

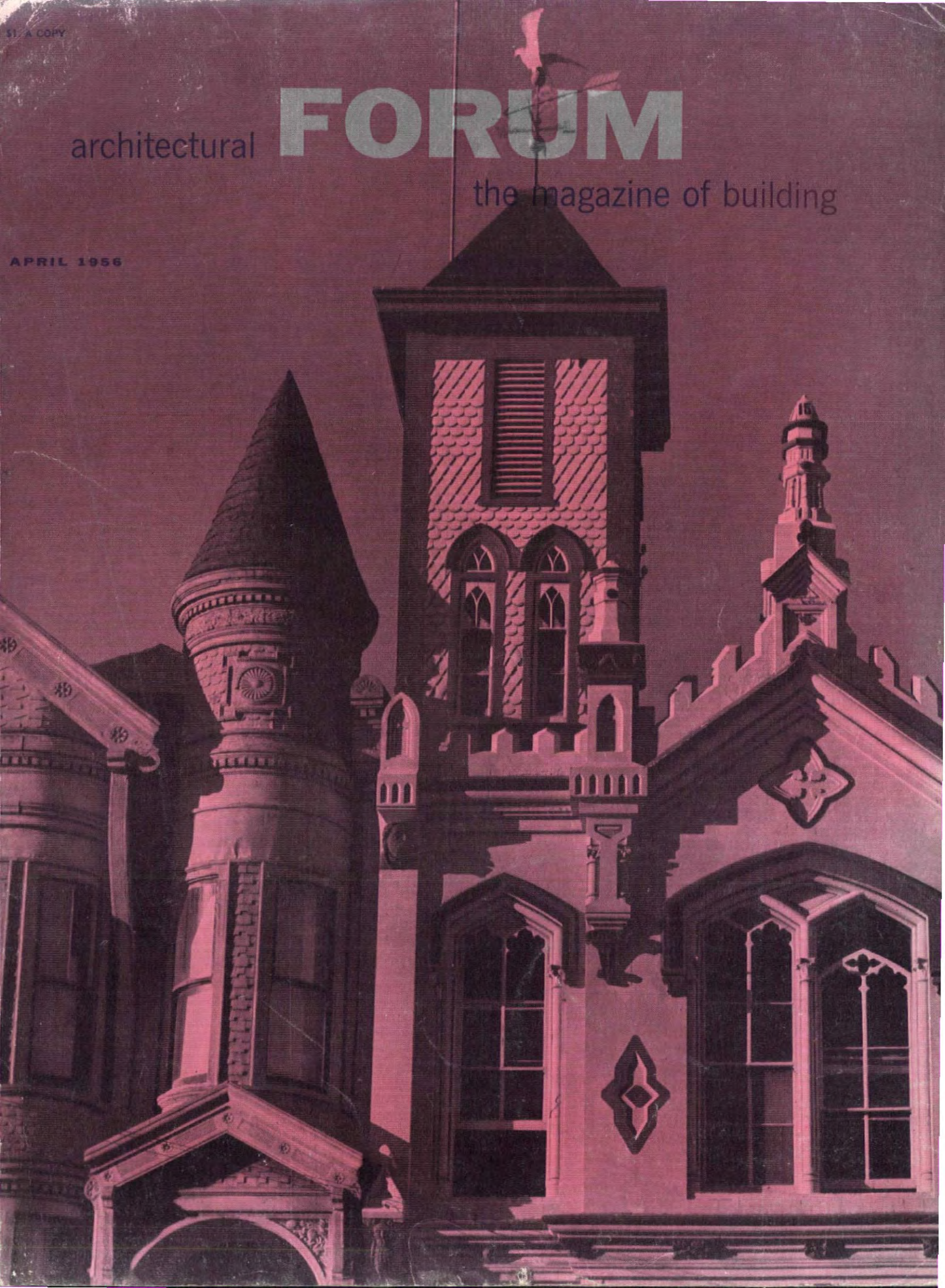
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# FORUM

the magazine of building

APRIL 1956





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BUILDER ..... Cilloniz-Olazabal-Urquiaga S. A.  
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the magazine of building

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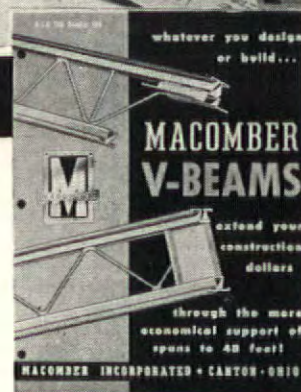


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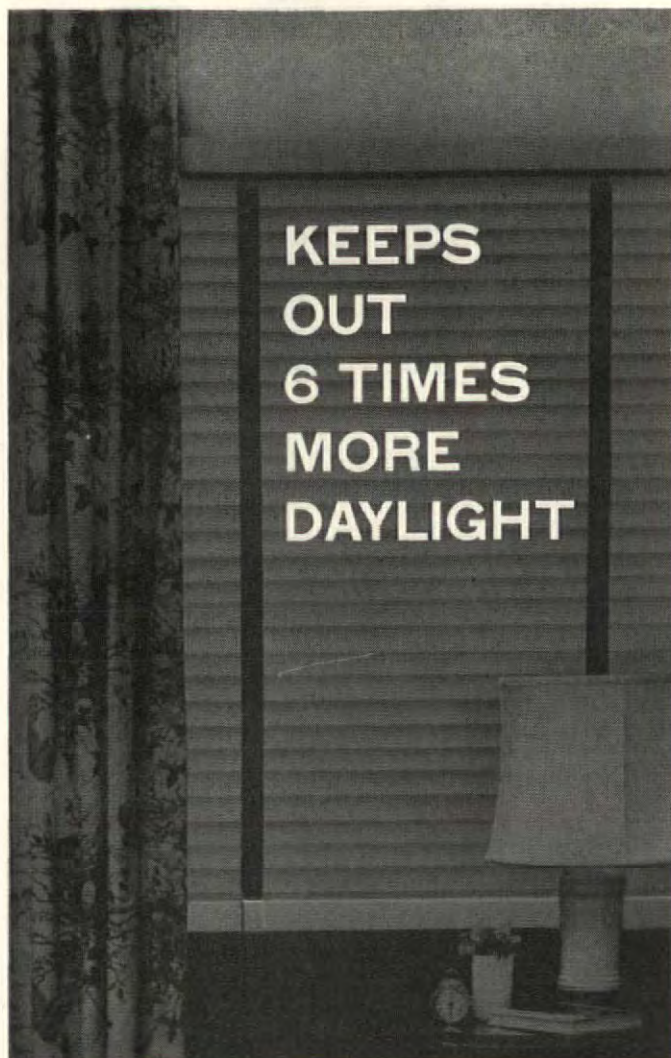
ABOVE: Photomicrograph (microscopic X-ray) of a granule of expanded perlite shows how expansion under 1700°F temperature hermetically seals the air cells (lighter areas), creating ideal insulation. Granule shown was photographed with sodium light.



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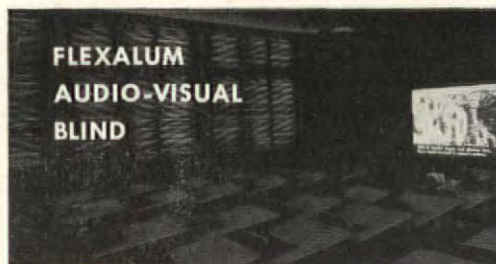
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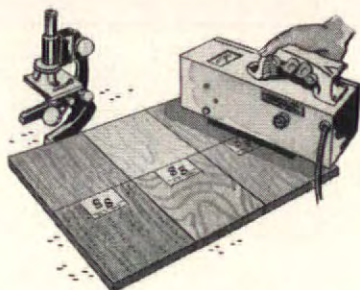
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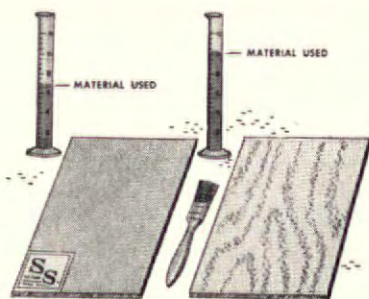
**SATIN - SURFACE**

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on a



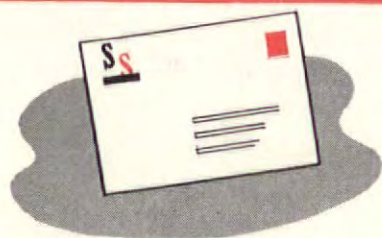
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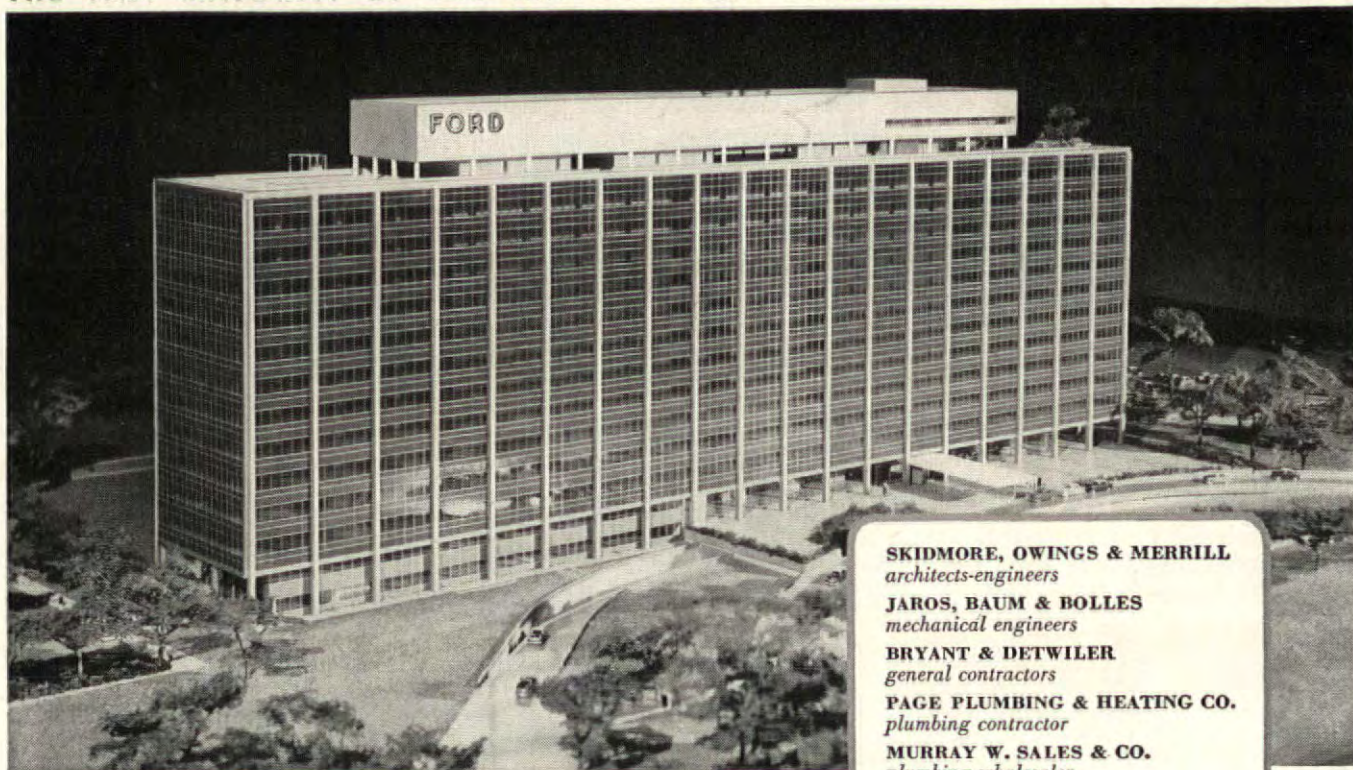
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all-year comfort. Movable partitions provide flexibility in the allotment of floor space. Escalators serve the lower eight floors and automatic elevators are used by employees on upper floors. Featured in a connected building are employees' cafeteria and lounge, a coffee shop, executive dining room and roof garden. Here also is a multi-purpose auditorium and a visual media studio. As are thousands of other expertly planned structures, the new Ford office building is completely equipped with SLOAN *Flush VALVES*.

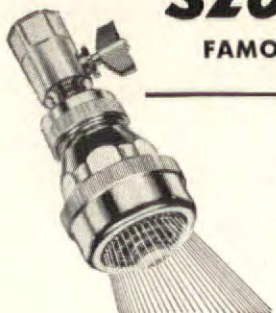
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## FHA would compromise most windfalls, but new profit-rate suit raises doubts

Two years ago, on April 12, HHF Administrator Albert M. Cole abruptly fired FHA Commissioner Guy Hollyday and with fanfare and White House prodding launched a program to clean up the "scandal" of FHA Sec. 608 apartment "windfalls."

On the second anniversary of the administration's probes and purges this month, the quasi-official word in Washington was that FHA, under Robert Wolf, its new general counsel of three months tenure, was going to intensify a campaign to settle and forget as many "608" cases as possible out of court. There were some indications to support such reports. But there was also a new twist in one new "608" suit filed by the government in Washington last month that seemed likely to rekindle or reinforce most apartment builders' misgivings about prospects for re-establishing amicable, workable understandings with FHA based on mutual respect and confidence.

**Settlement efforts.** Attorneys for some builders classified as windfallers confirmed that FHA was trying to settle many cases these days by conciliation rather than retaliation or prosecution. They said the agency's attitude is far different than it was when former Special Counsel William F. McKenna was lashing out at builders through the first year of the scandal.

For one thing, attorneys revealed that under some settlements builders were not being required to reduce their mortgages, but simply restore the distributed windfall to the owning corporation's treasury. Nor was the FHA insisting, in settlements, that builders accused of benefiting from windfalls agree that they have done anything illegal. This gives builders a firm base for any subsequent talks with Internal Revenue on refunds on the taxes they paid on distributed-but-then-restored windfalls.

Through conciliation, it is reported, Wolf believes the entire FHA windfall calendar can be cleaned up by the end of this year, except for the small minority of cases said to involve fraud or criminal action. These, he says, may take as long as "five or six more years to thresh out in the courts."

**Shunning publicity.** For obvious reasons, FHA is reluctant to discuss precise terms of any settlements, lest published terms set a fixed policy for all cases on any particular points.

For less apparent reasons, FHA officials declined last month to say how many cases they have settled to date, or the sums involved, although they spoke of 16 as the number currently under negotiation for out-of-court settlements. As a matter of fact, the agency professed to have no up-to-date data on total number or dollar amount of windfalls uncovered by its special staff of investigators, lawyers and accountants; no tally on its expenses for two years of probing and "recovery" efforts;

no information on how many projects ever reduced, or had their rents reduced by FHA after a "recovery"—one of the objectives stressed by Cole during the first year of the investigations.

Unofficial guess put the total of suspected windfalls around 1,200. In his final report in 1954, McKenna said an incomplete survey showed 1,410 cases of Sec. 608 mortgages exceeding construction costs, and total windfalls "exceeded" \$110 million. McKenna's report said every loan that exceeded costs was not necessarily a windfall. In a statement in April '55, Cole also said: "There is no question that some windfalls were legally arrived at although, in some cases, by methods of questionable ethical values."

**Profit-rate suit.** So far FHA has gone into court only four times in efforts to recover windfalls; in other instances, however, it has sued to take control of "608" corporations to protect its preferred-stockholder position (a preliminary move to a recovery suit, if the case goes that far).

The fourth and latest recovery suit raised an unusual point not brought up before. Filed in Washington on March 3, this suit does not charge an illegal distribution

of windfall proceeds. Instead it claims there was an identity of interest between the owning corporation and the construction contractor, and it was improper to let the contract to the latter for a much larger amount than some other contractor might have accepted.

In this case, involving the 663-unit Congress Park Apartments in Washington, the government says construction costs were \$1.4 million less than a \$7.3 million mortgage, all of which was turned over to the construction company. One estimate of the amount of construction profit in this case heard at FHA puts it at 24%.

**Conciliation, or badgering?** What gives this case special importance, in addition to being the first of its kind, is the possibility it could upset the entire campaign to settle most cases out of court. As builders' attorneys see it, FHA cannot expect builders to be convinced it is becoming more "reasonable" while at the same time launching a suit of this nature. They point out, for instance, that there was nothing in the 608 law or FHA regulations that purported to regulate construction profit rates, and builders could understandably have misgivings about making any settlement of any sort with an agency that was disposed to come back after five years and say, in effect, on a point not even covered in the law: "Now we are going after you because we think you made too much profit in building this job."

## Crown Zellerbach will build officer tower in a full-block park

For a headquarters building that President James D. Zellerbach feels will outshine Lever House, the Crown Zellerbach Corp. will develop a full block in downtown San Francisco as an East-meets-West park, in it erect a modern 20-story glass-and-metal tower supported on 18 columns rising out of a sunken-garden lobby.

San Francisco's Hertzka & Knowles, and Skidmore, Owings & Merrill, associated architects, designed the building, which will have floor-to-ceiling windows, 70' x 202' column-free floors for the greatest subdivision flexibility, and a separate elevator, utility and lavatory core (see cut) very similar to the new Inland Steel building in Chicago designed by SOM (AF, May '55). Eckbo, Royston & Williams, landscape architects, and Sculptor I. Noguchi were retained to design the park and garden setting that will "fuse the feeling of East and West that meets in San Francisco."



The building and service core to be started this summer will occupy only about one-fifth of the wedge-shaped block bounded by Bush, Battery, Market and Sansome Sts. The park will be open to the public and will have several entrances to the lobby supplementing the main entrance from Bush St. that will consist of a foot bridge over a reflecting pool (see cut). Under the park there will also be a garage for 200 cars.

Morley Baer



NEWS continued on p. 12



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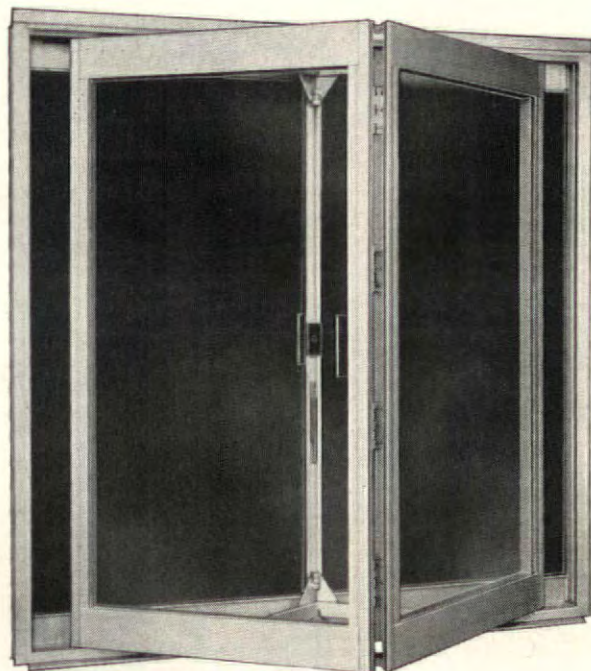
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*Flour City folding windows as used on the University of Minnesota Chemical Engineering Building.  
Architects: Magney, Tusler & Setter.*



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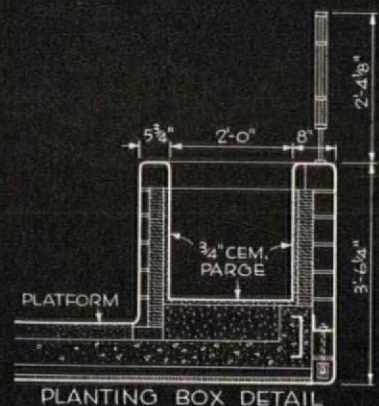
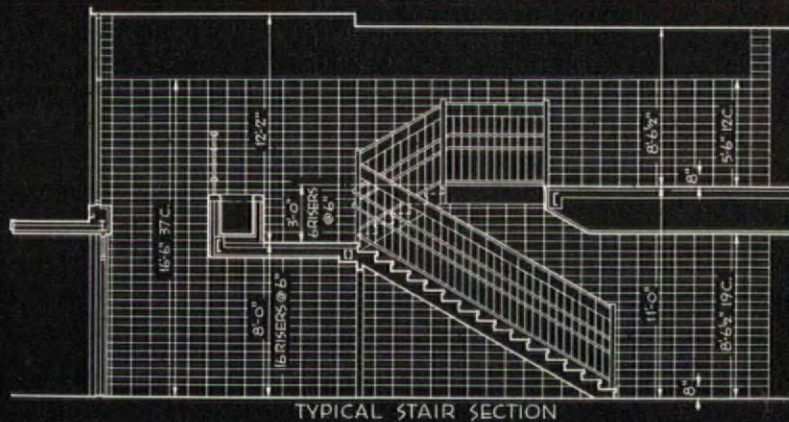
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# Bill would boost US urban renewal help, end "cost certification" uncertainty

Partisan politics and industry lobbying right up to the last minute becloud all predictions about what amendments to the federal housing laws Congress may enact at any session.

Subject to the hazards of the entire congressional obstacle course, however, the Capehart-Widnall (administration) bill sent to Capitol Hill a month ago by HHFA Administrator Cole contained a number of provisions that would ease the task of urban renewal and apartment construction in line with some of the recommendations of the FORUM Round Table reported on p. 114.

One administration proposal would make a builder's cost certification uncontested after the FHA commissioner once approved it, except for fraud and misrepresentation, also specifically allow an allocation of general overhead to be included as a recognized cost item.

Another proposal would allow localities to include as part of the cost of an urban renewal project the amount of real estate taxes the city loses while the property remains in public ownership before resale.

In redefining "urban renewal project," another proposed change would allow the rule on "predominantly residential use" to be applied to the whole "urban renewal area" rather than merely to the section to be cleared.

**Public housing proposals.** Under other housing legislation amendments urged by the administration, authority would be granted for another 35,000 units of public housing in each of the next two years; and units approved during the first year could be put

under construction during the second year if necessary. Sen. Herbert Lehman (Dem, N.Y.) introduced an omnibus housing bill of his own that would authorize 200,000 federal public housing units a year for three years. Cole promptly labeled this an "undisguised anti-private enterprise bill" and called its proposal for a total of 600,000 units only a "promise." He charged that "most of them, even if they were legislated, won't get built and can't get built and aren't wanted by our communities." As the weather grew warmer, so would the congressional public housing debate, and no telling what would be enacted until the final gong.

Republicans and Democrats both were pushing housing for the elderly. One of the administration's proposals for this would revise the 80% mortgage schedule for FHA Sec. 207 apartment construction to approve 90% loans (subject to an average of not more than \$7,200 per unit) for projects averaging less than two bedrooms per unit where 25% of the units were reserved for elderly persons. Another would approve mortgages for 90% of replacement cost, up to \$8,100 per unit, for nonprofit organizations building apartment projects for elderly persons.

**Military housing changes.** A bill by Sen. Homer Capehart (R, Ind.) would revise the Title VIII military housing law (AF, March, News) to increase cost limits from \$13,500 to \$15,000 per unit and eliminate the rule that makes this housing subject to the renegotiation act.

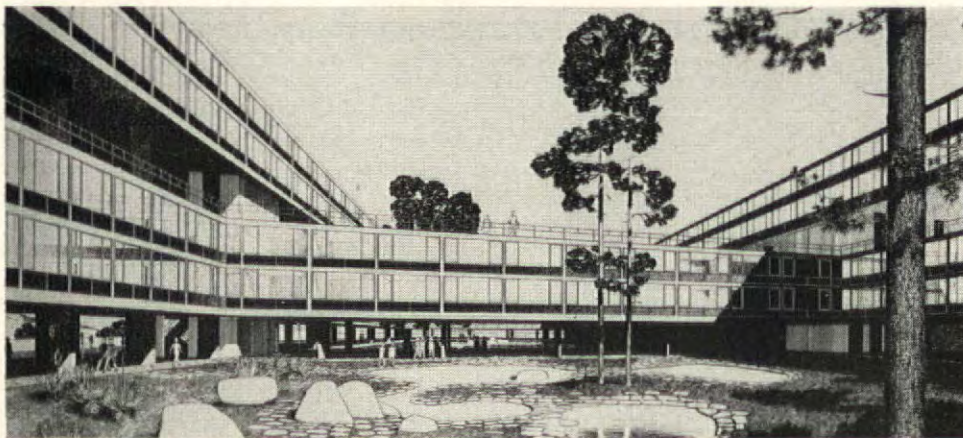
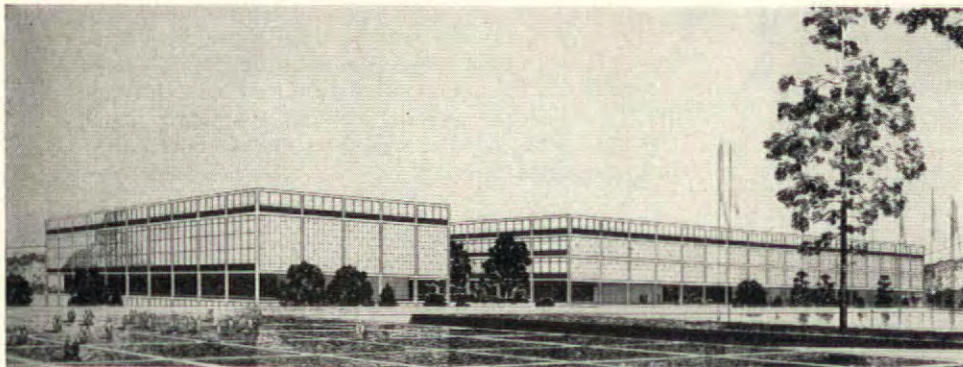
This would make Title VIII housing free from both renegotiation and cost certification requirements. Explained Capehart in introducing the bill: "There is no valid reason" for applying the renegotiation act to the competitive bid contracts used in this program.

## GSA urges huge 'Frisco, DC lease-purchase buildings

Lease-purchase programming by the Public Buildings Service of GSA was getting into stride. Two giant steps it proposed to Congress last month with approval of the Budget Bureau were:

► A huge 1.6 million sq. ft. air-conditioned Court House and Federal Office Building to cost up to \$45.3 million for site and construction in the area of the proposed San Francisco civic center. This would be the largest US office building outside of Washington, as well as the biggest lease-purchase program building anywhere. Upon approval by Congress, GSA would negotiate design contracts.

► A 633,000 sq. ft. air-conditioned office building in the southwest area of Washington, D.C., to cost about \$16.2 million, supplementing another 815,000 sq. ft. District building recommended last July. Both of these would be erected under the special District lease-purchase law that allows financing over a maximum of 30 years (instead of 25), requires demolition of an equivalent floor area of "temporary" buildings in the District, and allows negotiated



## Air Force Academy exteriors of glass-and-stone approved

After an appropriate time for the furor to die down, the Air Force last month approved a majority of the exterior designs of the controversial Air Force Academy at Colorado Springs (AF, June '55).

The final result was not surprising—less glass than the original designs, but not so much stone as Senator Capehart would like. The aluminum-framed buildings will be glass and stone-walled, with the stone tentatively described as a "pink Colorado marble," subject to substitution of some slightly redder (darker) stone. Mockups now constructed at Colorado

Springs await a visit this month by Air Force Secretary Quarles and his consultants—Architects Welton Becket, Roy Larson, Pietro Belluschi and Eero Saarinen—who will make the final decision on materials. Shown above are an academic building (top) and a cadet quarters courtyard. Construction of utilities—water, roads, grading—has already begun.

Cryptic reply from academy Architects Skidmore, Owings & Merrill, when asked for fuller details on materials for the buildings as shown in the sketches released by the Air Force: "No comment."



instead of competitive-bid contracts. (In January, President Eisenhower showed his eagerness to improve the Washington landscape through removal of the 37 eyesore "tempos" erected during both World Wars in parks and other Capital locations. For the dragon-slaying assignment of expediting demolition of these oft-reviled but sel-

dom-removed barracklike structures housing about 40,000 government workers, he commissioned Washington Realtor F. Moran McConihe, 51, as a \$15,000-a-year White House consultant. Jaded Washingtonians nodded approvingly, but withheld their loudest applause until the wrecking crews would start working in earnest.)

## Rush for 2¾% college housing loans may soon exhaust easily garnered funds

Overwhelming popularity was threatening to curtail HHFA's extremely liberal college housing loan program. Last month the flood of applications that started pouring in last fall (AF, Nov. '55) was nearing the \$500 million limit on such loans authorized in the generous amendments to the Housing Act of 1955. Under that law the maximum interest on these loans is the bargain rate of 2¾%, which is not even enough to cover the interest the Treasury now has to pay to borrow funds to make these loans.

The Eisenhower administration has objected to this cut-rate interest charge ever since its inception last August. Under the administration's pending housing bill, HHFA would set the rate ¼ of 1% above that at which it obtains Treasury funds, which at present would raise the rate to at least 3¼%. Perhaps as a lever, the administration bill would increase the gross loan authorization to \$600 million for the coming fiscal year, which would keep the program going only a few extra months at the rate applications have been flowing in recently. Applications have now passed the \$460 million mark.

**How about our people?** The big question each congressman will have to decide: whether to boost the interest rate, or cut short the supply of loan funds, before all the colleges in his own constituency have filed their applications for loans.

In the first five years of the college housing loan program, at interest rates only slightly below conventional rates, and before it was expanded to cover cafeterias, student unions and many other buildings in addition to dormitories, HHFA received about 240 loan applications. Under the liberalized program it received about 280 in about five months.

Among the largest applications since last fall: \$21 million sought by Indiana University; \$7 million by M.I.T.; \$5.8 million by Purdue; \$6.2 million by the University of Colorado; \$10.2 million by the University of Missouri. Biggest loan approved so far: \$4.2 million, University of Texas. Other big commitments: University of Michigan, \$3.6 million; Colorado State College of Education, \$2.7 million; Vanderbilt University, \$2 million.

**So easy to do business.** Administratively there are additional reasons why the college loan program is extremely popular with lender and borrowers alike. Loans can cover 100% of costs, so complicated problems of precise valuations and equity

investments that plague FHA insurance officials are virtually nonexistent in this operation. Nor are there bothersome, detailed construction specifications to be enforced, or inspections; no "workable program" or maximum-cost-per-room headaches. "We make it clear that we want good, solid construction," declares loan program Commissioner John C. Hazeltine, "but otherwise give the colleges and their architects 100% latitude."

Anti-windfall regulations require the college to give CFA an accounting on all expenditures, and to redeem its bonds (taken by HHFA in exchange for the loan) with any surplus funds. If a loan turns out to be inadequate?—HHFA will gladly consider increasing it.

**No fighting over integration.** In contrast to the Congressional politicking over a segregation amendment that has blocked enactment of federal school construction assistance legislation, the college loan program has been functioning smoothly without any law or administrative regulations concerning either segregation or integration. It has made loans to a number of Negro colleges. In another case, without anyone raising an issue over the matter, it also has made a loan to one southern university (Florida) that has been ordered by the federal courts to admit a Negro to one of its schools.

## Cheaper concrete building seen under ACI code for ultimate strength design

In an unspectacular, but potentially important action, the American Concrete Institute Convention in Philadelphia a month ago unanimously recommended revisions in the ACI reinforced concrete code to permit ultimate strength design construction.

Long known as a more accurate, but more difficult method of calculating strengths of beams and columns, ultimate design goes back as far as Galileo's experiments of 1638. The theory allows more exact calculations of the actual ultimate strength of structural members and permits engineers to design them on the basis of load plus reasonable safety factor instead of overdesigning them by as much as 50%. Coignet and Tedesco's late nineteenth-century "straight-line" theory of beam strengths is a quick and safe, but also a sloppy method of calculation, permitting



### High rise apartment houses urbanizing New York suburbs

Drawing the line between city and suburb was becoming increasingly difficult in the metropolitan New York area. Last month, for instance, foundations were being set for a 21-story air-conditioned apartment (see cut) in East Orange, N.J., celebrated not many years ago as a community of executives' suburban houses out beyond Newark. This luxury tower with 282 apartments, 190 with balconies overlooking a park, and a two-level underground garage with auto space for every suite, was designed by Romolo Bottelli, president of the N.J. Society of Architects and the state AIA chapter. Harry A. Taylor, former state realtor president, arranged financing and will manage the building for the owning syndicate including Builders William Gotelli and Arthur H. Padula.

Even closer to Manhattan, on a 32-acre Ft. Lee site a mile south of George Washington Bridge, former NAREB President Alexander Summer was planning a \$20 million group of eight 14-story buildings totaling 1,400 apartments. This luxury (\$65 a-room) project, on top of the Palisades looking over the Hudson River, was being designed by Architect Max Simon.

at times safety factors as high as 4-to-1. This is the bugaboo of "overdesign."

Simply put, the new system opens the way for important savings in materials. It will not be immediate, it will not apply to every design, but it will eventually mean generally lighter members — beams and columns—and cheaper structures. In use in Europe and Latin America for years, it is official design practice in Brazil, the Soviet Union and a number of European countries, where material savings averaging 10% are regular, and occasional peaks of 40% savings are reported.

The ACI reinforced concrete code is the unofficial concrete bible for about 95% of major US cities. Late in the spring, after a formal mail vote to amend the code (a convention code recommendation has

*continued on p. 16*



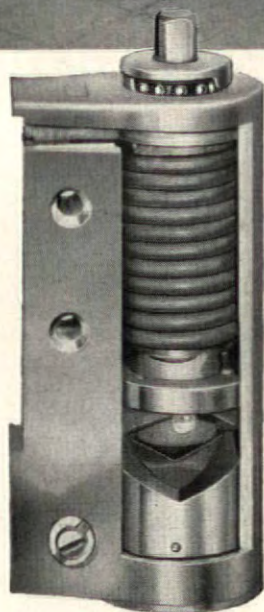
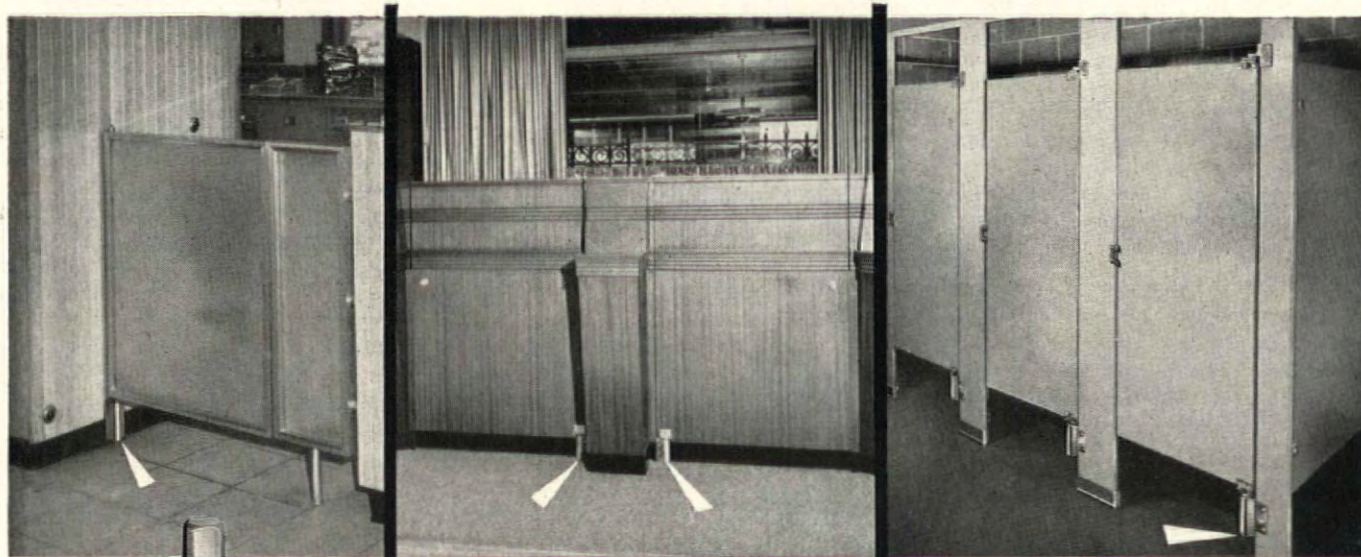
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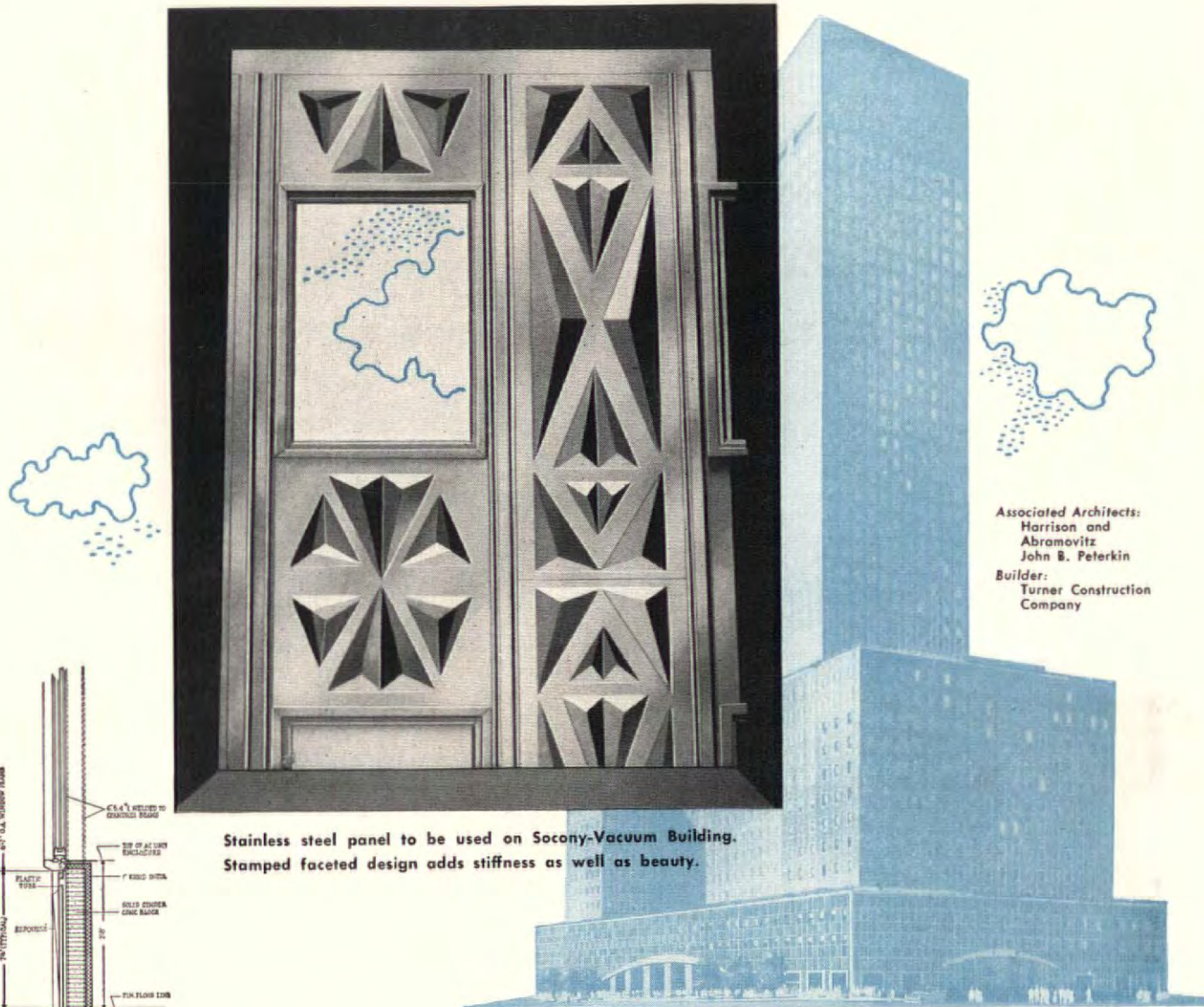
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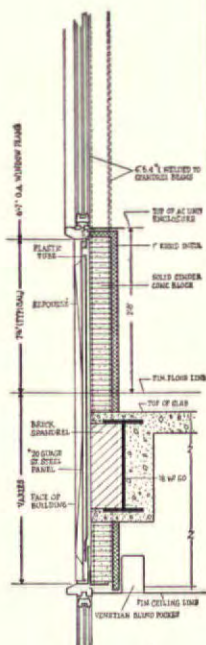
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never been rejected), ultimate strength design will probably be permitted automatically in many cities, most of which have lifted their building code concrete requirements right out of the *ACI* book. Under performance codes, there should be no difficulty in the adoption of ultimate strength design, and, possibly within the year, the industry can start to look for some of its promised savings.

