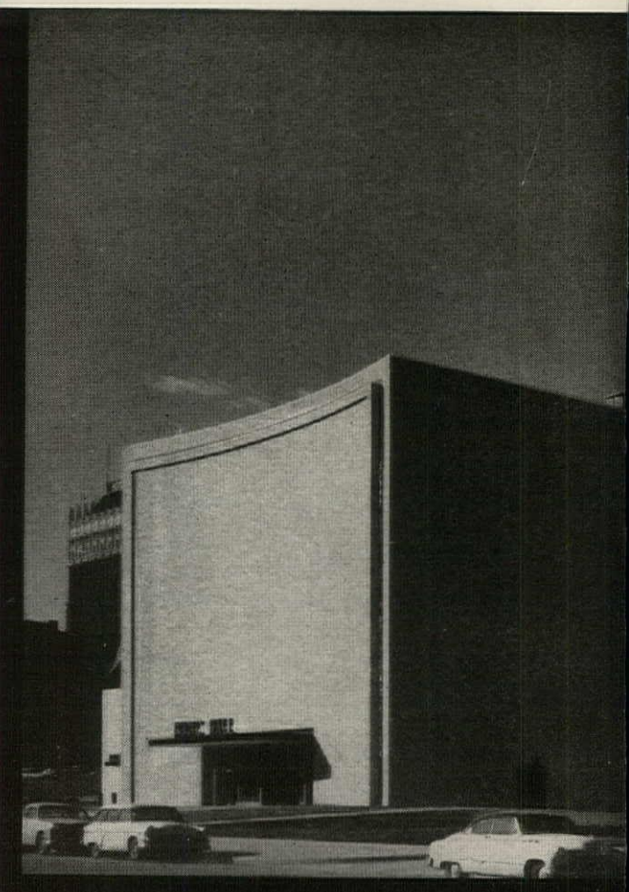
GRAYBAR ELECTRIC COMPANY, INC., 420 LEXINGTON AVENUE, NEW YORK 17, NEW YORK. IN OVER 130 PRINCIPAL CITIES



Arena entrance of the Omaha Civic Auditorium. Ceco-Meyer Steelform concrete floor joist construction and Ceco Open-Web Longspan Steel Joists were used in appropriate floor and roof areas of this building.



View of the music hall, one of the areas where Ceco-Meyer Steelform concrete floor joist construction was used . . . in this case, in the slab levels. Same framing was used for other floors, ramps and concourses.



FRAMING METHODS CUT DEADLOAD 30%... SAVE TIME...

PRODUCE RIGID FLOORS AND ROOFS

Ceco helps architects, engineers and contractors meet schedules for finest buildings—It takes a lot of material to build a safe public structure of ten million cubic feet. Weight could be a problem. That was the condition confronting Leo A. Daly Company, architects and engineers, in designing the Omaha Civic Auditorium. They determined 30% in concrete load could be saved by using Ceco-Meyer Steelform concrete joist construction for floors, concourses, ramps and balconies. Similar weight savings were made by using Ceco Open-Web Longspan Steel Joists in areas of the roof. Architect Daly put it this way:

"Metal pan rib floors were used where loading and span permitted. Though the weight is light, the depth of the floor produces great rigidity. Formwork is economical, requiring only a simple centering board for the soffit form under each rib or joist. Longspan Steel Joists used in appropriate roof areas cut weight, too, as compared to heavier standard truss and purlin construction."

When Peter Kiewit Sons' Company set up the building schedule, Ceco service went into action, delivering all material as needed—on time. For the best in floor framing methods and service, call in your Ceco Engineer.

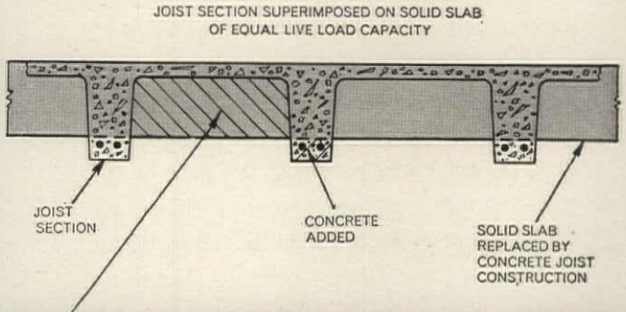
This is the Omaha Civic Auditorium, showing the music hall entrance at left and the exhibit hall entrance at right. Leo A. Daly Company, Architects and Engineers; Peter Kiewit Sons' Company, General Contractors.

CECO STEEL

CECO STEEL PRODUCTS CORPORATION

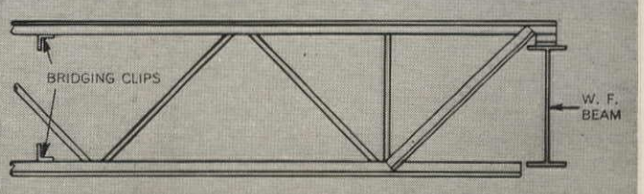
Offices, warehouses and fabricating plants in principal cities
General Offices: 5601 West 26th Street, Chicago 50, Illinois

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE



HERE'S THE ECONOMY OF CONCRETE JOIST CONSTRUCTION

Ineffective concrete eliminated by a shape of section which allows maximum depth for rigidity and minimum deflection. Savings in material and dead weight thus result in better structural performance.



STEEL JOIST CONSTRUCTION SAVES WEIGHT

Open-Web Steel Joists comprise the lightest standard construction and cut framing time by months, compared to heavier, slower methods. They permit wide open floor areas with fewer columns.

DATES

Smithsonian Institution Traveling Exhibits, Dec. 9–Jan. 3: "A Half-Century of Architectural Education," Columbus Museum of Arts and Crafts, Columbus, Ga.; "German Architecture Today," J. B. Speed Art Museum, Louisville, Ky.

Fourth Illinois Structural Engineering Conference, Dec. 3-5, University of Illinois, Urbana

California Assn. of School Administrators, architectural exhibit and panel discussions between architects and educators, **Dec. 3-7,** Sheraton-Palace Hotel, San Francisco

Society of the Plastics Industry, Inc., Sheeting and Coated Fabrics Division Conference, **Dec. 4-5,** Commodore Hotel, New York City

Modern Builders Conference, sponsored by Armour Research Foundation of Illinois Institute of Technology, **Dec. 6-7,** Prudential Building, Chicago

Regional Businessmen's Highway, Transit, and Parking Conference, sponsored by US and local Chamber of Commerce, **Dec. 13-14,** Skirvin Hotel, Oklahoma City

Highway Research Board, annual meeting, **Jan. 7-11,** Sheraton-Park Hotel, Washington, D.C.

Society of Plastics Engineers, Inc., annual technical conference, **Jan. 16-18,** Hotel Sheraton-Jefferson, St. Louis

American Institute of Electrical Engineers, general meeting, **Jan. 21-25,** Hotel Statler, New York City

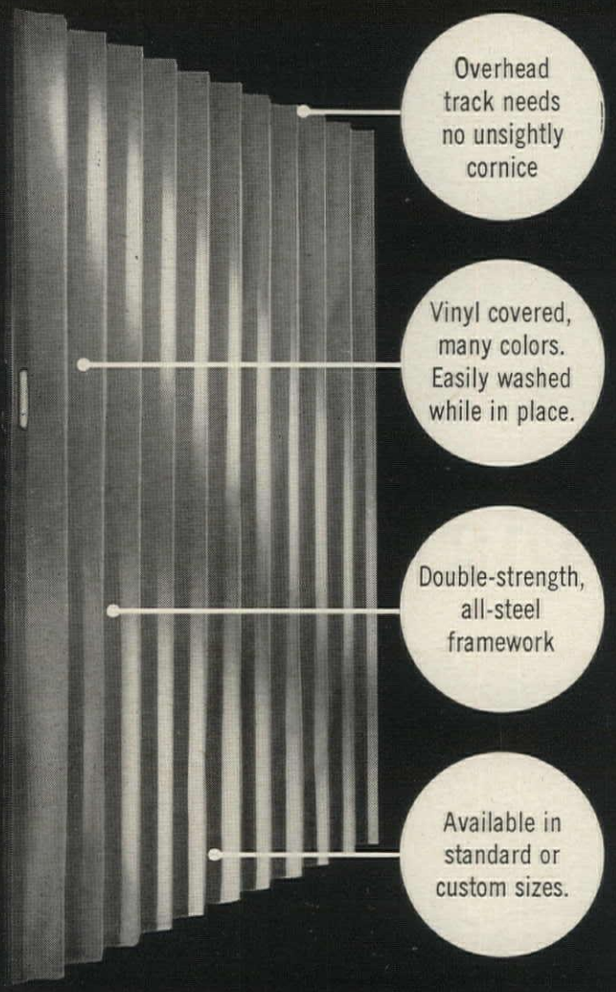
Mortgage Bankers Assn., senior executives conference, **Jan. 22-24,** New York University, New York City

Society of Architectural Historians, annual meeting, **Jan. 24-26,** Detroit Institute of Arts, Detroit

Industrial Heating Equipment Assn., Jan. 28-29, Washington, D.C.

Conference on Working Problems in Urban Renewal, sponsored by Redevelopment Section, National Assn. of Housing and Redevelopment Officials, **Feb. 23-26,** Kellogg Center, Michigan State College, East Lansing

are folding doors faddish...or functional?



Superior construction features account for MODERNFOLD'S leadership. More MODERNFOLDS are in use than any other make of folding door!

what's behind the growing popularity of MODERNFOLD DOORS?

Ask any of your friends in the profession why *he* has used MODERNFOLD Doors. Was it to save space? Was it as a room divider? Or did he devise some completely *new* application for this door?

In recent years, architects have seen how MODERNFOLD allows them greater freedom of design by eliminating door-swing. They have witnessed the long service life of this door. And they are employing them in commercial, residential and institutional designs.

How can MODERNFOLD Doors best serve *you*? When your MODERNFOLD distributor shows you their many quality features, your imagination will be stimulated to find new applications for them.

modernfold doors have no equal

MODERNFOLD distributors are listed under "Doors" in city classified telephone directories

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DOORS

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New Castle Products, Inc., Dept. M32, New Castle, Indiana

Please send me full information on MODERNFOLD Doors.

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BUSINESS ADDRESS_____

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CITY_____ ZONE____ STATE_____

Lambert-St. Louis Municipal Air Terminal . . . ARCHITECTS: Hellmuth, Yamasaki & Leinweber . . . AIRPORT CONSULTANTS: Landrum & Brown . . . ENGINEERS: William C. E. Becker, structural; Ferriss & Hamig, mechanical and electrical . . . CONSULTING ENGINEERS: Edgardo Contini and Roberts & Schaefer . . . GENERAL CONTRACTORS: L & R Construction Co. . . . ELECTRICAL DISTRIBUTOR: Graybar Electric Co., Inc. . . . ELECTRICAL CONTRACTOR: Mack Electric Co.

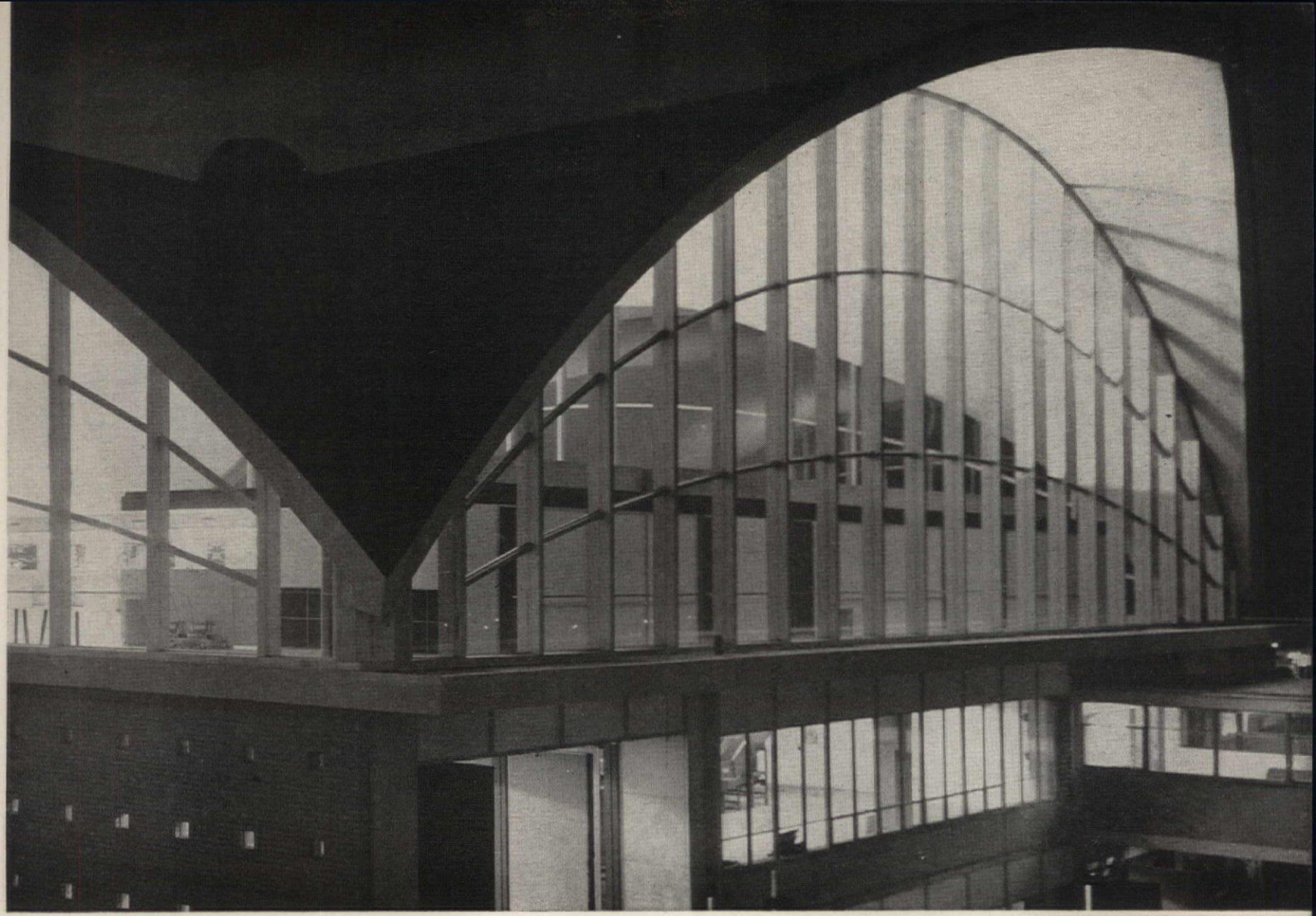
Day-Brite Lighting in the

"Finger" area connecting terminal building with aircraft loading stations

Main terminal area, showing ticket counters, newsstand, shops

Incoming baggage terminal area, lighted with Day-Brite recessed fixtures

61185



"Grand Central of the Air"

Accorded the first honor award by the AIA, the new St. Louis Air Terminal has been described as the "first appropriate terminal in the age of air travel." Called the Grand Central of the Air, it is designed throughout to meet the highest standards of quality. Naturally, Day-Brite lighting fixtures were specified and installed.

Before you decide on any lighting fixtures for any type of installation, consult your Day-Brite representative. You'll find him in your classified phone directory . . . Send for *new* 12-page Architectural File.

Day-Brite Lighting, Inc.

"DECIDEDLY BETTER"
DAY-BRITE
Lighting Fixtures

5471 Bulwer Ave.
St. Louis 7, Missouri

NATION'S LARGEST MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT

At the new **CARLING** 600,000 barrel eastern plant

General Contractor:
GILBANE BUILDING COMPANY, PROVIDENCE, R. I.

Mechanical Contractor:
HARTWELL COMPANY, INC., EAST PROVIDENCE, R. I.

Heating Contractor: J. C. HIGGINS CO., BOSTON, MASS.

Plumbing Contractor:
JAMES S. CASSEDY, INC., CAMBRIDGE, MASS.

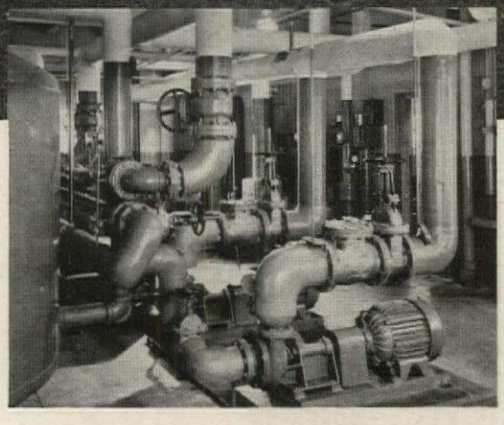
JENKINS VALVES

control piping planned for new standards of brewing efficiency

At Natick, Massachusetts the new plant of the Carling Brewing Company gleams like a giant laboratory, totally different in every aspect from the conventional brewery architecture of the past.

In layout for operating efficiency, as well as appearance, the Carling plant sets new standards. All equipment was selected to meet the critical requirements of this advanced design. Over 2000 Jenkins Valves were installed on the basis of proved dependability, safety, and long-range maintenance economy.

This *extra value* built into Jenkins Valves is recognized by plant operating managements in every type of industry. Let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.



JENKINS VALVES selected to control steam, water, waste, and processing pipelines include many sizes and patterns of bronze, iron, cast steel, and stainless steel valves. Illustration shows large iron gate and check valves in the filtered water pump system.

JENKINS
LOOK FOR THE JENKINS DIAMOND
VALVES
SINCE 1864 TRADE JENKINS MARK

Jenkins Bros.

SOLD THROUGH PLUMBING-HEATING AND INDUSTRIAL DISTRIBUTORS

TERRITORIAL HEADQUARTERS, THE SALVATION ARMY
ARCHITECT: *Skadberg-Olson Co., Chicago*
GENERAL CONTRACTOR: *Paschen Contractors, Inc.*

KAWNEER METAL WALL / *responsibility from the anchors on out!*

The new Salvation Army Territorial Headquarters in Chicago is another example of Kawneer's ability to engineer, produce and install a complete skin from the anchors on out. Kawneer works closely with the architect by helping him establish his design budget well in advance of the bids. Kawneer assures him that the translation of his design will be true and accurate. The curtain wall of this building will consist of Ingram Richardson 2″ insulated porcelain enameled steel sandwich panels, double-glazed pivoted Kawneer aluminum windows and self-supporting aluminum mullions. Special weather-tightness features, adequate provision for expansion and contraction, and tested prefabrication methods assure the architect complete client satisfaction. For further information on how Kawneer can assist you in metal wall engineering write: Metal Wall Department, Kawneer, Niles, Michigan.

Other Kawneer metal wall jobs:

Tishman Buildings, Los Angeles
Equitable Life Building, San Francisco
Insurance Exchange Building, Oakland
Imperial Oil Co., Sarnia, Ontario
Newark Center Building, Newark
Kaiser Aluminum, Ravenswood, W. Va.
Fireman's Fund Insurance Co., San Francisco
Superior Oil Office Building, Los Angeles
Mutual Benefit Life Insurance Co., Newark

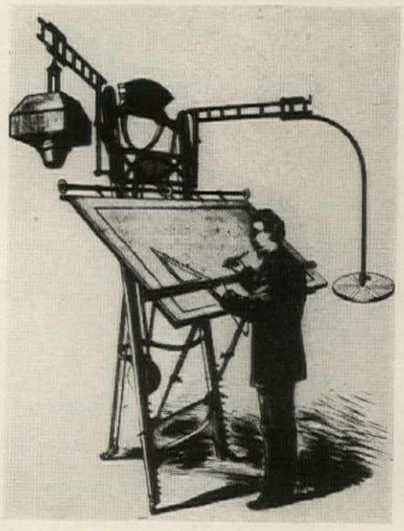
Write for folders describing Kawneer metal wall jobs and windows.

50TH ANNIVERSARY
Kawneer
General Offices
NILES, MICHIGAN
ARCHITECTURAL PRODUCTS DIVISION
1906–1956

(GREETINGS)

The cold weather has come, the FORUM drafting room has switched over to winter-grade India ink, and along with best wishes for an easy-going Christmas season, we deliver here two gift suggestions:

1. For juniors, an automatic drafting machine (invented some 50 years ago but never fully utilized).



2. For others, a new product of 1956, suitable for exchange among clients, architects, builders, bankers—everyone in the vast building field. It is manufactured by the Bobrick Co.

"By developing a new master key, the Bob-Key, for all the Bobrick Tamper-Proof Soap Dispensers (for liquid soap, lather soap, powdered soap and lotion), this firm has consolidated the principle which defies mischief."

"By using the designated part of the

PARENTHESES)

Bob-Key only is it possible to unlock and open the filler top as well as turn hex spouts and hex and Phillips-Head screws on any of these dispensers . . ."

Defy mischief! Turn away hexes! Merry Christmas!

(NO SIR)

Specification-writers, those masterly interpreters of the inchoate urges of clients and designers, may be interested in this item from Tanganyika, and so may personnel men.

According to the magazine, *The South African Builder*, a discharged employee, with the help of a professional letter-writer, submitted this plea for reinstatement:

"*Kind Sir,*

"*On opening this epistle you will behold the work of a de-jobbed person and very be-wifed and much childrenised gentleman who was violently de-jobbed in a twinkling by your goodself.*

"*For heaven's sake, sir, consider this catastrophy as falling on your own head, and remind yourself on walking home at the moon's end, to five savage wives and sixteen voracious children, with your pockets filled with no existent £ s.d. and a solitary sixpence. PITY MY HORRIBLE STATE. As to the reason given by yourself Esquire for my de-jobment, the incrimination was laziness.*

"*No Sir. It were impossible that myself which had pitched sixteen infant children into this vale of terror can have a lazy atom in his mortal frame, and the sudden departure of £ 7 has left me on the verge of destitution and despair. I hope this vision of horror will invade your dreams this night and the good angels will melt and pulverise your heart of nether millstone, so that you will awaken and, with such alacrity as may be compatible with your personal safety, will hasten to rejobulate your servant.*

"*So be it, Amen, Yours despairingly.*"

It is clear that the man of letters cleared this one up, all right; the man got his job back (or equal) immediately, without arbitration.

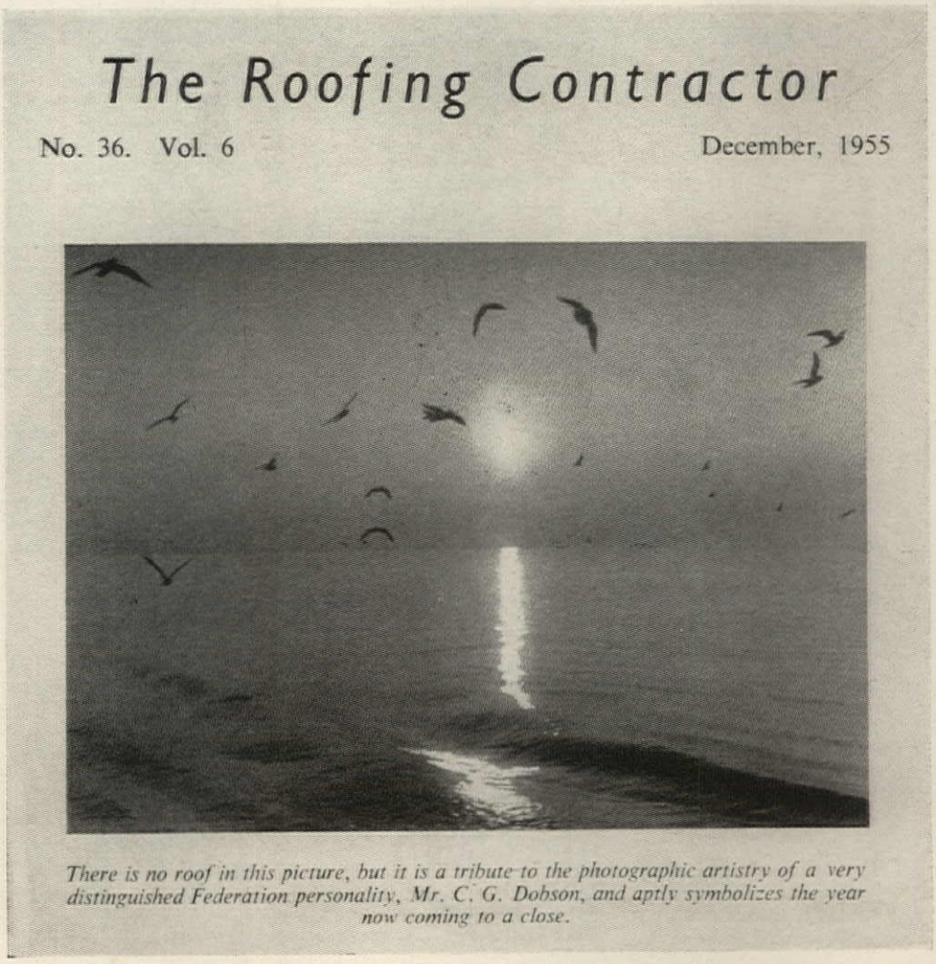
(SOUTH AMERICA)

And another note from a less distant place, but still quite far away. The US public relations firm representing Venezuela has sent along this photo and caption:

"*Caracas, Venezuela . . . Art hits the jackpot in Caracas. You have to see it to believe it. Newest trend in ultraswank apartment house construction in Venezuela's booming city of Caracas are these Gargantuan reliefs 50' high. This one, designed by former Rome art student, 30-year-old Esteban Toth, is almost sensational in scope. It depicts the abundant 'Land of Plenty' atmosphere for new settlers in Venezuela. Dr. Alejandro Horn, owner of the 'Maryflor' apartment in La Florida section of Caracas, paid Toth 25,000 Bolivars ($8,333) for the job. It's in soft tones of beige and green and blue. 'It's worth it,' says Horn, 'nobody refers to my apartment by number any more—only in the nicest artistic terms.'*"

(ROOFLESS)

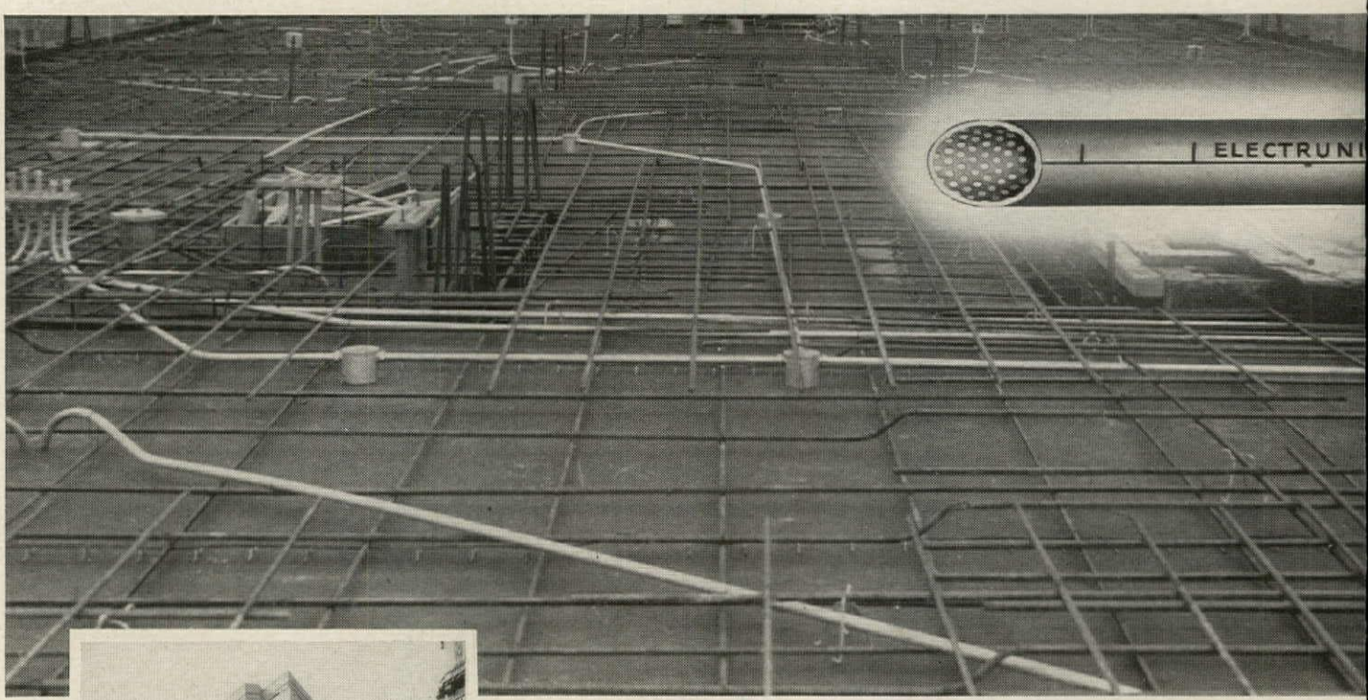
The season also gives us an opportunity to publish something we've had around for a year now, hoping to reprint. It is the opening page from the Dec. '55 issue of an English magazine, *The Roofing Contractor*, and captures a little of the solid, sturdy, pleasant, waterproof charm of that remarkable nation. Below.—W. McQ.



There is no roof in this picture, but it is a tribute to the photographic artistry of a very distinguished Federation personality, Mr. C. G. Dobson, and aptly symbolizes the year now coming to a close.

Built to take tomorrow's electrical

250,000 feet of Republic "Inch-Marked" E.M.T. provide electrical flexibility



530 Park Avenue Apartment, New York, N. Y. Contractors: Campagna Construction Corp., New York, N. Y. Architect: George F. Pelham, Jr., New York, N. Y.

APARTMENT BUILDINGS KEEP THAT MODERN LOOK with smartly styled Truscon Series 138 Double-Hung Steel Windows. The Campagna Construction Corporation of New York City, builders of the distinctive 530 Park Avenue Apartment (left), has used Truscon Windows for more than 15 years. Campagna likes the "fair prices, durability, smooth operation, ease of maintenance, weather protection, paintability and Truscon service." See your Sweets File or mail coupon for details.

LONG-LASTING BEAUTY AND FIRE PROTECTION in ceiling construction are a certainty with Truscon's Herringbone Lath and plaster. This durable double mesh lath and plaster provide a tested insulating membrane that effectively shields structural members from fire. And the surface is both durable and attractive. The complete Truscon line includes more than 40 different items of Metal Lath and Accessories. They're available everywhere.

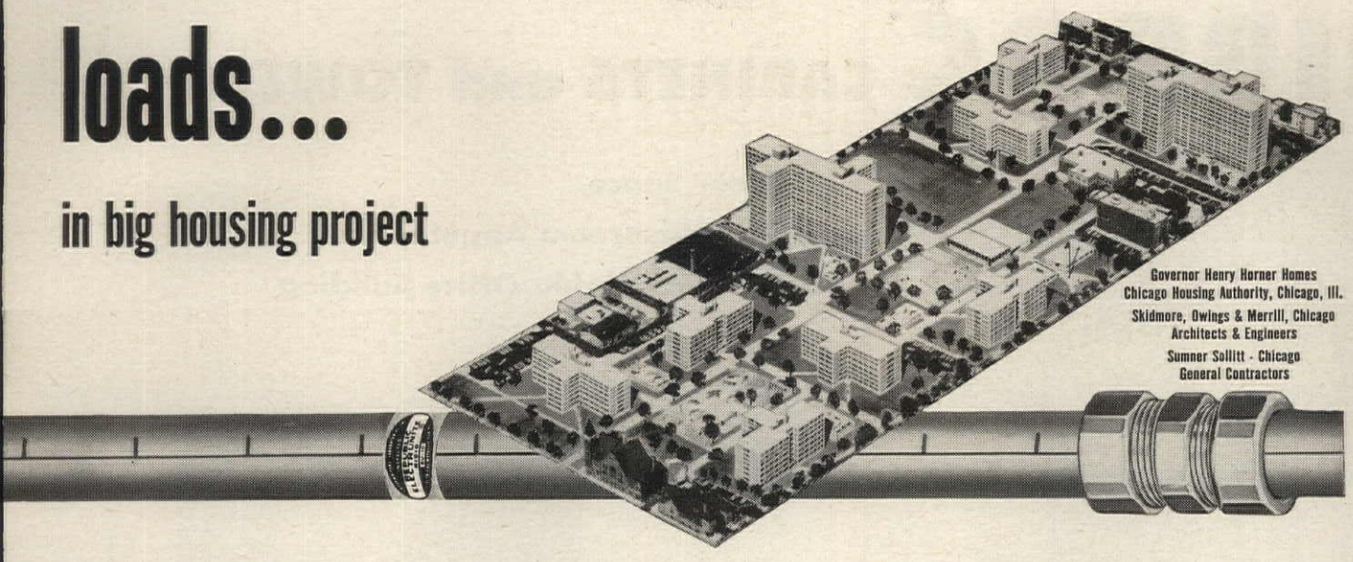
REPUBLIC

REPUBLIC STEEL

World's Widest Range of Standard Steels

loads...

in big housing project



Governor Henry Horner Homes
Chicago Housing Authority, Chicago, Ill.
Skidmore, Owings & Merrill, Chicago
Architects & Engineers
Sumner Sollitt - Chicago
General Contractors

The current drive for "Housepower"* carries the promise of more and more electrical conveniences for home and apartment. In turn, this dictates the need for electrical systems flexible enough to provide for increased loads.

Designers and builders of Chicago's magnificent Henry Horner Housing Project took this need into consideration when they specified conduits of ample size and installed Republic "Inch-Marked"® E.M.T. Nearly 50 miles of this modern, electrical raceway was used in the eight beautiful apartment buildings (above)—providing unsurpassed protection and flexibility. Though present wiring will handle all foreseen loads, the addition of extra circuits — should they be needed — will be quite easy.

Wires are quickly replaced by pulling old wire out of tube and inserting new. Additional wires are easy to add. And to speed the job, "Inch-Marked" E.M.T. is "knurled" on the inside—an exclusive Republic feature that simplifies wire-pulling by 30 per cent.

Republic "Inch-Marked" E.M.T. provides positive protection from fire, moisture and insulation damage. Since connections are made with couplings and fittings, threading is unnecessary. Thus the tightly adhering, galvanized coating remains unbroken—assuring permanent, end-to-end circuit protection.

It will pay you to get the complete story on the many advantages of Republic "Inch-Marked" E.M.T. Exclusive installation features—"Inch-Marked" and "Guide-Lined"—will save construction dollars. And it's approved by the National Electrical Code for concealed, exposed, and concrete installations and carries the Underwriters' Laboratories Seal of Inspection. Send coupon for handy reference booklet giving complete facts.

*Adequate wiring

Lodgewood Apartments, Milwaukee, Wisconsin
Fabricator: Louis Hoffman Co., Milwaukee, Wisconsin
Architects: Scott, Kloppenburg & Scott

THIS STAINLESS-CLAD APARTMENT BUILDING HAS A BRIGHT FUTURE. More than 60% of its exterior surface is made up of spandrels, fabricated from Republic ENDURO Stainless Steel. That means it will stay vivid and attractive for life. Because it's highly resistant to rust and corrosion, maintenance costs are reduced. And there's a substantial reduction of wall weight from conventional construction. It will pay you to investigate ENDURO Stainless Steel made by Republic. Send coupon.

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and Steel Products

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Dept. C-1924
3108 East 45th Street, Cleveland 27, Ohio

Please send more information on:

- ☐ ELECTRUNITE E.M.T.
- ☐ Truscon® Metal Lath
- ☐ Truscon Series 138 Double-Hung Steel Windows
- ☐ ENDURO® Stainless Steel for architectural applications

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

NIBROC® CABINETS and TOWELS

Save Floor Space, Improve Washroom Appearance in New Philadelphia Office Building

PENN CENTER BUILDING, Philadelphia, Pa.
Architects: Emery Roth & Sons, New York
Builder: Uris Brothers, New York

In keeping with a desire to provide tenants with the finest washroom facilities available, Nibroc Recessed Cabinets and Nibroc Towels have been installed in Philadelphia's attractive new Penn Center Building.

Nibroc, America's first wet strength towels for commercial use, are super-absorbent, strong, sanitary, soft textured. Because *one* towel dries both hands, they speed washroom traffic—end waste.

The new, improved recessed dispensers with waste receptacles are highly popular for washrooms with heavy traffic. They load faster, hold more towels, and are beautifully constructed of 22-gauge stainless steel. For staggered installation, dispenser and waste receptacle are obtainable separately. Wall cabinets available in white enamel, chromium plate or stainless steel.

For complete satisfaction, choose Nibroc Towels and Cabinets. Look under "Paper Towels" in your classified directory for name of nearest distributor, or write Dept. UN-12, at our Boston office.

See Sweets Catalog for full details about Nibroc Cabinets—wall, floor model and recessed.

BROWN QUALITY COMPANY
Berlin, N. H.

General Sales Office: 150 Causeway Street, Boston 14, Massachusetts

HANLEY BRICK

COLOR . . . newest aid to the architect in his creative task . . . now is combined with the time-proven strength and endurance of brick. The shaft of the Grand Central Building rises skyward in a solid lift of deep blue . . . Hanley Iris Blue Duramic Brick No. 418. The broad base of this mid-town Manhattan structure is of mist-tinted Hanley Pearl Gray Duramic Brick.
In Hanley Duramic Brick, ceramic engineers have perfected a burned-in color with an almost-unlimited spectrum . . . a new concept in tone and texture, produced under a closely-controlled process that eliminates staining and preserves its original beauty indefinitely.

Grand Central Building,
New York City
Architect: William Lescaze

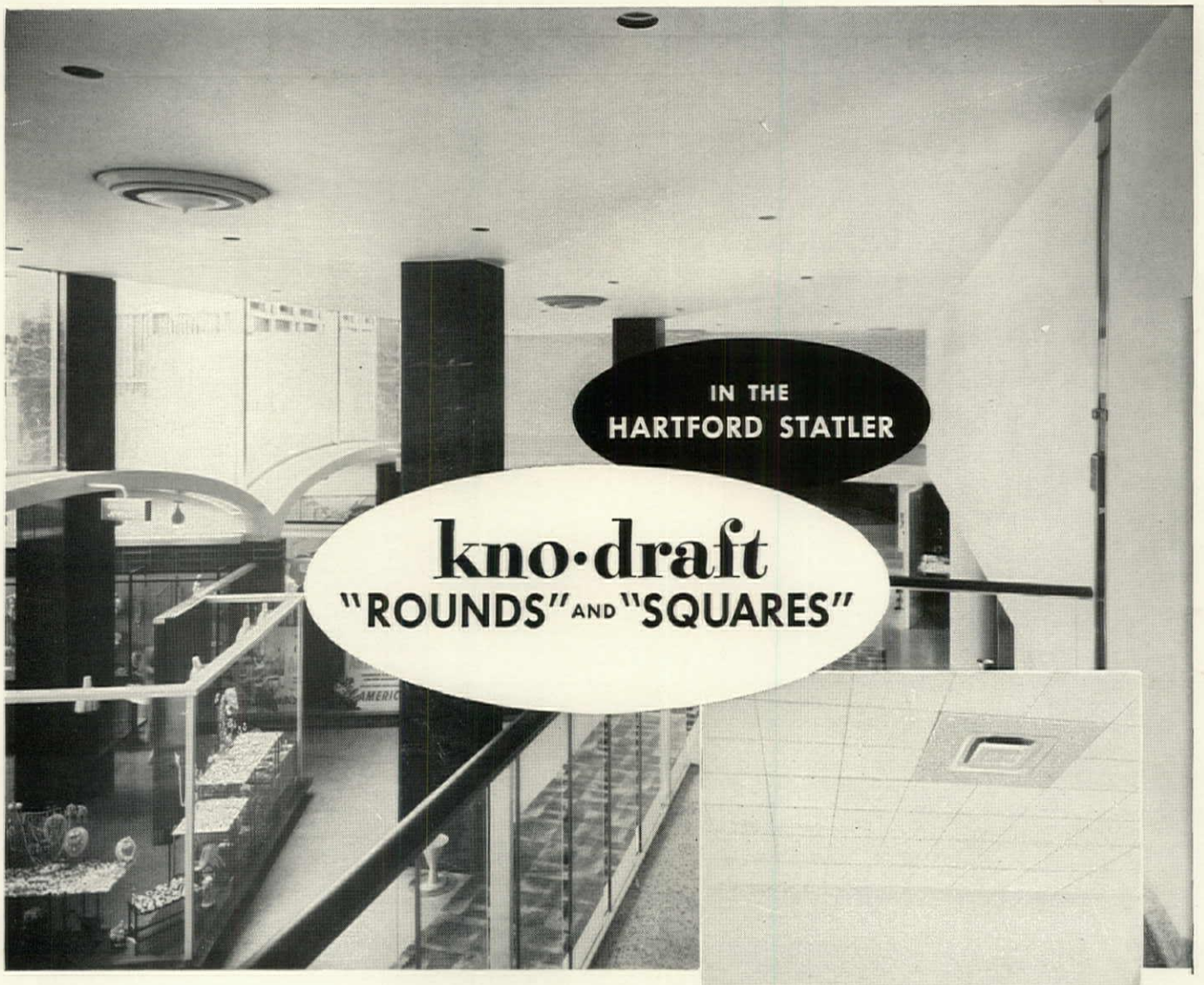
HANLEY DURAMIC glazes are highly-resistant to severe weather changes and have been time tested under various climatic conditions throughout the United States and Canada. All the traditional qualities that have made brick a favorite building material through the ages . . . plus the modern manifestation of color . . . that is *Hanley Duramic Brick.*

ARCHITECTS

For complete information on Hanley Ceramic Brick and Tile, ask nearest Hanley office for Architect File Folder.

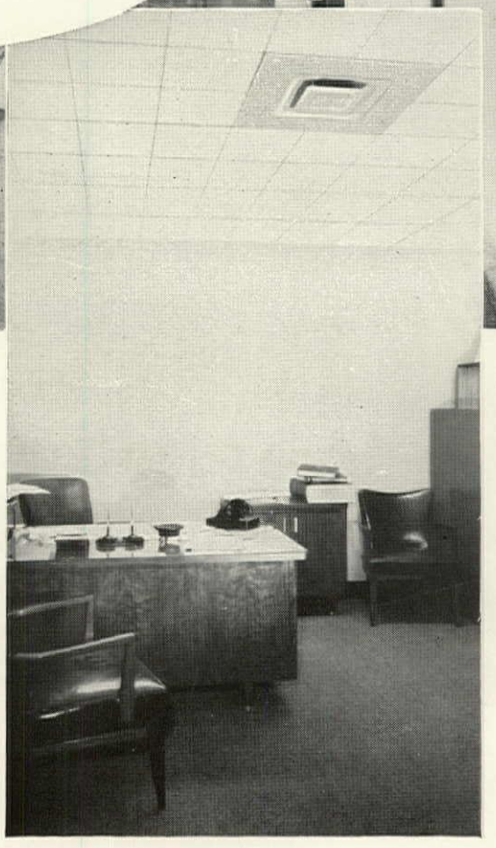
HANLEY COMPANY INC.

NEW YORK: 101 PARK AVENUE • **PITTSBURGH:** ONE GATEWAY CENTER • **DETROIT:** 14976 SCHAEFER HIGHWAY



IN THE
HARTFORD STATLER

kno·draft
"ROUNDS" AND "SQUARES"



Engineers: Jaros, Baum and Bolles
Mechanical Contractors: Alvord and Swift

Conditioned air is delivered to all offices and public rooms of the new, modern Statler Hotel in Hartford, Connecticut, through Kno-Draft Adjustable Air Diffusers. Both round and square units are used—and a few of the new slot-type Kno-Drafts (not shown).

Primary reason for selection of Kno-Draft was the greater comfort assured by *draftless* air movement, uniform temperature, and the easy and accurate control of both air volume and flow pattern.

And notice how neatly the Kno-Draft squares fit into acoustical ceilings and how—square or round—the handsome Kno-Draft units blend unobtrusively with the architectural scheme of things.

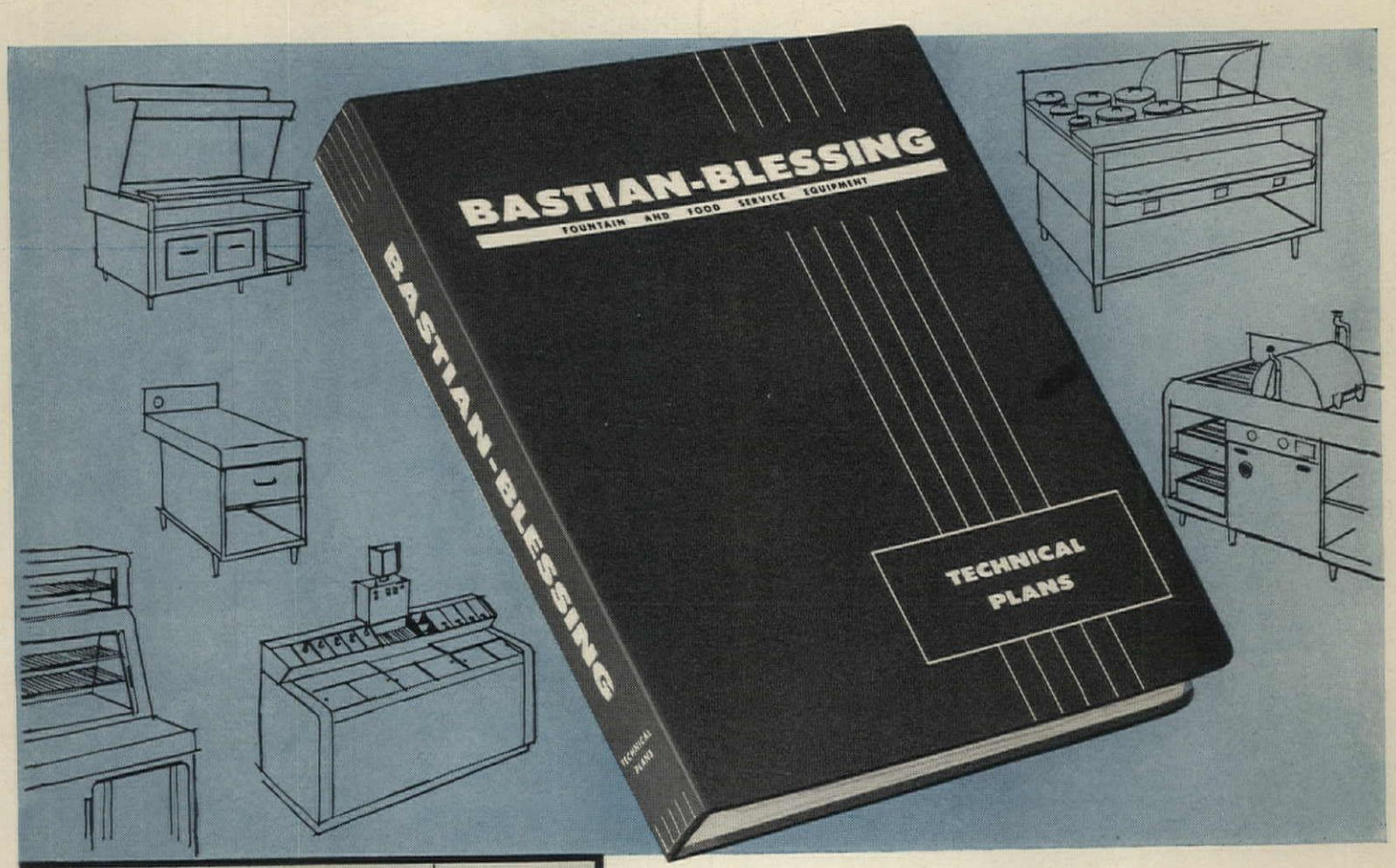
For complete specifications, engineering and installation information on Kno-Draft round, square and slot-type diffusers, simply write on your letterhead to Connor Engineering Corporation, Dept. D126, Danbury, Conn.

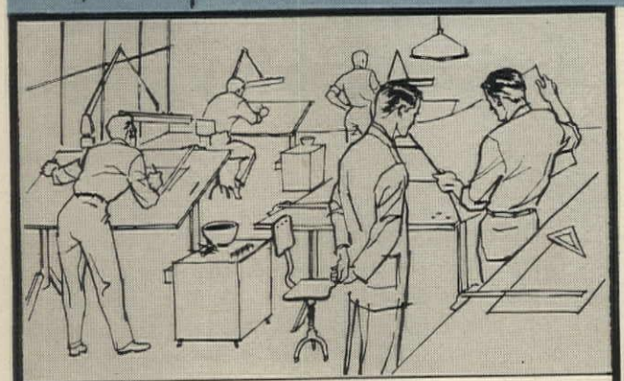
CONNOR
ENGINEERING
CORPORATION

kno·draft®
adjustable air diffusers

Yours Free!

from the leader in fountain-food equipment





Bastian-Blessing also offers you a complete planning, layout and consultation service for fountain-food equipment installations. See your Bastian-Blessing distributor or write the company.

Architects whose practice takes them into the specialized field of counter restaurant design—for drive-ins, drug stores, hotels, hospitals or restaurants—will find this big $10.00 volume an educational and time-saving aid to their layout and design work. The Technical Plans Book contains scale drawings of both the floor plans and elevations of all items in the Bastian-Blessing line. Complete dimensional data, including size and location of plumbing and electrical connections, are furnished.

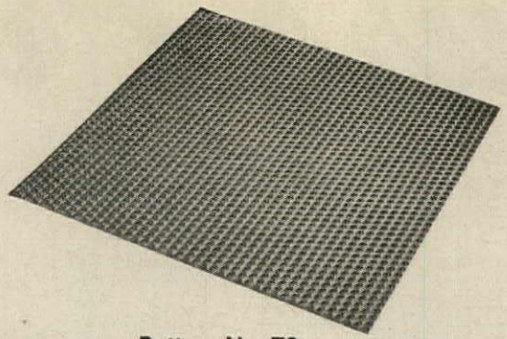
The book is loose-leaf so that drawings can be temporarily removed and traced on vellum or cloth as the layout of the complete counter restaurant progresses.

The Technical Plans Book is free to qualified architects who write on their business letterheads. We would appreciate your stating your interest or connection with the fountain-food equipment field. Write The Bastian-Blessing Co., 4205 W. Peterson Ave., Chicago 30, Ill.

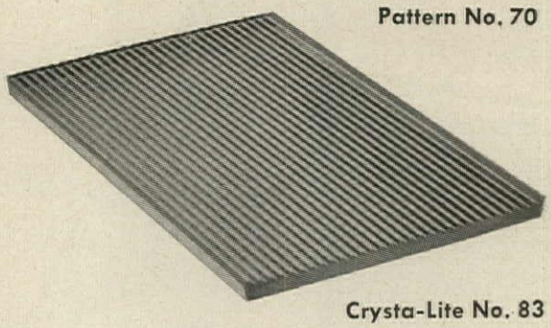
See Our Catalog Insert 24c/Ba in Sweet's Architectural File

Your best buy **BASTIAN-BLESSING**

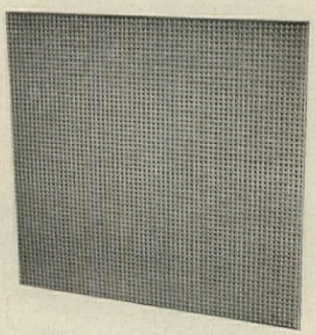
World's largest manufacturer of fountain and counter food service equipment



Pattern No. 70



Crysta-Lite No. 83



30° angle Fota-Lite

GOLDEN ANNIVERSARY 1906-1956 SUSTAINING MEMBER

This is the Corning engineered lightingware selection in 24-inch panels

Prismatic fluorescent

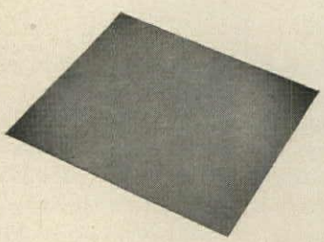
Pattern No. 70. Low-brightness lens panel. Prismatic configuration gets *very* low surface brightness with maximum light in useful zone. Available in 24-inch panels and panels 24 inches wide up to 100 inches long.

Crysta-Lite No. 83. A continuous prism lightweight panel designed to cut off light across prisms at approximately 50° from vertical. Result is low luminaire brightness in glare zones. In 24-inch panels and panels 24 inches wide up to 100 inches long.

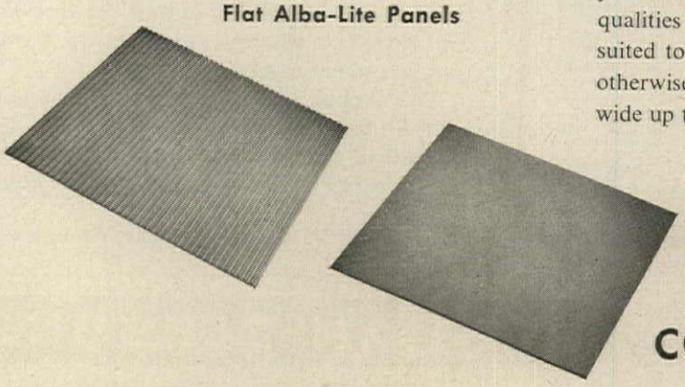
Louvering fluorescent

30° angle Fota-Lite. Here's the cell pattern produced with louvers in one direction tilted 30°. Angular light projected parallel to the tilted louvers produces offset beam lighting for vertical surfaces and accent lighting of exhibits and displays. Louvers cut off view of lamp in other directions. In 24-inch panels and panels 24 inches wide and up to 49 inches long.

Get the optical quality of glass,



Flat Alba-Lite Panels



Diffusing fluorescent

Flat Alba-Lite in three patterns. Use these panels where you want diffused lighting. Alba-Lite's excellent diffusing qualities totally obscure the fluorescent lamp. It is especially suited to applications where reflected or direct glare might otherwise be present. In 24-inch panels and panels 24 inches wide up to 100 inches long.

CORNING GLASS WORKS,

Security Bank Building, Billings, Montana
Architect: Bank Building and Equipment Co., St. Louis, Mo.
Illuminating Engineer: Robert Cook, Montana Power Co.
Fixtures: Columbia Electric and Manufacturing Co., Spokane, Wash.
Lightingware: Corning Pattern No. 70, Corning Alba-Lite (Side panels)

the advantages of 24-inch panels . . . with Corning engineered lightingware

Ceiling appearance and lighting efficiency may be improved by the use of large-panel lighting fixtures.

When considering large-panel lighting, look to the advantages of glass panels by Corning. In addition to the permanent beauty of glass, its long-time economy in both service life and maintenance, you can obtain the engineered optical properties to fit a wide variety of needs for lighting offices, banks and other public buildings.

24-inch-wide panels are available for prismatic, diffusing or louvering light control. Accurately controlled glass compositions in opal or water-white crystal insure true transmission of light-source color. Precision-engineered designs, in the permanent hardness of glass, direct light effectively without glare. Panels up to 100 inches long permit flexibility in ceiling design.

For specific and detailed information, write, wire or phone us.

CORNING, N.Y. 64-12 CRYSTAL ST.

Corning means research in Glass

LETTERS

WHAT CITY PATTERN?

Forum:

Your September issue on city pattern is an excellent presentation of the more serious problems and philosophies of urban planning. Those of us who daily raise our individual small voices heartily welcome any and all assistance to speed the real work. I have recommended your fine article to our mayor and councilmen.

JOHN D. SPAETH
Director of Planning
Seattle, Wash.

FORUM:

CONGRATULATIONS ON YOUR SEPTEMBER ISSUE. YOU ARE ON CORRECT TARGET FOR ARCHITECTS. KEEP SHOOTING.

KEN REID
ERNEST J. KUMP, ARCHITECT
PALO ALTO, CALIF.

Forum:

These articles are extremely timely and raise some interesting questions concerning the future of land use planning.

RODERICK L. DOWNING
Professor, Civil Engineering
University of Colorado
Boulder, Col.

Forum:

. . . an excellent presentation of a very timely subject.

TRACY B. AUGUR
Assistant Commissioner for Urban Planning Assistance
Housing and Home Finance Agency
Washington, D.C.

Forum:

You have rendered a service to many people in presenting this important case for the future of our American cities.

FOSTER WINTER, *treasurer*
J. L. Hudson Co.
Detroit, Mich.

Forum:

It is excellent and certainly timely in the light of growing traffic and other problems which threaten our urban areas.

RAYMOND B. TUCKER, *mayor*
St. Louis, Mo.

Forum:

. . . exceedingly stimulating.

ERNEST M. FISHER
Professor of Urban Land Economics
Columbia University
New York, N.Y.

Forum:

I found the article concerning the future of American cities of intense interest.

ARTHUR RUBLOFF
Arthur Rubloff & Co., real estate management
Chicago, Ill.

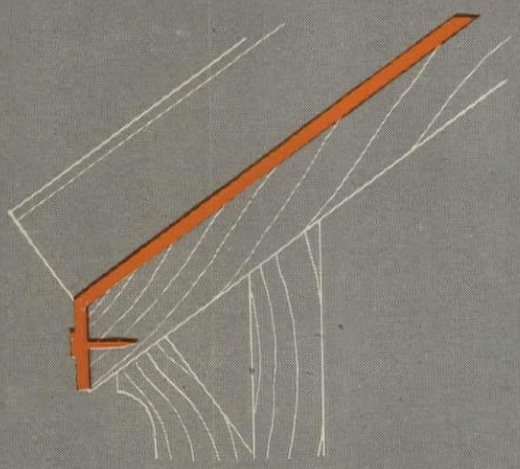
Forum:

Catherine Bauer's article on the city pattern is a more powerful argument for

continued on p. 70

HOW WOULD YOU DO IT?

. . . this way?



EDGE STRIP DETAIL
BATTEN SEAM ROOF
Fig 1

. . . or this way?

EDGE STRIP DETAIL
BATTEN SEAM ROOF
Fig 2

In the Fig. 1 detail the roofing pans are turned down over the cornice edge and secured by copper nails spaced about 3 inches on center.

In Fig. 2, along the cornice edge, a continuous edge strip made from 8′-0″ long pieces, such as shown, is attached to the roof boarding before the roofing pans are placed. The lower edge of the roofing pans hook over this previously placed edge strip.

In Fig. 1 the exposed nails will work loose and draw out so they can be removed by the fingers. By nailing the sheets, expansion and contraction movement is restricted which cause waves and buckles to form in the roofing sheets.

In Fig. 2, where the roofing pans are hooked over the edge strip, freedom of movement is provided for the necessary contraction and expansion of the metal. This also keeps the copper nails from being exposed, for a neater installation. A proper drip edge is also provided and the cornice edge of the roof can be finished in a workmanlike manner. Note that the edge strip should extend under the copper roofing pans at least 4″ and the ends of each 8′-0″ length butt together.

We do not wish to presume to tell you how to design your structures or dictate their construction. For there are many satisfactory methods of installing gutters, leaders, roofs, flashing, coping covers, etc., which, of necessity, change with the design and type of construction and materials used. The purpose of this advertisement is to point out the methods of installation that have been proved by many years of use, and backed by more than a century and a half of experience in working with copper, to be the most satisfactory techniques. You will find these methods in Revere's 110 page brochure, "COPPER AND COMMON SENSE." Send for a copy today. And remember: Revere has a staff of specialists known as Technical Advisors, whose experience qualifies them to render valuable service and advice regarding the use of metals in the building field. Feel free to consult with them at all times regarding the use of Revere Copper; you incur no obligation. Revere Technical Advisors may be contacted through the Revere Office nearest you.

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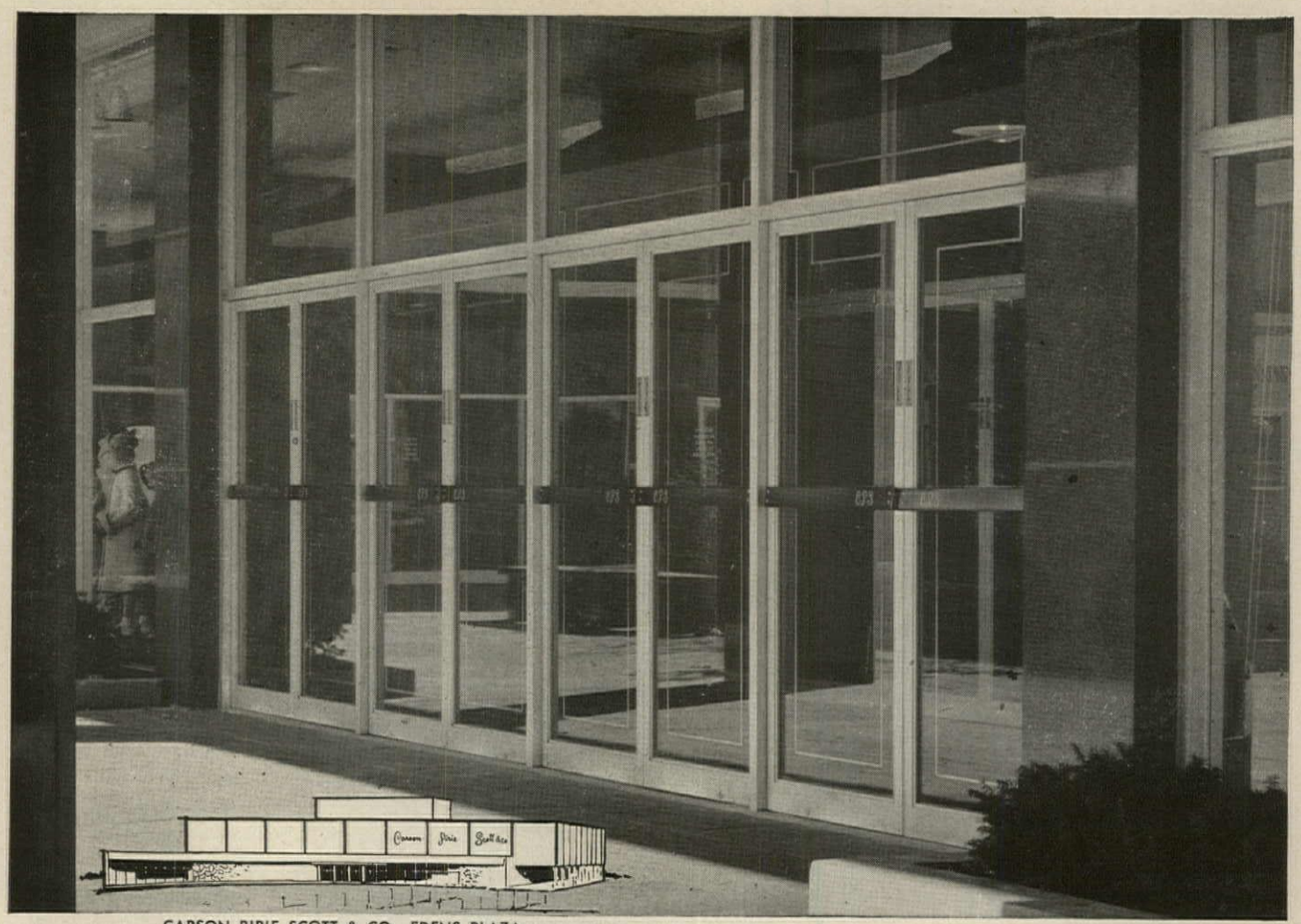

CARSON PIRIE SCOTT & CO., EDENS PLAZA
Architects and Engineers: Welton Becket & Associates, Los Angeles
Graham, Anderson, Probst and White, Chicago

equip ENTRANCE DOORS with RIXSON for durability and appearance

CONCEALED floor type CLOSERS

for single acting doors
wood, metal or glass

- offset hung
- center hung
- butt hung

for double acting doors

- wood or metal doors
- glass doors

Entrance doors create the first impression of a building. Openings should be smooth and gentle, closings silent and safe. Still the door must withstand great abuse and be under complete control at all times. This requires an efficient, rugged, durable closing mechanism. RIXSON is world famous as the originator of concealed floor type closers with more than half a century's experience in engineering, testing, and development. There are installations over 45 years old in which RIXSON "floor checks" continue to function satisfactorily.

RIXSON floor type entrance closers give maximum strength of installation and *complete* concealment of the mechanism—including the arms, on offset hung and center hung doors.

THE OSCAR C. RIXSON COMPANY

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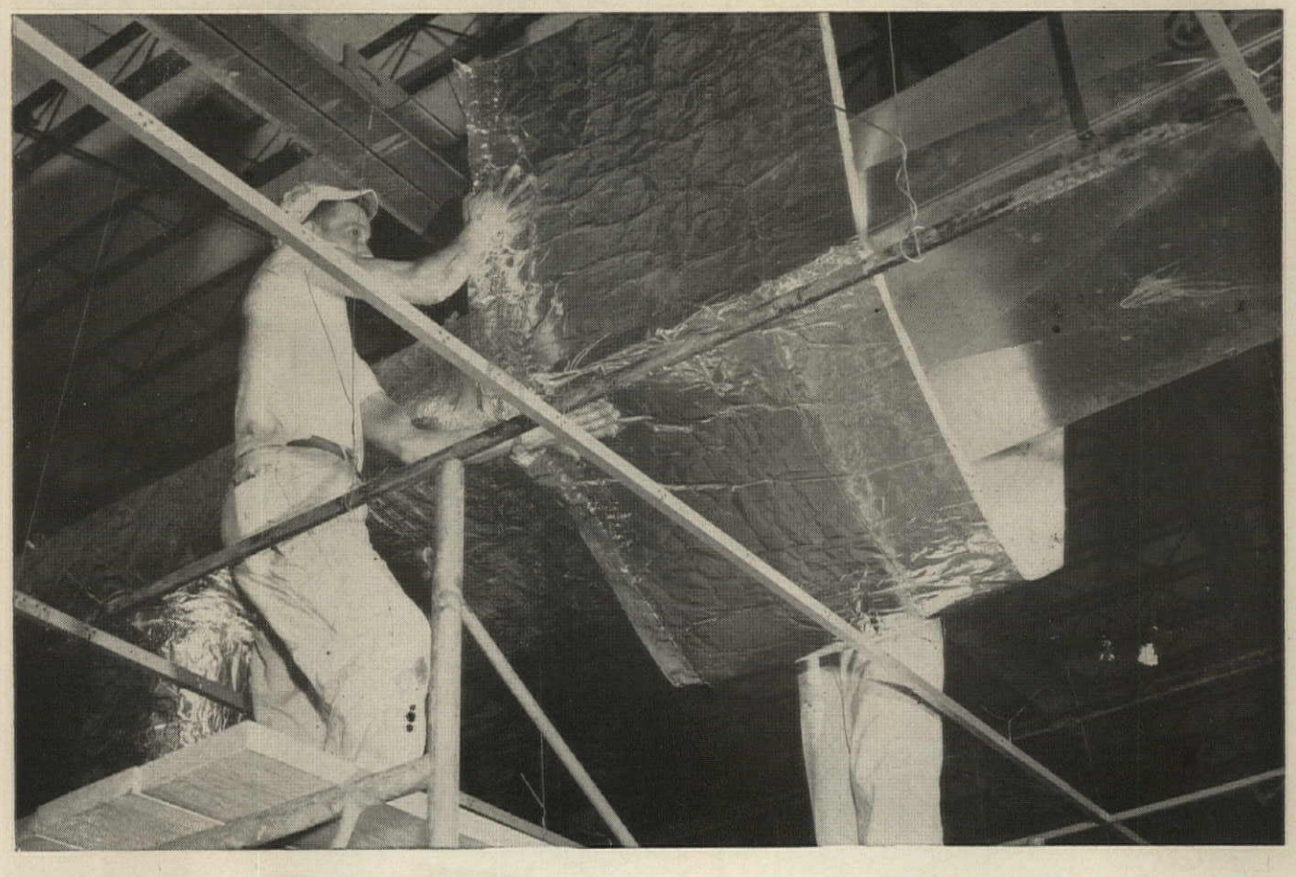
INSULATION News from L·O·F GLASS FIBERS COMPANY



"Foil-faced Microlite combines high insulating efficiency with one of the best vapor barriers ever!"

"We used foil-faced Microlite to insulate sheet metal ducts in Toledo's University Bowling Alleys because it is an extremely effective thermal insulation." In addition, Nelson E. Thal, architect, states, "We found that the aluminum-foil facing on Microlite not only does a better vapor barrier job than anything else, but also has the added value of reflective insulation. It's flameproof, too. Microlite is fast to handle and costs no more when installed than other materials. As a result, both client and contractor were pleased!"

The very fine glass fibers of which Microlite is made form millions of dead air cells, which effectively reduce heat loss or gain. These inorganic fibers will not rot, mildew or support combustion. As a result, Microlite gives you the nearest thing to *permanent* insulating efficiency!

Microlite is available in easy-to-store rolls, with a variety of plain or reflective vapor barriers extended to form tabs. Contractors find it easy to handle and apply because it is light in weight, strong, resilient, and eliminates the need for precision cutting or fitting.

For free literature, write: L·O·F Glass Fibers Company, Dept. 60-126, 1810 Madison Avenue, Toledo 1, Ohio.

L·O·F GLASS FIBERS MICROLITE INSULATION

L·O·F GLASS FIBERS COMPANY

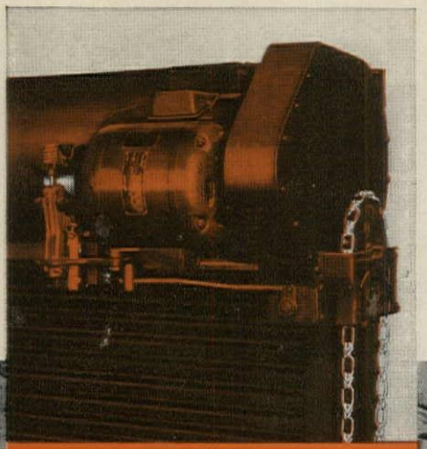
TOLEDO 1, OHIO

Makers of glass fibers by the "Electronic-Extrusion" process

Rolling Steel Doors

Save Space Under Restricted Operating Conditions!

Illustrated below is another unusual shipping dock application in which no other type of door could meet the operating space requirements. In three openings, 38′-0″ x 14′-0″, at the entrance to an enclosed subterranean shipping dock adjacent to a vehicular tunnel under a fabulous suburban shopping center, three Mahon Power Operated Rolling Steel Doors provide the quick, timesaving, space-saving operating features demanded in this compact, easily accessible freight handling facility. Each rolling door serves an unusually wide opening to permit trucks in the tunnel to quickly back into angular loading platforms. Quick-opening, quick-closing power operated rolling steel doors, with signal arrangements and push-button control stations, offer the ultimate in convenience and timesaving operation . . . and, the all-metal construction in rolling steel doors provides the permanence, security and fire-safety which assures a lifetime of trouble-free service. When you are ready to select a rolling steel door, it will pay you to check specifications carefully . . . you'll find extra value features in Mahon doors—for instance, the galvanized material in Mahon curtain slats is BONDERIZED and DIP-COATED with synthetic enamel which is baked on at 350° F. prior to roll-forming. You will find other quality and design features in Mahon Rolling Steel Doors that add up to a greater over-all value. See Sweet's Files for information and Specifications, or write for Catalog G-57.



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POWER OPERATOR 910-P

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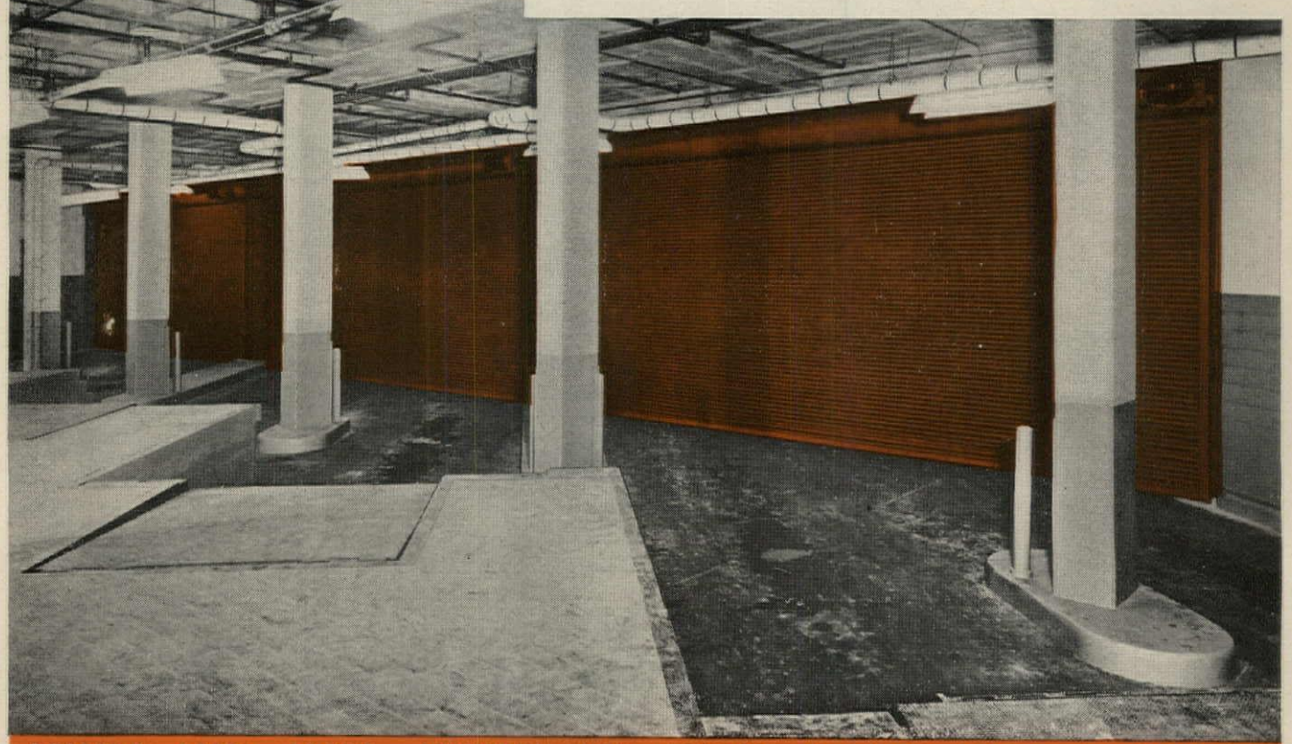
Sales-Engineering Offices in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Roof Decks and Long Span M-Decks; Electrified M-Floors; Permanent Concrete Floor Forms; and Acoustical and Troffer Roof and Ceiling Forms.