Dean Frank Kerekes, of Michigan College of Mining and Technology, was elected

as the new president of *ACI*. Former President Franklin R. McMillan, of Asheville, N.C., received the Henry C. Turner Medal, "for 40 years of outstanding leadership in discovering and disseminating knowledge of the basic principles of concrete and concrete construction." John I. Parcel, of Sverdrup & Parcel, St. Louis, received the Alfred E. Lindau Award, "for inspired authorship and teaching of structural principles applicable to reinforced concrete design."

## Fullerton, Calif.: orderly development today to avoid urban renewal tomorrow

Probably the best way to avoid the problems of renewing a city is to assure well-planned development in the first place.

Although it may not be the perfect example, having had the benefit of some factors that not all other communities may enjoy, the city of Fullerton, Calif., forms a case study of one young city's efforts to avoid the growing pains of fast, haphazard development and their delayed after effects of deterioration and blight.

**Born both sides of the tracks.** For most of its 68 years, Fullerton dozed peacefully in the shadow of Los Angeles, 25 mi. northwest across a county line. Now and then a Santa Fe train roared through, despoiling the silence of its orange groves. That had to be tolerated, because the tracks were there before Fullerton, but it was not welcome.

As a matter of historical fact, the railroad played midwife to Fullerton's birth. In 1887 two settlers, George and Edward Amerige, bought 430 acres astride the railroad right-of-way and staked out a townsite. But the municipal web they wove, enlarged in later years to 22 sq. mi., filled slowly. Even the discovery of oil (around 1900) scarcely disturbed the city's somnolence. It was an unexpected dividend; that was all. The city fathers legislated themselves a hefty slice—by 1950, oil revenues accounted for 40% of Fullerton's income—and went back to sleep.

For decades Fullerton barely moved. By 1930 its population had reached 10,000, and thereabouts it stayed for nearly 20 years. By 1950 it was only 13,958. The city took a certain pride in discouraging the influx of new industry.

**Tidal wave abuilding.** But all the while, Los Angeles was stretching its elastic seams, spilling space-hungry inhabitants over the near countryside. Inevitably some of these re-settlement safaris dropped their bales in Fullerton. Los Angeles' ambitious freeway system, then still mostly on paper, threatened to lay rude hold of Fullerton with four multi-lane tentacles. Hyper-enthusiastic real estate developers flocked into town, looking for cheap, raw land. Eastern industrialists, with that gleam in their eyes, dispatched scouts to case the swelling West Coast market and more particularly, southern California. By 1950 it was plain to even the drowsiest resident that Fullerton was going to be in for it.

Although handsomely qualified, Fullerton all this time preferred to avoid playing "dormitory" or "bedroom city" for Los Angeles. To preserve its peace, its stewards had done some careful thinking and acting from 1940 on. The City Planning Commission had drawn a zoning map, predominantly rural and residential; only one small southwestern strip was dedicated to light industry. Subdivision requirements were vigorous; a 1955 survey indicated that to develop 80 acres for residential purposes, a developer would have to spend \$130,000 for required improvements in Fullerton, \$68,000 in Buena Park, \$4,500 in Newport and \$3,966 in Costa Mesa—all cities in the same area of Orange County.

**Once discouraged, now embraced.** But even exacting subdivision rules could not stem impressive growth after 1950—and meanwhile the oil subsidy was sliding after the wells had been steadily tapped for 50 years. As oil pool revenue fell and the

population rose, from 13,958 in 1950 to 19,050 in 1952, the city administration took a long hard look at Fullerton's future. One silhouette was crystal-clear: new industry.

In this introspective period, it became equally clear to the city council that Fullerton 1) had to have new industry to replace the diminishing oil subsidy; 2) could accommodate new industry without hurting any one; and 3) was in a better position to attract new industry than any of its near neighbors. Its tax rate, lowest in the vicinity, had not been raised in five years (nor has it gone up since). As one of the 13 charter members of the Metropolitan Water District (formed in 1931), it has proprietary rights to its fair share of Metro water. This assures Fullerton water to grow on. It also is served by three rail lines: Santa Fe's main line from Chicago, and Union Pacific and Southern Pacific spurs. When the Freeway program has been fully cast in concrete, Fullerton will stand, unscathed, in the middle of a square formed by four nonstop highways.

**Go-getter coordinator.** Despite some beefing from pastoral types, Fullerton bowed to the inevitable. Its first—and, as it developed, its wisest—move was to hire a citrus rancher from the Orangethorpe School district, Robert L. Clark, now 42, who, as president of the Orangethorpe School board, had mediated a Fullerton-Anaheim boundary hassle with marked success. A one-time movie special effects man, Clark had no formal qualifications for the job of industrial coordinator; on the other hand, Mayor Hugh S. Warden and City Administrator Herman A. Hilt-scher were positive Clark was their man. "He was a real go-getter," says Hilt-scher.

In outline, the industrial program Clark launched late in 1952 was monumentally simple:

1. More land for incoming industry. A 900-acre tract adjacent to the Santa Fe main line, and later another 300-acre tract, were "reserved" for light industry, with requirements flexible enough so that the city administration, at its discretion, can keep out undesirable invaders.

2. A comprehensive city growth program, re-shaped to accommodate the prospect of industrial growth. A) The school system, for instance, was geared for more rapid expansion. A series of five bond issues were adopted between 1950 and 1954. In a special election last month school trustees were authorized to borrow up to \$3.5 million from the state for additional construction. B) Long before the post-war tide began to flow, farsighted city officials had taken steps to avoid sclerosis of its two main automotive arteries. Other parallel streets were designated as standby arteries, their rights-of-way carefully protected by new and generous setback requirements.

3. The most important thing was the business of attracting new industry. Clark conducted some very active wooing, and worked full time at the job of enticement. In one instance he read in a newspaper that Sylvania Electric Products planned to



Hedrich-Blessing

**FULLERTON PLANT** for Kimberly-Clark Corp. was designed by Skidmore, Owings & Merrill, will have blue and white porcelain enamel panels over exterior. This \$10.5 million, 360,000 sq. ft. mill on a 67-acre site will employ 250 workers, ship its products to distributors in 11 western states.



locate a new plant in northern California. Clark promptly wrote the company chairman in New York, pointing out some of southern California's natural advantages and asking him to consider Fullerton before making his decision. This forthright aggression netted the fish.

**Location and water: marriage.** One of the most recent examples of how an Industry-Fullerton wedding was consummated is that of Kimberly-Clark Corp., which will begin operations this month in its new Fullerton paper products mill (see cut).

For some years, K-C considered a West Coast expansion program, principally to reduce excessive distribution costs. Little thought, however, was given to site; it is traditional to locate paper mills in an area offering abundant water power and the raw material of paper—trees. On the West Coast only the Pacific northwest qualified in these respects; in automatic obedience to tradition, the planners planned to look nowhere else. But some younger executives demurred, and argued that it might be more economical to locate the manufacturing process nearer to the nucleus of the West Coast market, because it was much cheaper to ship pulp than the finished product. K-C research teams at Neenah, Wis. headquarters studied the possible advantages of Northwest, Bay Area and southern California sites, taking into account such strategic factors as population centers, freight costs, labor pools, market proximity. Each time, the answer came up: southern California. The factor that tipped the scales every time was cost of distribution.

As a potential site, Fullerton stuck out like a sore thumb. It had water, and a paper mill runs on water. Besides being assured its proportionate share of Metro water, it sits on top of two underground river basins. Its geographical formation offered another advantage. Fullerton has hills, and can consequently build reservoirs for water storage against dry spells.

**Three times 'round for water.** If Fullerton had lacked water, K-C would certainly have located in the Bay Area. But Fullerton had water, and lost no time filling

K-C's glass. In a special city council resolution, it guaranteed K-C a water supply, 24 hours a day, seven days a week, of "up to 3,000 gallons a minute"—enough to slake the thirst of four papermaking machines although K-C's initial program called for only one. On its side, K-C pledged itself to a water-conservation program: it has devised a water re-circulation program which will make one gallon do the work of two to begin with, eventually the work of three.

In all other important respects, K-C scouts also found Fullerton eminently suited to the company's needs. Said plant manager James A. Murphy: "Fullerton had municipal leadership that planned ahead for industrial growth through a well-defined industrial program . . . it had a comprehensive plan (for its industrial districts) with railroad lead tracks, public utilities and sewer lines.

"Fullerton also planned for its people. It is a progressive, cultural community. Its school building program was well planned and in keeping with growing needs. It has a municipal airport, 20 churches, a large new hospital under construction and well-defined recreation and club programs for young people."

**Growing—but not overgrown.** Former Industrial Coordinator Clark, who was lured from his post for a more attractive position himself last December, estimates the tide of new industry (75% of this post-war growth occurring since 1952) has given his city an extra \$28 million to \$30 million of ratables already, and another \$15 million in sight or in the works.

Fullerton's 1950 population of 13,958 had jumped to 36,016 last October, by an extra official US census count of the entire community. (Plants and enterprises put into construction since 1952 have created 4,100 new jobs, with another 7,150 new jobs in prospect when they are fully staffed in about another year.) At its current rate of growth Fullerton will have an estimated 83,000 population in its present city limits by 1975, or 120,000 if certain areas are annexed. Its urban renewal problems then will be the fewer for its orderly, controlled growth today.

**HEAD OFFICE AND FACTORY** in Fullerton for Arcadia Metal Products, manufacturers of steel- and aluminum-framed sliding doors, was designed by A. Quincy Jones and Frederick E. Emmons with extensive garden and landscaped parking areas. Company relocated in Fullerton (on ten acres adjoining Kimberly-Clark plant) because of rail facilities, for national distribution of its products, and excellent schools and community services for workers' families.

Dale Healy



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## New Waikiki Beach hotel, Hawaii's biggest since '27

Floor-to-ceiling sliding glass doors open onto private balconies with curved railings from all the rooms across the front of the new 11-story Princess Kaiulani Hotel overlooking Waikiki Beach and the Pacific Ocean. Rooms across the back all have wall-to-wall picture windows looking over Honolulu to the Koolau Mountains behind the city. This \$4.5 million 300-room hotel designed by Architect Gardner A. Dailey of San Francisco is the Matson Line's fourth in Hawaii, and the largest hotel built there since the Royal Hawaiian was completed in 1927.

## SIR group suggests factory mortgage insurance by US

Federal insurance of mortgage loans for new industrial plants in labor surplus areas should be studied by the government, according to a recommendation by the federal committee of NAREB's Society of Industrial Realtors.

At a conference a month ago with Raymond J. Saulnier, of the President's Council of Economic Advisers, the SIR group suggested such insurance as an alternative to proposals by the administration to spur industrial revitalization in economically distressed domestic areas through direct government loan assistance for new plants. The SIR committee, headed by Chairman Charles J. Mitchell of Philadelphia, said mortgage insurance (up to 80% of fair market value or cost, whichever is lower) would keep financing in private hands and prove more flexible and practical in reviving blighted areas. But it should be limited, said the committee, to borrowers who could not qualify for conventional financing.

As described to the February meeting of the American Planning and Civic Assn. by Victor Roterus, of the Dept. of Commerce, the administration's program (dubbed by some as "a domestic Point Four program") contemplates (1) a \$3 million appropriation to send consultants and technicians to depressed communities to help develop revival plans, and (2) a \$50 million revolving fund to help distressed communities finance new or improved industrial facilities. Such federal loans (limited to 25% of costs, and supplemented by loans from state and local sources) could be used to prepare land for industrial use, or to construct or remodel plants.

NEWS continued on p. 20





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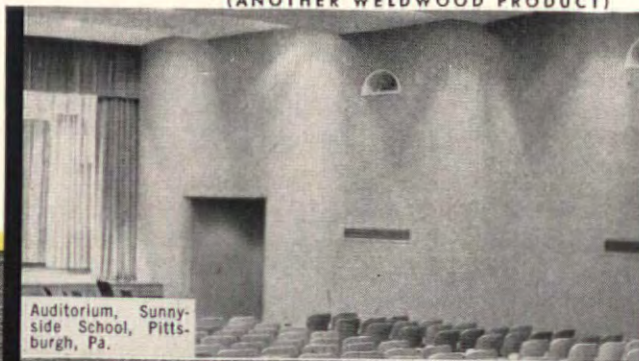
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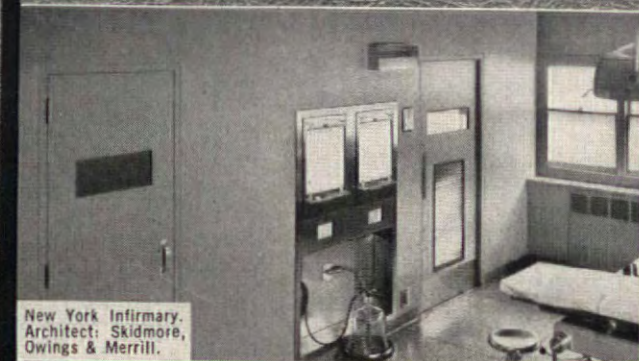
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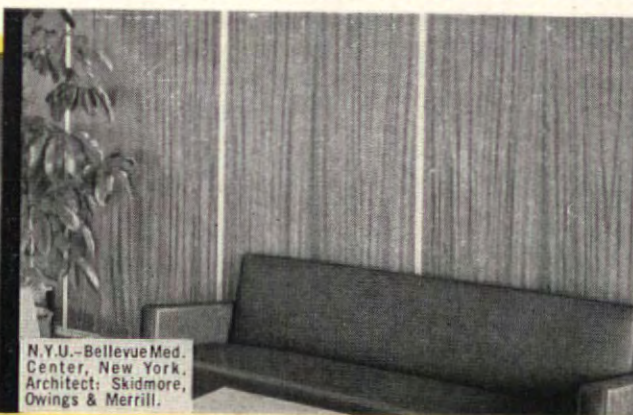
New York Infirmary. Architect: Skidmore, Owings & Merrill.



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# Design awards announced by AIA, NY Architectural League

Spring brought forth the names of five First Honor Award winners and 14 Award of Merit winners in the AIA's eighth annual competition for outstanding American architecture; also the winners of the much longer established National Gold Medals of the Architectural League of New York. (In friendly jibe at the league's award dinner, in fact, National Gold Medal Committee Chairman Walker O. Cain in jest

charged the AIA with appropriating the New York organization's competition for its own some years ago.)

Four of the five top AIA prizes this year were awarded for nonresidential buildings (see cuts)—all of them given, or scheduled to receive their first comprehensive architectural presentation in FORUM. Four of the five top winners also captured Awards of Merit; Wurster, Bernardi &

Emmons an Honor Award and two Merit Awards.

This year's five Honor Award winners raised the number of recipients to 27 in eight years. The jury that named them consisted of Architects Pietro Belluschi, Eero Saarinen, Paul Thiry of Seattle, Donald S. Nelson of Dallas, and George B. Allison of Los Angeles. The full list of winners:

## FIRST HONOR AWARDS

Hillsdale High School, San Mateo, Calif.; John Lyon Reid & Partners (AF, Oct. '53). Center for Advanced Study in the Behavioral Sciences, Palo Alto, Calif.; Wurster, Bernardi & Emmons (AF, Jan. '55).

Lambert Municipal Airport Terminal, St. Louis; Hellmuth, Yamasaki & Leinweber (AF, Nov. '52). Manufacturers Trust Co., Fifth Ave. branch bank, New York; Skidmore, Owings & Merrill (AF, Dec. '54).

House for Mr. and Mrs. Richard Hodgson, New Canaan, Conn.; Philip C. Johnson.

## AWARDS OF MERIT

Hilton Istanbul Hotel, Turkey; Skidmore, Owings & Merrill, associated with Sedad H. Eldem, Turkey (AF, Dec. '55). Schlumberger Administration building, Ridgefield, Conn.; Philip C. Johnson (AF, Sept. '53).

Feld Clinic, Detroit; Yamasaki, Leinweber & Associates (AF, June '55). First Methodist Church, Midland, Mich.; Alden B. Dow (AF, Dec. '52 and Sept. '53). Interfaith Center, Brandeis University, Waltham, Mass.; Harrison & Abramovitz (AF, Sept. '54).

Oak Cliff Savings & Loan Assn., Dallas; Prinz & Brooks (AF, Feb. '56). US Embassy Staff Apartments, Neuilly and Boulogne, Paris, France; Ralph Rapson, John Van der Meulen and John Greenwood (AF, Jan. '55).

Mark Thomas Inn Motel, Del Monte, Calif.; John Carl Warnecke. Los Angeles Police Facilities; Welton Becket & Associates and J. E. Stanton, associated architects.

Architectural office for own occupancy, Long Beach, Calif.; Edward A. Killingsworth, Jules Brady, Waugh Smith.

House for Mr. and Mrs. Theodore Bernardi, Sausalito, Calif.; Wurster, Bernardi & Emmons.

House for Mr. and Mrs. Nelson T. Nowell, Stockton, Calif.; Wurster, Bernardi & Emmons; Landscape Architect, Thomas D. Church.

Krause residence, Whittier, Calif.; Raphael S. Soriano.

House for Mr. and Mrs. Walter P. Swain Jr., Plainfield, N.J.; Reginald Caywood Knight, Jasper Dudley Ward III, associate.

**Architectural League Medals.** The jury that awarded the N.Y. Architectural League Gold Medal in architecture to Giorgio Cavaglieri and Leo Lionni for the Olivetti



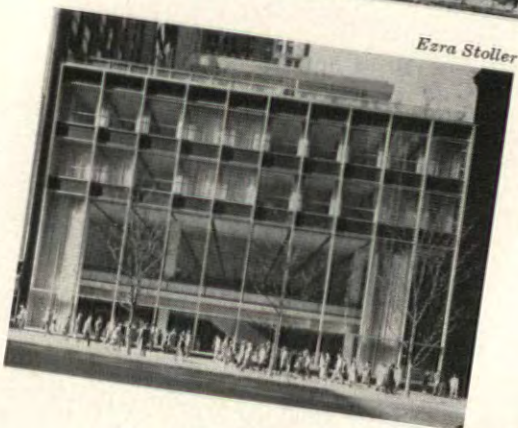
Roger Sturtevant



Morley Baer



Ezra Stoller



**AIA HONOR AWARDS** for nonresidential buildings were given to: Reid's Hillsdale High School, San Mateo, Calif. (top l.); Wurster, Bernardi & Emmons' Behavioral Sciences Center, Palo Alto (top r.); Hellmuth, Yamasaki & Leinweber's St. Louis Airport, and Skidmore, Owings & Merrill's bank for Manufacturers Trust, New York (l.).



Ezra Stoller

**ARCHITECTURAL LEAGUE.** Gold Medal for Architecture was awarded to New York Architect Giorgio Cavaglieri and Designer Leo Lionni (art director of *FORTUNE*), for the Olivetti store and showroom in San Francisco (r.).



store and showroom in San Francisco (AF, Sept. '54—also see cut) was composed of Cain, as chairman, and Architects Gordon Bunshaft, Henry R. Shepley, Max Abramovitz and Ralph Walker. Separate juries selected these additional gold and silver medal winners in allied fields:

**Sculpture.** Gold Medal: Marshall M. Fredericks, Royal Oak, Mich., bas reliefs in Beaumont Hospital, Royal Oak, and in the Ford Rotunda, Dearborn. Silver Medal: Oronzio Maldarelli, sculptural decoration for State Insurance Fund building, New York City.

**Mural decoration.** Gold Medal: Fred Conway, Ladue, Mo., works in the First National Bank, Tulsa; Barnes Hospital, St. Louis and the Mayo Clinic.

**Design and craftsmanship.** Silver Medal: Max Spivak, of New York, mosaic work, Cerebral Palsy School, Staten Island, N.Y.

### AIA directors map drives against packagers, ad photos

AIA directors at their annual meeting in Washington a month ago heard reports and acted on a score of subjects, of which the chief were:

► A decision to convene appropriate committee chairmen and others "to initiate a program for meeting the challenge of the package dealer." Such a meeting will be held before the annual convention in Los Angeles next month.

► A decision to recommend to the convention that last year's action permitting the use of architects' portraits in advertising be rescinded. This followed a discussion of means of limiting the use of such portraits "so they will not violate good taste or harm the profession."

► A report from Chairman Alexander C. Robinson 3rd, of the 1957 Centennial Committee, including word that Eastman Kodak is prepared to give "unprecedented cooperation . . . not only technical assistance but a staggering financial commitment as well" for the institute's centennial architectural exhibition in the National Gallery of Art next year. It is being prepared under the direction of Frederick Gutheim.

► Confirmation of the board's earlier decision to retain Ketchum, Inc., of Pittsburgh, as public relations counsel for the remainder of 1956. At the same time it authorized a new liaison committee to consult with the public relations committee and the staff on "necessary improvements that will strengthen the methods of coordinating and integrating" the institute's public relations program.

After the directors meeting it also was reported that President George Bain Cummings has notified those who intended to nominate him at next month's convention that he will not run for a second term. April 4 was the deadline for nominations for national officers by petition. Nominations also can be made by the nominating committee and from the convention floor.

## Greenfield quits realty firm, heads reformed Philadelphia Plan Commission

City Planning Commission forecast in Philadelphia under the new administration of Mayor Richardson Dilworth, who succeeded fellow-Democrat Joseph S. Clark Jr.: "Cloudy; probably thunder storms."

With the change in administration four of the six members of the ten-man commission who are not ex-officio went out; four new ones came in. Out went: Edward Hopkinson Jr., chairman since the commission was organized in 1943; R. Stewart Rauch, president of the Philadelphia Savings Fund Society, who quit to accept the presidency of the redevelopment project Food Center Corp.; Engineer D. Robert Yarnall, president of Yarnall-Waring Co., who resigned for purely personal reasons, and Industrialist C. Jared Ingersoll, who quit in protest against Dilworth's decision to appoint the man slated to become the chairman.

In came: Albert M. Greenfield, the new chairman, whose realty firm reputedly does more business than any other in the nation, but who also has vast department store, hotel, investment banking and other interests in Philadelphia and elsewhere; G. Holmes Perkins, dean of the University of Pennsylvania's Fine Arts School; Dr. James Creese, president of Drexel Institute of Technology, and Robert McKay Green, a member of Mayor Dilworth's law firm. (The only two holdovers: Builder Carl Metz and Joseph F. Burke, business agent of the AFL Sheet Metal Workers.)

**Causes for uncertainty.** Some of the background that was stimulating open-end speculation on what kind of voyaging lay ahead for Philadelphia's agitated planning ship and its mostly replacement crew of commissioners:

Mayor Dilworth and Hopkinson, a senior partner in the banking house of Drexel & Co., had been on the outs since 1947. Running for Mayor that year, unsuccessfully, Dilworth charged the planning commission was "powerless" and "sabotaged" by the Republican machine that ruled the city at that time. When Mayor Clark's election ended 67 years of Republican rule in 1952, however, GOP-appointed Hopkinson was allowed to remain as commission chairman. His close business and social friend, Democratic leader Albert Greenfield (the same) declared the city owed him "a debt of gratitude for unselfish public service." But after Dilworth was elected last November he soon made it clear that Hopkinson would have to go, and fast, rejected Greenfield's suggestion he be allowed to remain another six months to a year.

**Greenfield quits one company.** But magnanimous and philanthropic 68-year-old Greenfield, who has made large contributions to the University of Pennsylvania, was not without his own foes. Early in December, three weeks before formal announcement

Fabian Bachrach



GREENFIELD



PERKINS

that Dilworth intended to appoint him to the commission, Greenfield announced he was withdrawing as president and selling his stock interest in his large tristate real estate firm, Albert M. Greenfield & Co. He had planned this for several years, he said. His purpose was "to devote more energy, thought and time to public, civic and philanthropic endeavors." But he did not step out of any of his other multiple business enterprises in Philadelphia and elsewhere, and in mid-December planning commission member Ingersoll sent his resignation to Mayor Clark (who had named him to the commission four years earlier).

Protesting the impending Greenfield appointment, Ingersoll wrote: "Any planning commission decisions in the future with a real estate man as a member will raise a question whether the decision was in anyway influenced by personal gain." Mayor-Elect Dilworth said the "complete answer" to Ingersoll was that men like Dr. Creese and Dean Perkins had "informed me that they will be delighted to serve on such a commission"—headed by Greenfield.

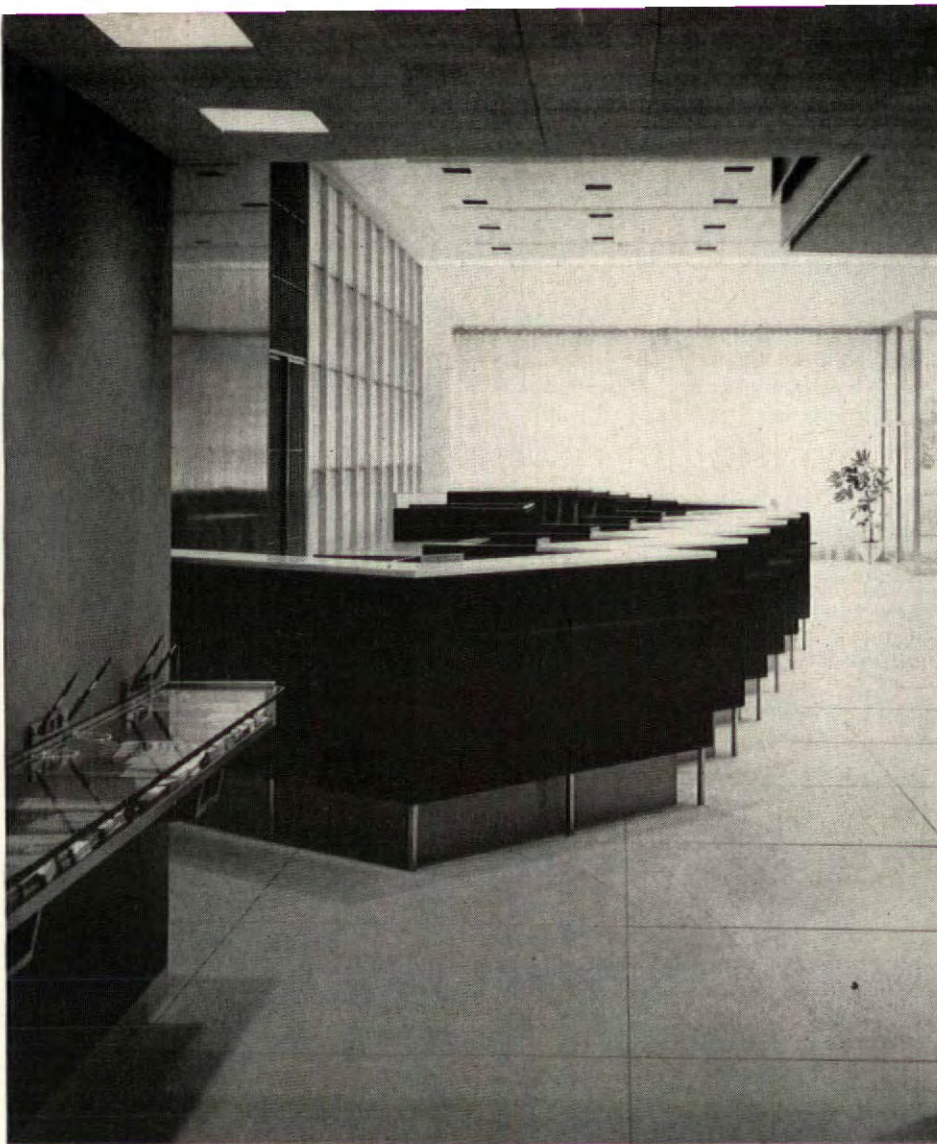
Soon after his election, the unofficial Citizens Council on City Planning asked Dilworth to make "every effort" to name as commission members "persons having no important private interests likely to profit, or the public would think would be likely to profit from the advance information available to the commission . . . men sufficiently younger than the normal retirement age so that they will be available for a considerable period of service"—and no one who has been prominent politically.

### Clarence Stein to receive AIA's Gold Medal for 1956

Clarence Stein, FAIA, internationally famous planner (Radburn, Greenbelt, Kitimat), was chosen to receive the AIA's 1956 Gold Medal, its highest honor. Presentation will be made at the Los Angeles convention banquet, June 17, at which Stein will be the principal speaker.

The institute's Fine Arts Medal will be awarded to Hildreth Meiere, "for excellence in mural painting and mosaics," and its Craftsmanship Medal to Sculptor Harry Bertoia, "for excellence in design and execution of metal work."





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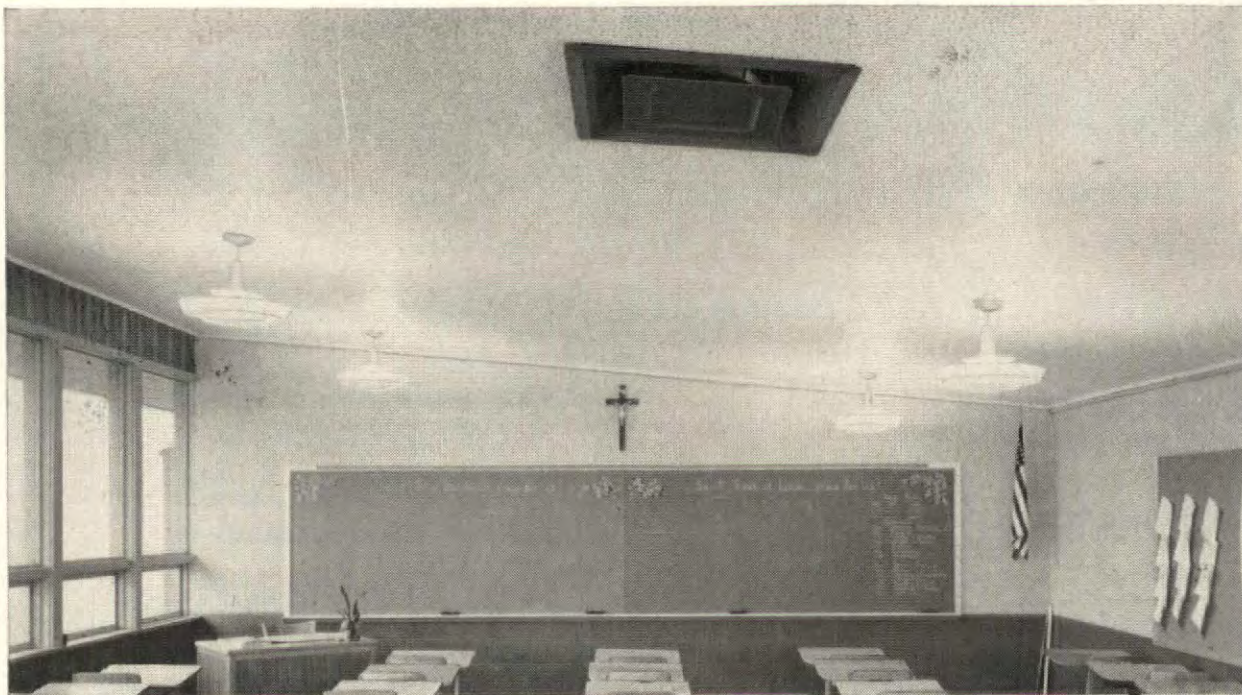
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## PEOPLE

After serving in the House since 1930, a key legislator in shaping national housing policy, **Rep. Jesse P. Wolcott** (R, Mich.), 60, announced he will retire at the end of his current term this year. As a member of the House banking and currency committee since 1933, senior GOP member since 1937 (chairman when Republicans were the majority party) Wolcott had a major role in drafting all national housing laws for almost a quarter century. Democrats and Republicans in the House both esteemed him for his exceptional ability and sincerity, which in 1946 won for him *Collier's* award for "distinguished Congressional service." Last month Washington observers thought a fight in his own state organization made uncertain the re-election of the next ranking Republican on the committee, **Rep. Ralph A. Gamble**, of New York. As a result, they expected the minority leadership (or chairmanship) most likely would descend next January to the present third senior Republican member, **Rep. Henry O. Talle**, of Iowa, first elected to Congress in 1938.

US architectural and construction experts were increasing their activity in Europe last month under both private and public auspices. Architect **Peter G. Harneden**, supervisor for design, construction and operation of many US government exhibitions in western Europe during the last five years, organized a private office, **Peter G. Harneden Associates**, in Orgeval, just outside Paris, specializing in exhibition design and construction, industrial design and architectural service.

To infuse US productivity and efficiency into European housing construction, the Organization for European Economic Co-operation asked Detroit's **Giffels & Vallet, Inc.**, L. Rosetti to provide an architect, engineer and builder for one year to show overseas builders and building officials the advantages of detailed preplanning, organization and administration in construction. In Europe on the assignment last month: Architect **Edward X. Tuttle**, vice president of Giffels & Vallet; Engineer **R. E. Schroeder** of Milwaukee, and Builder **George Morgan**, formerly general superintendent of Charles J. Rogers, Inc., of Detroit.

**ELECTED:** **John Lyon Reid**, of the northern California chapter, and **William Glenn Balch**, southern California, as the new president and vice president, respectively, of the California Council of Architects; **William Bynum**, executive vice president since 1951, as president of Carrier Corp., succeeding **Cloud Wampler**, who continues as chief executive officer in his new post as board chairman; **A. K. Ferguson**, former president of H. K. Ferguson Co. (founded

## Rep. Jesse Wolcott, Republican housing legislation chief, will retire; US Chamber's F. Stuart Fitzpatrick dies

LIFE: Geo. Skadding



WOLCOTT



TALLE

by his father), as a vice president of F. H. McGraw Co., where he will be executive officer for construction of a \$90 million aluminum manufacturing plant McGraw will erect for Olin Mathieson Co. near Wheeling, W. Va.; Architect **Charles DuBose**, designer of the Monmouth Park, N. J., race track and former architecture and design instructor at the University of Pennsylvania, as a McGraw vice president to take charge of its Canadian subsidiary in Toronto; **Carl McFarlin Sr.**, executive committee chairman, as president of Devoe & Reynolds Co.

In organizational reshufflings since the start of the year, AIA Modular Coordinator **William Demarest** has resigned to become assistant director of NAHB's construction department and research institute; **James E. Lash**, 41, former redevelopment director for San Francisco has joined ACTION, the American Committee to Improve Our Neighborhoods, as executive director, succeeding **Martin Meyerson**, who is returning to the University of Pennsylvania at the end of a year's leave but will continue as ACTION's research chief.

**HONORED:** Cleveland's **Ernest J. Bohn** (member of the FORUM Round Table reported on p. 114), given one of the five Governor's Awards in Ohio in January for his public service in housing; NYC Public Works Commissioner **Frederick H. Zurmuhlen**, given the Engineer of the Year award of the metropolitan chapters of the N.Y. State Society of Professional Engineers; **John Ihlder**, pioneer public housing leader, former director of the National Capital Housing Authority, feted on his 80th birthday in Washington last month at a dinner addressed by **Dean Acheson** and Supreme Court Justice **Harold H. Burton**.