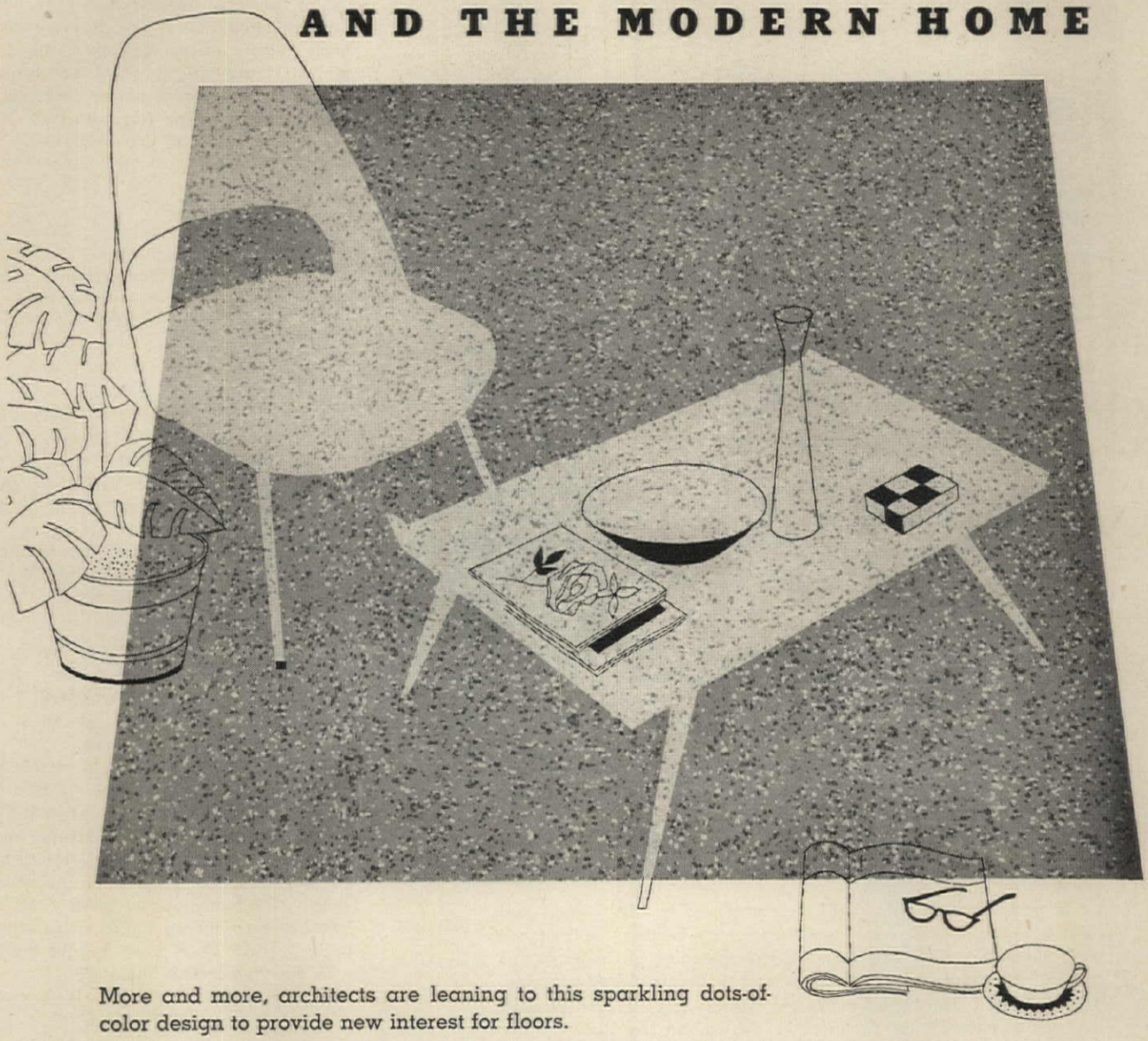
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Three Mahon Power Operated Rolling Steel Doors, 38′-0″ x 14′-0″, at the entrance to an enclosed subterranean shipping dock off a vehicular tunnel under "Northland", Detroit, Michigan. Owners: Northland Shopping Center, Inc. Architects: Victor Gruen & Associates. General Contractors: Bryant & Detwiler.

M A H O N

Moultile JUBILEE TILE FLOORING

AND THE MODERN HOME



More and more, architects are leaning to this sparkling dots-of-color design to provide new interest for floors.

The reason: here is something eye-catching, different . . . yet is a fit companion to *every* style of architecture, *every* kind of decor.

It's not surprising, then, to note Jubilee in the specifications for virtually every room in the house . . . play, utility, living.*

Of particular importance is the fact that Jubilee wears as well as traditional asphalt tile. So here, too, is real economy . . . both in initial cost, installation and maintenance.

We would be happy to send you complete data.

*Nor, may we add, is it surprising to find Moultile Jubilee in virtually every type of *installation*.

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LETTERS *cont'd.*

metropolitan government than it is for metropolitan planning. It demonstrates once again that ideas and plans for a better physical environment are almost useless unless they are incorporated in some means of control over the forces which create the physical environment. Which comes first, a better form of government or a better form of city?

H. W. STEVENS
Director of Planning
City Planning Commission
Cincinnati, Ohio

Forum:

. . . an extremly interesting article.

JOHN R. SEARLES JR., *executive director*
District of Columbia Redevelopment Land Agency
Washington, D.C.

Forum:

I was very pleased and impressed to find Catherine Bauer's article in your magazine. It is a valuable piece of writing on a subject that architects should be more conscious of and spending more time thinking about and acting on.

LOUIS P. DOLBEARE
Philadelphia, Pa.

Forum:

In your discussion of the urban pattern for 1976 (AF, Sept. '56) FORUM should have included Architect LeCorbusier's "7 Roads" which became the basis of the Chandigarh plan.

While Frank Lloyd Wright stands stock still with his Broadacres, Corbu has moved further than Plan Voisin. One wonders why so little—in comparison to others—has been published in the US about Corbu, his works and his development. Not much of the great debt owed him has been repaid. Also, there is much to be learned from him; he did not stop with the "machine à habiter."

NORMAN N. RICE, *architect*
Philadelphia, Pa.

ACOUSTICS

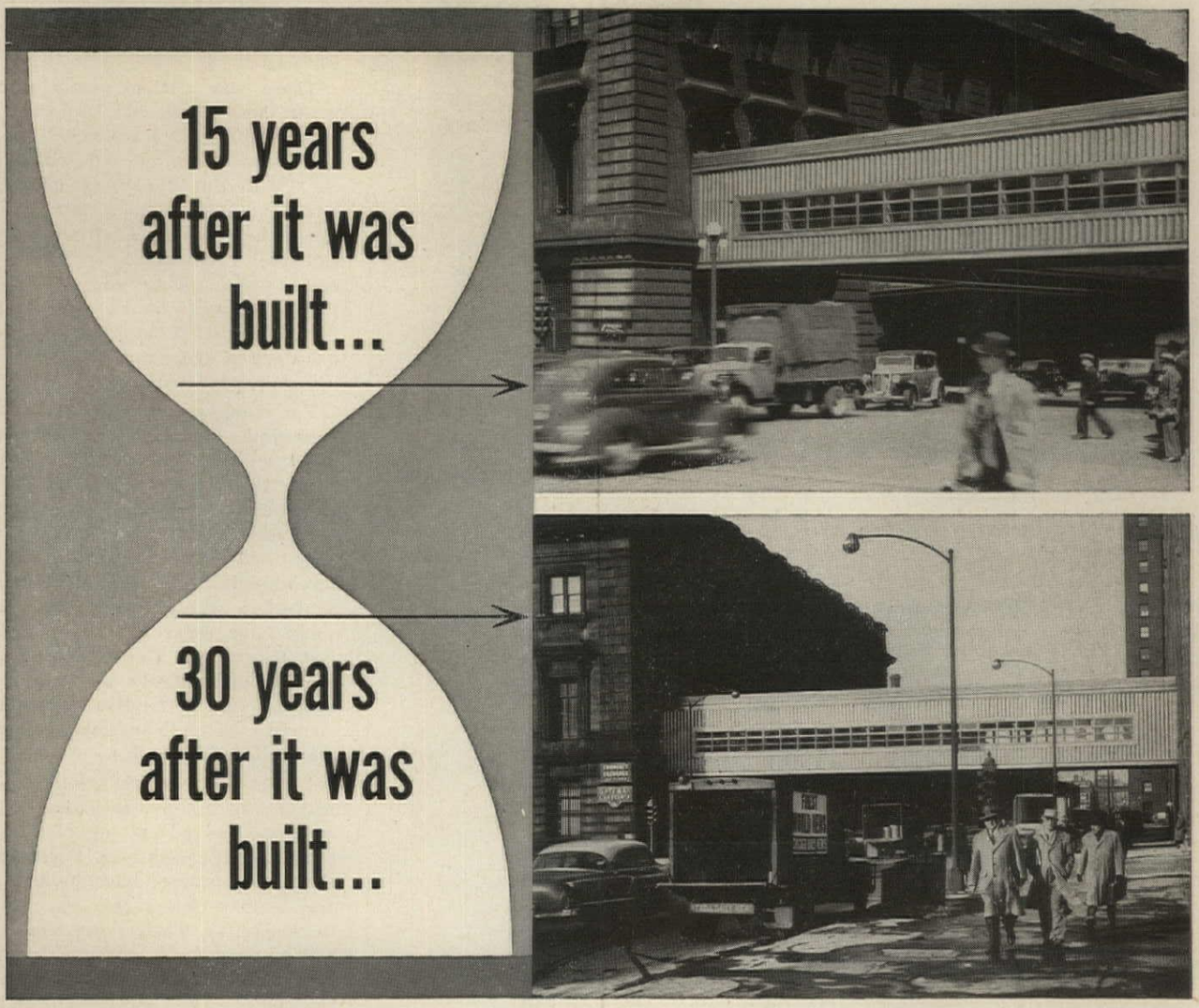
Forum:

Your article in the September FORUM, "Beautiful Buildings and Horrible Sounds," helps to demonstrate again why a team of experts must work together in the design and construction of our present-day buildings. In the area of materials alone it clearly defines how the designer must use the right material in the right place and in the right amounts. The usual "judgment by experience" method is rapidly disappearing. The moral of your story is that acoustics and sound control are more than skin deep.

This kind of an article helps a client to appreciate how thorough architects' services are.

STANLEY SHARP
Ketchum, Gina & Sharp, architects
New York, N.Y.

continued on p. 72



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

"INFO" for Architects and Builders

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2. "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. A1A File No. 26D.
3. "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Write for Details

Address Dept. B-84

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

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

No other architectural metal can match stainless steel in these properties. Not one can last as long, cost as little to maintain, and prove as economical in the long run. ● Use AL Stainless in *your* projects, for maximum service and lasting beauty, both in exteriors and interiors. Ask us for any help you need. *Allegheny Ludlum Steel Corp., Oliver Bldg., Pittsburgh 22, Pa.*

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LETTERS *cont'd.*

Forum:

There was a time, many years ago, when those of us who promote the sale of architectural acoustical materials would have been pleased with the article "Beautiful Buildings and Horrible Sounds" in your September issue. We would have appreciated any efforts to call the attention of architects to the necessity of giving adequate consideration to acoustics in the design of buildings. Now that architectural acoustics has come of age, we expect more accurate and fair treatment.

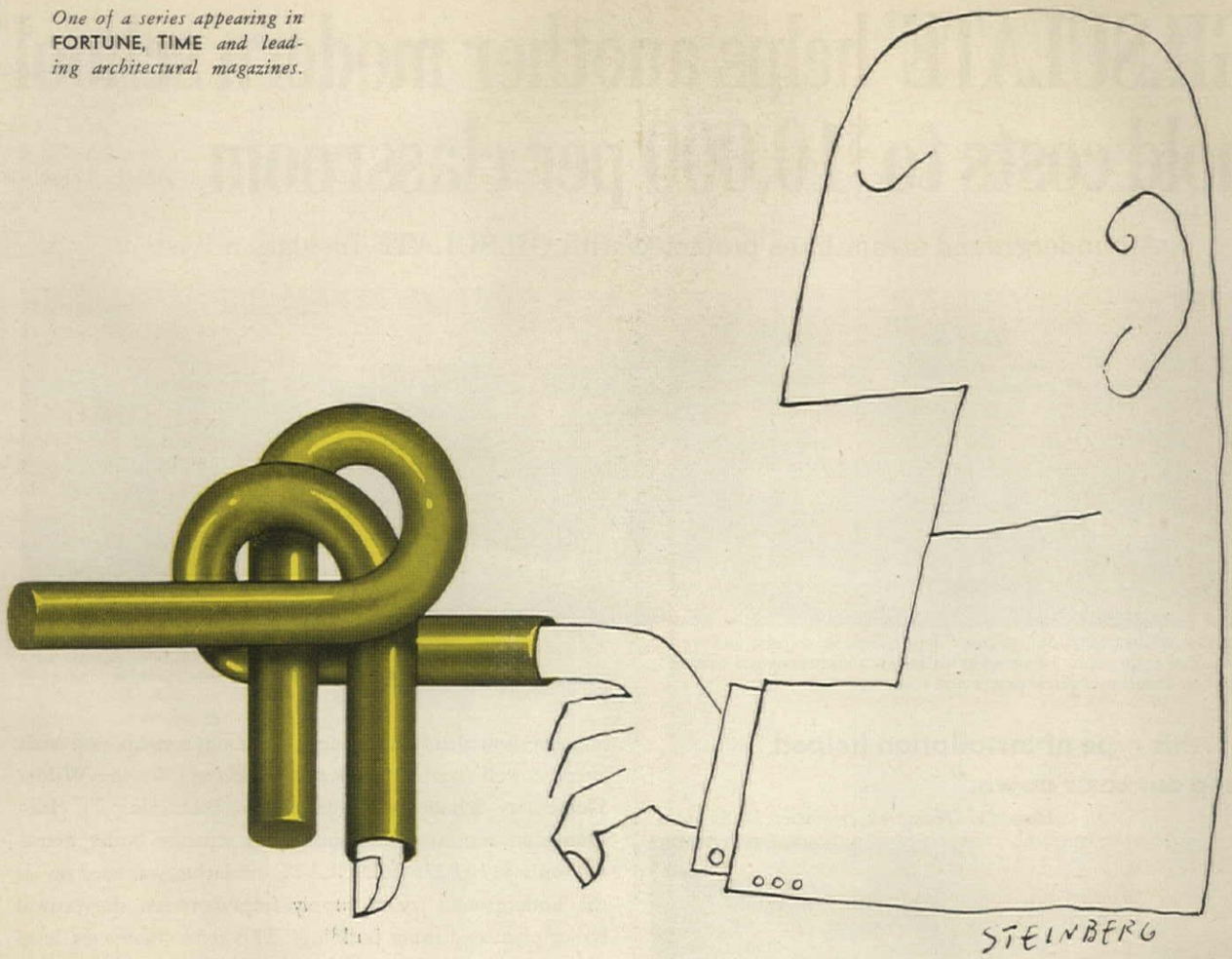
For many years the manufacturers of acoustical materials represented the great majority of the few voices crying for better acoustics and less noise. There were some acoustical consultants, and good ones, more than 25 years ago and they and the manufacturers deserve much credit for building the industry and profession which your authors seem to think have come into being during the last ten years. The tendency to ignore the accomplishments of their predecessors is one of the less admirable characteristics of youth and must be challenged when the evidence is so obvious.

Let me state quite unequivocally that manufacturers of acoustical materials welcome the advent of new acoustical consulting organizations. For many years the manufacturers have been furnishing free engineering service, at great cost to themselves. Their representatives have had many years' experience in the practical solution of acoustical problems and the architectural profession and public have been benefited by their services. The business has grown and become more competitive and problems have become more complex to the point where the profit from the sale of materials frequently does not justify the engineering involved. The establishment of more independent acoustical consultants is a natural part of the evolution of the industry. And it is also quite natural that these new acousticians should be looking for new materials to prove their originality and help solve some of their unusual problems.

There have been few, if any, basically new principles introduced into architectural acoustical engineering in the last 25 years. Auditoriums can still be given very satisfactory acoustics by the methods developed by Wallace C. Sabine before 1920. Public-address systems and noise-making mechanical equipment have been added to complicate problems but the basic principles of sound distribution and absorption remain the same. The mechanism of sound absorption by acoustical materials is also unchanged although much "chrome" and other trimmings have been added to make acoustical materials more efficient, attractive and practical.

continued on p. 76

One of a series appearing in **FORTUNE, TIME** *and leading architectural magazines.*



puzzlement

What happened to the hole in Lewin-Mathes Tube?

It's been eliminated in *part* of our production . . . so that users of Brass Rod can now enjoy the same standard of quality and service which has been responsible for the popularity of Lewin-Mathes Copper and Brass Tube and Pipe during the past 25 years.

In designing America's most modern Brass Rod mill, Lewin-Mathes has pioneered new automatic production and testing methods . . . adding even greater efficiency to our already *completely integrated* plant.

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All underground steam lines protected with GILSULATE Insulation System

MODERN WILDER SCHOOL features 6-foot overhang on east and west as weather protection, 5-foot wide walks; each classroom has outside entrance. Exterior is brick veneer and concrete.

Mechanical Contractor: Intermountain Company, Boise, Idaho
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"...this type of installation helped keep our costs down."

Harold G. Thompson, Architect, Boise, Idaho.

900-SQ. FT. CLASSROOMS feature plastic skylights and 12-500 watt concentric ring fixtures; continuous wall heating and a mechanical ventilation system. Total building area is 12,416 sq. ft.

Surveys show that most modern classroom construction costs average well over $30,000 per classroom. Yet the Wilder Elementary School in Wilder, Idaho, containing 11 classrooms, an administrative suite, plus separate boiler house, cost only $116,827! GILSULATE insulation was used on all the underground steam supply lines between the central boiler plant and other buildings. This remarkable cost level was also achieved at the Cadott School in Wisconsin—another GILSULATE installation.

The Wilder School installation consists of a 5-inch steam line and a 1¼-inch condensate return running for 156 feet from the boiler house to the school, and a 6-inch line and 1½-inch condensate running for 120 feet between the boiler and high school. The entire job required 17 tons of Type A GILSULATE, and took 21 man hours to install, plus 2 hours for a grader to backfill the trench.

Whatever type of job you have in mind—airport, school, utility, institution, factory, railroad—it will pay you to investigate the unusual features of this easily-installed, dependable, low-cost insulation system. Write for further information or see your local GILSULATE dealer.

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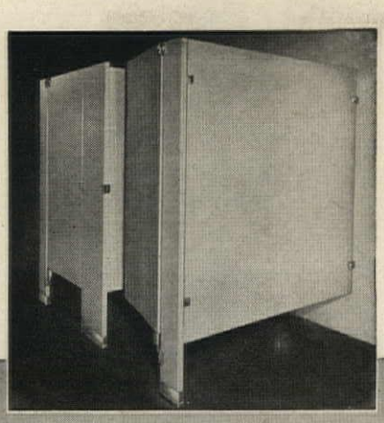

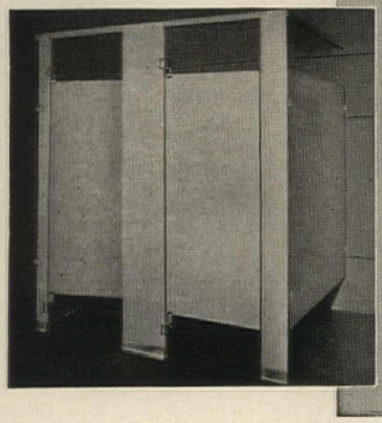

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LETTERS *cont'd.*

Why do materials manufacturers make the products they do? Because those are the materials time has shown to be most practical and which lend themselves to mass production and sale at the lowest price. This does not mean there have been no improvements or new materials. The latest official bulletin of our Association lists 69 different materials, 49 of which did not exist ten years ago, and even those bearing the same trade names as ten years ago show radical improvements. Some of the consulting firms claim they need additional materials and point to unusual installations where their ingenuity has produced "something different" and peculiarly fitting to a particular job. The manufacturers have no quarrel with them on such custom jobs and will be glad to mass-produce any materials for which a substantial market exists. That advances in our standards of living have been based on mass production is too well known to need argument. We would still be in the "dark ages" of architectural acoustics if material had to be custom made for each job.

The manufacturers of acoustical materials have worked hard for more than 30 years to promote recognition of the importance of acoustics in architectural design and to build the industry from which they, acoustical consultants, architects, and the public now profit. Is it not appropriate for a journal such as yours to recognize the contribution which this sustained effort has made to the architectural profession?

WALLACE WATERFALL, *executive secretary*
Acoustical Materials Assn.
New York, N.Y.

● FORUM does indeed recognize the contributions of Reader Waterfall's Association members, six of which also wrote FORUM of their displeasure with the September article (Celotex Corp., Armstrong Cork Co., US Gypsum Co., National Gypsum Co., Johns-Manville Sales Corp., and E. F. Hauserman Co.).

These readers criticized the article for not being comprehensive and for discussing the role of independent acoustical consultants at the expense of the service offered by manufacturers and their distributors. Actually, the article could not, nor was it intended to, cover the entire field of noise control. Its purpose was to underline the growing need for architects and their clients to seek expert acoustical advice from some source (independent consultant or manufacturer's agent) in the early stages of their building programs. FORUM's article concentrated on the role of the independent consultant because the widespread use of these experts by architects is a relatively recent development and therefore a timely subject for an article. Moreover, the subject of acoustics includes building design as well as the use of acoustical materials.

The manufacturers also challenged the accuracy of seven statements in the FORUM article:

1. "There is no substitute in sound control for 12" of solid concrete." This statement is true but was used to make a point, not to imply that every partition should be concrete 12" thick—obviously an absurdity.

2. "An all-tile ceiling absorbs too much sound . . . listening is difficult. . . . Tile belongs around the top of the walls and the ceiling edges in a class-

room." This statement may not be true for lower-grade classrooms where noise control is particularly important, but is generally true for upper-grade classrooms and classrooms used for lecture purposes.

3. "Ceilings are lower, which means that noise cannot drift upward and get lost." This statement is debatable. While lower ceilings minimize the problem of reverberation, some noises are more bothersome in confined spaces. Technically speaking, sounds do not actually drift upward and get lost, but FORUM believes that its readers welcome the occasional use of such conversational phraseology in a technical article.

4. "To the annoyance of many tile manufacturers, the acousticians argue that we are using more acoustical materials than we need to." This statement, according to the manufacturers, is false: they are not annoyed and they are opposed to the use of unnecessary materials.

5. "The major item of expense in an acoustically treated office building is the cost of the ceiling tile." Two member companies call this statement "questionable." Examples can probably be found to support both sides of this argument, and we concede it would have been better to say that tile is *a* major item of expense rather than *the* major item of expense. In the same section of the article, we cited as a "typical office building" one of 20 stories with a base area of 40,000 sq. ft. Here, we believe, we were in error. A more typical example would have been a building of 20,000 sq. ft. at its base. In this case, the cost of tile would have been $240,000, instead of $480,000 for the larger building mentioned in the article.

6. Architects and acoustical engineers "sometimes grumble that the manufacturers are too far from the problems of the acoustician and the architect to know what tomorrow's products should be." This is a fact we picked up in our reporting—they do sometimes grumble about the remoteness of the manufacturer.

7. "The acoustical materials industry is one which has progressed mainly by evolution—by modification of existing products, rather than by development of new materials." Although one company, for example, says it has since the war developed five new products involving four distinctively different materials and compositions, it seems fair to refer to the industry as an evolutionary industry compared with the radically changing chemistry and electronics industries. (FORUM reported this as interesting information, not as criticism.)—ED.

Forum:

I was most interested in the article on acoustics in your September issue. Congratulations on the clear and concise way in which the article stated the present status of the art and science of acoustics.

The situation in Canada at the moment appears to be even worse than in the US and at times I feel that I am conducting almost a one-man campaign to improve matters!

ROBERT H. TANNER, *engineering consultant*
Belleville, Ontario.

MISPLACED CREDIT

Forum:

I would have been proud to have supplied you with the picture of the tile mural on your October cover, as your credit line says I did. But, the picture isn't mine.

BEN SCHNALL, *photographer*
Hewlett Harbor, N.Y.

• The credit should have gone to Photographer Fred Stone.—ED.


THIS CAR UP

You Can Buy a New Luxury Car Every Year with Savings on Each Westinghouse Operatorless Elevator You Install

Automated (Operatorless) Elevators Cut Operating Costs up to $7000 per car per year

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This is a typical example of the Corbin preference held by architects, contractors, building owners, and tenants who have had experience with the superb design, ease of installation, and trouble-free performance of Corbin Unit Locks and Finishing Hardware. It explains why Corbin is specified for more and more of the world's outstanding new large buildings. Specify this finer hardware for *your* new office and institutional buildings . . . consult your dealer for selections from Corbin's complete line.

NEW SOCONY MOBIL BUILDING

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Major Lessee: Socony Mobil Oil Company
Associated Architects: Harrison & Abramovitz and John B. Peterkin
General Contractors: Turner Construction Co.
Corbin Locks and other hardware by: Charles Kurzon, Inc.

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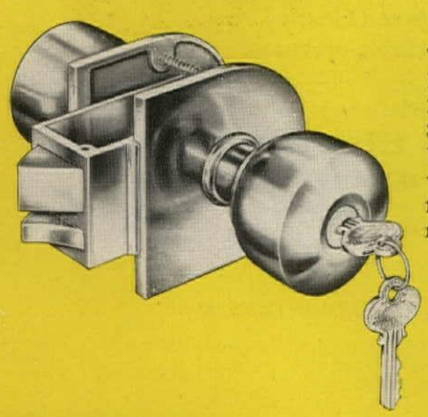
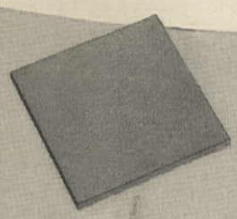


These exclusive locks in Titan Design No. 904 are installed on 22 of the total 45 floors in the Socony Mobil Building. Corbin Unit Locks are available in a wide range of designs and finishes to meet every functional requirement.

CORBIN **HEAVY DUTY UNIT LOCKS**

The Locks that come Practically Pre-Installed

New Tiles Galore— for Wall and Floor by Summitville

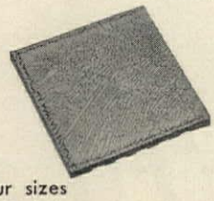


QUARRY TILE

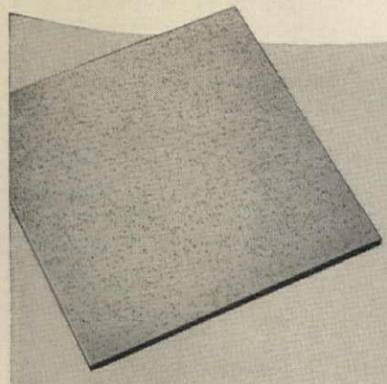
Now available in six beautiful colors. Summitville Quarry Tile is unsurpassed for richness of color and superior chemical, structural and mechanical qualities. No other flooring is so durable and easily maintained.

GLAZED

Quarry Tile



The only frost-proof glazed Quarry tile available. Available in a wide range of colors and textures in four sizes with matching trim units. Ideal for light-duty floors, patios, store fronts and swimming pools.



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A sensational "first" in new product development. This 11⅞" x 11⅞" x ⅜" ceramic unit offers unusual design and color treatments wherever glazed interior tile is specified.

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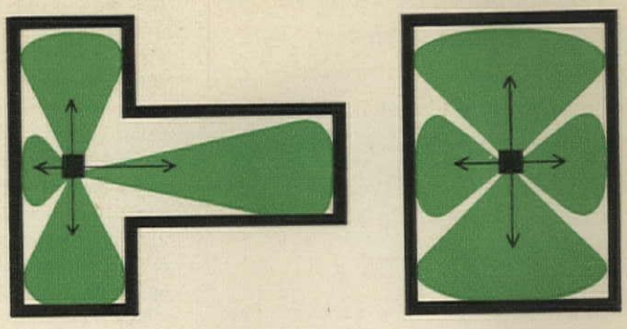
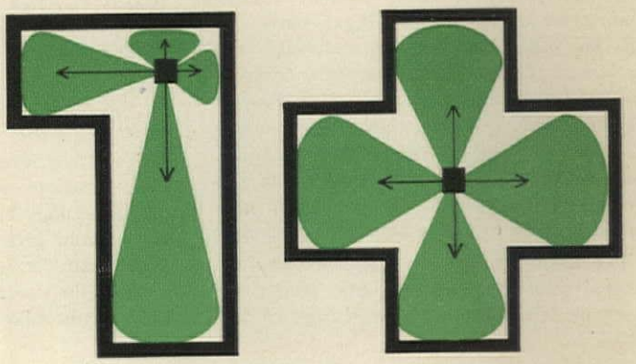
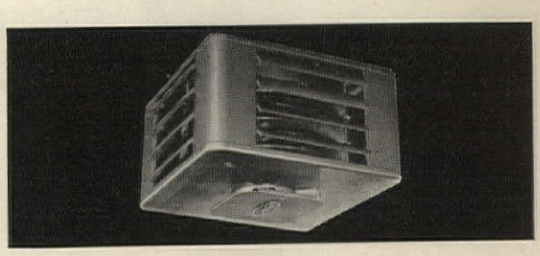


any of these areas



with one Carrier "Clover Leaf"



Just one of Carrier's exclusive "Clover Leaf" Unit Heaters with variable 4-way air distribution effectively heats up to 8000 square feet of floor area. Carrier's greater, more flexible coverage means fewer units are needed, resulting in impressive savings in first cost, installation and upkeep. For steam or hot water, in 8 sizes: 55,000 to 600,000 Btu/hr.

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EXCERPTS

Opinions expressed in these excerpts are not necessarily those of FORUM's editors

Architecture and nature

Excerpts from remarks by Garrett Eckbo, landscape architect, before the Southeastern Conference of the Association of Collegiate Schools of Architecture at the N.C. State College School of Design and first printed in the school's student publication

Buildings don't exist in a vacuum. They exist in a real world surrounded by things that have gone on before. The landscape is a continuous phenomenon. It is continuous from ocean to ocean. It doesn't have boundaries except in the legal sense. It only has obstacles. For each individual the landscape is a continuous experience from the time they are born until they die. In all their waking hours they are conscious of some kind of landscape around them. Each new building which is added to the landscape is a new force. It sets up new relations, new tensions or contradictions.

The architect and the engineer produce central concepts, new concepts, which are more or less abstract new things in the world. The function of the landscape process is to establish a relation between this new central force—if it is a building—and the site it is on, the space immediately around it, and the local landscape that surrounds that site. The landscape process is concerned with continuity, with relations and with connections. These all boil down in practice to the effort to organize and articulate space. This has the same function as architecture has. Ultimately the two of them have to merge into an art of space design which is a continuous art, which doesn't have boundaries, which doesn't produce isolated concepts that exist in a void, but are always related to what is around them.

Architects' fees

Excerpts from an article by Architect John Stetson in The Florida Architect

The statisticians tell us that the average beauty shop operator, mortician, real estate broker, barber shop operator, head waiter and girdle designer makes more a year than Mr. Average Architect.

Consider the relative returns of certain individuals who contributed to the design and erection of one of South Florida's false-faced, facetiously fenestrated flophouses: the general contractor netted over 10%—plus 7% interest on a loan he made the owner—and he obtained the job on a cost-plus basis without competition! The mortgage broker received 1½%, plus a tidy appraisal fee. The architect received the grand fee of just under 1%, out of which he paid all office overhead and expenses, except engineering.

How can a man with so much training sell his self-created efforts for so little? Maybe he isn't a creator, but just a cribber. Maybe he is *satisfied* to produce creations that reap money for everyone else, while he lives on the wages of a sausage-stuffer.

Our previously mentioned hotel may soon be sold. The broker will collect a fee of 5% of the cost of land, furnishings, construction, landscaping and the first owner's profit. This will amount to over ten times the fee collected by the architect. Considering overhead and expenses, it represents just about 100 times the net return of the building's designer.

I'm the last to advocate a lower fee for brokers. I envy them. However, I envy a situation wherein a man with no required formal education can establish himself in the eyes of the buying public as being so necessary to the development of Florida that he can demand and receive a fee ten times the size received by the creative professional with five years of college and

years of technical experience.

It is impossible for the "strong members" of the architectural profession to hoist the "weak" into a higher income bracket. So is it impossible to legislate fees for those too timid or mentally incapable of demanding and receiving a fair return. Only within each individual architect lies the power to raise his own income, by producing a service overwhelming in its thoroughness and by continuing to produce better designs aimed at good taste and lower construction costs.

Zest for ziggurats

Excerpts from an editorial in the British magazine, Town & Country Planning

The impulse to build as high as possible, evident in every child playing with his first set of bricks or pack of cards, and in the monuments of many civilizations, reflects the beginnings of a love of the spectacular or of a pleasure in personal prowess: natural tastes that may develop later to virtuous or vicious degrees. Majesty of scale can be a factor in buildings giving esthetic thrills to millions for centuries; but there are many cases where majestic ruins excite a curiosity or awe that is not in the best sense esthetic, and may be mixed with sadness at the reminder of man's folly, infatuation or brutal display of power. Projectors or designers of buildings have a moral duty to assure themselves that they are not actuated by a craving to build in some novel way, simply because it is fun to produce remarkable effects, or because it is technically possible and the exercise of one's powers is satisfying. The architects of the Tower of Babel no doubt had a lot of fun; but it was the community who had to foot the bill, and who paid the frightful penalty imposed by the Lord for their succumbing to the temptation to build as high as heaven.

The naked desire to excel vertically, yielded to by commercial concerns or designers or dazzled stockholders, was a stronger factor in producing skyscrapers in America than economic or social considerations, as their financial history shows. And it is difficult not to believe that Frank Lloyd Wright's project for an office tower of 528 stories, one mile high (AF, Nov. '56), springs from the impulse to show what modern building engineering can do combined with the itch to make the Eiffel Tower and the Empire State building look small. Such a project does not arise as the next natural stage in the so-far unchained evolution of Chicago as an overgrown and overcrowded city. It is an outburst of technological exhibitionism. No doubt this is a luxury the world can afford. And we sympathize with it enough to wish there could be a periodic international South Bank type Jamboree at which such outbursts could be worked off harmlessly. But the quasi-esthetic penchant for height and the scientific enthusiasm for new ways of construction should not be the prime movers in permanent projects in workaday cities.

Office planning standards

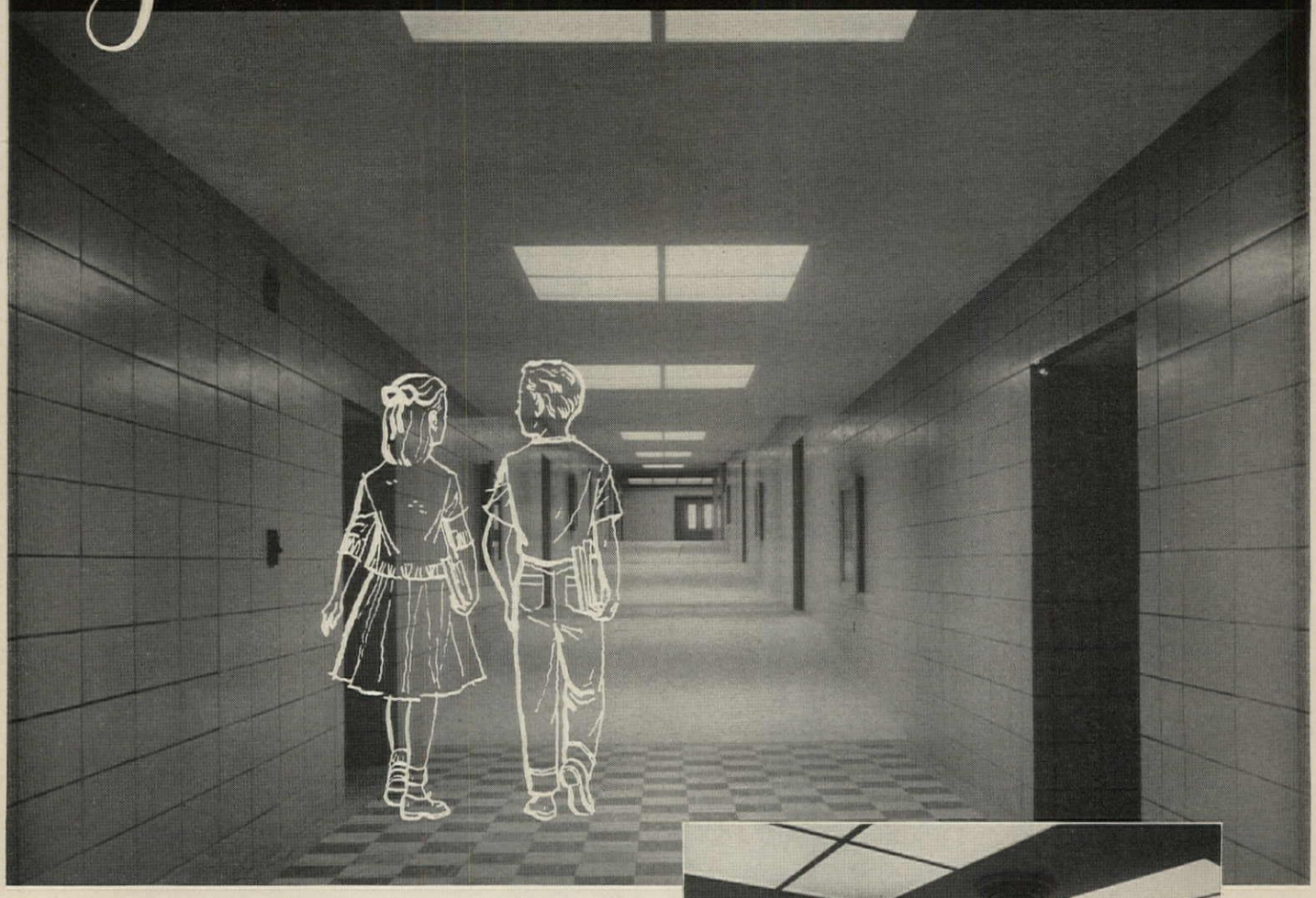
Excerpts from a talk by Burke W. Taylor of Welton Becket & Association before the Los Angeles Convention of the National Assn. of Building Owners and Managers

A number of formulas have been designed to make possible reasonably accurate estimates of a prospective tenant's space requirements in advance of any actual plan drafting. We like best the one based on "work positions" rather than accommodated personnel, and on the reduction of equipment other than desks to "file equivalents."

To illustrate the "work position" theory, in nearly every large office there are employees who work at two different stations—part time at a desk and part time,

continued on p. 90

Glass MAKES EVERY STEP TO LEARNING SURER



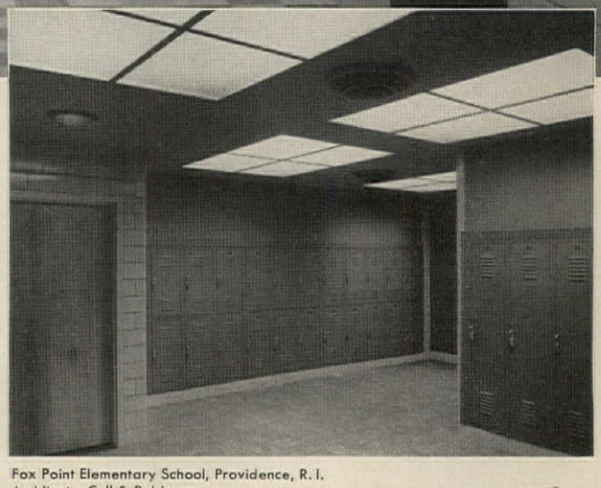
Skylights of Wire Glass Achieve Open Air Atmosphere in School Corridors and Rooms

A ceiling of sunshine floods the long corridor in Fox Point Elementary School, Providence, R. I., with bright, natural light to make it safer for hurrying youngsters. Mississippi Magnalite "B" Wire Glass, Approved Fire Retardant No. 32, employed in skylights, achieves broader, more uniform light distribution . . . eliminates shadows . . . creates a pleasant, open atmosphere that relieves the stark simplicity of the long hall.

Mississippi Glass makes every step to learning surer by providing better daylighting that protects precious young eyes against fatiguing glare in classrooms and laboratories. It provides a maximum of security against breakage and entry in doors, skylights, windows.

When you build or remodel, consider the many ways in which translucent, light diffusing glass can improve *your* school. Figured glass by Mississippi is available in a wide range of patterns and surface finishes all "visioneered" for better daylighting.

Mississippi maintains an experimental school building on factory grounds for the study of daylighting. Take advantage of the company's wide experience. Our technicians are ready to help you with every daylighting problem.



Fox Point Elementary School, Providence, R. I.
Architects: Cull & Robinson

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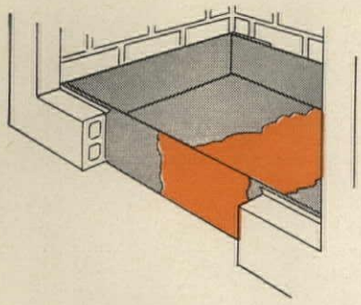
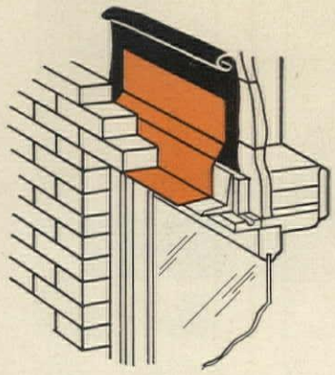
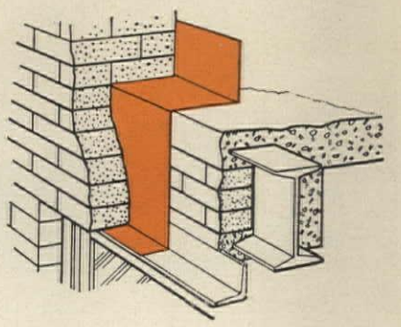


"Electro-Sheet" coated with asphaltic compound provides a nonrusting, watertight, one-piece shower pan installed below the finish floor tiling.



Door and window flashings of "Electro-Sheet" bonded to building papers seal against air infiltration and moisture penetration.



A low-cost, easily installed product giving the lasting protection of copper is widely used for spandrel beam flashing, to prevent seepage of water.

COPPER has proved itself a lasting barrier to water and water vapor over many, many years. It doesn't rust and it resists most forms of deterioration which impair the protective value of other materials.

Therefore it is an ideal material for flashing and dampproofing which must be built into a structure or buried – concealed flashing that should last the life of the building.

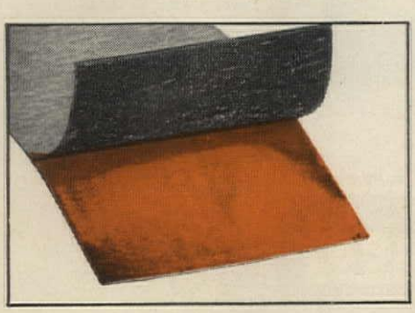
Making a little copper go a long way. Anaconda's development of "Electro-Sheet" made the use of copper in these hidden places practical and economical in all types of building. "Electro-Sheet" is pure thin copper produced in long, wide rolls by electrodeposition in weights of 1 to 7 ounces per square foot. It is furnished to manufacturers who bond it to high-grade building papers and fabrics, or coat it with asphaltic compounds.

Easy to handle and apply. These flashing products incorporating "Electro-Sheet" are extremely flexible, easy to handle and are furnished in rolls up to 60" wide. They are available through building supply dealers throughout the United States and Canada.

For more information. If you wish more information about ANACONDA "Electro-Sheet," or want a list of manufacturers using it in their products, write: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont. 5646

"Electro-Sheet"
ANACONDA®
COPPER

"ELECTRO-SHEET" Is Bonded To Various Materials



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SPLIT MULLION DESIGN. Interlocking mullions provide for horizontal expansion and contraction.

CLEAN SIGHT LINES. Glazing beads for fixed sash are recessed to be flush with the mullion, providing clean sight lines and unobstructed vision.

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NO EXPOSED FASTENERS. Units are assembled with concealed fasteners and glazing beads are installed by a positive toe-heel interlock.

FLUSH INTERIOR DESIGN. Interior face of mullion and muntin bars lie in the same plane, facilitating the installation of interior furnishings.

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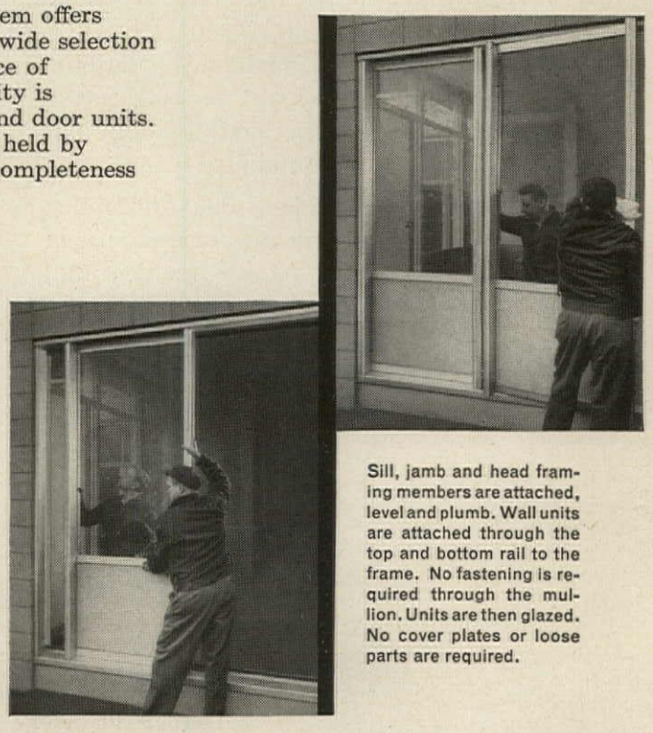
Write for new 12-page detailed book on Kawneer Unit Wall System.



Sill, jamb and head framing members are attached, level and plumb. Wall units are attached through the top and bottom rail to the frame. No fastening is required through the mullion. Units are then glazed. No cover plates or loose parts are required.

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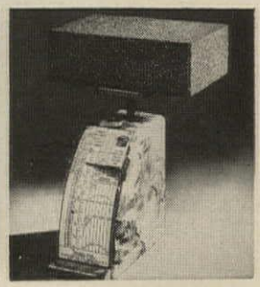

Lightweight

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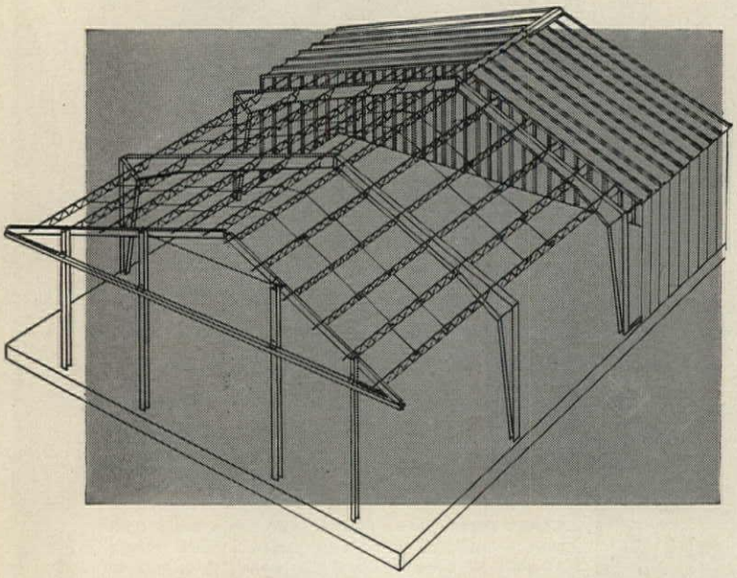
Use Armco Steel Buildings

to save preliminary design and engineering time

Here's the Skeleton



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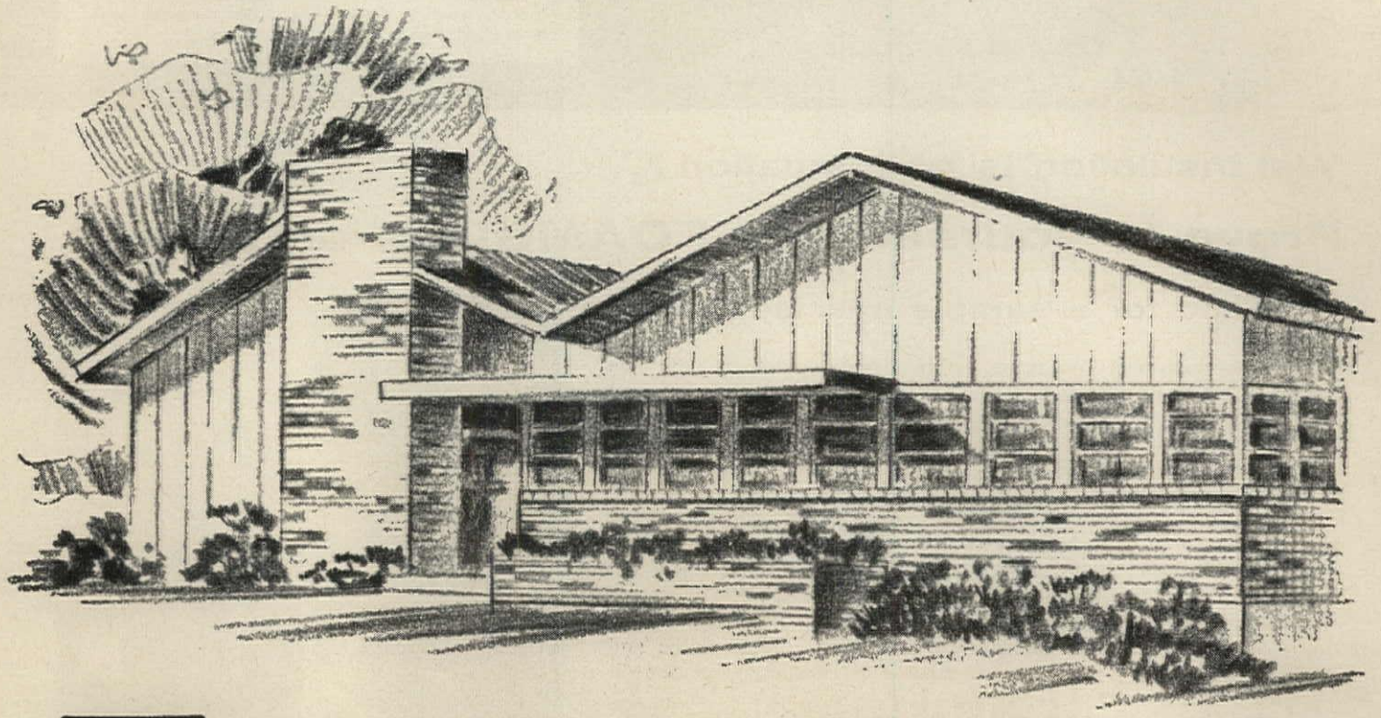

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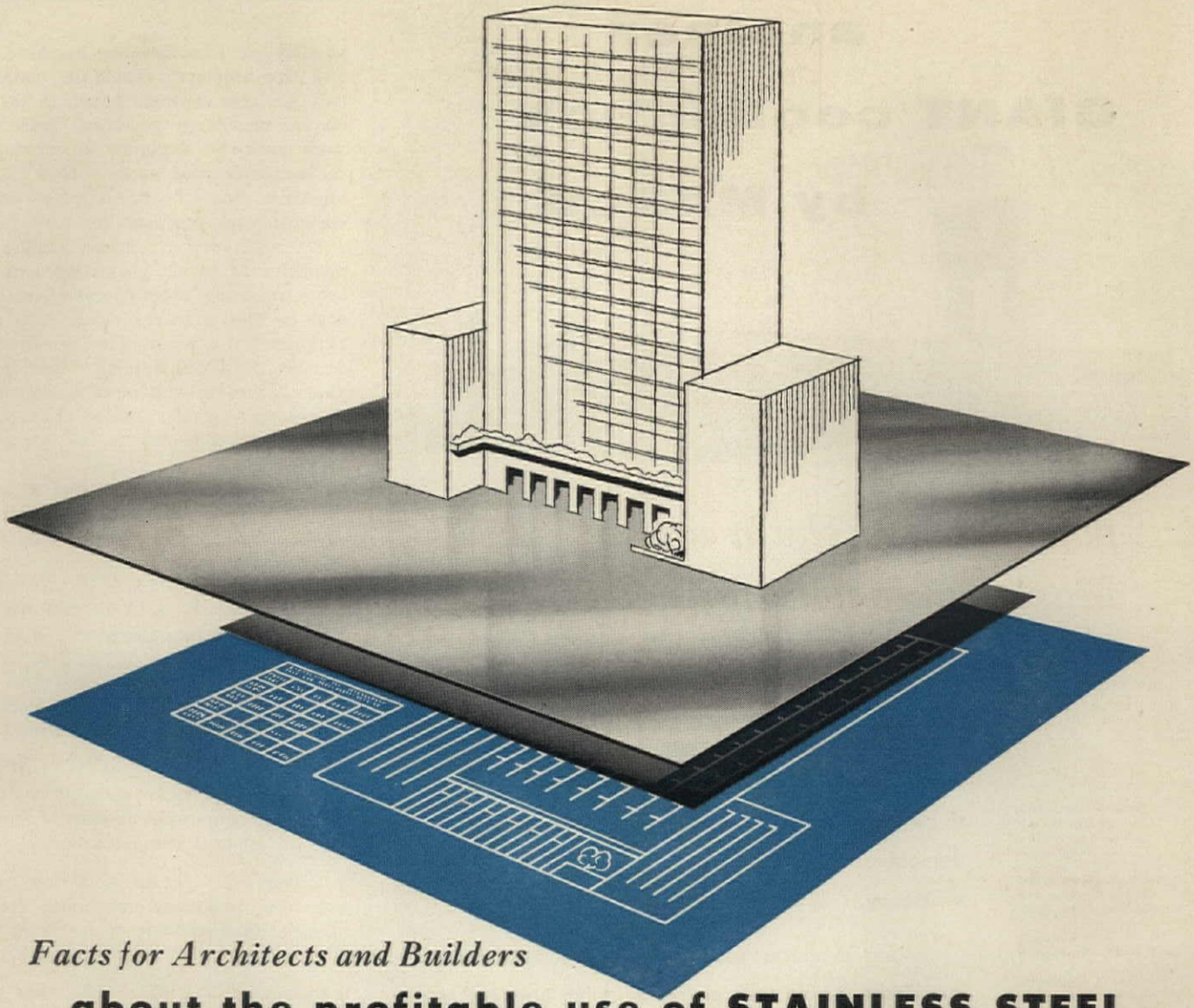

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EXCERPTS *cont'd.*

possibly, at a bookkeeping machine. Actually this employee should be counted as two. An area estimate based, in this case, on accommodated personnel rather than work positions would be in error. Again the employee who works with a table behind him should be calculated as one-and-one-half work positions.

In addition to desks, tables and machines at which people sit and work, there are many other pieces of equipment such as files, counters, safes, supply cabinets, etc., to which the work position formula cannot be applied. The "file equivalent" theory establishes a common denominator for the computation of the areas to be allocated for all such equipment.

For example, a legal file, measuring approximately 2'-6" x 1'-6" occupies 3.75 sq. ft. of floor space. If an equal area is allowed for working the file, the total area chargeable is 7.5 sq. ft. A safe 2'-6" x 3' occupies the area of two files, and, therefore, the area chargeable is 15 sq. ft. Likewise, a counter 12' x 2'-6" occupies the equivalent of eight legal files or 60 sq. ft. In the following illustration the application of the entire formula to a hypothetical department is explained:

▸ Allow 70 sq. ft. for each 60" x 34" desk or other comparable permanent work station in general clerical areas.

▸ Convert all files, safes, storage cabinets, counters, bookcases, machines, etc., into filing cabinet equivalents at 7½ sq. ft. per file.

▸ Include private offices and other private work areas according to this table:

PRIVATE OFFICE SIZE STANDARDS

Occupancy	*sq. ft.*
Chairman of the Board	400-450
President	400-450
Executive Vice President	400-450
Secretaries	150
Executive Officers (Vice Presidents, Treasurer, Secretary)	300
Secretaries	120-140
Assistant Vice Presidents	225
Secretaries	100*
Assistant Secretaries	175
Assistant Treasurers	175
Secretaries	100*
Department Heads	150
Assistant Department Heads	100†

*Open area or private office †Open area

▸ Add 25% of area of all private offices and specifically defined single occupancy work areas for access thereto.

▸ Add actual area of public lobbies, storage rooms and other special areas.

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the magazine of building

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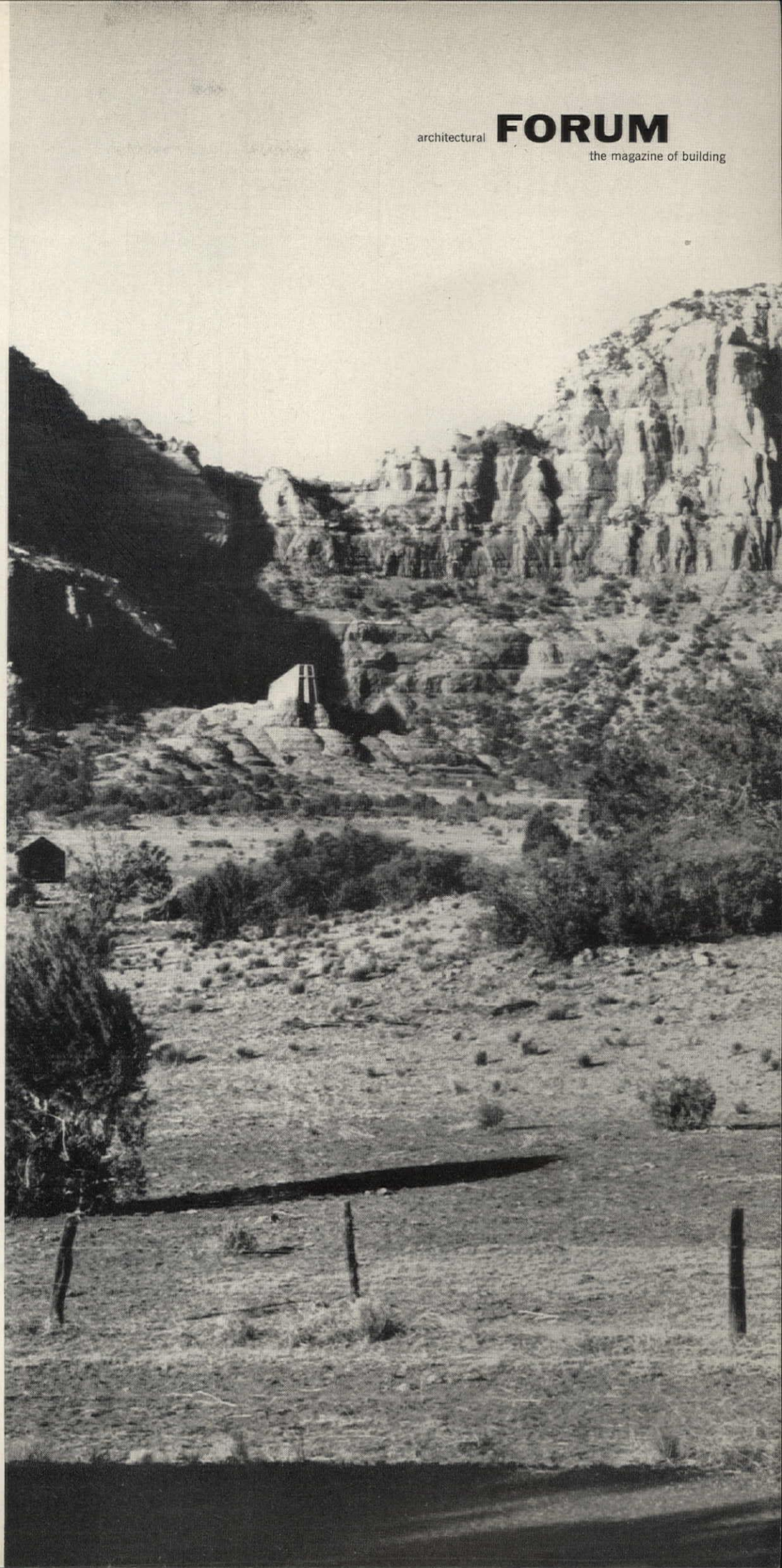
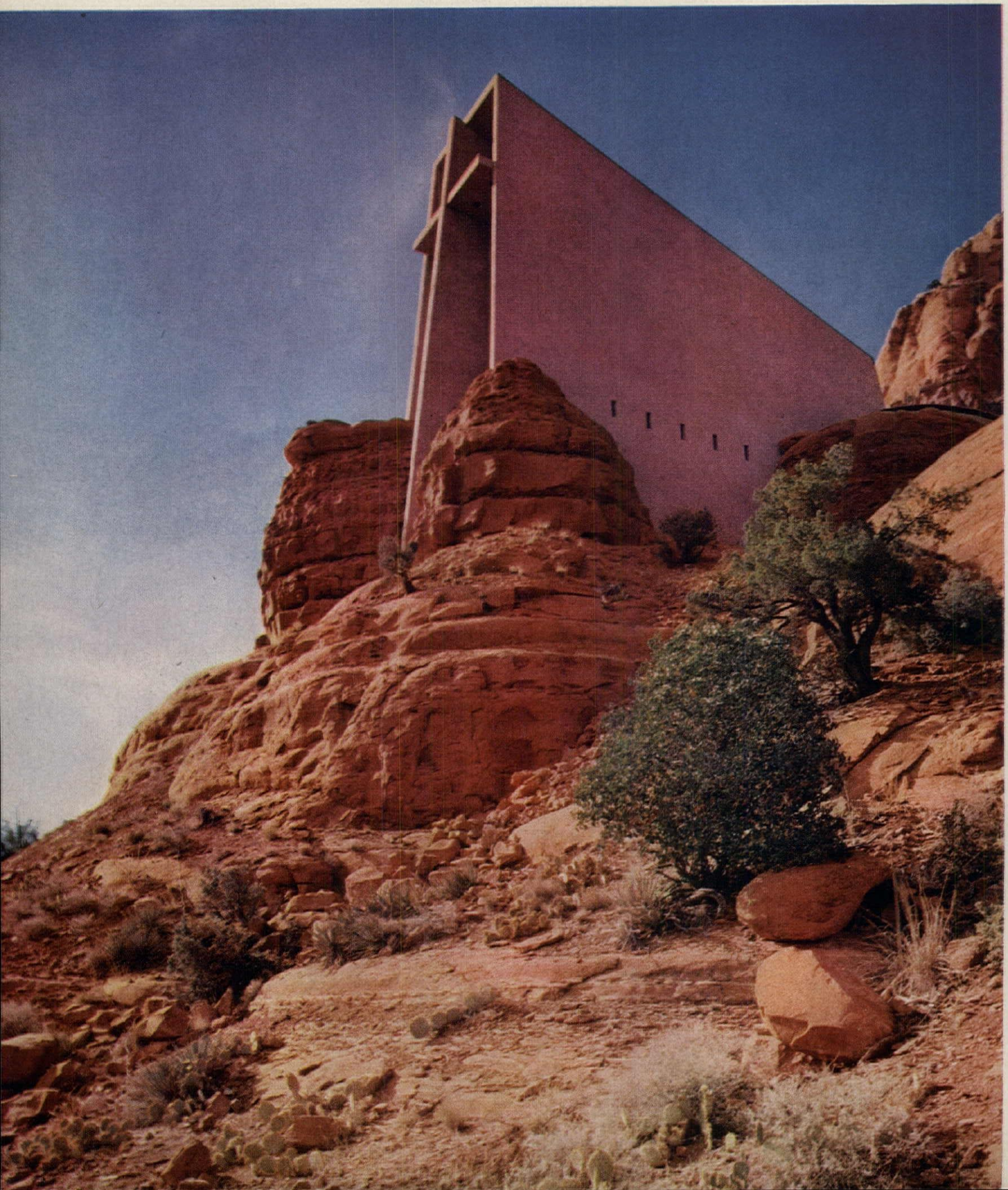


Against a 1,500′ high screen of sandstone the architecture of a small Catholic chapel in the Arizona countryside compels attention

ROGER STURTEVANT



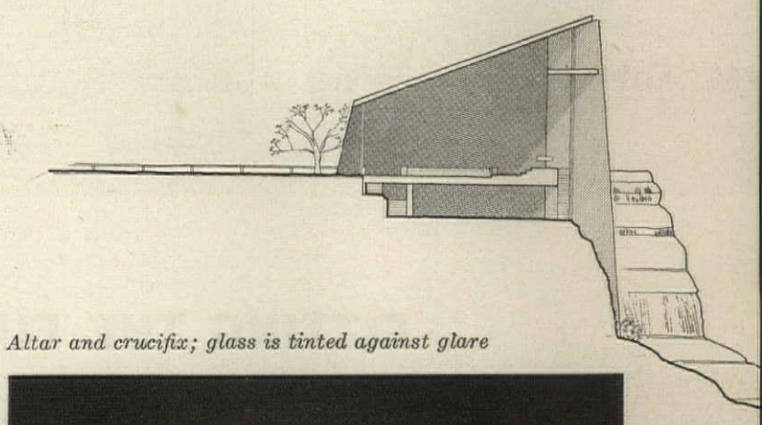
Entrance of chapel, at top of ramp. Sacristy and crypt are downstairs

DRAMA IN THE DESERT

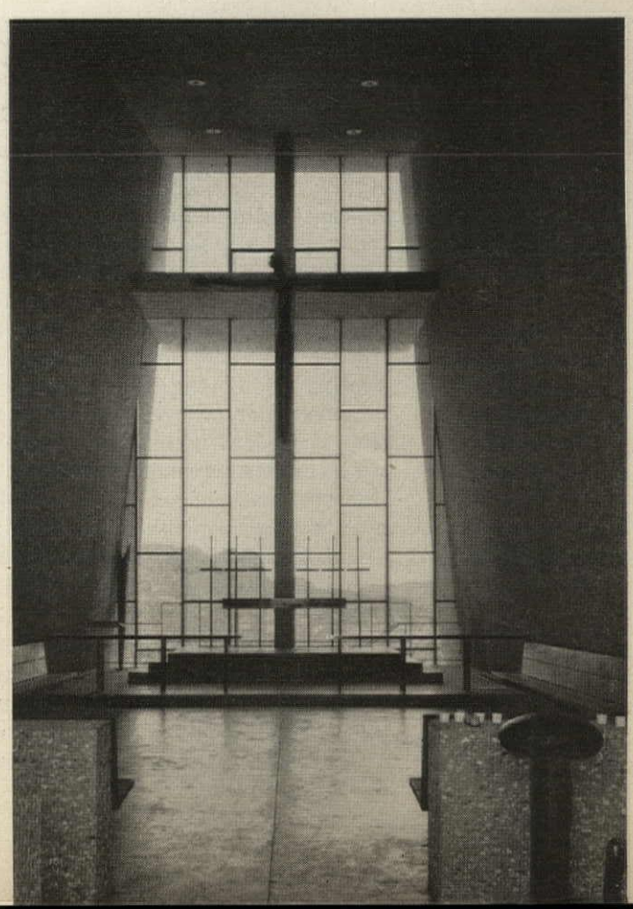
In 1930 a well-to-do young sculptress rented a studio in the penthouse atop the Hotel Carlyle in New York. Working there, she had a fine view of the steelwork going up in the new Empire State building downtown, and as the weeks passed her idea of sculpture expanded to include architecture. It occurred to her, as it has to others, that the framework of a skyscraper is its highest drama, perhaps the highest drama of our building age. Another thought imposed: the angular symbol of western religion, the crucifix, is a constantly recurring theme in such a building skeleton.

The image persisted, and 25 years after the steel bones of the world's greatest skyscraper had been hidden within its phlegmatic outer skin, Marguerite Staude dignified this architectural idea. At a cost of $250,000, in memory of her father and mother, she presented the Catholic church in Arizona with a projection of the structural cross, a small chapel which stands alone, an hour and a half north of Phoenix, but is almost never empty. Designed around an enormous crucifix, the chapel is fitted into a 150′ high approach to a pair of towering weirdly beautiful red sandstone spires. The architects, when they started the design in 1953, looked at the site and said "Nature has done everything here. All we have to do is understate." With simple shapes and materials (the walls are coarse-aggregate concrete) they did this, but without neglecting any opportunity for drama.

ARCHITECTS: Anshen & Allen
SCULPTOR: Keith Monroe
ENGINEERS: Robert D. Dewell, structural
Earl & Gropp, mechanical and electrical
CONTRACTOR: William C. Simpson Co.



Altar and crucifix; glass is tinted against glare



PHOTOS: (LEFT & OPP. P.) ROGER STURTEVANT; (ABOVE) STUART WEINER

FITTING THE FUTURE INTO THE PAST

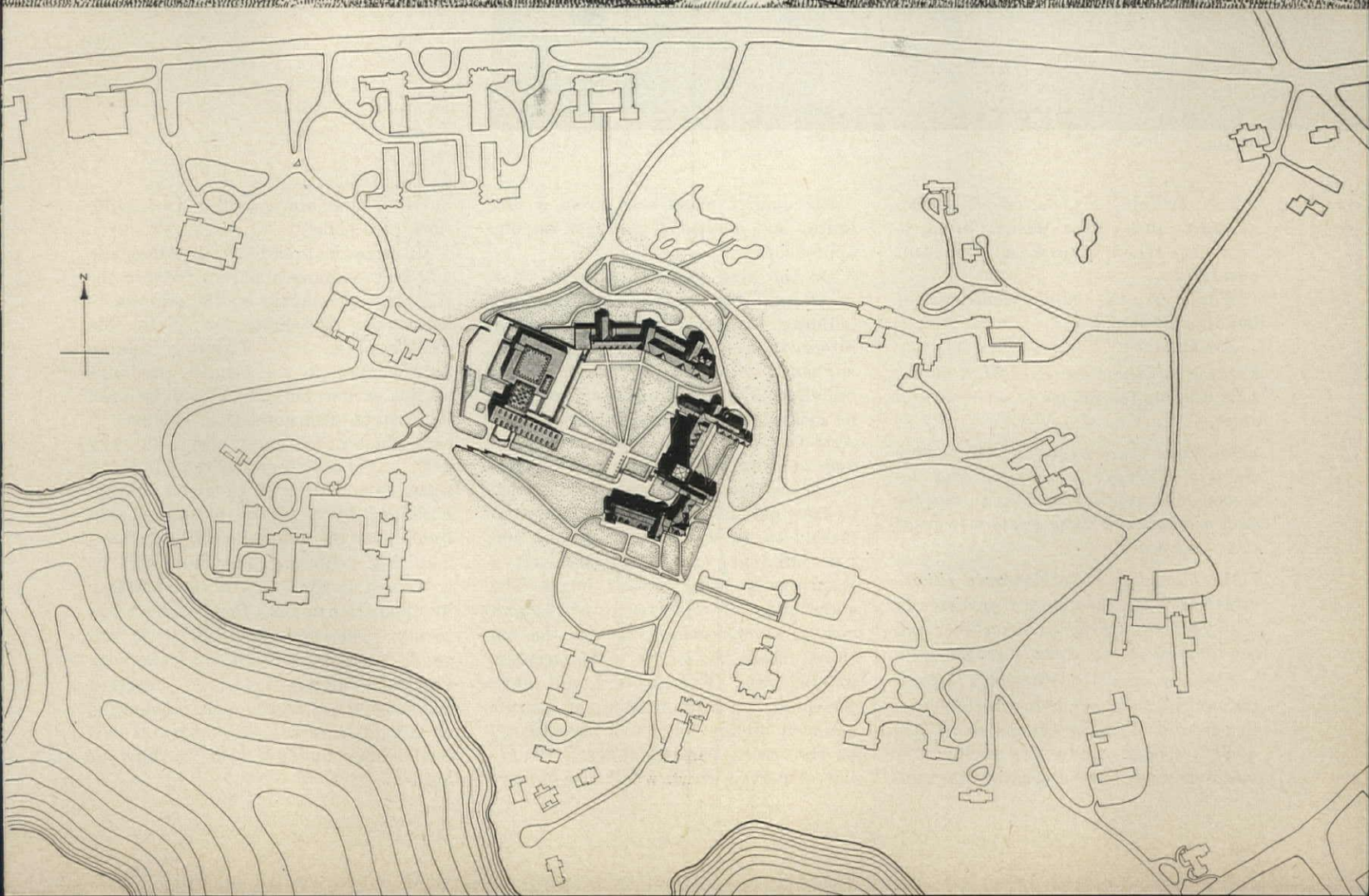
After two years' study, Architect Paul Rudolph designs a modern arts center to harmonize with the architectural traditions of Wellesley College

As constricting an assignment as exists today is the task of designing a new building for an old college campus. Even a church addition poses fewer problems. The overlay of sentiment is thicker than snow in February on the gently sloping Gothic swards of the nation's elder colleges; the mere mention of modern architecture often provokes dissension under the elms. This was once as true at Wellesley College, near Boston, as anywhere.

But a few years ago, this school, proud of being among the eldest female institutions of higher learning, but prouder still of being perennially youthful, built a modern dormitory (AF, June '53). And now Wellesley has taken a longer step in commissioning a focal building group at the center of the campus to Architects Paul Rudolph and Anderson, Beckwith & Haible. The Mary Cooper Jewett Arts Center will be sited on the south and west slopes of Norumbega Hill, the academic center of the college (site plan, right), directly in the day-to-day path of all students. It will house the art, music and drama departments, with galleries for paintings, sculpture and traveling exhibitions.

Its design, shown here for the first time, will be a significant one for Wellesley; it may be equally significant for US architecture too, demonstrating that there are many chords in past buildings and in future buildings which can be joined in unsuspected harmony.

Rudolph and his associates have taken their assignment with deep seriousness;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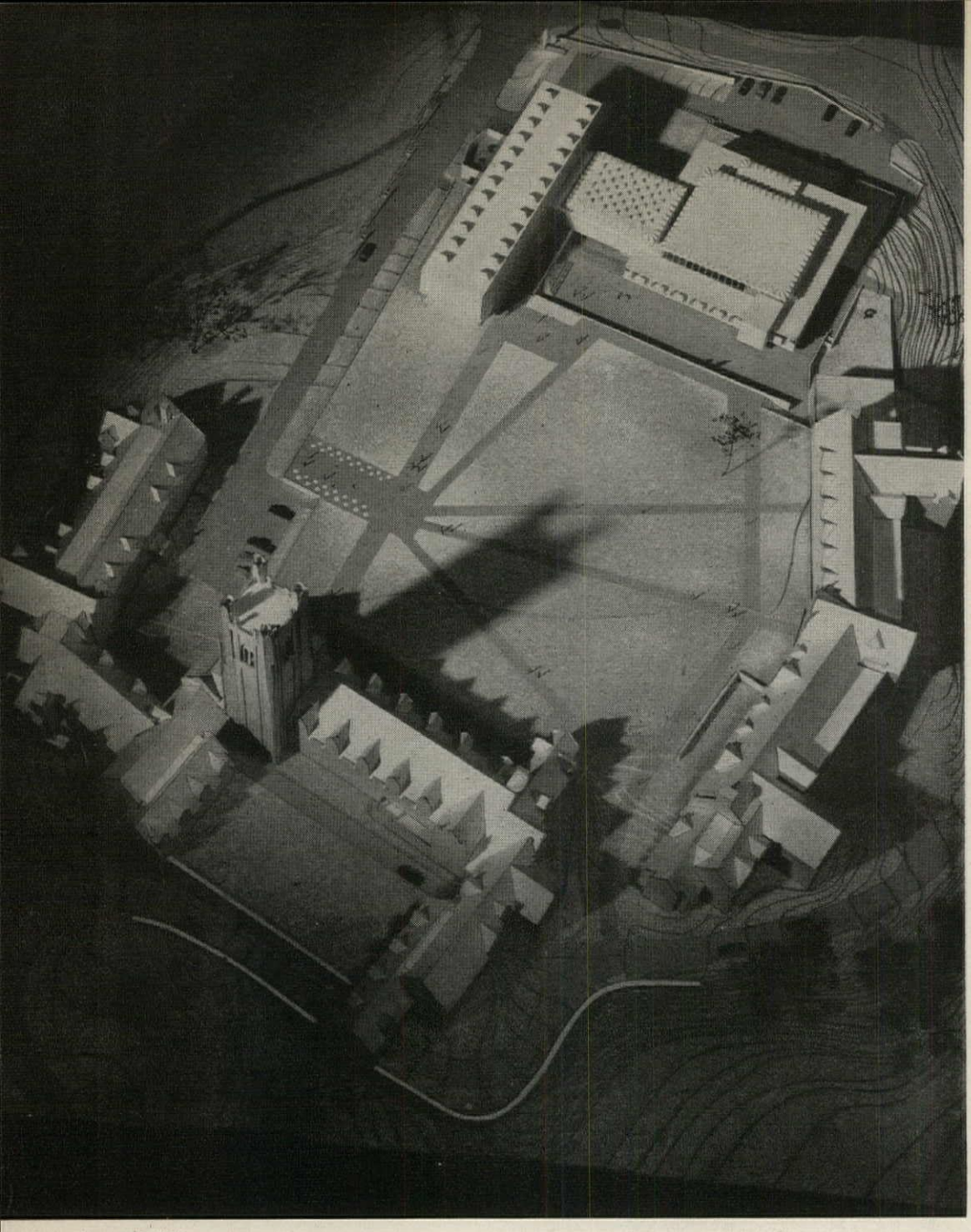


FRED STONE

New arts center at top of photograph is planned as a continuation of old buildings, not a challenge to them. The long narrow shape is the art building, which is linked to the music and drama building by a bridging gallery. The model shown is an earlier scheme than the drawings; its roof treatments have been superceded.

Bridge suspended between buildings, overpassing the end of the sunken courtyard, contains the art gallery. Jagged silhouettes of both buildings are an amiable echo of the stern collegiate fortifications which prevail over much of the Wellesley campus.

Before bringing his meticulous draftsmanship and fertile design mind to bear, he asked himself a significant question:

What are the basic traditions of building at Wellesley?

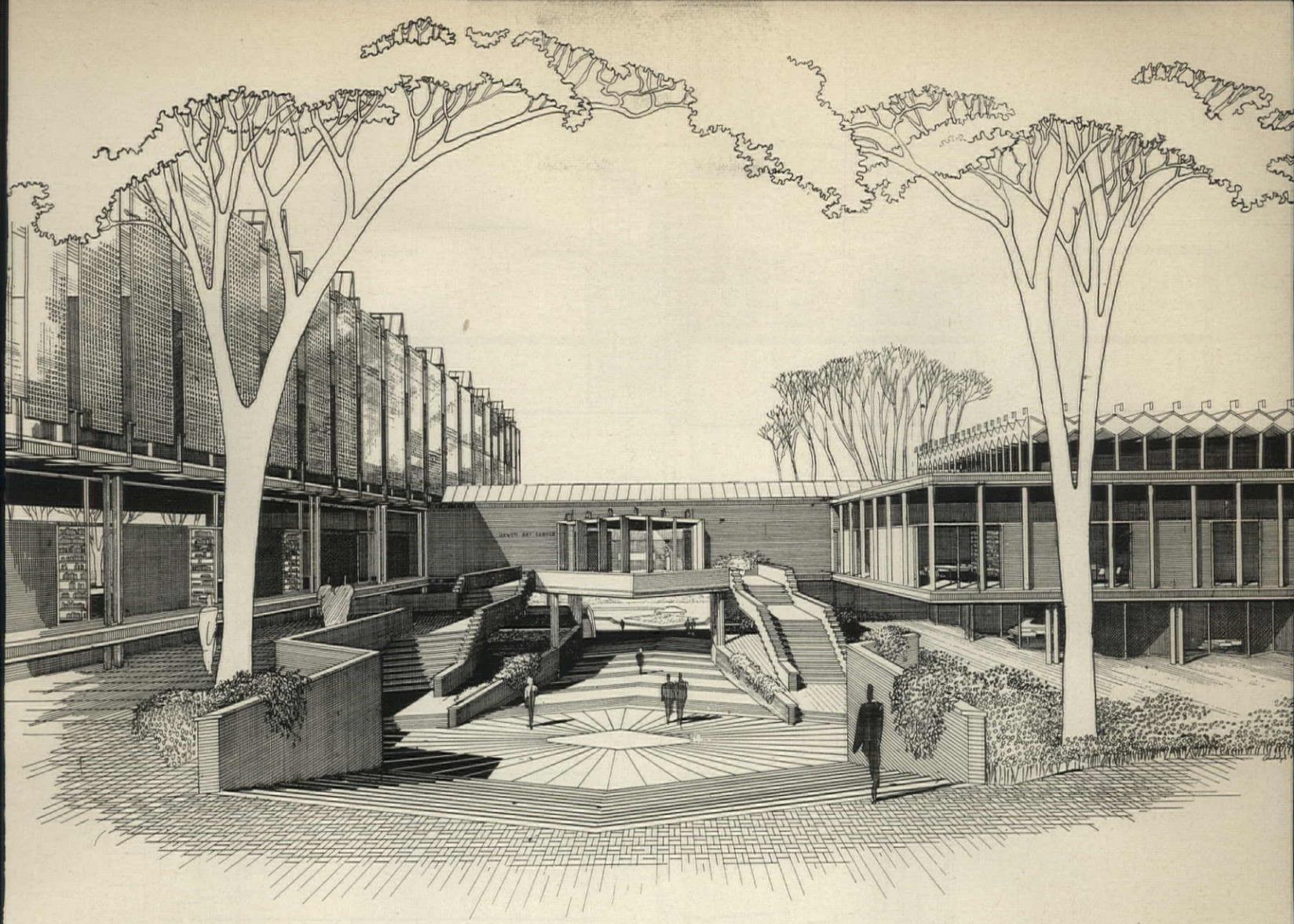
His answers:

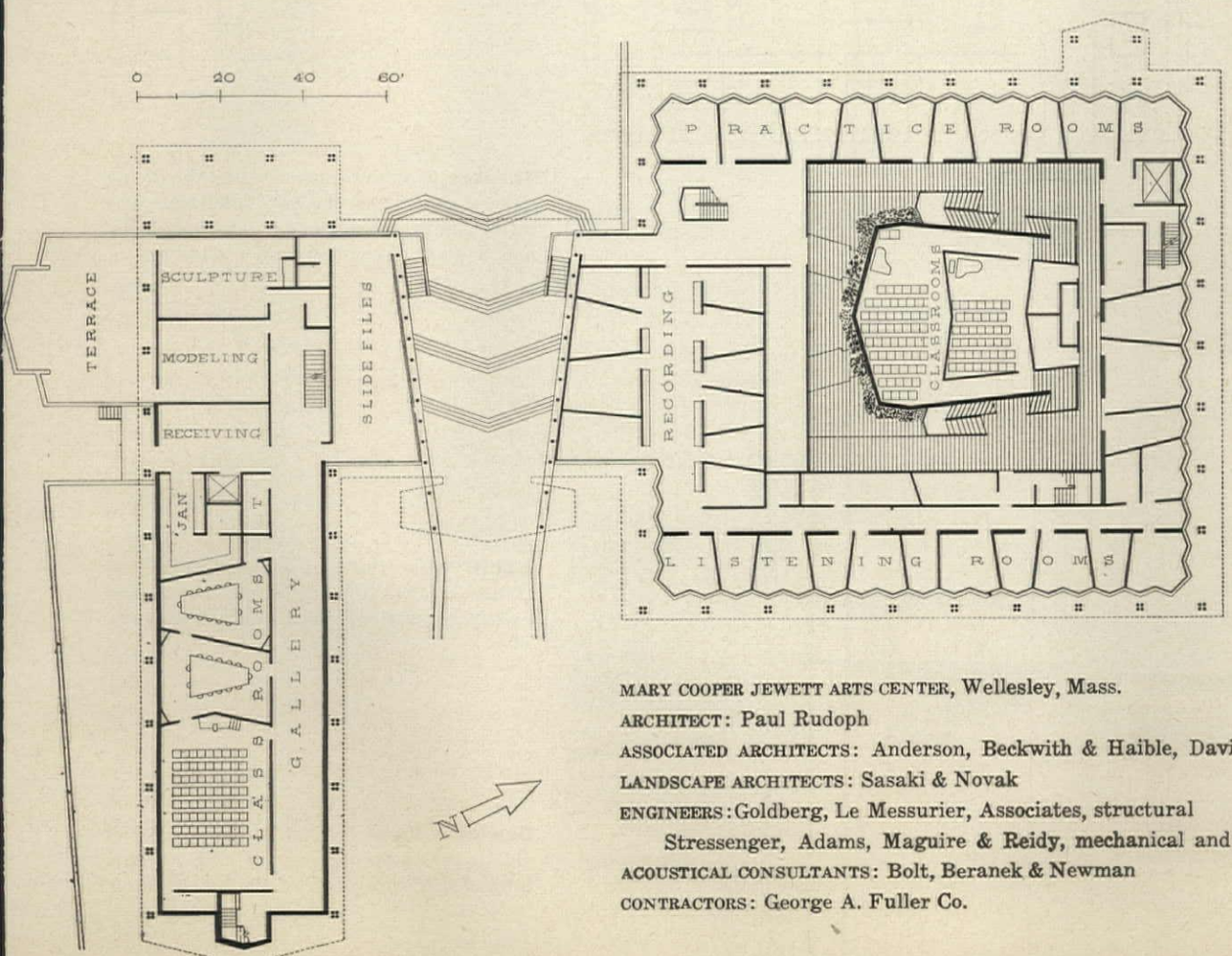
- *Major buildings are sited high on the hills, leaving the valleys in their natural state.*
- *Buildings are grouped in rather close clusters, forming courtyards and coherent landscaped outer spaces, but the distance between these clusters is great and unimpeded.*
- *The buildings have elaborate silhouettes; they are constructed consistently with facings of brick or limestone; and the vertical line is usually emphasized.*

These answers of Rudolph's defined the architectural arena in which he was to perform; another conviction of Rudolph's helped write the script: "A building must have a certain diagrammatic quality when seen from a distance, but additional interest as one approaches."

On the high point of the hill, on a great retaining wall, he placed the art building. Growing downhill, defined by intermittent spaces but assembled into one mass, will be the music and drama building. A paved sunken terrace will be defined by the wings of Music and Art; the mated dimensions of the old and new buildings around the courtyards on the upper level are designed to draw old and new together. The complexity to the eye of both the old and new buildings earned the architect a franchise to bring in new forms. The significance of this mating of old and new is campus-wide; just as the old tower marks the center of the campus in silhouette, the courtyard will mark the center horizontally. A great outdoor stairway in the court will be focussed on the tower, passing under a bridge-like structure which will house the art building and join the other two buildings (see plans).

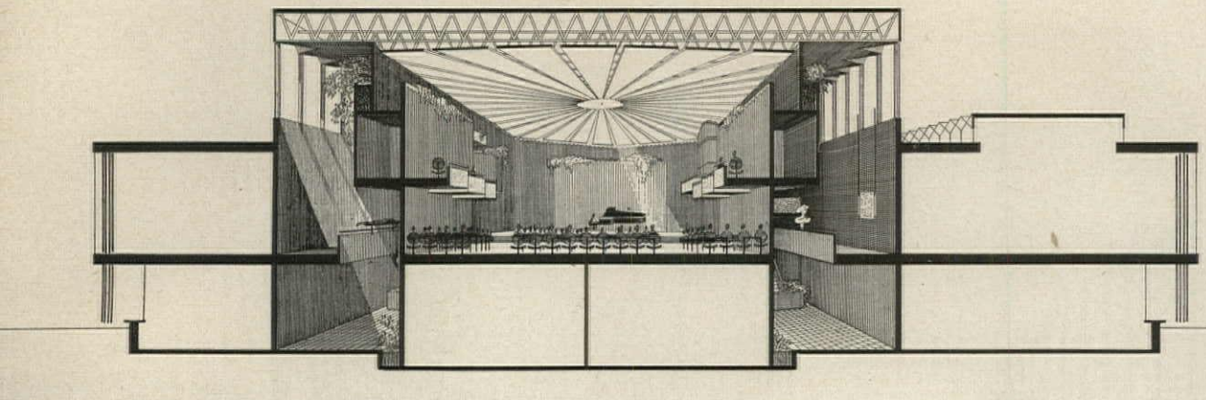
Up close the architects' inventiveness will be even more apparent. Within the construction module of 15′ (chosen to match the bay dimension of the old buildings) a 7½″ diameter column (conforming to the window mullions of the earlier buildings) will be used in clusters. The number of columns in each cluster, not their size, will vary with the load, thereby reducing the scale. Silhouette will be given the art buildings by a set of prismlike skylights over the studios on the top floor, and this deliberate intricacy will be continued in the music-drama building by undulations of the facia of the auditorium. The exteriors will wear red brick, precast vibrated concrete with limestone aggregates (for clustered columns), glass and porcelain enameled aluminum screens—an intimate pattern which Rudolph calls "a kind of built-in ivy."



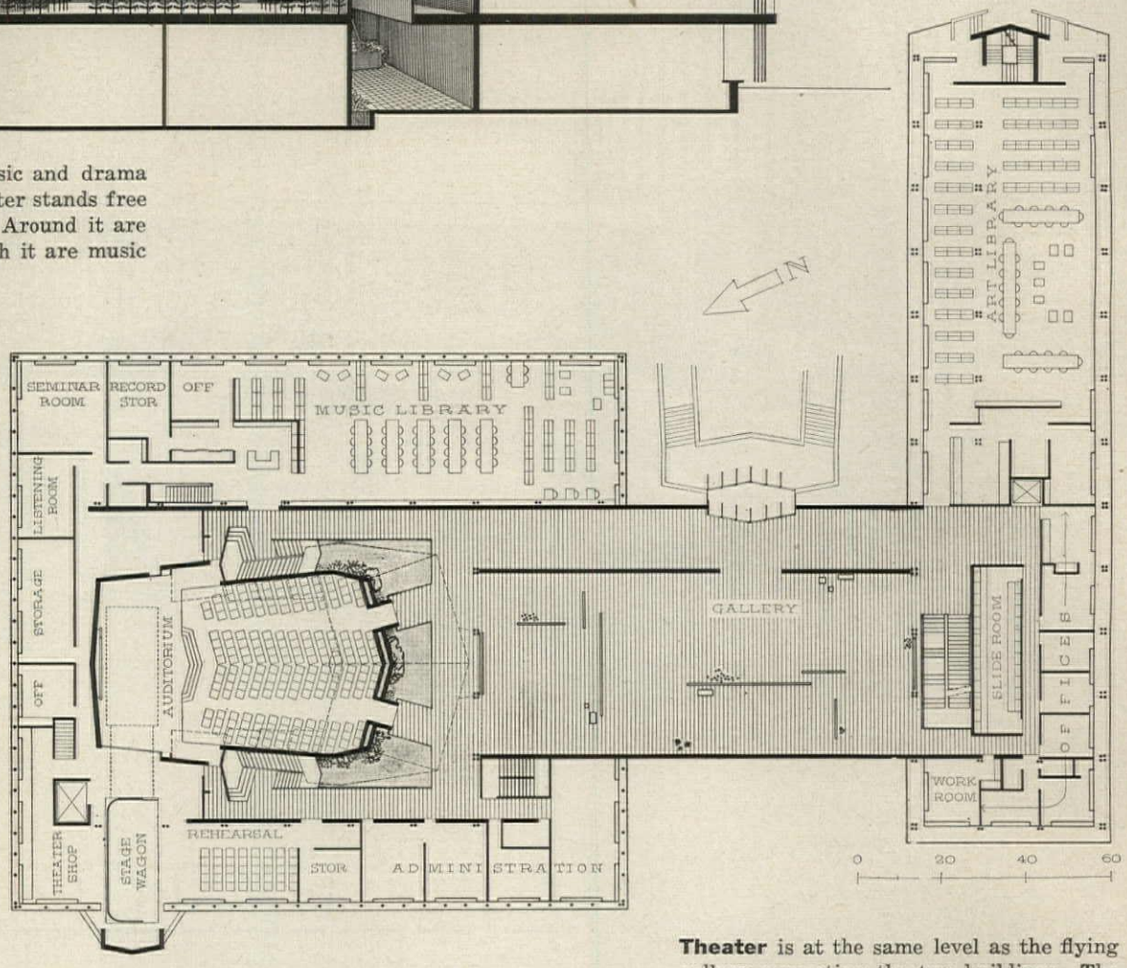


Ground floor of music and drama building shows the fringes of practice rooms with their acoustically angled walls which surround the central court and its freestanding auditorium-classroom building.

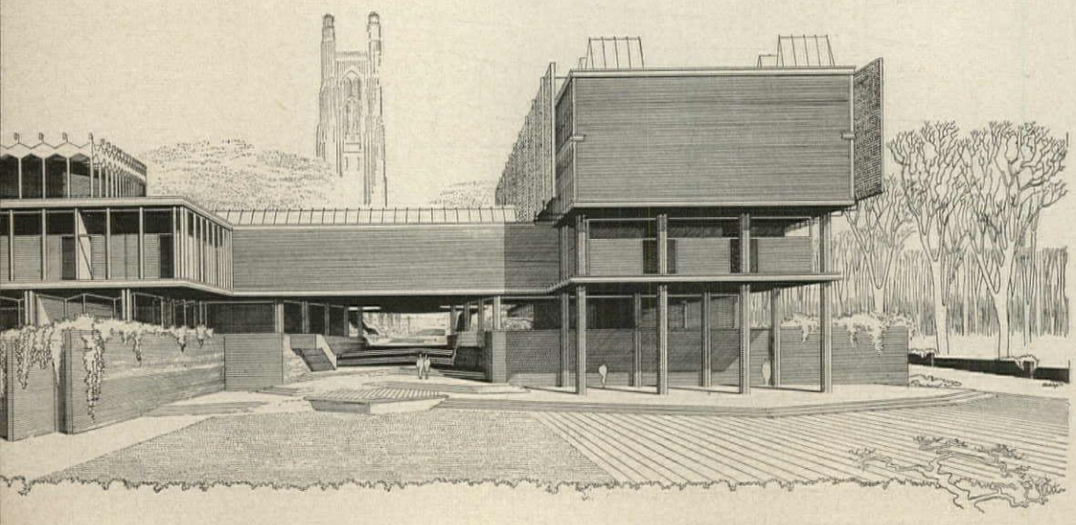
MARY COOPER JEWETT ARTS CENTER, Wellesley, Mass.
ARCHITECT: Paul Rudoph
ASSOCIATED ARCHITECTS: Anderson, Beckwith & Haible, David Johnson, job captain
LANDSCAPE ARCHITECTS: Sasaki & Novak
ENGINEERS: Goldberg, Le Messurier, Associates, structural
Stressenger, Adams, Maguire & Reidy, mechanical and electrical
ACOUSTICAL CONSULTANTS: Bolt, Beranek & Newman
CONTRACTORS: George A. Fuller Co.



Cross-section through music and drama building shows how the theater stands free of the rest of the building. Around it are stairs and galleries. Beneath it are music classrooms.

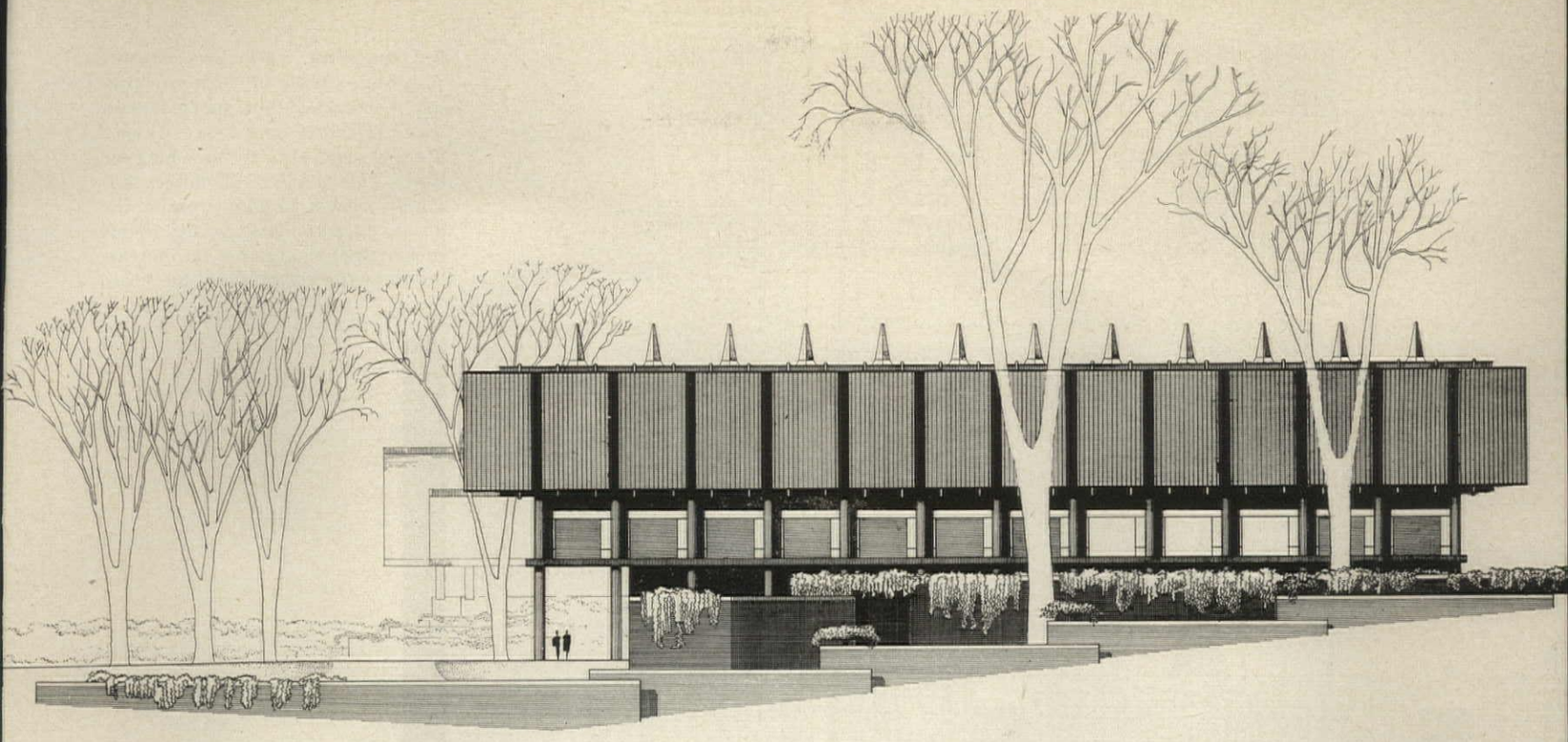


Theater is at the same level as the flying gallery connecting the two buildings. The latter can function also as a spacious lobby and a place for intermission strolling.

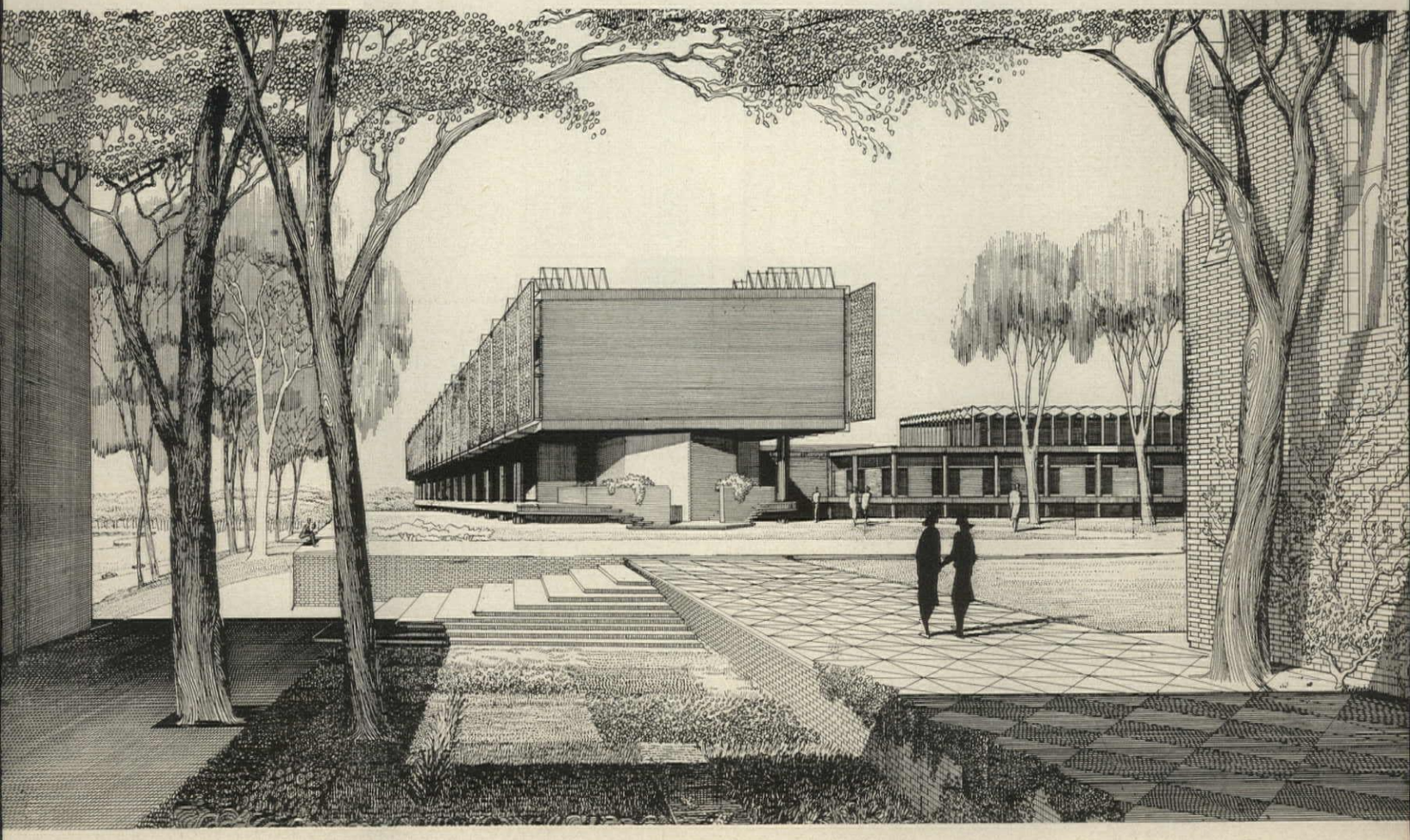


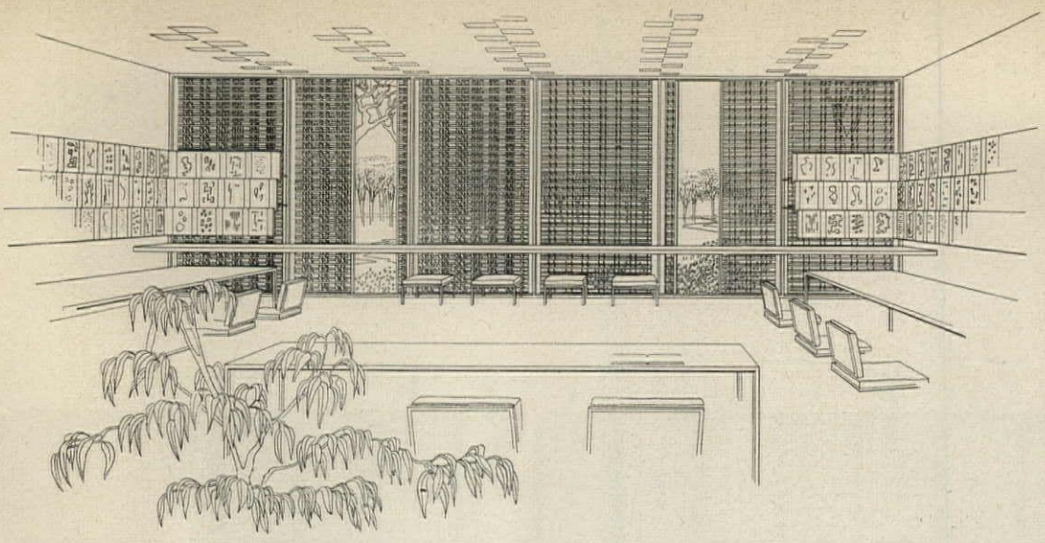
Uphill view (left) is across sunken entrance terrace toward upper court and existing tower which dominates campus.

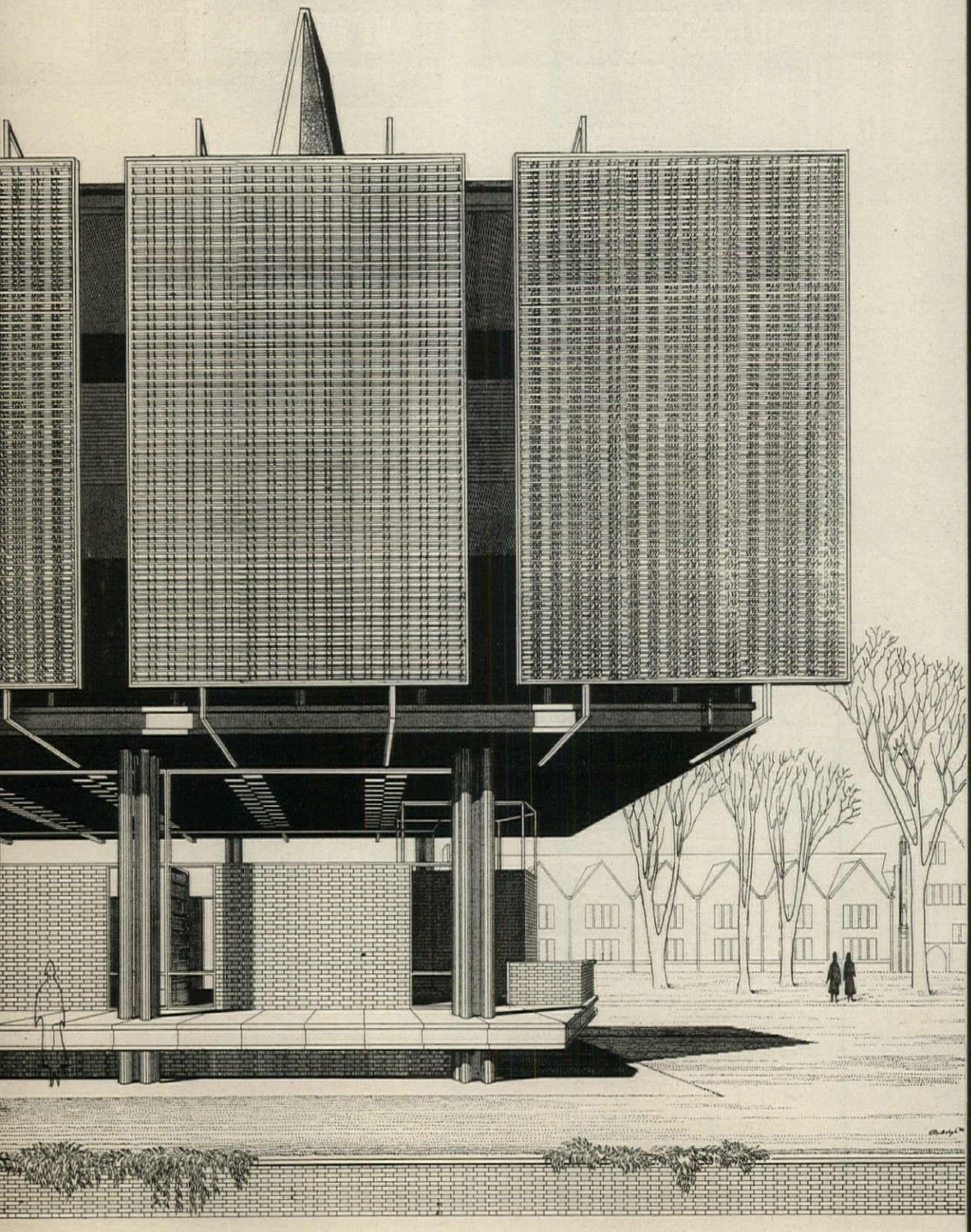
Downhill view (right) is from base of old tower building across upper court toward projecting end of the art building.



Art building, in elevation above, will be studded with steeply sloped prismlike skylights, illuminating the top floor studios. The building's construction module is deceptively heroic—15′.







Art building walls are screened with huge panels of patterned porcelain-enameled aluminum grillwork which will filter light into the upper floors without entirely banishing the view. This project—Architect Rudolph's largest to date—retains the linear, diagrammatic quality of his earlier work, but shows an increasing discontent with plain surfaces.

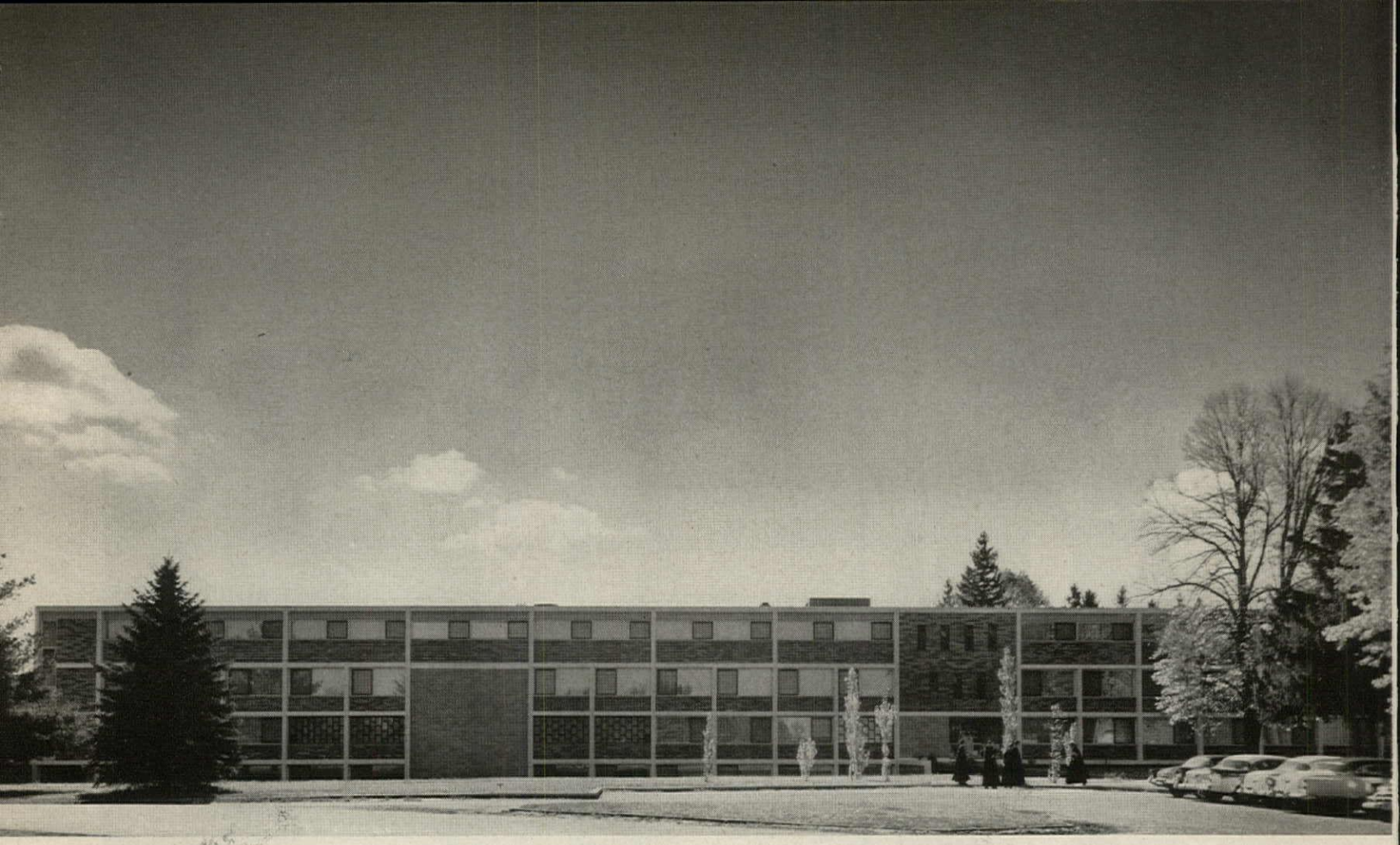
PHOTOS: WARREN REYNOLDS, INIFINITY, INC.

Marcel Breuer's first completed building for St. John's Abbey
is a massive dormitory, precise in detail, rich in texture—a progress report

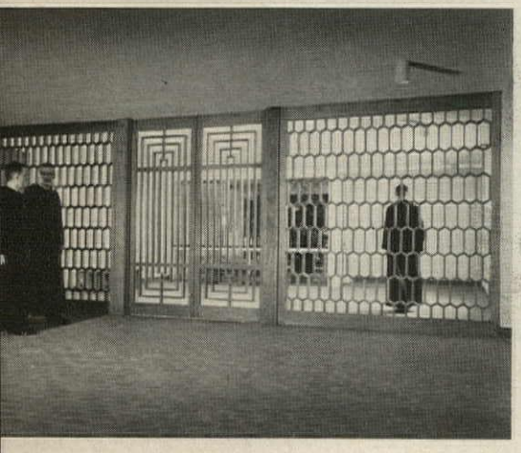
MONASTERY IN MODERN MOOD

When Marcel Breuer and Associates were chosen several years ago to plan the growth of St. John's, the Benedictine Abbey in central Minnesota, they first went in quest of the origins and architectural antecedents of the ancient monastic order. The path led backward through the centuries to the Romanesque of Germany; the architectural qualities they isolated for modern depiction—but not duplication—were strength and stability, rendered in concrete and masonry—in "heavy" materials (AF, July '54).

Breuer found this use of basic materials appropriate not only for the tradition it carried, but suitable also for the local conditions of the American site, a stern northern climate with its own masonry tradition. Into the



North facade is a diagram of the building's rooms. On the top floor are small dormitories for clerics. On the lower floors are individual cells and offices. The large blanked section is the future link with the church which is to be built adjoining.



Brick floors are characteristic of the common rooms. Rough textured concrete and handsome wooden grilles also enrich the dormitory's interior. Above, wood screen; below, a recreation room.

first of the completed monastic buildings, a large living wing for priests and clerics, the architect has designed Benedictine firmness and order; more difficult, he has recreated some of the richness that was applied laboriously by the craftsmen of the Middle Ages, but which for the sake of economy today must be implied by the architect.

The building is a large one; there are rooms for 53 priests, with six guests' rooms for visitors, two bedrooms and a living room for visiting prelates, quarters for the abbot, offices for the prior, subprior, and master of clerics, an entire floor (the third) with eight-man dormitories to house 72 to 80 clerics with their own study halls, recreation room, music room and typing room. There are two more recreation rooms downstairs, one for priests and one for the monks. Most important, there is a very small chapel, finished in the colors and techniques which Breuer plans for the powerful church which is to stand before this strong residence wing (see drawing). The buildings will be connected.

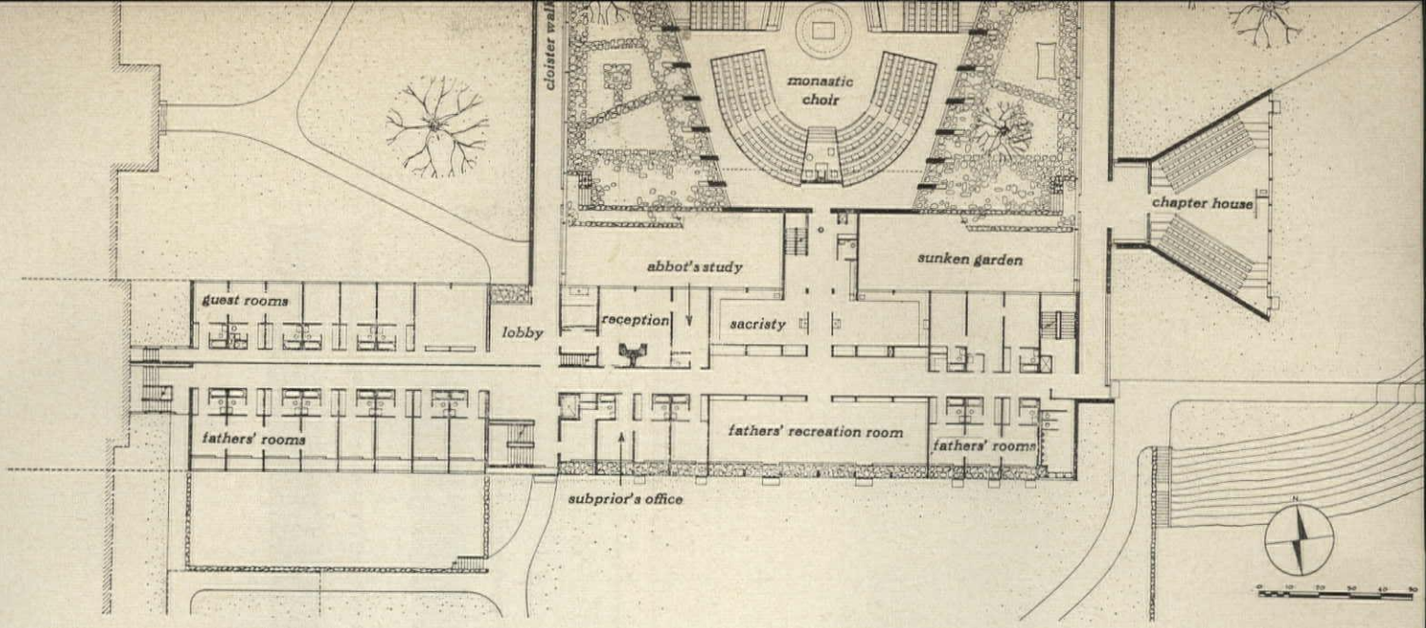
A clear-cut essay in precise architectural shapes and forms, the Benedictines' new home has a matte finish, with a natural, not a faked, set of the rough textures and surfaces that most of us associate with medieval times, when the great monastic orders were born. Some of the materials, of course, have continued unchanged, such as the brick floors which Breuer used throughout the halls and common rooms, and the granite walls. Others have new roughness, like the formwork marks left on the underside of the reinforced concrete floor slabs exposed as ceilings. It is an effective combination. Another tradition upheld in this project was the amount of work done by the community themselves on their new structure. Much of the woodwork and cabinetry, for example, was made in monastic shops from lumber cut and finished in the Benedictines' own mill. This is as important to the clients and architects as the diagram from the priests' cells outlined on the façades.

LOCATION: Collegeville, Minn.

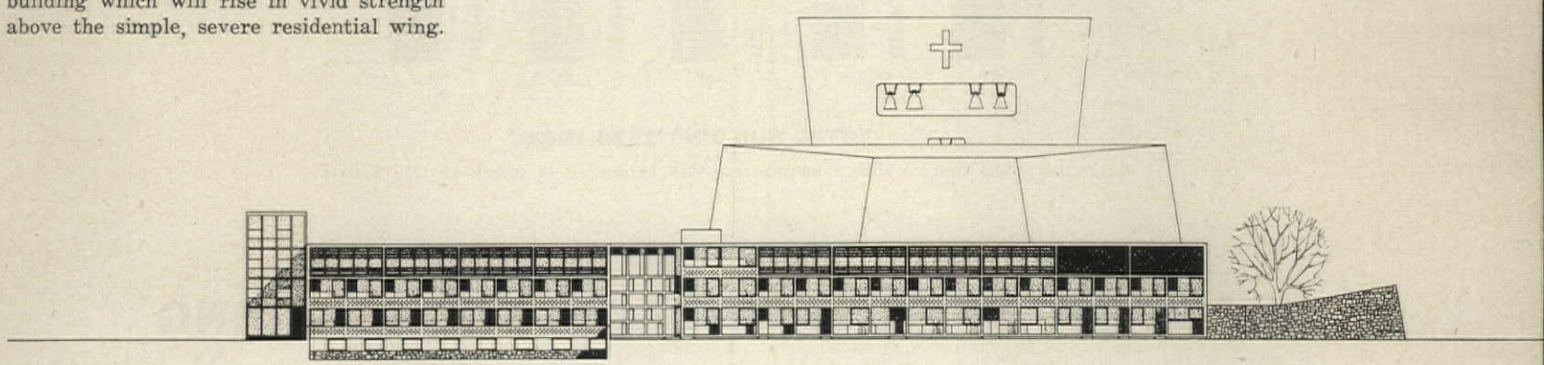
ARCHITECT: Marcel Breuer & Associates
Hamilton P. Smith, design associate
Supervising arch'ts.: Traynor & Hermanson

ENGINEERS: Farkas & Barron, structural
Fred S. Dubin, mechanical and electrical

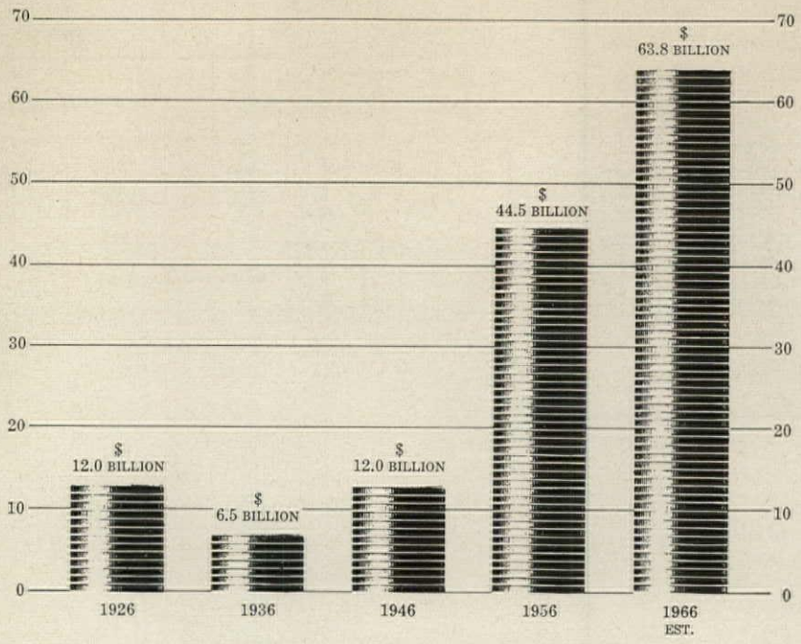
GENERAL CONTRACTOR: Wahl Construction Co.



Plan shows a part of the massive church building which will rise in vivid strength above the simple, severe residential wing.



South facade of completed building (below) has grid of overhangs calculated for summer shading.



TOTAL BUILDING 1926-1966

Based on public and private expenditures—1966 estimated in terms of 1956 dollars.

1956-66: A TEN-YEAR BOOM FOR BUILDING

A long look ahead indicates that population growth and technological advances will boost the industry market for new construction to $63.8 billion a year by 1966—more than 44% above the current level

For all of its record breaking in recent years, the US construction industry is facing a future that seems likely to out-boom anything it has seen in its past. Tied to an expanding economy, with the promise of strong gains in population, production, and income, building's prospects over the next decade are not just bright, but dazzling.

By 1966, new construction is likely to be running at a rate of nearly $64 billion a year (in present dollars), a massive 45% above this year's record volume of $44 billion. In an expansion in which every type of private construction, and most classes of government building, will gain, these will be some of the most impressive changes:

- Total new private construction, ten years from now, will have climbed 41%, while public building will be up close to 53%.
- Nonresidential building, under heavy pressures for more schools and hospitals and for new and improved industrial plants and commercial structures, will show a rise of nearly 43% to $18.4 billion (chart, right).
- Residential construction faces a 26% expansion in housing starts to about $17.0 billion. (Greater increases in additions and alterations and nonhousekeeping construction will boost the total residential classification to $20.8 billion, up 36%.)
- Highway construction, which will have an industry-wide effect unmatched by any other single factor in the twentieth century, will climb nearly 75%.
- Public utilities and sewer and water facilities will show tremendous gains, ranging from 58% to 84%.
- Within these broad classifications almost every building type from farmhouses to factories will share in the boom (see table, p. 113, for details).

A growing population

Spectacular as it seems, this forecast, which is the result of a special study by Economist Miles Colean for FORUM, may actually prove conservative. In an environment of population growth, advancing technology and rising productivity, building has little choice but to grow. Over the next decade, its growth may well exceed anything that can be seen now, for unless the signs are wrong, the environment that building faces is not only one of steady population gains, but of technical advance that may surpass all that has been seen by a generation that had its infancy with the airplane's.

Three years ago, Dr. Joseph S. Davis of the President's Council of Economic Advisers pointed out that "ever since 1940, the actual population has been running away from successive forecasts. . . . Every revision has been upward, and the latest ones already appear conservative. The Census Bureau's first postwar forecast, in Sept. '46 . . . pointed to 164.5 million as our probable peak population, to be reached about 1990. It now seems certain that this figure will be passed in 1955 or 1956!"

What Davis foresaw in 1953, Census confirmed this year. In June, it announced its estimate of present US population as 167.9 million. And on this basis, it drew two new sets of projections, a high and a low, which forecast a population in the range of 176.5 million to 179.4 million in 1960; 186.3 million to 193.3 million in 1965; and 196.4 million to 209.4 million in 1970.

Census makes no case for taking either of these sets of figures as against the other. But in the light of its tendency to undershoot the mark, most economists have leaned to the higher set. Following this upper curve, population in 1961 would be in the neighborhood of 182 million, up 8% from this year, and in 1966 would be close to 197 million, a gain of about 17% for the decade as a whole.

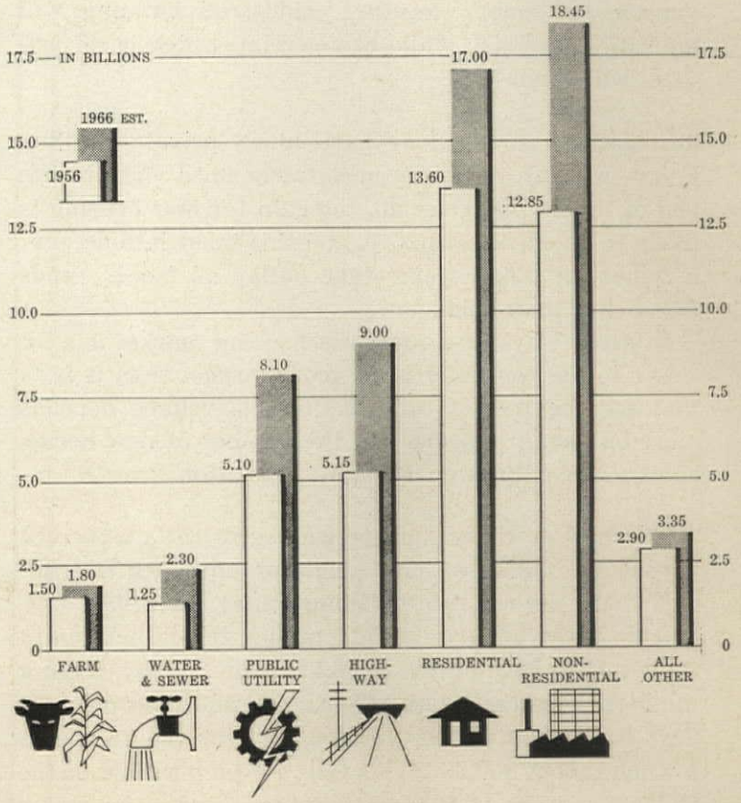
Growing production

Tie this population growth to the possibility of a continued per capita increase in the gross national product, and it immediately becomes apparent how strong an economic stimulus it will be. The average compound rate of year-to-year change in per capita GNP has been about 1.9% in the years 1946 through 1955, figured on the basis of constant dollars. Starting with an estimated GNP per person of $2,430 in 1956 (probable GNP total: $408 billion), and applying the 1.9% rate to the population estimates, the outlook is for a gross national product of $485 billion in 1961 and $575 billion in 1966. This, of course, assumes a continuing gradual rise in GNP per person. But even without this rise—if we were to do no more than maintain the present standard of living—the population pressures would be forcing GNP up into the area of $477 billion ten years from now. This fact alone is of tremendous importance to construction.

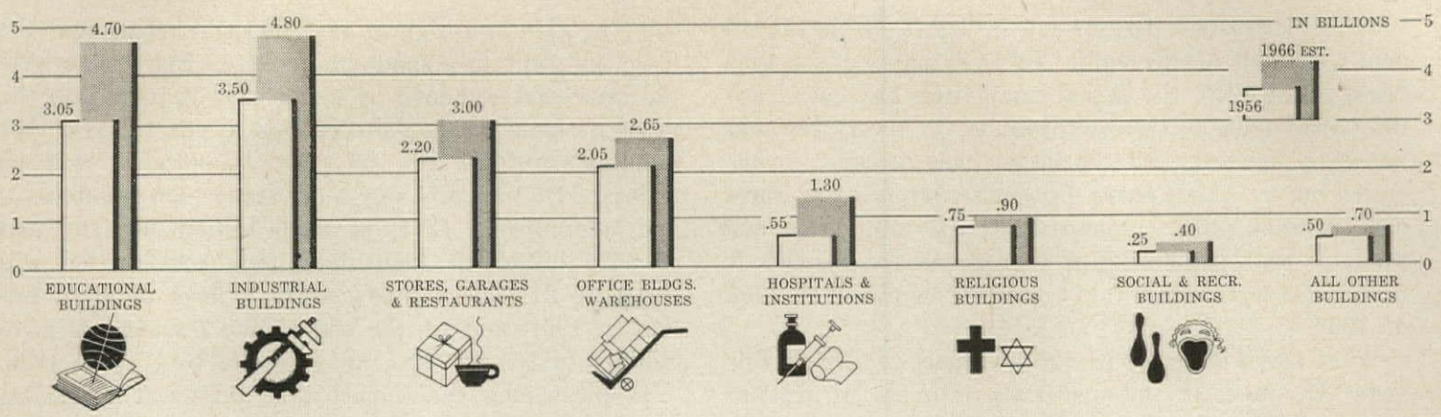
Over the years, there has been a long-standing correlation between GNP and building activity. When gross national product has been rising, construction has been rising at an even faster rate. On the downturn, too, it has moved with the curve, but again its movement has been quicker. Except for periods of wartime distortion, this relationship has been true for both private and public building, although public work has shown more of a lag on the upturn.

For the past decade, construction's average share of GNP has been 9% (the range has run from a low of 5.7% in 1946 to a high of 11% in 1955). This year the ratio will drop to a shade under 11%. But in line with the improved standard of living that is built into the gross national product projections, it seems likely that building's future slice of the total product will be at least 11% and probably a bit better. On this basis—and assuming a GNP of $485 billion in 1961 and of $575 billion in 1966—total new construction will shoot up 21% over this year to a level of $53.4 billion in 1961, and by the end of the decade will have climbed to $63.8 billion, an awesome 45% above 1956.

In measuring the impact that this vast expansion will have on the various categories of construction, it is impossible to apply any constant growth factor. The variations are too great, the behavior of the individual segments of building too erratic. Nevertheless, it seems inescapable that the dominant force in construction over the next ten years is going to be the improvement and expansion of the nation's capital plant, both economic and social. The demands of a growing population, and the pressures on industry to increase productivity in line with a rising wage scale, make this almost certain. Not only will there be a steady climb in the amount of industrial and commercial building, but there will have to be tremendous additions to utility capacity—telephone and telegraph, electric power lines and pipelines—to serve a broadened market. By the same token, population will be forcing an expansion of government's social and economic plant—highways,



TOTAL BUILDING 1956-1966—BY TYPE
Figures, in billions of 1956 dollars, include both public and private expenditures. Residential figure excludes additions and alterations and nonhousekeeping facilities.



NONRESIDENTIAL BUILDING 1956-1966—BY TYPE Figures, in billions of 1956 dollars, include both public and private.

sewer and water facilities, schools, hospitals, and airports. More people will mean more churches, too.

In the light of this, it is possible to make some meaningful estimates of how the future will affect specific types of construction. Here are some of the key conclusions, based on a consideration of each category's recent share of total construction, and an adjustment to reflect the trend:

Industrial and commercial building will probably have the steadiest, though by no means the greatest, growth of all the categories. A drop in government industrial construction may occur if the development of atomic energy shows a strong shift to private industry, but in any case the over-all totals will be unaffected. Lumping private and public together, industrial building will gain 37% by 1956, while commercial, which is all private, will climb 36%.

Residential construction—particularly private dwelling units—will advance only moderately until close to the end of the decade. Over all, the gain for new housing is likely to be only about 26%, and this takes into account a somewhat larger percentage outlay of family funds for shelter than holds now.

In many ways, the nonrental housing market is a lot closer to the consumer hard goods market than it is to that for the rest of construction. Its volume depends more on family income, and the number of new households, than it does on straight population growth.

The newest census projections raise the number of households (families, plus single or unrelated individuals living in separate dwelling units) from 48.8 million this year to range of 50.5 million to 51.8 million in 1960, and to 53.3 million to 56.1 million in 1965. Taking the higher figures, average household additions over the next four years will be 750,000, and for the decade as a whole, about 800,000. This falls a good bit short of the 850,000 average of the last few years and is far under the 1½ million of the early postwar period that sent housing zooming away on its boom. (The explanation of the drop, of course, is that the people now coming to marrying age are drawn from the low birth years of the depression, and that we have borrowed ahead on households by lowering the marriage age.)

Though residential builders will find some of the effects of this lower formation rate cushioned by an increase in nonfarm households at the expense of farm, it will be 1964 before households again start edging close to a rate of 900,000 a year. Thus, on the average, an annual production of about 1.2 million new housing units is about the best that can be expected. And this assumes that 300,000 to 400,000 dwellings will be started each year to make up for the demolitions of the highway and urban renewal programs and for abandonments and replacements stemming from rising living standards.

In apartment houses, building should gradually move up from its present skimpy share of less than 10% of total residential activity. The reasons: the attractiveness of apartment living for young married people and elderly couples, whose ranks will be increasing; a probable rise in demand for close-in accommodations as urban sprawl continues; the aging character of the existing apartment-house stock. Cooperative apartment buildings, which have special tax advantages, as well as advantages in financing through the Federal Housing Administration, probably will get much of whatever expansion comes along. However, since the political and economic climate for investment rental housing is still definitely on the unfavorable side, the volume gains won't be spectacular.

Outside of New York and a very few other places, public housing now seems to stir up little enthusiasm as a political issue, while the rising level of family income removes the original excuse for its expansion. Unless some new elements appear—housing for oldsters or for families displaced by highway and urban renewal operations—public apartment building seems sure to decline.

School building over the next decade will run substantially ahead of construction's over-all gains. The present backlog of needs, and the future upsurge in population,

will bring a 56% jump in public school outlays by 1966. Private school building, which accounts for about 17% of the educational total, will have a gain of better than 45%. At the end of the decade, schools will probably just be starting on another round of expansion.

Hospital and institutional building, whose outlays this year were evenly split between the public and private areas, will show a tremendous gain of 191% on the public side, a smaller, but substantial 82% in the private total. Here again the population factor is the main force at work.

Highway building will probably have more impact on construction over the next decade than any other factor in history, with the possible exception of the railroad construction of the 1800's. Under the new federal program, the outlay for roads and streets will rise 75% by 1966. Beyond this, the effects of the program are incalculable, but it is certain that no phase of construction will escape its impact.

As the plan stands now, close to $40 billion of the estimated $100 billion to be spent on highways over the next ten years will be channeled into metropolitan areas. This gives some measure of the transformations that will be worked upon the urban scene. Vast numbers of existing buildings—generally the most obsolescent and deteriorated—will be demolished, an operation that will both shore up the real estate market and open the way for new apartments, stores, parking and industrial buildings. In this sense, the highway plan promises to breathe life into the slow-moving urban renewal program and give real vitality to its efforts.

Beyond the core areas of cities, the effect of new expressways and feeder ways will be to add to the stock and to improve the character of outlying sites, not only for new residential neighborhoods, but for shopping centers and industrial parks, too. On top of this, the program will produce an immeasurable amount of new service facilities—motels, garages, restaurants and the like.

Within its potential, the new road building has the power both to intensify the suburban shift and to restore the balance between the close-in and the outlying sections of the metropolitan areas. It is likely to do some of both.

Taking all these factors into account, construction's outlook is promising indeed. Over the next ten years, employment will be at a high level, and the demand for materials will be steadily mounting. (The Associated General Contractors has estimated that to meet the construction volume expected by 1965, Portland cement capacity will have to expand by 152 million barrels; steel ingot production will have to rise nearly 50 million tons, assuming the present product mix doesn't change.) On the manpower front, there will have to be many more architects, engineers and skilled workers than are in sight now. In short, the serious question may soon be not how much construction can grow, but how much the rest of the economy can let it.

EXPENDITURES IN MILLIONS OF 1956 DOLLARS

	1956	1961	change 1956-61	1966	change 1956-66
Total private and public[1]	$44,100	$53,400	21.1%	**$63,800**	44.7%
Private total	$30,800	$35,750	16.1%	**$43,500**	41.2%
Nonresidential building	8,950	10,800	20.7	**12,700**	41.9
Industrial	3,100	3,800	22.6	**4,600**	48.4
Commercial	3,525	4,100	16.3	**4,800**	36.2
Warehouses, lofts, office bldgs.	1,325	1,400	5.7	**1,800**	35.8
Stores, restaurants, garages	2,200	2,700	22.7	**3,000**	36.4
Other nonresidential building	2,325	2,900	24.7	**3,300**	41.9
Religious	750	850	13.3	**900**	20.0
Educational	550	700	27.3	**800**	45.5
Hospital and institutional	275	400	45.5	**500**	81.8
Social and recreational	250	350	40.0	**400**	60.0
Miscellaneous	500	600	20.0	**700**	40.0
Residential building (nonfarm)	15,100	17,000	12.6	**20,600**	36.4
New dwelling units	13,350	14,500	8.6	**16,800**	25.8
Additions and alterations	1,300	1,900	46.2	**2,950**	126.9
Nonhousekeeping[2]	450	600	33.3	**850**	88.9
Farm	1,500	1,550	3.3	**1,800**	20.0
Public utilities[3]	5,100	6,200	21.6	**8,100**	58.8
All other private	150	200	33.3	**300**	100.0
Public total	$13,300	$17,650	32.7%	**$20,300**	52.6%
Nonresidential building	3,900	4,550	16.7	**5,750**	47.4
Industrial	400	300	-25.0	**200**	-50.0
Educational	2,500	3,000	20.0	**3,900**	56.0
Hospital and institutional	275	500	81.8	**800**	190.9
Other nonresidential building[4]	725	750	3.4	**850**	17.2
Residential building	250	250	0	**200**	-20.0
Military facilities[5]	1,400	1,400	0	**1,000**	-28.6
Highways	5,150	8,100	57.3	**9,000**	74.7
Sewer and water facilities[6]	1,250	1,650	32.0	**2,300**	84.0
Public service enterprises	500	700	40.0	**900**	80.0
Conservation and development	675	800	18.5	**900**	33.3
All other public	175	200	14.3	**250**	42.9

[1] Also includes major alterations and additions.

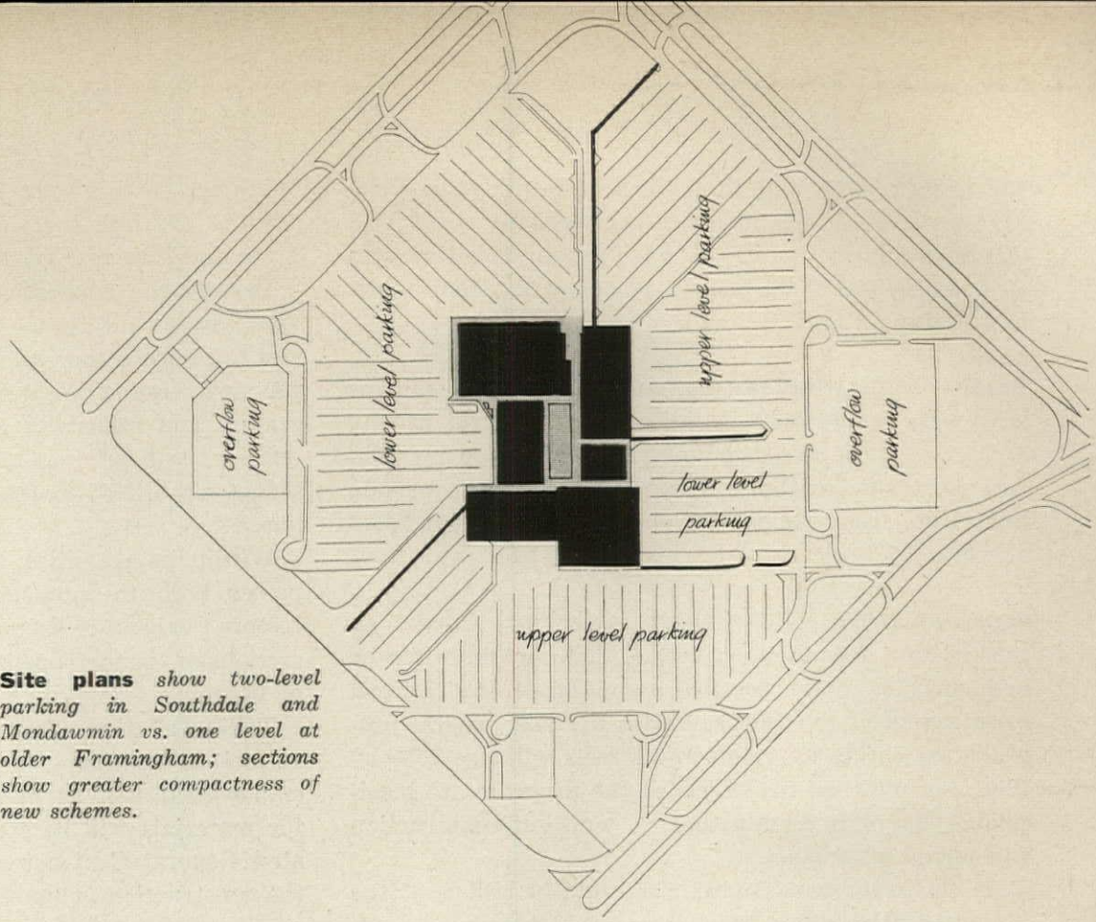
[2] Includes hotels, motels and dormitories.

[3] Includes buildings of various types (power plants, telephone exchanges, stations, maintenance shops, warehouses, etc.) as well as power, telephone and telegraph lines and other nonbuilding construction.

[4] Includes mainly government office buildings.

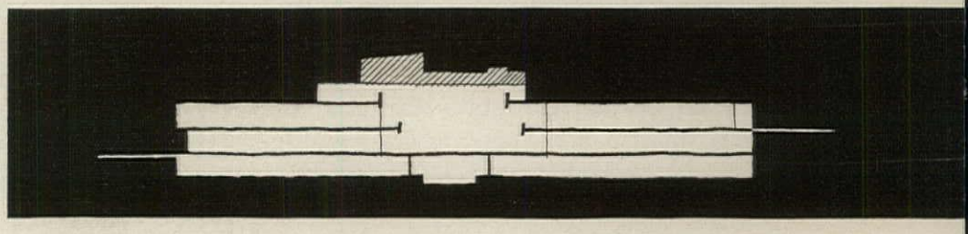
[5] Includes mainly buildings of various types (warehouses, barracks, theaters, hangars, schools, etc.) as well as airport and other nonbuilding construction.

[6] Includes buildings of various types (sewage plants, pump stations, etc.) as well as nonbuilding construction.



Site plans *show two-level parking in Southdale and Mondawmin vs. one level at older Framingham; sections show greater compactness of new schemes.*

NEW: SOUTHDALE OUTSIDE MINNEAPOLIS



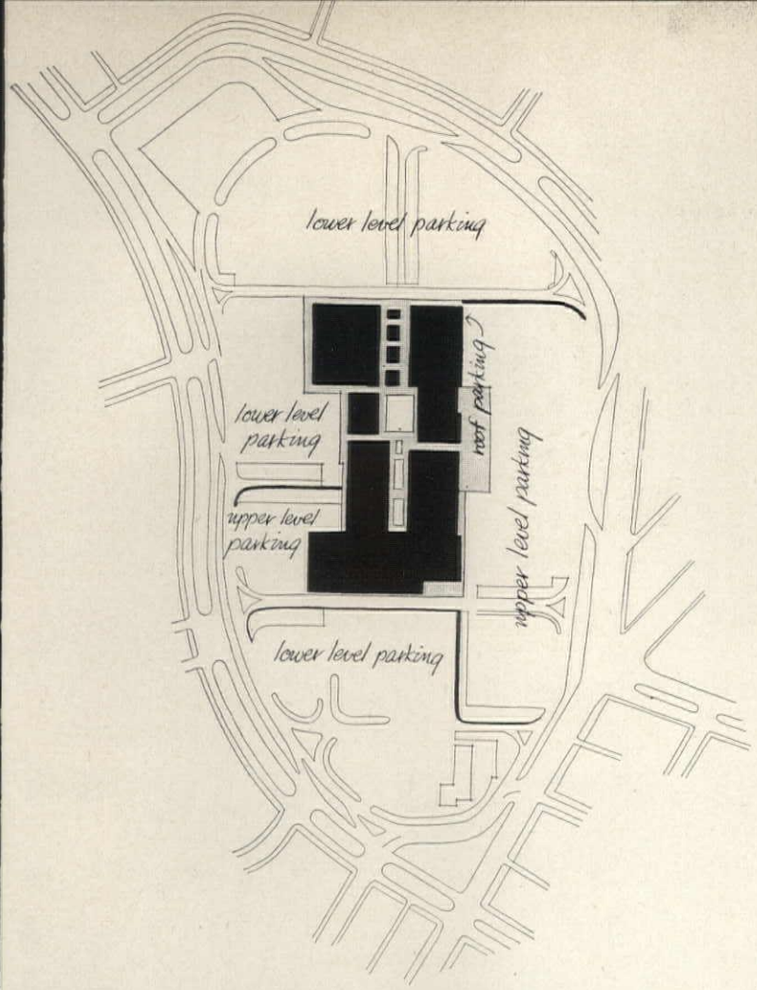
A BREAK-THROUGH FOR TWO-LEVEL SHOPPING CENTERS

A bugaboo ever since it did not quite pan out at Framingham, the double-deck mall has been rethought for two big new centers in Minneapolis and Baltimore. Results: a gay new atmosphere, a new dimension for shopping convenience and a new revelation of pedestrian scale

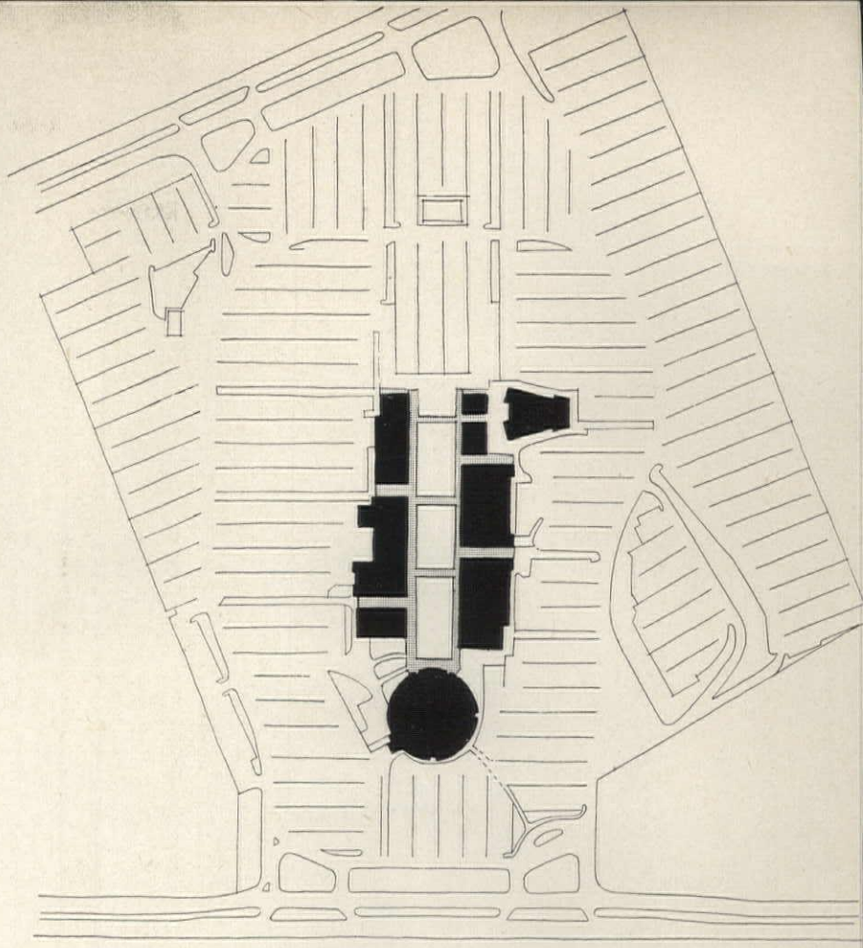
The great potential advantage of two levels for a big shopping center is compactness—compactness to cut walking, to permit air-conditioned courts or malls and to induce the gay bustling atmosphere congenial to shopping. The potential disadvantage is that shoppers will favor one level more than the other and will resist moving between levels. Ever since such difficulties were revealed at two-level Shoppers World, in Framingham, Mass.—opened five years ago—most developers have been afraid of the idea.