For one hour on Feb. 20, **Henry K. Holsman**, FAIA, was held in custody by a US Marshal in Chicago, his sentence after being convicted for mail and securities fraud in connection with the acceptance of down payments for two unbuilt cooperative apartment houses. Federal Judge **Walter J. LaBuy** passed this "mercy" sentence on

89-year-old Holsman, former Chicago AIA chapter president, in consideration of his "fine past record . . . and age." For conviction on identical charges, however, he sentenced his architect son, **William T. Holsman**, 50, who is appealing the verdict, to four years in the penitentiary. The government charged that the Holsmans bilked some 124 investors of \$677,000 on two apartment developments of 244 and 350 units each which they projected in 1951. In the 1920's the senior Holsman organized, built and sold a series of six cooperative apartments. William Holsman blamed their failure to erect their 1951 projects on the credit squeeze created by the Korean crisis, when the government restricted mortgage lending through Regulation X. After that had held up the projects about a year, he said, "our corporate trustee threw the thing into court. . . . We lost a lot of money, and the firm, of course, had to go into bankruptcy." The prosecutor said he was never able to trace what became of the funds paid to the Holsmans, except that some of them were used to bail out earlier projects.

**DIED:** **F. Stuart Fitzpatrick**, 64, head of the construction and civic development department of the US Chamber of Commerce

Blackstone Studios



FITZPATRICK

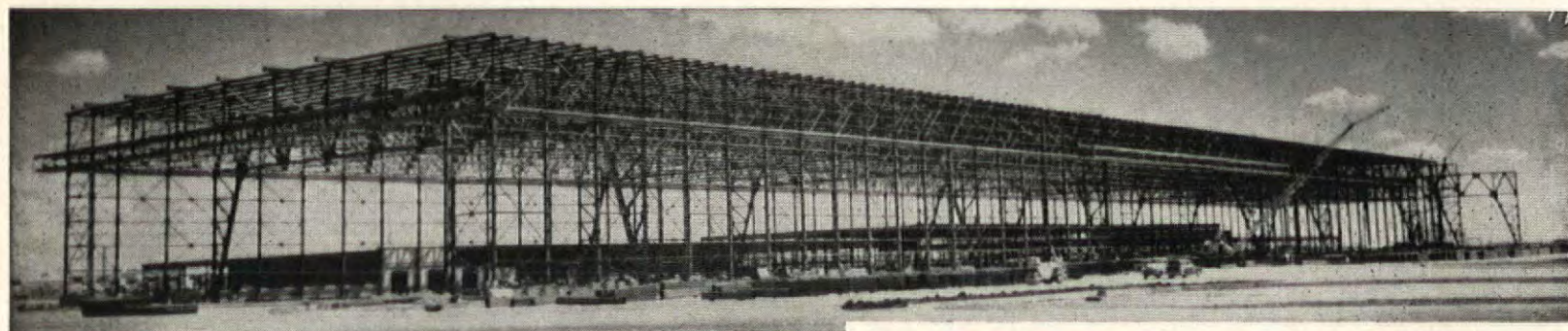
since 1930 and a nationally known leader and writer in the construction field, March 2, in Washington. Fitzpatrick helped establish **BRAB** and the Building Research Institute, was an honorary AIA member, and last November was the third recipient of the Award for Outstanding Service to Construction given by the Producers' Council. **W. M. Reed**, 63, founder and board chairman of American Air Filter Co., Feb. 2, in his winter home in Ft. Lauderdale, Fla.; Landscape Architect **Charles Downing Lay**, AIA, AIP, 78, founder and president of the Housatonic Valley Planning Assn. (Conn.), first American silver medal winner in the Olympic Art Exhibition section for architectural designs and models (1936), Feb. 15, in Stratford, Conn.; **Sumner Godfrey Davenport**, 80, architect for many large Canadian bank buildings, before he retired in 1942, March 7, in Georgeville, Que.; Architect **John MacKnee Jeffrey**, 72, US and Canadian hotel and theater designer, March 10, in Valley Cottage, N.Y.; Engineer **Gavin Hadden**, 67, designer of Harvard's indoor athletic building and many college stadia, official historian of Manhattan District and the Armed Forces Special Weapons Project, March 9 in Washington.

for news about TRENDS—p. 29





**New Maintenance Hangar  
KELLY AIR FORCE BASE  
San Antonio, Texas**



## **Whopping BIG** *any way you look at it!*

**F**ABRICATED and erected by AMERICAN BRIDGE, the new repair hangar at Kelly Air Force Base, near San Antonio, is the world's largest.

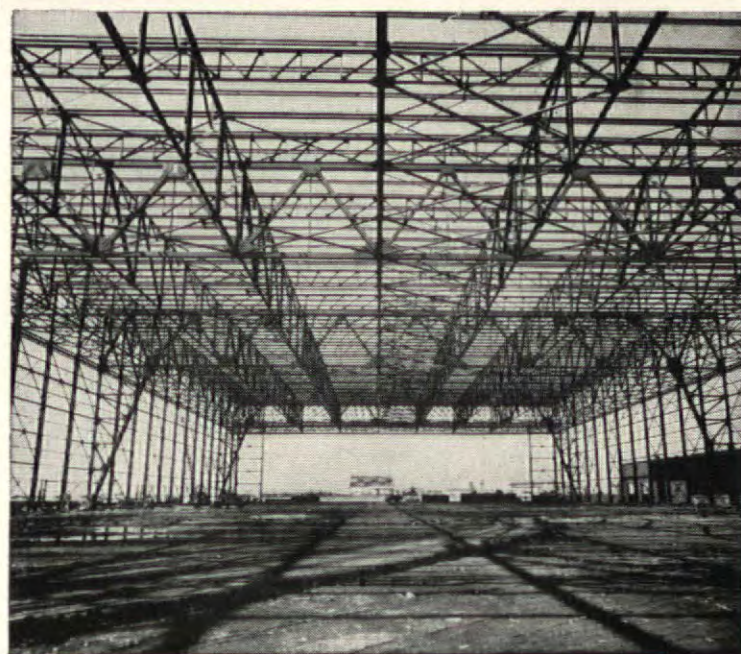
The main repair hangar is 300 ft. wide x 2000 ft. long x 91 ft. high to roof. The framework for this giant consists of 50 double-cantilever trusses 398 ft. long x 24 ft. deep, spaced 36 ft. apart, center-to-center. Each is composed of a center anchor span of 250 ft. and two 74-ft. cantilever spans.

The roof of this main aircraft repair hangar is supported on 10 rigid truss frames 298'-3" long x 24'-9" deep, spaced 250 ft. apart, center-to-center, composed of parallel-chord trusses and two triangular legs which are 66 ft. high x 23 ft. wide at the top. The weight of the structural steel used in this building is 9,374 tons.

The adjoining Maintenance Shops Building is 250 ft. wide x 1650 ft. long. 2,876 tons of steel went into its construction.

In addition to the above main structures, American Bridge fabricated and erected the steelwork for the Boiler House—52 ft. x 80 ft. x two levels of framing; as well as the Pump House—44 ft. x 44 ft.

American Bridge is very proud of its role in helping the United States Air Force expand its air field facilities. Over the years American Bridge has fabricated and erected the steelwork for more than a score of buildings for smaller hangars and other Air Force buildings throughout this country and elsewhere.



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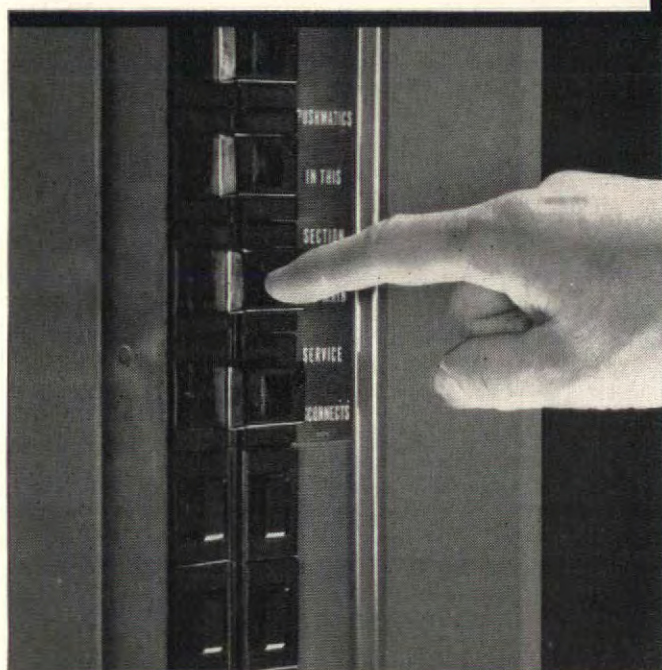
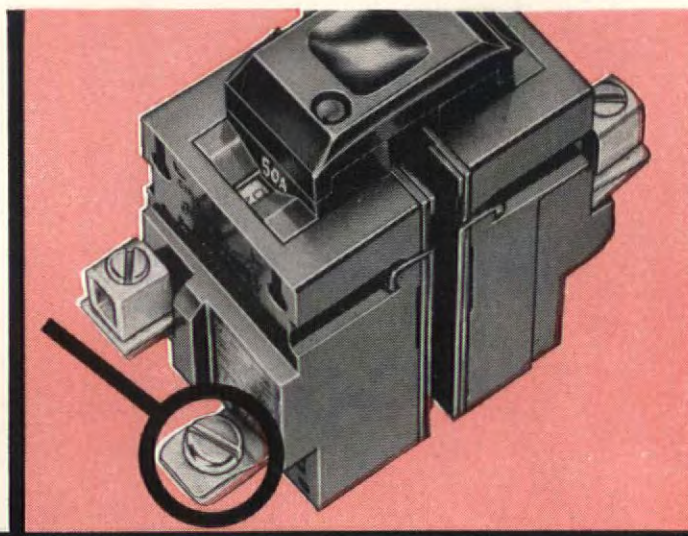
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## MATERIALS: New freight rates, \$1-an-hour minimum wage law, point to further price boosts for lumber and other items

Prices for building materials continued their uptrend in February (see chart), and were heading still higher. The situation last month in leading items:

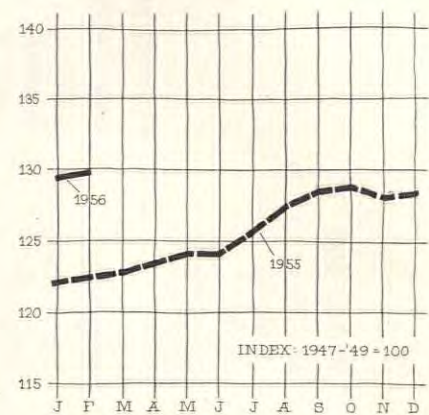
**Steel**—Through June prices for structural shapes and materials were not likely to change drastically, but after that were sure to jump. They would be boosted just as quickly as it was determined what adjustments were required to compensate for whatever wage and benefit increases are won by mill workers in their contract replacing the one expiring June 30. For the present, and indefinite future, the major problems in steel were supply and delivery.

**Copper** — In February leading primary copper producers raised their prices from 43¢ to 46¢ a pound, and last month introduced a dual pricing system: 46¢ for domestic production, 49¢ for Chilean output. In the brass and wire mill fabricating field, Revere Copper & Brass, Inc. took the lead in marking up all its items on the basis of 49¢ a pound for all its raw material, noting that for some custom smelted supplies it was paying as high as 54½¢ a pound. Government officials insisted almost unanimously that record production ought

to bring copper supply and demand into balance by about midyear. Assuming that, said experts, then prices might begin to come down. To ease the present tight situation, ODM on March 13 postponed to the end of the year the scheduled shipment of 36,000 tons under contract for delivery to the defense stockpile by June 30.

**Lumber**—According to BLS, average wholesale lumber prices rose 1.4% in January and February. Two factors promised to boost them considerably in the months ahead: 1) freight rate increases authorized last month by ICC, and 2) the increase to \$1 an hour under the federal wage law effective March 15. On "lumber" articles the ICC approved a rate increase of 6¢ per 100 pounds; for "building woodwork and millwork" articles, 7¢ per 100 pounds. Southern pine producers would feel the greatest effects from the new \$1 minimum wage rate; northwestern producers relatively none. Southern Pine prices in New York were going up at least \$2.50 per Mbf.

**Paints, miscellaneous items**—In the BLS index the sharpest increase in average wholesale prices through January and February



**BUILDING MATERIALS PRICES** rose 0.2%, from 129.4 in January to 129.7 in February, on the BLS index of average wholesale prices. Main causes for the rise were advances of 0.5% for lumber, and 1.8% for prepared paint.

occurred in prepared paints: up 1% the first month of the year, and up another 1.8% in February.

From February 1955 to February 1956, the index for all building materials rose 5.9%. By individual materials, the largest advances over this 12 months period were 12.1% for plumbing equipment; 10.4% for metal doors, sash and trim; 7.7% for structural steel; 7% for structural clay products; 5.7% for window glass, and 5.6% for lumber.

## BUILDING VOLUME: Big nonresidential gains more than offset drop in housing outlays

Private nonresidential construction was taking a big lead as the star performer in 1956 building.

For January and February, compared with the same months a year earlier, its increased expenditures handsomely offset, by a wide margin, the sizable declines in both private residential and all public construction outlays.

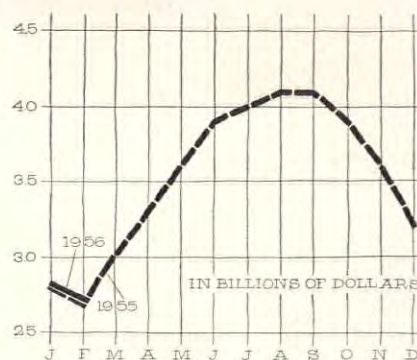
Commerce and Labor Dept. data (see chart and table) recorded a \$210 million (19%) advance in private nonresidential spending for the first two months of this year over January and February, 1955. In the same period private nonfarm residential outlays were off \$111 million (new housing off \$125 million) and total public construction down \$34 million. Private nonresidential outlays not only counterbalanced this combined \$145 million decrease (and an additional drop of \$31 million in farm and other miscellaneous private building categories); they lifted total construction spending for these two months \$34 million above total outlays for all types of building a year earlier.

**Still brighter prospects.** There were also strong indications that nonresidential building would climb to even higher peaks as the year progressed. A joint SEC-Commerce Dept. report last month estimated that business outlays for new plants and equipment this year will reach about \$35 billion, or a 22% gain over 1955's record-breaking \$28.7 billion. Economists who prepared this report said it was based on data gathered late in January and through

February, before President Eisenhower decided he would be willing to run for a second term. It probably would have been even more bullish, they said, if its inquiries had been made after his decision.

Nonfarm housing starts, after a steady, mild (partly seasonal) decline since last summer, turned slightly upwards in February, when they totaled 78,000, a 4,000 gain over January. Seasonally adjusted, the February rate reached 1,200,000 annually again, after hovering just below that mark for the previous three months.

Residential mortgage financing was easing a little. Probably the best uptrend indicator news for homebuilders, however, was contained in the annual survey of consumers' spending plans by the Federal



**TOTAL CONSTRUCTION** expenditures in February declined seasonally to \$2,705 million, just a shade above the previous February record of \$2,698 million set in 1955.

Reserve Board released last month. This survey found that about the same proportion of consumers reported plans to buy new and used houses and undertake home improvement and maintenance programs in 1956 as a year ago.

	First two months			
	Feb. '56	1956	1955	%±
<b>(millions of dollars)</b>				
<b>PRIVATE BUILDING</b>				
Residential (nonfarm)	981	2,060	2,171	—5
Nonresidential*	650	1,301	1,091	19
Industrial	229	454	373	22
Commercial	250	500	387	29
Offices; lofts; warehouses	100	205	167	23
Stores; restaurants				
garages	150	295	220	34
Religious	55	113	108	5
Educational	39	80	81	—1
Hospital; institutions	25	51	56	—9
Public utilities	295	598	599	—
*PRIVATE TOTAL	2,019	4,143	4,075	2
<b>PUBLIC BUILDING</b>				
Residential	19	39	43	—9
Nonresidential	279	569	662	—14
Industrial	28	58	166	—65
Educational	187	377	360	5
Hospital; institutions	19	42	47	—11
Military	81	167	155	8
Highways	165	335	305	10
Sewer; water	75	154	146	5
*PUBLIC TOTAL	686	1,404	1,438	—2
*GRAND TOTAL	2,705	5,547	5,513	1

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

TRENDS continued on p. 32



# How many eyes has this door opened?

## New Concepts of Design Unfold to Architects Using Space-saving **MODERNFOLD DOORS**

Surprising...really surprising how much a folding door can contribute to imaginative design...that door is MODERNFOLD.

Every inch becomes more active, and you are freed of needless design restrictions caused by old-fashioned hinged doors.

Foremost among manufacturers of folding doors is MODERNFOLD. Among your friends in the profession, you will be certain to find many who have used MODERNFOLD in residential, commercial and institutional installations. They will surely vouch for MODERNFOLD's beauty, utility and longevity.

Or if you want the full story, why not call your nearest MODERNFOLD distributor? You and he together will no doubt discover many unique applications for these folding doors.

**modernfold doors have no equal**

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

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NEW CASTLE PRODUCTS, INC., New Castle, Indiana • In Canada: New Castle Products, Ltd., Montreal 6 • In Germany: New Castle Products, GMBH, Stuttgart



Superior construction features account for MODERNFOLD'S leadership

New Castle Products, Inc., Dept. D32, New Castle, Indiana

Please send me full information on  
MODERNFOLD Doors.

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CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

**modernfold**  
DOORS



**builds anything**

with greater simplicity

because attachment is to

both sides of the channel-

completely demountable...reusable

**KINDORF** a basic  
material



A PRODUCT OF STEEL CITY ELECTRIC COMPANY

Send for the Kindorf catalog

PITTSBURGH 33, PA.



## BUILDING COSTS: Large number of company failures caused by pricing ignorance; ruinous underbidding injures entire industry

Judged by its record of business failures, construction, traditionally a risky enterprise, seems now to be riskier than ever.

Looking apprehensively at business fatality records and slim profit figures, many contractors have been wondering where sharpened competition may drive them next. Last month the AGC Carolinas branch *Bulletin* printed some 1955 earnings reports of several leading building materials firms and other big national corporations (see FORUM's earnings reports below), and commented: "How do contractors' profit percentages compare with those of some of the companies with which many contractors do business? . . . Maybe it's time for contractors to begin charging for their goods and services in a manner comparable to other industries."

**Casualty records.** Data compiled by Dun & Bradstreet trace the steady uptrend in failures in recent years and show building's growing share of all business failures:

Year	Construction No.	Liabilities (000)	% of all failures
1940.....	760	\$13,311	5.6
1950.....	912	25,651	10.0
1951.....	957	37,473	12.0
1952.....	838	36,145	11.0
1953.....	1,024	43,327	11.5
1954.....	1,305	56,829	12.0
1955.....	1,404	83,179	12.8

Here's how business failure has hit various kinds of contractors in recent years:

Line of construction	1955		1954	
	No.	Liabilities (000)	No.	Liabilities (000)
General contractors...	443	\$39,827	456	\$29,757
Heating, pl'bing,				
Air cond'ning.....	223	8,391	228	8,548
Electrical .....	96	4,088	53	2,232
Masonry, stone work	50	4,284	25	703
Plastering, lathing.	48	1,373	32	795
Carpentering .....	45	988	27	297
Roofing, sheet metal	91	3,204	139	3,111
Concreting .....	38	1,216	37	1,591
Excavation, founda-				
tion .....	62	3,650	47	2,231

Why does an industry accounting for roughly 10% of the Gross National Product and starting into its 10th straight record-setting year have so many business failures?

The main underlying causes, according to Dun & Bradstreet, are "incompetence" in about 46% of the cases; "unbalanced experience," 20%; "lack of managerial experience," 19%, and "frauds," 1.4%.

**Ignorance—and sure death.** Explaining how so many subcontractors blunder into bankruptcy through deadly ignorance of their real costs, Richard Sanzo, of Dun & Bradstreet, cited last month an experi-

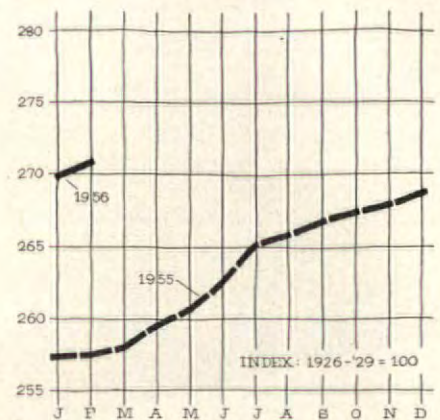
ment conducted by an accountant three years ago at a school for members of the Associated Plumbing Contractors of Georgia. A typical job was projected to the group, and specifications furnished. The men were asked to study the specs well and then to submit a bid. The accountant had calculated in advance exactly how much profit, above costs of labor and materials, was necessary to come out ahead.

The men studied, figured, chewed their pencils and turned in their bids. The projected profit range on their bids, above basic costs, ran from 13% to 29%. The correct answer was 26%.

That small percentage of men whose figures ranged from 26% to 29% could have taken the job profitably; the majority would have lost their shirts.

The lack of uniformity in those bids reflected sheer ignorance of costs—or, more dangerous—a philosophy of "bid, take the job at any price, finagle the profit any way that it can be done," a practice risky for builder and client as well.

**Weakest bidders set pace.** The postwar building rush brought into the field a great many people from lines far afield from construction. Using capital gained elsewhere, these firms hired a few competent supervisory personnel, usually from older, established building firms and went to work on apartment houses and speculative structures. They generally let most, if not all, of the actual work out to subcontractors who worked under loose super-



**CONSTRUCTION COSTS** for nonresidential buildings rose from 269.9 in January to 270.9 in February on the index compiled by E. H. Boeckh & Assoc. The combined January and February increases on this index totaled 0.8%, and in view of new freight rate increases (p. 29) and scheduled wage rate hikes, Boeckh said he anticipated an increase as high as 7% to 8% by the end of the year.

vision. As more and more such firms entered the field, they forced themselves, and the older firms, to lower and lower profit margins—often taking jobs with little or no profit simply to keep equipment working and payrolls met.

Says a long-established Eastern builder: "There used to be five or six bidders on a job—now we have to face 10 or 12. Of course, we have to be careful about our figures." What about the quality of work resulting? "The owner gets exactly what he pays for."

## EARNINGS: Big gains scored by most producers and builders

(thousands of dollars)

Company	1955	1954	% Change
<b>MATERIALS MANUFACTURERS</b>			
U.S. Steel .....	\$370,197	\$195,417	+90.0
General Electric ....	200,923	198,913	+1.0
Kennecott Copper....	125,615	77,906	+61.0
Alcoa .....	87,600	62,000	+41.6
Republic Steel .....	86,271	52,875	+63.2
Pittsburgh Plate Gla.	61,433	38,637	+59.0
Inland Steel .....	52,466	41,287	+27.0
Jones & Laughlin ..	50,104	25,032	+102.0
Weyerhaeuser .....	49,241	35,510	+38.3
Westinghouse Elec...	42,803	79,922	-46.5
Monsanto Chemical..	42,169	23,700	+77.8
U.S. Gypsum .....	40,380	32,371	+24.7
Libby-Owens-Ford ..	36,045	24,046	+50.0
Owens-Illinois Glass	27,022	21,538	+25.5
Johns-Manville .....	23,511	16,655	+41.5
American Radiator,			
Standard Sanitary ..	22,600	20,423	+10.1
Min'polis-Honeywell	19,275	15,345	+26.1
National Gypsum ...	15,763	13,144	+19.8
Armstrong Cork ....	14,542	11,913	+22.1
Lehigh Portland ....	11,262	7,958	+44.0
Lone Star Cement ..	10,767	9,437	+11.9
Hooker Electrochem.	10,555	8,202	+27.9
US Plywood Corp.**	8,615	5,097	+68.0
Carrier Corp.† .....	8,487	6,863	+25.0
General Portland ....	8,195	6,833	+19.9

Penn-Dixie Corp. ...	6,876	4,854	+40.5
Crane .....	9,030	5,087	55.4
Bridgeport Brass ...	5,539	5,105	+9.1
Permente Cement#..	5,346	4,144	+29.6
Carborundum .....	5,187	3,283	+57.9
Celotex† .....	5,081	3,202	+58.0
Flintkote .....	4,945	5,095	-2.5
Alpha Portland .....	4,788	4,576	+4.2
The Ruberoid Co. ...	4,511	4,628	-4.3
Yale & Towne Mfg.**	3,072	1,018	+292.0
York Corp.##.....	2,426	2,912	-20.0
Devoe & Reynolds...	2,175	1,334	+61.6
Kawneer Co. ....	2,083	1,199	+75.0
Congoleum Nairn ...	1,952	1,082	+80.0

### CONSTRUCTION FIRMS

Merritt-Chapman &			
Scott .....	10,745	3,212	235.0
Morrison-Knudson†	4,307	2,852	55.0
Raymond Concrete			
Pile .....	3,050	2,654	15.0
Utah Construction*	1,738	1,116	53.6
Arundel .....	1,554	956	62.5
Arthur G. McKee...	900	1,800	-50.0
Geo. A. Fuller.....	648	660	-1.7
Turner Cons't. ....	377	629	-40.0

\*year ended Oct. 31. †year ended June 30. ##year ended Sept. 30.  
\*9 months to Sept. 30. †9 months to Oct. 31. ##9 months to 1st 11 months.



Largest and most colorful skyscraper in "the world's most air conditioned city."

Houston's new landmark is owned jointly by The Texas National Bank and The Continental Oil Company. Floor space is approximately 560,000 sq. ft.

# TEXAS *National* BANK OF HOUSTON



Huge revolving sign with 15 ft. diameter WEATHER EYE, 85 feet above the 21 story building flashes weather forecasts by color.



Architect  
Kenneth Franzheim  
Engineers  
Bernard Johnson & Associates  
Contractors  
Barber Plumbing, Inc.  
and Straus Frank Co.



## POWERS *System of individual room Air conditioning control used in this colorful building*

The ultimate in comfort has been provided for the occupants of this beautiful building. With individual room control they can select and enjoy the temperature they want.

Maximum year-round comfort, obtained with 640 Powers pneumatic summer-winter thermostats controlling 1500

air conditioning units, helps increase employee efficiency.

When you want modern individual space temperature control specify a Powers pneumatic system. The advantages of its simplicity and dependable performance have been proven in many of the nation's prominent buildings.

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Skokie, Illinois | Offices in Chief Cities in U.S.A., Canada and Mexico  
65 Years of Automatic Temperature and Humidity Control





**PROOF THAT HEAVY DUTY FLOORING CAN BE LUXURIOUS!**



**Magnificent  
New Resilient Flooring  
Features  
Permanence and  
True Color Clarity**

EXCLUSIVELY IN GOLD SEAL "VENETIAN"... A MARBLE DESIGN IN THE LUXURIOUS ITALIAN MANNER

## **NEW GOLD SEAL NAIRON\* TILE-CUSTOM**

"Nairon" Custom Venetian is a remarkably beautiful resilient tile flooring for modern business interiors and luxury homes. Colors in these  $\frac{1}{8}$ " homogenous plastic tiles are maintained in full value through the entire thickness. The tiles are reminiscent of the memorable floors in the world's architectural gems.

Highly resistant to abrasion and the weight of heavy loads, "Nairon" Custom Tile is both flexible and tough. A superior plastic product, it is grease, oil and chemical resistant—a "natural" in heavy

traffic areas where beauty and styling must appear. The design lends itself to use with brass, copper or stainless steel feature strips. Write to Architect's Service Department, Congoleum-Nairn Inc., Kearny, N. J. for information and samples.

**SPECIFICATIONS:** Install over on-grade concrete, suspended wood or suspended concrete.

"Venetian"—5 colors— $\frac{1}{8}$ "

"Sequin"—19 colors— $\frac{1}{8}$ " and .080"

"Marble"—7 colors— $\frac{1}{8}$ " and .080"

All  $\frac{1}{8}$ " tile available in 9" x 9", 12" x 12" and 18" x 18".

The .080" tile offered in 9" x 9" only.

### **FOR HOME OR BUSINESS:**

INLAID BY THE YARD—Linoleum • Nairon\* Standard • Nairontop\*  
RESILIENT TILES—Rubber • Cork • Nairon Custom • Nairon Standard  
Vinylbest • Linoleum • Ranchtile® Linoleum • Asphalt  
ENAMEL SURFACE FLOOR AND WALL COVERINGS—  
Congoleum® and Congowall®  
RUGS AND BROADLOOM—LoomWeave\*



CONGOLEUM-NAIRN Inc., Kearny, N. J. Copr. 1956



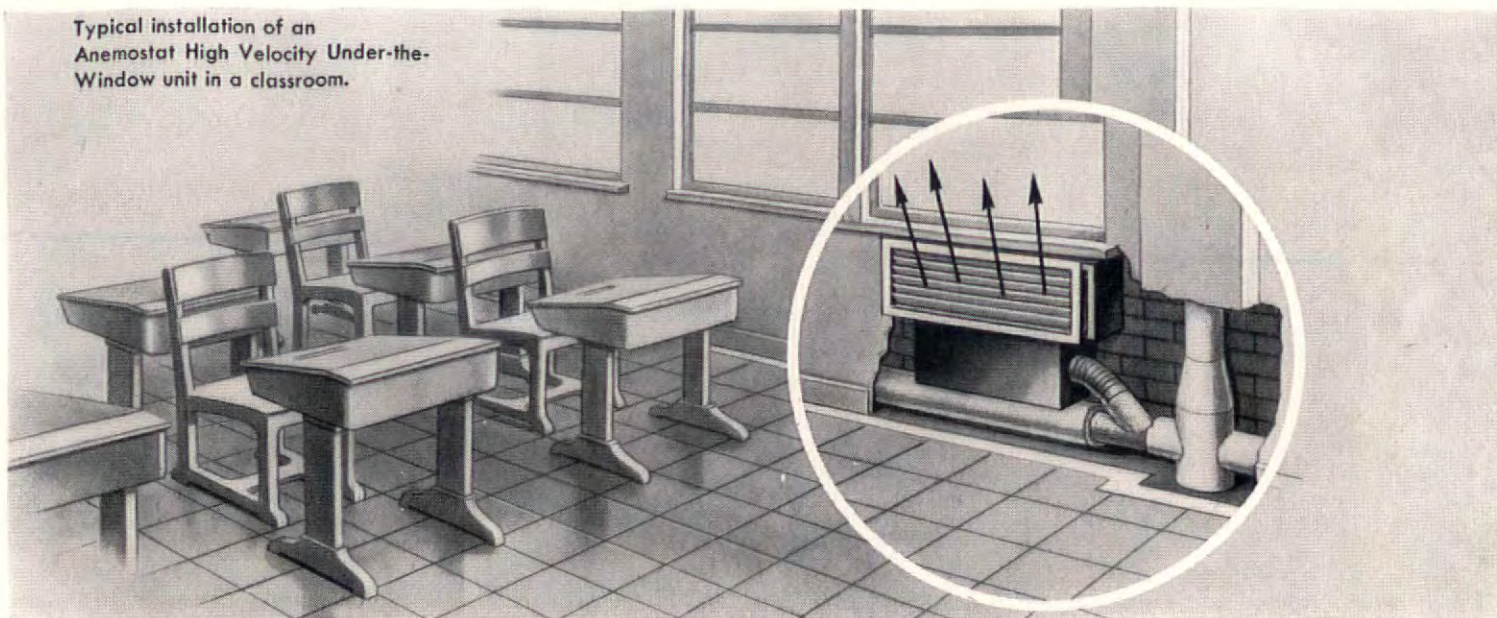
FOR THE LOOK THAT'S YEARS AHEAD

**Gold Seal®**  
FLOORS AND WALLS

\*Trademark



Typical installation of an Anemostat High Velocity Under-the-Window unit in a classroom.



## How to deliver high velocity air to schoolrooms

Shown here are two ways of using the Anemostat All-Air High Velocity system of draftless air distribution for heating and ventilating schools. Under-the-Window units (above) are the most practical for colder climates. Corridor distribution (below) is preferable in warmer climates.

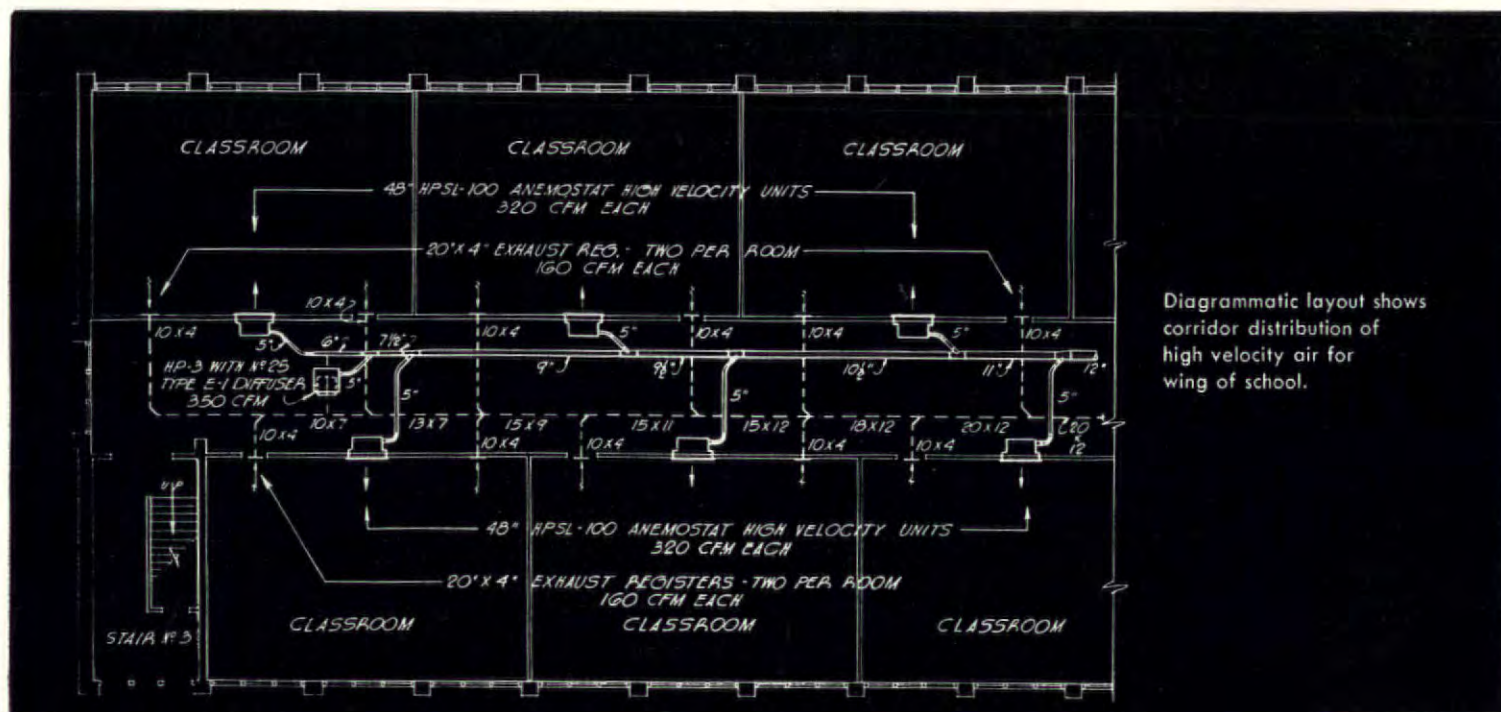
### Advantages:

- All-Air High Velocity units require smaller than conventional ducts, thus save space and money.
- All-Air HV units can be used for individual or zone control, in single or dual duct installation.
- Since air is supplied from the main equipment room,

there is no need to break through the outside of the building for prime air make-up. This eliminates grilles, dampers, possibility of leaks.

- The Anemostat All-Air HV system can be simply installed by the sheet metal trades. No supply or return pipes are required. Units are quiet, need a minimum of maintenance from custodians.

For latest data on All-Air High Velocity units, write on your business letterhead for new Selection Manual 50 to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.



Diagrammatic layout shows corridor distribution of high velocity air for wing of school.






Robbins Floor Products, Inc., Tuscumbia, Ala., created this smartly styled modern flooring. It's homogenous vinyl tile with a bright and lustrous sheen. Molded from BAKELITE Brand Vinyl Resins, it thoroughly resists wear, stains and soiling, despite heaviest traffic. The easiest of cleaning keeps its beautiful colors bright and unmarred for years. And the savings on maintenance costs every year could well amount to more than the entire cost of the flooring!

# Up-to-date styling... years-to-come savings

*but that's only part of the many  
advantages of flooring made of*

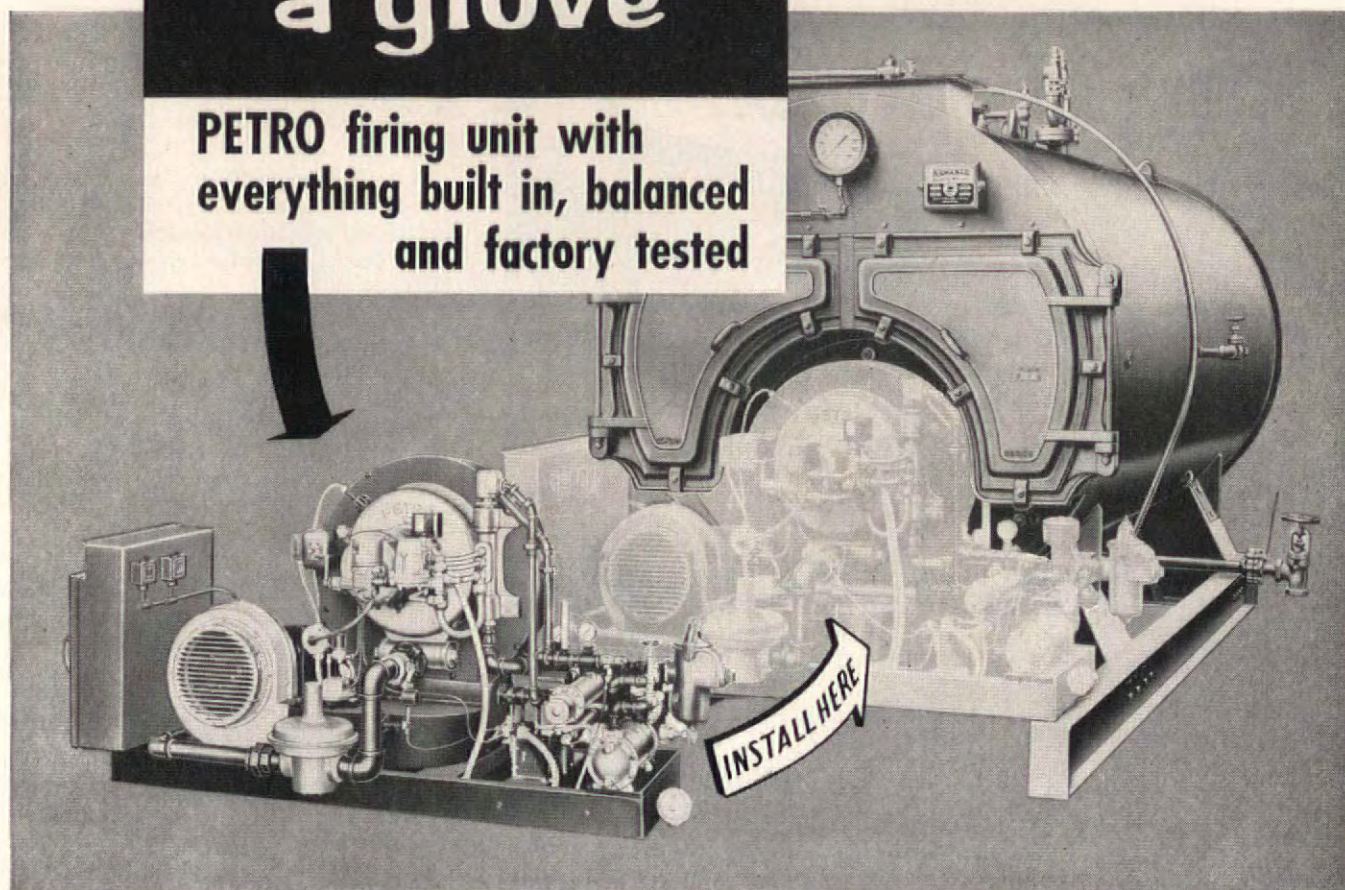


**BAKELITE COMPANY**, A Division of Union Carbide and Carbon Corporation  30 East 42nd Street, New York 17, N. Y.  
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC



# Fits like a glove

**PETRO firing unit with  
everything built in, balanced  
and factory tested**



**The PETRO package includes an oil or gas burner (or combined gas-oil);  
a factory-wired control panel; forced draft air supply and a  
built-in fuel system—ALL IN A SINGLE INTEGRATED UNIT**

Phantomed area shows the Petro package unit (assembled at factory on its own base) fitted to boiler front. Refractory burner throat is part of the burner—no brick work or tile required.

This is not a simple conversion burner—it's a complete combustion system. Everything that goes into an ultra-modern firing system is right here, mounted on a rigid steel frame and ready to go. All of the intricate wiring and electrical controls are factory assembled, installed, and tested. Every component is engineered for the job, in the proper size, capacity, and type. Nothing is left to on-the-job improvising.

And best of all from *your* standpoint, a single unit

means single responsibility. It's a Petro job from beginning to end and Petro is proud to back it up. It has all the sturdy qualities that have made Petro famous for **DEPENDABILITY**.

The Petro forced draft burner is suitable for firing all types of boilers, or can be purchased as a complete boiler-burner unit with matched Scotch type Titusville or Kewanee boiler.

Coupon will bring full information and specifications.

# PETRO

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

PETRO, 3215 West 106th Street, Cleveland 11, Ohio.  
In Canada, 2231 Bloor Street West, Toronto, Ontario.

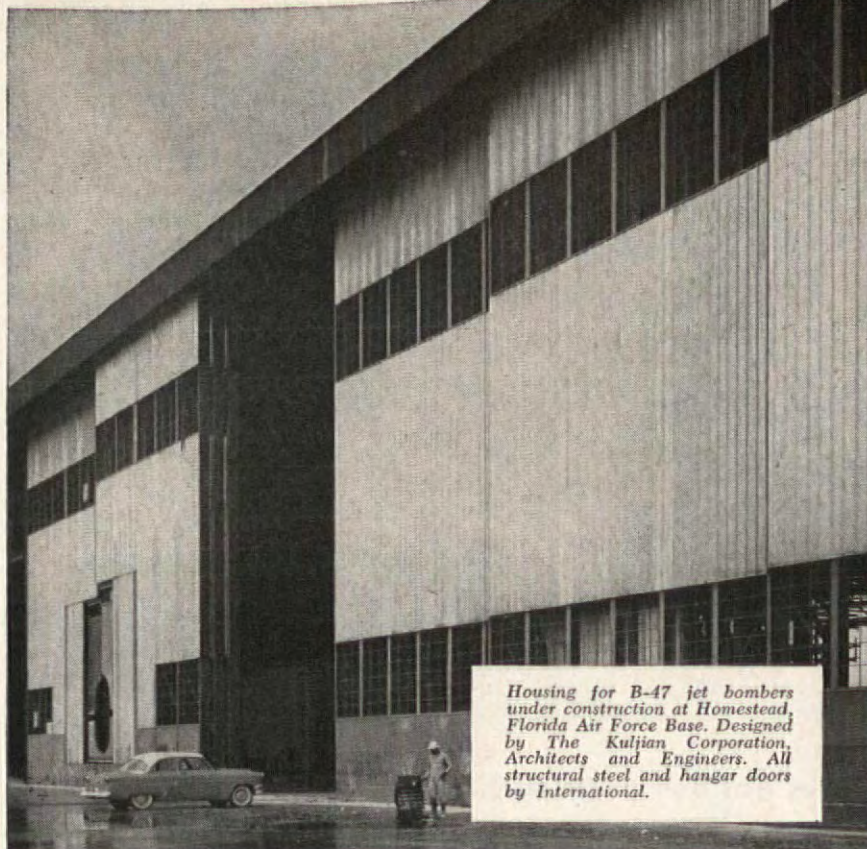
Please send me literature and specification sheets on the money-saving Petro Package Unit.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_



it's a wall . . .  
it's an entrance . . .

it's **SUPERPLANNED!**



*Housing for B-47 jet bombers under construction at Homestead, Florida Air Force Base. Designed by The Kuljian Corporation, Architects and Engineers. All structural steel and hangar doors by International.*

Each of this huge structure's two sides comprises 11 International-built doors — each door self-propelled, 64 feet high and 35 or 40 feet wide. Together, they form a weather-tight wall when closed, even when planes extend partially outside. All doors open with pushbutton ease, individually and in any combination, to match any entrance need at this giant maintenance hangar. Before planning door installations for any plant or aviation building, check with International . . . where you'll find the kind of teamwork that can help you make short work of entrance problems.

*See Sweet's Industrial Construction File No. 7a*



**INTERNATIONAL STEEL COMPANY**  
2102 EDGAR STREET • EVANSVILLE 7, INDIANA

## DATES

**American Institute of Steel Construction**, 8th annual national engineering conference, **April 4-6**, Lehigh University, Bethlehem, Pa.

**Urban Design Conference**, **April 9-10**, Graduate School of Design, Harvard University, Cambridge, Mass.

**National Housing Conference**, annual meeting, **April 11-13** (dates changed from April 9-10), Hotel Statler, Washington, D. C.

**Smithsonian Institution**, traveling exhibition, "The Re-Union of Architecture and Engineering," through **April 15**, Swarthmore College, Swarthmore, Pa.

**AIA Regional Conferences**, **South Atlantic District** (guest speaker: Italian Engineer Pier Luigi Nervi), **April 12-14**, Washington Duke Hotel, Durham, N. C.; **Middle Atlantic District**, **April 26-28**, DuPont Hotel, Wilmington, Del.; **Gulf States District**, **Oct. 7-9**, Chattanooga, Tenn.; **California-Nevada-Hawaii District**, **Oct. 10-13**, Yosemite, Calif.; **Western Mountain District**, **Oct. 18-20**, Salt Lake City.

**Smithsonian Institution**, traveling exhibition, "Building in The Netherlands," **April 15-May 6**, Hunter Gallery of Art, Chattanooga, Tenn.

**Mortgage Bankers Assn. of America**, Eastern mortgage conference, **April 30-May 1**, Hotel Commodore, New York; **Western conference**, **May 14-15**, Mark Hopkins Hotel, San Francisco.

**American Institute of Planners**, annual meeting, **May 7-9**, Sheraton-Biltmore Hotel, Providence, R. I.

**Michigan Engineering Society**, annual convention, **May 11-12**, Pantlind Hotel, Grand Rapids.

**American Institute of Architects**, annual convention, **May 14-18**, Hotel Biltmore, Los Angeles.

**American Society of Civil Engineers**, structural division, Spring convention, **June 4-8**, University of Tennessee, Knoxville.

**American Society of Heating and Air-Conditioning Engineers**, semi-annual meeting, **June 18-20**, Shoreham Hotel, Washington, D. C.

**School Plant Planning Workshop**, conducted by Dept. of Architecture, University of Colorado, **June 18-July 20**, Boulder, Col.

**National Association of Building Owners and Managers**, annual convention, **June 24-28**, Biltmore Hotel, Los Angeles.

**New York State Assn. of Real Estate Boards**, annual convention, **June 24-27**, Concord Hotel, Kiamesha Lake.





## Standard Fixtures — Right out of the Catalog do this Interesting Lighting Job — by **LITECONTROL**

This handsome interior is the Franklin County Trust Company, Greenfield, Massachusetts. We think you'll agree that the Litecontrol lighting makes an important contribution to the pleasing appearance and we would like to tell you how it was accomplished — *with standard Litecontrol fixtures.*

Holophane Controlenses\* keep the brightness subdued while distributing the light efficiently. Supplementary incandescent lens boxes are used in the rectangles, at all corners, and in the "tee" section where the fixture runs across the rectangle. Note how the lighting displays the murals to best advantage — from top to bottom.

We're specialists in supplying "the right light with the right fixture in the right place" . . . with a custom look at standard prices. Let us know your lighting requirements for stores, offices or public buildings.

\*® Holophane Co., Inc.

ARCHITECT: Howe, Prout & Ekman, Providence, R. I.

ELECTRICAL CONTRACTOR: Edward Stotz, Inc., Riverside-Gill, Massachusetts.

AREA: Public and Bank Working Sections.

CEILING HEIGHT: 12'-0".

FIXTURES: Litecontrol No. 5128 recessed lens troffers with No. 5100-33 corner type and No. 5100-35 tee type supplementary lens boxes in rectangle.

INTENSITY: 50-60 footcandles average in service.



# LITECONTROL

## Fixtures

KEEP UPKEEP DOWN

LITECONTROL CORPORATION

36 PLEASANT STREET, WATERTOWN 72, MASSACHUSETTS

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





# Marlo Seazonaires To Air Condition Luxurious New Chicago

**When You Look for Quality in Air Conditioning —  
You'll Find Marlo.**

Send for your copy of new brochure on Marlo Seazonaire Room Air Conditioning Units—Remote Type.

Fabulous is the word for these ultra-modern apartments now under construction on Chicago's lake front by Herbert S. Greenwald. The "900 Esplanade Apartments" will include two 29-story skyscrapers, and the "Commonwealth Promenade Apartments" will comprise four 28-story structures. The buildings will be the tallest flat-slab, reinforced concrete structures in the country, and possibly in the world.

Summer and winter comfort conditioning in these luxurious buildings will be provided in individual suites by Marlo Seazonaire Room Air Conditioning Units—Remote Type, permitting tenants to select temperatures to suit their individual comfort.

Both skyscraper projects were designed by Ludwig Mies van der Rohe. Associate architects are Friedman, Alschuler & Sincere. William Goodman is the mechanical engineer, and Sumner Sollitt Company the structural engineer. Mechanical contractor is Advance Heating & Air Conditioning Corp.

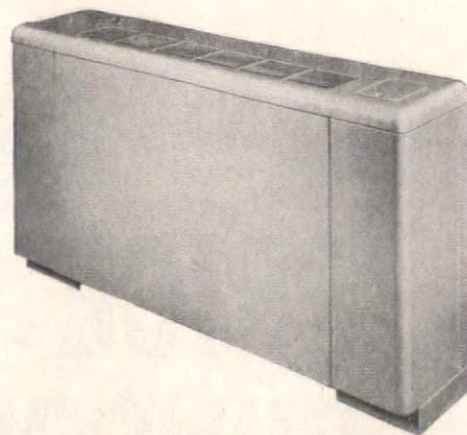
## **MARLO coil co.**

SAINT LOUIS 10, MISSOURI

Quality Air Conditioning and Heat Transfer Equipment Since 1925



**\$25,000,000 LAKE FRONT  
GROUP WILL BE ONE OF  
COUNTRY'S LARGEST FULLY  
AIR CONDITIONED PROJECTS**



Marlo Seazonaire  
Room Air Conditioners—Remote Type—  
Free Standing Style.

# Apartments





# PRICE CONSCIOUS?

There's no need to sacrifice beauty in sound conditioning for the sake of economy. You can have both with



Forestone, a sensationally different acoustical material, has all the beauty of fissured mineral tile, with even greater warmth and richness, yet

**Simpson Forestone**  
fissured tile costs no more  
... in the 9/16" thickness ... than popular thicknesses of perforated tile. Forestone is also available in 3/4" thickness with either beveled or square edges.

Installed only by Simpson  
Certified Acoustical Contractors  
identified by this symbol



Mail this coupon for  
information and name of  
nearest contractor

Simpson Logging Company • 1010 White Building, Seattle 1, Washington  
Please send additional information to:

NAME .....  
ADDRESS .....  
CITY ..... STATE ..... A.62

**SIMPSON LOGGING COMPANY • SHELTON, WASHINGTON**

## (THE INESCAPABLE PAST)

"One of the interesting sidelights coming out of the latter studies was the discovery of the various technics used for getting into bed and their connection with the wearing of slippers and the necessity for getting under the blankets. Slipper-wearers usually sit on the edge of the bed first. Nonslipper-wearers very often flop face down, particularly if the bedclothes are not in the way. This method is almost compulsory for very high beds. Long-legged sleepers have a trick way of walking into bed if the bed is low enough."

The above quotation is from *Family Living as the Basis for Dwelling Design*, Volume VI, p. 7—"Measuring Space and Motion," published by the John B. Pierce Foundation in 1944. It was sent us by a friend, Amnon Rubinstein, as a nostalgic reminder of what housing research used to be. A few years ago a great deal of time—perhaps too much time—was devoted to research into people's behavior and wants. Now, of course, more effort seems to go into charging ahead in the laboratory to create new behavior and new wants. The latter is more exciting. It is great fun to be anticipated.

But it is also reassuring when the great technological headwaiters sometimes stumble while leading us to new feasts. When one of the marvelous new machines does hesitate, or develops one of the eccentricities that the Pierce Foundation used to treasure in us people, the franchise is given back to humanity.

It happens. Not long ago one of our operatives was over at the grand opening of a touring Kitchen of Tomorrow, a marvelous array of gadgetry designed to make the housewife a cog-maiden of progress. The demonstrator had got along as far as the kitchen telephone. It had a svelte charcoal gray mouthpiece, and, for demonstration purposes, a loudspeaker. There also was a TV screen for talking face-to-image. And another feature of this telephone of tomorrow, one of the designers explained kindly to the audience, was an electronic device to simplify the tedious process of dialing. Fifty numbers could be preset to be obtained merely by dialing a simple, single-motion signal. The phone mechanism itself, smiling a charcoal gray smile, would then do the monotonous hand work.

"For example," said the guide, "let us assume that you wish to dial to find out



# PARENTHESES



what the correct time is. Instead of seven hand operations, one each for dialing ME 7-1212, all I have to do is make one simple motion. Let me show you."

The demonstrator then made the one simple motion and the audience waited, listening, some of them leaning forward toward the telephone-speaker, ready to check their wrist watches. *Click-click* went the automatic dialer. The phone buzzed four times. Then finally a voice was heard. It was a vague female voice. "Hullo? . . . hullo? . . ." it said plaintively, from another, older world.

The demonstrator silently lowered the charcoal gray phone to its cradle. Somewhere a long-legged nonslipper-wearer stood, phone in hand, and wondered who was calling.

## (PRESTIGE)

Here are two advertisements from the Sunday Real Estate section of the New York Times, the local family bible of builders. The first advertiser is a builder of garden apartments in the Bronx, and you can tell he has a point to make about his product:



The address of the Cadillac apartments is 44 Fleetwood Ave.

There you have the enthusiastic approach, which is the general tone of most real estate advertising in the Times. But not all sellers believe in giddy allusions. Farther out in the suburbs, in Upper Brookville for example, a surprisingly

stern tone is sometimes taken:

## NEW YORK TIMES, SUNDAY

Houses—Nassau-Suffolk		EAST	
<b>GOOD INTENTIONS PAVE THE ROAD TO . . .</b> any choice wooded site the family agrees would be just the setting for that home you have thought of finding in the Brookvilles. You see, at Brynthon Woods, the acreage you select yourself is taken off the market and reserved as reserved for you on nothing more tangible than your sincere desire of becoming a future resident of this estate community. We know it takes time and thought to work out plans, cost and budget with the architect—and we also know that the security of having your acreage reserved during those weeks affords unfettered planning. Thus, our confidence in Brookville and in you makes it possible for the land of your choice to be reserved in your name without one dollar down payment. Present residents' homes range from about \$40,000 to about \$60,000. What yours would cost is completely dependent upon your demands. Certainly you should find out if you ever plan to live in an estate-zoned village.		<b>FULL BASE</b> Just reduced luxurious 11 spacious 11 kitchen, 2 plus a 3rd 30' dormer, basement, professional frass included storms, scr	
<b>GENERAL EASTERN CO</b> Northern Blvd at Glen Cove Rd. Roslyn 3-5260 Field office phone. Brookville 5-6583		<b>FULL BASE</b> Exotic custom. Cod with 1 framed by tv fords the spl room with casting log-billy-sized dining in kitchen, 2 tile bath, fu garage. Gor. flagstone patio make this	
<b>Artists' Hilltop Estatelet</b> Three Milk Views		An artist's C this sprawling Ranch. The plays a center room with pic ing room, kna kitchen, 3 clared Hollywe extras. Tal sage.	



## (COO)

Pigeons, like architecture, are always with us, but with the coming of spring their arrogance blooms anew. We have noticed a lot of that over the course of the last year in New York. It began last April after we printed a photo of some Venetian pigeons relaxing in the shade.

Soon after this photo appeared, a scornful New York pigeon settled in an air-conditioning exhaust on the roof of the setback just below our office windows. Not only settled, but set up housekeeping and laid two eggs, and—defying the strong updraft from the air exhaust below her—hatched them. She was quite a sight, sitting defiantly on the eggs, her feathers ruffling in the breeze, her eyes fierce as only

maternal feeling can make a pigeon's eyes fierce. Her strategy was clear: when the time came for her young to learn to fly, they would be assisted aloft by a man-made updraft. Venetian pigeons may be wise, but New York's pigeons are sophisticated.

Midtown N. Y. C. pigeons are fortunately not yet the architectural nuisance that pigeons were in Milan, Italy, a year ago. There the pigeons were making such a mess around the cathedral and cafés that it was proposed by a sly delegation of concerned citizens that bread soaked in wine should be set out in the square one evening for the pigeons to devour, then that they be seized when inebriated and carried off in speeding trucks to wake up in the countryside the next morning, with hangovers and no sense of direction.

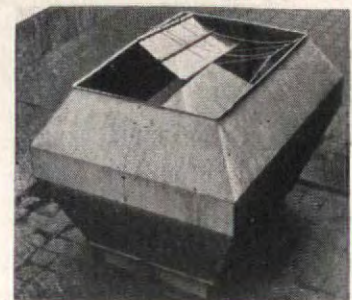
This was in modern-day Milan. In 1811 Stendhal wrote a letter about earlier residents of that city:

*"I daily perceive that at heart I am Italian, saving any bent for murder—a bent of which, in any case, they are accused unjustly.*

*"But the mad love of gaiety, music and the free-est conduct, the art of tranquilly enjoying life, etc. . . . all these constitute the Milanese character."*

Evidently the centuries don't change the Milanese, and probably don't change the pigeons much either. Exile wouldn't work; the pigeons would hitchhike back.

Most pigeons in our area of New York fly over to take their meals in front of St. Patrick's Cathedral across Fifth Ave. from Rockefeller Center. There they have come to believe in divine beneficence, and with good reason. They know about lesser beneficence too. When rain threatened the pigeons below us on the air-conditioning outlet, a couple of pagans from the promotion and art departments down the hall even climbed out and rigged an awning.

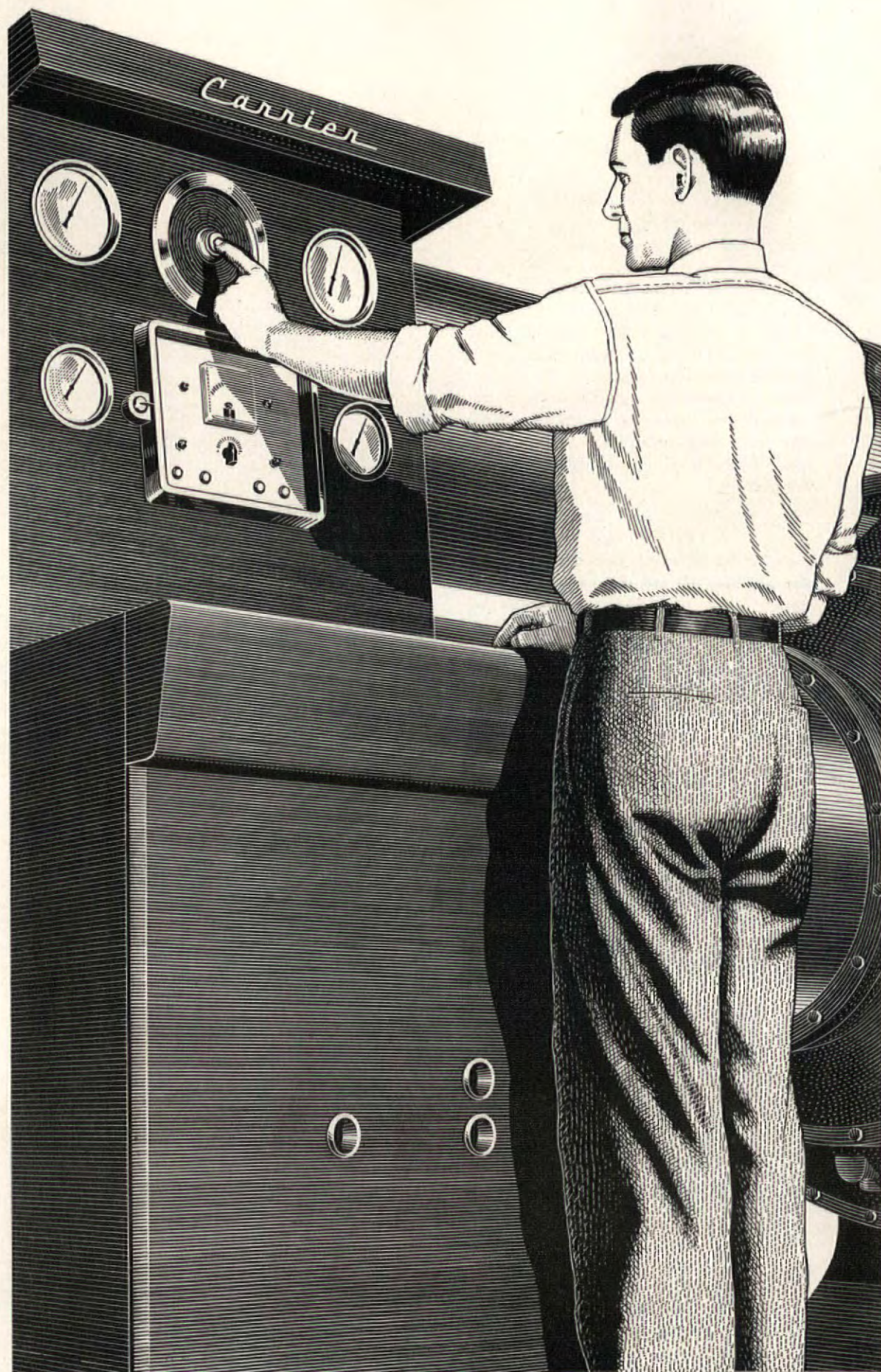


Not exactly a space frame, but home.

Yes, more and more the pigeons are adapting man's ways, man's materials, *continued on p. 46*



# Carrier again makes news





# A new centrifugal for air conditioning

From Carrier—the people who built the *first* centrifugal refrigerating machine—now comes a *new* centrifugal designed especially for big building air conditioning, and for chilling water for industries.

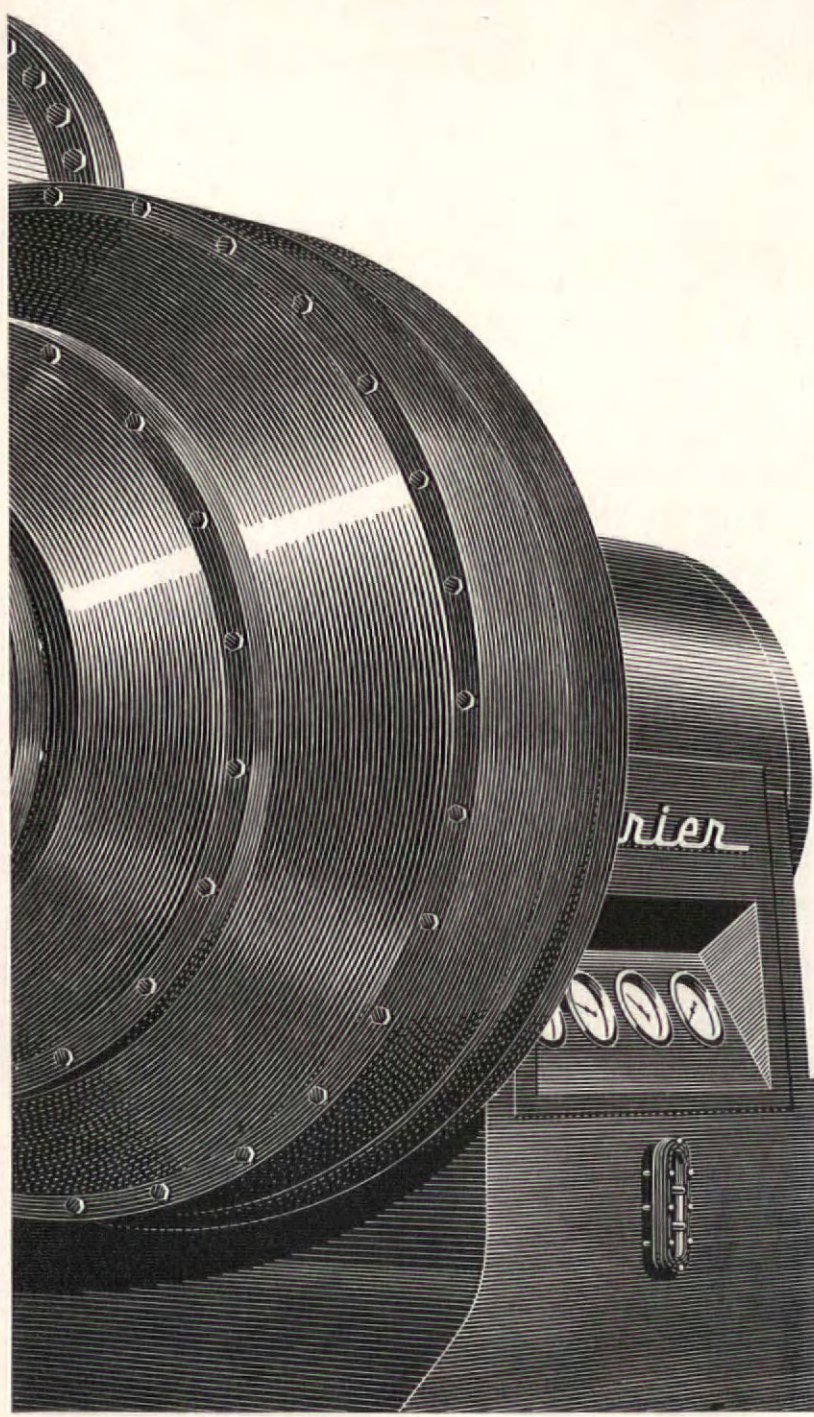
It's a hermetic—**WITH CARRENE-COOLED MOTOR** . . . exclusive with Carrier! Cool, dry refrigerant gas from the refrigerating circuit keeps motor temperatures at a uniform level under all load conditions.

It's a hermetic—**WITH ELECTRONIC CONTROLS** . . . exclusive with Carrier! You push a single button and electronic controls take over the entire operation, including starting, stopping, part load, and protection of the machine under all conditions.

It's a hermetic—**WITH CENTRAL CONTROL CONSOLE** . . . exclusive with Carrier! All control functions are co-ordinated in a central console. You can locate this nerve center right by the machine, or in the next room.

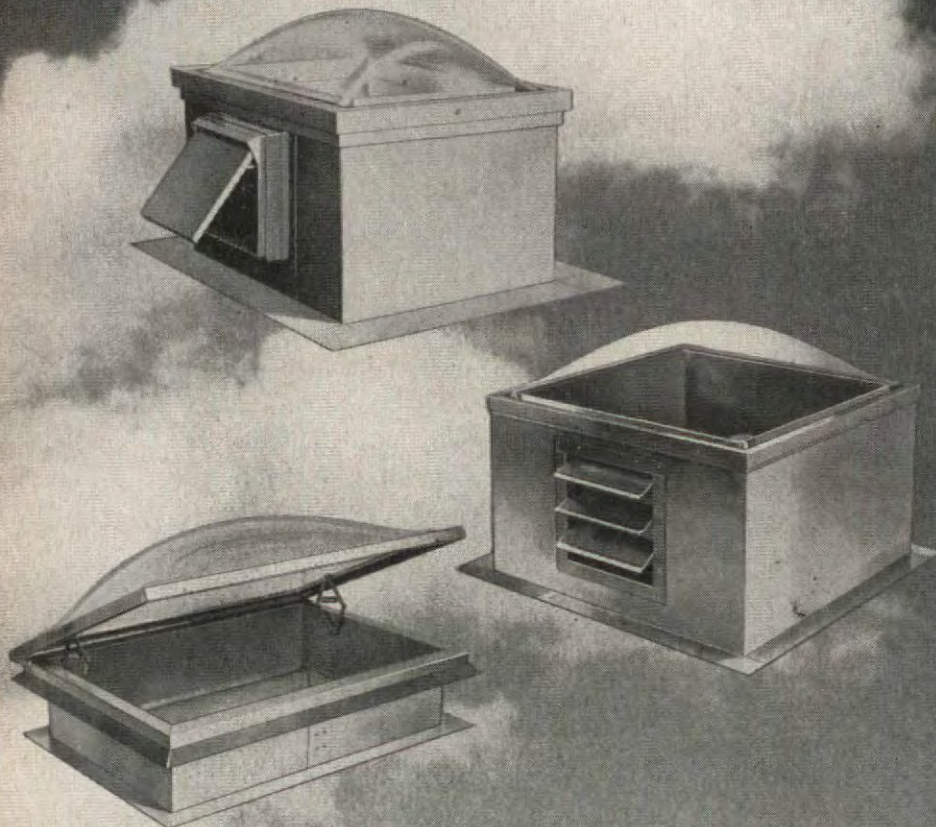
It's a hermetic—**WITH HYDRAULIC CAPACITY VANES** . . . exclusive with Carrier! Capacity regulating pre-whirl vanes are *positively* positioned by hydraulic power under the automatic control of the electronic system.

Get the full story—*now*. Call the nearest Carrier office for your copy of the big, new factual booklet on Carrier *Hermetic Centrifugal Refrigerating Machines*. Or write Carrier Corporation, Syracuse, New York.



air conditioning  
refrigeration  
industrial heating





**Fresh as all outdoors . . .** Daylight plus ventilation any way you want it, anywhere you want it.

Now you can have famous SKYDOMES with built-in ventilation for all interior areas. **Wascolite Skyvent** — daylight plus gravity ventilation through adjustable louvers.

**Wascolite Ventdome** — daylight plus positive ventilation provided by motor-driven air exhaust.

**Wascolite Airdome** — daylight plus natural ventilation.

Opens and closes like a window to the sky.

Removable screen. Write for new folder.

## **WASCO PRODUCTS, INC.**

Cambridge 38, Massachusetts

Wasco Chemical (Canada), Ltd., Toronto, Ontario



## **(PARENTHESES)**

*cont'd.*

and man. On exhibit at the Museum of Natural History in New York City is a prize pigeon nest from the stern neighborhood of Wall St. This one is made entirely of paper clips and hairpins borrowed without interest from J. P. Morgan and the other downtown neighbors.



## **(HOIST)**

The elaborate glass trucks which trundle tenderly around our cities have an airborne branch now. Recently, in Chicago, when a 300-lb. sheet of glass, 7' x 8', had to be transported to the twenty-third floor of an apartment house, the Hamilton Glass Co. used a helicopter to do the job.



Says Hamilton's president: "It was no stunt. It was the only practical way we could deliver it without severe technical problems and extreme high cost. Since the glass would not fit into the building elevator, it would have been necessary to erect a scaffolding up the side of the building, using twelve men at a prohibitive cost." The estimate was that a boom and hoist arrangement would have cost between \$800 and \$1,000. The helicopter delivery cost \$200.

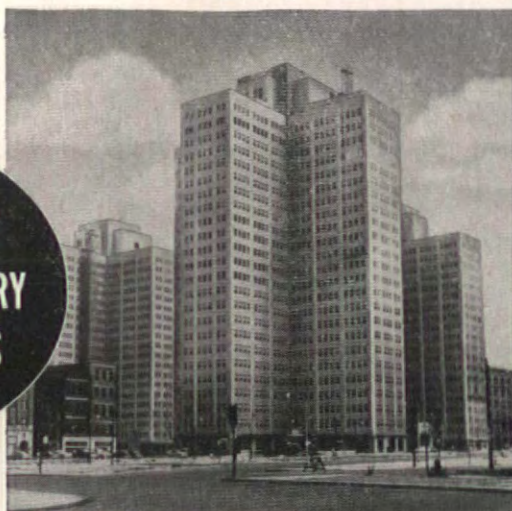
## **(GET A BIKE!)**

Everyone talks about the traffic in our cities, but few individuals do anything about it. It is a pleasure to know one of those who does; this lady, who shall be nameless, gets on a bicycle in Rockefeller Center every day at close of work and pedals down Fifth Ave., south through the crowded department store district, southeast through the impossible press of the garment district, on through the fallen petals and broken blossoms of the whole-

*continued on p. 51*



FOR NEW  
MULTI-STORY  
BUILDINGS



... OR  
SHEATHING OLD  
STRUCTURES



... OR BIG  
INDUSTRIAL  
OFFICES



... OR SMALL  
INDUSTRIAL  
BUILDINGS



## STAINLESS CURTAIN WALLS

give you the best "long pull" investment

### "INFO" for Architects and Builders

- 1 "AL Stainless Steels for Building"—12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.
- 2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. A1A File No. 26D.
- 3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Write for Details

Address Dept. B-76

Curtain wall panels faced with AL Stainless Steel have *all* the advantages. They can give your building the truly modern look. They have a soft, highly attractive luster and permit wide latitude in design for individual appearance. They're light and strong . . . can be used for sheathing or "face-lifting" operations on existing structures, as well as for any type or size of new commercial building or institution.

*Compared to brick or masonry construction,* stainless curtain walls present savings at every turn: in lighter foundations; in enlarged floor space; in fast all-weather erec-

tion; in reduced maintenance, easy cleaning and freedom from painting. And—*compared to any other curtain wall facing material*—stainless steel is the hardest, strongest and most resistant to smoke, fumes, weather, wear, etc. It is the one material that can best take a beating . . . that costs the least in the long run because it lasts the longest.

Our Engineering and Research Staffs, etc., are at your service—anywhere, anytime. • Let us work with you. *Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.*

Make it BETTER—and LONGER LASTING—with

# AL Stainless Steel



WAO 5208C Warehouse stocks carried by all Ryerson Steel plants





## When you plan open areas, plan on carpet for 50% lower maintenance costs

Most clients would probably guess their floor space at far less than it is. Since a general office staff of ten people requires a minimum of 1,000 square feet, according to an article in *Management Review*, most of your clients have a lot of floor space to maintain.

The trend to more open planning in general offices means more heavy traffic areas. And here is where you can save your clients money. Specify carpet... because *carpet can save over 50% in heavy traffic areas.*

The cost of labor and equipment needed to keep non-carpeted floors at an accepted maintenance level averages \$383 per 1,000 square feet annually, in heavy traffic areas. Carpet averages only \$189 per 1,000 square feet a year—a clear saving of \$194 a year for each 1,000 square feet, or 50.7%.

Industrial Sanitation Counselors, maintenance en-

gineering specialists, whose clients include Lever Brothers, Ford, and many other blue-chip companies, based these figures on their own field work, which shows that carpet cleans so inexpensively because it cleans so easily.

Soil stays loose in the pile—routine vacuuming can easily remove it. Less labor and equipment are needed—just one operator and one operation. Dirt doesn't grind in and there's no gloss to wear off.

Carpet looks better longer, too. It's amazing durability is due to the resiliency that makes it yield with pressure, spring back when pressure is released. Carpet looks soft—wears hard. In addition, carpet reduces noise and provides slip-proof footing.

**Send for your file copy of "Cutting Costs With Carpet."** Write Dept. A1, Carpet Institute, Inc., 350 Fifth Avenue, New York 1, New York.

Specify carpet designed and made for the American way of life by these American manufacturers

Artloom • Beattie • Bigelow • Cabin Crafts-Needletuft • Downs • Firth • Gulistan • Hardwick & Magee • Hightstown • Holmes Karastan • Lees • Magee • Masland • Mohawk • Nye-Wait • Philadelphia Carpet • Roxbury • Sanford • Alexander Smith

**CARPET INSTITUTE, INC., 350 Fifth Avenue, New York 1, N. Y.**





**Even on a cloudy day**



**your school can be a brighter place!**

Even on this misty dim day, daylight fills the room. And the view brings in a feeling of freedom.