But fortunately not all clients and architects scare so easily. Two new two-level centers opened neck and neck in October: Southdale, designed by Victor Gruen & Associates for the Dayton Co. at Minneapolis; and Mondawmin, designed for Developer James Rouse at Baltimore by a design board which included Architects Pietro Belluschi and Kenneth Welch.

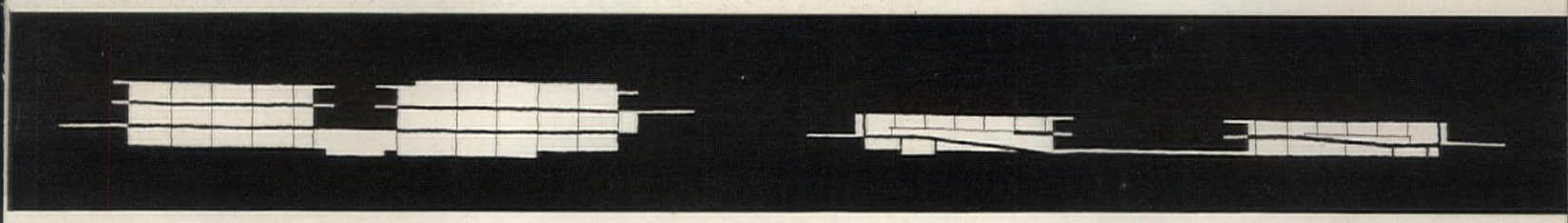
At Southdale and Mondawmin, traffic is shared so fairly by both levels, its flow up and down is so easy and unin-



NEW: MONDAWMIN IN BALTIMORE



OLD: SHOPPERS' WORLD IN FRAMINGHAM, MASS.



hibited, and so much gaiety is added by that second layer of moving people, lights and color, that timidity about two-level design now seems pointless.

To understand the reasoning behind the bugaboo and the significance of the new thinking, it is necessary to look at Framingham. That center was plagued by all the difficulties of an underfinanced shopping center (see "Why Aren't There More Good Shopping Centers?" p. 127) and these, rather than its pioneering design, were the cause of later troubles. But financing and leasing difficulties also hampered the way the design worked, for Framingham's single department store has the best spot in the center for visibility and access, and the second department store, called for in the original plans, has never materialized. That missing store, at the other end of the mall, was vital both to draw shoppers down the mall and to provide an escalator link there between levels.

At both Southdale and Mondawmin, the architects and owners avoided any such pitfalls and rethought three major aspects of two-level design: parking, vertical connections and scale of focal spaces. Their conclusions, arrived at independently, show these similarities:

Parking at both Southdale and Mondawmin is segmented into two levels, *bringing shoppers directly in at each level.* The division is mathematically exact at Southdale; Mondawmin's lower level has more sales area, more parking. (Framingham's parking lies between levels, with pedestrian ramps up and down.) The two-level parking works beautifully as a traffic distributor.

An added surprise is what the device does visually. With different levels, the enormous sea-of-asphalt look disappears. All parking seems closer to buildings.

Vertical connections at both Southdale and Mondawmin are in the center of things, and plentiful. They include public escalators, in addition to those within stores, and eye-catching stairs. (Framingham's principal common-use connections are the ramps extending to the parking, or back door, side.)

Focal common spaces in both Southdale and Mondawmin are not large, parklike malls but concentrated "pedestrian square" courts. These intimate and busy spaces bring the whole panorama close to the shopper, make any point from here to there—across or up and down—look easy to reach. They do more than that: in dramatizing the panorama, they entice the shopper to try it from different levels. *Thus compactness is not only the goal of the design but a key to making it click.*

Aside from these similarities in principle, Southdale and Mondawmin are very different from each other in size and arrangement. As the following pages show, they also differ greatly in effect, not only from all other shopping centers, but from each other. Mondawmin conveys an intimacy that makes it kin to a charming market town. Southdale conveys a glamor that makes it kin to an exciting city center.

TWO-LEVEL SOUTHDALE

Infinity Inc.

is more like downtown than downtown itself

Here we see architecture fulfilling one of its most creative roles: building a new kind of environment.

The Southdale environment is quite unlike that of any other shopping center. There is nothing suburban about it except its location. For Southdale uncannily conveys the feeling of a metropolitan downtown: the magical, intangible assurance that here is the big time, this is where things happen, here is the middle of things. Consider that this is done in what is actually a single building and without any of downtown's entertainment world to help, and it becomes even more astounding.

Nor is Southdale a copying of downtown. Rather, it is an imaginative distillation of what makes downtown magnetic: the variety, the individuality, the lights, the color, even the crowds—for Southdale's pedestrian-scale spaces insure a busyness and a bustle. Added to this essence of existing downtowns are all kinds of things that ought to be there if downtown only weren't so noisy and dirty and chaotic—sidewalk cafés, art, islands of planting, pretty paving. Other shopping centers, however pleasant, seem provincial in contrast with the real thing —the city downtown. But in Minneapolis, it is the downtown that appears pokey and provincial in contrast with Southdale's metropolitan atmosphere.

Those who like quick and easy recipes will want to lay this magic to the fact that Southdale has an enclosed, air-conditioned court. It is not so simple. The court is part of it, but the way the court is sized and what goes into it are vital. The court opens up, almost as if it were the outdoors, very different from the central courts of the early department stores, to which it will surely be compared. Its height is dramatized by sculpture and trees that lift the eyes up, by shafts of sunlight or dimness of dusk. All this is indispensable to the illusion of being in the midst of something that is more than a building and more than the sum of its parts.

Also indispensable is the lively downtown look of the lanes leading into the court and the variety of tenants and stores throughout. Diluting operations are all in the basement. Right up to its perimeter doors, this center never collapses into stage setting, never lets down.

DEVELOPER: The Dayton Co.; William Crear Jr., planning coordinator.

ARCHITECTS: Victor Gruen & Associates: R. L. Baumfeld, project director; Herman Guttman, project coordinator. Associated Architects, Larson & McLaren.

CONSULTANTS: Economics, Larry Smith & Co.; traffic, George W. Barton; landscaping, Morell & Nichols, Inc.; electrical and mechanical, Ralph E. Phillips; air conditioning, Donald Kroeker; communications and electronics, G. Rush Willet; acoustics, Vern Knudsen; land planning, Harman & O'Donnell; civil engineering, G. M. Orr Engineering Co.; land survey and road design, C. E. Coulter; geology, E. J. Longyear; hydrology, Adolph Meyer.

ARTISTS: John Anderson, Bernard Arnest, Dorothy Berge, Harry Bertoia, Louise Kruger, Daniel Soderlind, Joseph Young.

GENERAL CONTRACTOR: Johnson, Drake & Piper.

DONALDSON'S STORE by Architects John Graham (exterior) and Alvin L. Weidt & Assoc. (interior); coordinator, David Griswold. Donaldson's general contractor, Watson Construction Co.

←

By day, enclosed air-conditioned central court is daylighted, has open, outdoor effect. Among attractions visible here: 46′-tall "Golden Trees" sculpture by Harry Bertoia, sidewalk café, marble mail-drop to post office below, newsstand walls with abstractions in glass mosaic by Joseph Young (benches below to come), cigar-store Indian, 42′-tall eucalyptus, paving of brick, pebble concrete, tile.

→

By night, general lighting of court is dim, chandeliers shine forth, giving illusion of balmy outdoor evening. This portion of court, divided by escalators and bridge from the portion shown on opposite page, now includes juice bar with circular fluted canopy, not ready when photo was taken. Civilized little sales areas within court add much to gaiety, reinforce its invitation to leisure.

Birdcage contains 50 brightly plumaged little birds and their perch. Court is lighted by north skylight through wood louvers, clerestory and electric light in recessed ceiling squares.

PHOTOS: WARREN REYNOLDS, INFINITY, INC.

Southdale is full of surprises at every turn

—in the court, in the lanes and outdoors

Boys on stilts, of laminated walnut, stand beside slender eucalyptus tree; Louise Kruger, sculptor. Allotment for center's art program of four sculptures, mosaic walls, two murals, was $50,000.

Lockers for parcels and coats, enameled in yellow, orange, red and tan and set in marble, make strikingly handsome wall. Telephones are at one end; drinking fountains the other. This is in lane beside Dayton's.

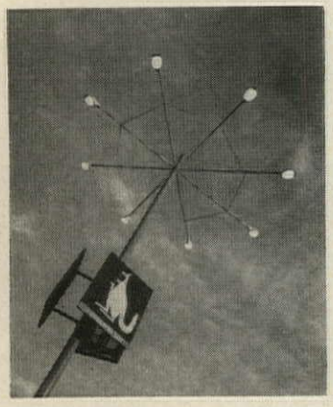
Fountain in court sends lighted spray toward globe chandeliers. Fish and lily pads were not yet in when photo was taken. Birds and fish are only fauna in court, but downstairs is children's carnival room with real zoo.

Unicycle performers by Minneapolis Sculptor Dorothy Berge stand on an upper level outdoor terrace. Sculptural water tower is Southdale's landmark, also serves suburban Edina where center is located.

Cigar store Indian once graced small town of Stillwater, Minn., had been curio in possession of Daytons for many years. To center rear are Bertoia's "Golden Trees" and to right a magnolia tree with orchid planting beneath.

Entrances to Dayton's department store include glass enclosed stair leading to second floor lobby shared by restaurant (behind glazed planting box at right) and small auditorium to left. These can be kept open for civic or business affairs when rest of center is closed.

PHOTOS (ABOVE & OPP. P.): WARREN REYNOLDS, INFINITY, INC.; (BELOW) ANTHONY LANE



Parking signs use animals as designations, partly because people seem to remember them more easily than colors or numbers, partly to make point that things are fun here. Each of 15 lots has animal symbol and huge fixture with eight 1,000 w. mercury vapor lamps. For orderliness, all parking lights are at same level, 60′ above pole base on lower level lots, 45′ above on upper level lots.

Southdale's economy lies in clever planning

Luxurious as Southdale is in materials, and generous in amenities, it is not extravagant building. Its cost of $20 per sq. ft. of rental area (as usual, all common areas including parking are figured into rental area cost) is low in any case for a center of such quality; in addition, that figure includes tenant allowances of a scale that encouraged quality and variety of stores (p. 122).

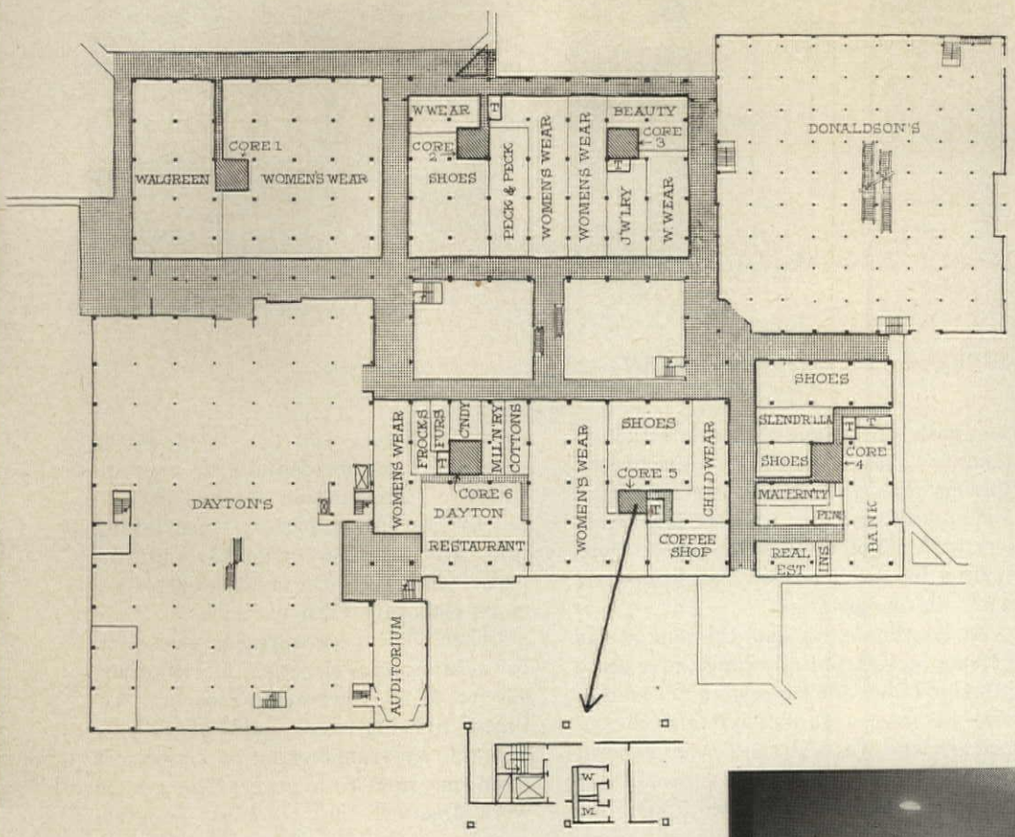
Most important economies:

▸ *Space planning.* Both main levels are treated like the highest value downtown land. Not an inch is wasted in back-door or "side street" activities. Those all go into basement, which is also used to its limit. Service cores are compact and convenient to every store's interior (plan right).

▸ *The enclosed court.* This "air-conditioned outdoors" pays its way and more. It permitted interior materials and detailing on all interior fronts; in effect these are partitions, not walls. It serves as air plenum, prevents loss through store doors of cooled or heated air, makes operation more economical than if it had been open (p. 122).

Charges to tenants include 1) rent; 2) amortization of air-conditioning plant over 17½ years, charge varying from 18¢ to 40¢ per sq. ft. of primary space (rental area minus storage) depending on location; 3) air-conditioning operating charge, prorated by cost: estimated at 26¢ to 39¢ per sq. ft. of primary space, depending on location; 4) common areas charge, also prorated, estimated at 22¢ per sq. ft. of gross rental space. The merchants' association, which all tenants have joined, levies own promotion charges.

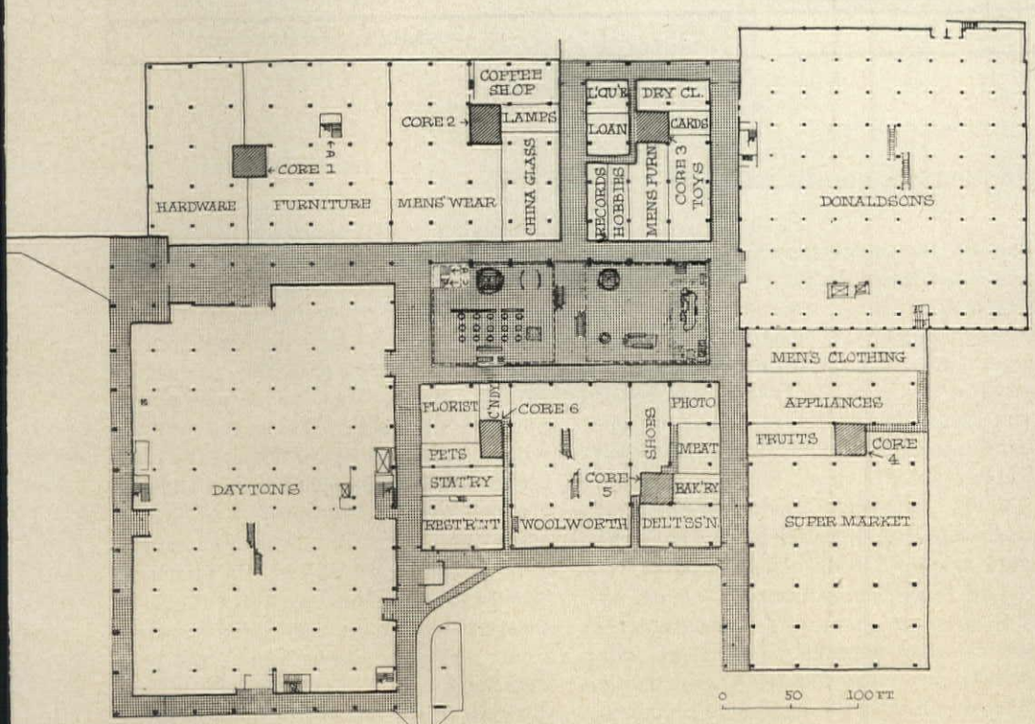
Southdale's vital statistics: site size, 84 acres (plus 400 surrounding acres integrally planned for offices, housing, etc. as proof against blight); 72 stores; 5,200 parking stalls plus 1,800 overflow. Rental area, 810,000 sq. ft. including 195,000 sq. ft. in Dayton's and 140,000 sq. ft in independently owned Donaldson's. Trade area pop., 250,000 in 15 minutes. Estimated business, $40 million by fifth year (most conservative). Cost including fees, $20 per sq. ft. rental area. Mortgage (about $10 million) held by Prudential Life Insurance Co.



Plans show how six service cores feed into store groupings, are completely concealed. Each core includes employee washrooms. For connections to loading, see basement plan, p. 123. Note how many small stores front on lanes, making them lively streets instead of blank side walls.

Bridge dividing court stands between escalator landings, gives both sides of court an even break on vertical traffic. At diagonally opposite court corners are stairs beside vertical objects to enjoy en route—bird cage at one shown in photo, Bertoia sculpture at other.

Interior store fronts have no weather problem; many are open, like china glassware-gift establishment, facing court on lower level, which shuts up at night with sliding expanded metal screen. Side of same store (below) with canted walls and slot windows shows one way of enlivening lane containing side wall. Architect: David Griswold.



LOWER LEVEL

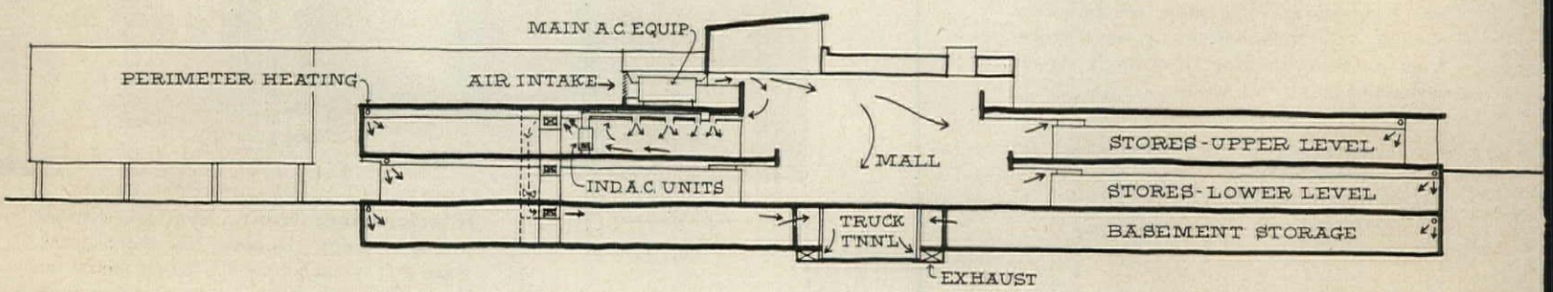
Southdale's tenant allowances encouraged store-front variety

The usual way of handling shopping center store fronts is for the developer to assume the cost of a standardized front. In theory, the tenant who wants something different—if he is allowed to have it—pays the difference. Actually tenants with strong bargaining power negotiate extras. The system nonetheless fosters standardization, especially for nonchain tenants, the very ones who depend most on individuality and who should be the spice of a center.

Seeking individuality at Northland (AF, June '54), which like Southdale was designed by Victor Gruen & Associates, the developer there assumed the cost of tenants' stores although tenants chose their own architects. Variety was gained, but cost ran high and supervision was a horrendous problem with about 80 individual store jobs trying to get finished simultaneously with the center itself.

At Southdale, instead, the tenant was given a store-front allowance, plus some interior finish allowances, and chose not only his own architect but also a contractor who was *not* the center general contractor, so that each job would get its own supervision and workmen. Allowances for fronts were enough to buy something good, not enough to buy fussy arcades: $48 per front ft. on court or lanes; $66 per front ft. on exterior. This, incidentally, is an indication of construction savings permitted by the enclosed court—also taking into account the fact that interior walls (in effect, the real fronts) are more elaborate than exterior.

Other allowances were 84¢ per sq. ft. for ceiling; 75¢, electrical distribution; 53¢ to $1.53, ductwork. Flooring, fixtures, lighting were paid in full by tenants. No transferring of allowances from one item to another. The system worked so well that hindsight suggests only one possible refinement: slightly higher allowances per front foot for small stores than for large.

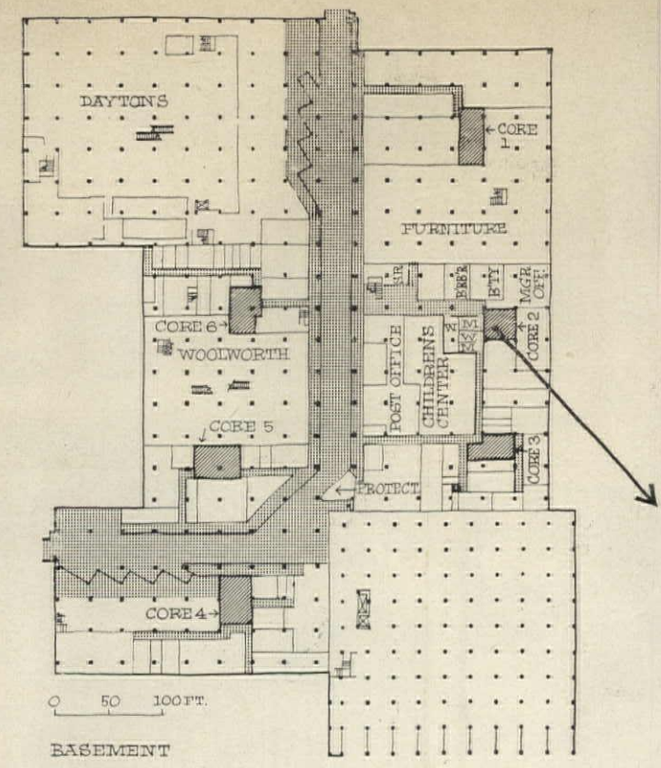


Southdale's court is a huge fresh air plenum, conditioned by a heat pump

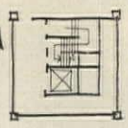
The path of the 120,000 cu. ft. per minute of conditioned air supply at Southdale is into the garden court and the lanes fingering from it, thence into the stores through their doors and the continuous grills at store ceiling line. In the stores, package refrigeration units compensate for lights and people to maintain a constant 75° temperature. From stores, the air travels into the basement, then into the basement truck road where it exhausts under loading docks and out through roof stacks. In cold weather, individual gas-fired units heat lanes' outdoor entrances; separate lines handle the perimeter.

The heat pump system at Southdale, one of the largest such installations yet, saved more than $500,000 in capital expense, costing $1,200,000 against $1,800,000 for a conventional system. Operating costs are expected to be lower, too, because the dozen employees who would normally man boilers are eliminated. The system uses 50° well water from 400′ down. The compressors —2,000 tons—are driven with gas; fuel costs are expected to be about the same as for a conventional system.

The whole plant requires no operators nor even inspectors. An automatic programmer directs equipment for early or late store hours. An electronic data handling system scans 100 temperature points in the system four times a second and every hour logs its data on an electric typewriter if all is normal. The moment any abnormal data is picked up, it goes onto the typewriter in red, and as soon as it returns to normal, in black. The typed record, which clatters along in the central protection office (see opposite page), shows any pattern of deviation in the system's operation, however subtle or minor, thus permits preventive maintenance. Should an engine go out, meaning safety devices have responded to something seriously wrong, lights and audible alarm would immediately inform the man in the central protection office.



Protection office, with view down both legs of truck road, is electronic headquarters for fire and police protection, lost and found, traffic, paging, heat pump operations control, music broadcasting, public address system. One man handles it all.



Basement plan shows service cores which connect with truck road; each enterprise's basement storage space is correlated with its own service core (see also p. 121). Tenant lease area in basement—storage and sales excluding Dayton's—is 130,000 sq. ft.

Southdale's basement has everything from electronic watchman to zoo

The zoo (animals rented and changed every few weeks) is in the children's playroom, a carnival of merry-go-rounds and bucking broncos which shares the basement concourse with shoe repair, barber, beauty shop, post office, center manager and washrooms.

The watchman's post is the central protection office, at the bend of the truck road. This is the communications and nerve center for all of Southdale. One man, stationed here, controls and checks the fire protection system—no sprinklers, instead electronic devices that report any flame (as small as a match flame, at night) and its exact location to the protection office. The same man controls the entrance and exit protection system (with electronic control over truck doors), traffic in the truck road (with a talk-back paging system), the intrusion alarms, the public address system, the music. Spotted about the center are 90 red emergency telephones connected directly with the protection center, for reporting lost children, ill shoppers, or other untoward circumstances. The man in the protection office has an alter ego, walking the center on a fixed schedule, with whom he is steadily in touch by transistor radio. No store watchmen are needed, even for department stores.

The basement also has three large sales areas, for Dayton's, Woolworth's and a furniture store. Furniture stores consume space and have a low gross productivity per square foot; a relatively small main level area and a big basement sales area is the economic answer to the need for a full-fledged furniture store in a complete center, says Gruen.

Every single enterprise in the center has its own basement storage—even the real estate and household finance offices which have what amount to large closets for paper supplies, the aim being to keep all main-level spaces working at top productivity—the main justification for a shopping center basement, in Gruen's view.

PHOTOS (BELOW): ANTHONY LANE; (OTHERS) WARREN REYNOLDS, INFINITY, INC.

BEN SCHNALL

Stair-bridge over pool so delights shoppers it gets more traffic than covered, centrally located escalators. Upper level beyond stair is roof parking now, expansion space for future.

TWO-LEVEL MONDAWMIN has the atmosphere of a cheerful market town

The quality above all others that makes this shopping center in Baltimore a delightful place is its scale. It is not built as familiar vehicular space with the vehicles removed; it is sized to the pedestrian. Mondawmin's main court, its "big space" is only 104′ square, its mall only 50′ wide, its side streets 26′ wide, and both mall and side streets will be improved as the center grows and they gather stalls and kiosks. Mondawmin's effect cannot be understood in terms of two dimensions. As with Southdale, it is probably necessary to feel this scaled-down space to realize fully how satisfyingly and even excitingly it fits the human on his own two feet. Extra advantage: court is small enough to enclose in future if desired.

Mondawmin has many unorthodoxies in regional center planning, perhaps the most daring being that it is deep within the city, not on the outskirts, only 3 mi. from a large, flourishing downtown. It opened almost simultaneously with two Baltimore suburban centers, the three adding 1 million sq. ft. of new retail area. Yet first month business has been excellent, with many chain tenants reporting they have equaled or bettered opening business records. "Architecture is our big, our extra pull," says Developer James Rouse. "We can see it working: first pulling people here, and then distributing them through."

Mondawmin's vital statistics: Size—46 acres, 60 stores, 4,000 parking stalls. Rental area—490,000 sq. ft. including 170,000 sq. ft. in independently owned Sears and 26,000 sq. ft. of basement rented for offices, but not 50,000 sq. ft. of unfinished basement nor 20,000 sq. ft. of kiosks and stalls which can be added in mall and lanes. Effective trade area population — 300,000 within 15 minutes. Estimated business—$30 million first year, divided in even thirds between department store, giant supermarkets, all others; $32 million second year. Cost, including fees—$20 per sq. ft. of finished rental area. The mortgage (about $6 million) is held by Connecticut General Life Insurance Co.

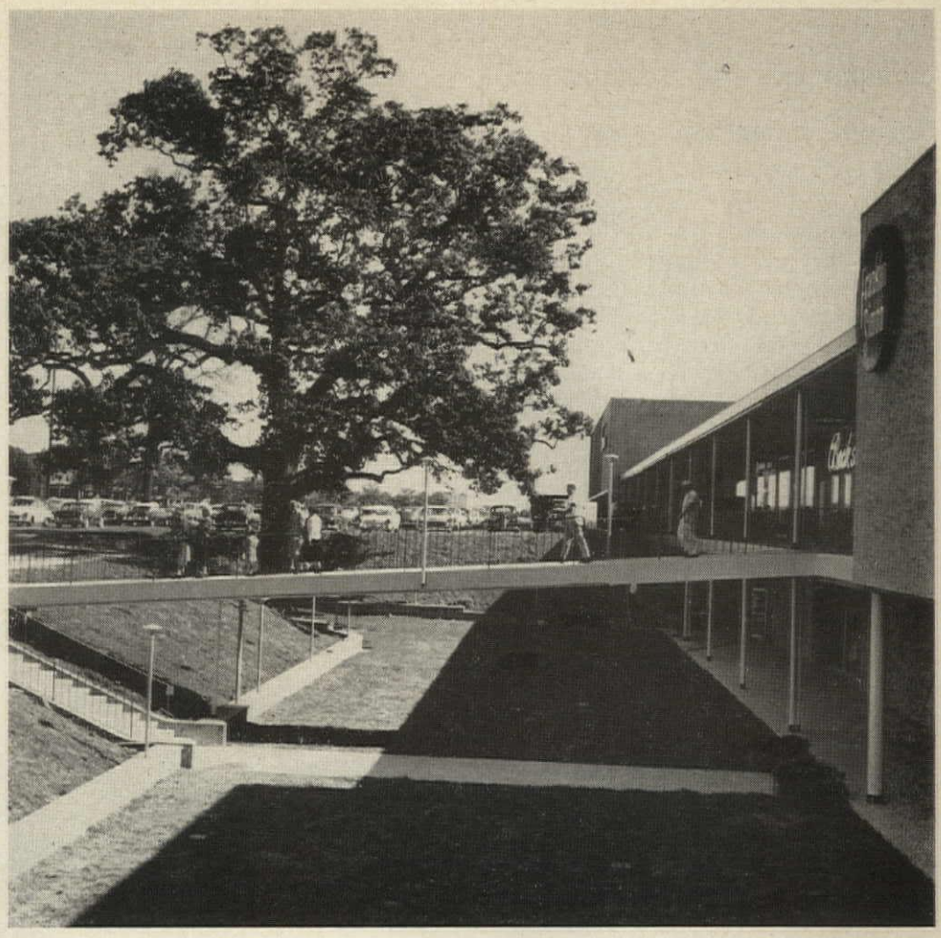
OWNER: Mondawmin Corp., Harry Bart, president; James W. Rouse, owner's representative.

BOARD OF DESIGN: Architects Kenneth C. Welch, Pietro Belluschi, Dan Kiley, and Fisher, Nes, Campbell & Assoc.; Wilbur Smith, traffic consultant; Seward Mott, land planning consultant.

CONSULTANTS: Structural, Van Rensselaer P. Saxe; mechanical and electrical, Egli & Compf; civil, Office of Albert E. Pohmer. Graphic design and sign control, Alvin & Elaine Lustig. Signs and colors, Betty Cooke & William O. Steinmetz; J. & G. Daverman, supplementary architectural.

GENERAL CONTRACTOR: Crow-Bart (joint venture of William L. Crow Construction Co. and Mondawmin's president, Housebuilder Harry Bart).

SEARS STORE: Design by Sears architectural division in consultation with Belluschi; general contractor, Cogswell Construction Co.



Bridged court saved fine old oak, will be developed in future. This is only portion of center where parking feeds shoppers into both levels, instead of one or other.

Central escalator is at juncture between main court and mall leading to department store (*plan overleaf*). Court is soon to have planting and sitting places.

Main court, similar in scale to the pedestrian markets of Europe, is both a climactic and an intimate space. Approaching pedestrian sees it suddenly—its whole panorama at once.

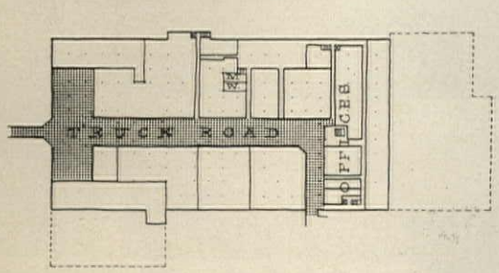
PHOTOS: FRANCIS DI GENNARO

Mondawmin's plan adapts mall for one department store

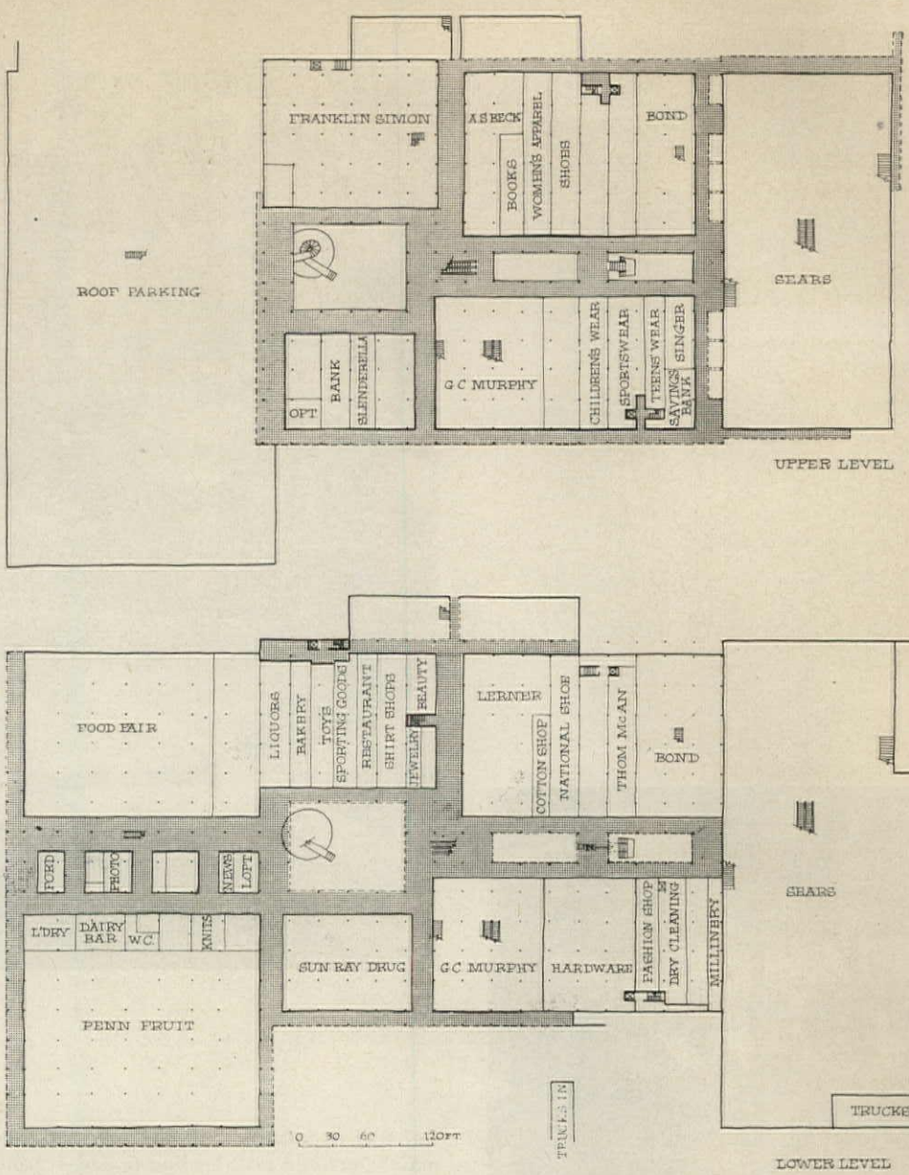
Mondawmin's developers, with only one department store, chose to stick with an in-line mall plan, saving a spot at the "open" end for a possible second big store where roof parking is now. To prevent this end from languishing, they not only placed there the big secondary pulls shown in plan, but also the main architectural features—court, pool, circular stair. It seems to work; during first month's business, this end of the center was fully as populated and lively as the other.

Supermarket space of Mondawmin dimensions (77,000 sq. ft.) is a big-center oddity, the usual theory being that people will travel only about five minutes for food as against the 15 to 25 minutes' pull of the regional center; thus the big-center supermarket is regarded largely as a convenience for those drawn by other errands. It is too early to be sure, but it looks as if Mondawmin's supermarkets may be major, long-distance pulls in themselves because of sheer size, hot competition between the two and a fantastic, regionally unequaled, array of unusual items.

Charges to tenants include: 1) rent; 2) amortization of heating and cooling plant, 23¢ per sq. ft.; 3) proportionate share of heating and cooling operation; 4) common areas maintenance, 10¢ per sq. ft. (with owner contributing about the same); 5) up to 12¢ per sq. ft. for Merchants' Association activities (with owner contributing sums equivalent to at least 4¢ per sq. ft.).



Mondawmin's basement is a question mark. It is there because of the underground truck road, and much of it is as yet unused. If the center grows, this space will be in demand for storage and perhaps by more office tenants. But hindsight may say that depressed cul-de-sac loading for the big stores (as worked out here by Sears), without full basement, is preferable unless a basement can be thoroughly rationalized from the start, like Southdale's.



PHOTOS: BEN SCHNALL

Tower and parking signs, designed by late Alvin Lustig, display red and black symbol, four M's radiating from circle. Lustig's device of "stacking" odd name in syllables made it feasible to keep land tract's traditional name, bestowed century ago by Longfellow. Low segments of parking lot can be double-decked in future if growth warrants.

WHY AREN'T THERE MORE GOOD SHOPPING CENTERS?

Because good materials, lively store fronts, pretty pavement, wide canopies, imaginative planting, art, central air conditioning, concealed servicing and the combination of devices that make compact, short-walk centers full of seductive lanes instead of dull alleys, all cost money

Such charms and efficiencies—assuming the fundamentals of a good site, easy access and parking, and the right tenants—pay off of course.* And any developer who has ever dreamed about a goose and a golden egg has dreamed a really first class center. If he pursues the dream, he almost always butts his head against the hard facts of cost versus financing.

The developer must depend on a mortgage to cover 70% to 85% of his costs (not including his own considerable time and energy or the increase in land value resulting from development). The amount of money he can spend on his center thus depends directly on the amount of mortgage he can raise. The amount of mortgage depends directly on the value of his leases. The value of his leases depends on the guaranteed minimum rents he can command from his important tenants. But—and here is the crux of his problem—his leases cannot produce enough value to raise enough mortgage money to finance a really well-built, well-planned magnetic center. So he cuts down from the $19 or $20 per sq. ft. of rentable area he and his architects aspired to spend, to the $14 or $16 per sq. ft. he can raise on his guaranteed minimum lease value, and settles for another humdrum job that can depend for drawing power on necessity and convenience and some promotion hoop-la, but on little else. Forever after he is stuck with a fundamentally cheap center, vulnerable to competition, expensive to maintain, monotonous to look upon (standardized store fronts are cheapest) and susceptible to shabbiness.

He is in this fix because the sources he must depend on for his proved lease value have him over a barrel. The department store is indispensable to the center and to its other stores and knows it. Without it—perferably two department stores in a regional center—there will be no center. In return for the traffic it generates, the department store customarily gets its space below cost. Rent from other stores must make up this subsidy. What other stores? The insurance companies that finance shopping centers want not just any old tenants on those smaller leases. They want AAA credit ratings on at least 55% of them, often up to 75%. With few exceptions, the only merchants recognized as AAA credits by the national offices of insurance company lenders are national chains. Knowing the developer *must* have them to get his loan, the chains drive a hard bargain too.

James Rouse, the developer of Mondawmin (left), who as a mortgage banker has arranged the financing of this and 35 other centers, reports it is not unusual for a developer to get himself into the impossible fix of proposing to subsidize the department store and just break even on the chains, hoping the residue of tenants, occupying say 10 to 20% of the center, will make up the subsidy and return him operating expenses and profits. His guaranteed minimum rents obviously cannot meet

continued on p. 166

*Witness the instructive success of Northland in Detroit (AF, June '54) where people even come in droves on Sunday to window shop, where reportable sales volume for the first full year was almost $88 million and currently, in the second full year, is running at an estimated $100 million against a pre-opening estimate of $50 million by the fifth year.

The city which has done so much pioneering
has now progressed far enough to reveal some important
conclusions about city rebuilding and public housing
—a progress report by Frederick Gutheim

PHILADELPHIA'S REDEVELOPMENT

Planning in Philadelphia, after a decade of national leadership, is being overtaken by doubts and refinements of maturity. It is adding up its experiences, firming up its policies and embarking on a program of comprehensive planning, with double its ordinary budget—actions that will once again set the pace for cities everywhere.

Philadelphia's new kind of planning is seeking planning's White Whale—an apparatus of fact control so complete that all who build, invest, vote, legislate or otherwise play a part in making the future city, will be guided by its forecasts, its estimates of needed quantities and areas, its determination of relationships. Only so, they are saying in Philadelphia, can planning get out of the trap where planners try —and fail, as always—to control something or someone who thinks he knows better.

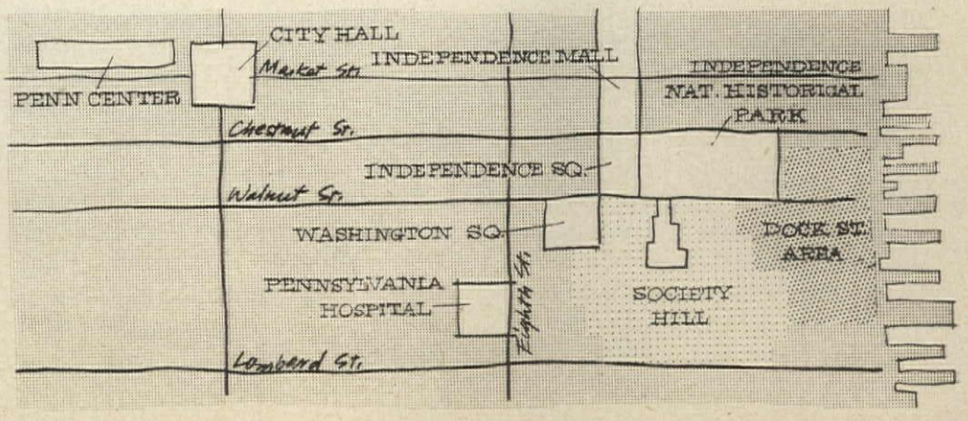
It is not enough to have what planners have thought to be good plans—plans that are brilliant concepts of the future city that rest on untested hypotheses or that have a basis in fact so insubstantial it would hardly impress another kind of engineer. Planning must judge how far, realistically, it can affect the basic urban pattern. It must see how the social sciences can be employed to create desirable physical patterns. Planning must become a science, testing its theories of how the lives and activities of people can best be organized in space.

To find these ideas being expressed, and this program, with its double annual budget, being championed by its new chairman, Albert M. Greenfield (see below), makes one blink. For Greenfield is not only the city's biggest taxpayer, its largest realtor, and a dizzying power in retailing, hotels and show business. He is the city's top Democrat, the man who goes around with the black bag and raises campaign funds. At 68 one can understand his satisfaction in holding an office so distinguished and so well calculated to his experience and ability, and still be surprised by the swiftness and daring of his attack on the planning problem.

It is hardly less surprising to find sophisticated research and hard-boiled public administration ideas nurtured in a planning commission chiefly admired for its attention to design and its three-dimensional planning.

A quick look around Philadelphia provides at least one explanation of these apparent paradoxes; the city is on the move, and it needs to know where it is going.

West of City Hall, the Penn Center program is giving Philadelphia a new sort of Rockefeller Center (photo left), tapping on several levels the daily flow of commuters from the Pennsylvania Railroad's suburban station through the monumental complex of City Hall, and into the heart of the Market St. commercial center. The controversially prosaic Uris building here has panned out as a sort of transportation headquarters. A second and better building in this complex, designed by Vincent Kling, is almost finished. A third building, also by Uris and similar to the first, is about to get underway. None of these buildings is in any sense outstanding from an architectural point of view. None responds architecturally to the unique conditions established by the Penn Center development as a whole, or by their relationships to each other. About the same kind of buildings would have been put on the most congested and unsatisfactory downtown site in any city. The opportunity offered by the spacious and distinguished land in Penn Center has



GORDON PARKS—LIFE

Philadelphia's Greenfield is the kind of planning commissioner few cities can afford, but his ideas make economic sense for even the smallest community

been neglected—one could almost say repudiated.

The open spaces between the buildings at street level, from which so much has been hoped as a new kind of urban plaza, have yet to find the landscape treatment, the sculpture, the life that will make them something more than, say, the similar dead spaces in Pittsburgh's Golden Triangle development. When contrasted with the performance of unified private management of a huge urban area, like Rockefeller Center, Philadelphia only raises doubts that a municipality can do as well.

Closely related to Penn Center is the fate of City Hall, now obsolescent, a festering sore in the middle of the city. The removal of its bulk (not the landmark tower) would relate the new buildings of Penn Center to the traditional Market St. shopping district and to the financial and managerial headquarters south on Broad St. But this sensible plan, agreed upon by the planning commission, Greenfield and Mayor Dilworth, is stalemated between those who want to improve City Hall (and have secured $2.7 million for this work in the 1957-62 capital budget) and those who think the building should be torn down. Meantime the police and the sheriffs use the monumental court for a parking lot, civic improvement agencies clutter it with billboards, and other raffish details thrive in a charitable atmosphere of political tolerance.

Elsewhere in Philadelphia is great activity. Clearance and construction are everywhere. East toward the Delaware River Independence Mall cuts across Market St. The initial Mall project, a cooperative clearance and development job involving the city, the state and the National Park Service, has been extended to include an east-west sector, Independence National Park. In this area private building has already begun to respond with new major construction. Renovation has reached boom proportions. Piecemeal reclamation of hundreds of architecturally valuable houses of the colonial and federal periods is already well advanced in Society Hill. The adjacent Dock St. area, long the city's central produce market, is getting ready for extensive clearance when its present occupants move to a new food distribution center 3 mi. down the Delaware. Parallel to the river, the proposed Delaware River Expressway is being given a final location. This entire area will be the theater of activity for the recently formed Old Philadelphia Redevelopment Corp., a nonprofit but privately owned community agency.

The reshaping of the central business district extends farther, into the realm of private construction and beyond into the longer range planning of the city's Urban Traffic and Transportation Board. Activity in the central city is echoed in other more remote sectors. There is steady progress on the planning of Eastwick, the nation's largest single redevelopment project, a virtually freestanding industrial satellite town within the city. A new system of expressways, spurred by the Eisenhower highway program, is being designed. All these projects are now plunged in second thoughts that will be resolved only by a more comprehensive planning effort.

Far from the impression gained by many an outsider that Philadelphia is about to stop planning and start doing, the truth is that—at long last—it is about to start planning.

As late as 1951 Albert M. Greenfield was a leading opponent of Penn Center. As recently as 1954 he was a vociferous objector to the food distribution center plan. Did these views reflect his financial interest in Market St. retail stores; or abstract convictions about the propriety of municipal subsidies; or a judgment of the soundness of these developments as a real estate man viewed them? All are theories held by one group of Philadelphians or another. But it seems clear enough that today Greenfield, as chairman of the planning commission, has become the strong advocate of these and most of the rest of the city's program.

What Mayor Dilworth had in mind when he appointed Greenfield, other than paying a debt of political loyalty, is obscure. What Greenfield sees in the job, other than a distinguished capstone to a real estate career, is equally conjectural. Most people give Greenfield credit for making an honest try, according to his view of things, and most are willing to see him have the chance to use his exceptional power and talents in what is universally regarded as one of the most important jobs in the city.

Greenfield is not a native Philadelphian. But in his 68 years he has probably covered as many miles tramping through the city's streets as anyone, and his knowledge of the city is impressive. He has bought and sold, or managed property in nearly every block in the city, and in some blocks nearly all of the properties, during his 50 years in real estate. Although he retired last year as chairman of the board of Albert M. Greenfield Inc., no one believes he is talking in other than technicalities when he says: "I am out of the real estate business." Performance on the job in his first year would dispel any possible impression that he took it to advance his own interests; now most people think

Greenfield is playing the unpaid job perfectly straight.

A high flier in real estate speculation in the twenties, Greenfield cut up large sections of northeast Philadelphia and sold lots at auction in tents. The crash caught him overextended and his Bankers Trust and Franklin Trust collapsed in Philadelphia's most notorious bank failure. His main business activity today is as chairman of the board of Bankers Security Corp. with gross assets pressing $100 million.

Greenfield in commission meetings has become a celebrated piece of local color. The veteran of innumerable boards, he presides with swiftness and precision. His teasing, paternalistic attitude toward the commission staff contrasts sharply with the coolness and official tone of most civil service behavior. His unrivaled knowledge of the city as a mosaic of real estate parcels is displayed in reminiscences sparked by commission agenda items. His intimate sense of the shape of many powerful interests in various sectors of Philadelphia often corrects the more distantly objective conclusions of the professional planning staff. But so far there is little evidence that the new chairman appreciates the difference between private and public business, between business deals and governmental policies, between unchecked trends in a laissez-faire economy and the guidance, direction and control implicit in all planning; and, perhaps most of all, between individual impressionistic judgments and the organized rational thinking of a professional group.

Greenfield's greatest strength, undoubtedly, lies in his influence within the Democratic party structure, with the city council and the mayor. His greatest accomplishment thus far is his recognition of the need for the comprehensive planning program and his willingness to go to bat for appropriation of $760,000—as against $380,000 last year. He deserves credit, too, for breaking through the previous administration's hold-the-line tax policy which limited to $21 million yearly the tax-supported bonds that could be issued to back the capital outlay program. Greenfield persuaded the city to raise this ceiling to $25 million.

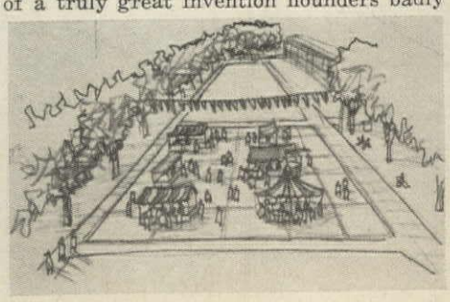
P. E. GUERRERO

Philadelphia's greenways are a promising redevelopment device, but they don't look as good on the ground as they do on paper

Greenways—recreational malls employed to unify, humanize and beautify urban areas—are Philadelphia's trademark in planning. They have become the chief means by which planners have shaped and conditioned the programs and works of such operating agencies as the street, recreation and housing departments. Completion of the first greenway, in the Harrison Plaza redevelopment project (photo above), shows the strengths and weaknesses of this technique, already superseded by plans for greenways in the South Philadelphia industrial satellite, Eastwick.

Greenways were conceived as a pattern of open spaces and pedestrian thoroughfares. By extending park, school and other public lands, by widening streets and sidewalks, and by using major existing buildings and important (usually high) new structures as local points, large areas embracing conservation, rehabilitation and new construction were brought within a single design. More recently greenways have been developed still further as a chain of parks and recreation areas. The agency responsible for their creation and management tends now to be the recreation rather than the streets department.

What began with the brilliant simplicity of a truly great invention flounders badly in Harrison Plaza. Clearly housing design has still to respond fully to the new opportunity inherent in the greenway concept. In this design housing still looks outward to the city street rather than inward to secluded green areas in the heart of superblocks and to a busy and friendly neighborhood life along the greenway itself. By varying the setbacks of abutting row houses, one side of the main street in Harrison has been developed as a concourse, punctuated by larger park areas, and crossed by a still wider green mall. But what was planned as rich paving has become mean asphalt; benches and planting boxes are still lacking; and many years will pass before the spindly young trees will grow into the continental bosk the designers' sketches showed. Clearly the execution of such projects by an agency sympathetic not only to their general objective, but aware of qualitative distinctions, is imperative if the original design conception is to survive.



Harrison Plaza also encourages some second thoughts about the social character of greenways. Theirs is not the atmosphere of a crowded shopping street, a quiet path in a park, much less a promenade. It smacks of the stratified and segregated life of a city playground—for mothers and children only. Worthy as this objective may be, it is not the road to urbanity.

Such considerations are pressing greenways into the framework of city parks, rather than challenging them to develop further as a pedestrian world, or reaching toward a more varied pattern of human uses and activities that would preserve some of the richness and color of life in the slums.

Philadelphia's experiments in high-rise housing have revealed some important facts about building design, land use and project management

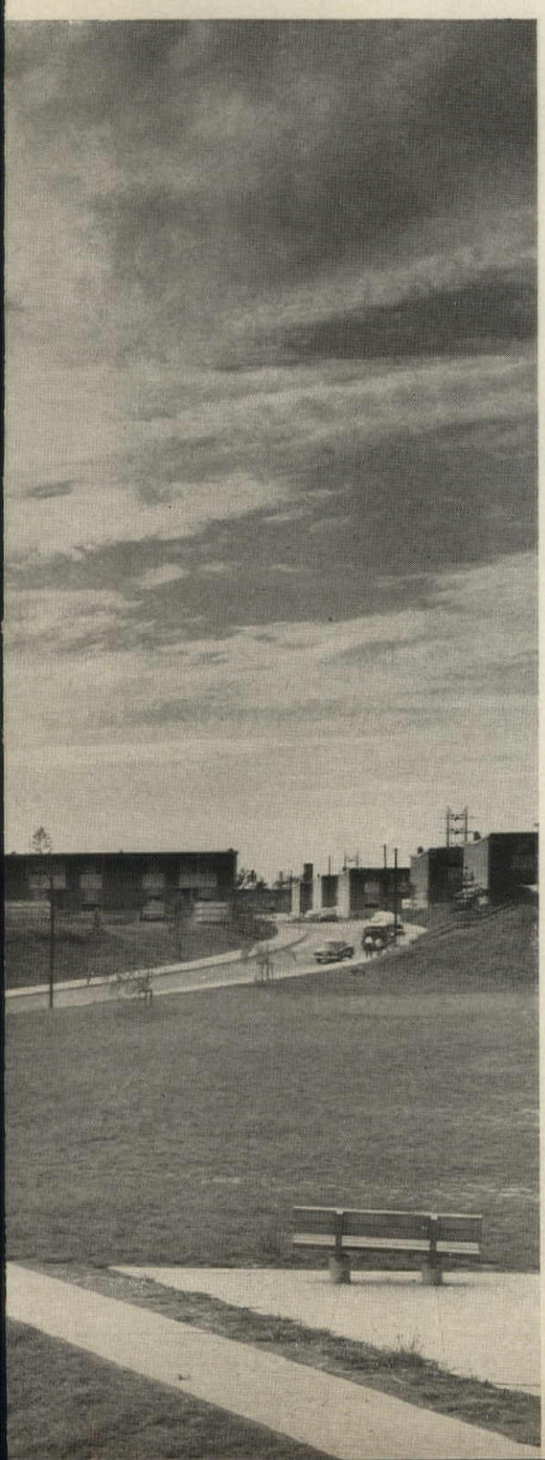
Nowhere has the social, economic and esthetic impact of elevator housing been given the consideration it has received in Philadelphia, and few housing authorities have more conscientiously tried to learn from experience how to improve their output. After five years of often reluctant experiment in this form of housing, Philadelphia now thinks it knows when, where and how the tall building should be used in its program.

At the outset, Anthony F. C. Wallace's careful sociological study for the housing authority, *Housing and Social Structure*, hung out a red flag of warning. He argued that high densities within apartment buildings, and usually within projects containing such buildings, led to excessive social contact and tended to break down individual and family life. Wallace put a high value on private yards in which families could undertake projects of their own, and thus develop mutual understanding and solidarity. He claimed that high-rise buildings demanded aggressive management which in turn sapped the independence and self-reliance of tenants, families and communities. What other values high buildings may have, Wallace concluded that they could not be said to strengthen family life. Warned by such a seer, elevator housing in Philadelphia became a self-conscious affair on which a running balance has been kept. When three projects had been completed, top housing authority officials took the time necessary to interview a sampling of families to determine their attitudes.

BUILDING DESIGN. By thus analyzing their experience with elevator apartments, the Philadelphia Housing Authority has reached some important conclusions. They have junked the skip-stop elevator, which produced too much corridor traffic and complicated maintenance problems. Corridor, stairway and other common space problems can be handled, they think, if limited to the immediate families served. Outside access corridors, like the communal balconies of the Schuylkill Falls project (right), are a worthwhile experiment but still have to prove values comparable to single-family living balconies (pp. 134 and 135).

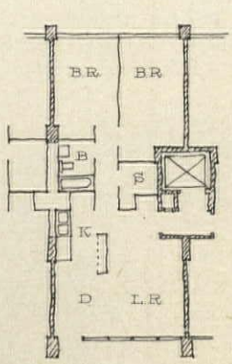
LAND USE. Perhaps the most important conclusions apply to handling open land in high-rise developments, until now a conspicuous failure in the design of such housing. Now in the planning stage is an elevator apartment project in which these ideas are applied. It has four, 13-story buildings, with a total of 550 dwelling units. There is a community building, which will be operated by a social service agency in the neighborhood. Plans have been made to enlarge nearby schools and churches, and to provide an enlarged site for a playground—the whole being tied together in a continuous pattern of public open space. Each of the four buildings will have names, not administrative numbers. Each will have some community space. The land immediately adjacent to each building will be cut up with courts, walls, changes of levels, planting and other devices into a series of small sitting areas for mothers with infants and older people bent on quieter forms of recreation. Games and organized sports are provided space in playgrounds more distant from the apartments.

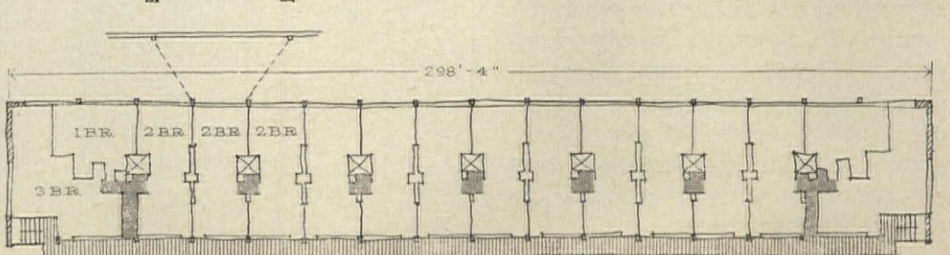
The detailed planning of such areas is only beginning to respond to the declaration that every square foot of outdoor space must do its job if high density housing is to



SCHUYLKILL FALLS TOWERS FEATURE ACCESS BALCONIES

Two uncompromising slabs announce the Schuylkill Falls project from its prominent location looking up and down the river. Made dramatic by their 18′-wide access balconies, this feature and seven elevators in each building eliminate most interior corridor space. The larger sizes of the project's 1,122 families live in back-to-back row houses, separated by 60′-wide neighborhood courts. Within the limitations of a large housing project, the utmost has been done to build livability into a plan with varied and imaginative types of buildings. Architect: Oskar Stonorov.





work. Casual and indiscriminate allocations of land, cheap and heedless areas of grass, formal walks and expensive retaining walls—these are now branded as waste. Organized space is taking their place. The higher initial costs involved in paving and construction pay off in human values, lower maintenance costs—and they justify careful design. So rapidly has this line of thought developed that even the architects of recently completed projects are pronouncing them obsolete in this respect. Difficulties still stand in the way. The desire to hold down initial housing costs makes it tough to get the money needed for land development.

SITE SELECTION. Philadelphia housing, as in most large cities, has become largely a strategy of sites. Much of the pressure for high rise building originates in the shortage of good housing sites—a problem currently engaging a Pennsylvania state housing commission, and an interagency committee set up by Philadelphia's Development Coordinator William L. Rafsky. Pressing against their boundaries, cities find vacant sites disappearing—although in Philadelphia two projects out of three in the public program occupy vacant land. Slum sites, unless accompanied by redevelopment funds to write down existing land values, are prohibitively priced. Philadelphia's solution has been to concentrate on small sites, closely integrated with existing communities.

PROJECT MANAGEMENT. The many small housing projects that have resulted are good because institutionalism has been stayed, but they are a management headache. By linking scattered sites into larger management units some of this has been overcome. But more gains have been made by putting some management burdens on the shoulders of tenants and communities themselves, and exploiting the group dynamics of the smaller housing project. New housing on slum clearance sites has almost invariably been located at the fringe of slum areas, where it buffers neighborhood conservation efforts and contains the still unredeemed slums.

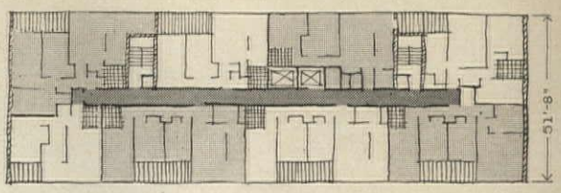
LAWRENCE S. WILLIAMS

MILL CREEK APARTMENTS ARE COMPACT TOWERS

Here is Louis Kahn's interpretation of how 15-story elevator buildings can be integrated with lower two- and three-story housing—in this case four-family quatrefoil units. More low units are about to be added to this project as clearance proceeds on the enlarged site. Screened balconies serve individual apartments. Design of open areas is indecisive, and grassy circles with no specific use have already become a maintenance problem. Treating the tall building as a tower, like Swedish "point" buildings, enhances the grouping of the buildings on a small site. Associated architects: Louis I. Kahn, Louis E. McAllister and Kenneth Day.

QUEEN LANE PROJECT IS A SINGLE BUILDING

This is probably the best expression of a single high-rise building in the Philadelphia program. The constricted site made tall building mandatory, but the adjoining playground is treated as a source of light and air, and contributes to some reduction in gross density. The project is moderate in size—120 families—and has no resident manager. It stands in a neighborhood of small houses in which some spontaneous rehabilitation is taking place. A high standard of tenant maintenance is promoted by clean-cut corridor design. Architects: Roth & Fleischer.



CONDAX-CORMAN

LENS-ART PHOTO

FOUR BRIGHT NEW HOMES FOR INDUSTRY

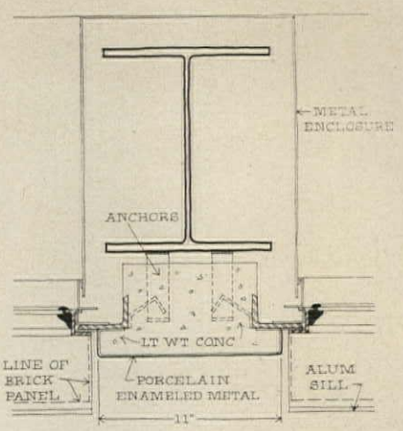
In some factories design excellence
and working comforts are only for the brass,
the "talent" or the customers.
In these four they are for the wage-earner
and the community, too

1. PRODUCTION MODEL OF GM'S "VERSAILLES"

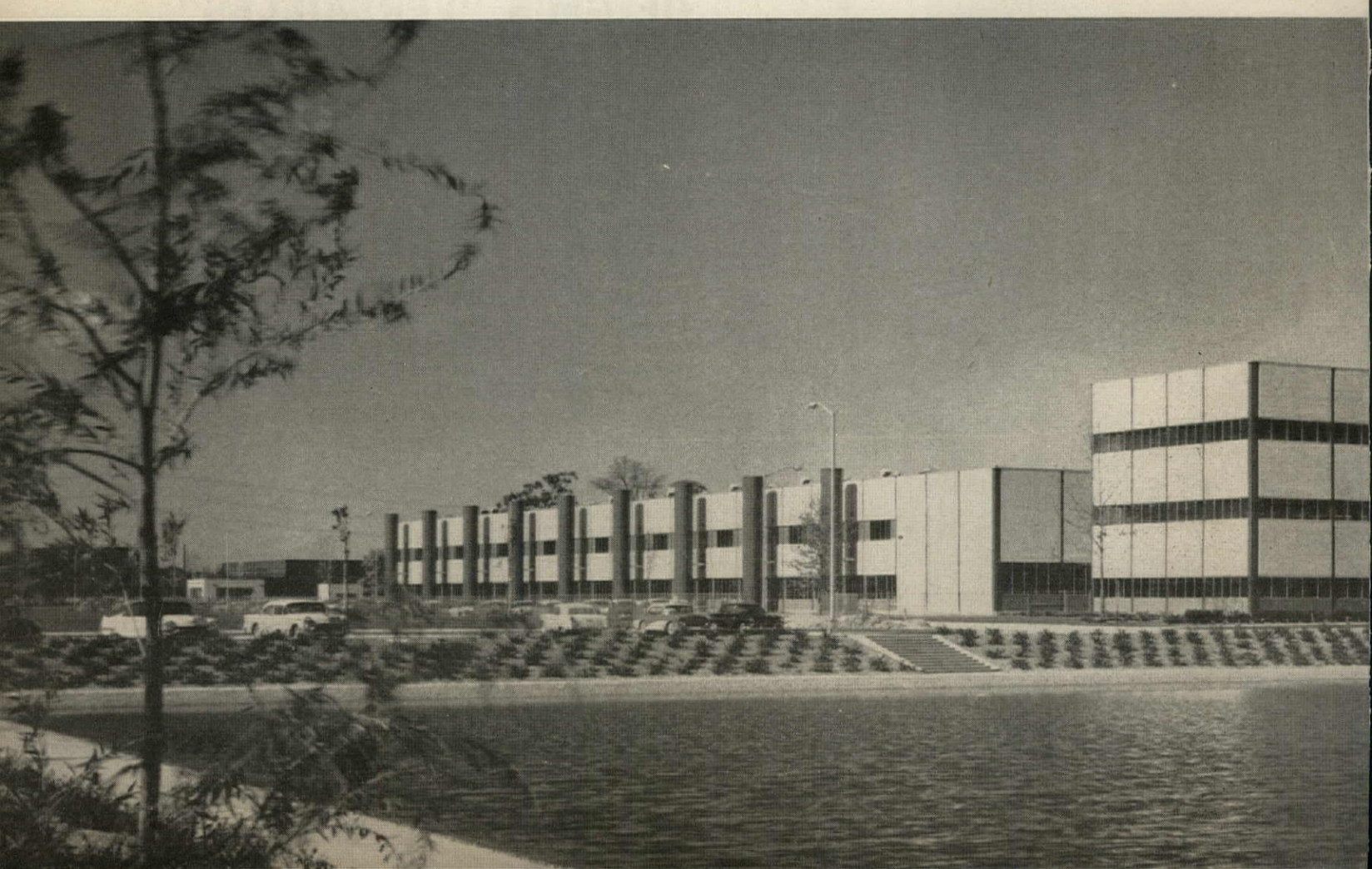
Right across the way from the soaring fountains and burning colors of the General Motors Technical Center, two of GM's divisions have built their own vast engineering headquarters—big, businesslike and smartly tailored in black and white. In the new Fisher Body and Chevrolet buildings (and the smaller GM photographic building that serves them—photo, left), GM's own architects and engineers have turned the painstakingly built "dream car" of the Tech Center into a simpler production model. Using the experience and detailing gained across the street, they have been able to build roughly the same 2 million sq. ft. of floor space at less than two thirds the cost, yet the amenities carried over are still a personnel man's delight: pleasant, roomy cafeterias and auditoria; bright, fully equipped miniature hospitals; high-velocity air conditioning, high-level lighting, moving stairways, luxurious employee lounges.

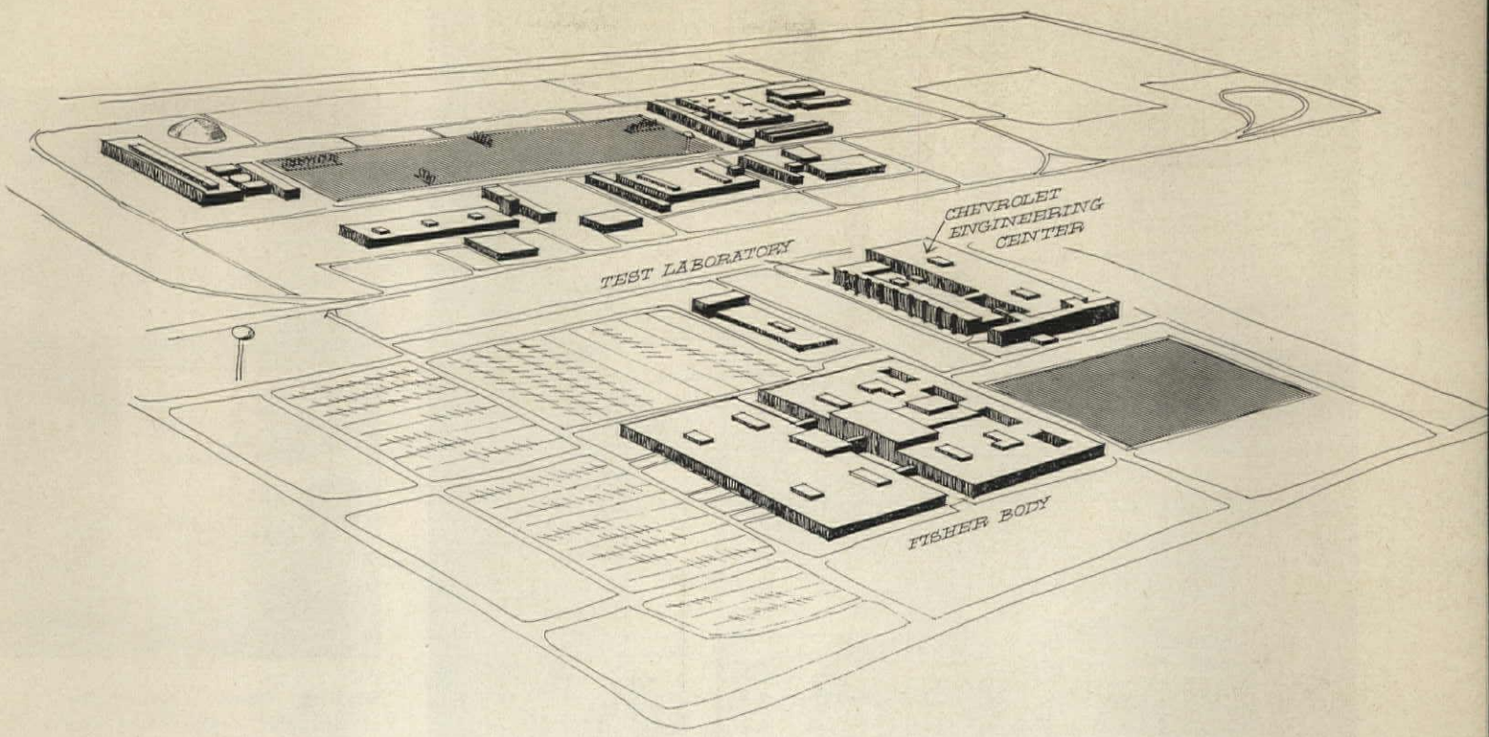
Before long, this kind of architecture may grace the assembly line too.