44 out of 45 teachers surveyed in a research project say that "daylight wall" type classrooms have educational merit. Here are two typical comments:

"Students do not get tired and restless, because there is no feeling of confinement."

"The lighter, brighter surroundings create a good environment for learning."

Send for *your* copy of the complete research report by Paul R. Hensarling, Director of Administrative Research and School-Community Relations for the Port Arthur, Texas, Independent School District.

Read the column at the right for full information on L·O·F Daylight Walls. For immediate cost estimates, etc., call your Libbey-Owens-Ford Glass Distributor or Dealer (listed under "Glass" in your phone book).

## Daylight Wall Facts

With L·O·F Daylight Walls there is less wall area to paint and maintain. Construction costs are lower. Artificial lighting isn't needed so often. In cold climates, you can cut heating costs by using Daylight Walls of *Thermopane*\* insulating glass.

## Technical Information

Natural daylight is the primary source of light for the classroom. Because daylight often varies greatly from hour to hour and day to day, the problem is to get *enough* light on the dull days and provide flexibility of *control* with simple blinds or shades. The cloudiest weather occurs during the school year, so windows should be designed to admit the most light possible on the dullest day. The clear glass in a Daylight Wall transmits from 83% to 89% of the light—more than any other form of glass.

The following minimum light levels should be maintained:

*Foot-candles*

- Classrooms—on desks and chalk boards . . . . . 30
  - Study halls, lecture rooms, art rooms, offices, libraries, shops, laboratories . . . . . 30
  - Classrooms for pupils who partially see and those requiring lip reading—on desks and chalk boards . . . . . 50
  - Drafting rooms, typing rooms and sewing rooms . . . . . 50
  - Reception rooms, gymnasiums and swimming pools . . . . . 20
  - Auditoriums (not used for study), cafeterias, locker rooms, washrooms, corridors containing lockers, stairways . . . . . 10
  - Open corridors and storerooms . . . . . 5
- For complete information on how to get the best lighting, how to arrange desks for maximum light, how to decorate for best results, how buildings should be oriented, etc., mail the coupon. We'll send you a free copy of our full-color booklet "How to Get Nature-Quality Light for School Children". \*®



# DAYLIGHT WALLS

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

Dept. 4246

Libbey-Owens-Ford Glass Company  
608 Madison Avenue, Toledo 3, O.

Send me Daylight Walls booklet M-12 and a copy of the Hensarling Report.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_





This is the new Music Hall of a great western university.  
Architect: Welton Becket and Associates, Los Angeles.

here's a beauty secret for you . . .

## LOOKING IN, LOOKING OUT, LOOKING AT

As you look through these great glass walls, you see how free from distortion everything is.

This greater clarity was rare before *Parallel-O-Plate*\* Glass was developed. L·O·F *Parallel-O-Plate* is the most distortion-free plate glass (and the *only twin-ground* plate glass) made in America. Yet, in most localities, it costs no more than ordinary plate glass!

For beautiful windows, storefronts, display cases, mirrors—for *looking in, looking out, looking at*—be sure you get *Parallel-O-Plate* Glass.

Read in the column at the right *why* it is better glass for you. \*®



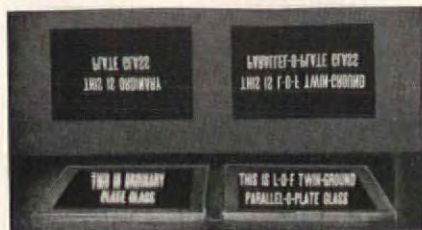
**PARALLEL-O-PLATE GLASS**

*Finest plate glass made in America... only by* **LIBBEY·OWENS·FORD**



## PARALLEL-O-PLATE

# FACTS



COMPARE the reflections of the upside-down signs in the mirror of conventional plate glass (left) and the mirror of *Parallel-O-Plate*\* (right).

*Parallel-O-Plate* Glass is more distortion-free than ordinary plate glass because its surfaces are more parallel.

This great degree of parallelism is the result of a special kind of grinding called *twin-grinding*.

The ordinary method is to cut off a section of glass, grind one side, turn it over and grind the other side.

In the *twin-grinding* process, the glass moves from the furnace through the new annealing lehr and into the *twin-grinding* process where both sides are ground simultaneously in a continuous ribbon 975 feet long. It's precision made all the way.

### L-O-F GLASS FOR BETTER LIVING

Out of the research and the laboratories at Libbey-Owens-Ford have come many of the world's greatest advancements in the use of glass. Tinted solar-heat-reducing glass for air-conditioned buildings. *Thermopane*\* insulating glass with the exclusive metal-to-glass seal. The first successful panoramic windshields were produced by L-O-F, in co-operation with leading automobile designers. These are just a few of the reasons Libbey-Owens-Ford is called "a great name in glass".

For further information, call your Libbey-Owens-Ford Distributor or Dealer (listed under "Glass" in telephone books). Or write Dept. 8846, Libbey-Owens-Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.\*®

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

## (PARENTHESES)

*cont'd.*

sale flower zone, and then down through wicked Greenwich Village until she reaches home, her house on Hudson St.

This cyclist knows a lot about NYC traffic. Lewis Mumford might learn a good deal on the handlebars of her bike, mornings and evenings when the weather is good and the wind holds fair to and from the office. (During the working day, she wedges her bike in among the ranks of



Cadillacs in the Rockefeller Center garage down the block.)

This bicycle-riding to the office in New York is nothing new for her; her estimate of New York traffic? . . . "Bad, getting worse, but not for bicycles."

As automobile traffic has worsened in recent years there has also been a change in drivers' attitudes toward the lonely bike rider slipping past, she reports. To illustrate, she has compiled two comparative lists—what the lady bicyclist heard two years ago, and what she hears these days. The remarks, and their frequency per trip:

Back in 1954—

- "Get a horse"—10 ("Very tiresome.")
- "Want a lift?"—5
- "Ho, ho, ho, look at that! Yak, yak!"—5
- "Whyn't you stay in the park?"—2
- "Watch out girlie, you'll get hurt."—2
- "Hang on and I'll pull you."—1
- "Your back wheel's spinning."—1

But now, in the past year—

- "That's a good idea!"—3
- "Hurry, you'll miss the light."—1
- "Good for you!"—3
- "Your back wheel's spinning."—2
- ("Those back wheel people are very reliable, year after year.")
- "I envy your energy."—1
- "There's the life of Riley."—1
- "Fastest thing going."—1
- "Take me with you."—2
- "Hello, Hon!"—1

The wheel of transportation obviously is turning backward. In 1956 she has not heard a single "Get a horse!"—W. McQ.

## FOLDING DOORS...

covered in  
**TOLEX®**  
SUPPORTED VINYL

...ARE MORE  
BEAUTIFUL...

...MORE  
DURABLE

...AND FIRE  
RESISTANT...

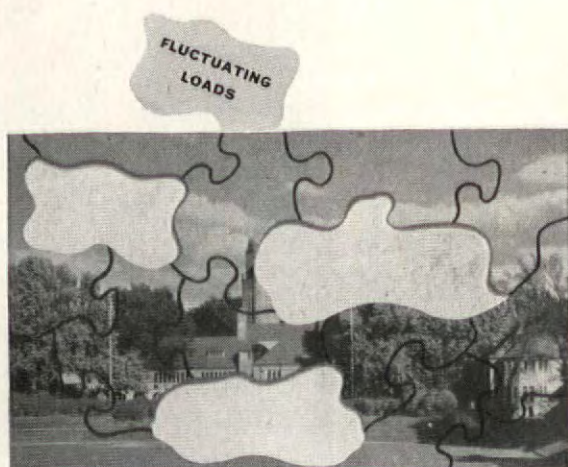
No other covering material offers such outstanding quality and features at such low cost! Produced in dozens of patterns and leather effects in a wide range of decorator colors ... the perfect folding door material!

**We'll send you sources!**

TEXTILEATHER, Toledo 3, Ohio  
Division of The General Tire & Rubber Co.  
Send me the names of folding door makers  
who use TOLEX supported vinyl coverings:

Name \_\_\_\_\_  
Address \_\_\_\_\_





FLUCTUATING  
LOADS

LOW OPERATING—  
MAINTENANCE COSTS

LIMITED BOILER  
ROOM SPACE

## HOW A JIGSAW HEATING PUZZLE WAS SOLVED

**KEWANEE** <sup>reserve</sup> <sup>plus</sup> <sup>rated</sup> **boilers**

**MET SCHOOL HEATING NEEDS**

A jigsaw puzzle heating problem . . . that's what it looked like at the Cranbrook School for Boys, Bloomfield Hills, Michigan, since the heating needs were so varied. But every puzzle piece fell into place when Kewanee Reserve Plus Rated Boilers were installed, because all heating needs were solved. Here's the way it worked:

**Problem 1:** Limited boiler room.

**Solution:** Two compact Kewanee Scotch Type Boilers with 50% reserve power guaranteed adequate heat under all conditions.

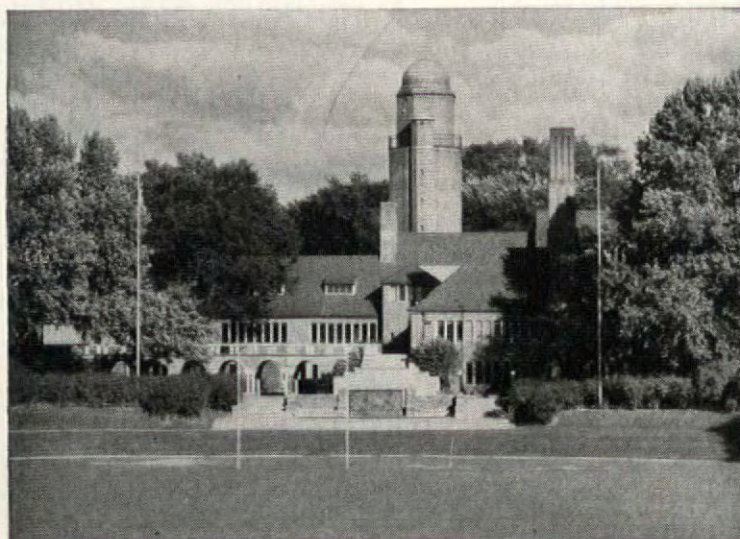
**Problem 2:** Fluctuating loads—boiler turned off nightly, turned on by stages in the morning.

**Solution:** Kewanee Boilers had sufficient reserve to assure a fast, dry steam when needed to give quick heat.

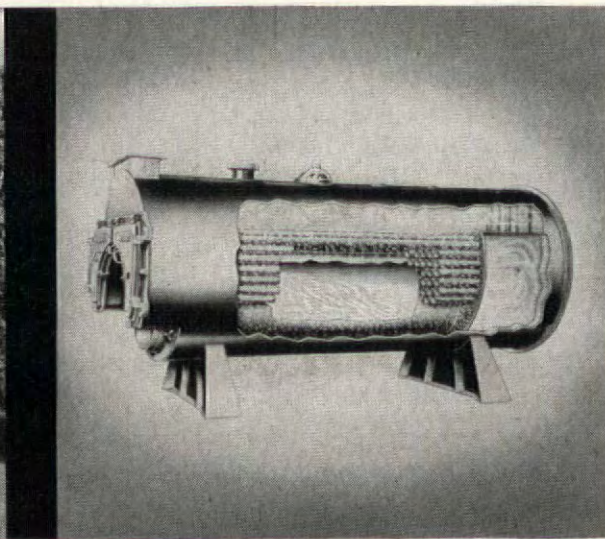
**Problem 3:** Low operating—maintenance costs.

**Solution:** Since Kewanee Reserve Plus Rated Boilers certify 50% extra power built in, they operate at "cruising speed." Result—less fuel used, less wear on boiler, greater efficiency delivered.

Kewanee Reserve Plus means boilers are rated on nominal capacity, with adequate power to take care of present needs, emergencies and future expansion. Boilers rated on maximum capacity are inadequate for today's fast growing school needs. Next time select Kewanee Boilers.



Cranbrook School for Boys, Bloomfield Hills, Michigan  
Heating Contractor: Laing Plumbing & Heating Company, Pontiac, Michigan  
Engineer: Snyder & McLean, Detroit, Michigan



Kewanee LM-800 Series for 15 lbs. steam or 30 lbs. water installed in the Cranbrook School for Boys.

**KEWANEE BOILER DIVISION**  
of AMERICAN-Standard  
101 FRANKLIN STREET, KEWANEE, ILLINOIS

**KEWANEE**  **BOILERS**

*You can depend on Kewanee engineering*



Architect—Allen N. Dryden, Kingsport, Tennessee



Beauty alone would be good reason for this lovely combination of Blue Ridge Patterned Glass Panels and Blue Ridge SECURIT® Interior Glass Doors. But there are practical reasons, too . . . light is generously transmitted, subtly reflected. The SECURIT Door is tempered glass and made to take hard use. See your local Libbey • Owens • Ford Glass Distributor or Dealer.

*Partitions and Doors of*  
**BLUE RIDGE PATTERNED GLASS**



*Made by* BLUE RIDGE GLASS CORP.

*Sold by*  
LIBBEY • OWENS • FORD GLASS DISTRIBUTORS



LIBBEY • OWENS • FORD GLASS CO.  
608 Madison Avenue, Toledo 3, Ohio

Please send me your folder "Blue Ridge SECURIT Interior Glass Doors."  
I would also like a booklet of ideas for using Blue Ridge Patterned Glass  
in ☐ homes . . . ☐ other buildings. (Check one or both.)

NAME (PLEASE PRINT) \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



# FIRE PROTECTION BUILT IN!



FABRICATORS who now offer corrugated translucent plastic panels, with U. L. label: Filon Corporation, El Segundo, Calif.; Resolite Corporation, Zelienople, Pa.

## Get specific fire resistance with HETRON® polyester panels

Are code requirements barring you from using conventional reinforced polyester sheet where you'd like to use it?

Then specify sheet that's *permanently flame-resistant*—made with HETRON polyester resin.

There are now commercial fabricators who have secured Underwriters' Laboratories listing and label for corrugated and flat HETRON sheet. Other fabricators are in the process of doing so.

### Ends guesswork, uncertainty

This label shows the flame spread rating of the material. It provides the exact data most code people need, to approve reinforced polyester sheet for:

1. General glazing
2. Industrial siding and roofing
3. Skylights
4. Partitions
5. Luminous ceiling and wall panels
6. Lighting and other decorative fixtures
7. Bathroom accessories

### Won't feed fire

HETRON sheet, properly formulated, does not support combustion. It will not burn except

at the point where a hot flame is applied directly, and snuffs out as soon as the flame source is removed.

Flame resistance is chemically locked into the resin. The result is lasting stability. There is no loss of mechanical properties, as may occur when flame resistance is obtained with additives alone.

### Proved by accepted tests

Translucent sheet made from HETRON shows flame spread ratings well under 75. Some opaque sheets have tested as low as 20 in exploratory tests (compared with 100 for red oak), by "Tunnel Test" ASTM E84-50T.

Typical flame spread ratings of 20 to 75, for various formulations so tested, placed

HETRON sheet in a bracket equivalent to the Building Officials Conference of America classifications of "slow burning," "fire retardant," or "noncombustible." Fuel contribution ratings of HETRON are also extremely low.

### Weather-stabilized, too

HETRON panels are now made from new light-stabilized resins. Properly fabricated, they can be used under the same outdoor conditions as light-stabilized non-fire resistant panels.

For names of fabricators who supply corrugated and flat sheets, louvers, expanded panels and other shapes made with HETRON, write us. Ask also for complete data file on HETRON resins.

SEE HETRON AT THE NATIONAL PLASTICS EXPOSITION,  
JUNE 11-15, BOOTHS 514-524

From the Salt of the Earth  
**HOOKER ELECTROCHEMICAL COMPANY**

54 UNION STREET, NIAGARA FALLS, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

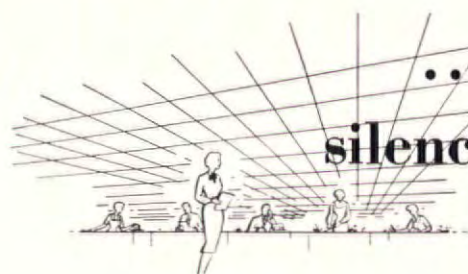






# KILNOISE<sup>®</sup>

## MINERAL ACOUSTICAL TILES



...for color,  
silence and stability

Kilnoise Mineral Acoustical Tiles, the finest *white* ceiling tiles on the market, are now also available in a wide range of soft pastel colors, designed to complement the interior color scheme of any building.

Architects no longer have to choose between sound-reduction and attractiveness. Kilnoise Mineral Acoustical Tile affords outstanding pastel beauty in a carefully controlled capillary structure that assures a high degree of sound absorption.

Kilnoise Mineral Acoustical Tiles are completely stable under severe humidity conditions and are incombustible. (Fully in-

spected by Underwriters Laboratory, Inc.) Handled and installed by approved acoustical applicators.

You'll get a rare combination of beauty . . . stability . . . and sound absorption when you *specify* Kilnoise Mineral Acoustical Tile. Write for complete details and name of applicator in your area.

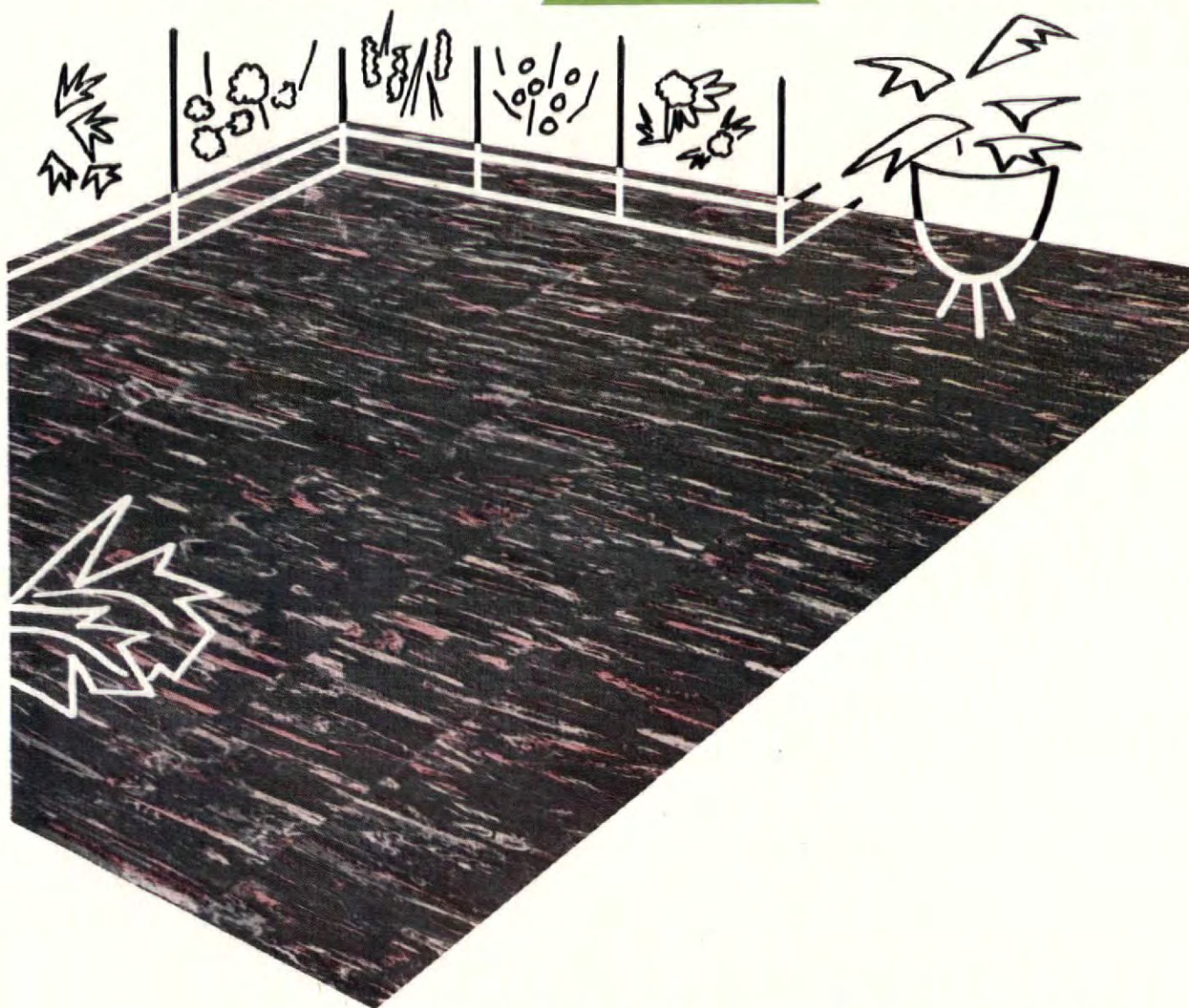
**KILNOISE**  
Acoustical Tile

NEW ENGLAND LIME COMPANY • Adams, Massachusetts



**Say it with floors**

... colorful **AZPHLEX**<sup>®</sup> marble tones



Where beauty is on sale, back it up with a selling *floor*. Azphlex Marble Tones, in light, clear colors . . in fresh, interesting design combinations make a perfect display floor for product or service sales.

This new and better flooring is *vinylized* to give it extra stamina to withstand extra traffic and wear . . to resist spilled or tracked-in greases and oils. It also means a smoother, tighter surface that's easy to clean, economical to maintain. Azphlex Vinylized Tile costs a bit more than asphalt tile, gives much more beauty and service. Discover the decorative possibilities in Azphlex . . write for samples, color chart and complete information.

*Pattern shown: Charcoral*



**AZROCK PRODUCTS DIVISION • UVALDE ROCK ASPHALT CO.**

552 Frost Bank Building • San Antonio, Texas • Makers of Vina-Lux • Azrock • Duraco • Azphlex



**NEW  
GRADE NAMES  
FOR WEST COAST  
LUMBER  
are NOW  
in effect**

Boards, Dimension and Timbers of Douglas fir, West Coast hemlock, Western red cedar and Sitka spruce now have grade names instead of numbers, as shown below.

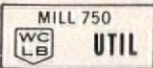
**NO. 1 . becomes CONSTRUCTION**



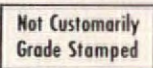
**NO. 2 . . . . . becomes STANDARD**



**NO. 3 . . . . . becomes UTILITY**



**NO. 4 . . . . . becomes ECONOMY**



There is no change in the identification of Select Merchantable Boards, Select Structural Dimension and Timbers, or vertical grain Clears.

The top grade of flat grain Clears becomes **C&Btr.**



For additional information on grades write to:

**WEST COAST LUMBERMEN'S ASSOCIATION**  
1410 S. W. MORRISON, PORTLAND 5, OREGON

All Grade Stamps shown are registered, U. S. Patent Office.



## LETTERS

### WASHINGTON

#### Forum:

Your article "Washington" (AF, Jan. '56) is very fine. As a former pilot and museum hunter, I completely agree that the Air Museum has no place on the Mall and would be better located at Bolling Field. It certainly needs a location where future growth will not be impeded.

The Air Museum could be put to better advantage if built more nearly in the center of the nation. Even Colorado Springs with the Air Academy nearby would be satisfactory. To any medium-sized city, the museum would become its principal pride and attraction; to Washington, it would be only another gem in the crown.

The new capitals of the world—Berlin, modern Rome, Tokyo, Mexico City etc.—have grown too large for comfort. In many nations the overpopulated capital is the stage for mob action and overcentralized authority, resulting in national instability. We are fortunate that our capital is not a combination of New York City and Washington. Should not the policy of Washington be that of keeping the population as small as possible with the emphasis on government only?

GARETH R. WILLIAMS, *architect*  
Dayton, Ohio

#### Forum:

The Washington bathos article is damn good. It should have some effect—I hope!

HENRY S. CHURCHILL, *architect*  
Philadelphia, Pa.

#### Forum:

As an architect turned city planner I am gratified by the emphasis FORUM has placed on city planning in recent months. No publication devoted strictly to city planning can equal your graphic presentation or reach large numbers of city builders. But in your fine Washington story as in several earlier ones, I found a big gap. Where is the general plan?

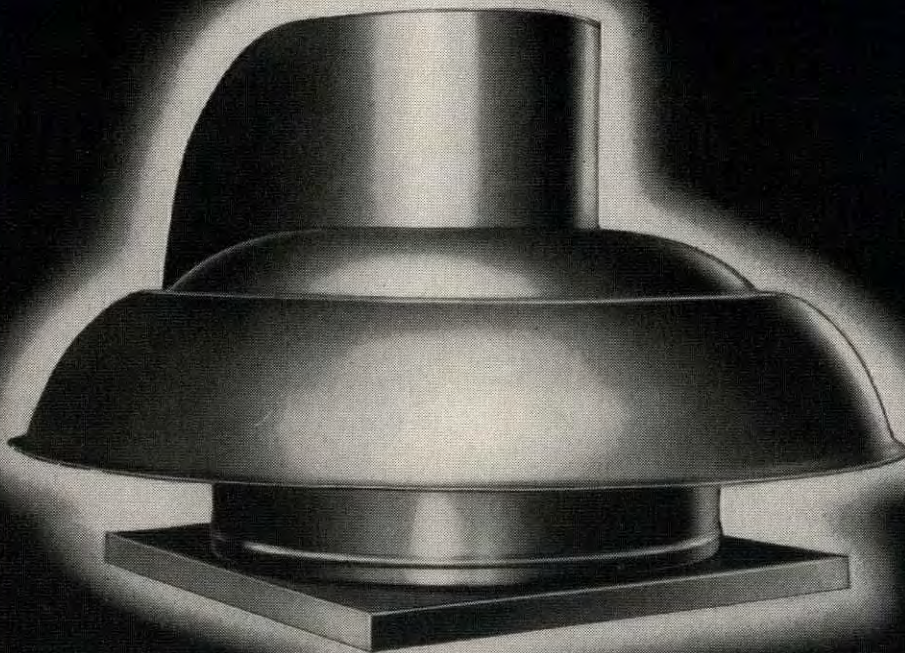
I want to look at the over-all picture before I try to evaluate detailed proposals. A redevelopment scheme makes sense only as it relates to a long-range, comprehensive general plan for the city and preferably for the region. No wonder Washington is having troubles—apparently they are flitting from detail to detail without having made the big decisions.

An increasing number of US cities are preparing and adopting such general plans. An article outlining the theory of the urban general plan, showing its use in several communities, and defining its relationship to the civic design work of architects would be useful.

JOHN BLAYNEY, *planning director*  
San Rafael, Calif.

#### Forum:

Your article on Washington was a  
*continued on p. 62*



**new!**

## CENTRIFUGAL ROOF VENTILATOR ... WHISPER QUIET, LOW SILHOUETTE

For whisper-quiet operation. Running at low tip speeds, moves large volumes of air efficiently against static pressure. Low in silhouette, distinctively profiled, blends well with modern architecture. Send for new 16-page catalog which also contains a section, "How to Select a Roof Ventilator."



**DeBOTHEZAT FANS, Dept. AF-456**  
Division of American Machine and Metals, Inc.  
EAST MOLINE, ILLINOIS

☐ Yes, please send me catalog on your new Centrifugal Roof Ventilator.

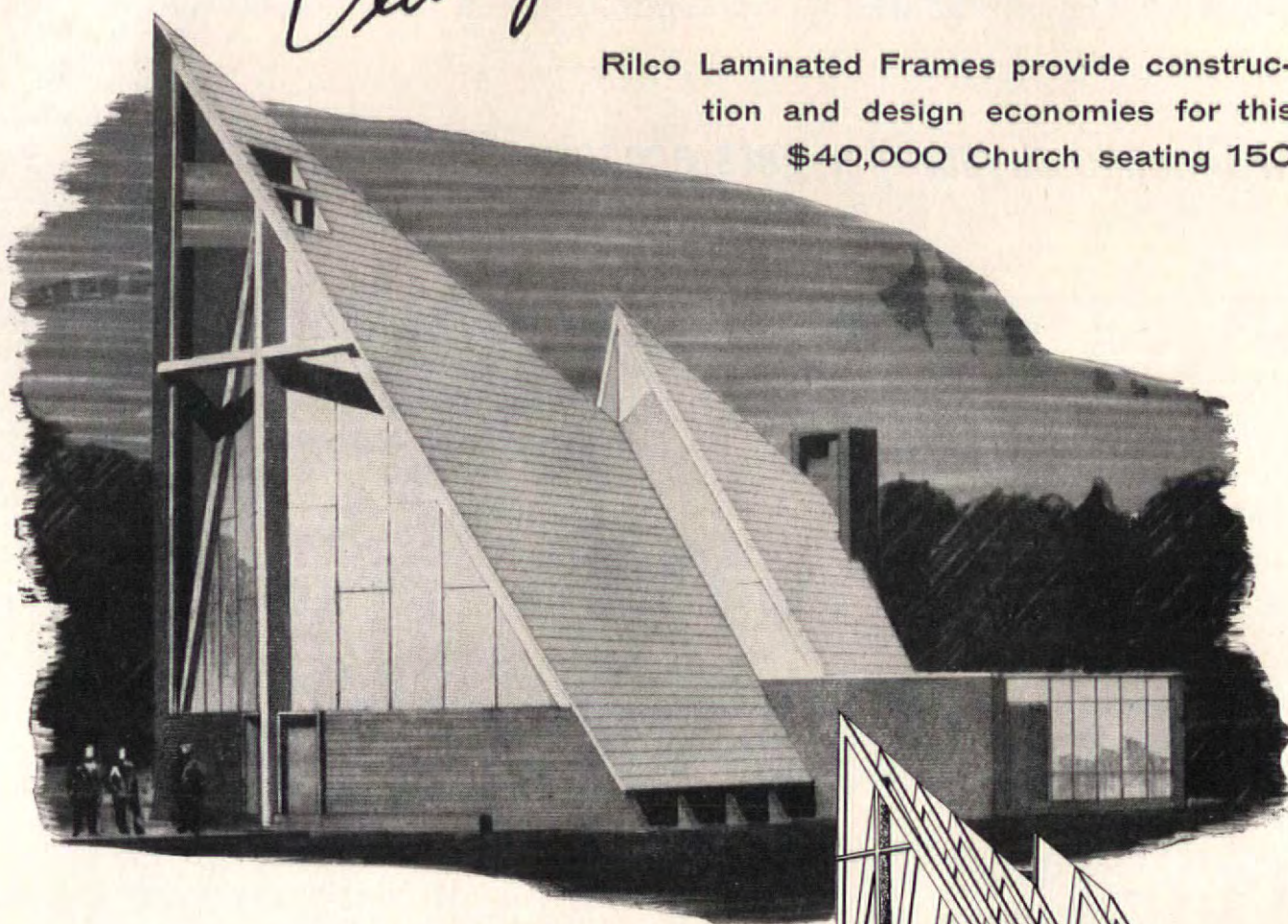
**De Bothezat FANS**  
A DIVISION OF  
**American Machine and Metals, Inc.**  
EAST MOLINE, ILLINOIS

FIRM NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_  
ATTENTION MR. \_\_\_\_\_



# Beauty on a budget

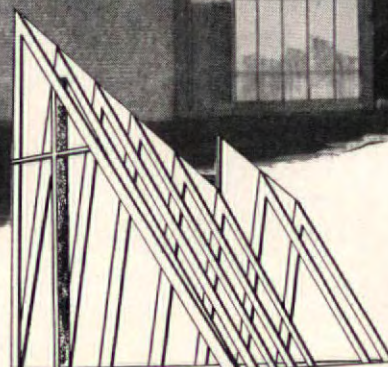
Rilco Laminated Frames provide construction and design economies for this \$40,000 Church seating 150



St. Gregory's Episcopal Church, Woodstock, N. Y.  
Wm. H. van Benschoten, A. I. A.

Even though it will rest deep in the valley, St. Gregory's seems to reach high above the surrounding hills. For it was planned that way.

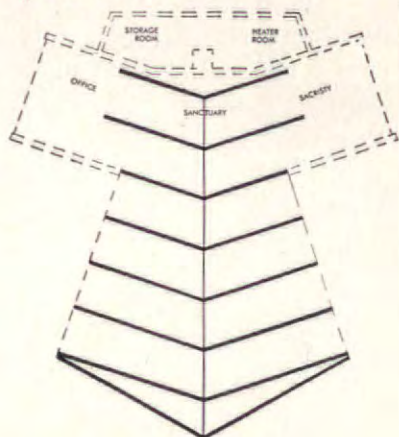
So intriguing was this design that we couldn't wait for photos of the finished job. And Rilco Glued Laminated Structural Members so perfectly carried out the desired effect that they were specified throughout — chosen not only for their warmth and flexibility, but for economy plus ease and speed of erection.



No matter how unusual your design, Rilco Glued Laminated Wood Arches, Beams and Trusses will faithfully portray the desired effect at a saving. You will be pleased, too, with the beauty of 4" x 5" Rilco Red Cedar Deck which combines roof insulation and ceiling finish in one economical application.

Rilco engineers will gladly work with you on your requirements and give on the job cooperation. For there's a cost-saving Rilco member for every type of structure, precision built to meet your needs. Just write . . .

BLOCK  
FLOOR PLAN



**RILCO**  
*works wonders with wood*

**RILCO LAMINATED PRODUCTS, INC.**

2524 1st NATIONAL BANK BUILDING ST. PAUL 1, MINNESOTA  
District Offices: Wilkes-Barre, Pa.; Fort Wayne, Ind.; Tacoma, Wash.



*New Chicago skyscraper gets economy in quantity*

# 800,000 Concrete Masonry units

*used in stair wells, corridor walls, elevator shafts*

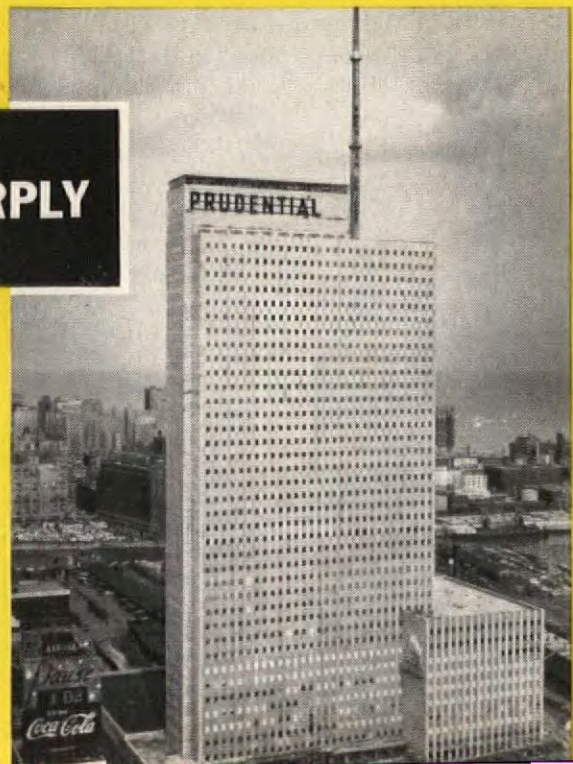
**RESULTS: BUILDING COSTS CUT SHARPLY**



Whether it's a city skyscraper or a country cottage your local block producer—a member of NCMA—can assist you with all the facts about versatile Concrete Masonry.

National Concrete Masonry Association • 38 South Dearborn—Chicago

*Mid-America Home Office, The Prudential Insurance Company of America, Chicago, Illinois—Naess & Murphy, Architects.*





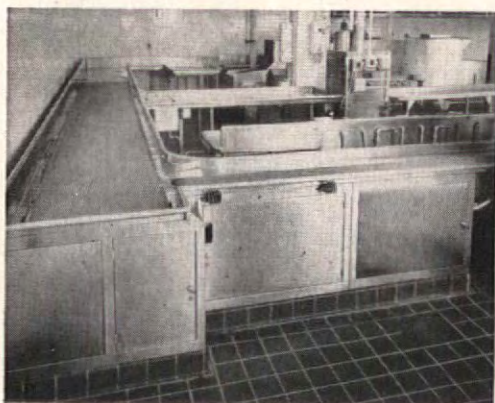
## ideas

from Blickman-Built  
award-winning  
food service  
installations

**WALL-MOUNTED KETTLES AND STEAMER,** main kitchen, eliminate leg obstructions, facilitate cleaning. Supporting structure is faced with sanitary stainless steel panels. Drippings fall to pitched floor beneath kettles and are easily flushed down drain.



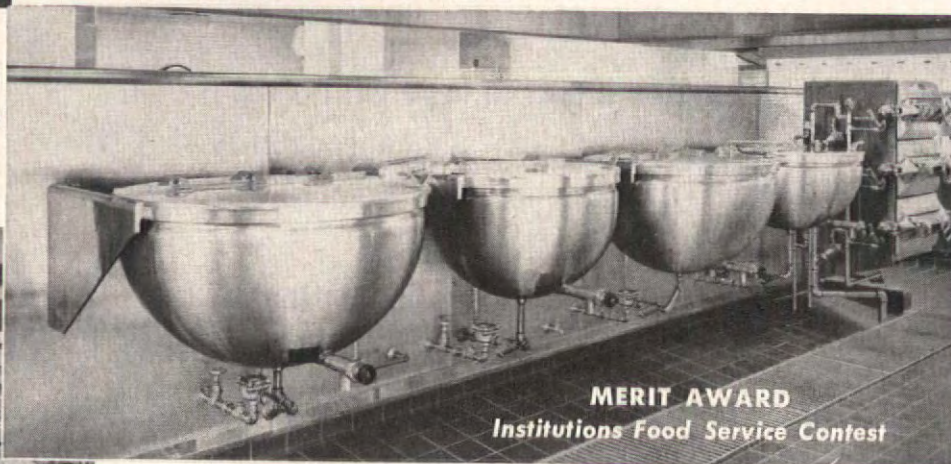
**STAINLESS STEEL CAFETERIA COUNTER.** Note absence of horizontal or vertical trim. This eliminates dirt-collecting ledges, assures rapid, thorough cleaning. At left are Tri-Saver urns which brew delicious coffee without urn bags or filter paper.



**DISH PANTRY,** showing conveyor belts which automatically unload soiled dishes and glasses from vertical conveyor descending from upper pantries.

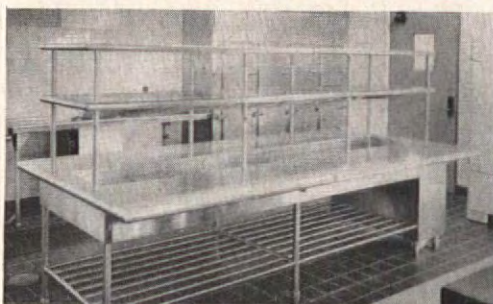
# wall-mounted kettles and steamer cut cleaning time

at **DUPONT HOTEL, WILMINGTON, DELAWARE**



• This prize-winning food service installation at DuPont Hotel has many time and labor-saving features. For example, stainless steel kettles and steamer are wall-mounted to eliminate the usual under-structure. Therefore, drippings fall to the pitched surface below the kettles and are readily flushed down the drain. The cafeteria counter, too, is designed for rapid cleaning. Dirt-catching vertical and horizontal trim is entirely eliminated. Work tops and sinks are of polished seamless construction to eliminate crevices that trap food particles. Carefully planned layout assures efficient work-flow. Throughout its service life, this Blickman-Built installation will save endless hours of waste motion in both food service preparation and in maintenance required for sanitation. It pays to specify "Blickman-Built".

**S. BLICKMAN, INC., 5804 Gregory Ave., Weehawken, N. J.**



**SOUND FUNCTIONAL DESIGN,** typified by this stainless steel salad preparation table. Mechanically cooled cold pan in center is convenient to work surfaces on both sides of table. Fluorescent lights on lower shelf provide glareless illumination.

Send for illustrated folder describing Blickman-Built Food Service Equipment — available in single units or complete installations.



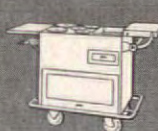
**Blickman-Built**  
FOOD SERVICE EQUIPMENT



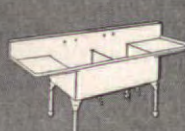
COFFEE URNS



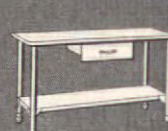
STEAM TABLES



FOOD CONVEYORS



SINKS



WORK TABLES





# HERMAN NELSON

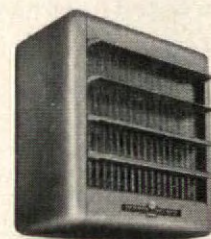
A Name Known For Better Air  
throughout half a century

**OLD ENOUGH** to have built a reputation  
for quality and dependability  
throughout half a century.

**YOUNG ENOUGH** to be continually in  
the foreground with the newest  
developments in heating, cooling  
and ventilation.

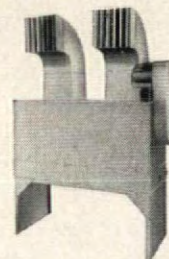
**BIG ENOUGH** to offer one of the most  
complete lines in the industry, and  
a nation-wide service organization  
second to none.

**SMALL ENOUGH** to give every customer  
the prompt personal attention and  
service that his order requires.



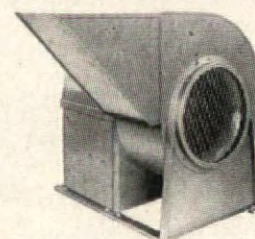
## HORIZONTAL UNIT HEATER

Available in 18 sizes, designed for ceiling suspension and also to use either steam or hot water. Quiet operation; compact design. Catalog No. 700.



## INDUSTRIAL HEATER

Replaces exhausted air, balances minus pressures. Big capacity—does the job of many smaller, propeller-type units. Catalog No. 750.

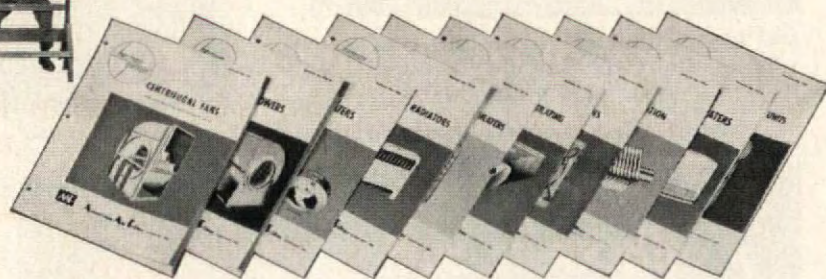


## UNIT BLOWER

Years-ahead features in new "packaged" Unit Blowers. Compact, space-saving, easy to service. Wide range of unit sizes. Catalog No. 826.

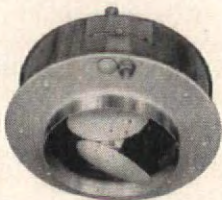
A wealth of useful data  
now ready for you  
in the NEW  
HERMAN NELSON Catalogs

New, modern format . . . easy-to-read engineering catalogs that are the finest in the industry are yours for the asking. Request catalogs you need on your business letterhead. Address American Air Filter Co., Inc., 427 Central Ave., Louisville 8, Ky.





# Heating and Ventilating Products



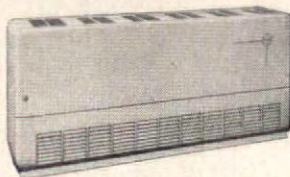
## VERTICAL UNIT HEATER

For high ceiling installations. Discharges air vertically downward or at angle to vertical in various directions. Steam or hot water. Catalog No. 700.



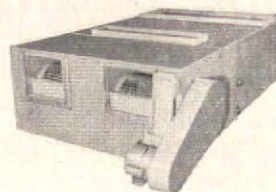
## GAS-FIRED UNIT HEATER

Job-rated for stores, lobbies, studios, warehouses, offices, salesrooms—all efficient heating. Available in seven different sizes. Catalog No. 715.



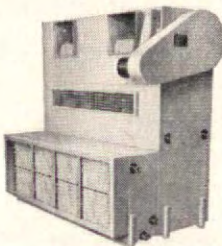
## CONSOLE HEATER

16 models—64 air inlet-outlet arrangements. Fully-recessed, semi-recessed or free-standing applications. Smartly designed. Catalog No. 727.



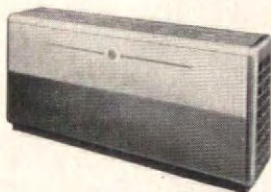
## HEATING & VENTILATING UNIT

Hangs on ceiling, out of the way, or mounts on wall or floor. Quiet operation, slow speed, with completely rotatable fan sections. Catalog No. 775.



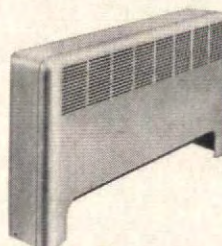
## AIR CONDITIONING UNIT

New type air-conditioning units for low cost commercial and industrial applications. Delivers up to 15,000 cu. ft. clean, cooled air per minute. Catalog No. 785.



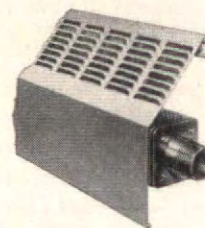
## CLASSROOM UNIT VENTILATOR

Functional, trim, clean lines—the modern version of the unit classroom heater and ventilator. Efficient, functional in design, attractive. Catalog No. 3500.



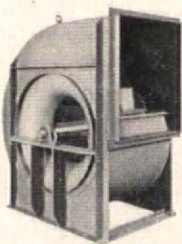
## CONVECTOR

Free standing or semi-recessed models in 4 depths and 3 or 4 heights. Can be furnished with dampers. Steam or hot water. Catalog No. 791.



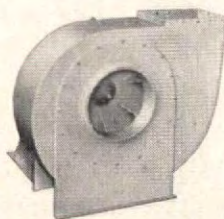
## FINNED RADIATION

Available either with steel fins on steel tubing or aluminum fins on copper tubing. Light-weight, suitable for exposed or concealed installation. Catalog No. 790.



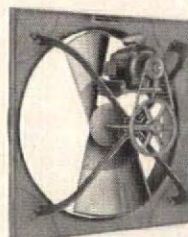
## CENTRIFUGAL FAN

Available in either slow speed or non-overloading types; 17 wheel diameters from 12 1/4" to 73"; 8 arrangements for direct or belt drive. Catalog No. 850.



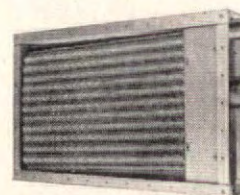
## INDUSTRIAL EXHAUSTER

Exclusive hub assembly cuts maintenance & replacement costs. New impeller design; heavy duty shaft & bearings. Catalog No. 860.



## PROPELLER FAN

Operates horizontally or vertically; belt or direct drive. Wide range of sizes in both types. Capacities to 36,150 CFM. Low operating cost. Catalog No. 800.



## AEROFIN COILS

A complete line of steam, hot water, chilled water, direct expansion and special duty coils. Catalog No. 49-NF.

*Better Air Is Our Business*



**American Air Filter**  
COMPANY, INC.

General Offices: Louisville, Kentucky

Plants in Louisville, Moline (Ill.), Morrison (Ill.), Chicago and Montreal (Canada)



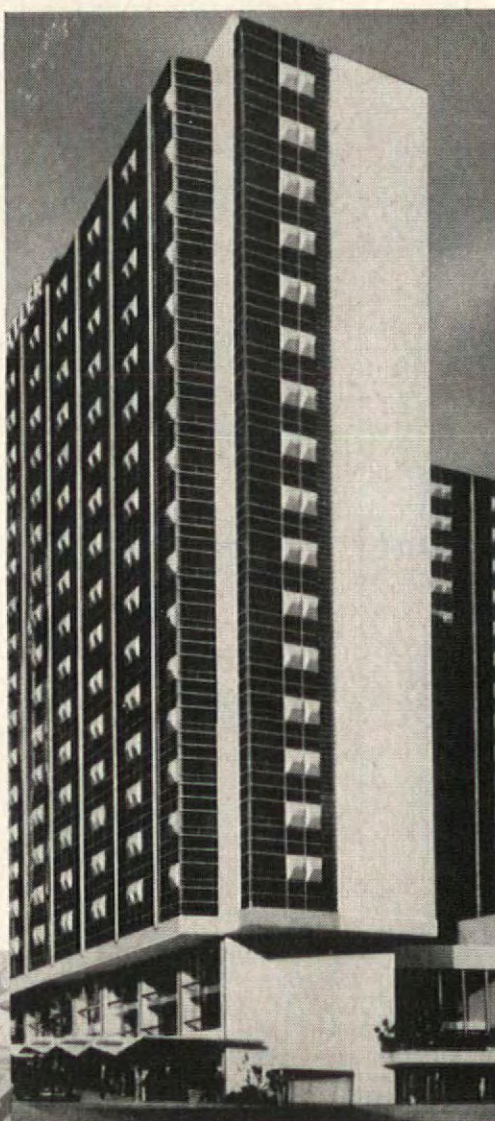
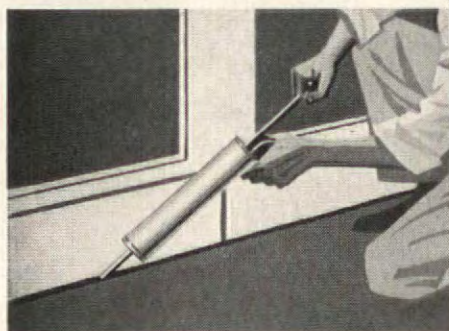
# New Statler Hotels Leakproofed With "THIOKOL" Based Caulking Compound

The modern window wall construction of the Statler-Hilton Hotels at Dallas, Texas, and Hartford, Connecticut demanded a caulking compound capable of leakproofing this type of structure.

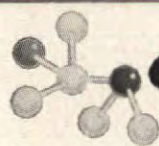
For sealing the aluminum window frame to the concrete opening, a "Thiokol"-based compound manufactured by Products Research Company, PRC Window Sealant was chosen.

"Thiokol" liquid polymer, the basic ingredient of this compound is a solventless liquid that converts at ordinary temperatures to a resilient rubber. It insures a tenacious, durable seal even after years of weathering...and maintains resilience and adhesion at temperatures ranging from 250° above to 65° below zero.

To insure leakproof construction, take advantage of "Thiokol"-based glazing and caulking compounds. Information will be sent to you on request. WRITE: THIOKOL CHEMICAL CORPORATION, 784 North Clinton Avenue, Trenton 7, New Jersey. IN CANADA: Naugatuck Chemicals Division, Dominion Rubber Company, Elmira, Ontario.



Thiokol Chemical Corporation manufactures "Thiokol" Liquid Polymer only as a raw material. The PRC Window Sealant (aluminum) compound is manufactured by Products Research Company, 3126 Los Feliz Boulevard, Los Angeles 39, California.



## Thiokol®

PIONEER MANUFACTURERS OF SYNTHETIC RUBBER

## LETTERS *cont'd.*

timely and capable handling of an imposing, urgent problem. I question, however, your attack on the National Planning Commission and unquestioning support of "Johnny-come-lately" Zeckendorf and his plan to make things reasonably right, make a reasonable profit, and move on reasonably soon. The problems of the National Capital Park and Planning Commission are neither new nor simple. Since 1926 it has guided the development of the District of Columbia. It must cooperate with other agencies, not the least of which include: the Commissioners of the District of Columbia, the Office of the National Capital Parks of the National Park Service, and the Commission of Fine Arts, whose authorities and interests overlap in much of this work. The plans of each agency are subject to review and comment by the others with a view toward preserving the best interests of the people of the nation. Unfortunately their job is often complicated by politics. They are by no means "a gentlemen's private club, running in secret circles."

FRANK BURGGRAF JR., 2nd Lt.  
U.S.A.F.  
Denver, Col.

• We agree that these groups operate with a strong sense of public interest and public responsibility. FORUM's characterization of planners running in secret circles with possibly a "gentlemen's private club" mentality, was confined to a subgroup of the National Capital Planning Commission, a small committee which earned this distinction by ignoring previous decisions and recommendations of the Planning Commission and making a strange series of mysterious new proposals never candidly discussed.—ED.

Forum:

Your article on Washington (AF, Jan. '56) says "St. John's, 'the church of the Presidents,' is being no more respected in the townscape than any other little urban gem." If this means that St. John's has been spoiled by the new building of the AFL-CIO nearing completion next to it, it is surprising. Mr. Meany, Mr. Schnitzler and the other officers of the AFL from the beginning of their planning were anxious to do everything to insure a proper harmony between their new building and our 1816 edifice designed by B. Henry Latrobe.

The firm of Voorhees, Walker, Smith & Smith designed the AFL building with St. John's in mind. It stands 35' away from the church and 10' back from the front of our church so that our tower shows clearly; its columns are on a smaller scale than ours and its roof is rounded to carry out the idea of our two gold domes. The first drawings were shown to our vestry and were enthusiastically approved and then the Fine Arts Commission of Washington, under the chairmanship of Mr. David Finley, saw the designs and approved them, and what looked so good on paper looks even better in actuality. St. John's and the AFL building are esthetically harmonious.

C. LESLIE GLENN, rector  
St. John's  
Washington, D.C.

*continued on p. 64*



# STEEL DECK

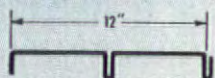
and LONG SPAN

# M-DECKS

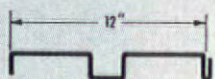
Mahon Long Span M-Deck installed on a multi-story office building for Ford Motor Company, Dearborn, Michigan. Voorhees, Walker, Foley & Smith, New York, N.Y., Architects. Bryant & Detwiler Co., Detroit, Mich., General Contractors.



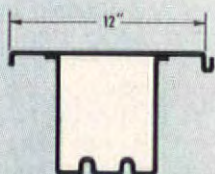
## MAHON STEEL DECK and LONG SPAN M-DECK SECTIONS



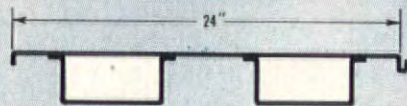
STANDARD DOUBLE RIB



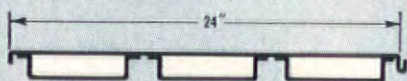
WIDE-FLANGE DOUBLE RIB



LONG SPAN M-DECK  
SECTION M1



LONG SPAN M-DECK  
SECTION M2



LONG SPAN M-DECK  
SECTION M3

Steel Deck continues to roof a greater percentage of new construction year after year . . . the reason is obvious: Steel Deck is lighter in weight, and it costs less than any other type of permanent roof building material. And now that long span M-Decks are available in a number of structural sections that meet virtually any requirement in combined roof/ceiling construction, steel, employed as the structural unit and the interior finish material as well, will cover even a broader field. The long span Cel-Beam Section is used with bottom metal perforated where an acoustical ceiling is desired; Cel-Beam Sections and Troffer Sections are used in combination to produce an acoustical ceiling with recessed lighting in both roofs and concrete floor slabs; the Open-Beam Section is employed for maximum economy in roof construction on clear spans up to 32 feet. Ceilings of hy-rib metal lath and plaster may be attached directly to the structural Open-Beam Sections. Mahon long span M-Deck Sections are available in designs and metal gauges to meet structural requirements in virtually any type of roof and cantilever construction of canopies or balconies. Mahon engineers will gladly cooperate with designers in special adaptations. See Sweet's Files for information, or write for Catalog M-56.

THE R. C. MAHON COMPANY • Detroit 34, Michigan  
Sales-Engineering Offices in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Steel Roof Deck and Long Span M-Decks; Structural Acoustical and Recessed Lighting Troffer Sections; Permanent Concrete Floor Forms; Insulated Metal Walls and Wall Panels; Rolling Steel Doors, Grilles and Underwriters' Labeled Automatic Rolling Steel Fire Doors and Fire Shutters.

# MAHON



# STRONGEST FASTENATION

## at Hollywood and Vine...



**THE CAPITOL TOWER,** spectacular new home of hi-fi Capitol records, dominates the heart of Hollywood, California.

First circular office building in the world, it was designed by architect Welton Becket; contractor is C. L. Peck. The \$2 million structure is 13 stories high, acoustically engineered for minimum sound disturbance; has underground reverberation chambers with foot-thick concrete walls buried 25 feet into the earth.

A dozen floors above the street, in America's new Tower of Music, this workman anchors steel channel as easily as squeezing a trigger—driving fasteners straight, deep and powerfully into solid concrete with the RAMSET® DUO-JOBMASTER.

### Complete flexibility with DUO-JOBMASTER

Both  $\frac{1}{4}$ " and  $\frac{3}{8}$ " fasteners are set with the same tool, the new RAMSET DUO-JOBMASTER. It's the famous RAMSET tool with two interchangeable barrels—to handle every fastening job with any style or length fastener.



#### NEED A KILN GUN?

Designed to dislodge clinker rings from rotary kilns, Western's Kiln Gun (now sold by Ramset) removes all types of stubborn, inaccessible obstacles. Write for complete details.

No matter what the construction problem, if it requires fastening to steel or concrete, RAMSET will do it better, faster, cheaper. Ask for new free catalog, just ready for you.

## Ramset Fastening System

WINCHESTER-WESTERN DIVISION  
OLIN MATHIESON CHEMICAL CORPORATION

12157-D BERE A ROAD

CLEVELAND 11, OHIO

## LETTERS *cont'd.*

### ST. JOHN'S COMPLETION

Forum:

I found the problems and solutions of St John's in New York City, (AF Dec. '55) very interesting, and I attempted my own.

Something which distressed me in the solutions by the M.I.T. students was the ornate appearance of the Gothic section in contrast with a relatively ornate modern section. So on this sketch I kept the new section as simple as possible to contrast with the ornamentation of the old.



The panels of translucent glass are colored for the traditional and desirable effect of colored glass on the interior.

Lighting on the interior in the evening would provide a dramatic illumination of this section.

DAN GALLAGHER  
Lyndhurst, Ohio

### THEOLOGY AND ARCHITECTURE

Forum:

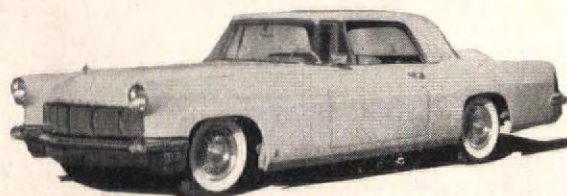
I read with intense interest your symposium, Theology and Architecture (AF, Dec. '55). I fully agree that no form of universal religion is inevitably bound to certain historical styles. The early Christians had no architecture. When they emerged from the catacombs, they appropriated the basilicae. Gothic—and Thomism—are the supreme achievements of medieval Christianity. But they are not exclusive and final: innumerable churches were built in Neoclassical and Baroque styles, including St. Peter's. So an ultra-modern edifice may be truly religious, as that great free conservative, Perret, has shown. Conversely, a historical style is still adequate to express a theology and a policy profoundly attached to their traditions. The Liverpool Cathedral, and St. John the Divine need no apologies. They are not anachronistic any more than the dogmas, hierarchy and ritual they serve. They belong to the ages, not to 1956. What is anachronistic is to have dissenting churches in the medieval idiom, or Christian Science Churches in the Neoclassical.

The special case of St. John the Divine calls for comment. Many churches were completed in a style different from the original one: from Romanesque to Gothic, through various versions of Gothic, and from late Gothic to Renaissance; some, like

*continued on p. 68*



Planned with  
the finest facilities  
...to build  
the finest of cars



*Architects and Consulting Engineers: GIFFELS, VALLET, INC., DETROIT  
General Contractor: H. K. FERGUSON CO., CLEVELAND  
Mechanical Contractor: STANLEY CARTER CO., DETROIT*

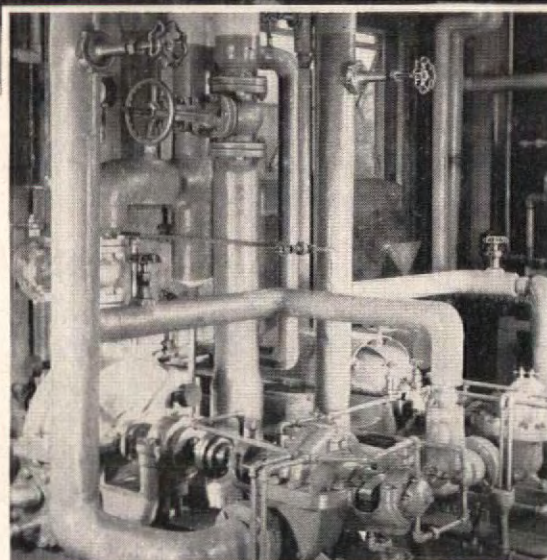
## ...equipped with JENKINS VALVES

The new Continental Division plant of the Ford Motor Co. has been built with every facility keyed to an avowed purpose . . . producing America's finest motor car.

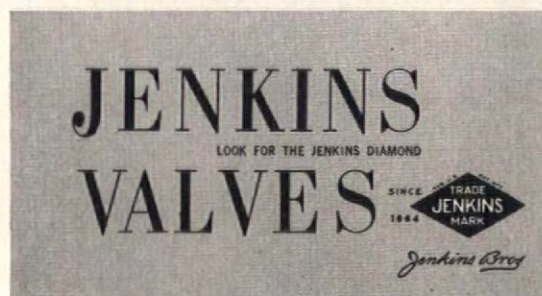
All components were selected to meet the highest standards of performance. Jenkins Valves control the intricate network of pipelines so essential to modern plant operation.

Confidence in the time-proved efficiency, economy, and safety of Jenkins Valves is the reason why they are chosen for so many of the news-making structures that are pacing the advance in modern plant design.

Let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.

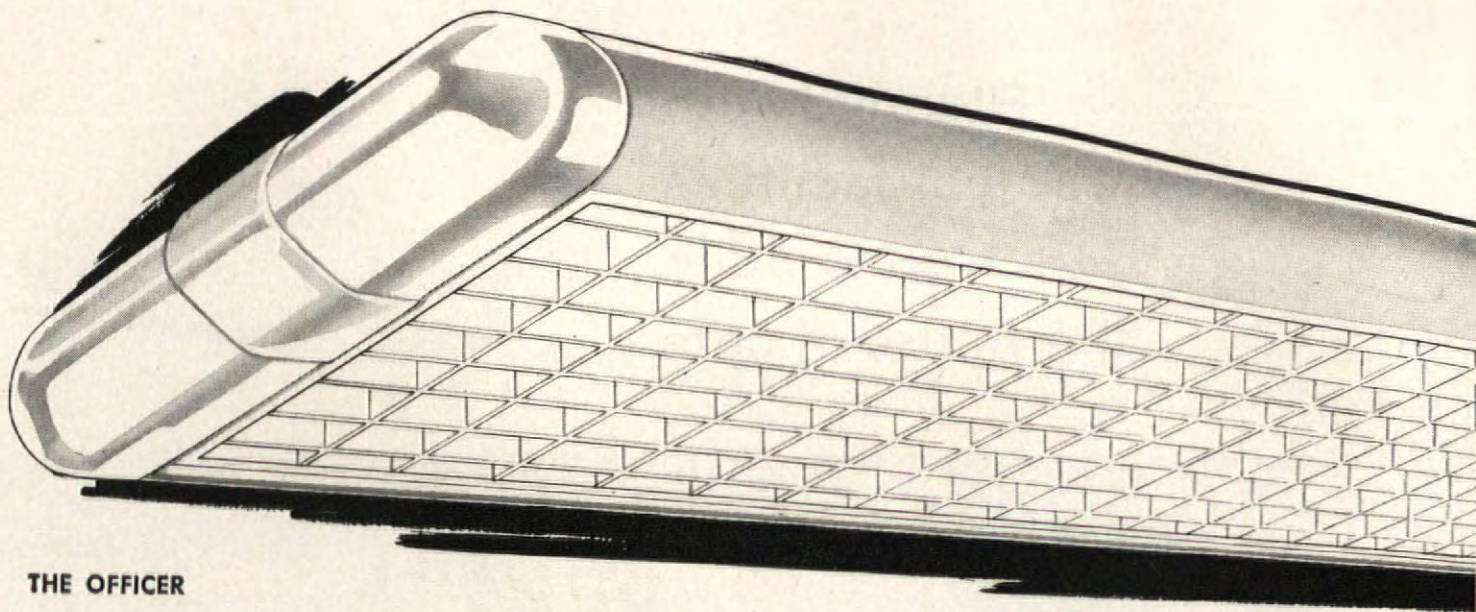


THE JENKINS VALVES installed in the Continental Division plant include many sizes of globe, angle, gate, and check valves. The above illustration shows Jenkins Valves installed on condensate return pump lines.

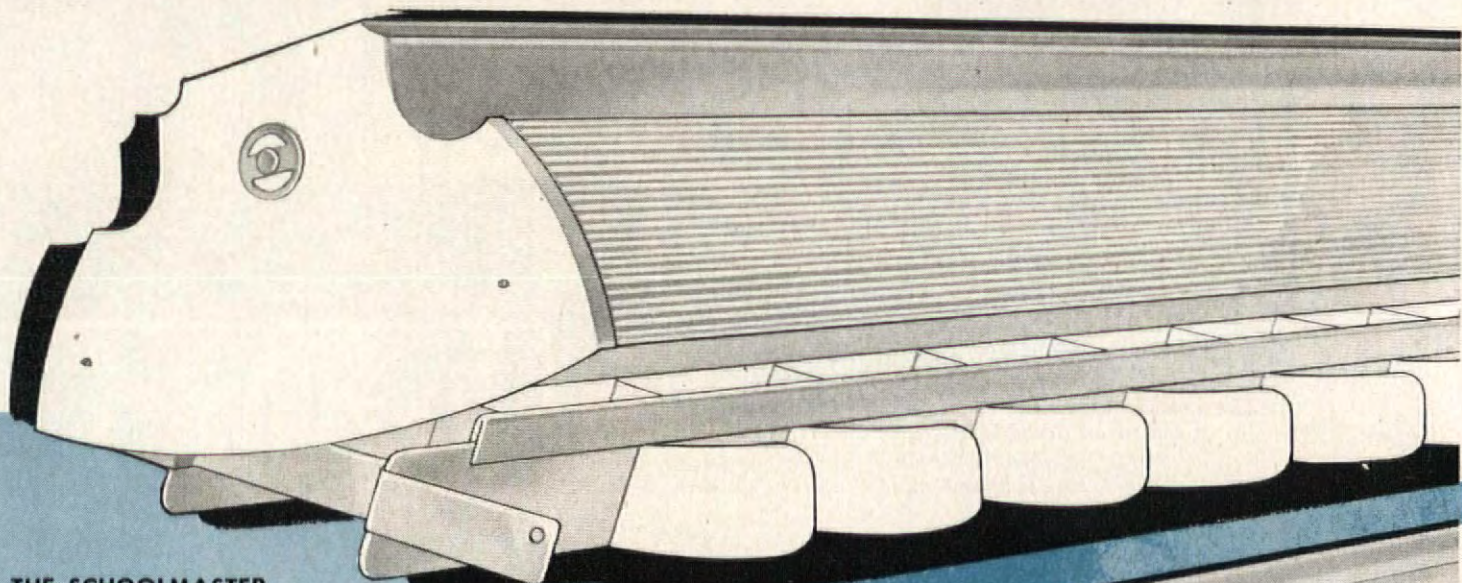


SOLD THROUGH PLUMBING-HEATING AND INDUSTRIAL DISTRIBUTORS

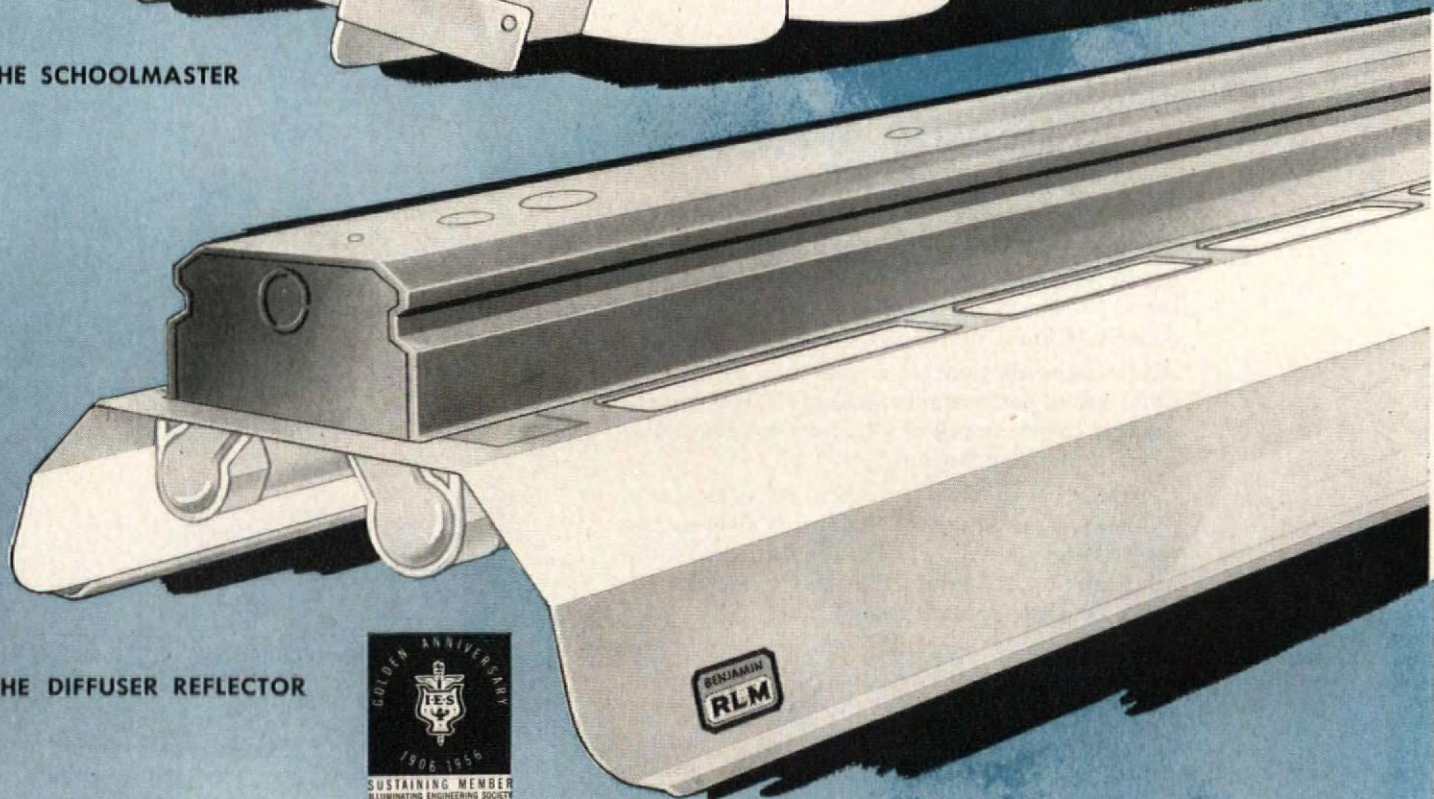




THE OFFICER



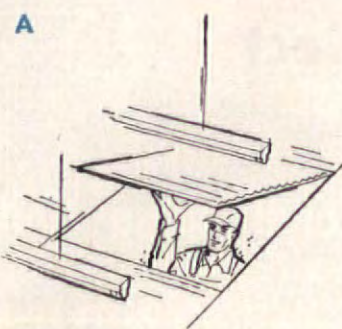
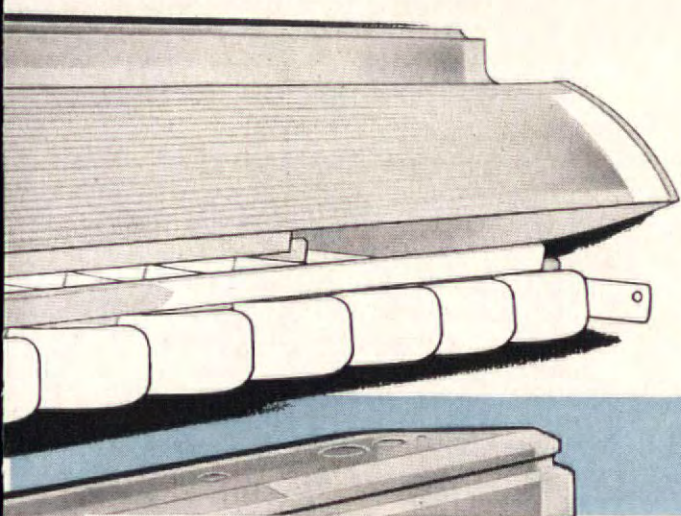
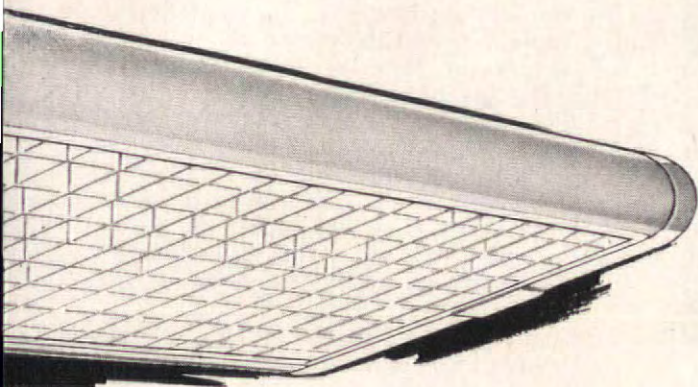
THE SCHOOLMASTER



THE DIFFUSER REFLECTOR



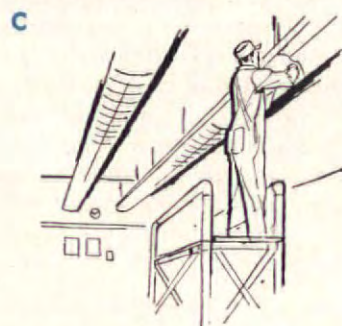




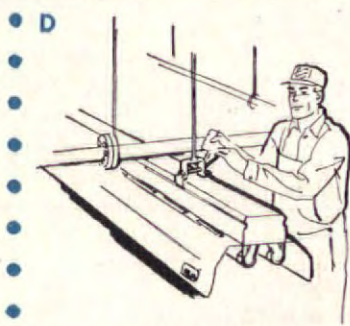
**A** Low Store Lighting Installation Cost



**B** Low Office Lighting Installation Cost



**C** Low School Lighting Installation Cost



**D** Low Factory Lighting Installation Cost

When all things are Considered, the Better Lighting choice is

**BENJAMIN**

Simplicity features like these mean  
*Low Cost from Start to Finish*

**A Simplicity is the Password!** Precision-engineered channels and louvers of Benjamin Luminous Systems fit together without on-the-job changes.

**B Architectural Treatments are a Breeze** with clean-lined units like the Officer, featuring a variety of incandescent inserts to help achieve unique effects.

**C Trouble-Free Continuous Lines!** No special couplings to fool with! Louvered units like the Schoolmaster are easily aligned by coupling them end-to-end.

**D "Slide" around Ceiling Obstacles!** Easy-to-adjust sliding clamp hangers simplify mounting despite ceiling obstructions.

These and many other installation features help to get every Benjamin Lighting System off on the right foot. When you consider them, in addition to the other four major areas of Benjamin superiority, you will see why, "When all things are considered, the Better Lighting choice is Benjamin!"

Send for Free Lighting Booklets shown at right! Benjamin Electric Mfg. Co., Dept. YY, Des Plaines, Ill.