LENS-ART PHOTOS



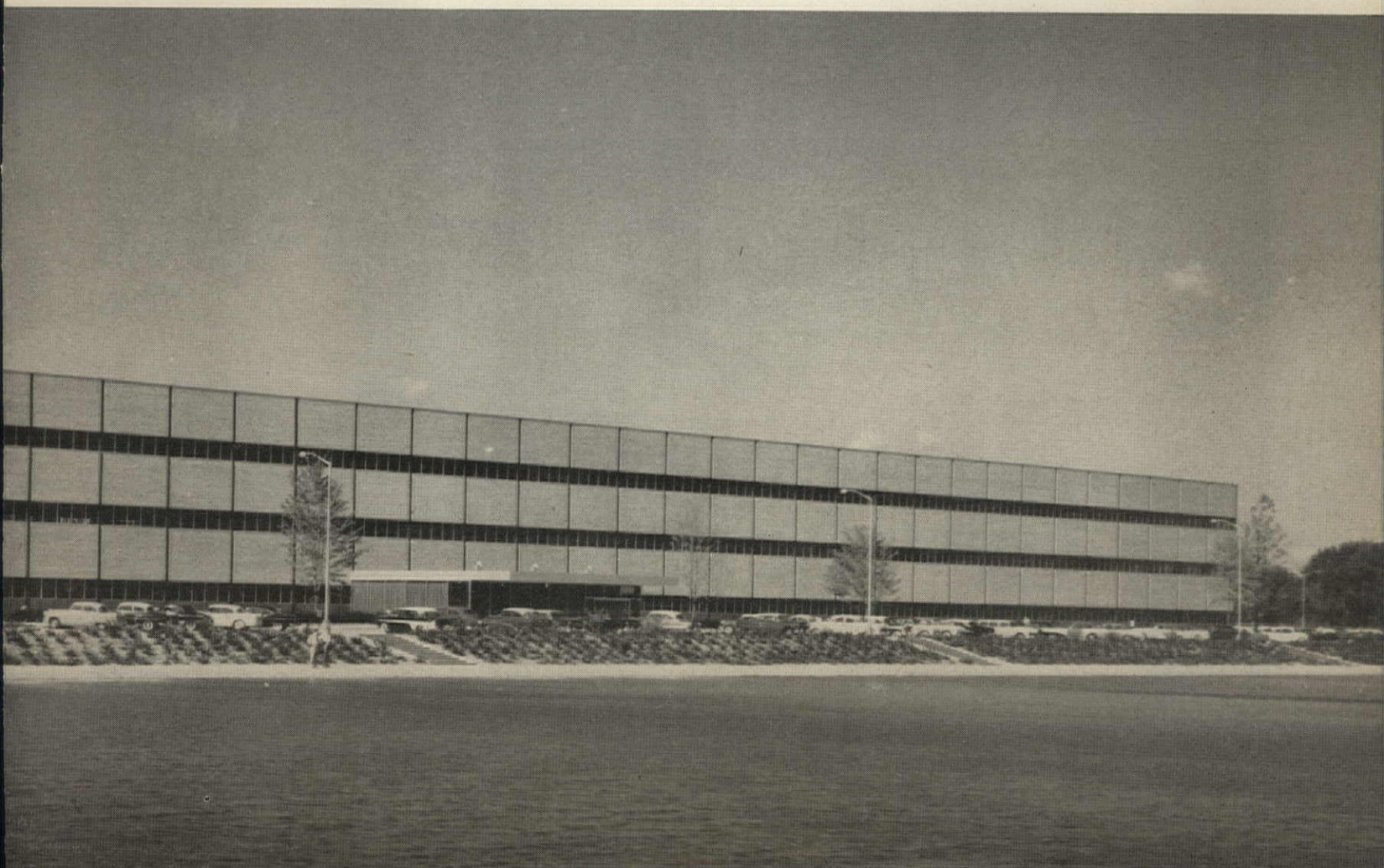
Bridges span service court between Fisher Body's engineering and shop buildings. Detail shows typical concrete-filled porcelain-enamel cover expressing column inside.





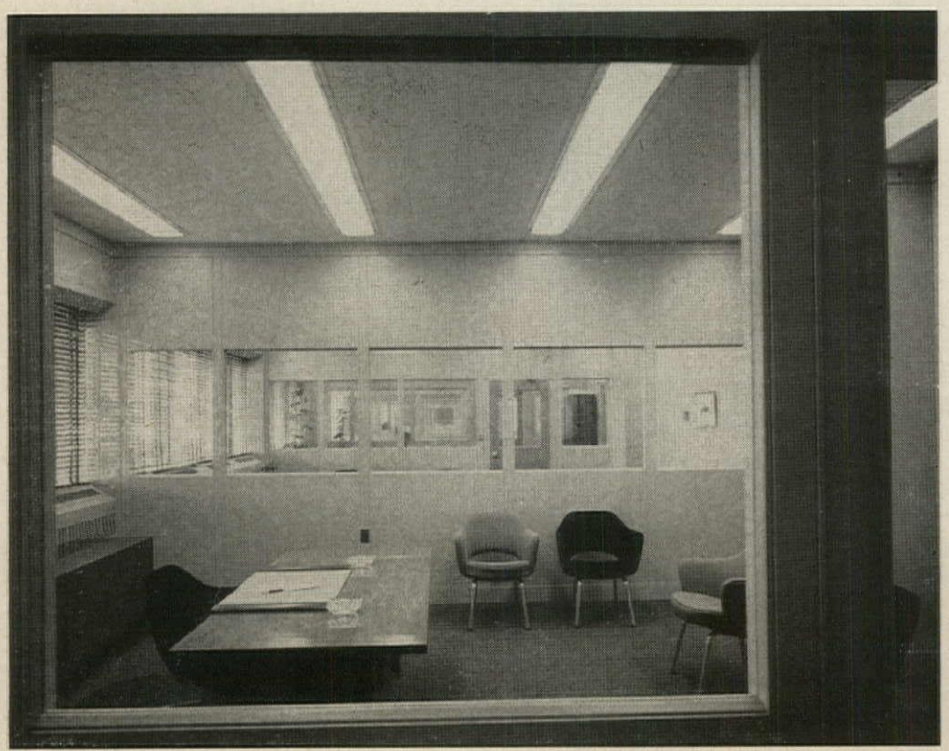
FISHER BODY-CHEVROLET ENGINEERING CENTER, Warren, Mich.
ARCHITECTS AND ENGINEERS: Argonaut Realty Division of General Motors
CIVIL ENGINEERS: Hubbell, Roth & Clark
INTERIOR DESIGN: General Motors Styling
GENERAL CONTRACTORS: Bryant & Detwiler, Darin & Armstrong,
O. W. Burke, W. E. Wood, F. H. Taylor, Perron Construction Co.

Engineering Center, like Tech Center, is grouped around a lake on its 184-acre site. Below, front of Chevrolet building is seen from Fisher Body entrance.



Drafting rooms get 100 foot-candles of light from acres of luminous ceilings. Drawings on metal templates move by crane to elevator, across street to photo building.

Styling studio lighted by plastic pan ceiling overlooks third floor deck where next year's cars can be viewed privately in daylight. At right are color samples.

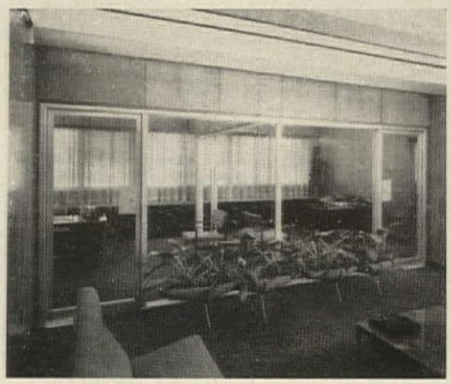


Typical office of department head has stock insulated metal partitions with view of offices on either side, ceiling with acoustical tile, strip fluorescent lighting.

Precise pattern shows 4′ window module, 20′ spacing of exterior columns in front of 40′ bays. At lower left is ramp to executive garage under Fisher Body building.

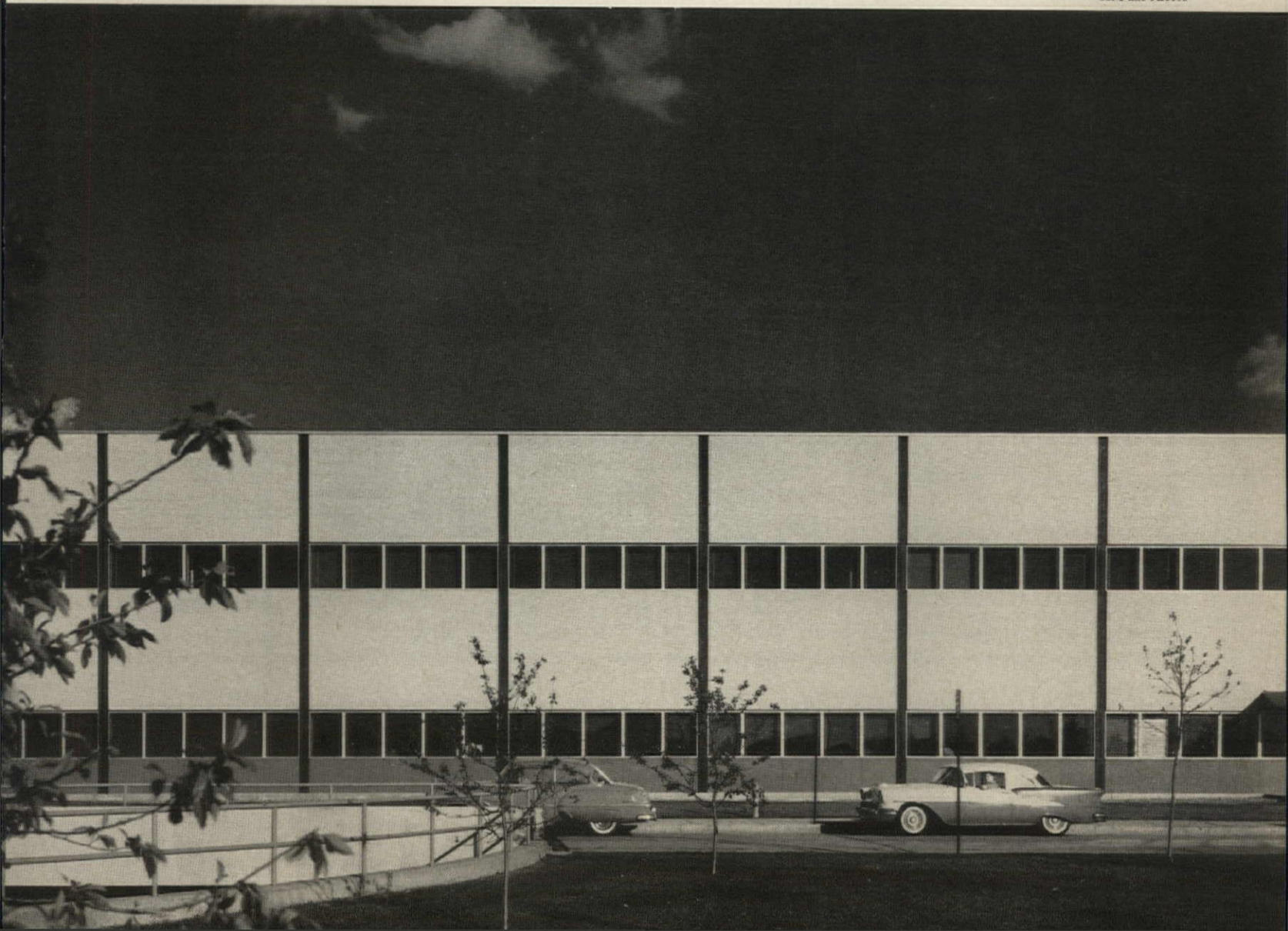
Testing labs and shops are light and clean. Like cars, interiors are colorful: crane tracks and machinery are painted bright blues, greens, oranges and yellows.

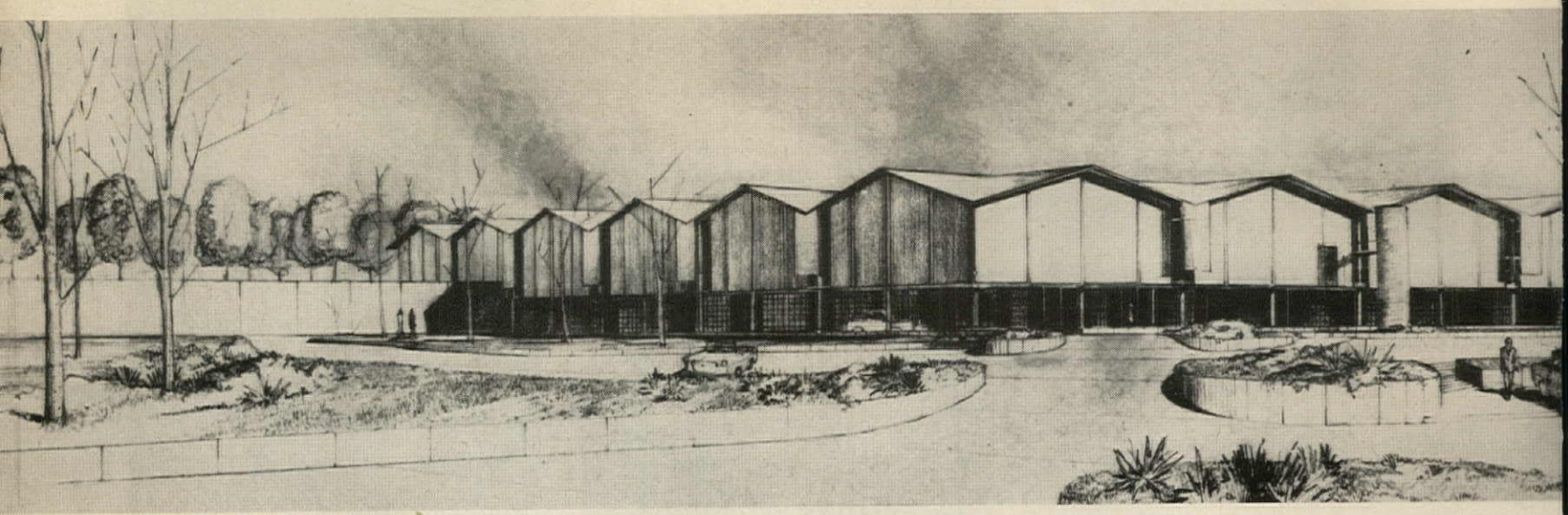
Executive suite: offices of secretaries to the two chief engineers are separated from each other and from reception lounge by floor-to-ceiling glass partitions.

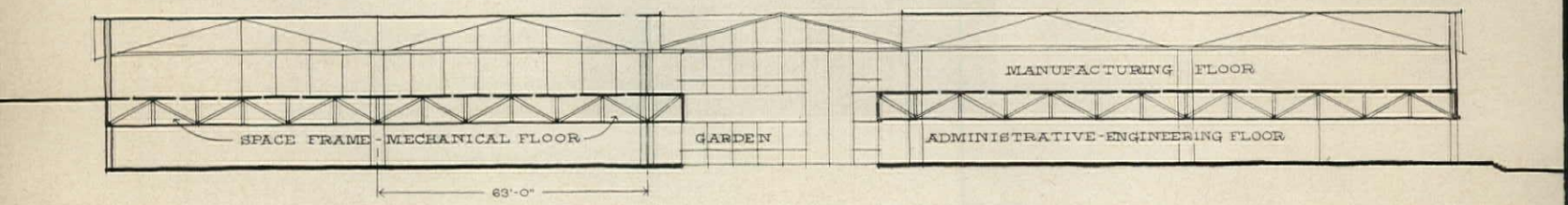


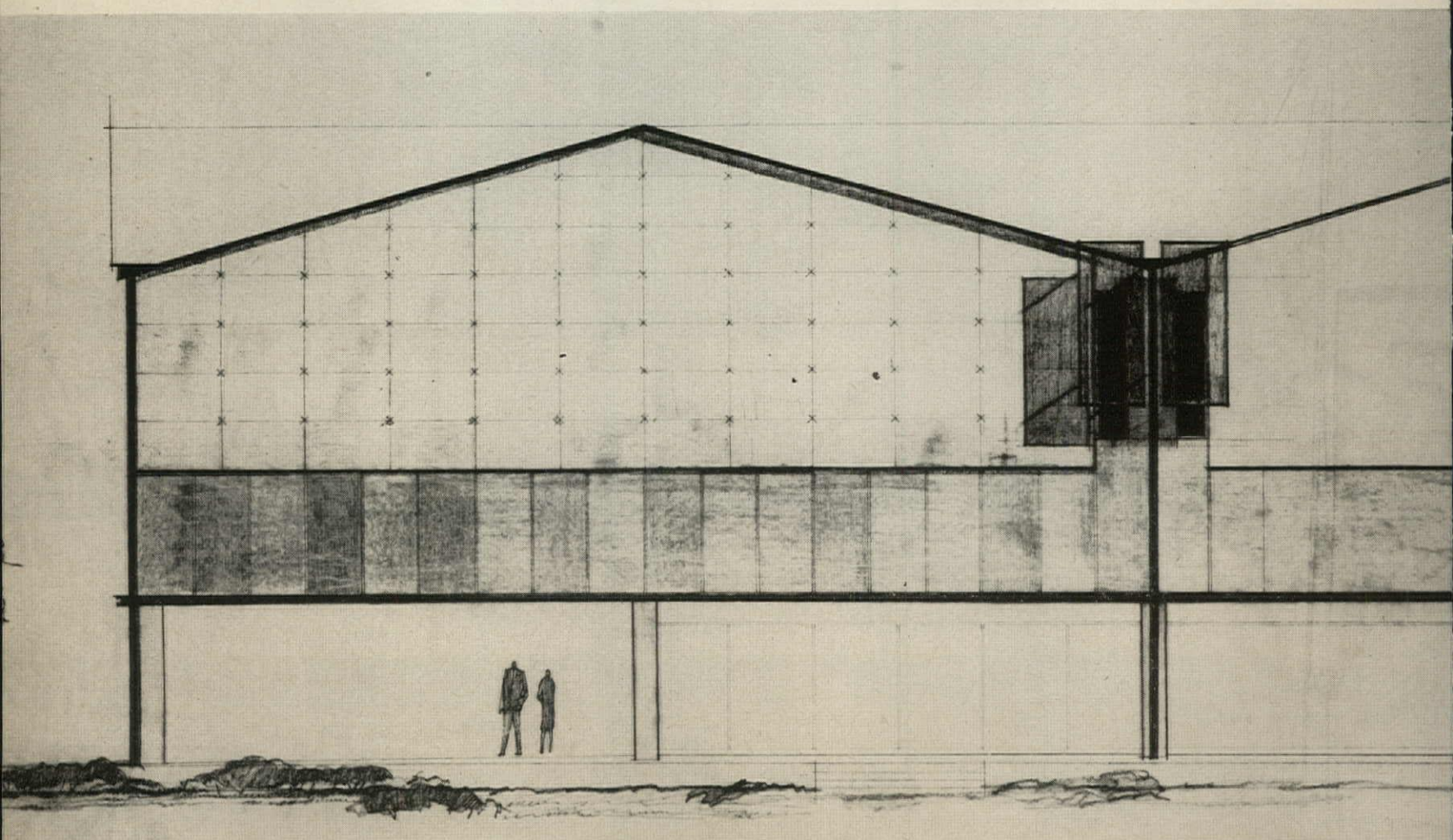
Dining room for Chevrolet executives faces sunken garden with landscaping and small reflecting pool. Conference room is behind curtained windows across court.

LENS-ART PHOTOS





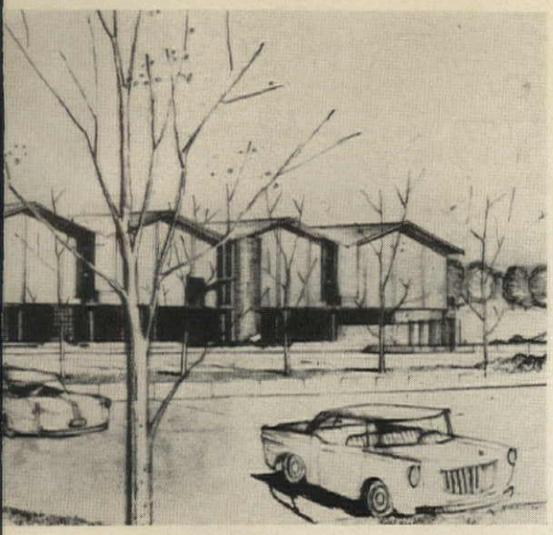

MANUFACTURING FLOOR
SPACE FRAME - MECHANICAL FLOOR
GARDEN
ADMINISTRATIVE-ENGINEERING FLOOR
63'-0"



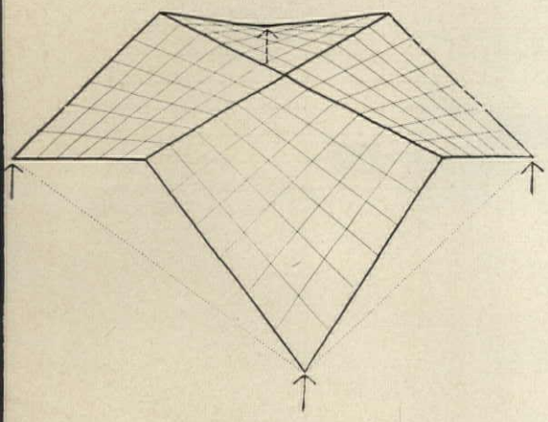
FOUR BRIGHT NEW HOMES FOR INDUSTRY

2. UMBRELLAS FOR WIDE SPANS

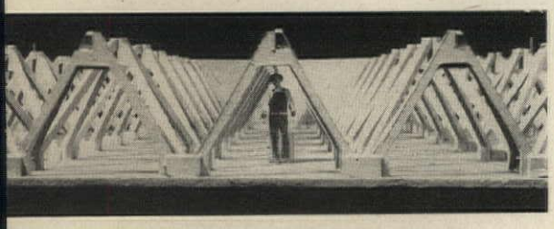
Upstairs factory has a many-shelled roof, a space-framed floor



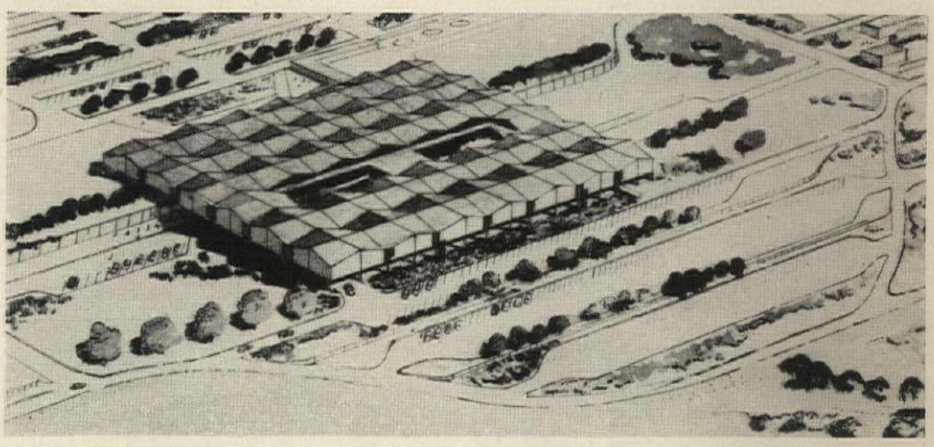
Gabled rhythm of loft is distinctive from road (above) and air (right). Note fire-stair towers, deep setback shading lower windows and entrance driveway.



Roof unit is a concrete umbrella, 3″ thick, formed of four hyperbolic paraboloids. It spans 63′ square bays, corners tied by rods and resting on columns.



Space frame of precast, prestressed struts between floor slabs is marked on exterior (left) by aluminum panels. Loft has marble skin, blue glass sunscreens.



Within the big, houselike shapes of this handsome new factory abuilding north of Dallas, Texas Instruments is gaining a number of unusual features for an unusual business. First, TI's architects have economically grouped nearly 5½ acres of floor space into two stories under a single, striking roof and given it great flexibility on 63′ square bays. They have also provided highly controlled conditions—vital to the precision manufacture of tiny transistors and military instrument parts—by placing the factory itself securely upstairs and making it nearly windowless and air conditioned against Texas heat and dust, changeable humidity and sunlight. Yet they have been careful to humanize the big indoors they have created by dropping garden courts into the middle of the building and other patios right outside.

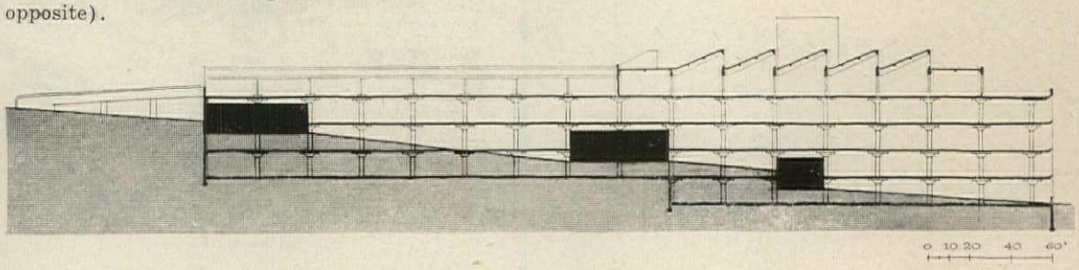
The jungle of utility pipes necessary to manufacturing is neatly enclosed in a mechanical floor between levels; from here conduits for various voltages, gases, air, vacuum, water and waste are distributed up into the factory, down into labs, in a regular pattern of outlets which can be tapped to serve any arrangement of equipment. This between-floors system, which eliminates the overhead clutter of older factories, is housed in a space frame 9′ high—easy for maintenance men to walk around in (photo left).

The real trademark of Texas Instruments, of course, will be its roof: hyperbolic paraboloids in thin-shell concrete, four to each bay. These will give the building a lively, distinctive pattern easily recognized from fast-moving cars on the nearby expressway and from airliners above—far more effective avertising than a run-of-the-mill building with billboard signs tacked on.

TEXAS INSTRUMENTS, INC., Dallas, Tex.
ARCHITECTS AND ENGINEERS: O'Neil Ford and Richard Colley; S. B. Zisman and Stewart King, planning consultants; A. B. Swank, associated architect; Hundley & Halff, site engineers; Arthur and Marie Berger, landscaping
SHELL CONSULTANT: Felix Candela
MECHANICAL ENGINEERS: Thermotank, Inc.; Gene Glass, associated engineer.

High back of factory shows how hill has been used to get ramp and rooftop parking for 300 cars, receiving docks for raw materials at various levels (see also section below). Offices and large art department occupy top floor under saw-toothed north skylights. Cooling tower is on top.

Sloping side has north-facing grid of glass and porcelain enamel spandrels set in aluminum sash, receiving docks at still another level. West front is corrugated steel siding; below this is cafeteria sundeck, entrance colonnade behind a small park (see photo opposite).



FOUR BRIGHT NEW HOMES FOR INDUSTRY

3. HILLSIDE HOUSE OF GREETING CARDS

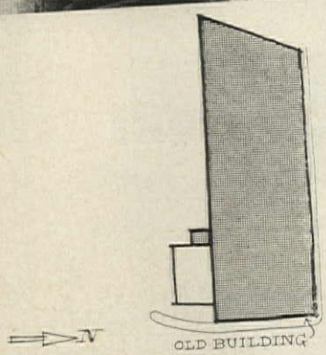
Hallmark capitalizes on a rough site, adds its own artful interiors

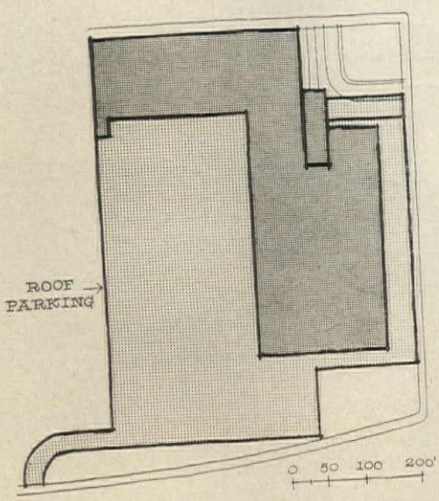
The seven abandoned acres behind Hallmark's old plant were typical of the only land left near the center of many cities: steep, rocky, covered with a tangle of brush and litter. Low price was the only apparent virtue—until Hallmark and its architects realized that the 70′ drop could be turned into a valuable asset for a new multilevel factory. What they fitted over and around the hill, with a minimum of excavation, is an "upside-down" building with its largest floor at the top, its smallest at the bottom. Trucks can drive up and around the back, discharging supplies wherever they are actually needed. Then gravity carries Hallmark's 2 million cards a day down through production levels, across to the old plant.

Low front: double bridge in porcelain enamel conveys cards to remodeled older plant for storage and shipping.

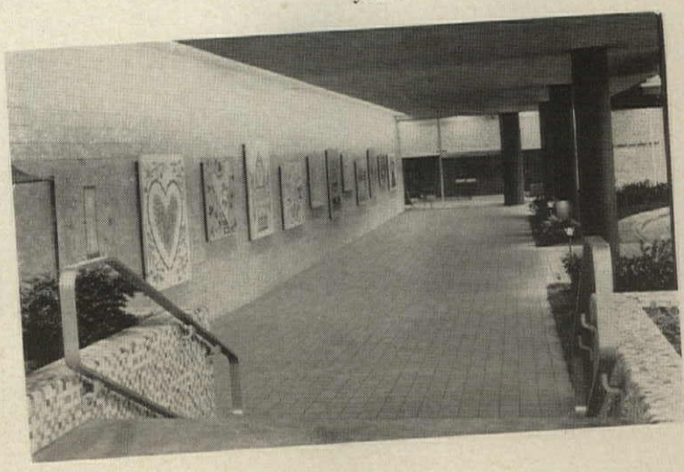
PHOTOS: WAYNE WRIGHT

"Crown Room," an employee cafeteria of baronial magnificence, seats 600 at walnut tables under brass chandeliers bearing company's trademark. Room also serves as 1,800 seat auditorium with stage at far end. Gallery above displays paintings by Hallmark artists, award winners.





Entrance colonnade, open to driveway at right, is walled and floored in tile, adorned with mosaic walls around plant boxes. Facing main approach are 12 covelighted, glass-mosaic murals symbolizing the greeting-card seasons of the year. In background is lobby.

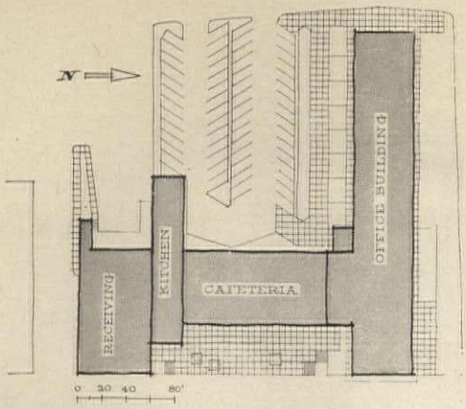


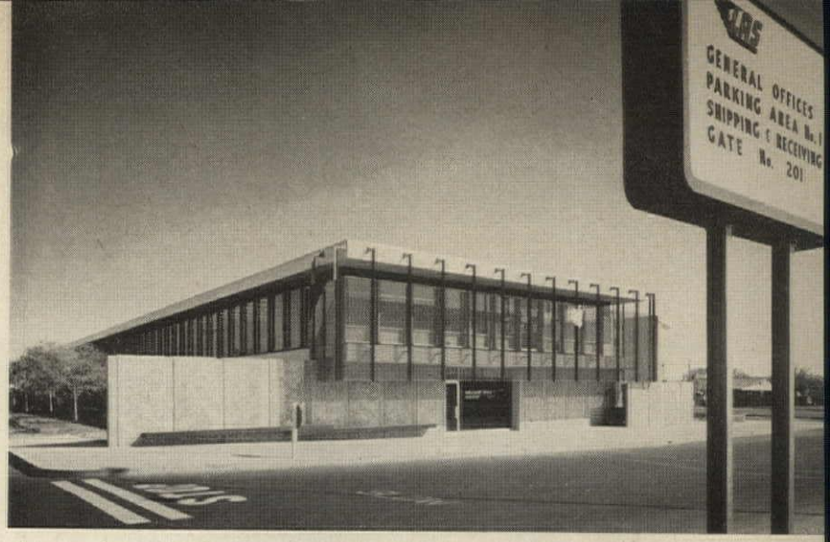
HALLMARK CARDS, Kansas City, Mo.
ARCHITECTS AND ENGINEERS: Welton Becket & Associates
GENERAL CONTRACTOR: Long Construction Co.

4. AN AIRY FRAME FOR AIRCRAFT WORKERS

Lockheed plays up structure, color, sun control—and the lunch-hour view

Company side: cafeteria terrace (left) and office building overlook 75-acre repair apron





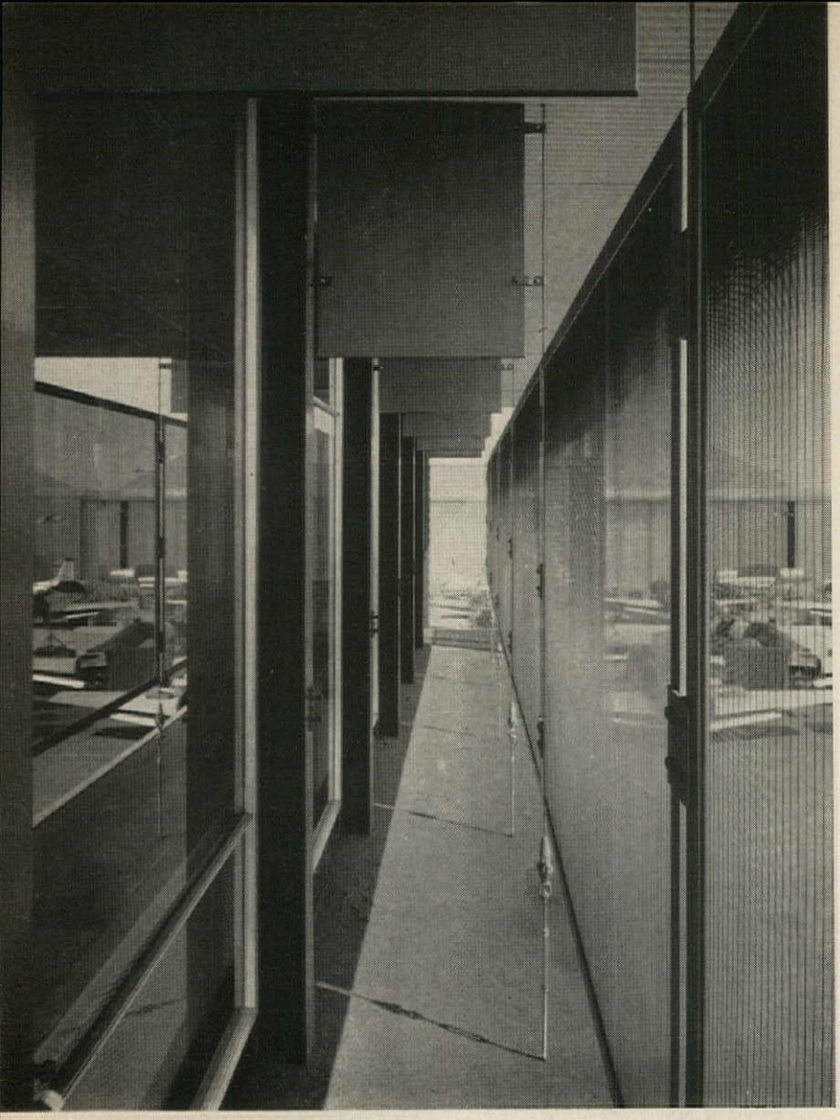
Community side: handsome sunscreen and wall set off entry

PHOTOS: ERNEST BRAUN

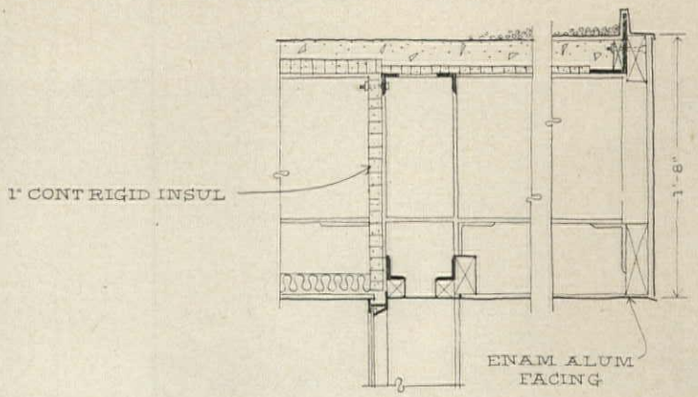
Except in hangars, where big spans beg dramatic solutions, aircraft plants seldom approach the striking beauty of their own product. More credit, then, to the architects of this simple office-cafeteria building that they were able to catch some of the light, structural feeling of an air frame itself (photo left). And, in so doing, to introduce two other items often missing: a system of sun control that is both effective and decorative, and a bright, pleasant dash of color accenting the structure (see overleaf)—not to mention the pleasant landscaped terrace around which the building is wrapped (p. 151).

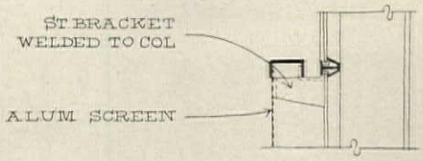
Lockheed Aircraft Service, largest US company maintaining, overhauling and modifying military and commercial aircraft, got its new building in record time, too. After a decision in mid-September, '55, to move headquarters from Burbank, Calif., to the repair base at Ontario, drawings were rushed through in three months and employees moved in less than five months later in May, '56. The new building is already paying off in "extras." Job applicants are noticeably more interested in working for the company, and the machinists' union is delighted with the new cafeteria and dining terrace that offers workers hot meals close to their shop area. A new spirit is evident among office workers, too. Says Lockheed's Administrative Vice President Philip Willcox: "We are actually wearing better clothes, and paying more attention to personal grooming. Our men and women are better looking, and our customers notice the difference."

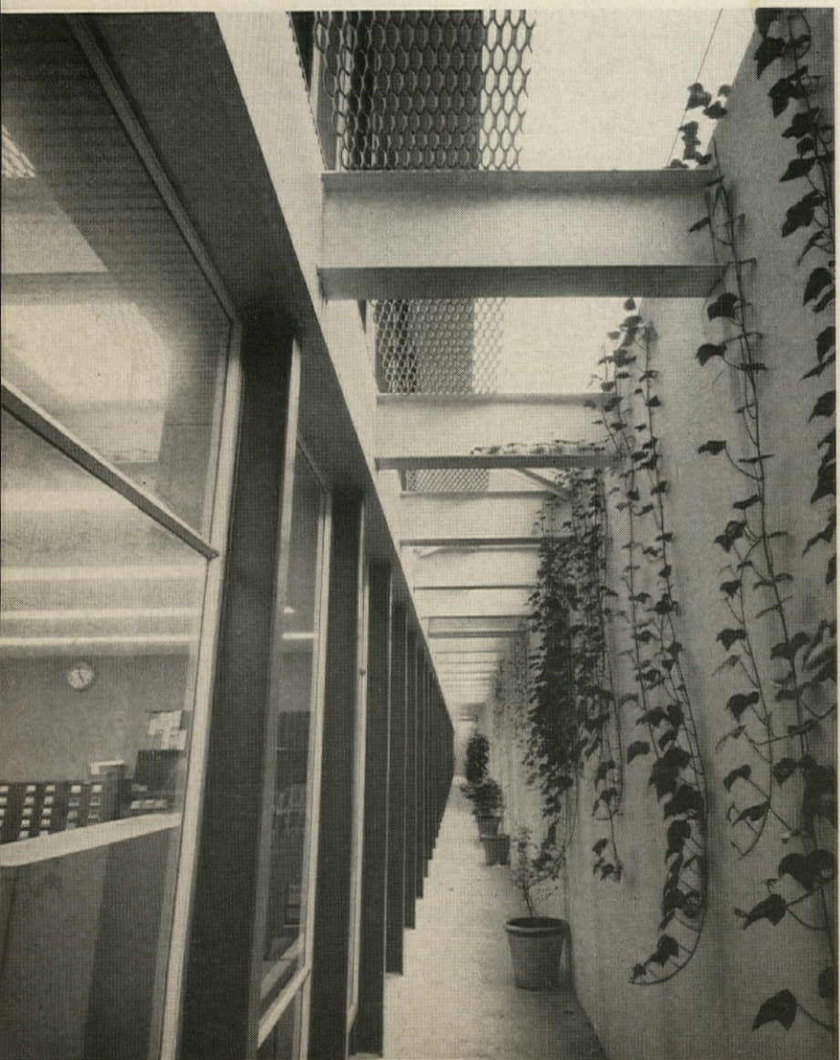
ADMINISTRATION BUILDING,
LOCKHEED AIRCRAFT SERVICE, INC.,
Ontario International Airport, Ontario Calif.
ARCHITECTS & ENGINEERS:
George Vernon Russell & Associates
LANDSCAPE ARCHITECT: Robert Forey
MECHANICAL ENGINEER: George B. Clapp
GENERAL CONTRACTOR: Pozzo Construction Co.

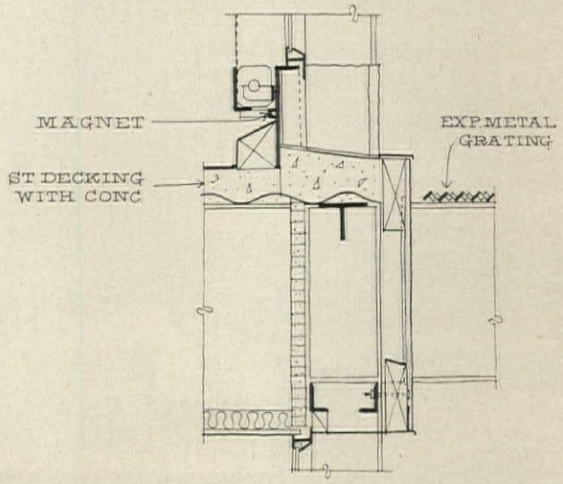


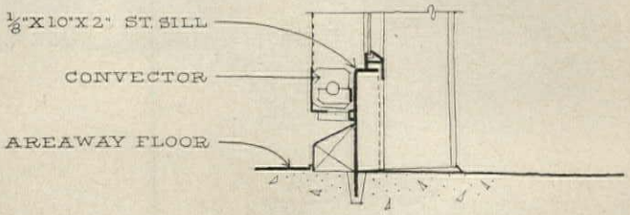
Sun control cuts glare and air-conditioning load along south side with four different devices: a 5′ roof overhang with corrugated aluminum soffit and fascia; cement asbestos fins, panels of louvered metal screening clamped to cables every 5′; blue heat absorbent glazing (see details below).











Basement offices, which save space on small, sloping site and allow entry at middle le el, are daylighted by 4′ wide areaways. Beams and slab extend to brace light, precast retaining wall decorated with planting; strip of expanded metal above doubles as sunshade, window-washer's walk.

North-facing offices such as the engineering department need no sunshading but retain blue glass against glare. Windows show 5′ planning module used by Architect Russell in many office, industrial jobs.

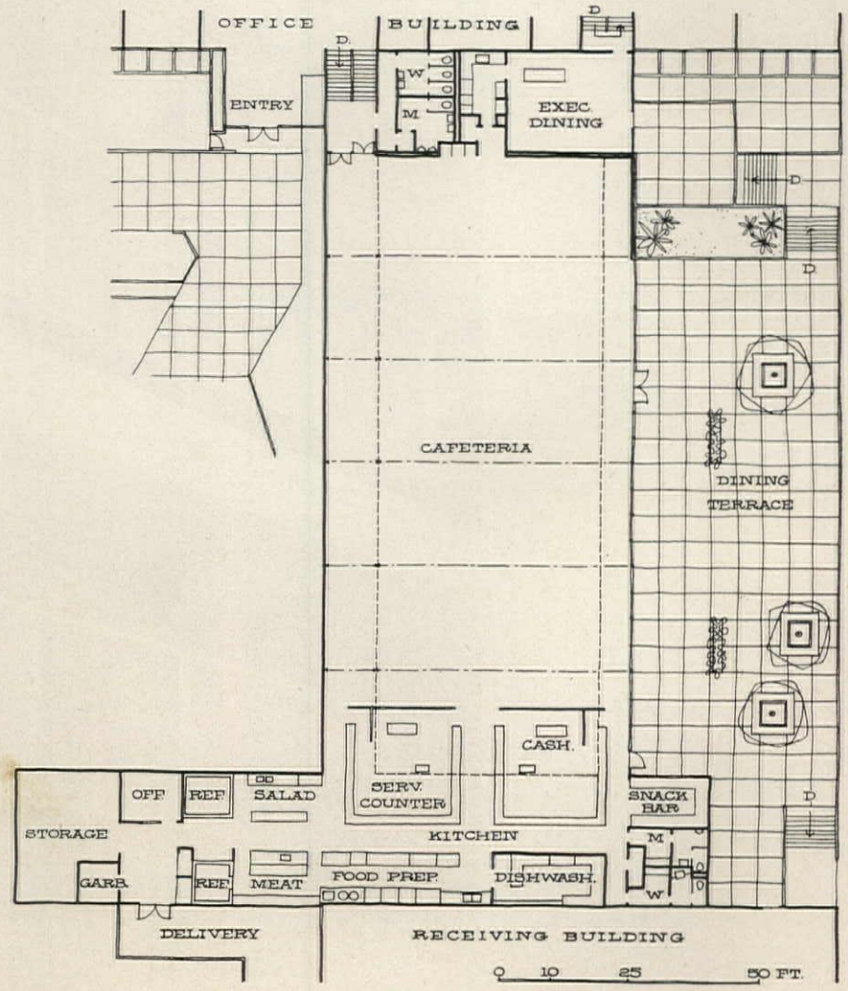
PHOTOS: ERNEST BRAUN

Pavilion screens of heavy expanded-metal grating (right) filter worst sun at east and west ends yet allow a view of shops area from executive offices. Grating is hung so that its natural "louvers" open to northerly light, block southerly sun. Small 30″ guard rails of expanded aluminum mesh (photo above) screen office clutter from street, hide convectors and augment the radiating surface. Held by magnets at the bottom, they can be quickly removed for window washing (detail left).

Acoustical clouds, shown also in color on the cover, float in a dark sky among the trusses of the spacious cafeteria. These 4′ x 8′ panels, like the continuous ceilings throughout the rest of the building, are of corrugated aluminum, perforated and backed with glass-fiber batts.

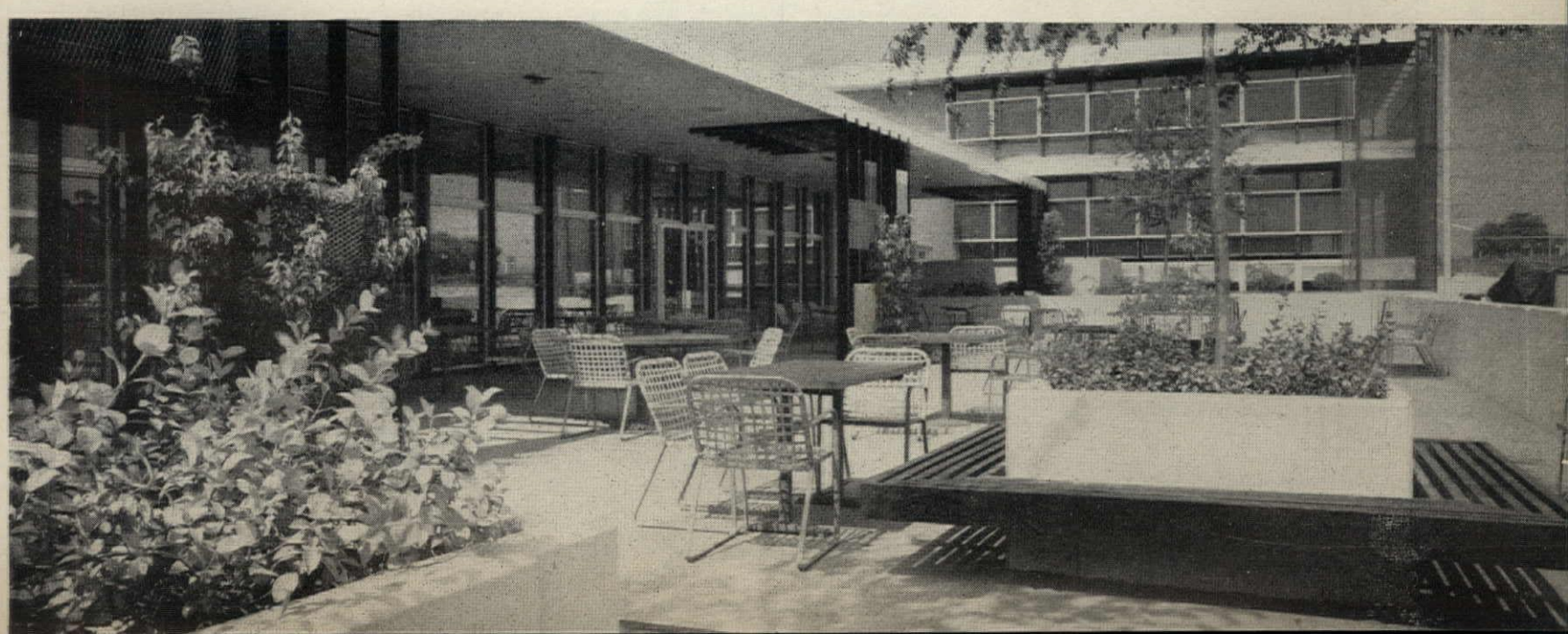
Serving lines (below and plan, right) start at outer sides of two compactly U-shaped counters, circle in and out past separate cashiers and join at center on the way to the tables, leaving three straight service aisles clear to the kitchen in back. A snack bar serves the terrace.

Bright kitchen is open to cafeteria and terrace (seen in left background), separated only by low ceiling over the serving lines. On either side of the 5′ wide aisle various preparation and washing areas are organized to avoid through traffic.

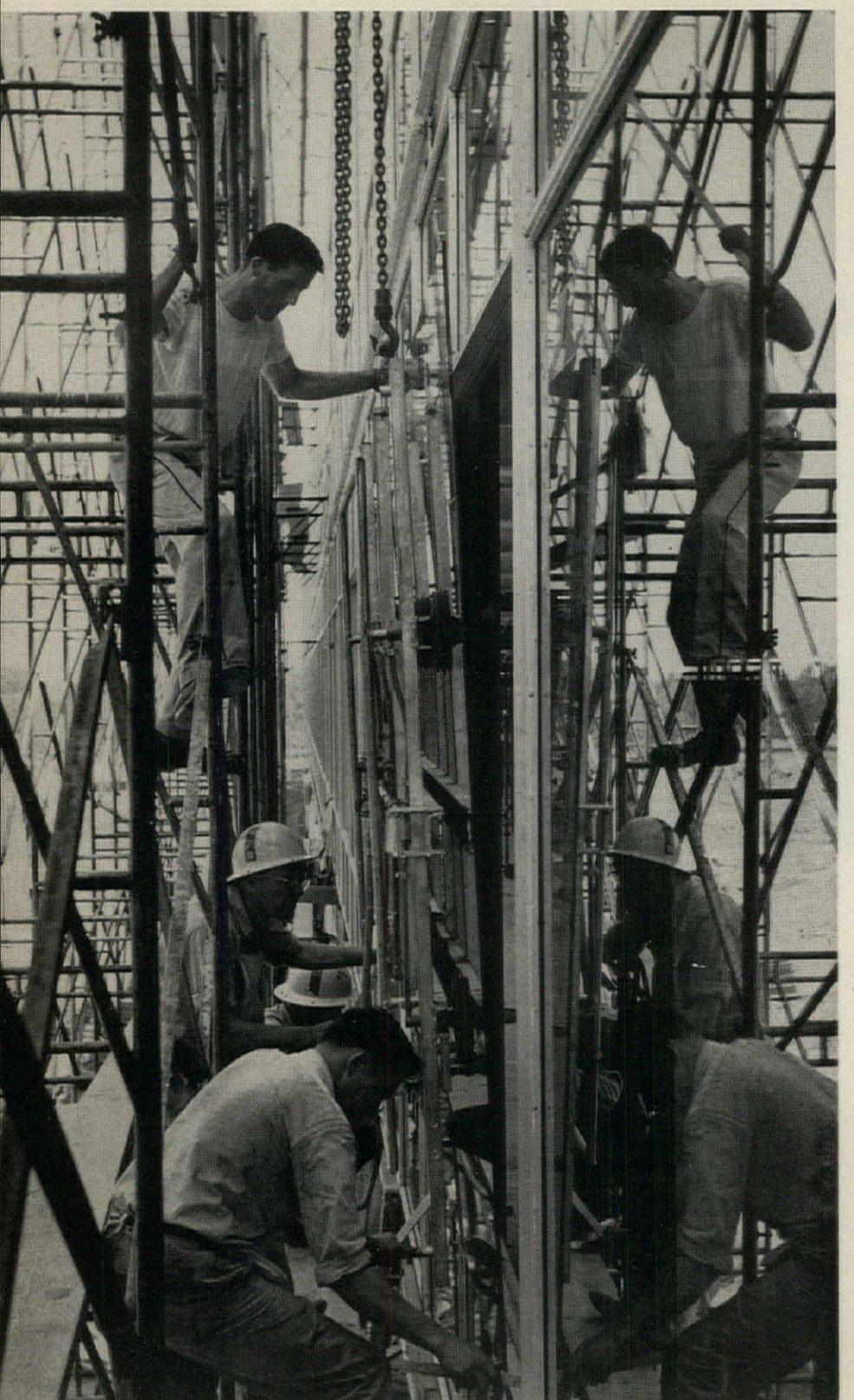


Deep 15′ canopy held by structural planting trellises shades glass wall of the cafeteria and tables on the terrace outside. Wall in center background shields a small patio outside the executive dining room.

Plantboxes with built-in slat benches break the broad terrace into more intimate areas. Workers from the shops area below can use stairs at either end, get a hot meal in the cafeteria or snack bar.



TECHNOLOGY



CLINT WILLIAMS

BUILDING OF GLASS: Connecticut General Life Insurance building, near Hartford, by Architects Skidmore, Owings & Merrill, makes extensive use of glass on its exterior walls. Buildings such as this one symbolize the upsurge in the use of glass in architecture.

GROWING PAINS IN GLASS

The increasing use of glass in building walls demands colored glass to combat sky glare and sun heat. But it can't be mass produced until the industry decides exactly what it wants

by DAVID ALLISON

Throughout the reign of the masonry wall, architects had wished for the day when glass could have a primary place in building design. Glass would permit expression of structure; it would free mankind from his restrictions of enclosure. "The perfect material," said many architects, just as many say today.

Then came glass. In 1948: Pietro Belluschi's Equitable Savings & Loan building, in Portland, Ore. In 1949: Mies van der Rohe's Lake Shore apartments, in Chicago. In 1950: Wallace Harrison's United Nations Secretariat. In 1952: Lever House in New York by Skidmore, Owings & Merill. The most inspired sales effort could have done only a fraction as much for the glass industry as have these buildings, for since their creation glass has had new meaning in modern architecture.

Where it once was just a window, glass now becomes a wall, with a sheet of transparent glass atop a second sheet of glass spandrel. And for a distant tomorrow, some glass manufacturers even talk about an "all-glass" building, in which glass—of new, high-strength composition—becomes a structural element as well as the key material in the curtain wall.

Architects certainly see an important place in tomorrow's building for glass. Viewing it strictly as a wall material, most architects judge that its usefulness will grow. In preparing this article, FORUM polled 36 leading office-building architects to get a measure of the importance of glass in tomorrow's building. Two thirds of them say they will use more glass in the future. Only one in four says he will use less; one in ten says that he will use about the same amount as he uses today.

But just any glass will not do. The clamor is for color. Most architects in FORUM's poll (82%) say that they have already used colored glass. Most (74%) complain that the supply and color range are inadequate. And an overwhelming number (85%) say that colored glass will be more important in the future than it is today.

Why do architects want colored glass? The most obvious reason, to add color to the face of the wall, doesn't happen to be the real reason. The real reason is glare reduction. To provide a proper light-intensity balance between a room and outdoors, the architect can either increase the light intensity of the room itself until it approaches the intensity of outdoors, or decrease the light intensity of outdoors by reducing the amount of outdoor light admitted. Either course would work, because it is the difference in intensity between outdoors and indoors which is disturbing. But, of course, decreasing outdoor light intensity is the more practical solution, because it is far less expensive to install colored glass than to boost a building's lighting requirements.

The varieties of glass

Unfortunately, the solution is not that easy. The architects cannot yet agree on what kind of colored glass is best, and the selection is limited. The biggest producer, Pittsburgh Plate Glass Co., makes just one kind, a green-tinted glass. (The company says that it will produce other colors, but only on special order.) The second producer, Libbey-Owens-Ford Glass Co., makes three shades: a pale bluish-green, plus peach, and blue; but LOF's largest sheet is only 7′-6″ x 11′, and some architects say this is too small. The only other plate glass producer in the US is Franklin Glass Corp.* Franklin makes color: six shades of gray, plus amethyst, green, yellow-green, flesh and blue. But Franklin is restricted by size; it produces only about 2% of all the plate glass in the US. Unlike Pittsburgh Plate and LOF, Franklin cannot make great quantities of glass at a time. It uses a production process which became technologically old-fashioned about 30 years ago. (Ironically, with the new demand for special colors, this restriction turned out to be an asset when architects began to ask for color. Now, with a heavier demand for color, Franklin has a new tank under construction which will double its capacity for colored glass.)

The architect's alternative is clear plate glass. It may not be his first choice, but he uses it most often, simply because it is readily available and relatively inexpensive. He is using more clear plate than ever before. According to the manufacturers, per capita consumption of plate glass has more than tripled in the past 30 years, from 1 sq. ft. per person in the twenties, to 3.5 sq. ft. per person today.

Obviously, with this increase in the use of glass, the problems of summer heat gain and glare have also grown, and the air-conditioning costs have gone up. Where air conditioning once accounted for 8% of a building's cost, it now accounts for 17%. Architects' increased use of glass accounts for some of this increase, though an enterprising architect and air-conditioning engineer can often trim the air-conditioning cost by proper building orientation, proper building shape, proper selection of glass and shading device.

As one solution to the problem of solar heat transmission, the glass manufacturers recommend double-glazed windows. They point out that a double-glazed window, made with one sheet of a heat-absorbing glass and a second sheet of clear plate glass, will reduce solar heat transmission by almost half, as compared with clear plate glass. In winter, when heat should be locked in, the double-glazed window provides the equivalent insulation of an 8″-thick brick wall. Architects, engineers and their clients accept these figures, but they say that despite its advantages—reduction of heat transmission, downdrafts and condensation—double-glazing is too costly in many instances.

But if he rejects double-glazing, the architect narrows his selection to just a few alternatives. He can choose clear plate glass, in single sheet, and add Venetian blinds to reduce solar heat transmission. But clear glass, even with blinds, creates a glare problem.

To reduce glare, he can pick a gray glass, or some other color, instead of clear glass. With gray, visible light transmission can be reduced by as much as 90%, and solar heat transmission by 60%. But, of course, gray plate costs more than twice as much as clear plate, and the architect may have to supplement it with a shading device, either a blind or drapery, just as he would clear plate glass.

Heat-absorptive plate glass costs only about one third to one half more than clear plate, and it will reduce solar heat transmission by about 54%. But its ability to reduce glare is only 25%, much less than gray plate, and this means that a shading device will often be necessary.

Thus, if he is to use glass throughout a building, whether it be colored or not, heat-absorbent or not, the architect will

TRANSMISSION OF SOLAR ENERGY

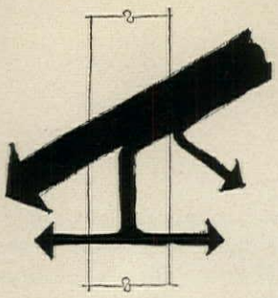
Kind of glass	Ultravoilet light	Visible light	Total solar energy
Regular window	73%	90%	86%
Typical gray	53%	12%	40%
Heat-absorbing plate	50%	75%	46%
¼″ regular plate	68%	89%	80%

Ultraviolet light is the so-called "healthful" segment of the solar energy spectrum. But ultraviolet causes fading. None of these four types of glass admits a significant amount of healthful ultraviolet; but regular window glass (or crystal) and clear plate glass admit a sufficient amount of ultraviolet to cause fading. With reduced ultravoilet transmission, fading is not such a problem with gray glass and heat-absorbing glass.

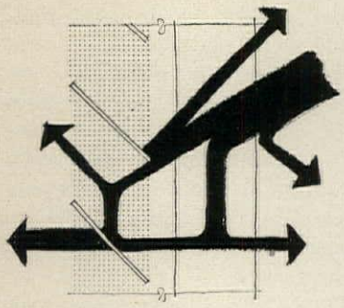
Visible light causes glare. By sharply reducing visible light transmission, this gray glass minimizes glare. Light intensity between outdoors and in comes into balance when visible light transmission is down to 12%.

Total solar transmission is a good measure of the effectiveness of glass as an insulator against solar heat. About half the solar energy is in the visible spectrum, the other half in the lower-frequency infrared.

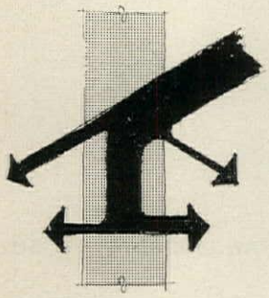
*Ford Motor Co. produces plate glass, but only for automobiles.



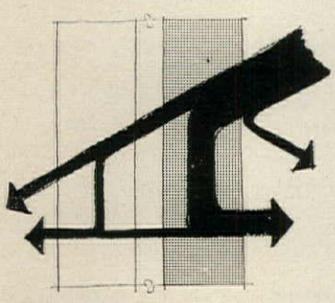
Window glass transmits 183 Btu./hr./sq. ft.



Venetian blind reduces solar transmission to 107 Btu./hr./sq. ft.



Heat-absorbing glass reduces solar transmission to 126 Btu./hr./sq. ft.



Double-glazed window, with outer pane of heat-absorbing glass and inner pane of plate, transmits 95 Btu./hr./sq. ft.

FOUR TYPES OF WINDOW

SOLAR ENERGY reacts differently to different types of glass. Data of research laboratory of ASHAE indicates how various kinds of window transmit that solar energy. Data is based on "design day" studies, i.e., mid-afternoon of sunny summer day. Donald J. Vild, who conducted research for ASHAE, presented this data two weeks ago, at Building Research Institute conference on windows and glass.

probably have to cover at least a portion of the glass with a sunshade, and increase his air-conditioning requirements.

Testing program

For the past few years, the American Society of Heating and Air Conditioning Engineers has tested various kinds of glass and various shading devices to determine which combinations are most practical from the standpoint of solar heat transmission.* A major conclusion reached by the Society in 1953 still stands: "Total heat gain with a heat-absorbing glass with an indoor white shade is practically the same as for common window glass and a white shade."†

This is the rule which air-conditioning engineers follow today. Put another way, it says: no matter what kind of glass is selected for a building, the additional cost of the glass, over and above the cost of regular plate glass, is seldom offset by an equal reduction in the initial cost of the air-conditioning equipment.

It is misunderstanding of this fact or, perhaps, unawareness of it which is at the heart of today's biggest problem in glass application. To expect as much from a ¼"-thick wall of heat-absorbing glass as from a thicker wall of masonry and insulation is dangerous, for a single sheet of glass obviously cannot insulate as effectively as another material of greater thickness.** According to Albert Baum, of Jaros, Baum & Bolles, New York air-conditioning engineers, each additional square foot of exterior glass can add as little as $1 or as much as $16 to the cost of a building's air-conditioning system. The spread is great because there are so many variables: wall orientation, climate and elevation. Each variable must be considered during the building's design, and those factors which can be modified—orientation and wall area—must be so modified as to make the most effective use of glass.

In other words, there are so many factors to be considered in the selection of glass for any building that it is impossible to make generalizations about which glass is best, or how much glass is desirable. All must be knit together before a "best combination" can be determined. Even then, there may not be just a single answer, but two or three.

At present, the best information source on heat transfer and fenestration is the ASHAE. With ASHAE data, the building's designers can predict the total instantaneous heat transfer for combinations of window design, climatic conditions, orientation and location. But there is one thing which cannot be predicted: today's conclusions will not necessarily be valid some years from now, because today's knowledge is subject to modifications as more is learned about this complex science. Or, as one air-conditioning engineer puts it: "This field of solar energy and air conditioning is too young to be a science. It is still an art."

The UN Secretariat serves as a good example of the changing knowledge of solar heat transfer. During its early planning, the air-conditioning consultants, Syska & Hennessy, made extensive studies, based on what was known then about solar heat transfer, to determine such things as proper building orientation, required capacity and cost of the air-conditioning system with various window combinations—various kinds of glass, various kinds of shading devices. Although its conclusions then were scientifically sound, based on information then available from ASHAE, Syska & Hennessy say now that new theories would dictate a quite different approach to the study of the Secretariat. But, to compound the confusion, the engineers report that despite the findings which have come along to contradict some of that information upon which Secretariat system was based, it does the job it was designed to do.

Glass manufacturers are developing several methods by which the problems of heat gain and glare may be solved.

*ASHAE tests are based on Aug. 1 "design day," at 3 P.M., sun time at sea level, 40° N. Lat., southwest exposure; room temperature is presumed to be 80° F. outside temperature 95° F. Thus, heat gain figures are always maximum.

† From Design Data for Slat-Type Sun Shades for Use in Load Estimating, ASHVE TRANSACTIONS, Vol. 59, '53.

** However, glass in new forms—foam and fiber—has made very important strides in the building industry as an insulation material.

For example, there is sputtered metallic film, which can be applied to glass to make it a better heat insulator and give it glare-reducing properties too. Instead of permitting solar energy to penetrate the glass, then requiring the glass to absorb and re-radiate that energy, the film reflects some of the energy before it reaches the glass. Also, there is the tiny Venetian blind which can be sandwiched between two sheets of plate glass, producing a window which causes no glare and has high resistance to solar heat.

Too, there is the variable-transmission window, which reduces solar transmission when the sun is bright, but not when skies are overcast. Pittsburgh Plate has been working on this development for several years, hopes to have a working model by 1958. Company President David G. Hill says that this window is "just around the corner." At present, the company will not say how the window works, except that the secret is in the chemical composition of the glass. Two methods are in development. One would work mechanically; the room occupant could vary the light transmission. The other would work automatically, varying with light density: as the sun gets brighter, the glass becomes darker.

Needless to say, any such method, to succeed, must lend itself to mass production and in the long run must be more economical and more efficient than clear plate glass and a shade.

The controversy

Today's architect gets little satisfaction from projections into the great future for glass. For, despite heavy investments in new production facilities and recent technological advances in production methods, there still remains a shortage of glass for the building industry.

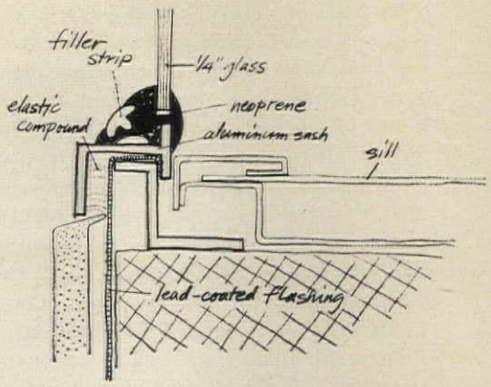
During the past year, the two giants of plate glass—Pittsburgh Plate and LOF—have spent $89 million in expansion. Pittsburgh Plate spent $35 million for its fifth plate glass plant, in Cumberland, Md.; LOF spent $54 million to increase production in three plants. Within the past few months, says LOF, it has increased by 50% its capacity for making polished plate glass.

Along with physical growth, glass has experienced a technological growth. In 1953, LOF imported a machine from Belgium that could grind glass on both sides at once. Up to that time, the US glass industry had used a semicontinuous process: plate glass ground on one side, then flipped over and ground on the other. This year, Pittsburgh Plate advanced the technology of glass production a step further; in its Cumberland plant, which went into partial production recently, Pittsburgh Plate will use a machine which grinds on both sides; later, the company plans to add twin polishers. Electronic devices do the inspecting, replacing the skilled workers who would ordinarily inspect the glass and cut out defects. Says President Hill: "For three quarters of a mile, the glass will move, without stopping, from melting tank to packing boxes, untouched by human hands and unwatched by human eyes."

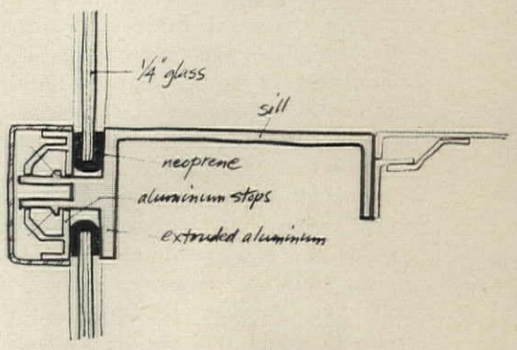
Men in the industry say that these advances in technology and productive capacity will bring the supply-demand situation into balance early in 1957. But some men in the building industry doubt it. Says one of the more outspoken architects, and, incidentally, one who has probably done as much as any US architect to further the use of glass as a building material: "Glass production is geared to the automobile industry. The manufacturers are not interested in a few creative architects."

THREE WAYS TO SEAL A WINDOW

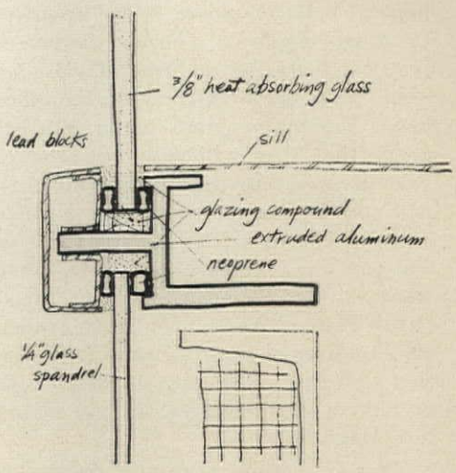
WATER LEAKAGE, a serious problem with early glass buildings, gets careful attention from architects in these three designs. Top sketch: GM's new engineering center (see also p. 136), like earlier buildings of GM Technical Center, fits hard rubber gasket between glass and frame; mushroom-shaped channel in gasket is fitted with second strip of rubber after installation, to force gasket against glass. Middle sketch: Arrivals building at Idlewild Airport, uses U-shaped strips of hard rubber between glass and frame. Bolts, on exterior side of unit, are tightened to squeeze frame and rubber against glass. Bottom sketch: Connecticut General's glass rests on lead blocks; rubber filler is spaced between blocks; hollow rubber tubes, shown in black, fit on both sides of glass; above rubber tubes, synthetic rubber calking compound is applied to seal both sides against water. This new compound is effective but costs about ten times more than standard compounds.



General Motors' Engineering Center, by Argonaut Realty Division of General Motors.



Arrivals building at Idlewild Airport, by Skidmore, Owings & Merrill.



Connecticut General Life Insurance building, by Skidmore, Owings & Merrill.

The manufacturers take strong exception to such comments as these, stating that their research programs place great emphasis on development of new kinds of glass for the building industry. Pittsburgh Plate and LOF also help finance such outside research programs as that of the ASHAE. Moreover, critics of the glass industry seem to underestimate the importance of the building industry to the glass manufacturers. An estimated $80 million of Pittsburgh Plate's glass sales are made in the building field. For LOF, building sales probably amount to $40 million.* But it is a fact that the auto industry is the plate glass industry's biggest customer: more than 65% of all US plate glass goes into automobiles.

Besides running far behind automobiles in plate glass purchases—about 150 million sq. ft. per year for building against 300 million sq. ft. for cars—the building industry is not the homogeneous purchaser that the auto industry is. Pittsburgh Plate can treat a Chrysler Corp. order for wrap-around windshields as a mass-production order. But in the building industry, there is nobody like Chrysler; no single building industry order will be big enough to take advantage of the glass industry's great capacity for mass production.

To the architect, the glass manufacturer sometimes seems to be unimpressed with new ideas in the architectural use of glass. "The big companies just won't give us the kind of glass we need," says one architect. On the other hand, the major glass manufacturers argue that they will willingly produce gray glass, if only the building industry will standardize on two or three kinds of gray. They say that the architects as a group don't know exactly what they want as yet. Says an officer of Pittsburgh Plate: "We have over 200 branch offices designed to service the construction industry. We want to help these architects. But we can't turn our plants into specialty shops."

Thus, it seems that the great advances in plate glass production technique, which have made the glass industry the envy of many less automatic industries, have, in part, reduced the industry's flexibility in meeting its markets. Plate glass is now more plentiful; its price, since 1935, has not increased so much as have the prices of most other building materials (though, since 1953, its price has increased at a greater rate). But the two major producers, by turning to quantity production of a few kinds of plate glass, can give architects only a limited choice.

Of course, this increases the importance of a company like Franklin, which will produce the kind of glass the architect asks for. For New York's Manufacturers Trust building, for example, Architects Skidmore, Owings & Merrill used Franklin's plate, because it was the only producer who could make polished plate glass of the dimensions required by the SOM design. (The largest pieces in Manufacturers Trust measure 22′ x 10′; the glass is ½″ thick.) More recently, Franklin has contracted for two of the most talked-about projects of the day: New York's House of Seagram and the US Air Force Academy, near Colorado Springs.

Window glass

Even the manufacturers of ordinary window glass have gone into production of some of these specialty glasses. The first was the Houze Glass Co., which began production in 1955 of a gray glass called Lo-Tran. It is limited in size to 5′ x 3′-2″ sheets, which might rule it out for most office building installations. But its heat-absorptive ability is somewhat better than heat-absorbing plate, and it transmits only 12.5% of visible light. To date, most of it has gone into schools; its biggest markets have been California and the Midwest.

American Window Glass Co. announced just four weeks ago that it was producing a new gray window glass—in sizes up to 3′-4″ x 6′-4″. Its characteristics of heat transmission and glare reduction compare roughly with those of the other grays on the market, but this glass consists of two sheets of gray glass, sandwiched around a plastic binder. Depending upon the darkness of the plastic, light transmission can vary from 17.5% to 50%.

Several months ago, Pittsburgh Plate also announced a gray glass which is a sheet of gray vinyl plastic between covering sheets of plate glass. It has produced small quantities, but does not intend to offer it as a commercial building material because of its high cost. The company may soon produce gray glass of another type, a regular plate, rather than a plate-vinyl laminate. It will test-market this gray glass soon.

Because there is no use for gray glass other than in windows, Pittsburgh Plate says that there is always a waste problem, which means higher production costs and prices.

With both gray glass and its new laminate on the shelf, Pittsburgh Plate is riding on its light-green heat-absorbent glass. This has been a successful product, even though some architects say it gives a room an unnatural color, and, if the window is open, the view outdoors seems pink.

LOF, with its three colors, has a wider selection. But none of LOF's colors has made much of a dent in the building market. One reason, say the architects, is that LOF's colors are not available in large enough sizes. Its heat-absorbing glass comes in 7′ x 10′ sheets. (Pittsburgh Plate's is made in 10′-10″ x 18′-2″ sheets; Franklin's colors, as large as 12′-6″ x 22′-4″.) And LOF's peach and blue are somewhat more restricted in standard size: 6′ x 10′ maximum, though the company will make these on special order in sizes up to 7′-6″ x 11′.

The heart of the controversy between glass manufacturer and architect seems to be this: the manufacturer feels that the architect is demanding a rainbow selection of colors; he simply cannot produce in such variety, because his plants are designed for mass-production. The architect, on the other hand, feels that the manufacturer is retarding progress in architecture by limiting his production of colored glass.

Actually, neither argument is completely valid. Architects do not want a rainbow; they want three or four neutral shades. The manufacturers do not want to discourage the use of colors, "but which colors should we make?" The architects are not ready to answer: "We don't know which colors, because we must have accurate data on a variety of colors before we can select those three or four which will work best." Obviously this chicken-and-the-egg question must be resolved before the supply of glass in color can be expected to come into balance with demand.

*Figures on plate glass sales must be estimates, because the manufacturers do not publish this information.

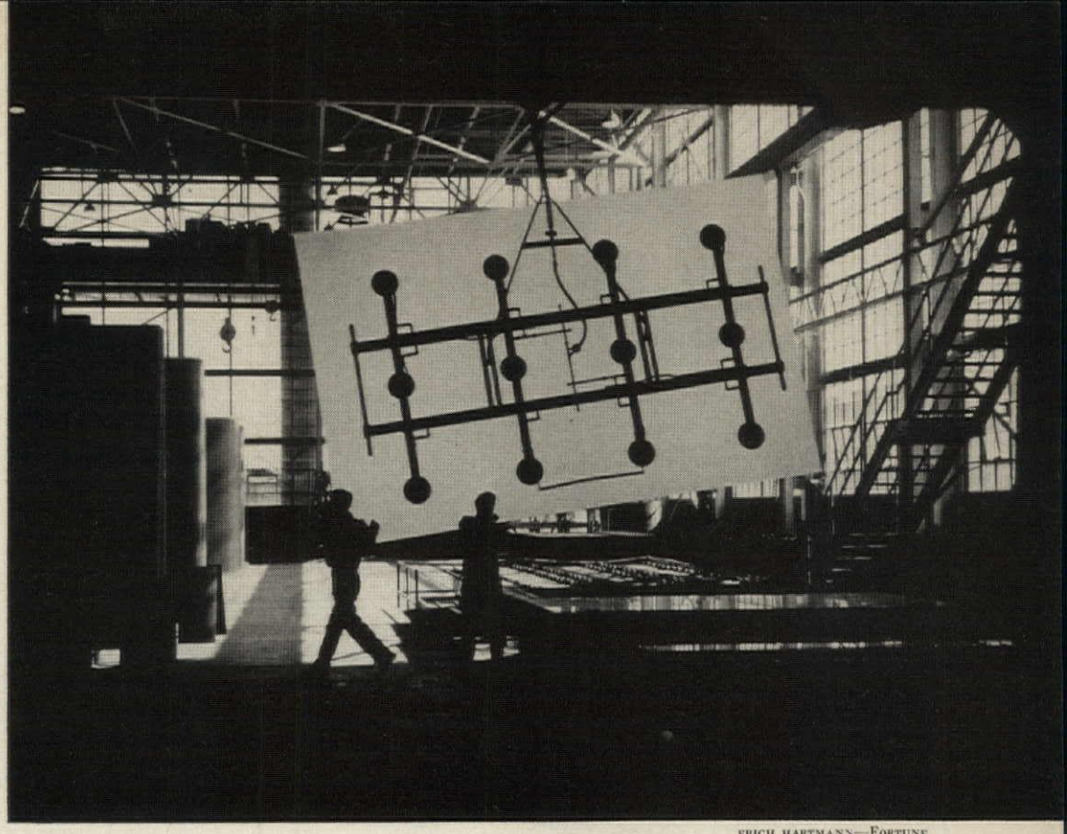
The potential of glass

No building material—be it light, corrosive-resistant aluminum, or tough, shining stainless steel, or any one of the versatile plastics—can look to a brighter future than glass. Today's glass industry, which can supply 7.5 million tons in a year, may one day rival the giant, steel, which now dwarfs glass in tons by 16 to 1.

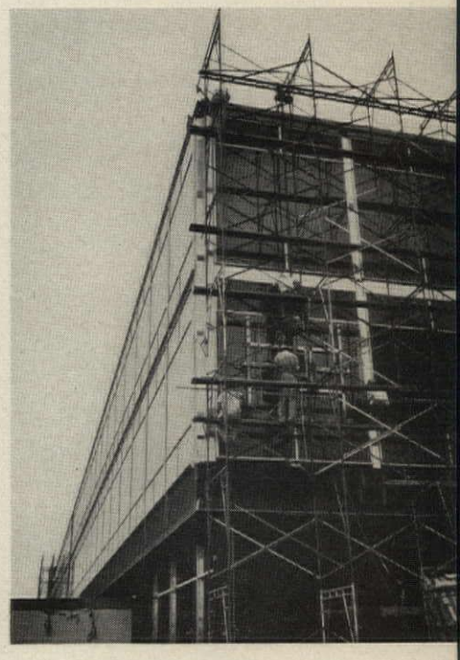
This growth will come in new kinds of glass—like glass fiber, which was a tiny speck in the glass industry of the thirties, and now accounts for about one dollar in every ten that comes into the industry. Currently, the industry is investing an estimated $30 million a year in research, and over a three-year span—between early 1955 and late 1957—three of the major manufacturers, Owens-Illinois Glass Co., Corning Glass Works and Pittsburgh Plate, will invest $18 million in new research facilities.

Some of this new research effort is certain to have a forceful impact on architecture. Glass scientists at Owens-Illinois, for example, are working to develop the great, untapped strength of glass. Says Oscar G. Burch, O-I's head of research: "The ordinary glass of commerce, whether it be a bottle, a tumbler, a television bulb or a piece of window glass, usually fails at a tension load of approximately 10,000 psi. But carefully prepared and handled glass fibers have attained tensile strengths of some 900,000 psi., or roughly twice that reported for the strongest of steel wires. In other words, we are commercially attaining about 1% of the highest measured strength of glass. When we learn how, by modifying the structure or by other means, to attain 10% of the highest measured values, glass will really come into its own as a structural material."

The answer, so the scientists believe, lies in two things: the disposition of the atoms in the interior of the glass, and the irregularities in its surface. "We and all of the larger glass companies throughout the world are carrying on work to increase our knowledge of these two subjects," says Burch. "We have learned that we can influence the disposition of the atoms by thermal history and environment. When we learn how to control and harness it on a commercial scale, we are confident that we will open many new, useful fields for structural glass."



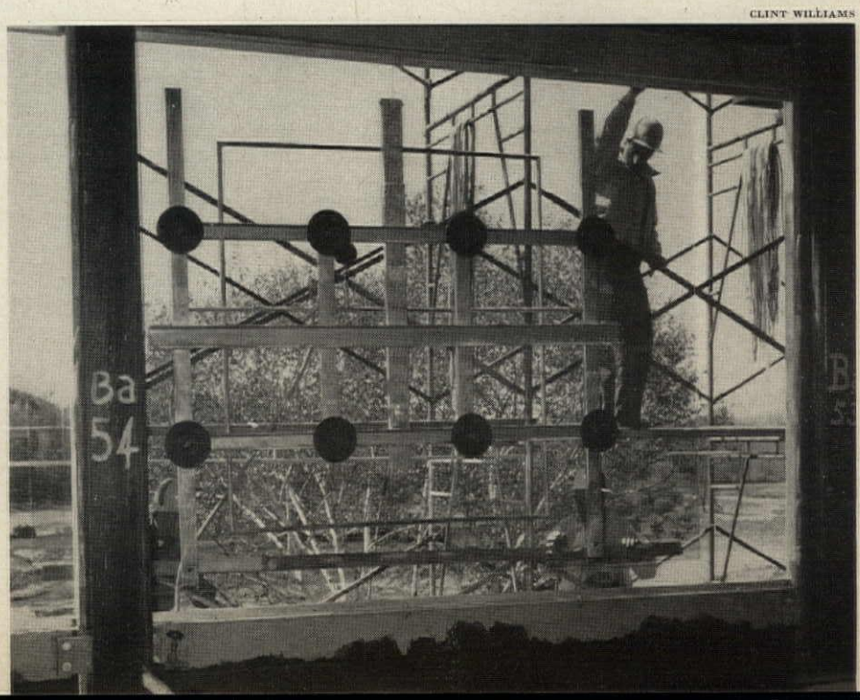
ERICH HARTMANN—FORTUNE



CLINT WILLIAMS

FACTORY METHOD COMES TO BUILDING:

IN GLASS PLANTS, such as Pittsburgh Plate's (top photo), large sheets of glass are moved from place to place by hoist, using vacuum cups to hold the glass. For Connecticut General building, this same technique is brought to the building industry to handle 8' x 11' panes. With new system, engineers of Turner Construction Co. found it more practical to set panes vertically—from top floor down—instead of working horizontally, around the building.



for all concerned

PARKSCAPE

The season has come when all through America and Europe people pause to send one another friendly greetings. This too is the season when editors of the big illustrated magazines revert to something which the rest of the year they ain't, and scurry for views of falling leaves in city parks, hoar frost on country windows, children on sleds, and steam piled against cold skies from old-fashioned locomotives.

KOSTI RUOHOMAA

Occasionally a bard is found to supply reflective poems. No doubt there are a few people here and there who will draw down the old *Journals* of Thoreau, and remind themselves how very closely the life of our ancestors was tied in with the rest of living creation, how concerned all were with little signs and portents of this other living:

December 26, 1840: "When the pond is frozen I do not suspect the wealth under my feet. How many pickerel are poised on easy fins fathoms below the loaded wain . . ."

December 26, 1855: "Already a squirrel has perforated the crust above the mouth of his burrow here and there, and left some empty acorn shells above the snow. He has shoveled out this morning before the snow has frozen on his doorstep . . ."

Such was the news of the day after Christmas for Thoreau, in 1840 and 1855.

Yet somehow there seems to be a regrettable lack of awareness, in all of this nostalgia, that the world moves forward. "*Tempora mutantur, nos et mutamur in illis*"—times change and we change within them. For quite a while there has been reason to brood over something lacking, lacking not only in the Christmas cards of a bucolic Grandma Moses, not only in the wintertime poetry of LIFE, but lacking also, for that matter, all year long in escapist publications such as *Holiday* and *National Geographic*. There is in American life a new element, one that emanates from what are called our "humming" cities and their "bustling" civilization. It is represented so rarely in our Christmas cards, and city postcards, and pretty views of new throughways seen from the air, that one would say people were almost consciously avoiding it.

To show what is meant there is included here a view showing this new poetic element (below.) Something like this should make a very fine Christmas card for officials of the Bayer Co., and Hertz rental cars, and all the thousands of New York City's Blue Shield doctors. FORUM has some color transparencies too, in case any of the officials are interested.

One thing such Christmas cards would do would be to show how these good citizens have been beautifying their city.

There was a time when the buildings of a city square became in themselves a familiar part of Nature, a sort of "second nature." The stones of an old Public Library at the head of an open square like Bryant Park in New York, the gold-tooth pinnacles of somebody's ambitious office building, the window-wall tapestries all about, made backdrops for pleasant bosques of Japanese sycamores (the only tree that can be counted on to survive city sulphur) under which people could sit down in the shade to look at massed flowers and to watch pigeons strutting or flight-wheeling. These city places were a kind of outdoor room, as familiar to city dwellers as sudden forest glades to people in the country, and in many ways perhaps more interesting.

Yet something was lacking: a sense of human message, some oracle of deep portent, a real city communication in strong, visible-from-afar color and big ever-so-legible letters, something to lift the city out of too close a reliance on Nature, too close a kinship with mere birds and vegetation. Our friends have supplied it. Our *new* greeting cards ought to recognize it.

Of course, if one might be so bold, what is good for the "outdoor room" of the city square must be good for the indoor room also; and is it not regrettable that today's vital messages of humming throbbing pulsating commerce penetrate our homes at only one point, the TV set and the radio? So, as a modest suggestion, a rough draft to be sure, our artist has sketched what an up-to-date Christmas tree *might* be, as the focal point of our living rooms, if we were to treat them as we do our outdoor rooms.

No doubt there will have to be a trial period. During this initial interval, while all of us catch up on our cultural lag, people must be forgiven if, like ourselves, they prefer from time to time to turn on just one library light (incandescent) in addition to the Christmas tree lights (stars in technicolor) and curl up with Thoreau. It's a passing weakness.

Merry Christmas!

Douglas Haskell

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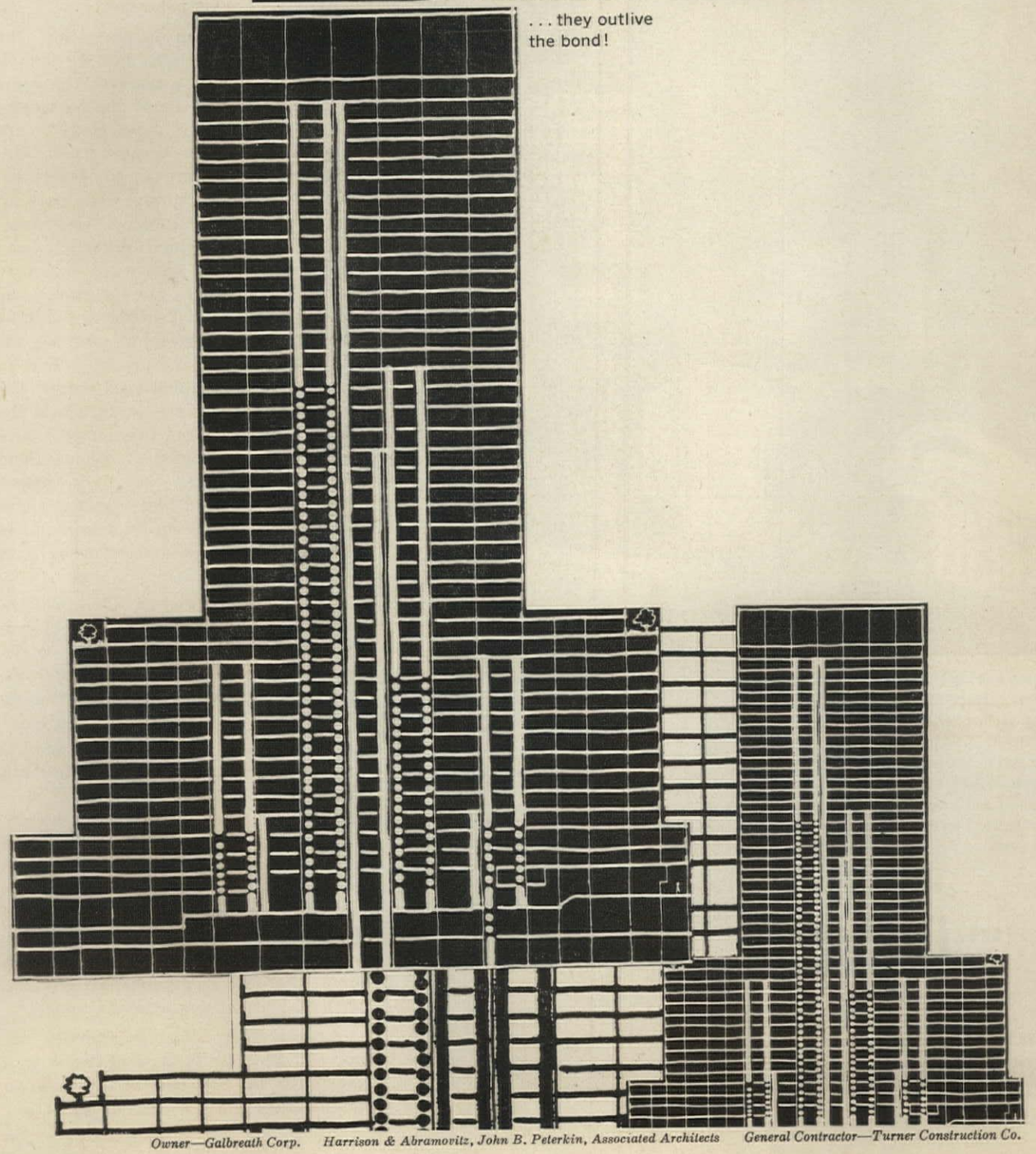

Owner—Galbreath Corp. Harrison & Abramovitz, John B. Peterkin, Associated Architects General Contractor—Turner Construction Co.

SHOPPING CENTERS

cont'd.

the basic test of covering debt service and operating expenses plus 25% more for developer's expenses, for return on his own equity and for cushion against contingencies. This is the point at which the majority of proposed projects whither away but not always. Shoppers' World at Framingham which, after default, was taken over by its mortgage holder, is the classic example of a center which is a going concern for tenants but not for the developer (who thereby lost several years of effort and his own risk capital) because its rents did not cover expenses during the years it was building up to its potential.

The majority of centers thus far have been promoted by men developing their first shopping centers; the same is true of projects now in the works. Many very poorly done centers are quondam successes because their surrounding suburbs are so underbuilt commercially that anything with parking would temporarily succeed. Ignorance, naïveté or misguided imitation lead many a developer into an even worse fix than he need be. For instance, some actually attempt to subsidize not only the department store but also the variety store and supermarket. This is because in a neighborhood center, the supermarket and variety store hold the same whip hand the department store holds in large centers; without them there is no center. They may present their neighborhood center leases, yielding about $1.25 per sq. ft. minimum, as their standard deal, and get away with it.

For the hep developer, who aims reasonably high, the hardest fact to contend with is this: If he rents to department stores on their standard deals, he can hardly avoid building anything but a cheap center.

The standard deal of the big department store chains like Allied, Sears and Macy, is 2½% of gross sales on a minimum productivity of $50 per sq. ft., which yields a guaranteed minimum of $1.25 per sq. ft. The May Co. and most locally owned stores have a target of 3% on a minimum productivity of $50, yielding $1.50. Sometimes they go to $1.80 but seldom higher. Sometimes they offer no minimum—merely 3% with no productivity starting figure.

Against this usual guaranteed income of $1.25 or $1.50, a center with a mortgage of $18 per sq. ft. has an annual debt service cost of $1.44 per

continued on p. 170


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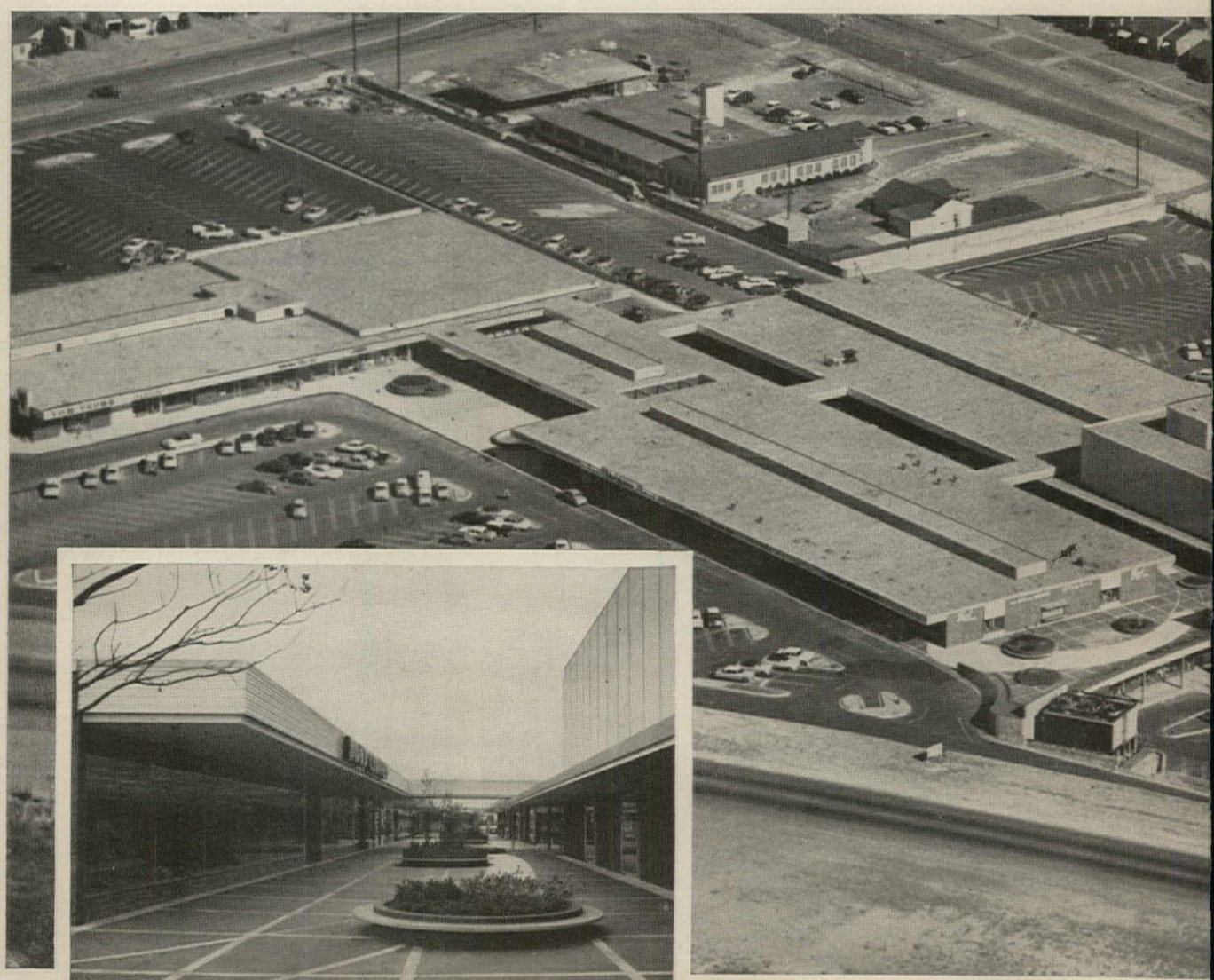

Harwood K. Smith and Joseph M. Mills, Dallas, Architects; Welton Becket F.A.I.A. & Associates, Los Angeles, Designing and Consulting Architects; Blum & Guerrero, Dallas, Consulting Engineers; Henry C. Beck Company, Dallas, General Contractors; Sam P. Wallace & Company, Dallas, Mechanical Contractors.

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The main A. Harris & Company department store, occupying 105,000 square feet of space on three levels, was equipped with a Honeywell Supervisory DataCenter. Ninety-six temperature sensing elements strategically located throughout the center can be read at this central panel.

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SHOPPING CENTERS

cont'd.

sq. ft.* Add to this 50¢ per sq. ft. for operating expenses and taxes, and the developer's total sq. ft. cash outgo is raised to $1.94. Not counting 48¢ for his own expenses and return on his equity, he is dealing out to the department store a cash subsidy of 44¢ to 69¢ per sq. ft.

What makes this so serious is that the department store or stores occupy a huge chunk of his center—anywhere from 35% to 60% of rentable space. Even though he prudently keeps it to about a third (which may or may not make the best balance from a merchandizing point of view) the lease value of two-thirds of the center must make up for the subsidy on the department store third. Considering that the chains, which are also in a very good bargaining position, make up 55% to 75% of the remaining lease value, it is clear that these arrangements simply cannot support an $18 per sq. ft. mortgage.

The developer has the alternatives of persuading the department store to pay him a guaranteed cost-covering minimum approaching $2.40 per sq. ft. (a few months ago $2.05 would have been sufficient), or considerably cheapening his center (the usual result), or arranging for the department store to build and maintain its own establishment within the center.

These alternatives all presuppose a center owned by the promotor-developer. There are of course, centers developed and owned by department stores. In these cases the department store is still, in effect, "subsidized" by the rest of the center—its tenants. How much "subsidy" it gets in the form of owner's profits depends directly on how successful the center is as a whole. For this reason, the department store-owned center is frequently the best planned and best financed, with a relatively large share of developer's equity. If such a center has a second department store (as Southdale, which is owned by one department store, Dayton's, but includes another, Donaldson's of the big Allied chain), the owning department store now has the same headaches as any developer in working out a viable deal with the second department store.

The solution at Southdale and at

continued on p. 174

*At the current 5½% interest and 8% debt service charges over 23 years. A few months ago this would have been 4½% and 7%, or $1.26 per sq. ft. Rising cost of money is accentuating the developer's cost vs. financing problem.

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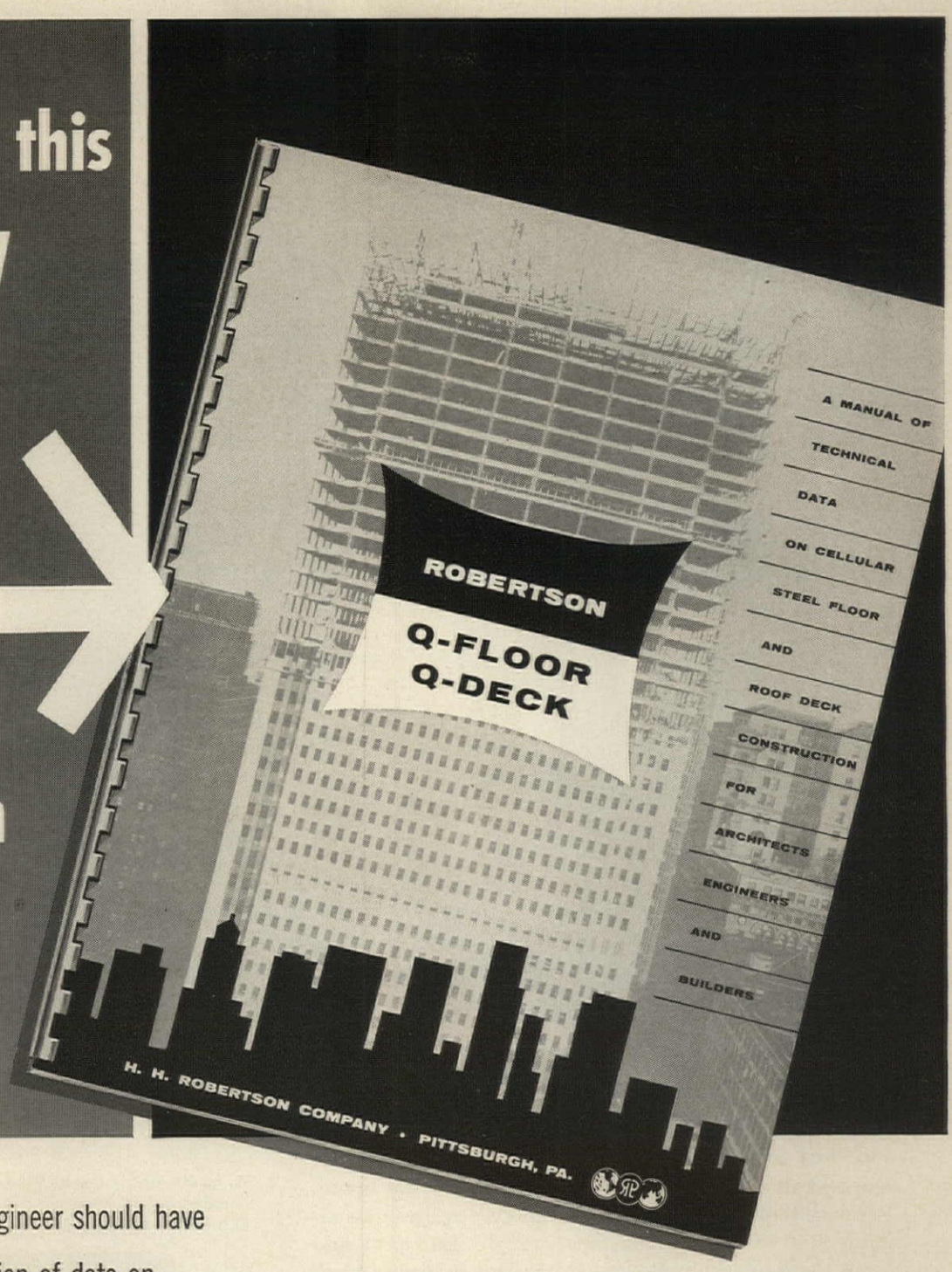

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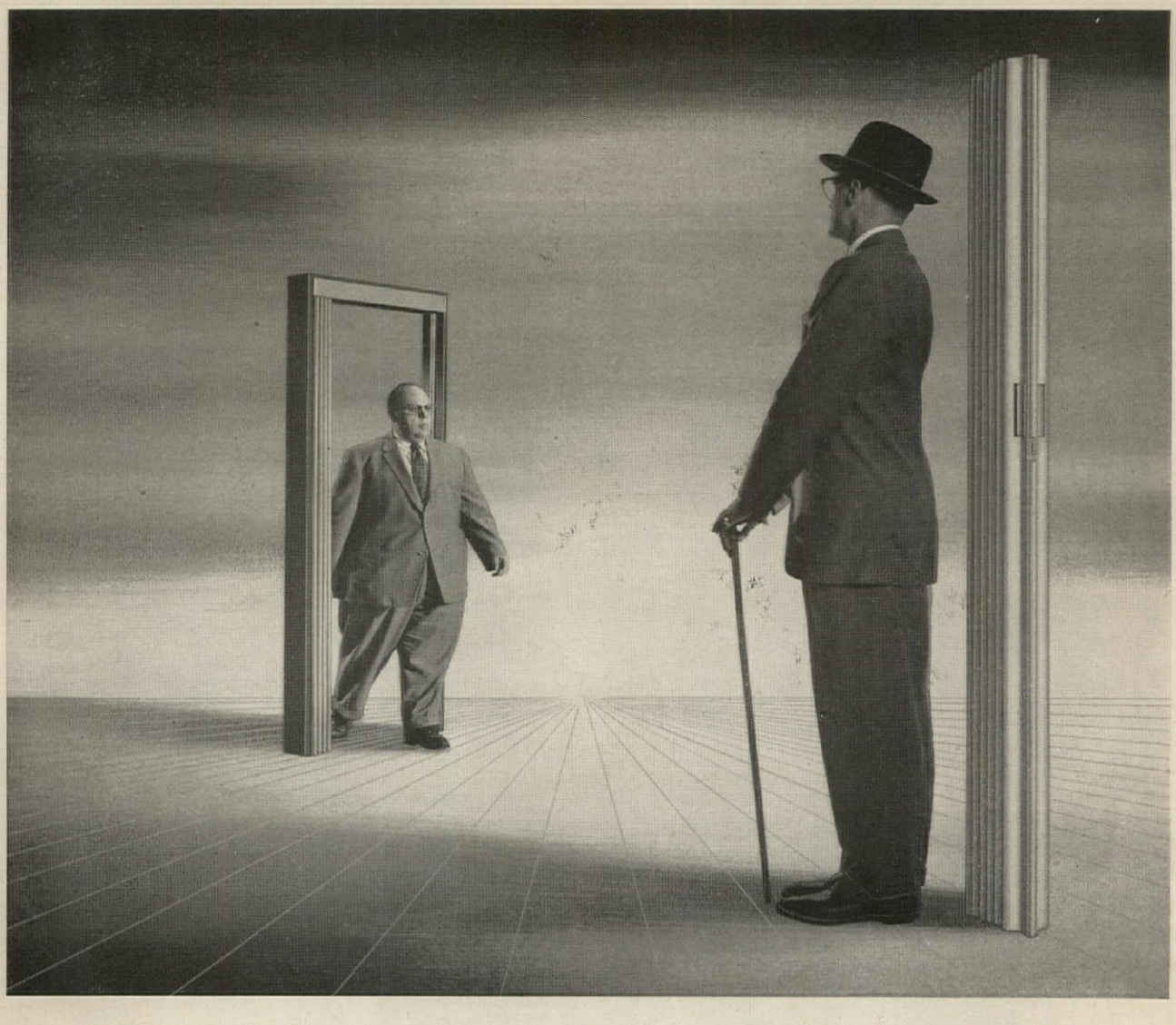

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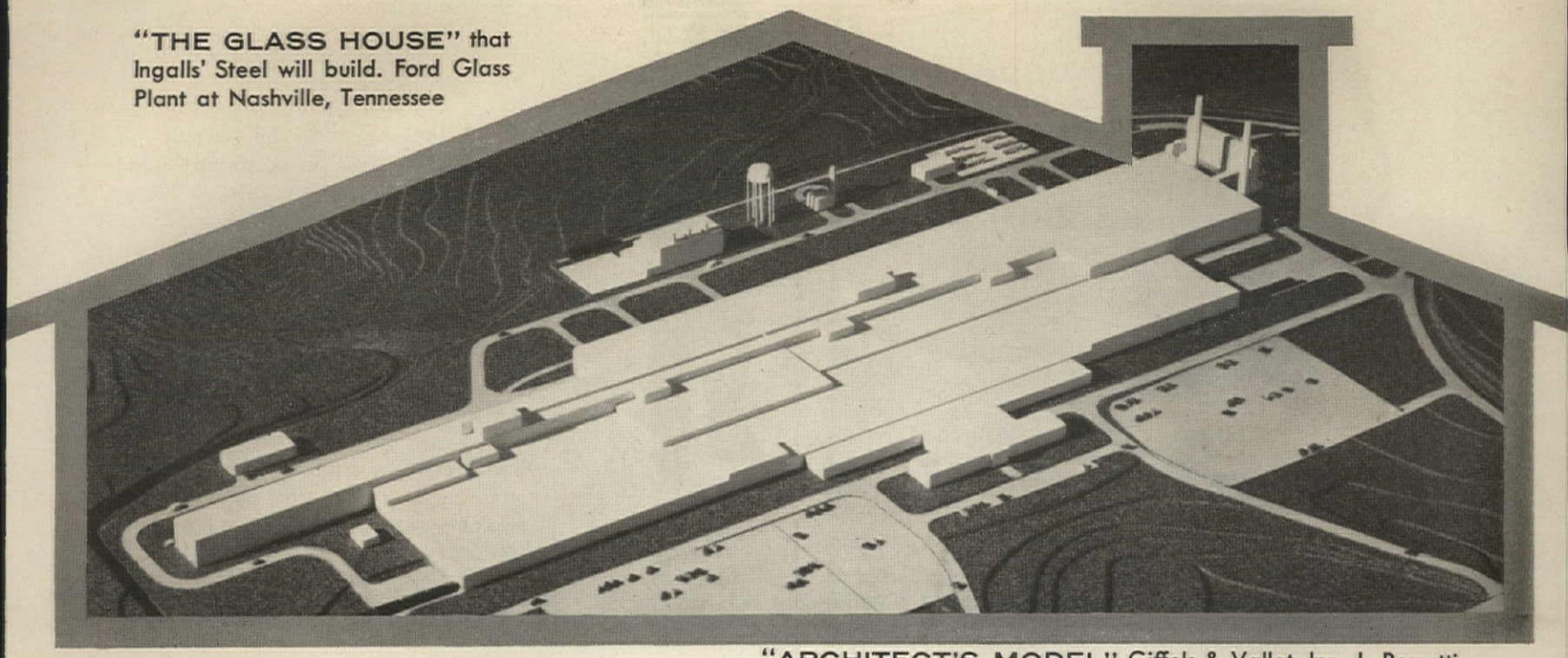

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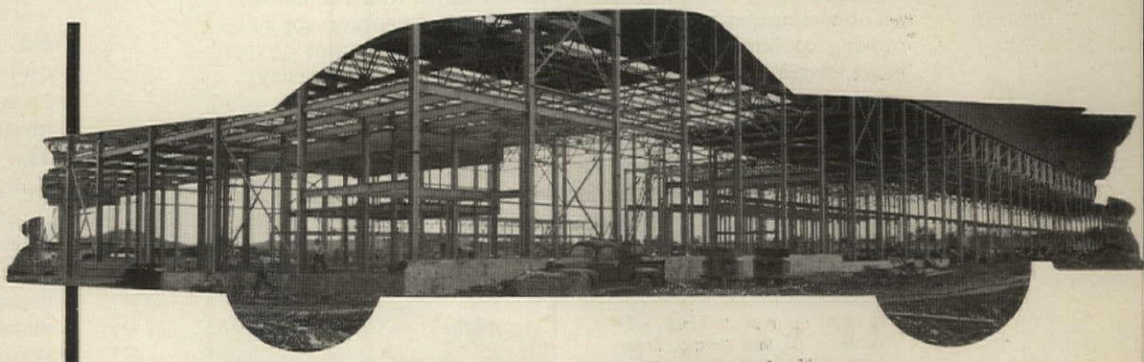

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SHOPPING CENTERS

cont'd.

promotor-owned Mondawmin (which has one department store, a major Sears, and would like a second but not at subsidy), was for the "tenant" department store to put up its own building. The center owner gets no income from such an arrangement, but he pays no subsidy either—nor (very important) is the lease value on which his building capital depends depressed by the subsidy deal—and he has his traffic puller.

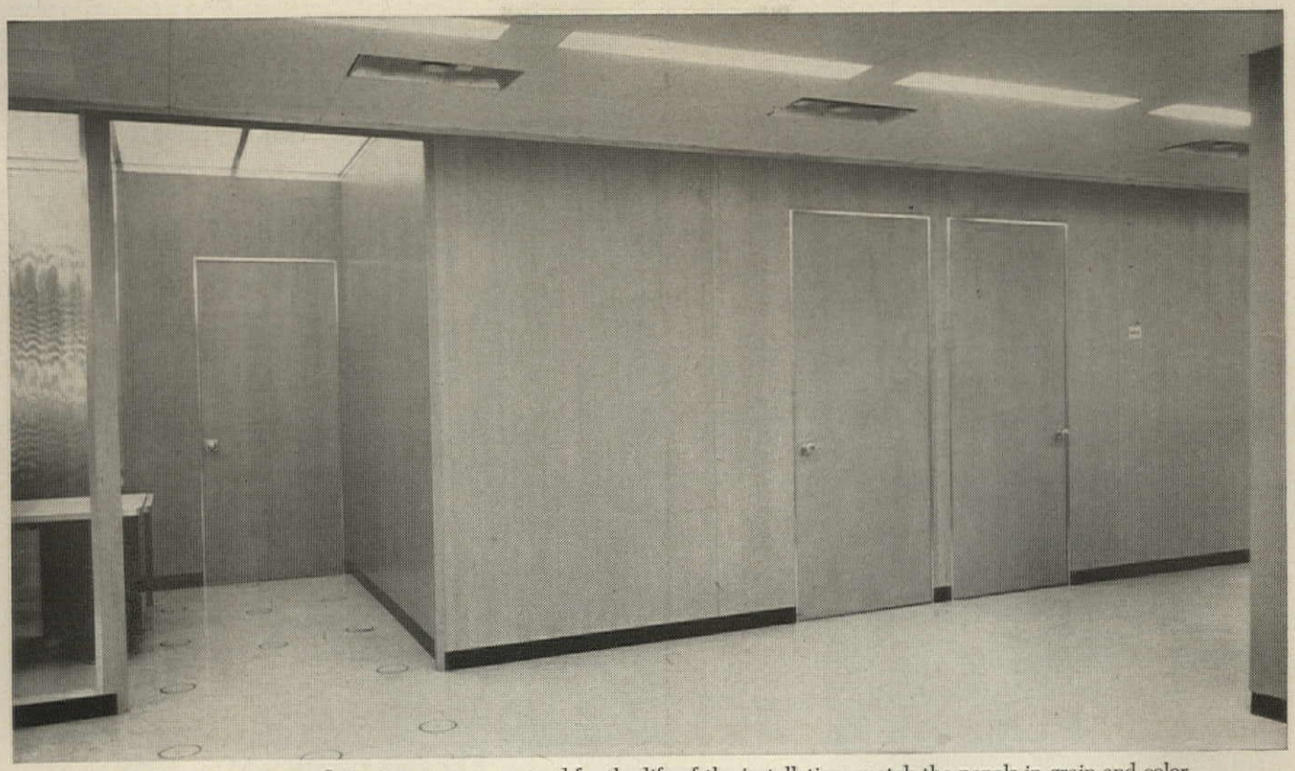
Usually this has drastic drawbacks too on the center as a whole: when the department store owns its own site and builds its own store, its preoccupation is to get every seeming immediate advantage possible, so it seldom integrates itself properly into the center or the best over-all parking and pedestrian traffic arrangements. It often even puts parking between itself and the rest of the center! Mondawmin and Southdale are both extraordinary in the degree to which the separately owned department stores have been integrated into a comprehensive scheme.

How can a center owner persuade a department store to build its own place when it thereby gets neither the subsidy of center-renting nor profits of center-owning, and moreover how can he also persuade it to do a relatively unselfish job of center traffic pulling? The department store must want in badly enough. Such a deal implies something close to equality of bargaining power. The owner's ace may be his site, or the presence of a competing department store in a center that is plainly not going to be easily vulnerable to competition from outside.

But if a department store will support its own building in such a case, why will it not support it instead in the form of cost-covering rent to the developer? Because the department store is able to sell its building to an insurance company and lease it back at a figure which, in effect, pays for the financing over 30 to 40 years at 4½% to 5% interest.* This is better than the mortgage deal of 5½% for 23 years that the same insurance company would give a developer, so the department store is still not paying what would equal a promotor's cost-covering rent. For the department store, the arrangement represents a compromise between a cost covering and a subsidized rent.

continued on p. 178

*A few months ago, this would have been 3½ to 4%.



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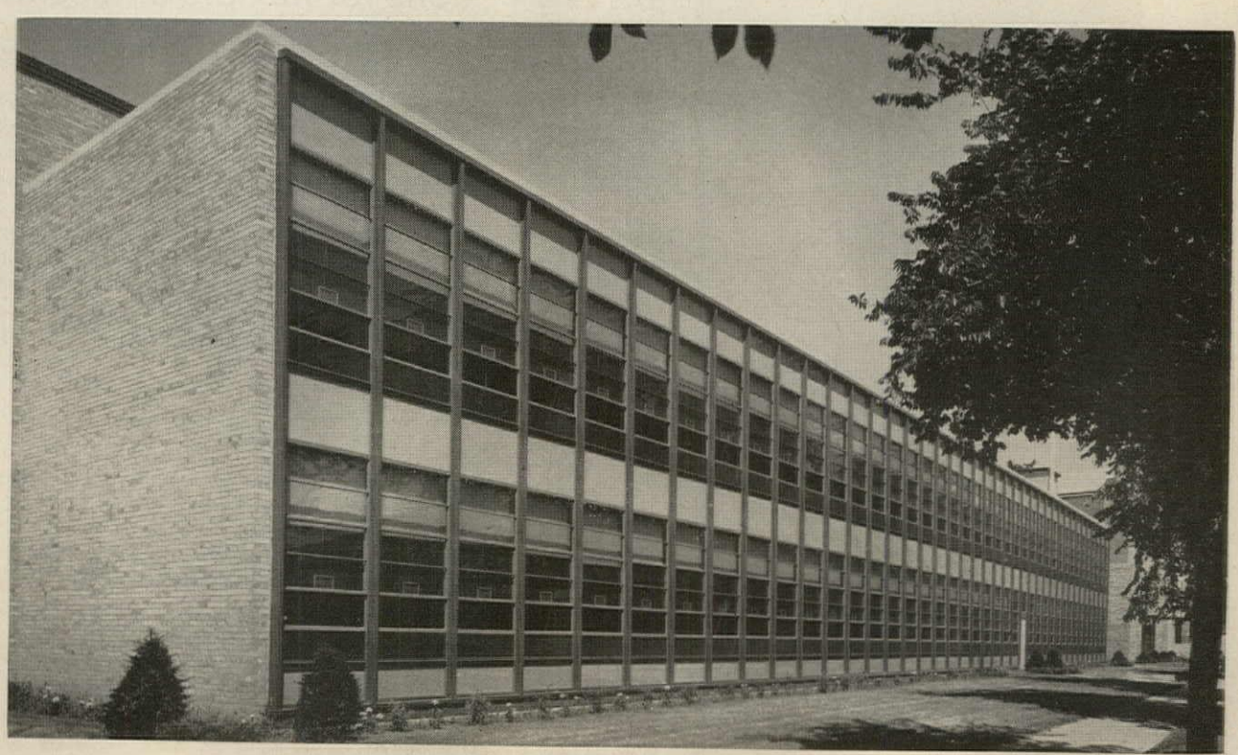
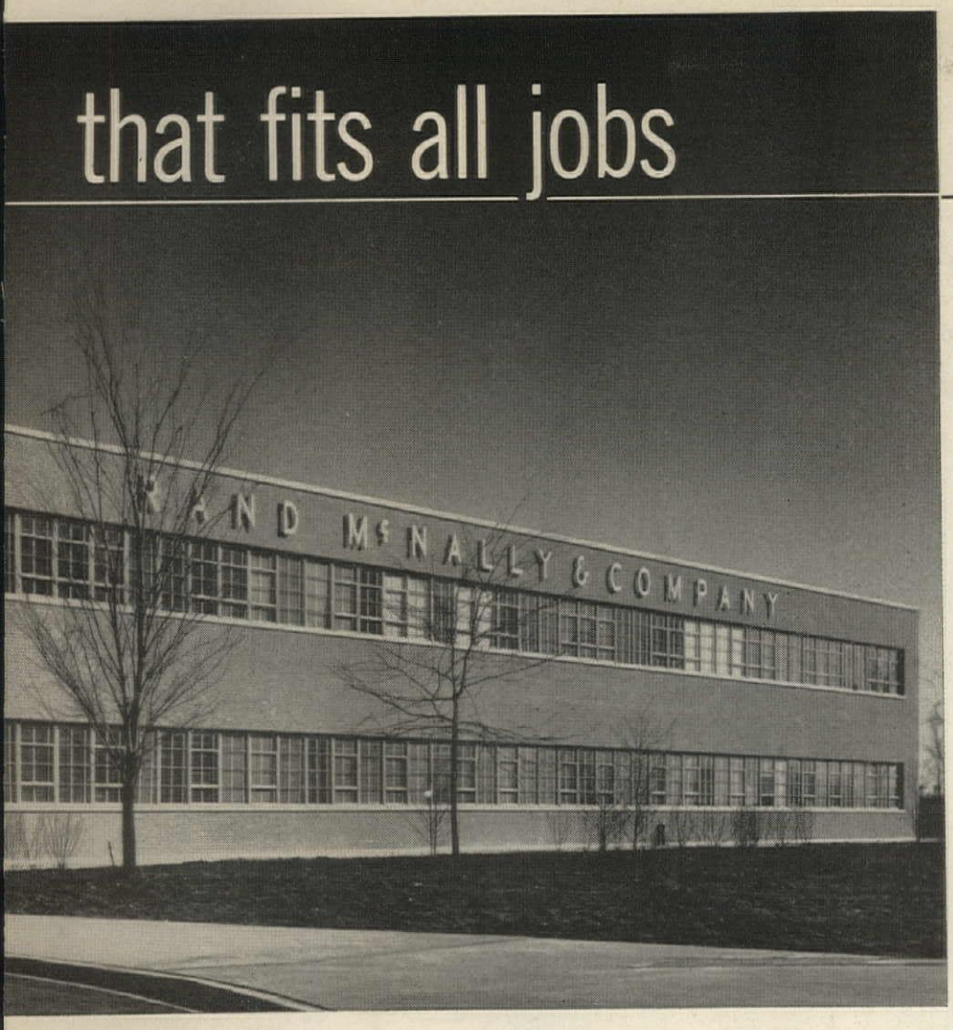
Modern factories are very different from their earlier predecessors. They are smart, modern and good-looking. And steel windows go right along with this new type of industrial design. Rand McNally & Company, Skokie, Illinois. Building was designed by Graham, Anderson, Probst & White, Inc., Architects.



More light for young eyes requires bigger glass areas, and a harder job for window frames. That's where the strength of steel comes in. It makes large windows economical and practical. Our Lady of Charity School, Cicero, Illinois. Architects: Naess and Murphy.

that fits all jobs



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The trend to larger picture windows applies to apartments as well as houses. In the Berkshire & Greenbrier Apartments, Washington, D. C., steel residence casements and fixed picture windows have been used in every apartment . . . and thanks to steel, the frames are neat, inconspicuous; blend in well with the decor. Corning & Moore, Architects, Standard Construction Co., Builders.

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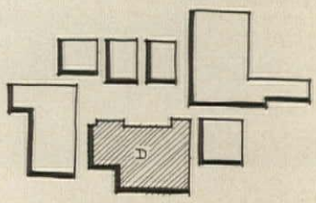
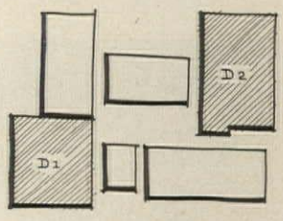
SHOPPING CENTERS

cont'd.

It is very tempting to a developer who wants two department stores but has only one, to go into construction with a scheme that needs the second store to complete it. Northland's and Southdale's architect, Victor Gruen, reasons that in such circumstances the developer is so clearly in need of the second store he has no equality of bargaining power, hence finds it impossible to get that second store at a deal he can live with. Most developers do not want to believe any such thing but up to now the evidence is with Gruen. Gruen's recommendation: If the center has only one store in the bag, design it for one, not two. Northland, designed as a complete entity with one store, is doing more than nicely. Southdale was originally designed for one department store only, Dayton's, the owner. That center went into working drawings with one. When the second came in, Southdale was redesigned. The



Southdale for one department store



Southdale for two department stores

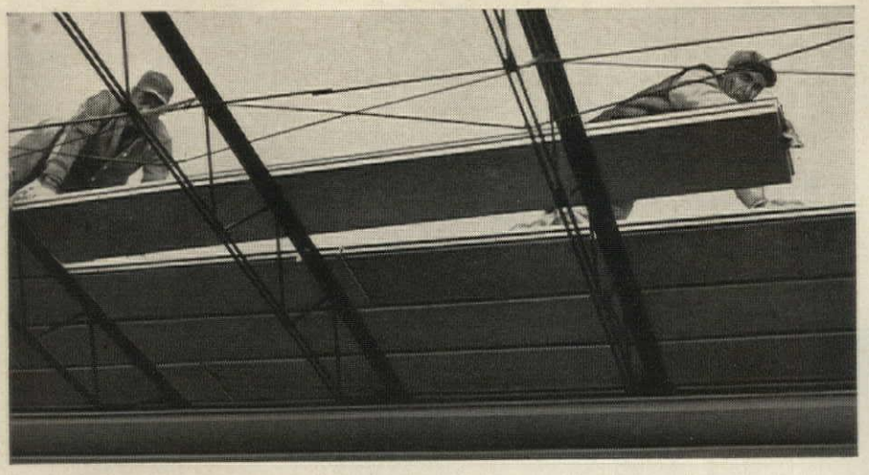
work put into the superseded scheme came to about $100,000. Superficially, it might seem this would have been saved had the design begun as two-store. But in that case there is no doubt the second store would have been so badly needed that either no deal would have been made and the center would always have been incomplete as Framingham is to this day, or the subsidy losses would have cost far, far more than the design work. "The chance that the first scheme might be revised after it was far advanced never was a gamble," says Gruen. "It was the cheaper of two clear choices."

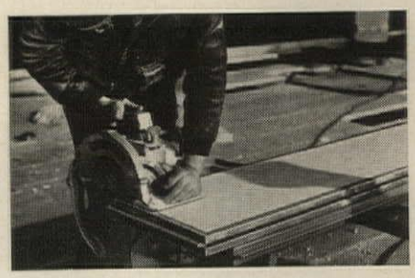
Rouse and Architect Ken Welch believe they have a type of scheme to which a second department store can

continued on p. 184

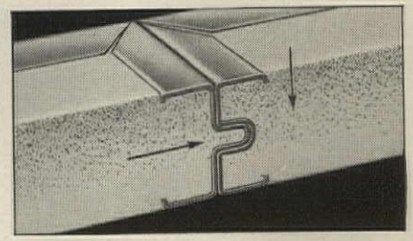
BESTWALL GYPSTEEL® PLANK ROOF DECK

CUTS CONSTRUCTION COSTS, MAINTENANCE COSTS, AND OFTEN INSURANCE COSTS AS WELL

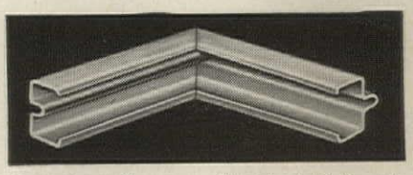




Gypsteel Plank can be sawed, nailed or drilled like lumber. A wide-set hacksaw will cut the metal edge. However, a power saw with a carborundum wheel is best. Actually, minimum cutting is required with Gypsteel Plank. Where a large number of openings in the deck are specified, plank is simply laid around openings, saving expensive labor.



Only Bestwall Gypsteel Plank has this type of tongue and groove. When engaged, the steel bindings mesh to form an I-beam that permits joints to be safely broken between supports. (Arrows show forces.)



Note the unique way the steel binding is welded at the corners to form a one-piece frame. This gives more rigidity and greater strength.

BESTWALL GYPSTEEL PLANK is a pre-cast gypsum slab (2″ x 15″ x 10′0″) reinforced with steel wire mesh and poured in a galvanized steel frame electrically welded at the corners for maximum rigidity. It combines great strength, light weight, and high fire resistance. It offers important advantages—in faster, easier construction and reduced costs—over any other type roof decking you can use today.

CUTS CONSTRUCTION COSTS
Gypsteel Plank comes all ready to apply—no special equipment required. Planks are tongued and grooved—assembled quickly and cleanly—may be sawed, drilled or nailed like lumber. Their light weight reduces the dead load—permits an important saving in substructural steel.

CUTS MAINTENANCE COSTS
Gypsteel Plank needs no painting to prevent deterioration. Undersurface requires no decoration. It provides good light reflection, and there are no ribs or flanges to collect dust and dirt.

Gypsteel Plank is as permanent as the building it covers. It is not affected by normal changes in temperature or atmospheric conditions, and because gypsum is inert, expansion and contraction are never a problem, and the danger of a cracked roof covering is minimized.

OFTEN CUTS INSURANCE COSTS
Gypsum is rock—it can't burn or support combustion. Gypsteel Plank is rated as incombustible by insurance companies and under building codes—and therefore gives the lowest insurance rate possible. *This is a benefit your clients enjoy for the life of the building!*

See your Sweet's Catalog for detailed information and nearest district office. Your local Bestwall Certain-teed Sales Engineer will be glad to be of assistance to you at any time.

TECHNICAL DATA

Gypsteel Plank can be used economically on almost any roof design—flat, sloping, sawtooth, and some curved or warped roofs (long radius). It's recommended for spans up to and including 7 ft. Weight: approx. 12 lb. per sq. ft. Safe load: 75 lb. per sq. ft., with safety factor of 4. Meets Federal Specification SS-S-439. Planks can be used over either steel or wood purlins. End joints need not come over purlin supports. Thermal insulation is very good. "U" Factors (air to air) including roof covering: no insulation, .528; ½" Certain-teed Fiberglas* Insulation, .26; 1" Certain-teed Fiberglas Insulation, .17. Insulation value is equal to 9 to 10 in. of concrete or an 8 in. brick wall. Roof coverings may be nailed right onto Gypsteel Plank when necessary.

*Trade-mark OCFCorp.

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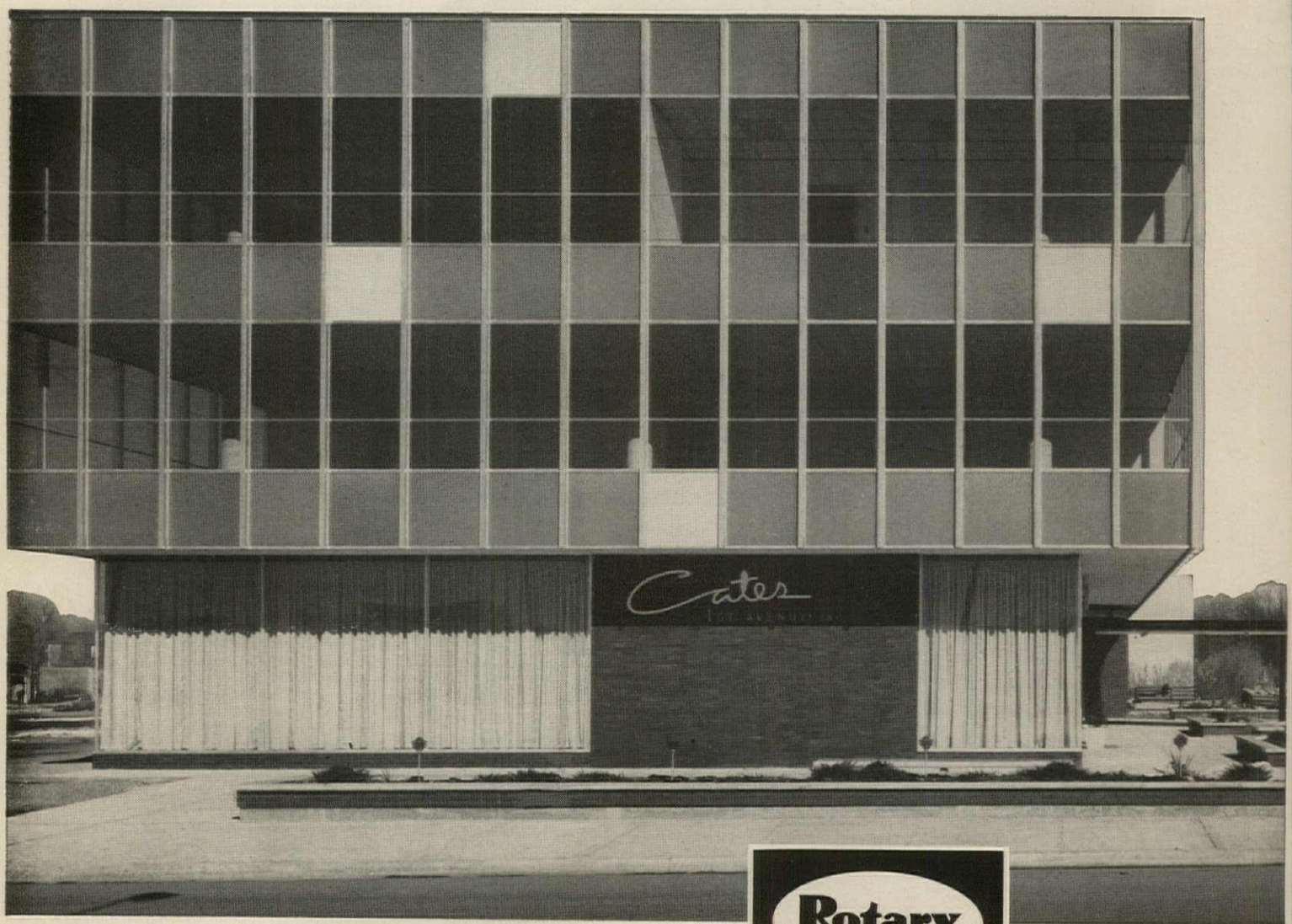
modern elevators



REDDING-MILLER BUILDING,
Denver, Colorado

ARCHITECT:
T. J. Moore, Jr.

GENERAL CONTRACTOR:
N. G. Petry Construction Co.

Rotary Oildraulic Passenger Elevator
sold and installed by
William Colin Kirk & Associates

Rotary®

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Columbus, Indiana

ARCHITECTS:
Eero Saarinen & Associates

GENERAL CONTRACTORS:
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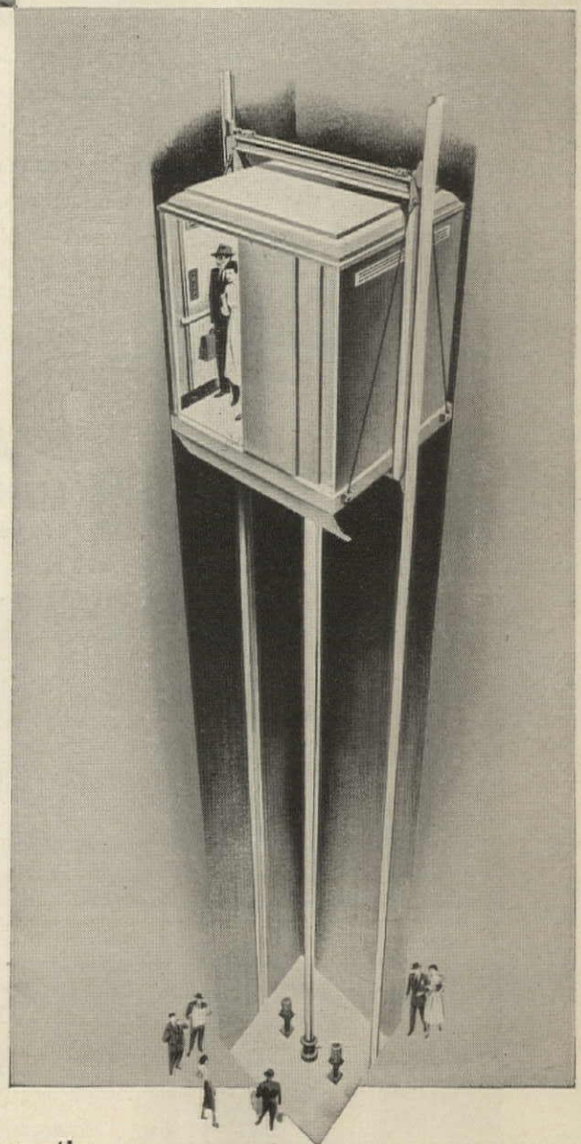
Rotary Oildraulic Passenger Elevator sold and installed by Service Elevator Co., Inc.



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Refreshing originality in today's architecture is facilitated by the modern Rotary Oildraulic Elevator. Because it requires no penthouse, this highly-efficient elevator permits bold innovations and distinctive modern design. The two buildings shown here are good examples.

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The Rotary Oildraulic Elevator is moved, supported and controlled by a powerful oil-hydraulic jack. There is no overhead machinery . . . hence no penthouse. And there is no weight on the building structure, permitting a substantially lighter hoistway and saving on construction costs.

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Any type of control is available, from simple push button to the most advanced selective-collective or similar automatic system. Operation may be with or without attendant.

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Rotary Oildraulic Elevators are sold, installed and serviced by factory-trained personnel in a national distributor organization. For assistance on plans and specifications, look for "Rotary Oildraulic" under "Elevators" in your phone book.

See our catalog in Sweet's

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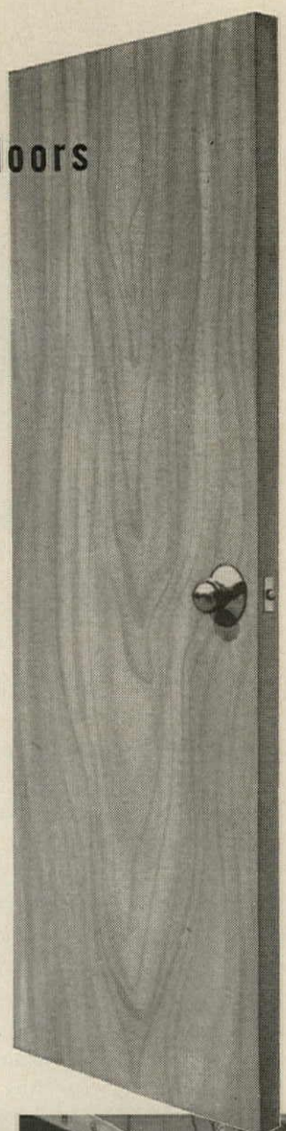
All flush doors may look alike . . . but these 9 reasons prove why America's *Finest* doors are Paine



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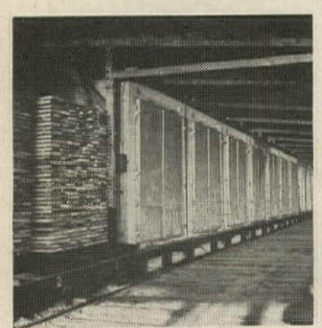


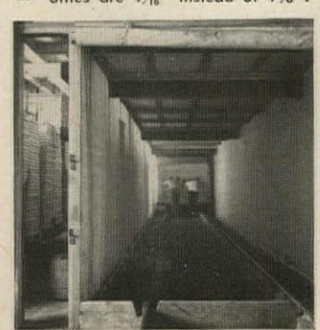
1 All lumber kiln-dried to specific, and uniform moisture content.

2 Stiles and rails securely fitted. Stiles are 1 7/16" instead of 1 1/8".

3 Hand-matched face veneers; the panels 1/8" thick—instead of 1/10".

4 A complete coating of resin glue is applied by machine.

5 Accurate assembly is assured by controlled heat and pressure.



6 Doors pass through a complete conditioning cycle in special kilns.

7 Doors are carefully belt-sanded to a cabinetmakers's finish.

8 Special doors are custom-made by experienced craftsmen.

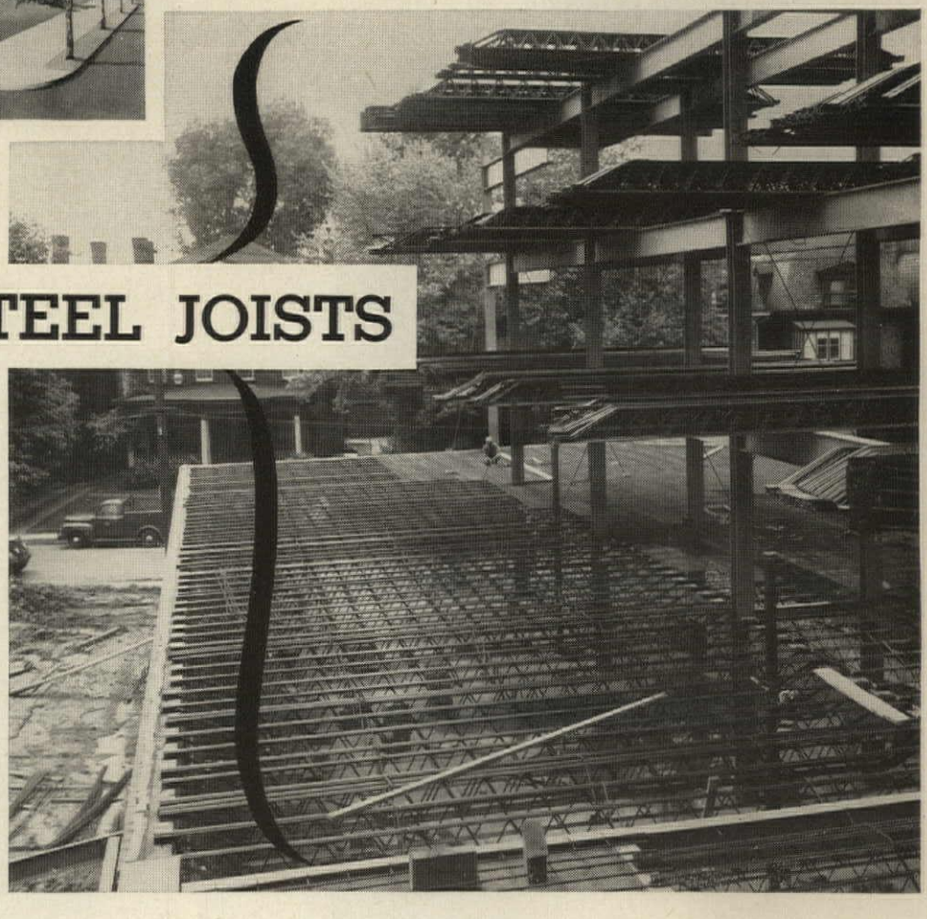
9 Each door must be painstakingly inspected in oblique light.

Apartment Building, Pittsburgh, Pa.

401 Shady Avenue

Contractor: Larson Construction Company,
300 Mt. Lebanon Blvd., Pittsburgh 34, Pa.

Structural steel and standard steel joists by American Bridge



AMBRIDGE STEEL JOISTS

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and money

for everyone!

The handsome new apartment building shown in the rendering above is another good example of steel-frame construction in combination with AmBridge Standard Steel Joists for all floor and roof supports.

Fabricated and erected by American Bridge for this strong, fireproof structure were 710 tons of structural steel and 809 tons of AmBridge Standard Steel Joists with accessories.

USS AmBridge Standard Steel Joists provide rigid, lightweight and economical construction suitable for any type of floor, roof and ceiling. The underslung and open-web design provides for maximum headroom and allows passage of pipes, ducts and conduits in any direction.

In floor construction, the ease and simplicity of handling this new-design steel joist reduce installation time to a minimum and permit other trades to begin work promptly. And for roof construction, it cuts the time required to put your structure under cover.

Fabricated and assembled on a modern production line basis to assure you a better product in faster time, USS Ambridge Steel Joists will enable you to build an economical structure without interruption of your schedule. For detailed information about the time- and money-saving advantages of these superior products on your next job, get in touch with our nearest office.

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

AMBRIDGE STEEL JOISTS

USS TRADE MARK

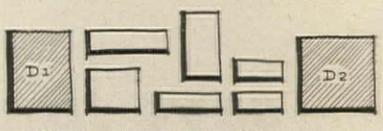
UNITED STATES STEEL

SHOPPING CENTERS

cont'd.

be added but which avoids the Framingham pitfall by being complete without the second store, thus preserving the developer's bargaining strength. They concentrate every major secondary pull and, most important, the strongest architectural pull, at the end opposite the department store. In its expanded

Rouse-Welch scheme for one dept. store



Rouse-Welch scheme expanded

version, the second department store would be added immediately at the "open end" or placed beyond additional secondary stores.

The space yielding highest rents in a shopping center is that rented by optical, millinery, jewelry, hearing aid, candy, and beauty and barber establishments, plus all sorts of little impulse and kiosk businesses. Minimums for these go as high as $6 per sq. ft. and at percentages of 10% and 12%, they can bring in as much as $20 per sq. ft. if business is good. Some sort of record is probably held by a keymaking kiosk in a successful center that yields $28 per sq. ft. in rent.

Variety stores in regional centers yield 4% to 5% of gross sales, with the minimum based on a gross of about $40 per sq. ft.; junior department stores yield 3¼% to 3½%, with minimum based on about $50; restaurants and florists, 6% to 7% on about $50 minimum; shoe stores 5% to 6% on $60 minimum.

The center owner stands to gain most from sales solidly above expectation and usual experience. That extra volume is the high-profit volume for everybody. Here is the bonanza, glittering beyond the bread-and-butter. This is the very business most sensitive to the shopper's attitude about the center; this is the extra that flourishes spectacularly in a center which shoppers find it fun to go to, appealing to traverse, seductive to hang around in. The qualities that make such a center are the very ones, ironically, that the developer must usually forego when he faces up to what he can buy with the mortgage his lease value will raise.

UNIQUE KITCHEN-CAFETERIA LAYOUT SERVES PRUDENTIAL EMPLOYEES

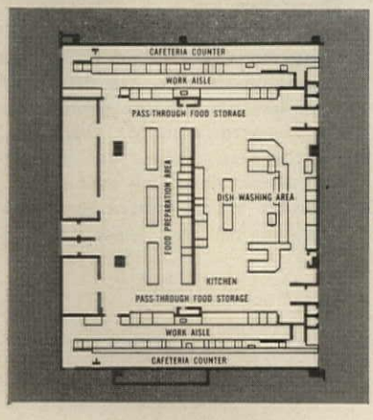
ideas from Blickman-Built food service installations

Second installation for Prudential places kitchen between twin cafeteria counters and pass-through facilities

• Originality of planning exemplifies this unusual food service installation in Prudential Insurance Company's Mid-America Home Office in Chicago. The kitchen is placed between two identical cafeteria counters. Fresh, appetizing food is prepared in the kitchen, and dispensed at the serving counters quickly and efficiently. Pass-through warmers and refrigerators, placed between kitchen and counters, keep adequate supplies of food in reserve. Long-lasting, sanitary stainless steel equipment is used throughout kitchen and cafeteria sections.

This is our second installation for Prudential within recent years. Efficiency of operation, economy of maintenance and high sanitation standards have characterized Blickman-Built equipment for almost three-quarters of a century. Consult us, if you too have a mass-feeding problem.

This illustrated folder gives more information about Blickman-Built food service installations. Send for your free copy today.



ONE OF TWO STAINLESS STEEL CAFETERIA COUNTERS — Back-bar shows warmers and refrigerated storage cabinets with pilot lights and signalling alarms. Sealweld serving urns are connected through wall to water boiler and coffee-making urns.

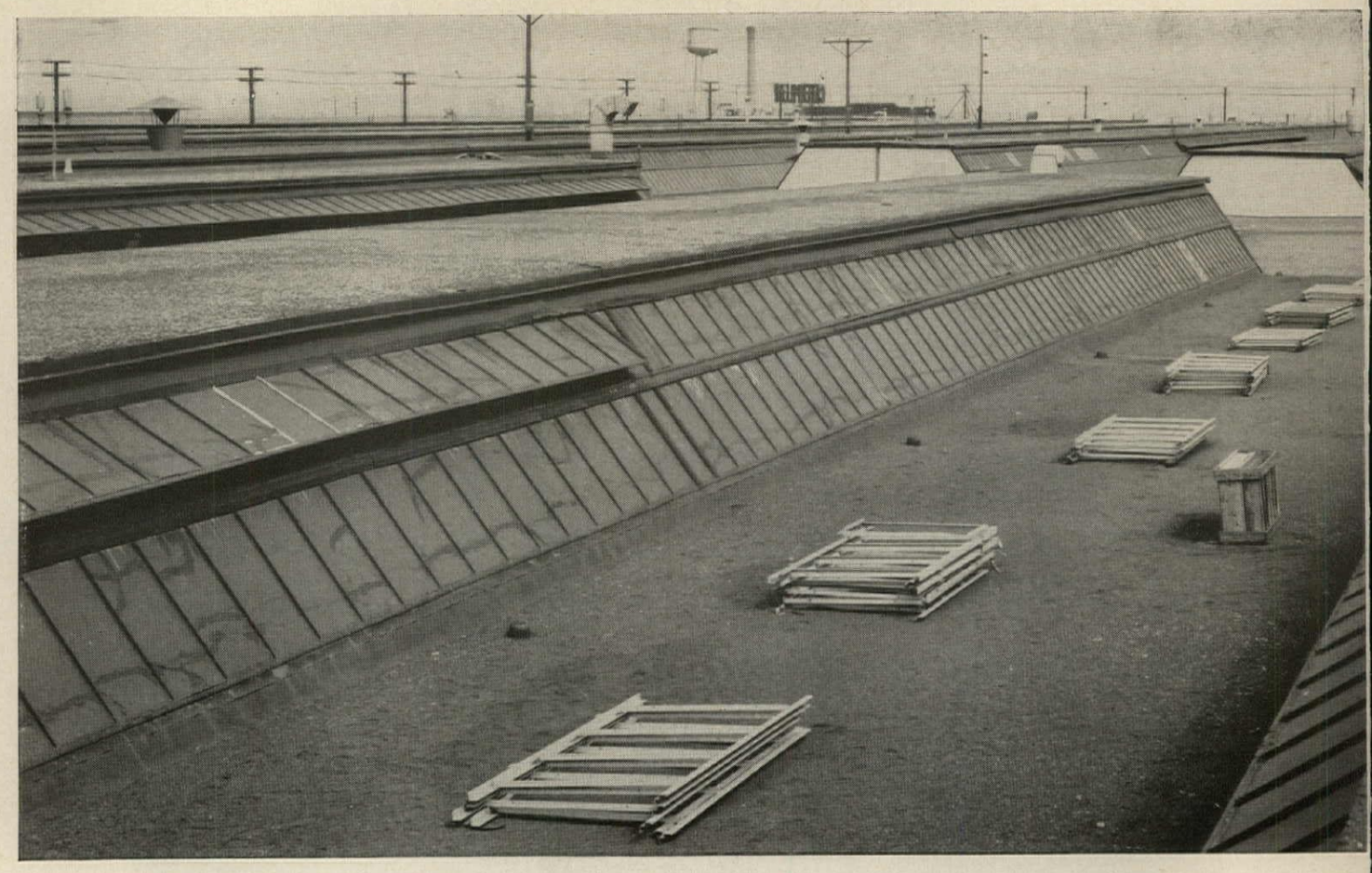
LAYOUT OF EMPLOYEES' CAFETERIA on ground floor of Home Office building, showing arrangement of dual serving counters, kitchen and pass-through facilities. A serving pantry on the eighth floor was also Blickman-equipped.