B-1039 IS

Sold Exclusively Through Electrical Distributors

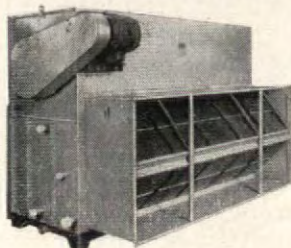


**There's no "or Equal"  
when you select...**

## **BUSH Air Conditioning Units**

**EXCLUSIVE INNER-FIN DESIGN ...**

**THE INDUSTRY'S MOST COMPLETE LINE**

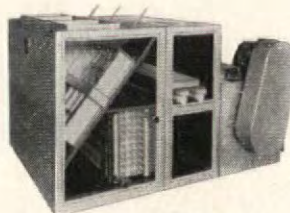


### **'AH' AIR HANDLING UNITS**

Available in 12 models from 800 CFM to 28,800 CFM. Floor-standing vertical and ceiling-hung horizontal models with direct expansion, water or steam coils. Face and by-pass damper sections, mixing boxes, spray type humidifiers and filter sections available for all units. Models AH-10 through AH-32 available with *Inner-Fin* coils.

### **'MZ' MULTIZONE UNITS**

Available in 9 sizes covering a range from 2,560 CFM to 28,800 CFM, Multizone Units parallel the standard Bush HAH Air Handling units, using the same proven blower sections and accessories such as filter sections and mixing boxes. Zone dividers may be arranged as desired — vertical, horizontal or a combination of both. Entire interior is well insulated and undercoated. Units can be shipped sectionally when this is desired to facilitate installation.



### **'CR' REMOTE AIR CONDITIONING UNITS**



Provide quiet, economical year 'round air conditioning for all types of multi-room buildings. Units are available in vertical floor and horizontal ceiling models . . . feature individual room control . . . are easily incorporated in new or existing buildings.

Request Catalogs containing complete specifications on units shown.



**BUSH MANUFACTURING CO.**

WEST HARTFORD 10, CONNECTICUT • RIVERSIDE, CALIFORNIA

## **LETTERS** *cont'd.*

St. Etienne du Mont and St. Eustache in Paris, are marvelous hybrids. But there always was some continuity. The worst that was done was to clap a Jesuit portal on a Gothic church. This was corrected by the Germans at Metz—a doubtful improvement. It might be corrected at St. Eustache. But the Neoclassical mask at St. Gervais was a success: it does not quite fit, yet it does not strike us as an incongruity. St. John is already a hybrid; as it has a Romanesque apse, it might be given Renaissance towers. But to saddle it with a Le Corbusier abstraction would be an absurdity. Rather leave it unfinished (as Cologne was for three centuries, as Notre Dame of Paris is to the present day) than turn it into a monstrosity. Let the young architects express themselves, and their age, or, more literally, the current vogue, in new churches. This is a church building age, the greatest since the 13th century; their opportunities are unlimited.

ALBERT GUERARD  
Stanford, Calif.

### **M.I.T.'S CYLINDRICAL CHAPEL**

Forum:

By what standard may the M.I.T. cylinder (AF, Jan. & March '56) be termed a chapel? The fact is too well known to deny that the visual impact of a worship building is too powerful to abandon altogether.

If this room is "for the meditation of the single individual," why space for 130 "individuals"? Meditation is usually a truly single, personal thing, and not done in concert. Meditation is customarily done in quiet and solitude—why then, an organ?

If the interior "has captured just the spirit we intended it to," definition of the word spirit certainly is in order. Since the word was not capitalized, I assume Saarinen was not referring to anything related to religion; therefore, precisely what "spirit" is intended for this, an alleged worship room?

Neither the "altar" nor its screen may be considered successful unless interpreted for, and accepted by, persons who have divorced themselves utterly from past conditioning. God is in this room by highly subtle, somewhat devious implication only, and something I scarcely believe many would absorb while meditating.

From the basis of art (and architecture) for art's sake, this project may be successful. From the basis of a realistic worship area which serves the customary concept of the purpose of worship, it is not—not any more than many worship rooms created with the "contemporary" in mind. I favor the contemporary, the permission for freedom to create by the architect. I regret I cannot feel that the average "contemporary" worship room is successful visually or acoustically; or, in most instances, in valid realization of the

*continued on p. 72*





**DOR-O-MATIC INVISIBLE DOR-MAN  
NOW AVAILABLE IN 2 MODELS**

If your plans call for completely automatic door controls, specify the Invisible Dor-Man . . . in carpet-actuated or handle-actuated models. Either type will open your doors quickly, quietly, automatically.

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there's one for every type door  
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Specify Dor-O-Matic for metal, glass, or wood doors. Installed with any one of them, Dor-O-Matic gives uniform opening control and produces a positive, 2-speed, door closing action . . . yet your door retains a clean, eye-appealing appearance. There is no unsightly surface-applied closer to mar entrance design. Special Dor-O-Matic features include a positive back-stop and built-in hold-open device (optional). Finest construction and simple, safe design assure long, trouble-free service . . . just a few reasons why Dor-O-Matic is best for contemporary entrances.

**Only DOR-O-MATIC provides  
these 10 service advantages**

1. Positive uniform control
2. Built-in hold-open device
3. No accidental hold-open
4. Positive centering of door
5. Positive back-stop
6. Two-speed closing action
7. Built-in leveling screws
8. Permanent oil seal at spindle
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**DIVISION OF REPUBLIC INDUSTRIES, INC.**  
**4440 North Knox Avenue • Chicago 30, Illinois**  
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# FOAMGLAS<sup>®</sup>

the cellular, stay-dry insulation



**STAYS DRY**—Cut a piece from your sample. Place it in water. Note how the hermetically-sealed glass cells filled with dead air keep it afloat. Weight it down for days, weeks or longer

if you like. Remove the weight and it bobs back to the surface . . . proof that the sealed cells have absorbed no water, still have their original insulating efficiency.

**VAPOR-PROOF** — With a nail file, cut a  $\frac{1}{4}$ " thick slice from your sample. Hold it to your lips and try to blow smoke through it. The smoke won't penetrate . . . proof that FOAMGLAS is a positive vapor barrier in itself.

**STRONG AND RIGID** — Place your FOAMGLAS block on the floor. Stand on it. Note how it supports your weight without crushing. Compressive strength is over seven tons per square foot . . . making it ideal for load bearing applications.

**WON'T BURN** — Hold a flame to your sample. You'll see at once that it does not burn . . . an important safety feature in all construction. It's even acid-proof and rodent-proof as you can prove if you happen to have a vial of acid or a pet rat handy.





Send for a sample and make these simple tests!

## Prove to yourself that FOAMGLAS is your ideal insulation!

Let us send you a free sample of FOAMGLAS. Use it to make the few simple tests illustrated. You'll prove that this unique cellular glass insulation has exactly the right combination of properties to assure you of these vital benefits: constant insulating efficiency . . . long, maintenance-free life . . . strength and rigidity for a variety of structural applications . . . ease of handling and installation.

Thousands of actual users have proved in actual performance the benefits so clearly demonstrated by these tests. No wonder, then, that new users every

day are picking FOAMGLAS to insulate the roofs, ceilings, walls and floors of all types of buildings, low temperature spaces, piping and equipment. Send for a sample today and make your own tests. Use the handy coupon, or write . . .

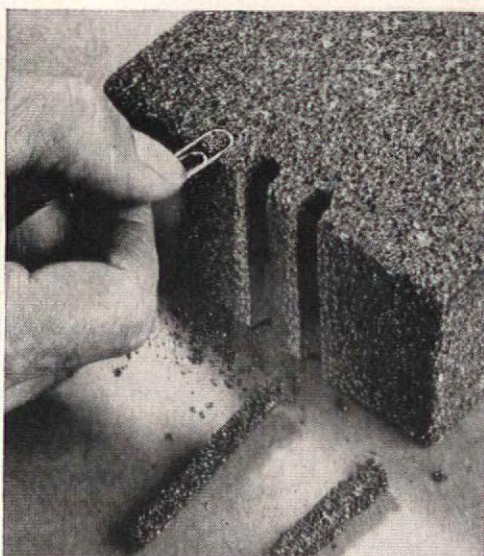
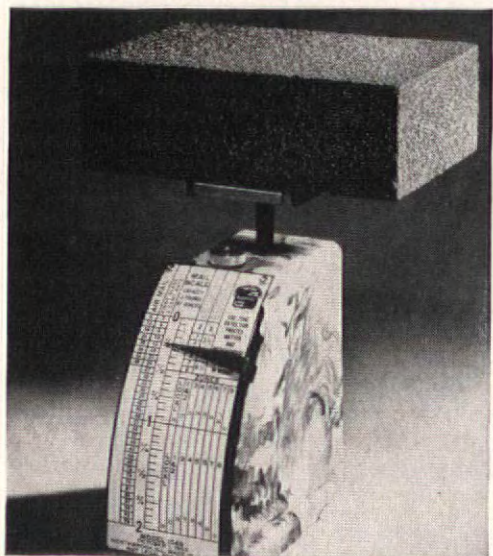
### Pittsburgh Corning Corporation

Department D-46, One Gateway Center  
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**LIGHT WEIGHT** — Just pick up your sample to see how light and easy to handle it is. Check actual weight on your company's postal scale if you wish. The density of FOAMGLAS is only 9 pounds per cubic foot.

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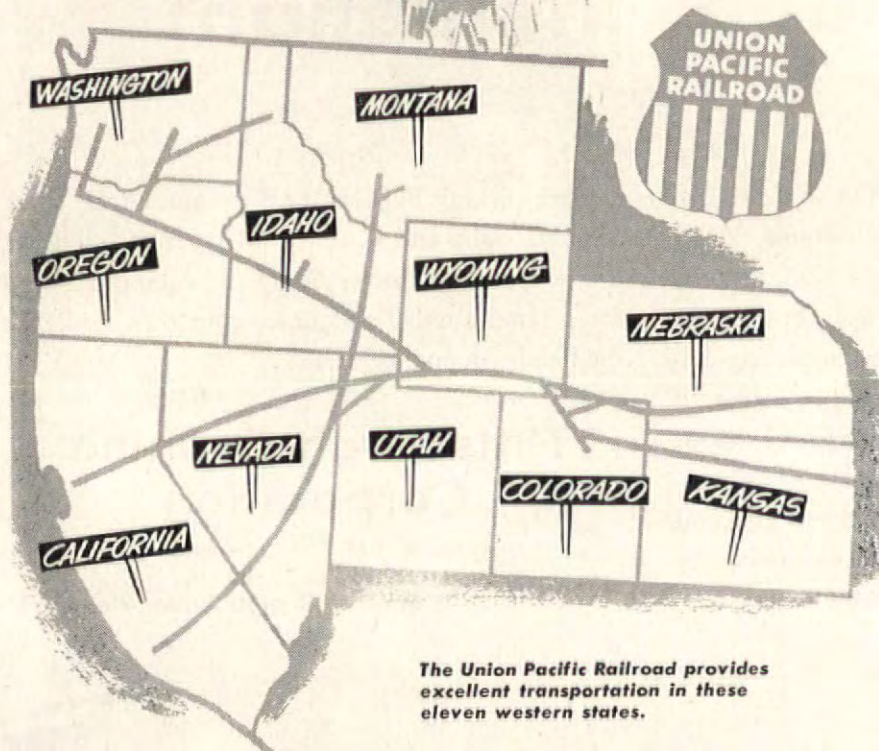
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## from Union Pacific "OUTPOSTS" comes information of pertinent value to SITE-SEEKERS . . .



Union Pacific representatives are scattered throughout the vast western empire served by the railroad. In addition to performing their various traffic duties, they act as our "eyes and ears."

Through their many contacts with civic groups, newspaper editors and business leaders, they know what is going on locally. We can ask them questions such as: "How's the labor situation?" . . . "What about new building projects?" . . . and so on.

This "on the ground" information supplements the wealth of factual data available at U.P. headquarters. We will gladly give you a confidential report on any area shown on the map if you are interested in establishing a western industrial site. Just ask your nearest U.P. representative, or contact—

**INDUSTRIAL DEVELOPMENT DEPARTMENT  
UNION PACIFIC RAILROAD**  
Room 394, Omaha 2, Nebraska

# UNION PACIFIC RAILROAD

## LETTERS *cont'd.*

true purpose of worship as most people understand and accept it.

RAY BERRY, *editor*  
*The American Organist*  
Staten Island, N.Y.

• Other equally keen observers have found the M.I.T. chapel to be highly successful as a place of worship.—ED.

### HYPERBOLIC PARABOLOIDS

Forum:

I read with interest your article, "New Way to Span Space" (AF, Nov. '55). Recently the Madras City Improvement Trust of South India has been doing some research on reinforced concrete membrane roofing with particular reference to low-cost housing. The unreinforced catenary membrane has been used for a roof and even to take a first floor.

The hyperbolic paraboloid, the single-sheet hyperboloid, the conoid and the helicoid, all designed as membranes with the hyperbolic paraboloid as the generating element have been used extensively with straight centering.

Since the hyperbolic paraboloid described in your magazine has only two supports, a heavy post-tensioned reinforced concrete beam is necessary. Similarly, if the structure had been made of reinforced concrete instead of wooden planks, the steel angles along the edges could have been avoided.

The calculations for the hyperbolic paraboloid given in your magazine are only approximate. The assumption that the tension and compression are equal is correct for the midpoint of the surface only. It is only in the case of the helicoid that the membrane stresses are everywhere equal and opposite on two perpendicular sections.

CAPT. D. GNANAOLIVU, *chairman*  
*City Improvement Trust*  
Madras, South India

### PENN STATION

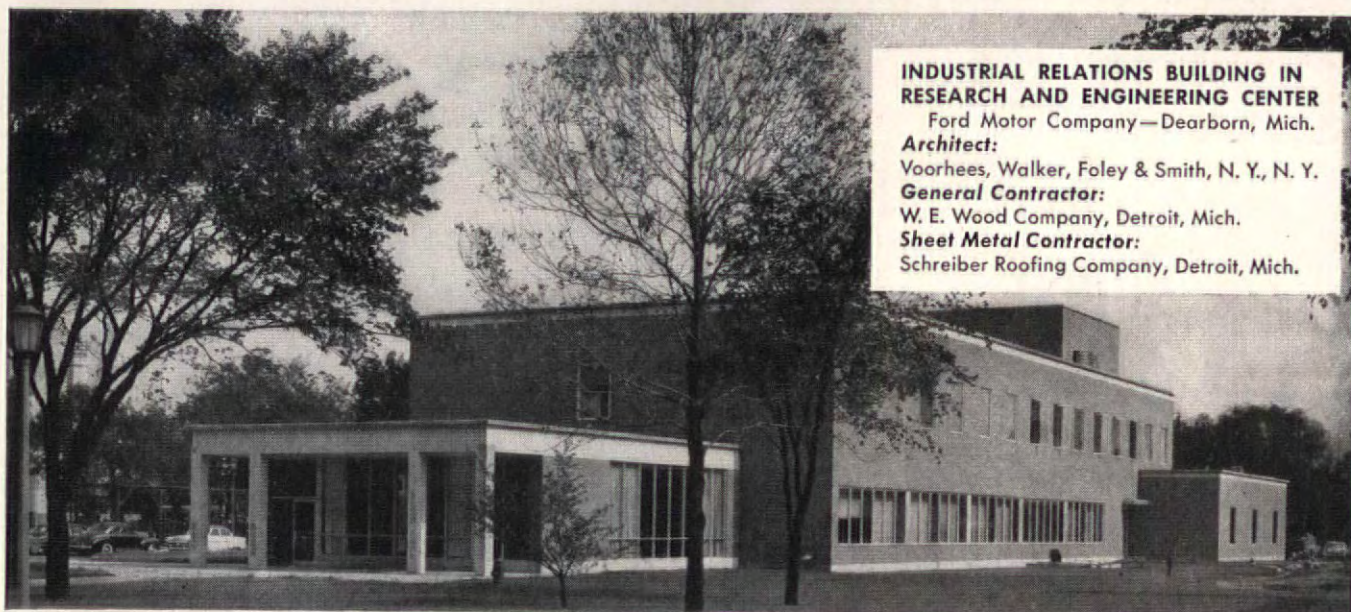
Forum:

Pennsylvania Station, New York, is one of the finest architectural experiences in the US. Perhaps not exactly architecture, but art of a great kind, akin to architecture. Say, permanent, habitable decor. Or a Bibbiena or Piranesi realized in granite and travertine. Or, take the title for it from a contemporary piece of music: *A Pagan Poem*. The paganism, of course, of the '00's, which existed in the light of incandescents, softly clustered in globes on torchères. A mellow paganism, romantic as well as classic. The portico is of a solidity that makes everything around look adventitious and insecure. And inside, McKim has organized for you an architectural walk so calculated that he seems to be walking beside you. Down the shopping arcade you go, and into the little vestibule where steps go up and down on all four sides, where columns and steps, materials and light make a composition both intimate and formal. And then, by steps or by

*continued on p. 78*



# OUTSTANDING!



**INDUSTRIAL RELATIONS BUILDING IN  
RESEARCH AND ENGINEERING CENTER**  
Ford Motor Company—Dearborn, Mich.

**Architect:**

Voorhees, Walker, Foley & Smith, N. Y., N. Y.

**General Contractor:**

W. E. Wood Company, Detroit, Mich.

**Sheet Metal Contractor:**

Schreiber Roofing Company, Detroit, Mich.

## Another installation of Chase® Copper Base Flashing Expansion Joint!

More than 1600 feet of Chase Copper Base Flashing went into this new Ford Motor Company building, protecting the vital juncture where the flat, built-up roof meets vertical masonry walls.

A solid copper perimeter flashes the base, and though every seam is soldered, the unique Chase Copper Base Flashing Expansion Joint will allow for expansion and contraction of the metal!

Now, there is no need to allow for temperature changes by using loose-lock, "hope-for-the-best" seams. Simply install Chase Copper Base Flashing Expansion Joint! The push-pull of temperature change is absorbed safely and surely, while seams stay completely watertight!

See that *your* installations get the protection of Chase Copper Base Flashing Expansion Joint—for information and specifications, write Chase!



*Installing Chase Copper  
Base Flashing Expansion Joint*

# Chase

**BRASS & COPPER CO.**

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*The Nation's Headquarters for Brass & Copper*

Atlanta	Chicago	Denver	Indianapolis	Minneapolis	Philadelphia
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Boston	Cleveland	Grand Rapids	Los Angeles	New Orleans	Providence
Charlotte	Dallas	Houston	Milwaukee	New York	Rochester
	St. Louis	San Francisco	Seattle	Waterbury	



# how you benefit today from the Kawneer Touch

The invention of resilient sash by the architect-founder of Kawneer, Mr. Francis J. Plym, revolutionized store front design. This was the foundation upon which Kawneer's expanding line of architectural products was developed and manufactured over its 50-year history.

The ability to put into these architectural metal products a certain "touch" has given Kawneer the opportunity to build products for all types of buildings. Today the greatly diversified line includes metal wall, flush doors, sun control products and other assemblies for big and little buildings, stores, offices, factories and schools. The Kawneer Touch offers you:

## **Eye-appealing metal finishes**

—years of experience by skilled artisans are reflected in the lasting beauty of Kawneer products.

## **Large variety of stock shapes and models**

—designed to be flexible and adaptable, yet retain design individuality.

## **Precise engineering and production**

—careful workmanship means less on-the-job erection time.

## **Continuous research and development**

—always prepared to satisfy new architectural demands and needs.

## **"On-call" field representation**

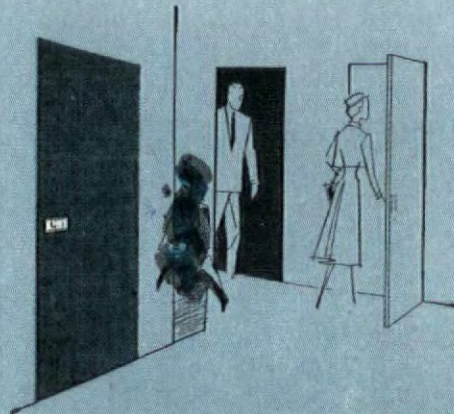
—over 110 representatives covering the nation and Canada, equipped through education, training and experience to assist you with any application problem.

## **Factory-trained dealer organization**

—ready to serve with adequate inventories, prompt deliveries and skilled installation methods.

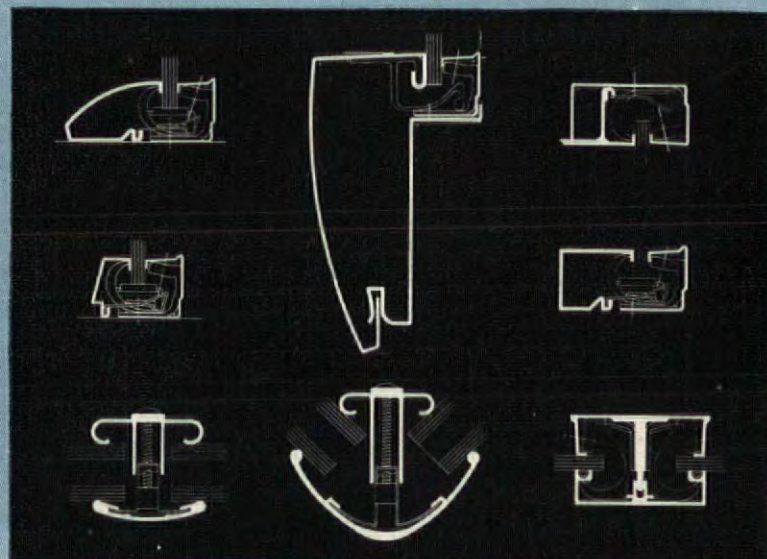
## **Nationwide network of factories and warehouses**

—near your jobs to provide quick delivery to dealers, preventing costly delays.



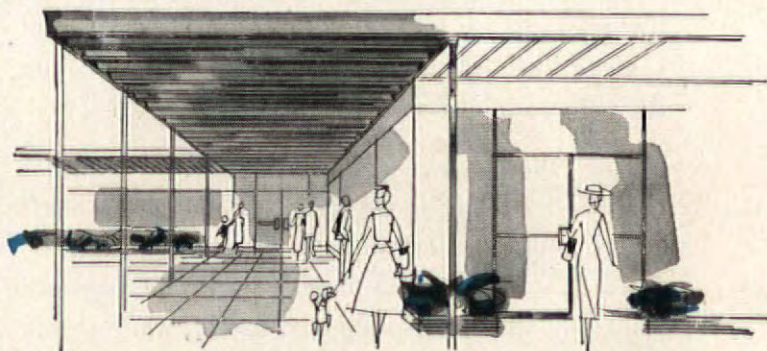
## **doors and entrances**

To enhance the merchandising effect of an outstanding window display, Kawneer many years ago developed entrances that would invite the public to enter. Today the epitome of doors and entrances has been developed. Kawneer's narrow-stile, all-welded aluminum doors and shop-prefabricated interchangeable hardware... an exclusive innovation... enables complete flexibility and individuality of design.



## **resilient sash**

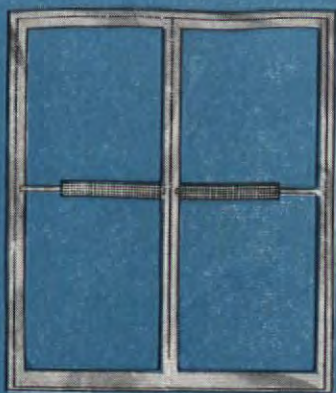
An apparent need for a sash that would "give" with the flexing of glass prompted the city architect of Kansas City, Mr. Francis J. Plym, to invent the first resilient sash. Since this time in 1906 many Kawneer sash assemblies have been developed and patented to provide you with a maximum variety of members from which to choose.



## **sun control products**

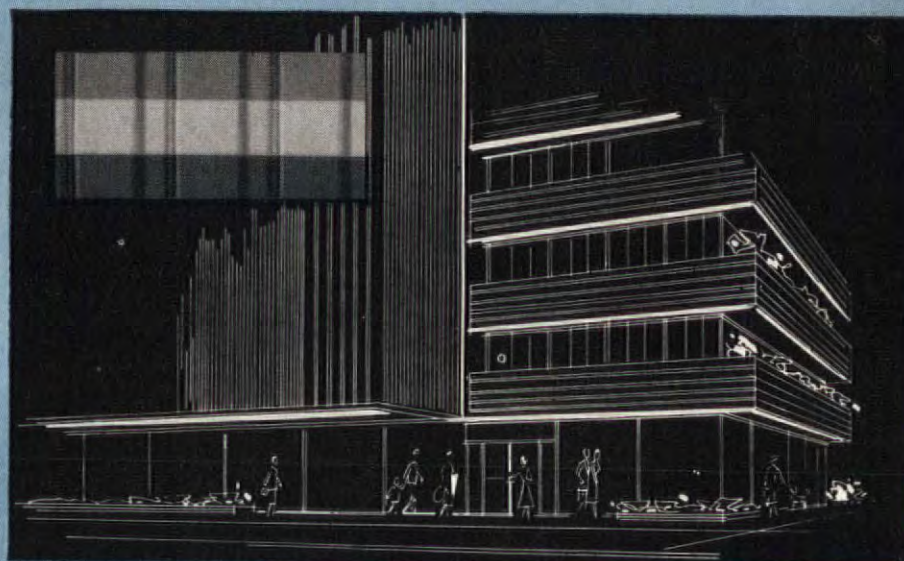
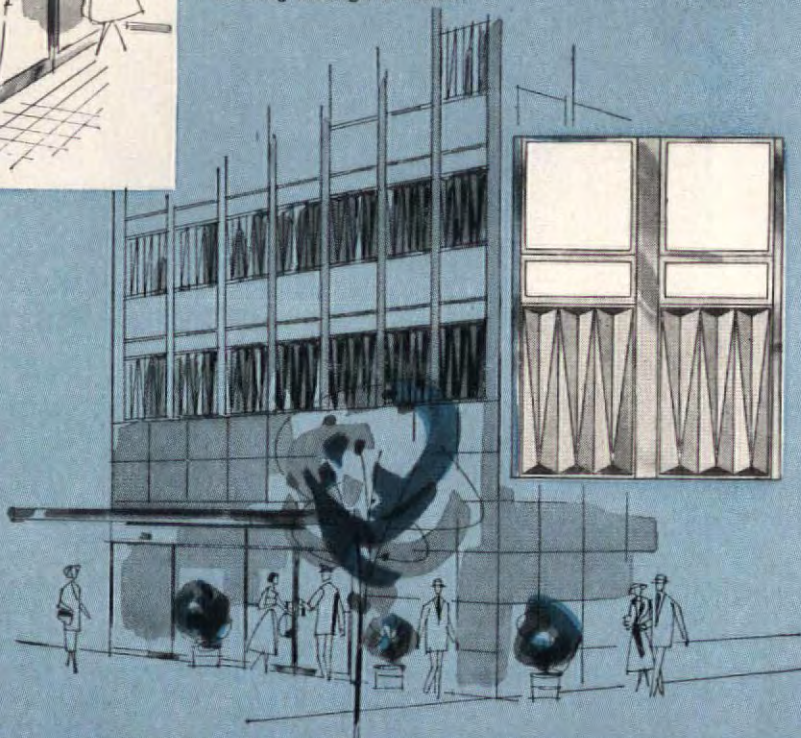
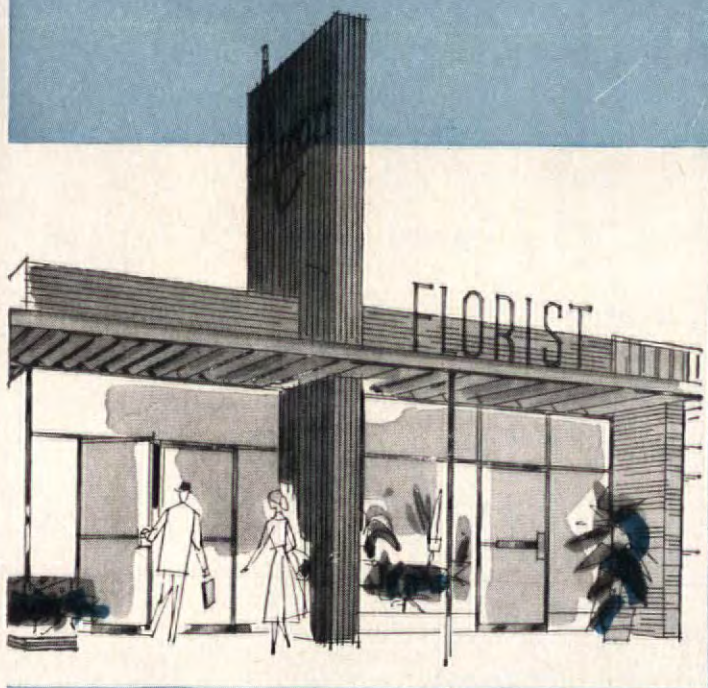
Rainy or blistering hot weather is an asset to the fortunate merchant who has protected his walk with a Kawneer Canopy. People run for protection, practically into his arms. Kawneer K-louvers, too, shield workers and students from hot sun rays and glare. Versatile and adaptable to all types of windows, buildings and latitudes, Kawneer Sun Control products are quickly erected and complement the building design.





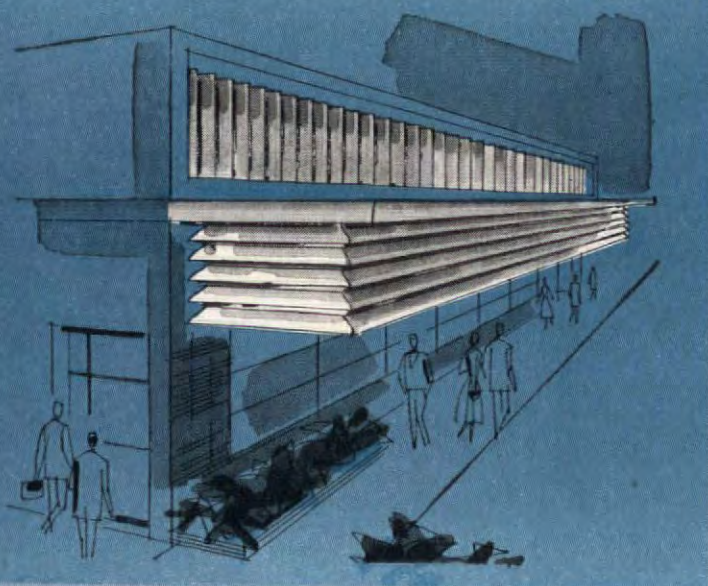
### metal wall products

A pioneer in the fabrication of aluminum for buildings, Kawneer furnished many famous structures with windows and spandrels. Today the skills and abilities that went into the windows and spandrels of the Mellon Institute, the St. Paul City Hall and Court House, and the Boulder Dam Power House are still at work furnishing modern structures with a complete service of "one responsibility," from engineering through erection.



### zourite facing

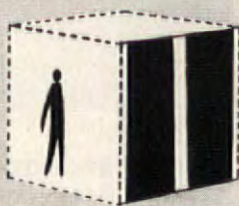
A crying need existed for a colorful, durable facing material. The exclusive Kawneer product, Zourite, was developed in aluminum with a porcelain enameled finish. Today the Kawneer Zourite product line includes 13 colors and 2 profile shapes—the narrow and bold.







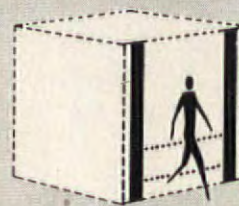
**HOW TRAFFIC SENTINEL WORKS WITH SINGLE PASSENGER (ALSO HANDLES 10-15 WITH EQUAL EASE)**



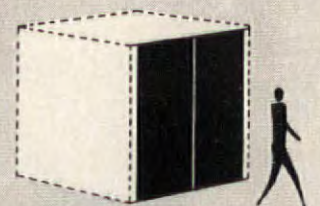
**1.** Car arrives



**2.** Doors open—  
Traffic Sentinel  
beams go "on"



**3.** Passenger leaves car



**4.** Doors close almost  
immediately



# How Invisible Beams of Westinghouse Traffic Sentinel Hold Operatorless Elevator Doors Open Until Entrance is Clear

**TEST BY BETTY FURNESS** — (see photo of  
delicately balanced eggs on spoons showing how  
doors are held motionless until entrance is clear.)

## HERE'S PROOF!

... Westinghouse operatorless elevator doors "lock open" as people pass through the entrance  
... absolutely no false door starts to startle passengers  
... even persons standing in doorway have no fear of doors starting toward them.

## HOW TRAFFIC SENTINEL WORKS

Traffic Sentinel controls doors according to the number of people moving in and out of elevators by:

1. Projecting invisible light beams across the car entrance which—
2. Operate in conjunction with door controls to—
3. Automatically adjust the length of time the doors remain open ...
4. Passengers entering or leaving the cars interrupt the rays and—
5. Once rays are re-established, the doors start to close almost immediately—but
6. If other passengers are following—they continue to break the rays—and doors stay open until last person is safely through entrance.

## OPERATES WITH 1 PERSON OR 15

With Traffic Sentinel, the lighter the traffic, the shorter the door-open time. During heavier traffic, the doors remain open long enough to permit unhurried loading or unloading of the car ... all under conditions that impart a complete new sense of security and freedom from annoyance to all passengers.

## NO PREMATURE CLOSINGS— ALL UNNECESSARY DOOR- OPEN TIME ELIMINATED

Traffic Sentinel operates more efficiently than a trained attendant, "sensing" passenger movement and controlling doors accordingly. This precise adjustment to traffic flow does away with all unnecessary door-open time—speeds elevator service throughout the building.

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Call our nearest office today for complete information on this and other fine Westinghouse vertical transportation equipment.

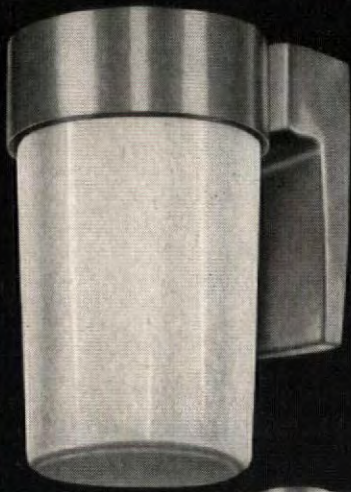
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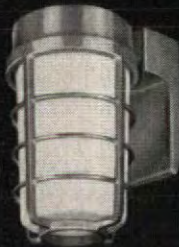


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### VAPOR-TIGHT

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43-40VT  
43-44 VT (guarded)

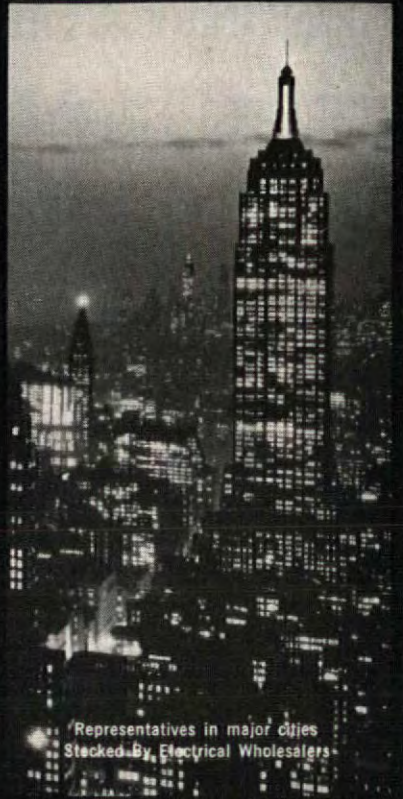


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### VAPOR-TIGHT

CEILING MOUNTED  
43-45VT  
45-46 VT (guarded)



## LETTERS *cont'd.*

escalator, descent into that dim, echoing gulf of space: before you, the great clock, the archway where the lights mingle in the glass; around you, the giant columns appearing, the vaults developing overhead; twilight perhaps in the great windows beneath them. The hall is a place of quiet enjoyment: smoky brown, warm, dim, vast—a place for happiness.

Now comes an architect who proposes to do a little remodeling (AF, Feb. '56 and photo below) and seemingly on the



principle that the discomfiture of a heretic is a work pleasing to God. If McKim was imitating the Romans, this one will imitate the Vandals, or the Huns. At the point where the eye would raise from the monotonous expanse of floor to the archway, then up to the vaults, he wants to erect a fluttery fatuous kiosk that might be in any other building without being any more harmonious. He is callously indifferent to the present Station. He would stress the bright note, it seems. No sober rectilinears for him. And his lighting as a matter of routine must be of the coldest fluorescent. In the context, it will be as appropriate as an installation of juke boxes in Westminster Abbey.