FOOD PREPARATION AREA IN KITCHEN showing island-type stainless steel cooks tables. Other equipment includes wall-mounted broiler, fryer and steamer tables, tilting kettles. Note Blickman-Built stainless steel hood.

Blickman-Built
MASS FEEDING EQUIPMENT
EST. 1889

For Service Life Measured In Decades

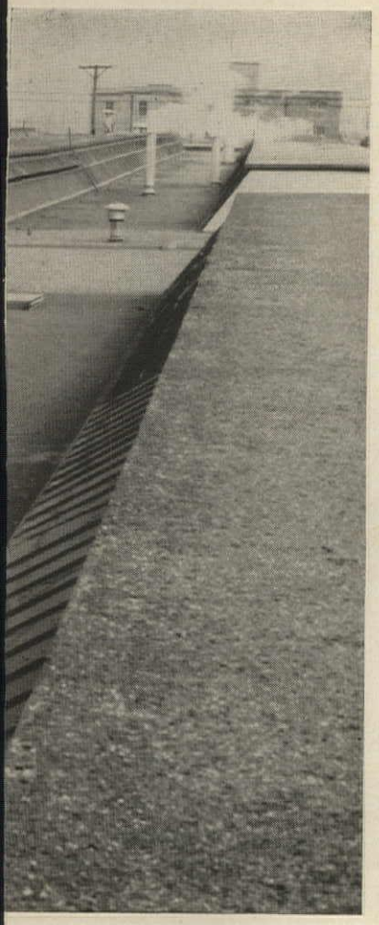
S. BLICKMAN, INC. 5812 **GREGORY AVE., WEEHAWKEN, N. J.**



Fenestra Industrial Steel Windows that need no painting, ready to be installed replacing the old monitor sash on Caterpillar Tractor Co., Building HH, Peoria, Illinois

Shown here are A. F. Wiedeman, Caterpillar Construction Engineer, and C. Y. Chapman, Construction Superintendent, examining the Fenestra Bend Bar Test that demonstrates the stronger bond of the Fenestra finish. Mr. Chapman, holding the Fenestra test bar, calls it "one of the best jobs I've ever seen." Your Fenestra representative can show you this same test. Ask to see it today.

The Fenestra FENLITE Finish is also available on the complete line of Fenestra Intermediate Windows for schools, office buildings and other fine structures.



Caterpillar Tractor Co.,
Peoria, Illinois, chooses Fenestra
Industrial Steel Windows
because they estimate they will

SAVE WINDOW PAINTING COSTS FOR 20 YEARS!

Maintaining nearly five miles of monitor windows on the roof of Caterpillar Building HH and the foundry at Peoria, Illinois, was an expensive and time-consuming problem. With the ordinary sash originally installed in these buildings, a complete paint job was required every four years. Even with this kind of care, the fixed sash in these monitors needed extensive reglazing and rehabilitation a few years ago.

Under the direction of W. H. Zurhorst, Manager, Plant Engineering, a plan was developed by C. Y. Chapman, Construction Superintendent, and A. F. Wiedeman, Construction Engineer, to completely replace the sash with Fenestra® Industrial Steel Windows that needed no painting. Based on careful tests they estimate that these windows will require *no maintenance painting for at least 20 years.* This saving in labor and materials will pay for the replacement!

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Fenestra Industrial Steel Windows with the New FENLITE Finish give longer life without painting *plus* a distinctive, new, window beauty. The FENLITE process is an exclusive Fenestra development based on years of experience and research with corrosion-resistant finishes for steel windows.

If you are planning a new plant, or if you are trying to solve an expensive maintenance problem with your present windows, get the facts about New Fenestra FENLITE Industrial Steel Windows. Call your local Fenestra representative—listed in the Yellow Pages—or mail the coupon below.

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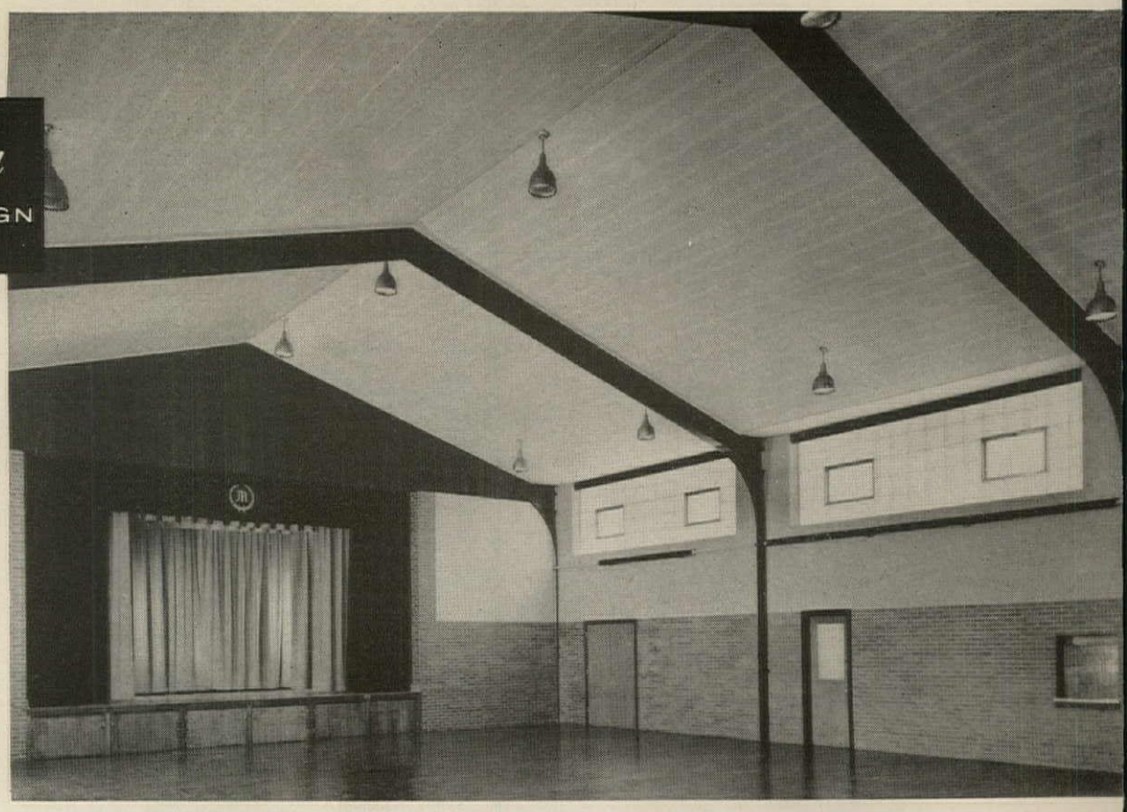
Fenestra
SCHOOL DESIGN NEWS



Fenestra Acoustical Building Panels form the structural roof and finished ceiling for St. John Bosco Church and School, Hammond, Indiana. If a larger sanctuary is built, this room can be converted for a gymnasium or auditorium at minimum cost. *Architect:* Bachman & Bertram, Hammond, Indiana. *Contractor:* Swenson-Carlson Builders, Inc., East Chicago, Indiana.

This multipurpose room at South and Northwest Schools, Adrian, Michigan, also has a Fenestra Acoustical Building Panel roof. The metal pan ceiling is impervious to damage and may be washed or repainted as often as needed without reducing acoustical effectiveness. *Architect:* Louis C. Kingscott & Associates, Kalamazoo, Michigan. *Contractor:* W. N. Bjorklund, Douglas, Michigan.

Fenestra

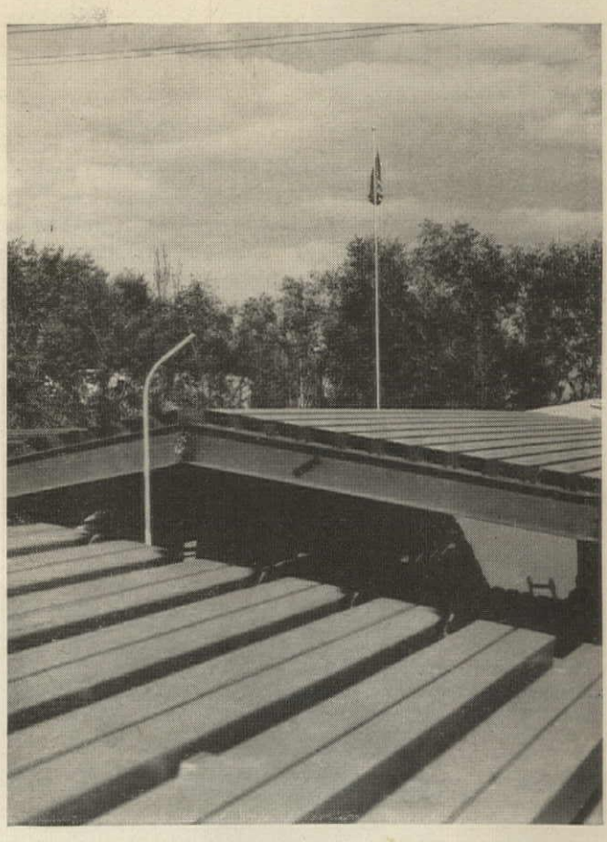
Building Panels

with "built-in" acoustical

treatment

cut the cost of . . .

MAINTENANCE-FREE CEILINGS FOR MULTIPURPOSE ROOMS



Here you see how the Fenestra Building Panels are installed over beams to form the structural roof deck and finished ceiling. Acoustical material is "built-in" the panels and the underside is perforated to absorb sound. Ask your Fenestra Representative to show you a sample.

Tough enough for a gym . . . quiet enough for an auditorium . . . soap-and-water maintenance . . . these are the advantages you can design into your schools with Fenestra* Building Panels. Best of all, you can actually save time and money on building costs, too.

Fenestra Building Panels combine the structural roof deck, finished interior ceiling and acoustical treatment in one easily erected building unit. One trade installs them in one operation!

Efficient sound-absorbing material is completely enclosed—*"built in" the sturdy steel panels.* It cannot be damaged by bouncing balls or by washing or painting the ceiling. There is no "stuck-on" or hanging acoustical treatment requiring periodic replacement or special care.

These unique building products are strong enough to span up to 31 feet, saving money on structural steel or other roof supports. Their light weight often reduces foundation costs, too.

Since 1930, Fenestra has pioneered in the design and production of metal building panel products with "built-in" acoustical treatment. This experience plus the modern Fenestra production facilities assures delivery of quality building products to meet your job schedule.

When you are planning your next school, ask your Fenestra Representative, listed in the Yellow Pages—to show you an actual sample of this moneysaving building material. Call him, today, or mail the coupon below for information.

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RESEARCH

A spotlight on new tests, new standards, new studies

Pressure drainage

Building drains are usually sized to flow half full under the maximum probable load. This type of drainage is known as gravity flow and is dependent upon proper pipe slope to maintain scouring velocities and satisfactory performance. In 1940, Roy B. Hunter, of the National Bureau of Standards, proposed a pressure drainage method of design which could have resulted in considerable reduction of pipe sizes and cost if it had been widely adopted. Unfortunately, his method dealt with fixture-unit loads which gave results that could not readily be checked. During the Korean War, renewed interest in economical use of ferrous pipe led to a reinvestigation of Hunter's method by Herbert N. Eaton, a retired staff member of the Hydraulics Section of NBS.*

When pressure drainage is used, drainage pipes are permitted to flow full; pipe slope becomes less important because a slight head is permitted to build up in the stacks to help push the waste through. The flow capacities of drains are more than doubled, resulting in average savings of 35% of pipe weight. Pressure drainage also permits increases in the capacities of existing sewer and drain lines of old buildings with a minimum amount of alteration. For practical purposes there are only two differencees between a pressure drainage system and a gravity drainage system: 1) the pressure system may not permit plumbing fixtures in the basement because some space must be provided at the bottom of stacks to permit waste water to rise during periods of peak load; and 2) a vent line is required above the water line in each stack.

Pressure drainage can yield the greatest savings in pipe costs in buildings such as factories and warehouses which may have very long runs of sewers and storm drainage lines, and in tall buildings such as hotels and apartments where stacks are heavily loaded and very large drain sizes are required to handle the loads under gravity flow conditions. However, pressure drainage cannot be used everywhere. For example: buildings where large load increases are likely, hospitals where high overload safety is required, buildings with short drains and small loads, and buildings where the drains must be so high that basement fixtures cannot be connected above the anticipated water level in the stack. The last factor is only of importance in existing buildings to be altered for pressure drainage, because new work can be designed to overcome the overflow problem.

Faucet performance

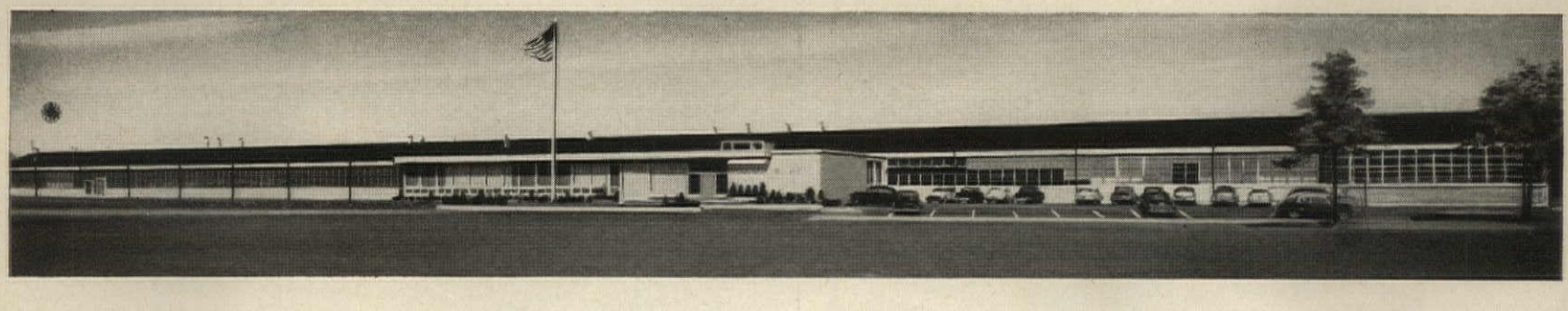
A study recently completed in France** has evaluated the behavior of cold water faucets and their rubber valve seals. The shape of the handle and the operator's temperament and his position were found to be quite important factors. Faucet operators were observed to apply a very wide range of stresses to the seals and in many cases, 3 to 5 times greater than necessary to close the valve. Some of the more important factors affecting the applied pressure are: whether the operator was looking at or able to see the flow, state of mind, misgivings as to possible

continued on p. 195

*Pressure Drainage Systems for Buildings; a reprint of Technical Report No. 9, of the Federal Construction Council, Building Research Institute, 2101 Constitution Ave., Washington, 25, $1

** "Etude sur les Robinets," *Note Technique No. 4*, Institute Technique du Batiment et des Travaux Publics, Paris

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



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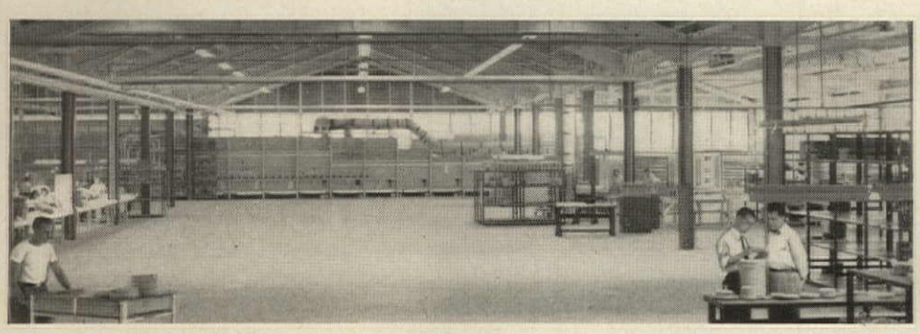
when we designed around LURIA STEEL FRAMES"



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

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

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with Lighting by LITECONTROL

Quiet elegance . . . maximum lighting efficiency at desk level — this installation of the Philadelphia National Bank, Lansdale, Pennsylvania, has *both*.

Time was when this type of impressive lighting represented a considerable investment. But no more! *Standard* Litecontrol fixtures held costs down here as they have elsewhere in many other bank, school, office and store installations.

Litecontrol series 3500RS rapid start troffers were used with Holophane low brightness lenses in hinged doors with Trigger Catches. Note how well the orderly but interesting rectangular fixture arrangement blends with the clean lines of the counters and furnishings.

"Litecontrol" is a good name to remember whether you specify, design or install lighting equipment — and quality, cost and upkeep *all* have to be right!

INSTALLATION:
Philadelphia National Bank, Lansdale Office, Lansdale, Penna.

DESIGNED BY:
The Cunneen Company, Philadelphia, Penna.

ELECTRICAL CONTRACTOR:
Swartley Brothers, Lansdale, Penna.

FIXTURES:
Litecontrol #3524RS and 3548RS (lamps in tandem) with Holophane #9016 lenses

INTENSITY:
55 Footcandles in Service

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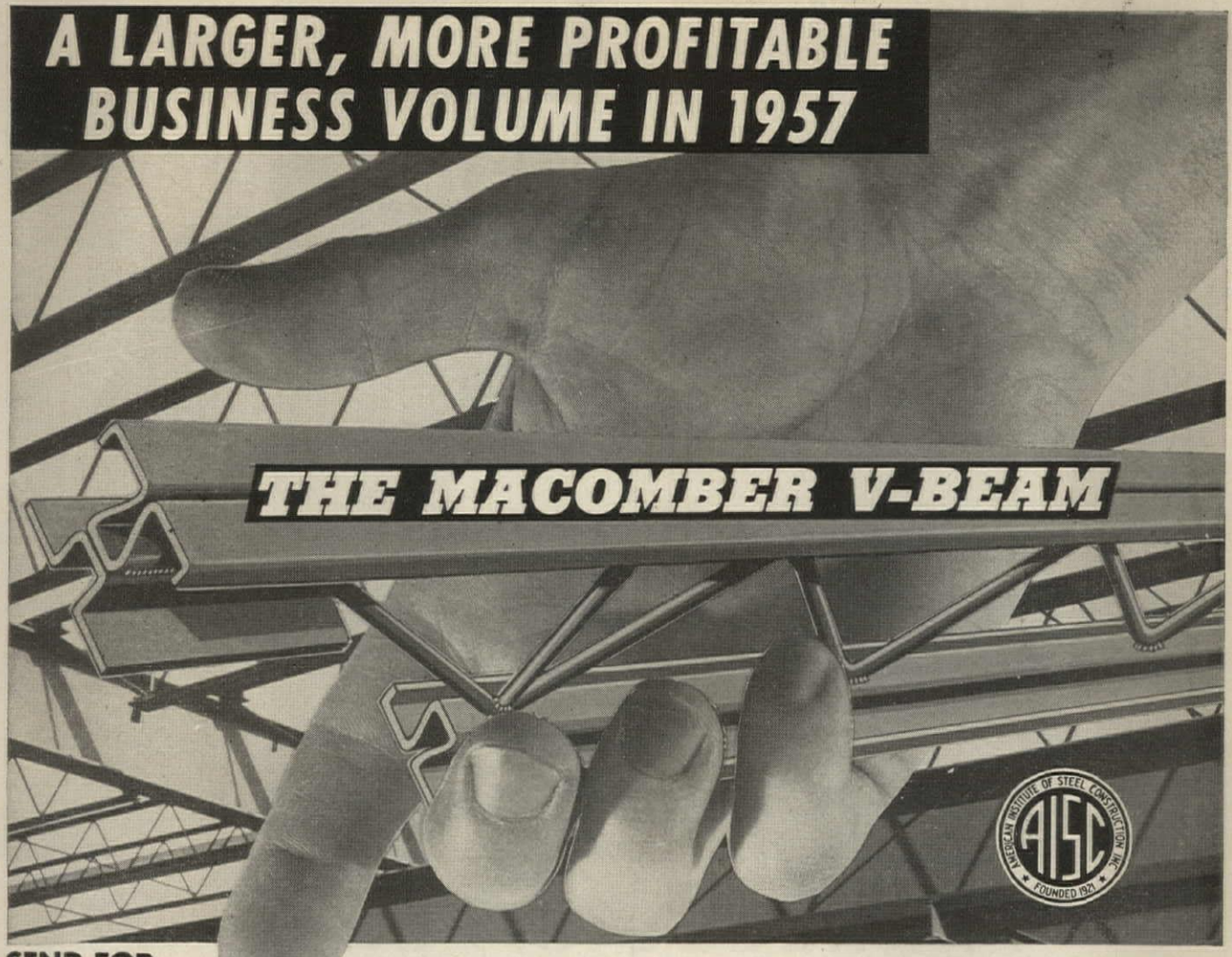

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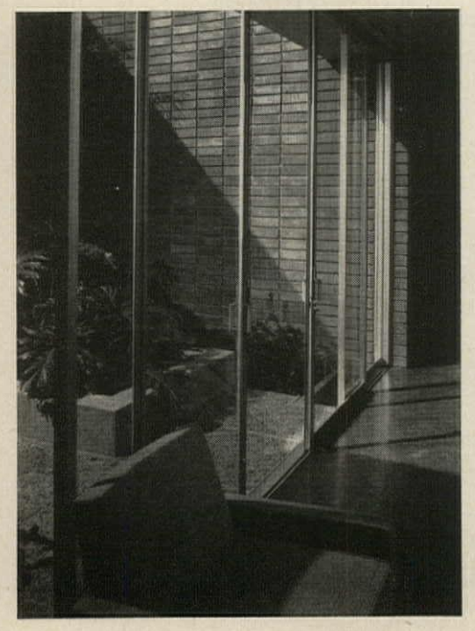

General offices of Arcadia Metal Products, Fullerton, California. Note the complete freedom from distortion even at this extreme angle. Architects: Jones & Emmons, Los Angeles.

The use of sliding glass doors in an office building was unheard of a few years ago. Yet see how bright and airy they make these working quarters!

Because doors require large lights of glass, it is important that they be polished *plate* glass. And the finest, most distortion-free plate glass made in America is *Parallel-O-Plate*. *Twin-ground* for more perfect parallelism, it is manufactured only by Libbey·Owens·Ford. It is available at no higher cost than ordinary plate glass.

Your clients will appreciate the trueness of vision provided by *Parallel-O-Plate* in windows, too. They will be glad you specified the best.

If you'd like a few more specifics, read the column at the right.

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PARALLEL-O-PLATE GLASS

Finest plate glass made in America...

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

RESEARCH *cont'd.*

drip, and the "rule" of one extra turn for vacation absences. The better valves gave as many as 50,000 closings before showing as much wear on the rubber parts as developed in some valves in a few hundred closings. Buna rubber was found to give the highest wear resistance.

Plastic pipe

Until asbestos cement pipe came along, the high corrosivity of the alluvial, marshy soil in Emden, Germany, caused constant maintenance and replacement of buried water pipe. The new pipe is proving satisfactory for mains, but as building service pipe of small diameter, it is easily broken and therefore impractical. Polyvinylchloride piping has now been tried with very good results. Pipe friction of the plastic is about 28% of that for iron pipe, and the service of the plastic pipe to date suggests a life of at least 50 years. Socket-type joints cemented at the site were used.*

A trouble spot in the use of plastic piping has been the connector at unions with metal pipe, fixtures and appliances. Flange-type connections are the only solution recommended by most plastic pipe producers. However, tests in England have proved a new stud union with a rubber sealing ring, split collet, and cap provide a screw-type connector that withstands greater pressures than the pipe can take.** These connectors are to be produced in a size range of 3/16″ to 6″.

Water heaters

In the past five years, the National Assn. of Plumbing Contractors has sponsored a series of research projects at Iowa State University on the operation of water heaters. Most recently completed is a study of temperature distribution in a 120 gal. hot water storage like those commonly used for apartment and commercial and industrial buildings. The report, to be available from NAPC soon, indicates that effective storage capacity of the tank can be reduced as much as 40% below optimum simply by improper installation. The greatest single factor in assuring maximum utilization of storage capacity is the arrangement of the piping circuit between water heater and storage tank. Circulation rates and rates of heating have no important effect on temperature distribution. In the best piping circuits, the line from the heater enters the tank at one end near the bottom and the return line leaves the tank for the heater near the bottom of the opposite end. The hot water supply line should be connected to the top, opposite the inlet pipe.

* Reinholdt, W., "Trinkwasser-leitungen aus Kunststoffen," *Werkstoffe und Korrosion*, 1955, No. 10 (German)

** High Pressure Components, Ltd., West Drayton, Middlesex, England

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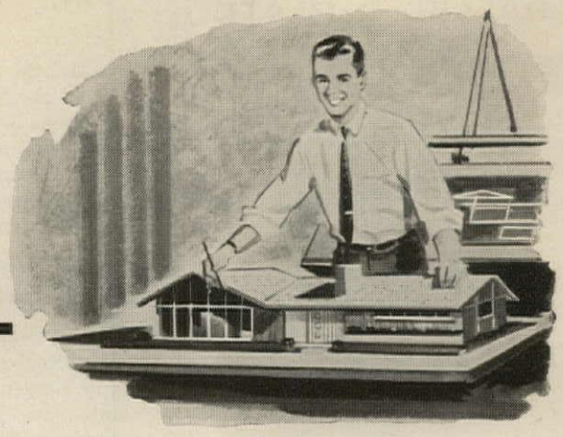

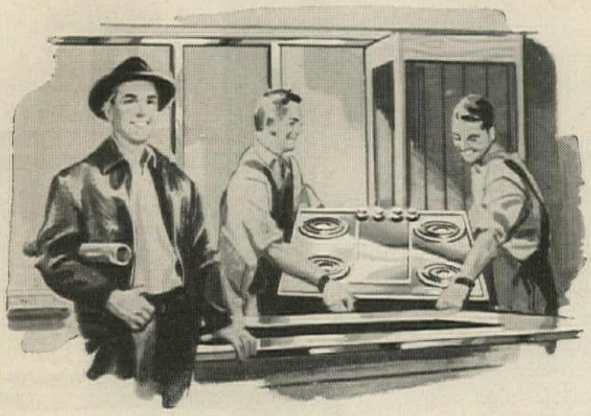

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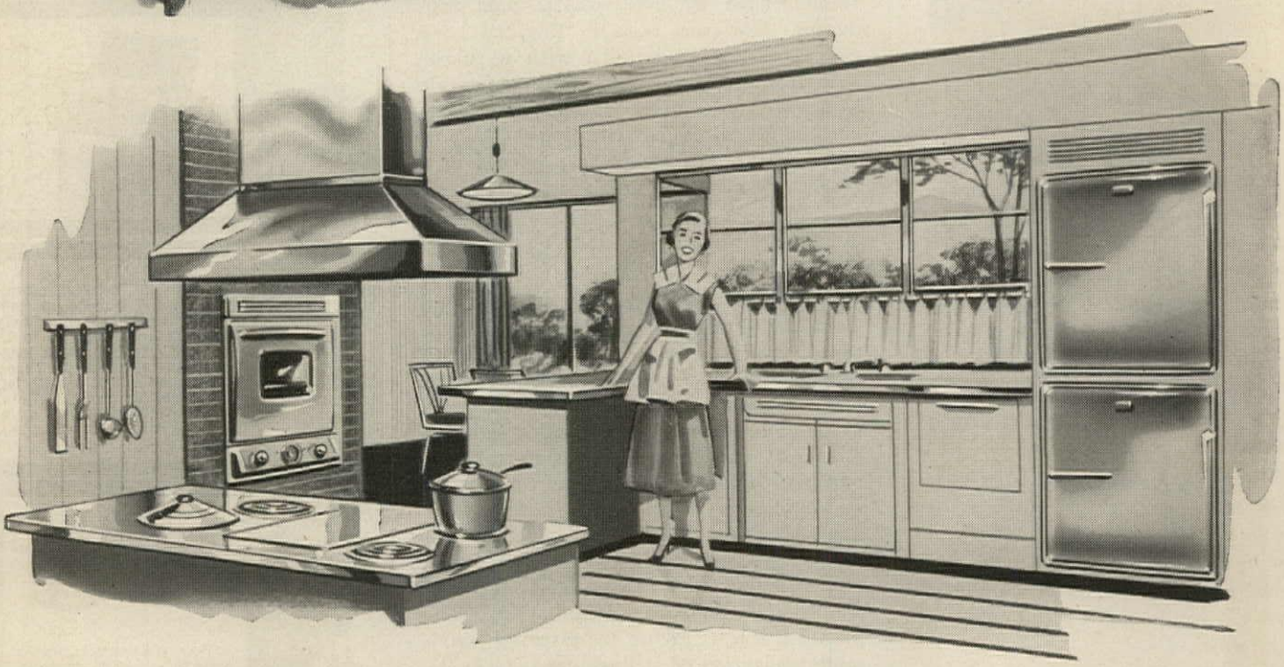
THE BUILDER has had long experience with Stainless Steel. It's easy to install, does not chip or peel, and its beautiful finish presents no problem on matching or replacement.



the owner likes living with Stainless Steel. It's always gleaming and beautiful, cleans with a wipe, and lasts forever. And, to complement her kitchen she loves to own those shiny pots, pans, tableware, and appliances, all made of Stainless Steel.

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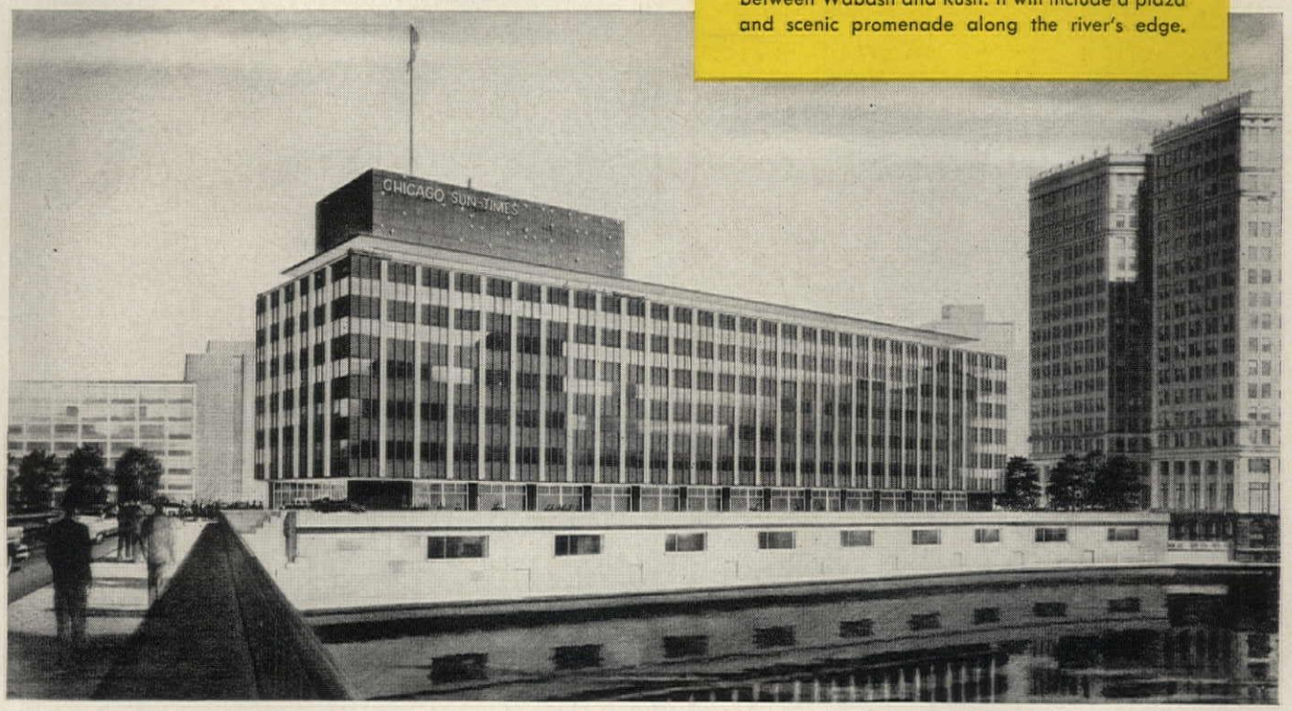
CHICAGO SUN-TIMES

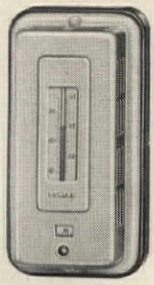
Modern $15,000,000 building now being erected on the north bank of the Chicago River between Wabash and Rush. It will include a plaza and scenic promenade along the river's edge.



Air Conditioning throughout

America's most modern newspaper plant

will be regulated by a **POWERS** *Automatic temperature and humidity control system*



Symbol of Economy and Quality Control

High speed production of 120,000 newspapers an hour will be aided here by the combination of an outstanding modern building and the latest mechanical equipment designed for maximum efficiency.

In the building's ten acres of air conditioned space, Powers control will play an important role by providing ideal indoor weather for administrative offices, editorial, art, typesetting and engraving departments and pressrooms. Color Printing in close register especially demands the precise temperature and humidity control assured by a Powers system.

If You are Planning a New Building or remodelling an old one, ask your architect to include a Powers Quality system of temperature control. You will help insure utmost comfort and lowest upkeep cost.

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U.S. Capitol • UN General Assembly Hall • New York Times • St. Louis Post Dispatch • Rockefeller Center • Madison Square Garden • New York and Toronto Stock Exchanges • Lever House • Radio City Music Hall • New York City Coliseum (c85)

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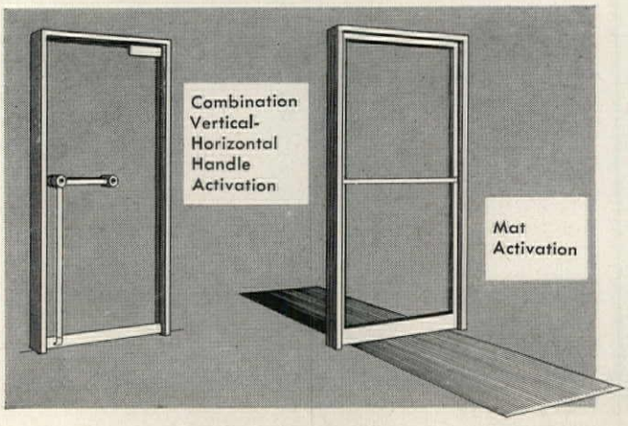
65 Years of Automatic Temperature and Humidity Control

HERCULITE®

Here, at the Ninth Federal Savings & Loan Association of New York City, New York, Pittsburgh's Herculite Doors were used, together with the Pittcomatic—"the nation's finest automatic door opener"—in a fine job of remodeling. These doors give the building a modern, inviting appearance. Herculite is made from Pittsburgh Polished Plate Glass, subjected to a special tempering process making it four times stronger than ordinary glass of the same thickness. Architects: Bank Building & Equipment Corp. of America, St. Louis, Mo.



The PITTCOMATIC®

opens doors at a touch!

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

Typical Pittcomatic Installations

For detailed information on Pittsburgh Doors, see Sweet's Architectural File . . . Sections 16a and 16d . . . or write direct to Pittsburgh Plate Glass Company, Room 6422, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

Pittsburgh Doors

are preferred for their beauty,

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When you specify Pittsburgh's *Herculite or Tubelite doors, you are certain of getting entrances that are unsurpassed in their architectural flexibility, handsome appearance and long life. From coast to coast, these doors have been utilized in thousands of installations. Their utter dependability is thus well known to architects and builders everywhere. Whether your requirement is for a single door or a multi-unit entrance, you will find it wise to insist upon* Pittsburgh *being installed.*

TUBELITE®

This interesting remodeling job of "The Man's Shop" at Harlingen, Texas, features Tubelite doors at the entrance. The selection of Tubelite doors was logical, because they adapt themselves to the architectural needs of the building perfectly. These doors are distinguished by their simplicity of design. They are a decided advancement in hollow metal entrance design. They have a unique interlocking feature which assures utmost rigidity. Quickly and easily glazed and installed, they offer the greatest value at moderate cost.

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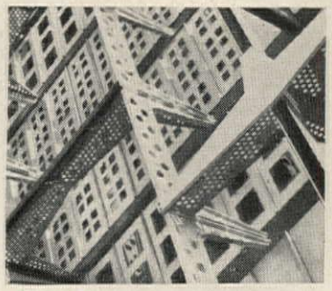
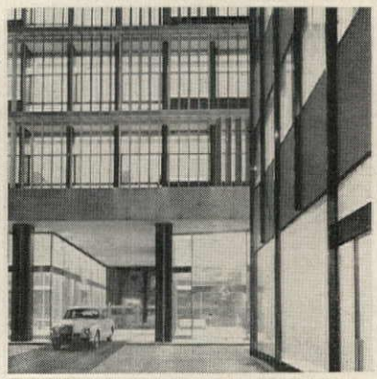
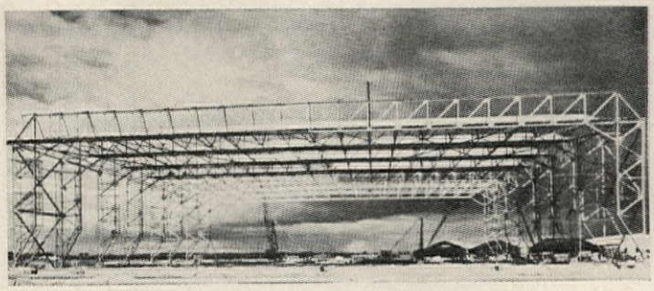
BOOKS



Exposition hall, Lille, France



Olivetti office building, Milan, Italy



De Havilland hangar, Hatfield, England

ALUMINUM IN MODERN ARCHITECTURE. Vol. 1 by John Peter. Vol. 2 by Paul Weidlinger. Published by Reynolds Metals Co., Louisville, Ky. 256 pp. and 341 pp., respectively. 9" x 9". Illus. $25 for both volumes

This book is a milestone in architectural publishing. Time was when commercial or industrial sponsorship of architectural literature abounded in things that made you wince. Here quite the contrary is the effect: far greater resources seem to have been lavished on these two volumes than the independent writer usually commands, and editorial responsibility has been commensurate.

VOLUME I—BUILDINGS

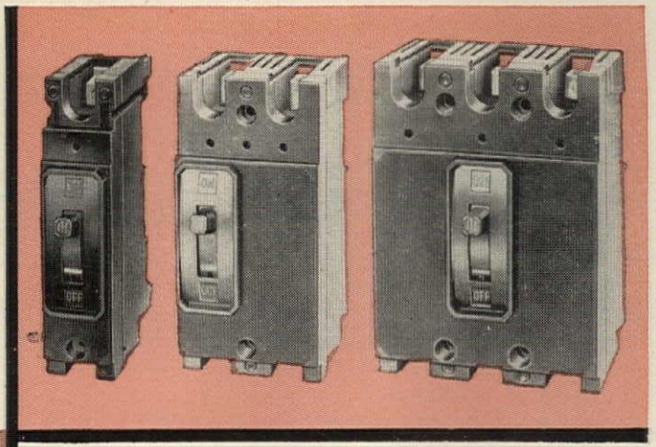
Aluminum has come a long way since Emperor Napoleon III equipped his Currassiers with aluminum armor, although he could have saved money with gold. Aluminum in those days, about 100 years ago, cost $545 a pound. By now the use of aluminum in buildings is so common that the publishers, by simply not being greedy, have been able to assemble in volume I what appears at first sight to be simply a compendium of the world's outstanding postwar architecture, and lo there is some use of aluminum in it all. The uninhibited selections of Editor John Peter are illustrated in handsome photographs (most of them specially commissioned and fresh), excellently printed and expertly annotated. A welcome feature is use of many examples from abroad. The volume of good work from France, in particular, is a surprise.

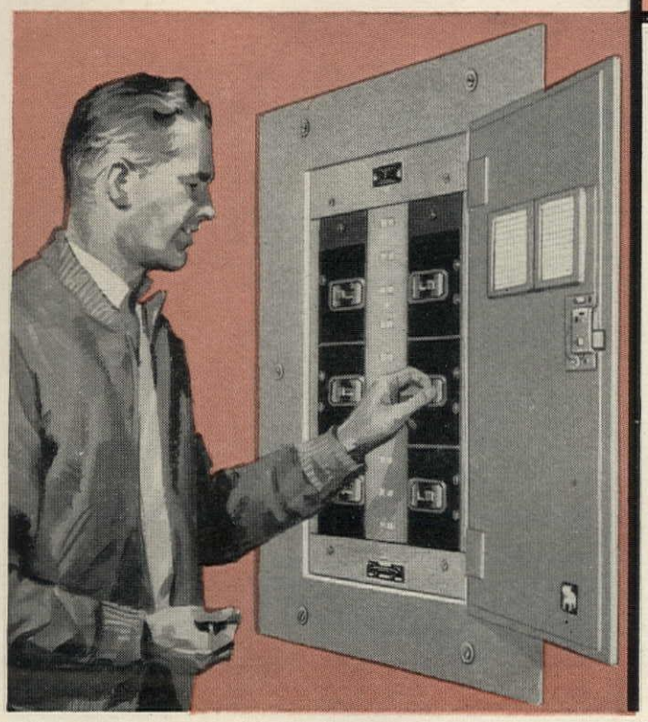
In keeping with the public-service view of the corporation's job, Reynolds makes no sales pitch at all. In truth, aluminum itself seems to need less selling today than architecture does. Reynolds has done well to include the Alcoa building, owned and built by their big competitor.

As dessert Volume I offers taped interviews with 26 important US architects. Inclusions and omissions might be disputed on the basis of individual taste but the best ones are there. Once again, the producer has transcended himself in letting many of the architects talk fascinatingly about not only aluminum but arch-

continued on p. 204

I-T-E MOLDED CASE TYPE 'ET' CIRCUIT BREAKERS cover a range of needs, from the 'E' Frame 100-Amp 1, 2 and 3 pole breakers shown at the right to 'L' Frame 600-Amp 2 and 3 pole breakers.





BULLDOG POWER PANELS—

Compact Control Centers

FILL NEEDS UP TO 600 AMPS SAFELY AND EFFICIENTLY

Here's the way to get an efficient nerve center for any commercial or industrial building. Compact BullDog Power Panels mount on walls where space is at a premium, and are designed for speedy, less costly installation. When you install BullDog Circuit Breaker Power Panels you get the last word in positive control and safety, plus all the performance 'extras' of famed I-T-E molded case ET circuit breakers.

The molded case breakers provide unsurpassed over-current protection—with the ability to safely carry continuous current rating indefinitely. The magnetic, instantaneous trip insures split-second protection against shorts—while the thermal time-delay trip guards against overloads.

Whether operated manually or automatically, you can count on these breakers to perform repeatedly with high efficiency, complete safety and low watts-loss! Whatever your needs, BullDog Power Panels meet them—from 100-amp light-duty to 600-amp heavy-duty service.

Ask your electrical contractor or BullDog field engineer—or write BullDog Electric Products Co., Detroit 32, Michigan.

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Important factors to watch when . . .

INSPECTING RESILIENT FLOOR INSTALLATIONS

Flooring installations usually call for no more than four inspections. First is the inspection of the subfloor prior to installation of the finish flooring. Then the materials should be inspected, followed by an inspection of the resilient floor during installation. Finally, the completed work should be inspected.

The following information and the accompanying chart – which outlines the special factors requiring attention for various types of subfloors and finish floors – should be helpful to the architect in timing his inspections.

Inspection of subfloors

The condition of the subfloor has an important bearing on the appearance as well as the life and serviceability of a resilient floor. Subfloor inspection should be made immediately before the installation of the resilient floor.

New concrete subfloors. It is important that all new concrete subfloors be thoroughly dry, clean, and cured to a hard, non-powdery finish. Dampness or a powdery surface will prevent effective bonding of the adhesive to the subfloor. Concrete subfloors should also be free of expansion joints, trowel marks, and other imperfections. A smooth subfloor is important, since irregularities will show on the surface of the resilient flooring material and high spots will receive excessive wear.

Old concrete subfloors. Inspect for proper filling of holes, cracks, and the leveling of uneven areas. The slab should be thoroughly dry and free from oil, paint, varnish, dirt, and other foreign matter.

New wood subfloors. Where resilient floors are to be installed over new wood subfloors, the architect should check his construction specifications against the manufacturer's recommendations as to construction with single, double, tongue-and-groove flooring, or hardboard or plywood underlayments. Major changes from the manufacturer's recommendations may call for individual recommendations for the proper installation of the resilient floor selected. Armstrong Architectural-Builder Consultants are always willing to work with architects on such special recommendations.

Old wood subfloors. All loose boards should be renailed and all badly worn or damaged boards replaced. Uneven areas should be sanded or properly filled with a floor fill. Sanded wood floors should be sealed to prevent warping due to absorption of moisture from adhesives. All previous finishes, oil, dirt, and foreign matter should be completely removed.

Inspection of materials

Before the flooring contractor starts the job, all resilient flooring materials to be used should be inspected for quality, color, and type as called for in the architect's specification. Particular attention should be given to the types of lining felt and adhesives to be used, especially if the contract agreement or the architectural specifications permit the use of underlayments and adhesives other than those recommended by the manufacturer.

Inspection of the installation

Poor workmanship, such as careless cutting and fitting, is best corrected early in the job—and inspection of the resilient floor during installation can avoid costly repair and correction later.

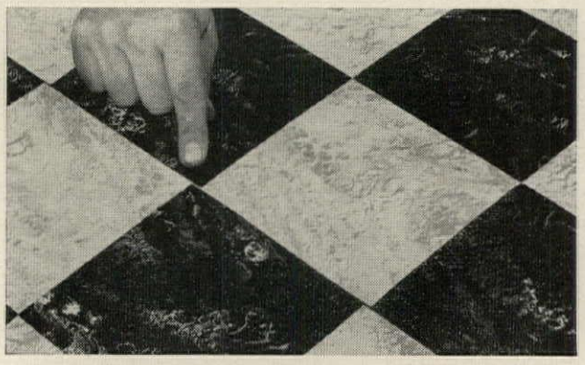
One of the most important operations in the installation of linoleum, plastic sheet flooring, and the majority of resilient tiles is the "rolling" process. This should assure a smooth, even bond to the underlayment by eliminating air bubbles, ripples, and uneven areas. The time required for proper rolling should not be shortened in order to speed the completion of the job, as this operation is vital to a satisfactory installation.

In areas where marbleized or patterned linoleum or Corlon plastic sheet flooring is being used, particular attention should be paid to seam matching.

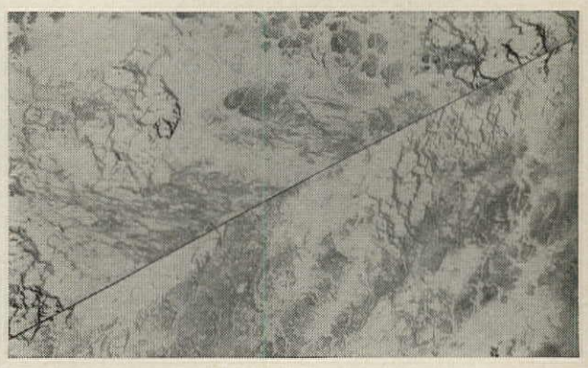
In resilient tile installations, all tile edges should be tight to the floor, and joint lines should be symmetrical and even.

Inspection of special installations

The preceding paragraphs cover inspection details ordinarily encountered in checking resilient floor installations over wood and concrete subfloors. The inspection of resilient floors over other types of subfloors – such as magnesite and metal – or of floors employing special techniques – such as the use of metal strips in conjunction with resilient floors for decorative effect – is governed by individual circumstances. In such cases, architects should not hesitate to call on Armstrong, their local Architectural-Builder Consultants for assistance.



Poor joint or seam alignment mars the appearance of any resilient floor. It occurs most often in tile installations. Because Armstrong resilient tiles are die-cut to perfect squares, this condition is eliminated, if the room has been squared off and the tiles are carefully laid.



For the proper appearance of certain linoleum floors—Marbelle, Textelle, Spatter, and directionally grained designs—strips should be turned end for end before installation. This enhances the beauty of the design and eliminates the illusion of "raised seams," shown above.

PRE-INSTALLATION INSPECTION

Type of Subfloor	Inspect for	Floor Should Be
NEW CONCRETE	Proper curing and drying. Absence of moisture or dampness.	Free of expansion joints, trowel marks, grease, dirt, or foreign matter. Free of imperfections. Hard, dry, and non-powdery.
NEW WOOD	Compliance with flooring specifications of maker as to construction in single, double, tongue-and-groove flooring or board-type underlayment.	Smooth, dry, and free from grease, dirt, or foreign matter.
OLD CONCRETE TERRAZZO CERAMIC TILE	Soundness, dryness, and necessary repair.	Level, free from cracks, holes, paint, varnish, and other finish. Also free from oil, dirt, and other foreign matter.
OLD WOOD	Renailing, replacement of worn or damaged boards, necessary filling of holes and cracks.	Sanded smooth, free of paint, varnish, oil, or other foreign matter. Sealed to prevent warping due to absorption of moisture from adhesives.

INSTALLATION INSPECTION

Type of Resilient Floor	Inspect during Installation for	Check Finished Floor for
LINOLEUM CORLON	Proper installation of lining felt. Proper matching of pattern at seams. Neat cutting and fitting around pipes and fixtures. Thorough rolling.	Over-all appearance. Free of air bubbles from inadequate rolling. Tight seams. Proper cleaning and waxing.
ASPHALT TILE EXCELON TILE RUBBER TILE CUSTOM CORLON TILE LINOTILE LINOLEUM TILE	Symmetrical joint lines. Tight joints. Proper tile laying (free of adhesive between tile joints). Thorough rolling of Rubber Tile, Custom Corlon Tile, Linoleum Tile, and Linotile. Neat cutting and fitting.	Over-all appearance. Tight joints. Properly bonded tile. Proper cleaning and waxing.
CORK TILE	Symmetrical joint lines. Proper finishing where unbeveled and unfinished Cork Tile are used. Thorough rolling.	Over-all appearance. Smooth surface. Tight joints. Proper cleaning and special waxing.

Here is an example of perfect workmanship in seam cutting and pattern alignment. The joint between two pieces of linoleum runs diagonally from top to bottom through the center of the picture. It is barely noticeable because the repeat of the design was correctly matched.

ARMSTRONG CORK COMPANY makes all types of resilient floors for all types of interiors. Almost any flooring problem can be met with one or more of the floors in the Armstrong Line. As a result, we have no special bias toward any one type and can offer architects impartial recommendations on any flooring problem. Our main interest is to aid you in making a sound flooring selection.

Armstrong Architectural-Builder Consultants throughout the country are glad to assist architects and make specific recommendations for individual jobs. Your Armstrong representative has a wide variety of experience and training in resilient flooring. He can also call upon the Armstrong Research and Development Center and the Armstrong Bureau of Interior Decoration for assistance.

For helpful information on any flooring question, call your nearest Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, Lancaster, Penna.

PLASTICS

IMPERIAL* CUSTOM CORLON® TILE
CUSTOM CORLON TILE
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DECORESQ® CORLON
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RESILIENT TILES

ASPHALT TILE
Standard
Greaseproof
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LINOLEUM TILE

*TRADE-MARK

BOOKS *cont'd.*

itecture. Among the aphorisms that will bring debate is the closer, Mies van der Rohe's saying: "I do not like to be so very interesting. I want to be good."

VOLUME II—TECHNOLOGY

The use of aluminum has incredibly changed since it was a rare metal on a par with gold. Now that structures, including bridges, are built with it, and aluminum aircraft are a prime source of instruction to the building industry, aluminum is a subject for careful engineering—and the technology of aluminum construction is the subject of Volume II. It is written by Paul Weidlinger, a member of that small group of truly creative American engineers which is endowed with esthetic insight as well as engineering skill.

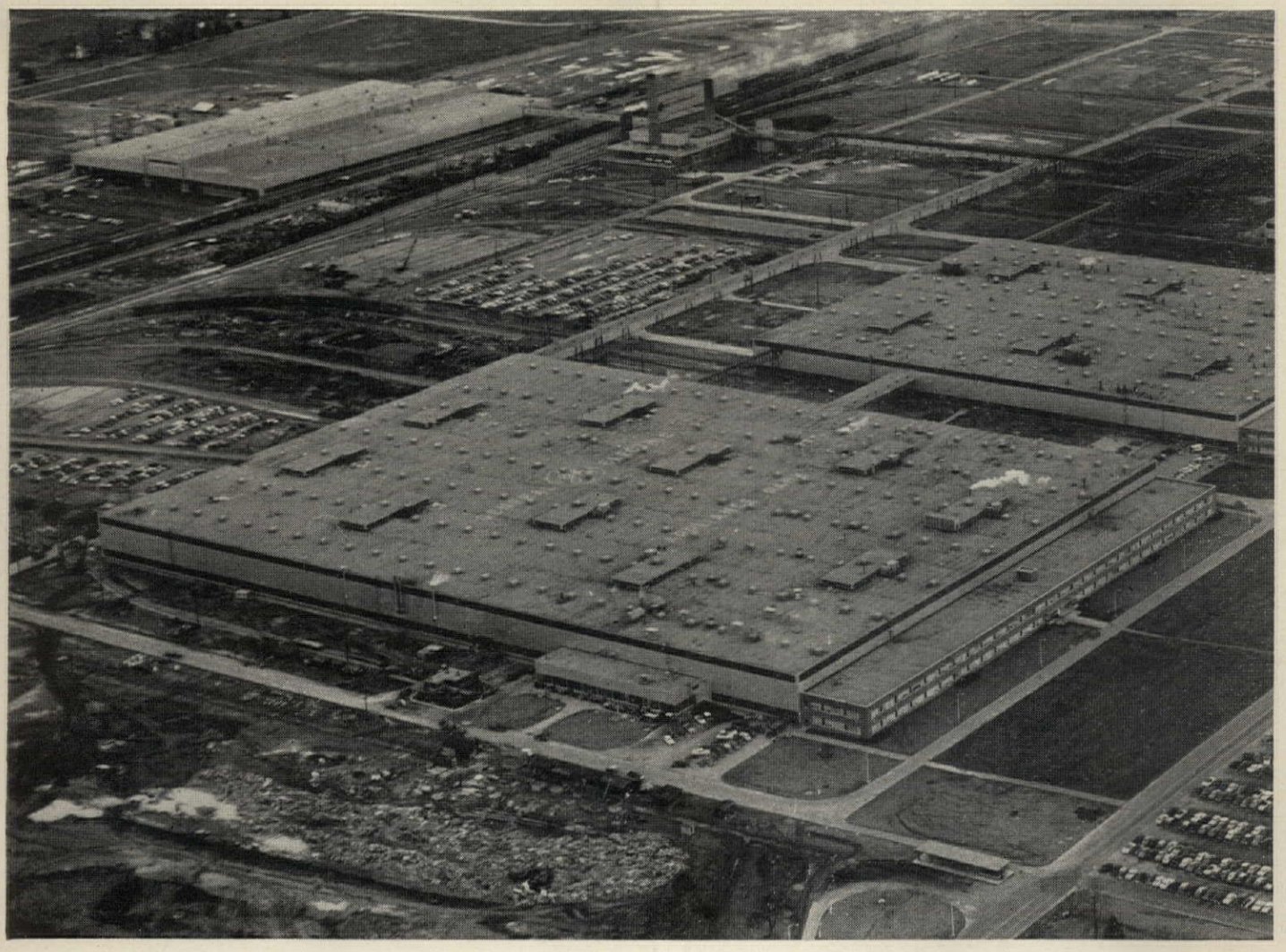
The section of this book which is likely to receive the most careful attention at first is the section on joints and connections. Says Weidlinger, "At present, there are no generally accepted standardized connections in structural aluminum. Thus, design is time-consuming compared to conventional materials." The book goes a long way toward supplying a full complement of these time-conserving needs.

Yet, the more readers penetrate from front to back the better, for this is a rare kind of engineering book for the building industry to have. It treats the building field to the kind of rounded knowledge which industries like aviation habitually expect, but building rarely gets. The book deals with everything pertaining to aluminum: its mining, its processing, its fabrication, its qualities under different conditions of use, and the various classification systems for aluminum alloys.

Because of the author's knowledge of the subject, this should become a popular workbook in a field where too little data has been available. There has been quite a lot of information published about aluminum in the past, but Weidlinger's volume talks in building industry terms, which makes it a valuable addition to building technology.

The publication of this volume is, in fact, a mark of the gradual maturing of the building industry, as a modern industry, and the maturing, also, of corporate procedures among the nation's primary aluminum producers. Reynolds Metals Co., the second member of the big aluminum production team, a company that had its origin in fabrication rather than production, here tests a modern thesis. Leadership can be achieved by a corporation which masters communication. Moreover, the furnishing of exact scientific information has become an expected corporate service. The more of this kind of literature the building industry can obtain, the better it can keep its place in the modern parade.

B.F.Goodrich



Flame-resistant Koroseal guards roofs for General Electric at Appliance Park, Louisville, Ky.

FOR protection against loss of production and property by fire, General Electric used fire retardant Lexsuco roof construction with Koroseal flexible material vapor barrier. Building Number 5 and the Central Warehouse are protected. Since Koroseal *will not* support combustion as conventional vapor barriers do, fire within the building cannot spread or be fed by the roof.

Factory Mutual tests prove that the Lexsuco roof vapor barrier and securement constructions are fire retardant with a Class 1 rating. You can now have an effective vapor barrier which does not contribute to interior and building damage in case of fire. Flame resistant Koroseal vapor barrier gives positive protection against the spread of fire on the underside of the roof deck.

When you plan a new building, specify the Lexsuco roof constructions with a Koroseal vapor barrier. See one of the local representatives on the opposite page, or for 8 page informative folder, write Lexsuco, 4815 Lexington Avenue, Cleveland, Ohio. Koroseal flexible material may also be used under base constructions or wherever a vapor barrier is required. Koroseal vapor barrier is specially compounded, fire retardant material made by *B. F. Goodrich Industrial Products Company, Marietta, Ohio.*®

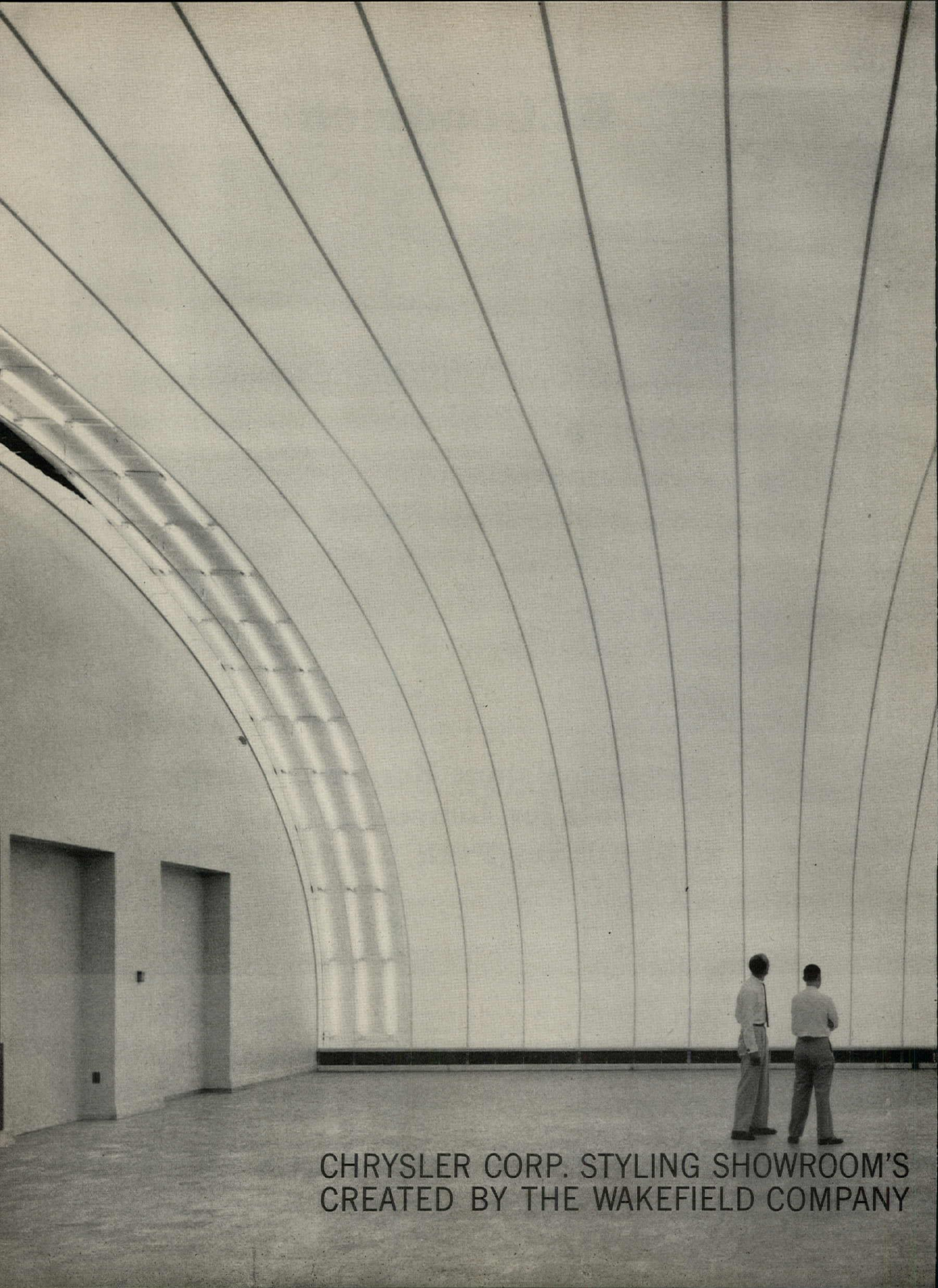
Koroseal

FLEXIBLE MATERIAL BY

B.F.Goodrich

INDUSTRIAL PRODUCTS CO.

MARIETTA, OHIO



CHRYSLER CORP. STYLING SHOWROOM'S
CREATED BY THE WAKEFIELD COMPANY

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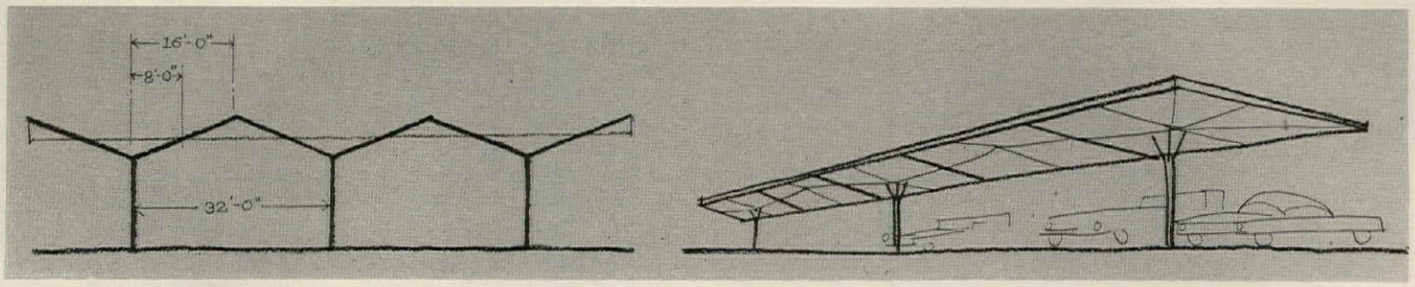
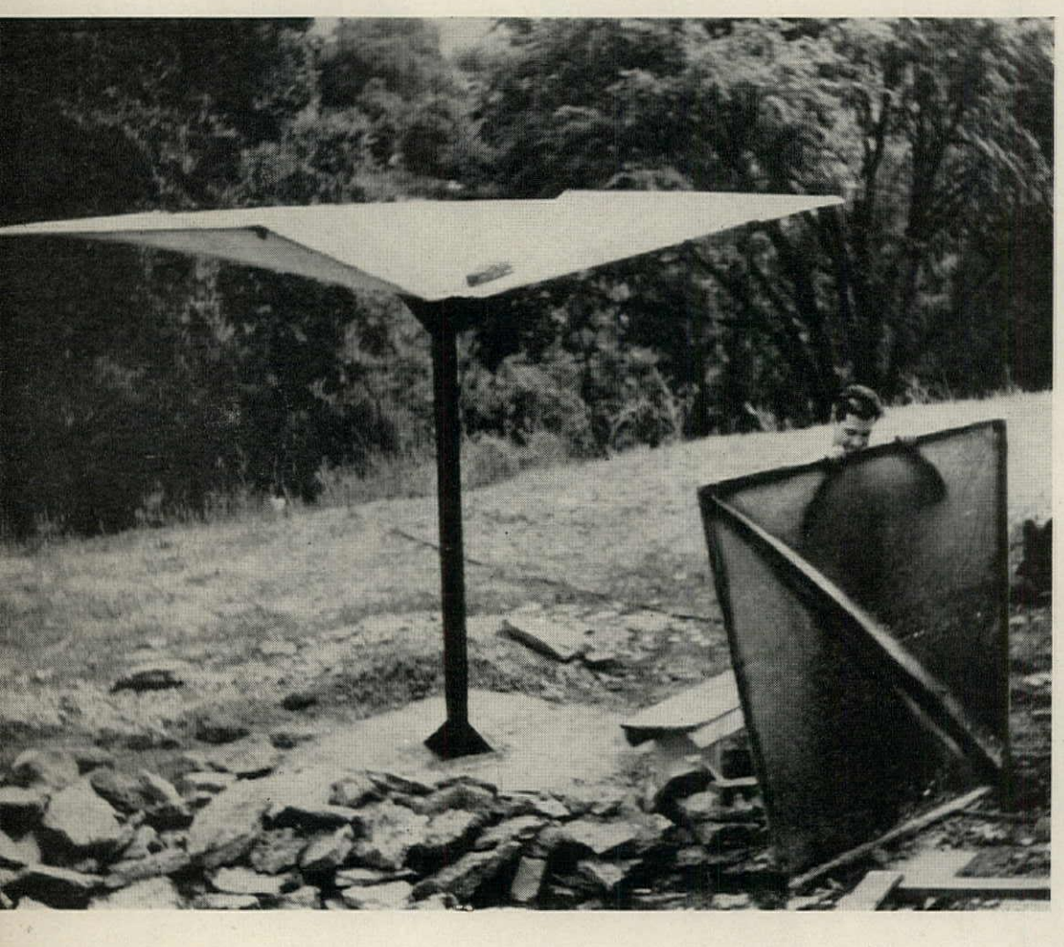
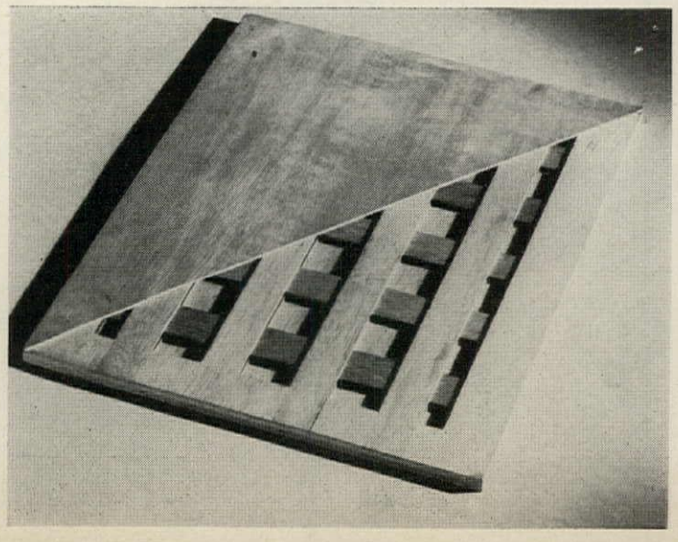




(1) WARPED ROOF of molded plastic supported at 32′ intervals

Except for swimming pools and skylights, no real structural use has been made of reinforced plastic in a mass-produced building item. Scattered technical data on strengths and some misconceptions about the cost of making molds may have slowed its acceptance. Designers and builders—even fabricators—weaned on metal building parts feel that huge quantities of a thing have to be made before it becomes economically feasible. While true for metal stampings the rule does not always hold for plastics. Two young architectural designers, Don Colucci and Rudy Hermes, are taking advantage of the relatively inexpensive dies needed for forming large polyester and glass-fiber sections to make up batches of a translucent roof they engineered and are patenting. Each 8′ x 8′ section is technically a hyperbolic paraboloid. Suitable for covering parking areas, bus stops, and arcades, the quadrants are assembled on the site in alternate groups of four up and four down.

Bolted or welded at the seams with epoxy resin, the thin roof becomes an integral structure supported only at 32′ intervals yet strong enough to carry heavy snow loads. The columns, placed under the downward sections, are hollow and double as drains. Messrs. Colucchi and Hermes figure the roof to sell for $4 a sq. ft.
Information: Hermes & Colucci.



(2) JAPANESE PLYWOOD cuts weight and warpage with grid

Lapped 1″ crossbands of straight grain mahogany work like the grid of a flush door to stablize exotic *Sigeru Board*. The semihollow core lets air inside the panel, and any moisture it carries, circulate, and the wood network prevents twisting. Matching the strength of solid plywoods of the same dimensions, *Sigeru* weighs about 22% less: a ¾″ thickness is 1¾ lb. per sq. ft.; regular plywood, 2¼. Panels are produced 4′ wide x 6′, 7′ and 8′ long with face veneers of rotary and ribbon cut

continued on p. 212

Tests show value of aluminum backing on HUETEX®... THE NEW AND BETTER SPANDREL GLASS FOR CURTAIN WALLS

ALUMINUM,
welded to the back, protects the enamel, reflects heat, insulates . . . an exclusive Huetex feature.

CERAMIC ENAMEL
fused to the back of the glass, adds permanent beauty in the color desired.

TEMPERED GLASS
5/16" thick is textured on the weathering side to subdue bright reflections.

Huetex, because of its unique aluminum coating, shows a much greater resistance to heat flow than similar products without this coating. Tests made at Electrical Testing Laboratories, Inc.* show that the heat loss in winter and the heat gain in summer may be reduced as much as 42% by the thermal effectiveness of this barrier to radiant energy, an exclusive feature of *Huetex*.

Huetex is an ideal low-maintenance, high-quality spandrel material. Lasting beauty is assured by the permanence of ceramic enamel color protected from the elements by glass. And the glass is tempered to increase its mechanical and impact strengths. *Huetex* can be used with a variety of framing systems and insulation. For descriptive folder, write Department H-1126, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

*ETL Report No. 362625, July 23, 1956.

HUETEX GLASS

BLUE RIDGE GLASS CORP.®

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LOF GLASS®

In 12 beautiful standard colors or custom-made to your color sample

PRODUCTS *cont'd.*

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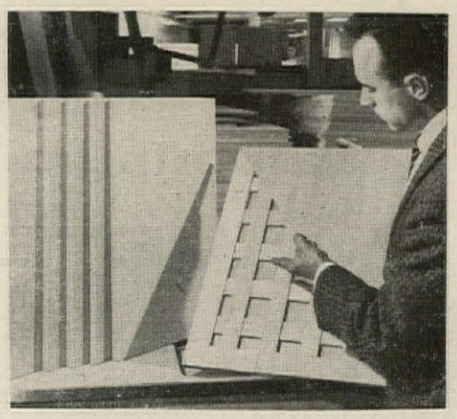
mahogany, sen (a lively Oriental ash), and birch. Prices run about $360 to $520 per M sq. ft. for ¾" thickness in 4' x 8' sheets. Special table top and cabinet door sizes are also available. All precut panels have a 7-ply 2" edge strip for milling and trimming. *Sigeru* is bonded with urea resin for interior applications and with melamine or phenolic glues for exterior. *Distributor:* Getz Bros. & Co.

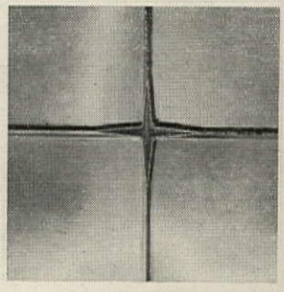


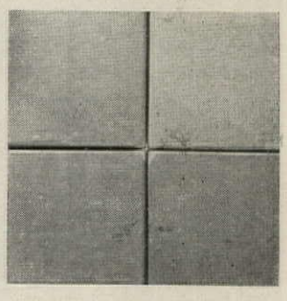
(3) METAL FOLD takes up movements in curtain panels

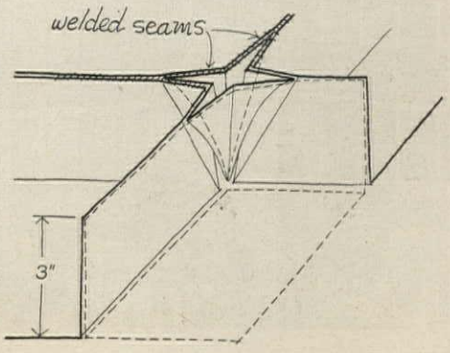
Many in building bemoan dependence on calk for joints but Anaconda's Henry Voegeli has done something. Taking the offensive in a war against gunk, Development Engineer Voegeli worked out details for metal curtain panels and window walls that would be put together mechanically and yet take up building movements without buckling. The flanged panels, of either bread pan or modified batten construction, are connected along the seams by brazing, spot or continuous welding or metal stitching. Each unit measures 4' x 10' to 12' tall and relies on small 2" to 4" quarterfolds of sheet metal at the corners to absorb expansion and contraction. Any changes in the individual panels are taken up by these inserts and not passed on from one part of the wall to another. Except at the 90° corner sections, the flanges are slightly splayed on all four sides to make welding easy from behind and create a V section which behaves like a bellows.

Explaining the expansible intersections to New York City specifications writers in a recent talk, Mr. Voegeli reminded his audience that a ship as long as the Empire State building is high has no expansion joints, and that automobile and aircraft designers have licked buckling problems by working in curves. The proposed calkless panels (approaching working drawing stage for a Toronto office building) do away with any soft jointing material except at the window glass, and

continued on p. 214







Built to Last. Aerial view of Veterans Administration Neuropsychiatric Hospital near Pittsburgh, Pa. All sixteen buildings have Monel nickel-copper alloy flashings and drainage systems. Architects-Engineers: Prack & Prack, Alfred Hopkins & Associates, Bowers & Barbalat. Hospital Contractor: James McHugh Sons, Inc. Sheet Metal Work: Miller & Meyer.

Why the big trend to light-gauge Monel for so many of today's new buildings?

More and more architects are writing three little words into their specifications these days.

The words are "Monel Roofing Sheet." And it's easy to explain *why*.

Monel* nickel-copper alloy is strong and tough. *Stronger* and *tougher*, in fact, than any other non-ferrous roofing metal. It is highly resistant to atmospheric corrosion.

Monel alloy also resists wear and abrasion. Has an average coefficient of expansion, so is less likely to crack under extreme temperature changes.

Because of this combination of properties, you can often specify lighter gauges than are commonly used. And with lighter gauges, of course, the cost of roofing metal per square foot drops measurably!

Another feature — Monel alloy presents no fabrication or installation problems to the experienced roofer. The same tools and techniques employed with other roofing metals work fine with Monel alloy!

So write Monel into every job. For schools . . . hotels . . . factories . . . office buildings . . . hospitals and all other institutions. And don't hesitate to ask for help or advice on a specific job. The Monel Roofing Sheet Distributor in your city is listed under "Nickel" in the "Yellow Pages" of your telephone directory. Call him. Or write to us.

*Registered Trademark

The International Nickel Company, Inc.
67 Wall Street New York 5, N. Y.

No Problems. Good workmanship is as easy to achieve in corrosion-resisting Monel alloy as it is in any other roofing metal. Neither fabrication nor installation of Monel sheet metal roofing requires special tools or techniques.

INCO NICKEL ALLOYS

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

PRODUCTS *cont'd.*

For more data use coupon, p. 236

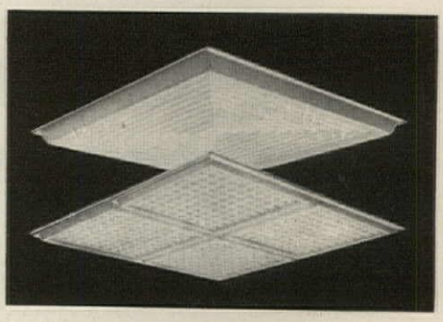
the completely welded skin averts any trouble from water filled updrafts. To prevent moisture from collecting on the panel backs, a 1" air space should be left between panel edges and inside fireproofing. Expansion folds of .032 copper cost about $138 for 120 pieces or about $1.25 each. They can also be made in aluminum and stainless steel.
Information: The Anaconda Co.

(4) SOUND TRAP sops some noises, bats others back and forth

Noise can be tolerable if you can tell where it comes from, say US Gypsum engineers who devised these acoustic prisms to rescue workers engulfed in heterogeneous seas of sound. Absorbing and tossing sounds around, the aluminum-faced *Acoustosorbers* minimize the noise of machinery and bring apparent loudness levels down as much as 50%. Speech communication can fall below shouting and noise sources are identifiable—no small comfort according to the sound psychologists. The 2'-high pyramids are shipped to the job flat and folded into shape along embossed lines like bakery boxes. Each weighs about 1¾ lb. and is wire strung from the ceiling. Installed cost of *Acoustosorbers* runs about 30¢ per sq. ft. of area treated.
Manufacturer: US Gypsum Co.

(5) LIGHT DIFFUSER punched to let through noise and air

Iso-sonic perforated white vinyl panels work in two directions, diffusing light from lamps above and dissipating sounds from below. Room air circulates freely, preventing any heat build-up in the plenum that might throw an air-conditioning system off balance, and helping to prolong the life of tubes and electrical parts by keeping them cool. The vacuum-formed 2' squares fit on standard suspension channels. Because the plastic will begin to distort at 145°F., in case of fire, the panels drop down in plenty of time for sprinklers mounted above to get busy.



On jobs where noise reduction is a major problem, companion panels of clear vinyl

continued on p. 218

SEATTLE ART MUSEUM/ARCHITECTS • YOUNG, RICHARDSON, CARLETON AND DEITLE, SEATTLE/DESIGNER • HARRY C. LYNDE CO., SEATTLE

HONEYLITE®

LIGHT-DIFFUSING ALUMINUM HONEYCOMB

A development of HEXCEL PRODUCTS INC.

951 SIXTY-FIRST STREET, OAKLAND 8, CALIFORNIA

THE FINE ART OF LIGHTING

Whether you're lighting priceless objects, not-for-sale . . .
or merchandise priced for quick sale, Honeylite's gentle but completely shadow-free light makes "seeing" a pleasure.
But Honeylite doesn't stop at being just one of the very best light diffusing elements. Salespeople, and more important, customers will tell you that Honeylite's full air circulation makes a room as refreshingly airy as a summer morning . . .
cool to work in, and fun to shop in.
And Honeylite's gossamer-weight, all-aluminum construction reduces the costly man-hours of installation, and lengthens the life of lighting units.
For price lists and detailed information call your dealer or write to Hexcel Products Inc., 951-61st Street, Oakland 8, Calif.

Early Tile-Tex floors still going strong after a quarter century of hard service

...and today's Tile-Tex H. M. W. (Higher Molecular Weight) Asphalt Tile is even better!

You're looking at some of the very first asphalt tile floors installed anywhere. You can imagine the hard wear they have received in a school, a Y.M.C.A., and a church during all these years. The above floors are still in use and are giving satisfactory service. These photographs were taken late in 1955.

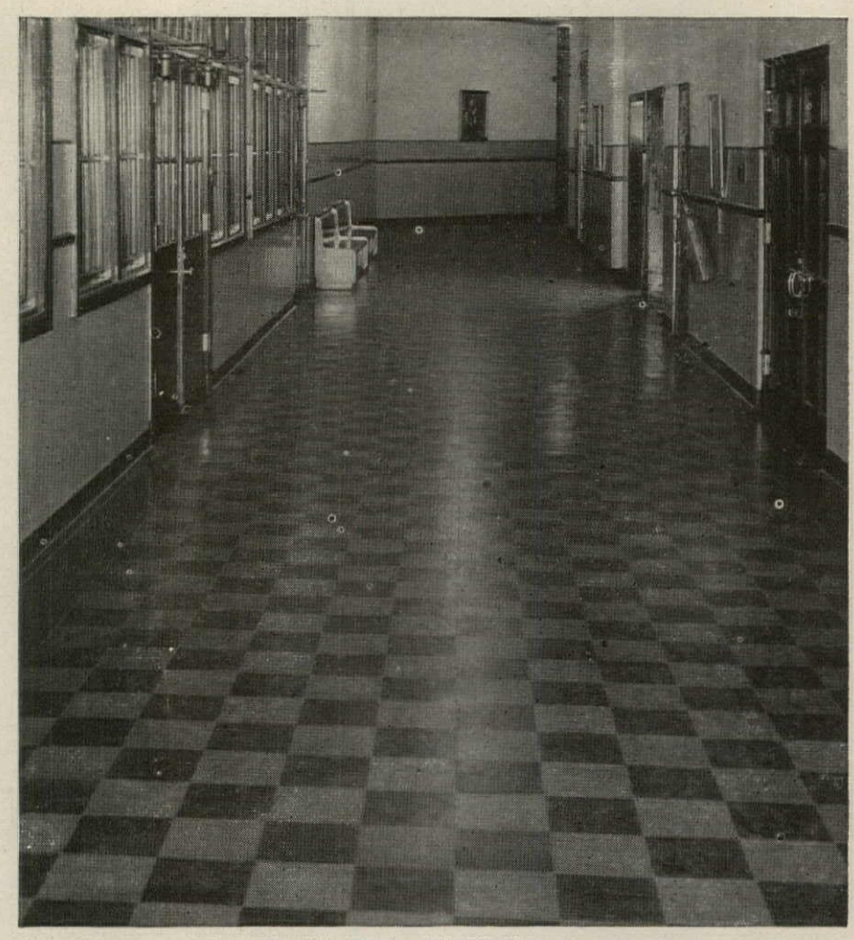
Tile-Tex, in addition to being the pioneer manufacturer of asphalt tile, was the first to make vinyl tile commercially. There are many Flexachrome vinyl-asbestos tile floors throughout the country which are still in use after over 15 years of service.

For the complete line of asphalt, greaseproof, and vinyl-asbestos floor tiles in color—see our catalog in SWEET'S Architectural and Light Construction Files. Or call your local Tile-Tex Contractor . . . he's listed in your classified telephone book. Or write:

THE TILE-TEX DIVISION, THE FLINTKOTE COMPANY
1234 McKinley Avenue, Chicago Heights, Illinois

In the 11 Western states: Pioneer Division, The Flintkote Company, P.O. Box 2218, Terminal Annex, Los Angeles 54, California.

In Canada: The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto.



Over 30 years ago in 1925, the Tile-Tex Asphalt Tile floor pictured above was installed in the Jesse G. Spaulding School for Crippled Children, Chicago, Ill. Photograph used by permission of Board of Education, City of Chicago, John C. Christensen, Architect.

See the TILE-TEX line Booth 817, Coliseum Section, at the →

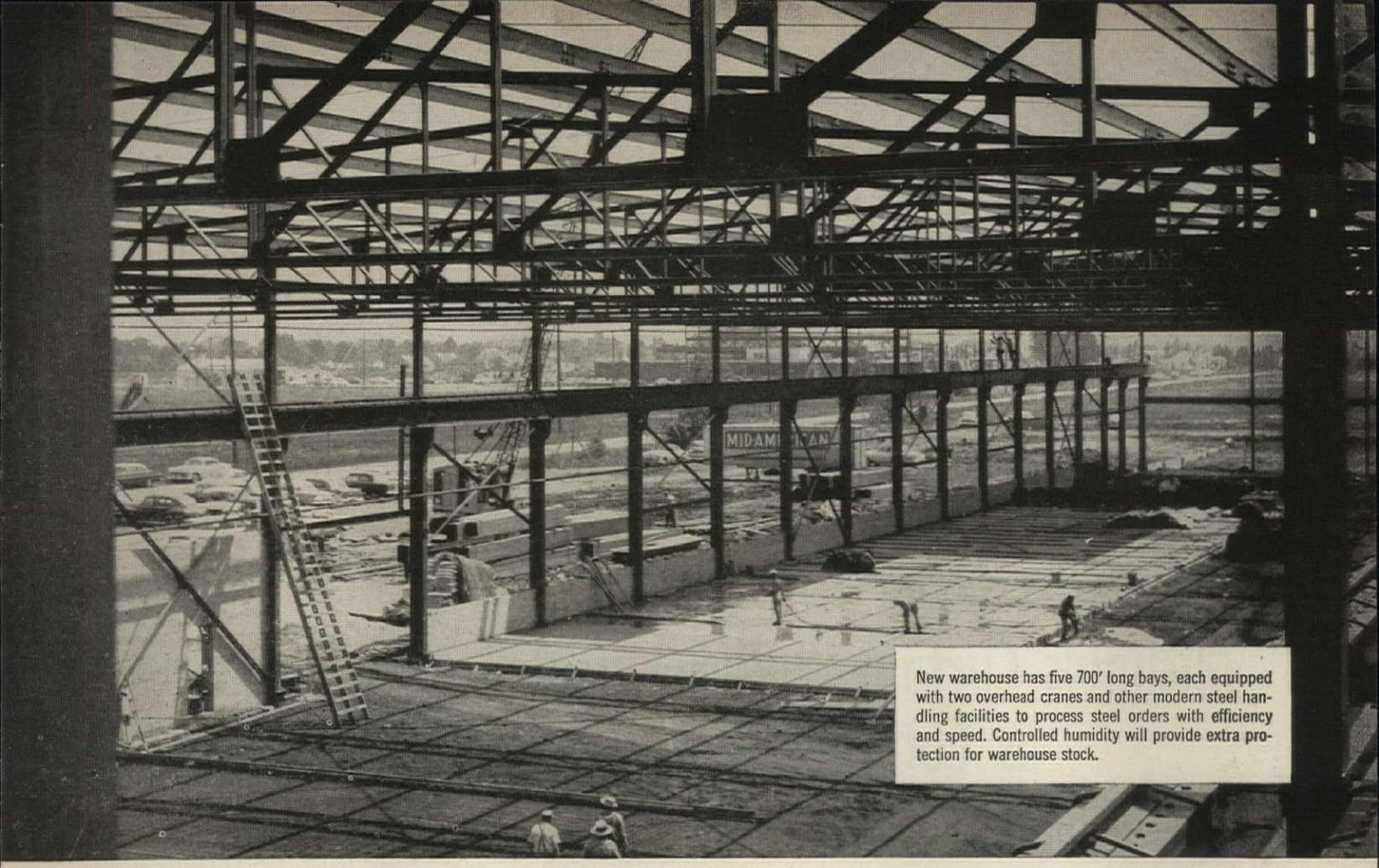
National Association HOME BUILDERS Annual CONVENTION EXPOSITION Chicago January 20-24 1957

In 1930, this Tile-Tex Asphalt Tile floor was installed in this Y.M.C.A. on Bowery Street in Akron, Ohio.

TILE-TEX... *Floors of Lasting Beauty*

Manufacturers of Flexachrome*...Tile-Tex*...Tuff-Tex*...Vitachrome*...Holiday*...Mura-Tex*...Korkolor† ... Holiday Flexachrome*... and Modnar*, the "plank-shaped" asphalt tile.

*Registered U. S. Pat. Off.
†Trademark of The Flintkote Company



New warehouse has five 700′ long bays, each equipped with two overhead cranes and other modern steel handling facilities to process steel orders with efficiency and speed. Controlled humidity will provide extra protection for warehouse stock.

Junior Beams as roof purlins speed erection of ultra-modern A. M. Castle & Co. steel warehouse

Two hundred tons of 10″ lightweight J&L Junior Beams are used as roof purlins in the new $4,500,000 Franklin Park, Ill., warehouse of A. M. Castle & Co., nationally known steel distributor.

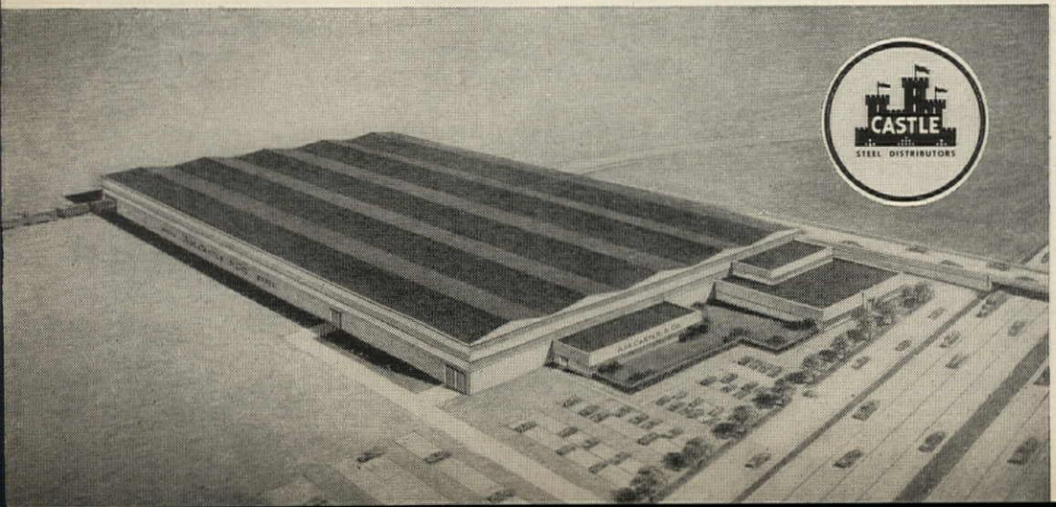
Erection is simple and fast. Junior Beams are cut to length and punched for bolts prior to arrival on the job. Their light weight makes them easy to raise and position. Connections are made with end plates and high tensile bolts.

This ultra-modern warehouse provides an outstanding example of one type of structure where J&L Junior Beams are employed to advantage. Other applications include almost every type of light occupancy buildings. Architects and builders use Junior Beams to develop functional, permanent, safe structures that are low in over-all costs.

Find out more about them today. Write for a free copy of our technical literature on J&L Junior Beams.

Jones & Laughlin
STEEL CORPORATION · PITTSBURGH

The Junior Beams are installed on 8′ centers over 24′ spans. To save steel, 9 lb., 10″ Junior Beams are cantilevered beyond the main trusses.



Over 2,200 tons of structural steel, fabricated and erected by Allied Structural Steel Companies, are being used in this new $4,500,000 steel warehouse at 3400 North Wolf Road, Franklin Park, Illinois.

ARCHITECT AND BUILDER:
Clearing Industrial District, Inc.
Architect, J. S. Cromelin
FABRICATORS: Gage Division
Allied Structural Steel Companies
ERECTORS: Industrial Construction Co.
Division of Allied Structural Steel Companies

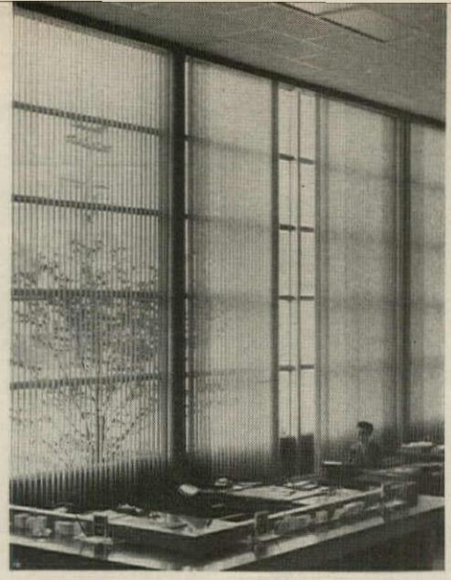
see our catalog in SWEET'S

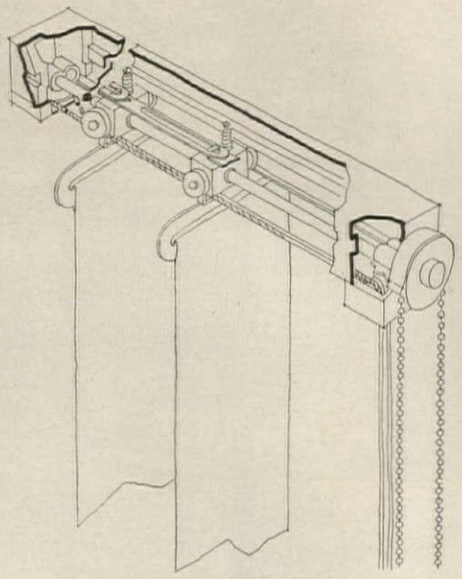
PRODUCTS *cont'd.*

For more data use coupon, p. 236

called *Iso-lyte* can be spaced above the *Iso-sonic* diffusers. Pleated but unperforated, the diaphragmatic top panels bounce sounds around until they are harmless. Cost per square foot for double diffuser and mechanical spacers runs about 85¢ per sq. ft. plus hanging system and installation. Both type panels are coated with anti-static wax to repel dust.

Manufacturer: Iso Industries, Inc.





(6) VERTICAL BLIND draws open without flutter or rattle

Traversing on a new track, *Louverdrape* fabric blinds make an attractive and effective control for regulating light and air as the sun moves around a building. The 2″ to 5″ wide vertical slats are carried across the window on tiny ball bearing carriers and are adjusted as easily as a curtain. Held in tension on slide fittings at top and bottom to avoid sagging and rippling, the blinds can be pivoted when open or shut to any angle in a 180° arc. The louvers are made in several colors of shantung and smooth *Dupont* shade cloth. A 7′-high *Louverdrape* runs about $10 to $12 a lin. ft.

Manufacturer: Vertical Blinds Corp. of America.

(7) PLASTIC RESTS support heavy furniture over fine carpeting

Drearly little wear spots left in carpet by chairs, desks and office equipment can create minor crises in today's fast-shifting office interior. *Carpetmates* many-toothed furniture supports should help save considerable yardage from the scrap pile. Each plastic disc has 100 tapered points which are pushed through the pile of a tufted floor covering without crushing the fibers. Three discs are said to support a grand piano on the finest carpet without leaving any indentations. A set of four of the 2¼″ size suitable for commercial equipment and large furniture costs 49¢. Colors: gray, clear and brown.

Manufacturer: Childlore Co.

continued on p. 220

PRODUCTS *cont'd.*

For more data use coupon, p. 236

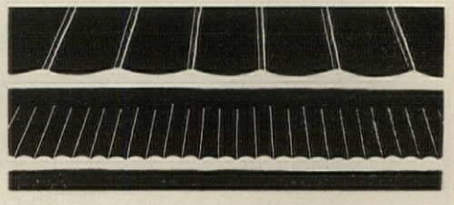
(8) BUILT-UP ROOF goes down cold over old roofing

Monroe Co. reports that its *CPR* cold process roofing can supplant the messy, costly and at times dangerous technique of removing old built-up roofs and hot-mopping on new ones. The heatless method uses *Hold tite*, an adhesive sealer which bonds asphalt-saturated 53-lb. roofing felt to the old surface (and the new felt plies to one another), and *Siliconed Rufferseal*, an asphalt top coat containing long fiber asbestos and penetrating oils. After the single- or two-ply felt is cemented in place, *Rufferseal* is spread on top. An alternate topcoat, *Siliconed Asbestolite* contains aluminum flakes which rise and leaf on the surface to produce a bright, heat-reflectant coat. A new *CPR* roof runs about $13 to $15 a square in place—about half the cost of the older method.

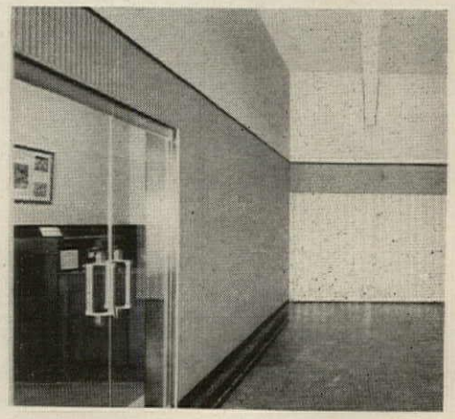
Manufacturer: The Monore Co., Inc.

(9) ASBESTOS PANELS dress up with ribs and flutes

Smooth sheets of good gray asbestos-cement have been around for so long that building designers and owners might think the only way it can be made is flat. One product on the market, an asbestos shingle with cedar grain imprint, indicates that this hard dense material must be somewhat plastic during processing. Slick surfaces are not indigenous to asbestos-cement but to the plates or rollers it is pressed against. (One firm in fact rejects 15% of production because of pitting and



pays more to cart the imperfect panels to the river than for the raw materials.) Now Keasby & Mattison has taken a bold step, among asbestos-cement fabricators, and is casting 4′ x 8′ panels ¼″ thick with two simple vertical rib textures. Sell-



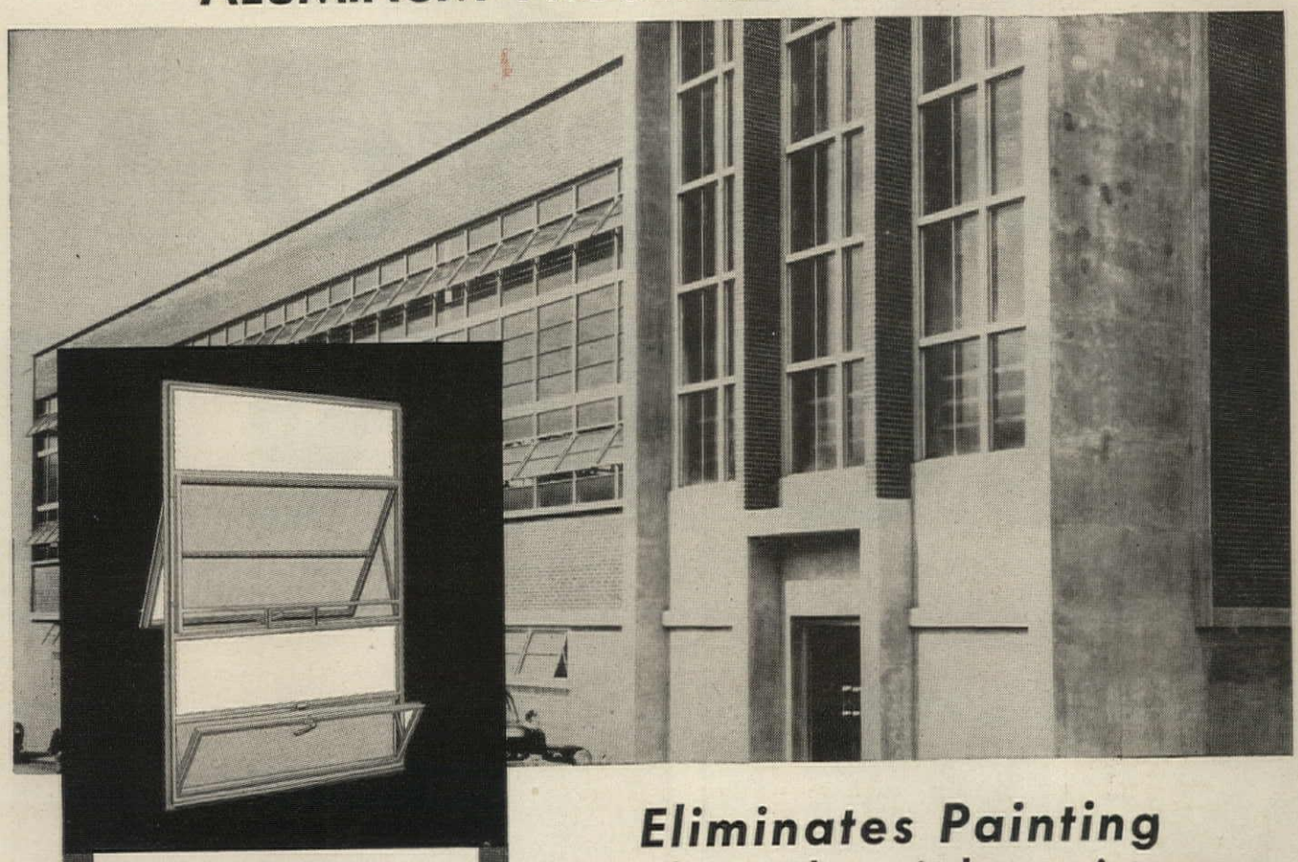
ing for about 19¢ per sq. ft., the new patterns should bring a good deal of the sheet indoors out of the rain (where it still will darken and dry in blotches if left unpainted) for interior partitions. Soffits, fencing and exterior siding are

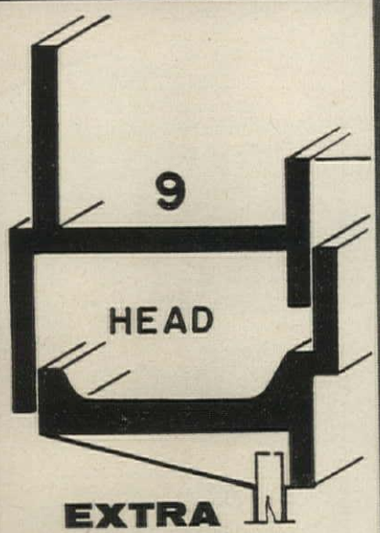
continued on p. 224

Modern Industrial Buildings Call for The Low Upkeep of

BAYLEY

ALUMINUM PROJECTED WINDOWS





EXTRA RUGGED

This full size detail illustrates the rugged, deep sections that give Bayley Windows extra durability. Note deep wall engagement and double weathering contact of ventilators.

Eliminates Painting

and reduces other window maintenance

Today's rising costs demand that every possible cent be saved on building maintenance. Paint elimination of aluminum construction is only one way Bayley Aluminum Projected Windows can cut these costs to the "bone". Their time-tested design offers—

- **Permanence coupled with modern appearance**
- **Simplicity of design—no complicated mechanism**
- **Rugged hardware—simple, apparent operation**
- **Complete and adaptable to all types of construction**
- **Ventilators easily operated—not affected by moisture**
- **Projected-out ventilator gives awning-type weather protection**
- **Projected-in ventilator provides no-draft ventilation**

Years of window specialization qualify Bayley Engineers—backed by most modern manufacturing facilities—to render you most complete window service. Centralize responsibilities by calling Bayley to follow-through, from the very start of your building plans.

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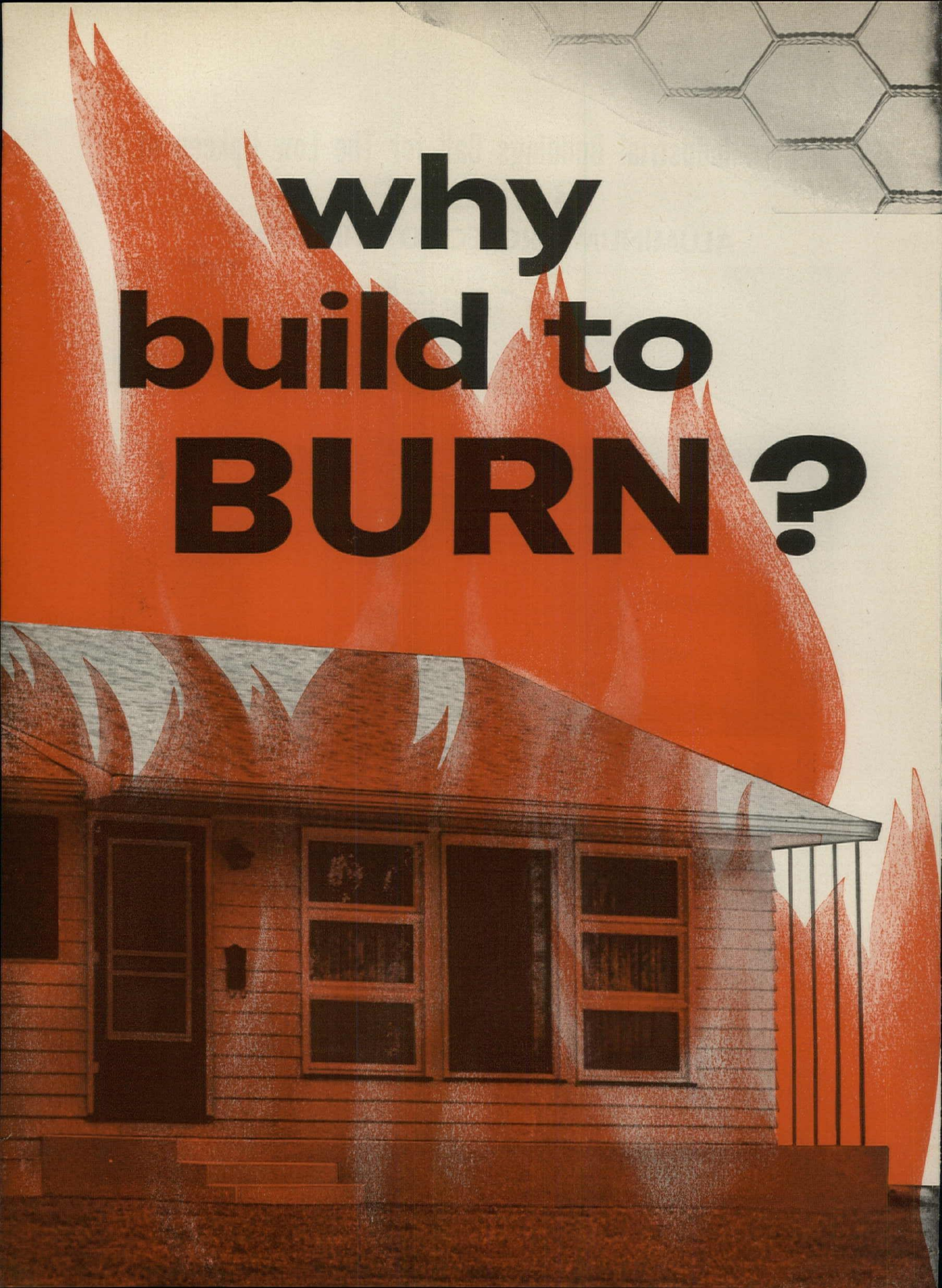
Springfield, Ohio

District Sales Offices: Springfield Chicago New York Washington

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.

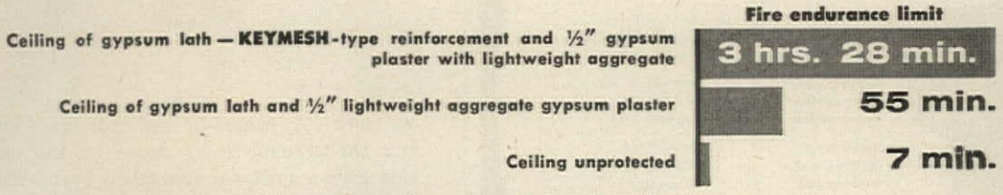
Take open-web steel joist floors and concrete slabs with gypsum ceilings, for example. With ½ inch of lightweight aggregate plaster, reinforced with Keymesh-like lath, a fire endurance limit of 3 hours and 28 minutes was obtained.*

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**



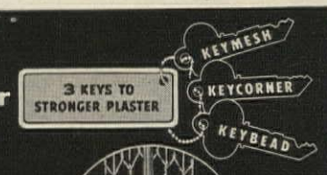
**See Building Materials and Structures Report 141, National Bureau of Standards: "Fire Endurance of Open-Web Steel-Joist Floors with Concrete Slabs and Gypsum Ceilings"*

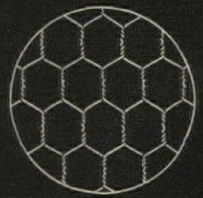
KEYSTONE STEEL & WIRE COMPANY

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).

PRODUCTS *cont'd.*

For more data use coupon, p. 236

other applications suggested by K & M for the *Asbestos Decorative Panels*. Weight per sheet: 105 lb.
Manufacturer: Keasby & Mattison Co.

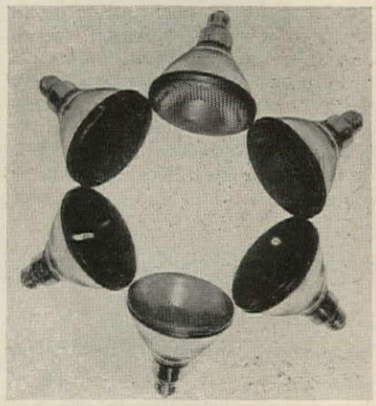
(10) LIQUID RESIN restores gloss of weathered plastic panels

Fiber-reinforced polyester panels that have dulled with wear and weather can be revitalized with a brush or spray coat of

Resolac. The plastic lacquer is actually a self-curing polyester that dries to a lustrous, crack and chip resistant finish. Becoming an integral part of the polyester sheet it is applied to, *Resolac* will not peel, crack or chip. It comes in clear and in seven colors which can be used to deepen faded pigments and reduce light and heat transmission. A gallon, covering about 400 sq. ft., costs $9.80.
Manufacturer: Resolite Corp.

(11) COLOR LAMPS made for outdoor display and sign lighting

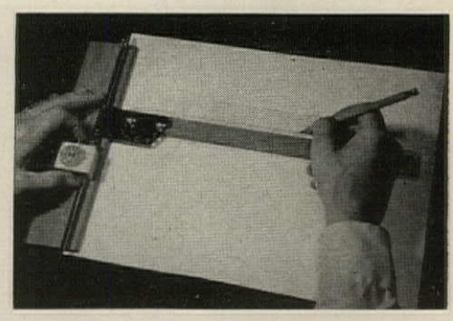
Translucent enamels in six hues coat G-E's spot lamps for outdoors. Made of heat-resistant glass, the bare bulbs can withstand the shattering effect of rain splatter



or snow. A sealed-in reflector and lens and the ceramic color fused on the outside give a uniform controlled beam. Produced in four strong colors and two pale tints, the lamps retail for $2.95 each.
Manufacturer: General Electric Co.

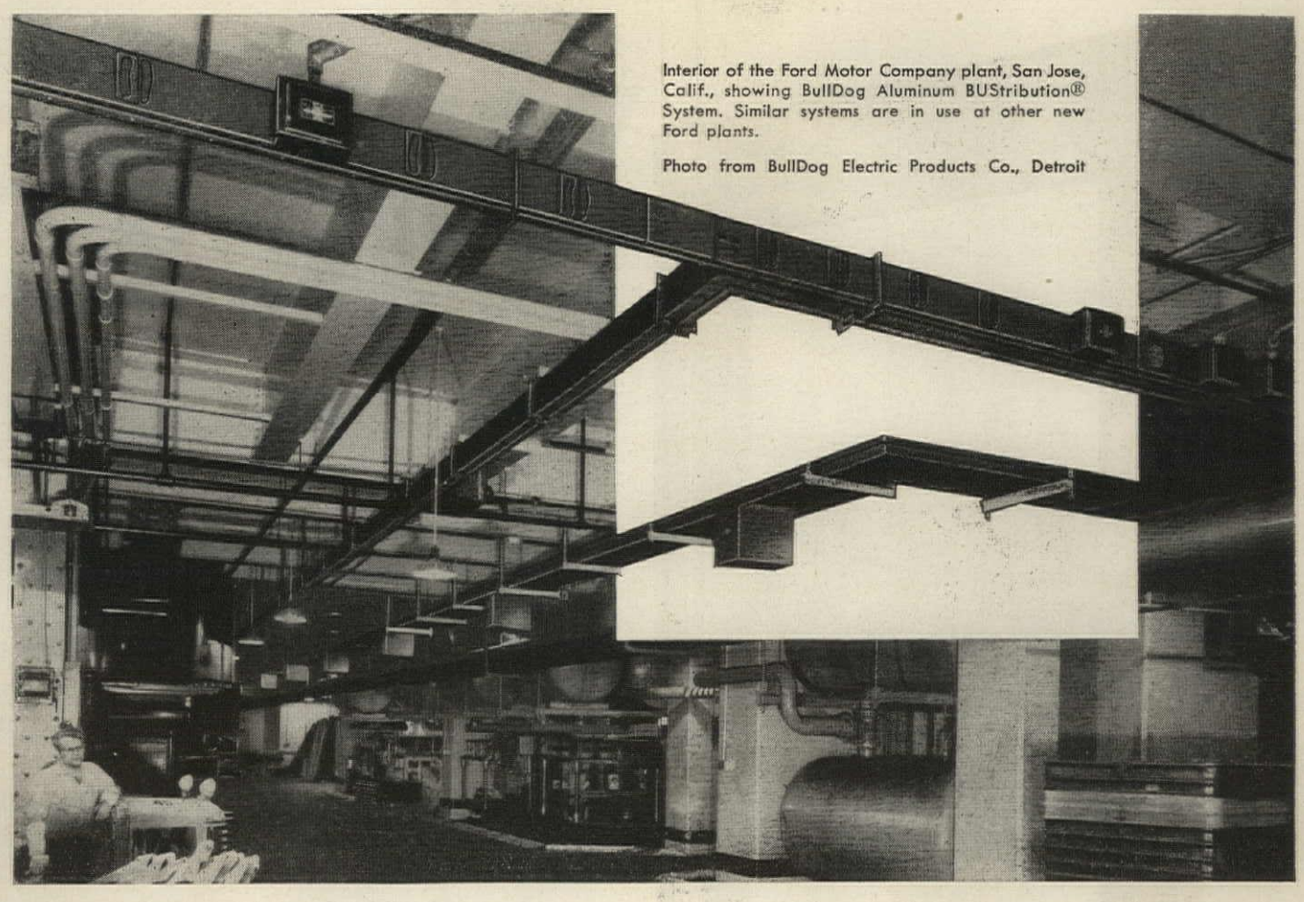
(12) DRAFTING TOOL speeds drawing of parallel lines

Draftsmen can draw evenly distanced lines and crosshatch precisely with the *Kohliner*. A pushbutton moves the instrument's



straight edge down by increments selected on the dial. The edge may be set at 15°, 30° and 45° for diagonal hatchlines. Price: $13.75.
Manufacturer: Koh-I-Noor Pencil Co.

continued on p. 228



Interior of the Ford Motor Company plant, San Jose, Calif., showing BullDog Aluminum BUStribution® System. Similar systems are in use at other new Ford plants.

Photo from BullDog Electric Products Co., Detroit

FORD INSTALLS BUSWAYS USING 1,500,000 POUNDS OF ALUMINUM CONDUCTOR

Installation costs less, provides more power per pound of metal. System is more flexible and operates with no increase in voltage drop or temperature rise over comparable copper system.

Since 1951, Ford Motor Company has been equipping its new plants with aluminum bus distribution systems. These include plants at Detroit, Chicago, Buffalo, Cleveland, Louisville and San Jose.

By switching to aluminum, Ford diverted more than 3 million pounds of critical copper to other uses. And Ford acquired a distribution system at lower cost.

Because aluminum is lighter, Ford received more conductor per pound of metal . . . put less weight on the building superstructure.

Because aluminum costs less than copper, Ford received more conductor per dollar invested.

And these prefabricated conductors make a neat, safe, flexible installation that brings power to the job in any amount at any location. They can be readily moved to meet new power demands. Standard fittings, tools and methods are employed.

For more information on these modern packaged plant distribution systems, contact your nearby Alcoa sales office. Or write Aluminum Company of America, **2304-M** Alcoa Bldg., Pittsburgh 19, Pa.

Your Guide to the Best in Aluminum Value

THE ALCOA HOUR
TELEVISION'S FINEST LIVE DRAMA
ALTERNATE SUNDAY EVENINGS

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ELECTRICAL CONDUCTORS
ALUMINUM COMPANY OF AMERICA
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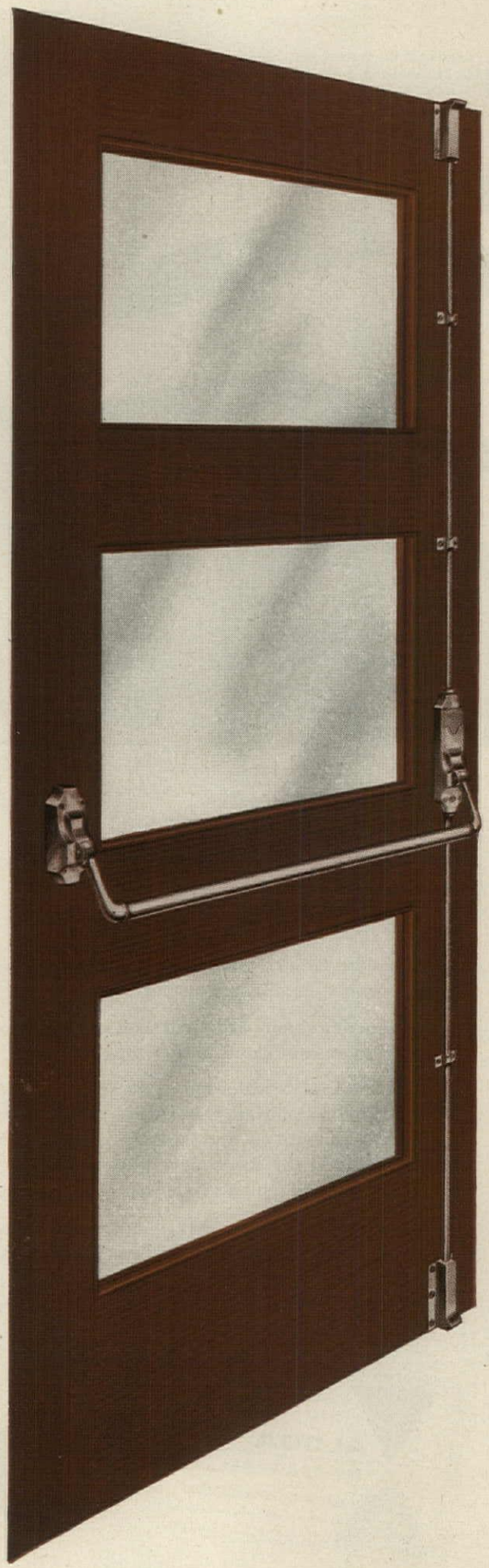
FASTEST ALUMINUM WITH ALCOA ALUMINUM FASTENERS

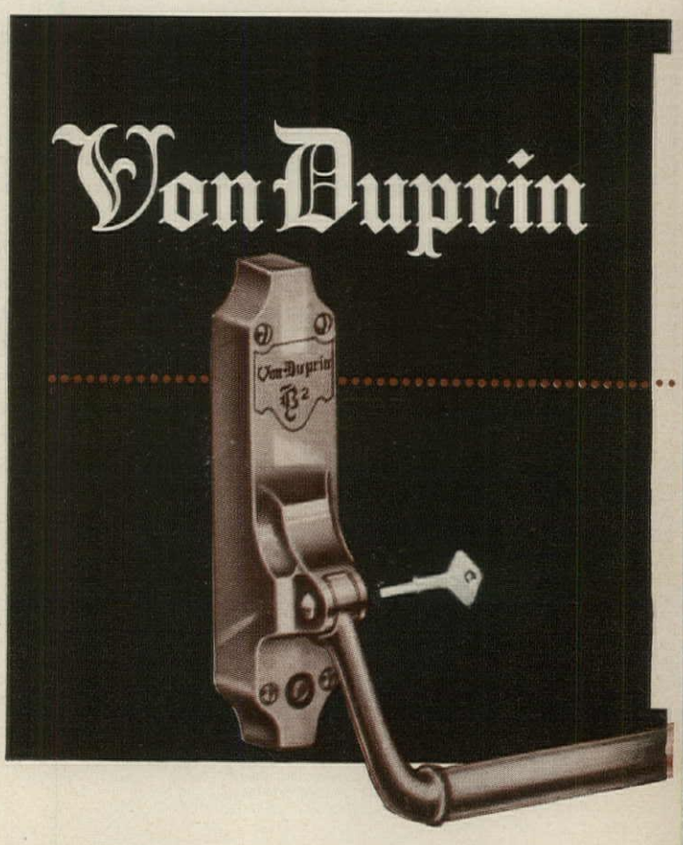


"THE SAFE

Increasing numbers of architects and other safety-minded officials the country over specify Von Duprin exit devices to provide "the safe way out!" And for good reason: Von Duprin's unequalled record of performance! Even under the most adverse conditions, these devices operate efficiently . . . with only normal maintenance.

Since originating fire and panic exit devices in 1908, Von Duprin has consistently paced the field in new designs, incorporating new materials and production methods.

Whether effectively handling the daily flow of traffic . . . or standing ready for that "once-in-a-lifetime" emergency, Von Duprin-equipped doors are your answer to safe, sure exit.



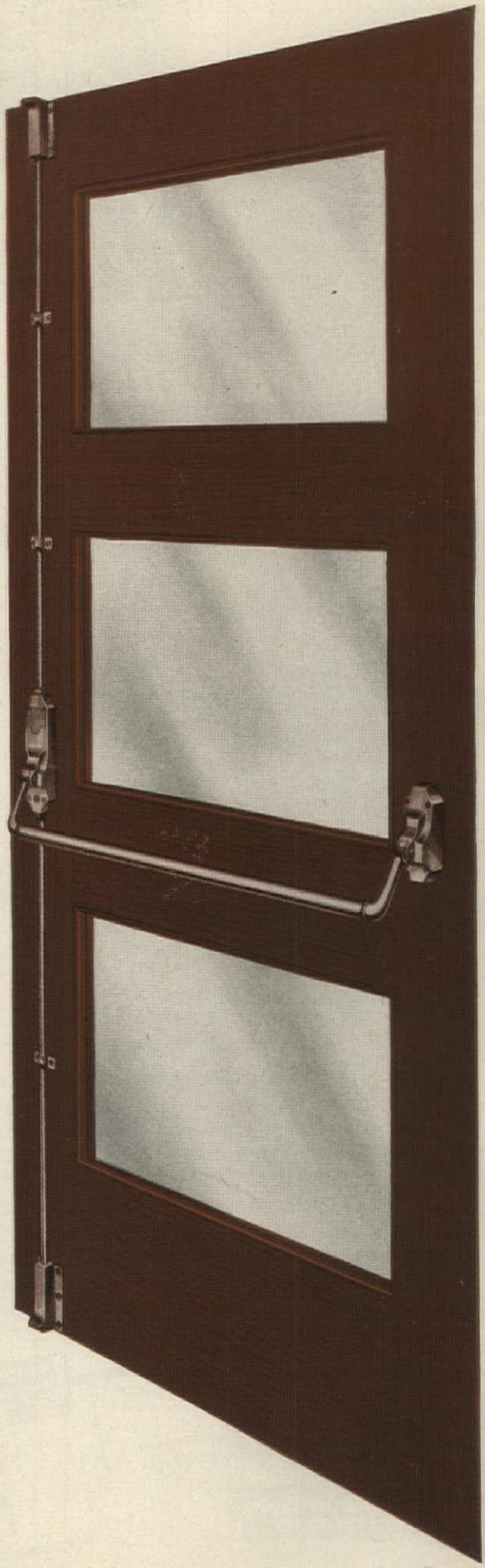
WAY OUT!"

The vertical rod Type B² device, illustrated here, is a part of the complete Von Duprin line of exit devices and auxiliary hardware designed to meet every exit requirement.

For complete information, or for expert advice on specific exit needs, call on your Von Duprin "Exit Specialist"—either a factory representative or a selected builders' hardware distributor.

Von Duprin
PANIC DEVICES
ASSURE SAFE EXIT

VONNEGUT HARDWARE CO.
VON DUPRIN DIVISION
Indianapolis 9, Indiana

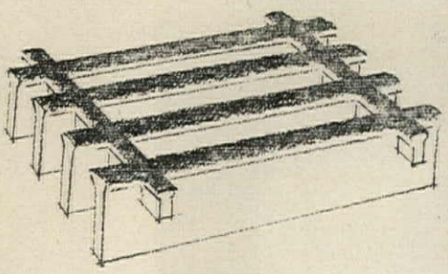


FIRE AND PANIC EXIT DEVICES

Type B²
verticle rod or
mortise lock

PRODUCTS *cont'd.*

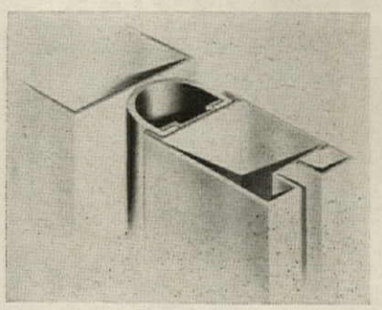
For more data use coupon, p. 236



(13) **ABRASIVE GRID makes slipproof factory walkways and stairs**

Little mounds of hard tough abrasive on *Relgrit* gratings and treads provide a lasting non-skid walking surface. Holding the maintenance advantages of open grate without sacrificing sure footing, the safety flooring is effective wet, dry or muddy. Even when coated with oil it loses a negligible amount of traction. The abrasive, said to wear twice as well as steel and to resist most common alkalis and acids, is baked on and penetrates into ⅛" *V* grooves along each bar. Three sizes of mesh are available. Standard spacing for 1-3/16" bars is 1" x 4". Stock stair treads with *Relgrit* nosings come in widths of 5-3/16" up to 12-5/16". Cost of the abrasive treatment adds about 25¢ per sq. ft. to the price of steel gratings of the same gages and spacings. Treads run about 50¢ higher each. Both *Relgrit* products comply with classifications set up by the National Safety Council.

Manufacturer: Reliance Steel Products Co.



(14) **VINYL DOOR SEAL protects fingers from harm**

An entrance with a large gap between door and frame seems to be a natural lure for unsophisticated fingers. To prevent any injury, *Overline* stainless steel doors for stores, schools and public buildings are fitted with a soft vinyl insert running the length of the stile. Extruded in a *U* shape, the plastic *Fing-R-Gard* safety edge also helps keep out rain and drafts.

Manufacturer: Overly Manufacturing Co.

continued on p. 232

This school was a top award winner in the Fifth Annual Competition for better school design sponsored by the School Executive magazine.

WILBERT SNOW ELEMENTARY SCHOOL, MIDDLETOWN, CONN.

Architect: Warren H. Ashley *Contractor: Wadhams & May Company*

HOPE'S WINDOWS were chosen for this award winning school

● An unusual feature of Wilbert Snow School is that administrative offices, cafeteria facilities, a large gymnasium and the classroom units (see insert above) are all housed in separate buildings as shown in the small aerial view at left.

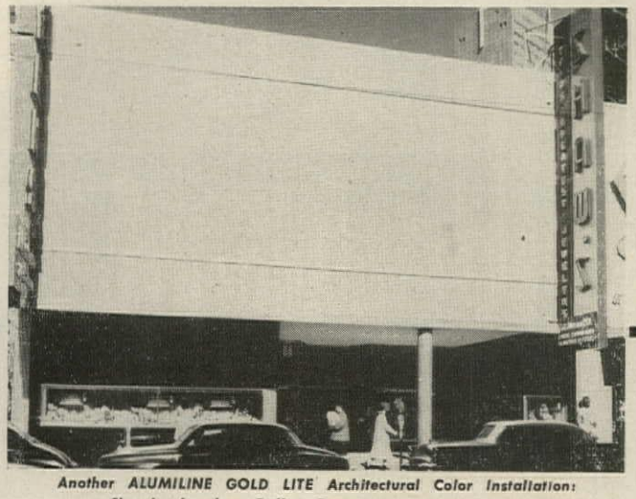
The adaptability of Hope's Windows to any type of building design is well illustrated by their application to the various buildings of this school. For example, in the classroom units a full window wall elevation, plus an upper ribbon of windows encircling the entire unit, provides abundant controlled daylight with healthful comfort for young eyes in each classroom. Note that a door for each classroom has been included as a safety factor and traffic convenience in the window wall elevation.

Write for our new Window Wall catalog No. 152F or call your local Hope's representative where additional information and planning assistance are always available without obligation

Since **HOPE'S** *1818*

HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH



Another ALUMILINE GOLD LITE Architectural Color Installation:
Shaw's, Jewelers, Dallas, Texas
Architect: George L. Dahl
Installed by: Associated Glass Company

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THE ALUMILINE CORPORATION
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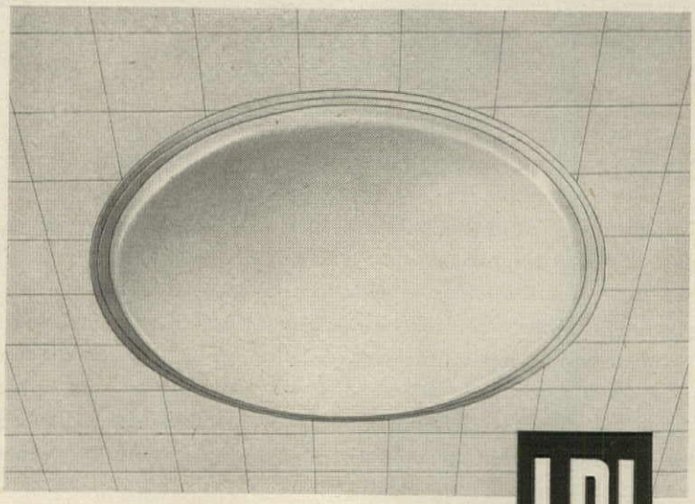
*Trade Name Aluminum Company of America

See our catalog in Sweet's or write for copy



Circles of Light... by LPI

NEW and DISTINCTIVE, these 3-foot and 6-foot Variform Circles are designed especially for LOBBIES, FOYERS, and BANKING AREAS . . . or wherever high quality lighting is desired . . . offering new concepts in interior designs and esthetic balances.

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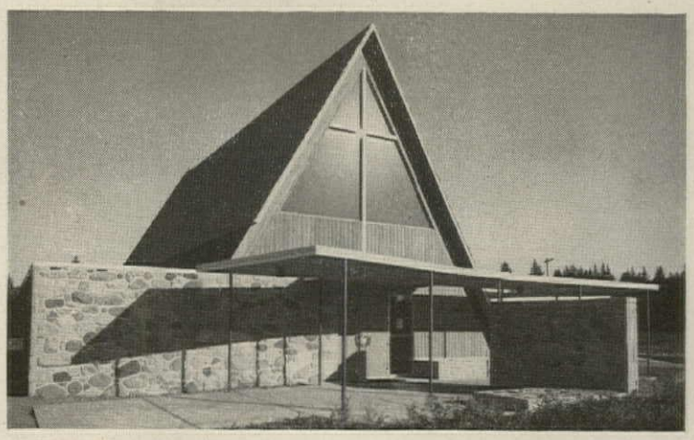
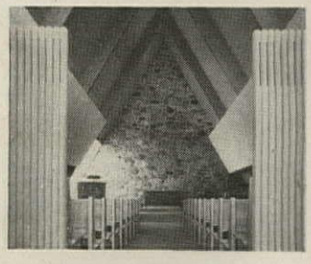
to enhance and preserve the beauty of modern churches



St. Anselm's Church in Vancouver, B. C. Architects: Semmens & Simpson, Vancouver. Cabot's products used throughout



both inside and outside . . .

Cabot's

Paints and Stains

With the great progress that is being made in religious building today, leading architects are adopting the Cabot "one-stop-specification" that permits the entire job to be done with Cabot's quality paints and stains.

A good example is this interesting, modern church in Vancouver where Cabot's products were specified throughout the building.

Roof Shingles:
Cabot's #241 Bleaching Oil (Weathered Gray)
Ceiling:
Cabot's #0-3 Glacier Blue and #0-15 Long Island Gray Stain Wax
Laminated Members:
Exterior — Cabot's #325 California Redwood Stain
Interior — #0-6 Redwood Stain Wax
Phillipine Mahogany:
Exterior — Cabot's #247 Bark Brown and #344 Silver Gray Creosote Stains
Interior — #0-15 Long Island Gray Stain Wax
Cross:
Cabot's DOUBLE-WHITE
Stonework behind altar:
Cabot's Clear Cement Waterproofing

Quality products from Cabot Laboratories ...manufacturing chemists since 1877

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THE three books at the left are a "must" for anyone who is interested in good masonry construction. One describes the type of *workmanship* recommended to secure dry brick walls. The second describes the *specifications* recommended to secure dry brick walls. The third describes the type of workmanship recommended for *good concrete-block walls.*

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Without cost or obligation, please send me a copy of each of your three books on masonry construction.

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PRODUCTS *cont'd.*

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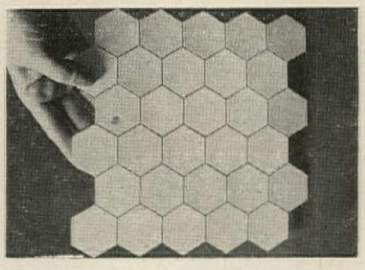

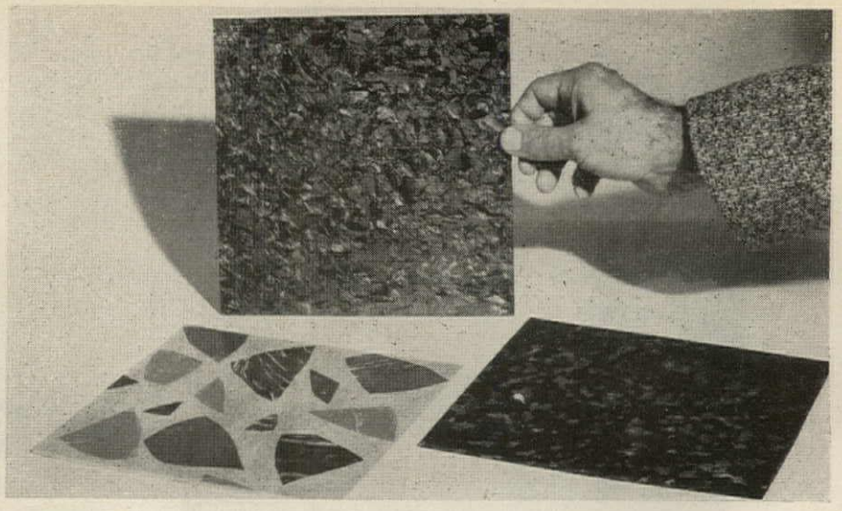

(15) VINYL TILE made in metallic hues, new small shapes

Having designs on the commercial building market rather than milady's kitchen, Robbins Floor Products keeps coming up with elegant novelties in practical vinyl. The latest, *Metaltone* tile mixes metallized plastic particles of gold, silver or copper colors in a splendid but sober manner. (First major installation, appropriately, is in the Bankers Trust building in New York.) The chemical-resistant flooring sells for about $1 to $1.20 plus installation and can be applied over any subfloor. Black *Metaltone* has a random sprinkling of gold and looks like large slabs of tortoise shell. It is also made in white and gold. Standard size for all colors is ⅛" thick and 9" square. Larger sizes up to 3' square can be obtained on order. Maintenance for *Metaltone* vinyl floors consists of an occasional mopping and buffing.

Ceramatile, miniature versions of Robbin's *Geometile*, take on the scale of small hexagonal and octagonal ceramic tiles. They are mounted on sheets about 9" square for easy application and are prespaced for "grouting" with a seam compound to complete the masquerade and waterproof the floor. A third recent product *Patio Tile*, is formulated with weatherfast colors for the great outdoors. Its pattern resembles terrazzo and is reported to wear well under heavy traffic. Although solid vinyl sidewalks would hardly be practical at $1.20 a sq. ft., some resilient promenades might help coax urbanites out of their automobiles.

Manufacturer: Robbins Floor Products Co.

PRODUCT NOTES

(16) Glue for plastic foam

No. 145-0 Styrogrip is a quick-drying adhesive for bonding foamed styrene insulation to materials such as plywood, galvanized metal and masonry block. Although a solvent, the new resin does not attack styrene. It is colorless and highly water-resistant.

continued on p. 236

a short cut to "finish time"

Steelcraft steel doors can help you meet completion dates on big jobs or small. This is because Steelcraft doors are **standard** doors — offering big savings in time all down the line.

They eliminate time-consuming detail in planning and specifying. They are mass-produced and factory-stocked for quick delivery. And they are shipped complete with framing and all hardware prepared for fast installation.

For any type of opening — standard or heavy-duty — in industrial, commercial or institutional buildings, Steelcraft standard steel doors are always "a short cut to finish time."

standard steel doors by STEELCRAFT
MFG. COMPANY
ROSSMOYNE, OHIO

STEEL Craft

THE INDUSTRY'S MOST COMPLETE LINE OF STANDARD STEEL DOORS

PRODUCTS *cont'd.*

For more data use coupon below

(17) Antistatic plastic

Homalite 141 thermosetting clear plastic has inherent antistatic properties which prevent electricity from building up on its surface and attracting dust. Suitable for drafting instruments, the dimensionally stable sheet has high scratch resistance and should also be applicable for glazing where fracture and chemical fumes are problems.

(18) Paint for hot spots

Speco Inc.'s *Heat-Rem QD Black* paint can be used on ovens, manifolds, steam lines and stacks and other surfaces that get as hot as 600° F. Applied by brush or spray, the paint dries less than two hours after application.

(19) Giant steel extruder

A 126'-long hydraulic press with a squeezing power of 12,000 tons has been built by Loewy Hydropress. Capable of extruding a 50'-long 6" diameter tube of steel or titanium in 9 seconds, the new giant press will be used first for making large components for aircraft.

PRODUCTS INFORMATION COUPON

For additional information on any product reviewed in the December issue check the corresponding key number below and mail this coupon to Architectural FORUM (Room 7-06) 9 Rockefeller Plaza, New York 20, N.Y.

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- ☐ 2. Hollow core Sigeru board
- ☐ 3. Anaconda expansion fold
- ☐ 4. Acoustosorber sound traps
- ☐ 5. Iso-Sonic lighting panels
- ☐ 6. Traversing vertical blinds
- ☐ 7. Plastic furniture rests
- ☐ 8. CPR cold built-up roof
- ☐ 9. Asbestos ribbed panels
- ☐ 10. Liquid plastic coating
- ☐ 11. G-E outdoor color lamps
- ☐ 12. Drafting instrument
- ☐ 13. Safety grid walkway
- ☐ 14. Overline vinyl door strip
- ☐ 15. Robbins vinyl floor
- ☐ 16. Styrogrip adhesive
- ☐ 17. Antistatic plastic
- ☐ 18. Heat-Rem paint
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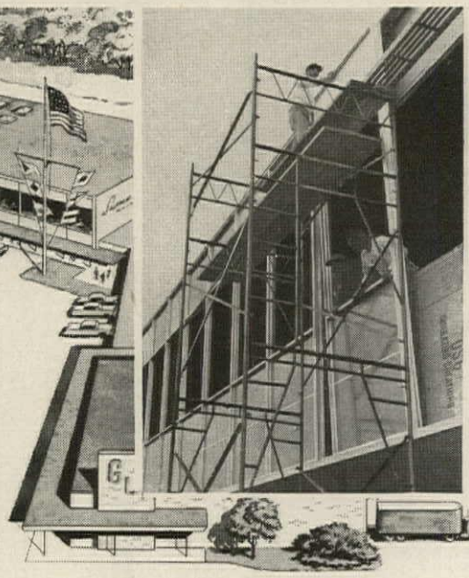

Architect: Rossetti and DiCorcia, Bristol, Conn.
Architectural Aluminum and Glazing: Stateo Ornamental Glass Division, State Glass Co., Hartford, Conn.
Owner and Contractor: Green Manor Estates, Inc., Manchester, Conn.

Manchester Shopping Center has 157,800 sq. ft. sales area, 25,000 sq. ft. office space, 2,500-car parking lot.

◀ *Up and in! Giant curtain wall section is installed with colorful wall panel already in place.* Complete wall *of 204 sq. ft. was erected* per man per day.

Adding extra speed, savings and flexibility to curtain wall construction...

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FREE Design Book
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Architectural fabricator uses made-to-order Bridgeport Aluminum Extrusions in his own curtain wall system—with important savings!

Savings and speed—these were the advantages Green Manor Estates, Inc. looked for when they built the colorful 25-store Manchester, Conn., Shopping Center. And they got both.

Speed—because the two- and three-story wings were built in record time, curtain wall style, using Bridgeport all-weather, lightweight extruded aluminum.

Savings—because made-to-order Bridgeport Extrusions, even in large sections, are designed for rapid, easy installation.

Other benefits? Yes! Beauty in the clean, modern lines, and the carefree utility of no-maintenance aluminum surfaces. Because the buildings were finished sooner, they'll pay for themselves sooner, too.

Curtain walls are just one of many architectural applications for Bridgeport Aluminum Extrusions. Our wide variety of special and standard shapes—many available without die charge—open up interesting new design and fabrication possibilities for any project, regardless of its size or plan.

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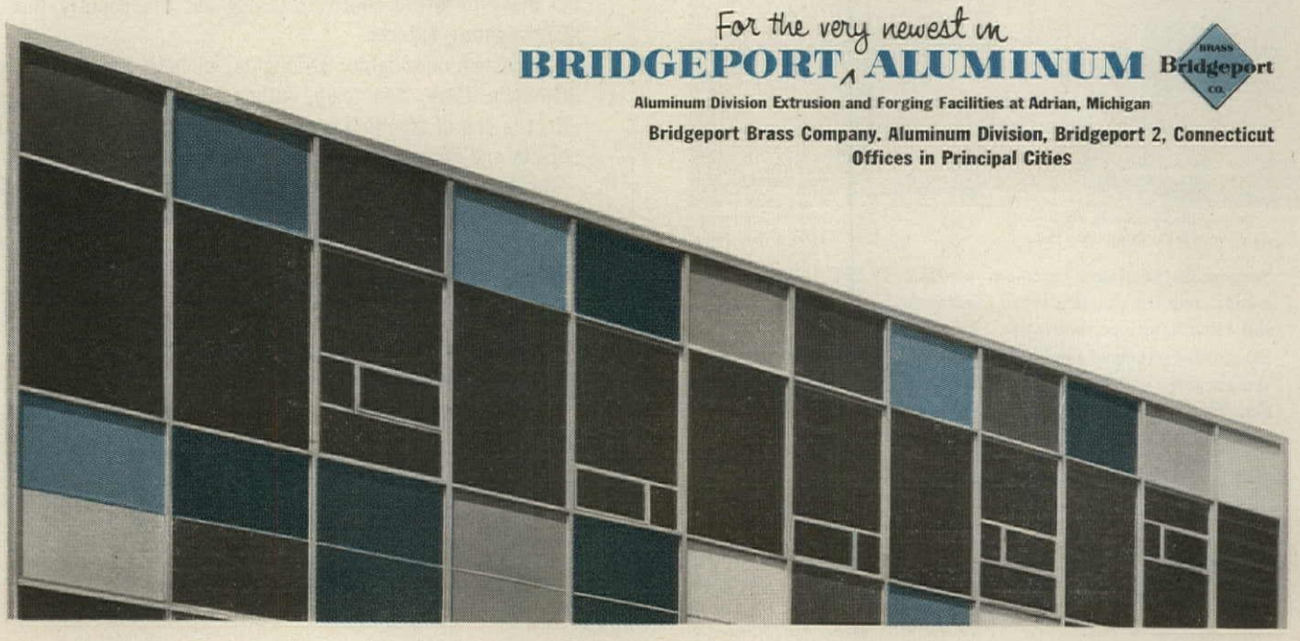

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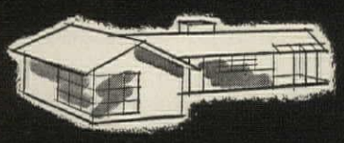

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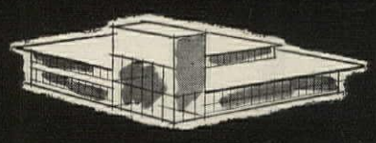
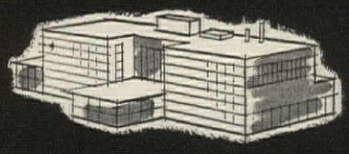
bells, buzzers, electric accessories
push buttons • burglar alarms



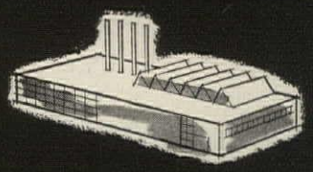
for schools

clock & program systems
fire alarm systems
bells, horns, buzzers
intercommunication systems



for hospitals

nurses call systems (audio, visual)
doctors' paging systems
fire alarm systems
in-and-out registers
psychopathic alarm systems
contact devices



for business –industry

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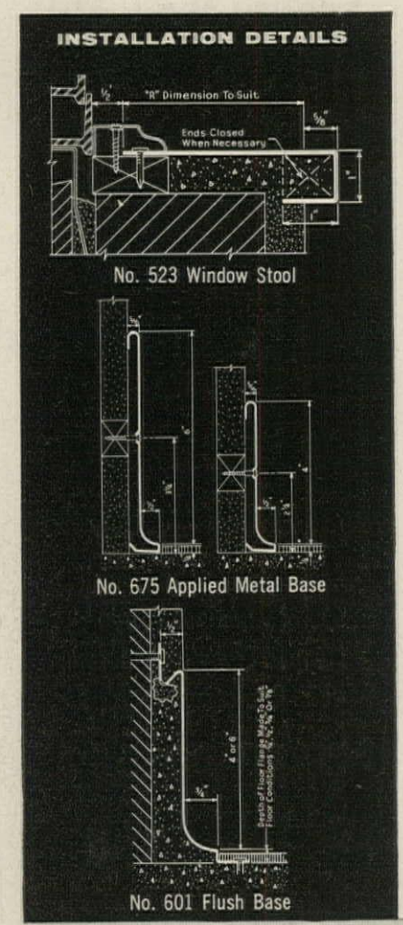

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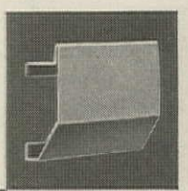
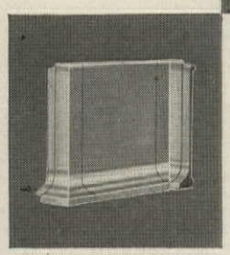
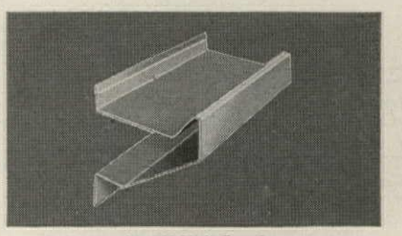
Refer to the Milcor catalog in Sweet's (Section 12a/InL). Or write for Catalog 102.

MILCOR® Metal Trim

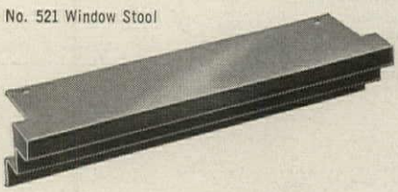

No. 72 Picture Mould


No. 721 Blackboard Mould


No. 675 Applied Metal Base


No. 730 Chalk Trough

No. 521 Window Stool



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