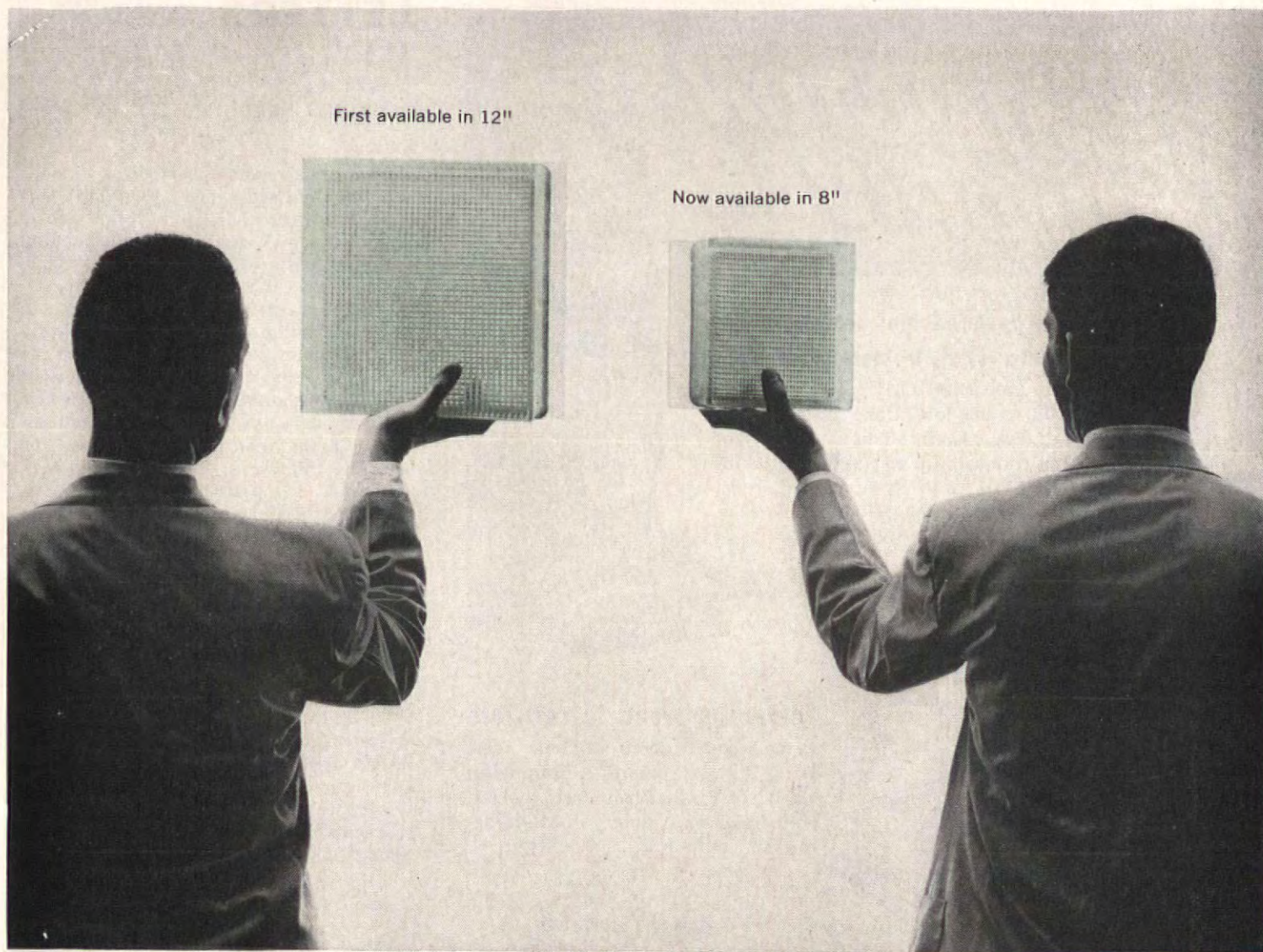
It is to be hoped that someone will see that it is stopped: and any remodeling made in a way that will leave the original effect heightened or left alone. As a matter of fact, a kiosk might give point to an interior space now a little diffuse. But a man must be found who will consent to abandon the thought of making it slick or bright and chirpy: a man who is capable of using travertine and soft warm light, who can devise an ornament that will lighten and articulate a structure so large. And thereby give us an even greater work of architecture.

WALTER C. KIDNEY  
Philadelphia, Pa.

● FORUM is not in agreement with Reader Kidney. With all that travertine around, why more? The canopy is airy and gracious, and acknowledges the formidable pomp around it with a friendly smile. FORUM will tell more soon.—ED.

*continued on p. 80*



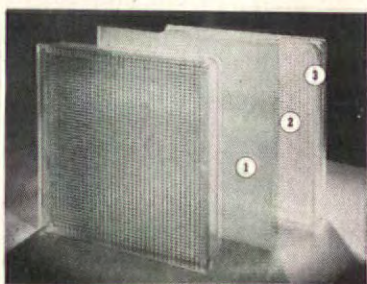


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The picture above gives you a good idea of what you see. Notice that the *outer* faces of the Suntrol Blocks are *bright*, but on the *inside* faces, the raw light has been cut down to a soft, diffused glow. In addition to trapping glare, PC Suntrol Blocks reduce heat gain. To sum it up in percentages—glare reduced by 35% and heat gain by 25% compared to standard glass blocks.

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Write for more information. Address Pittsburgh Corning Corporation, Dept. E-46, One Gateway Center, Pittsburgh 22, Pennsylvania. In Canada: 57 Bloor St. W., Toronto, Ontario.

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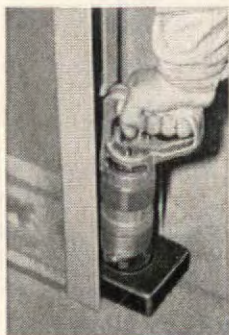
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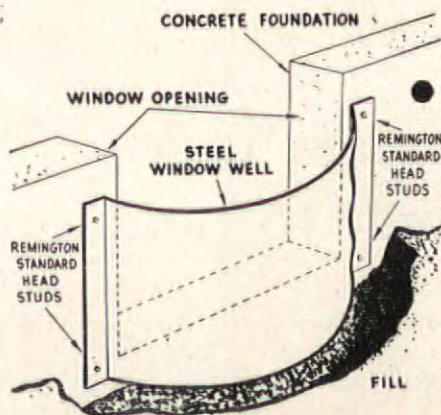
## Fastening door bucks to concrete floors and ceilings



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## LETTERS *cont'd.*

### BOSTON'S NEEDS

#### Forum:

I have just read your article on renewal activities in Boston (AF, Feb. '56). One important item that your News article omitted is that Boston is slowly expanding into an urban area 50 to 70 mi. in radius and has not yet realized it!

There is very little planning of Boston on a metropolitan basis. The new highways will bring more cars and less people to the city. The transit system's management seems to be shortsighted and is constantly reducing its service and giving away potential rapid transit rights-of-way for poor superhighways. There already have been traffic tie-ups on the new expressways, some of them not yet completed. The thinking is on moving automobiles (at 1.7 passengers or less per vehicle) and not on moving people. The under-the-Common garage is not near any of the "integrated belt highways" and in all probability will only make traffic congestion worse should it be built. It is an excellent example of poor planning.

What Boston (like most cities) needs is a system of suburban-interurban rapid transit free from the present inefficient and often political management. This system could move thousands of people per hour, many times that of the highways and would also be very cheap in comparison.

THOMAS LENTHALL  
Transit-planning consultant  
Cambridge, Mass.

### HOTTER WATER

#### Forum:

The article entitled "Heating with Hotter Water" in your January issue mentions the US Air Force Academy job in Colorado Springs but fails to mention us as the high temperature water consultants.

Incidentally, the distance from the boiler plant to the community center area is not 2 mi. as indicated in your article, but 4 mi. and this system is unique in that there is roughly a 500' rise from one end of the system to the other.

You mention forced circulation boilers as being the most efficient and the cheapest means of generating high-pressure high-temperature hot water. This is not always the case. Forced circulation boilers without a drum, natural circulation boilers in which the drum is used as expansion tank, and steam boilers with direct high-pressure hot-water generators, all have their place in high-pressure hot-water systems. Although in the bigger units the forced circulation type boiler is cheaper and has certain advantages, in the medium field from say 20 million to 50 million Btu's per hour, a system employing steam boilers with direct contact heaters definitely is about 25% cheaper.

E. G. HANSEN  
J. O. Ross Engineering Corp.  
New York, N.Y.





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Thomas A. Schutz Company, Morton Grove, Illinois. Seymour S. Goldstein, Chicago, Illinois, Architect. B. Stromberg Construction Co., Morton Grove, Illinois, Contractor.

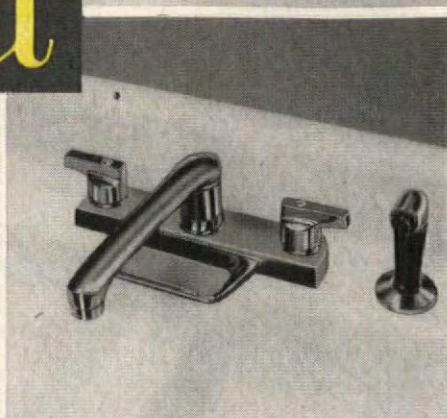
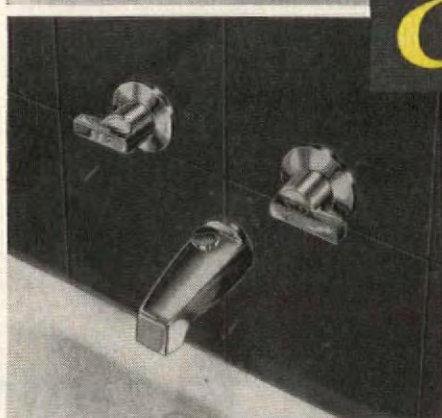
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**b** **New Monogram Fittings.** These luxurious fittings have a rich satin chrome finish, and can be personalized with the owner's initials. Distinctive Monogram fittings are available with clear or colored non-slip handles to blend with the bathroom color scheme.

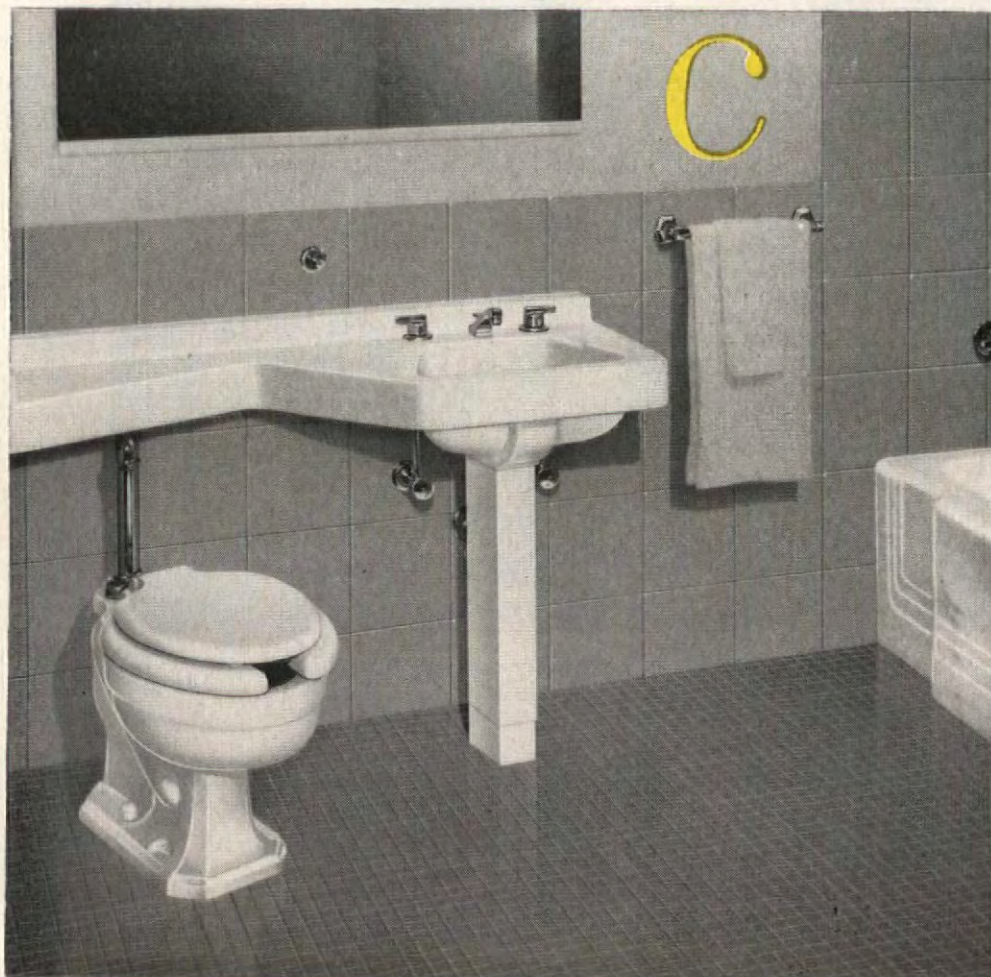


**a**

## Picture studies in function and

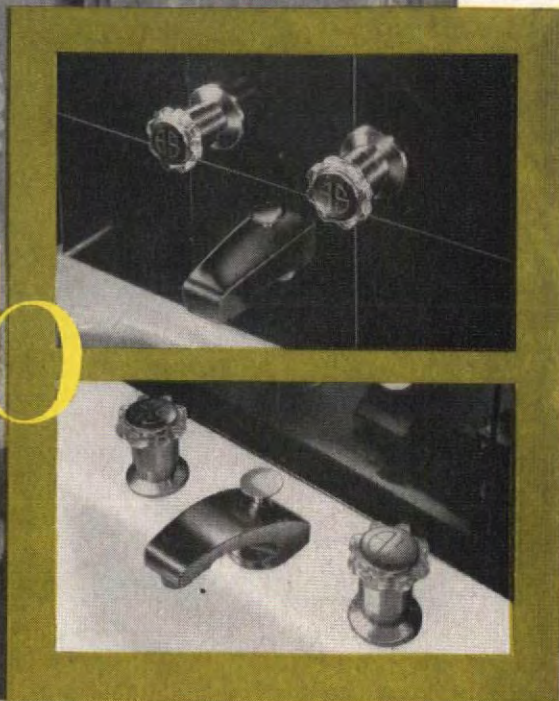
**C** **Combination Lavatory and Vanity Shelf.** This smart-looking one-piece Guestledge lavatory-counter combination is especially suitable for use in hotel or motel baths. It's a notable space-saver, since the toilet in the bathroom can be so positioned as to serve as a dressing table seat. Of genuine vitreous china with non-tarnishing Chromard fittings, the Guestledge is low on maintenance, high on guest appeal.

**d** **New G-6 and G-4.** They're new American-Standard gas-fired boilers that can be used with either hot water or steam systems. These boilers are compact and streamlined . . . drafthood and manifold are completely enclosed in a steel jacket. Service is simple because big, easy-to-remove access doors let maintenance men do their job quickly and thoroughly. These efficient boilers have A.G.A. approval. The G-6 boiler can be used singly or in battery to handle any commercial or industrial heating job. This compact boiler has a solid, one-piece cast iron base for reduced installation costs. The G-4 boiler can be used in large homes and small industrial and commercial buildings. Designed for quick, easy assembly.



**C**





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## EXCERPTS



### The unfinished revolt

*Excerpts from the introduction by Lewis Mumford to the Triangle, a publication of the engineering and fine arts schools of the University of Pennsylvania*

Almost a generation ago, a revolt against the existing courses of study began in the architectural schools.

This revolt was largely prompted by the students; and on the negative side—the removal of academic dry rot and rubbish—it succeeded beyond anyone's expectations, with respect to swiftness and thoroughness. Students no longer had to study the Five Orders, learn to translate Gothic forms into concealed steel frame construc-

tion, or imitate the flowing rhetoric of the latest Beaux-Arts prize winner, in order to become an accredited architect. While much dead or inert knowledge was thrown out during this clearance, much that should have been salvaged and reconditioned for current use was also sacrificed. Fine renderings were happily no longer equated with good architectural design; but often the art of free drawings was allowed to lapse, leaving the young architect tongue-tied. Let this example stand for many others. What is worse, eclecticism and historicism, the two stylistic sins of the old architectural schools, did not disappear: rather they came back in modern disguise. Students who would not imitate Palladio or Adam imitated Le Corbusier or Gropius: those who would have revolted against fitting modern functions into a Greek temple did not hesitate to fit them, for the sake of the fashionable external impression, into an abstract prism by Mies van der Rohe. Instead of drawing on the history of 20 centuries the student now draws on the history of 20 years; and in the second case he uses history to no better purpose than in the first: the past is not absorbed and transmuted, but swallowed and regurgitated, without being digested. Under the original guise of functionalism, a new formalism has developed; and the organic

development of modern forms, through a deeper insight into the entire architectural complex, is now threatened with arrest. So the time has come to complete, on the positive side, the work that the first revolt only began. It was not enough to clear the ground: we must now lay more solid foundations. That is the task of this generation.



### Planning and the auto

*Excerpts from remarks before the American Society of Planning Officials by Richard L. Meier of the University of Chicago*

Let us establish the crude dimension of city growth in North America. Population



Remember  
YOU CAN COUNT ON

OUR 102nd YEAR

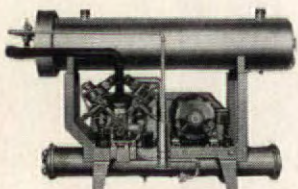
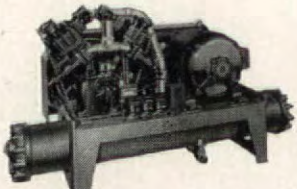
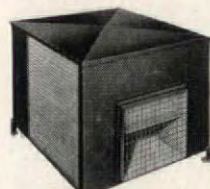

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projections indicate that it is not unlikely that 100 million or so souls will be added between now and the end of the century. Places must be found for them. For many reasons, 80 to 90% of these new additions to the population are likely to choose low-density urban surroundings—if they can get around successfully with automobiles. This means that space must be allocated to factories and offices with large parking lots, shopping centers with parking, recreation and amusement with places to park, similarly schools, hospitals, railway stations, airports, etc. One can see that although metropolitan population only doubles (approximately) by the end of the century the space it occupies should increase by five to ten times. Many metropolitan districts will develop arms which extend so far that they join their neighbors—just as New York and Philadelphia have done already.

East of the Appalachians there will be zones of continuous urbanism stretching for hundreds of miles. North of the Ohio River a gross weblike pattern would arise whose outline is fixed by the superhighways and railroad main lines. In the South and West vestiges of the same pattern would appear but, due to uneven topography and lesser over-all densities, the strands of urbanism linking major centers

may often be interrupted. The interstices in the web are presently only sparsely settled, and there is every indication that migration will continue to be away from these areas, so that in the midst of this web of urbanisms one may expect empty spaces, even more devoid of permanent settlers than at present. The marginal land would go back to brush or forest, pasture land, or crops that can be mechanically cultivated. This first over-all approximation of urban development yields very naturally green blocks or islands, instead of greenbelts, some of them hundreds and thousands of square miles in extent, surrounded by urbanism. Whether this is good or bad, one cannot say, but we can look closer at the pattern of living that is likely to evolve, based upon the further developments of technology and the present trends in social values, and from this deduce whether strong trends in other directions are likely to arise.

One of the most important technological areas is the automobile.

Perhaps the most striking feature in the forthcoming use of automobiles is a movement away from the "family car" and toward the private, personal vehicle. Thus two- and three-car families are likely eventually to outnumber those in the single-vehicle status. Already it is not un-

common to find as many vehicles as there are adults, even in families of factory workers. A steadily increasing share of income is allocated to the purchase and operation of automobiles.

Why do Americans feel cars are so important? Careful observation suggests that an automobile, in North America, is coming to be regarded as a basic instrument of freedom. A car opens up a much wider range of alternatives for work, shopping, recreation, education and social services than was ever available before or can be obtained otherwise.

Roughly two-thirds of the present high school students, girls as well as boys, assume, as a matter of course, that they will be owning and operating their own car within a few years. In many suburban communities an important fraction already do. Thus, a predominant share of the adults in the 100 million new souls will demand domestic arrangements which permit them to operate automobiles.

What then will happen to cities? Wouldn't their interiors be gradually redesigned to expedite the flow of vehicles, and the extensions of present urban areas be chosen for their accessibility to main routes? Heavy emphasis will no doubt continue to be made upon convenience to the

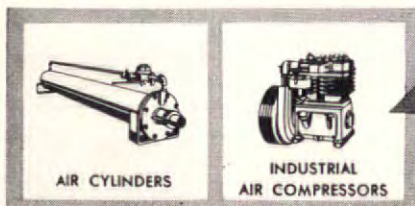
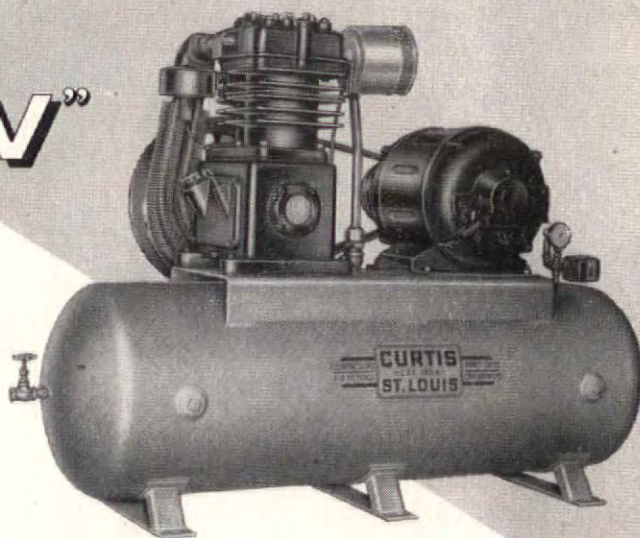
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	Armco HEL-COR Pile Shells	8 3/8" to 22 1/2"	18 to 14 gage	Up to 60'
	Armco Pipe Piles	8 5/8" to 22"	.141" to .312"	Up to 93'
	Armco Caissons	24" to 36"	.375" to .500"	Up to 90'

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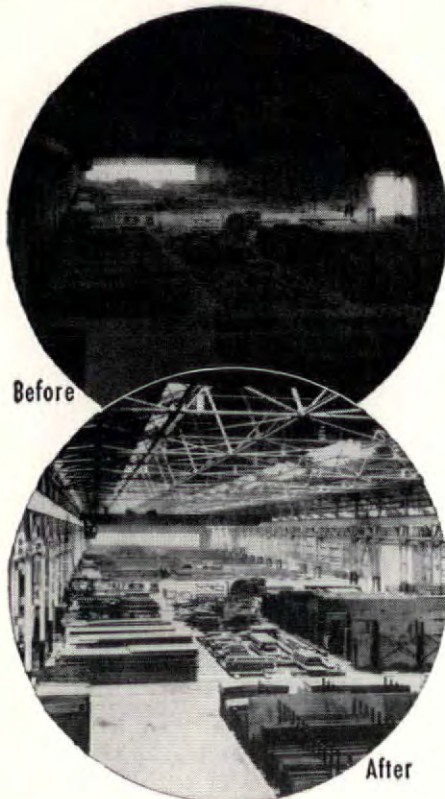
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## EXCERPTS *cont'd.*

car user. Even mass transit in metropolitan areas would need to be designed to serve the people who own automobiles. Pseudopods of suburban type low-density development would stretch out along the toll roads and first class highways. If matters run true to form, the regulation of the dispersed urban development, and the control of the traffic it generates, will be too little and too late. It seems unlikely that mass transit by itself can help very much in relieving the situation. It is at best a minor palliative, suited to the older, more densely settled portions of cities.

A somewhat more promising possibility lies in the thorough development of systems of automobile rental, with a pool of cars in each neighborhood which can be drawn upon by anyone with a credit card. If made extremely convenient and dependable such a service could reduce the number of parking spaces required per car and eliminate much unnecessary travel. However, this approach soon encounters another facet of the relationship of the American to his car. A *personal* automobile tends to be regarded in much the same manner as clothing—it is chosen to express a self-conception of social role; the styling is evidence of personal taste, and an indication of individuality.

One wonders whether the automobile cannot be adapted to an esthetic development pattern for cities. The best guess is that purchasers will not permit this constraint upon their choice. The personalized vehicle seems to be valued much more highly as an art form than compact, trim communities. The forthcoming technologies which work in glass fibers and plastics, combined with the possibilities of the gas turbine, suggest that popular *sculpture* should reach its heights not in parthenons, chapels, busts or abstractions, as in earlier ages, but in automobiles! Since it is the automobile which is valued so highly, its form must reflect this regard! A man driving a car becomes an actor, the stage is the long ribbon of highway, the cluttered perspective of intersections, and the parking space. The car itself is his costume. The audience is not only the traffic along the way, but also the people at the destination who watch you drive up. The future should bring a higher degree of differentiation in car bodies and much less in the engine—the new technologies permit this at little extra cost.

There seems to be no easy way out. Planning the spatial requirements for the extra 100 million must conform to the needs of the two- and three-car family.

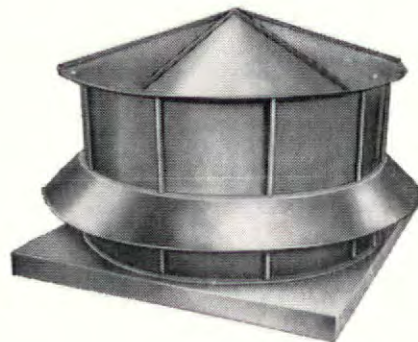
This estimate of the urban patterns likely to be dominant around 2000 A.D. is rather disturbing. The pattern anticipated is one which has been neglected by urban specialists and is contrary to the doctrines regarding city form expressed by many sensitive, design-conscious planners. Still more disturbing is another paradox. The

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**Capacity: 18,100 CFM Free Air**

**Total Installed Height: 43 3/4 inches**

We think that when you have examined a Gallaher Air-Van you will agree that it contains every ounce of progress in power roof exhauster design that means service and performance.

The vital features are the Air-Vans corrosion resistant finish, sound structural design, shipped completely assembled, quiet operating, patented scroll design, and patented air seal-off to protect the motor. Gallaher performance ratings are based on actual, reliable physical tests by an independent laboratory.

#### CAPACITIES:

Direct Drive: 150-11,000 CFM  
Static Pressures to 4"

Belt Drive: 3,000 - 65,000 CFM  
Static Pressures to 4"

## The GALLAHER Company

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Export Office: 306 Paul Bldg., Utica, New York  
Cable: "Keiserquip"



FOR EVERY TYPE  
OF INSTALLATION  
**ALTEC** PROVIDES  
THE FINEST IN  
SOUND SYSTEMS

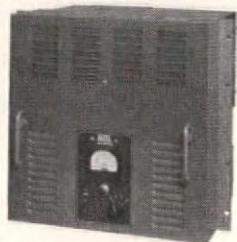
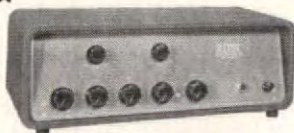
Every Altec Lansing sound product is especially designed to do a specific job. Altec manufactures more than 100 sound products—including microphones, amplifiers, controls, speakers and enclosures, thus providing the right combination of components for every installation regardless of size.

Typical of the wide range of Altec products are the two amplifiers shown. The new Altec 342A is a 20 watt public address amplifier that is truly outstanding in its flexibility of function. Incorporating the "input-matcher" features, the 342A permits the use of any combination of 4 inputs to match your exact circuit needs. It is quickly and easily installed and occupies a minimum of space—the ideal amplifier for small or intermediate size installations.

The Altec 260A is a 260 watt amplifier of low distortion and wide frequency range for public address and industrial control applications where long life and minimum maintenance are paramount. In addition to other outstanding features, the filament warm-up period is controlled by delay relay, thus permitting remote full on-off control.

For further information on Altec Lansing sound products see Sweet's Architect's File (32a/AL) or Industrial Construction File (12j/AL) or write Department 4-F for the Altec Engineered Sound Products Catalog.

342A



260A



A SOUND REPUTATION SECOND TO NONE

9356 Santa Monica Blvd., Beverly Hills, Calif.  
161 Sixth Avenue, New York 13, New York

planners find that the redevelopment of cities in America is frustrated by the political boundaries which separate the city itself from its suburbs and so have strongly advocated measures which would make the metropolitan region the basic planning and administrative unit. Perhaps, in a few instances at least, this may be achieved in the course of several decades by employing a step-by-step approach. But by then, it appears, the metropolitan unit will itself be obsolete. It may stand in the way of future progress as effectively as the gerrymandering of the last generations blocks our effort today.

### Capital gains in real estate

*Excerpts from an address by Harry B. Helmsley, president of Helmsley-Spear, Inc., before the Real Estate Board of New York*

In the middle of a building boom, land prices have a tendency to go very high. We have not as yet reached the figures which were being paid during the 1920's for land, but there has been a very decided increase in values.

The value of a lot is, of course, the residual after you take the total value of land and building and deduct the actual cost of the building. Let us assume we have a 250,000 sq. ft. building on a 15,000 sq. ft. plot. And suppose that the rent averages \$5 per sq. ft.; that our expenses come to \$1.30; and that taxes will be 90¢. Our over-all expenses are, therefore, \$2.20 a sq. ft. leaving a net return of \$2.80. We will also assume a capitalization rate or yield of 9%. That means that the property has a value of \$31 a sq. ft. or somewhat better than \$7.5 million. If this building cost \$20 a sq. ft. to build, then we would have a building cost of \$5 million and our land would be worth \$2.5 million.

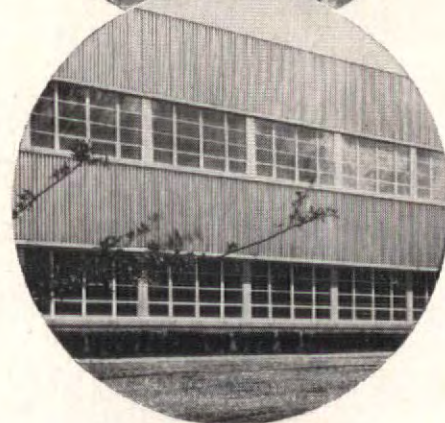
If the market will justify a rent of only \$4.50, we would have a net of only \$2.30 after deducting \$2.20 for our cost of operation. This means that on the basis of a 9% yield, we have a value of \$25 a sq. ft. or somewhat better than \$6 million. Because our building costs remain the same, our land would be worth only \$1 million, as opposed to \$2.5 million—a sizable difference attributable to a mere 50¢ change in rent.

The cost of the building also has a very definite effect upon land value. If we raise the cost from \$20 to \$25 a sq. ft. in the example just cited, it would have the effect of reducing the land value by \$1,250,000.

In the 1920's land had a terrific boom, because, while construction and operating were very reasonable, rental rates were very high. New buildings promised to be profitable even with fairly large vacancies.

*continued on p. 94*

## Read about Q-Panels



### Quick, clean, dry all-weather construction for modern insulated walls

Q-Panel walls are handsome in appearance and have better insulation value than 12-inch slow, expensive masonry walls. They go up fast because they are hung—not piled up—and in any kind of weather. Crews have installed a mile in a week. These sturdy steel or aluminum panels are permanent, yet they can be de-mounted and moved at will. Use the coupon below to write for literature.



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A vari-color coating product, which permits paints of three different colors to be sprayed simultaneously from a single gun has been developed by the Glidden Co., Cleveland. The lacquer is sprayed on a regular base coat. Three colors in the coating remain in the spraying.

A new, vari-color  
mits three, different  
simultaneously from a  
developed for profess  
painting contractors by  
land, Ohio

## Multi-Color Paint

A new, vari-color coating which permits three different colored paints sprayed simultaneously from a single spray gun has been developed for professional home builders and contractors, it has been announced by A. D. Glidden Co. and general manager of the firm's paint division.

Glid-Tex, available in a combination of yellow and white, is sprayed on the background base of the surface.

Due to chemical reaction, the three Glid-

A new, vari-colour coating of different coloured paints to be applied by a single spray gun, has been developed by home builders and painters. The lacquer coating gives a

the lacquer coating gives a smooth, durable finish in the interior decorating field. Application of the special spray equipment or complex spray technique with a regular base coat in any shade desired. Then, Gl Tex, available in a combination of yellow, gray and white, is sprayed on top of the background base coat. This application covers approximately 30% of the original background colour. Due to chemical suspension, the different colours remain separated during the spray process, resulting in a speckled finish with a custom-styled appearance. The Gl Tex system offers unlimited colour combinations.

Now you may spray on three different colors of wall paint at one time through the same spray gun, says the Glidden Co. The company has developed Glid-Tex colors to remain separated during the spraying process, thus producing a speckled finish. Colors available are white.

new, vari-color coating product which permits three different colors to be sprayed simultaneously from a single spray gun has been developed for professional builders and painting contractors. It was announced today by the president of The

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background suspension, remain separate. In the process, remain with a customer. Since the can be finished. Glid-Tex is a color-fashioning effects. Reasonable. Glid-Tex has of 125 to 150 show excellent 5 pounds of pounds air pressure of the color size of the container to satisfy merely character pressures. Sixteen hours.

Three, count 'em, three, different colored paints can be sprayed simultaneously from a spray gun because of a new "or" coating product developed by the Glidden Company. The new product is called "Or" and the press release says it "declares the lacquer finishers in 'an entire world' in the interior design field".

"You apparently don't look decked out like a sportsman to put the stuff on people? Here's all you do: spray the surface with a base coat in any shade you like. Then spray on Glid-Tex 'Or' already, go back and spray the surface with a product which permits three different colored paints to be sprayed simultaneously from a single gun has been developed by the Glidden Co., Cleveland. The results in a three-tone spray finish."

ew, vari-color coating. The three, different colored pigments simultaneously from one has been developed for some builders and painting according to A. D. Duncan, vice president of The Glid-Tex Company, Chicago. Named "GLID-TEX," the new product is being used by plumbers and gas fitters in an entirely new color and exterior decorating field, according to the manufacturer. Application of Glid-Tex does not require any special spraying equipment or complex spray technique. The procedure consists of first cleaning the surface with a regular base primer, then the shade desired. Then, Glid-Tex is applied in a combination of yellow, green and blue. It is sprayed on top of the base primer. The Glid-Tex application is approximately 30 per cent of the base primer and color. Due to chemical action of the three Glid-Tex colors remaining on the surface during the spray process, the finished finish with a custom-

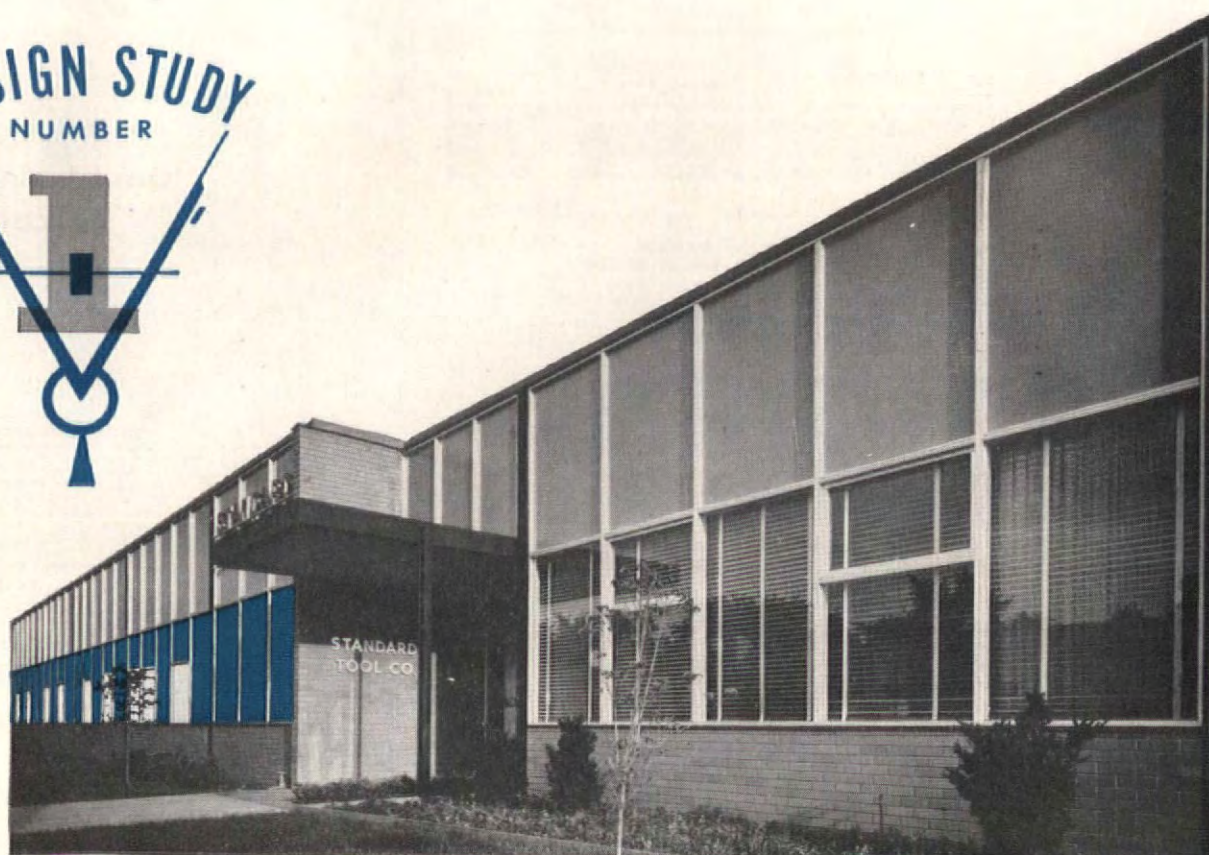
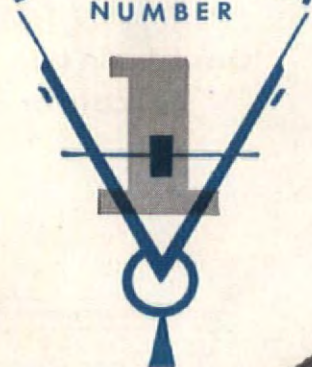
**The Glidden Company**  
Maintenance Finishes Division  
Dept. AF-456, 11001 Madison Ave.  
Cleveland 2, Ohio



## Paint Announced

A new, multi-color coating product which permits three paints—all of different colors—to be sprayed simultaneously from a single spray gun was announced today by A. D. Duncan, vice president of the Glidden Co. and general manager of the firm's paint division.



DESIGN STUDY  
NUMBER

**STANDARD TOOL COMPANY**  
Detroit, Michigan

Architect: Louis G. Redstone, AIA  
— Detroit, Michigan

Davidson "Double-Wall" Type "C" Porcelain Panels — Distributed  
and Erected by: The D. G. Garrison Company, Detroit, Michigan

**T**ODAY the architect's building design is the result of coordinated planning to insure that every practical requirement is considered.

Significantly too, the above building design includes Davidson Architectural Porcelain — a material that is maintenance-free as well as offering flexibility to the architect's design.

Whatever the application of architectural porcelain, you can rely on Davidson's experience to bring you the utmost in modern porcelain panels to effectively meet your design requirements.

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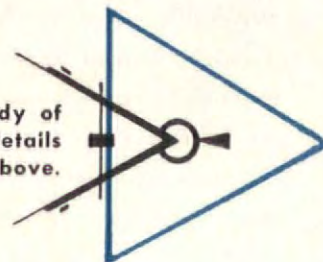
**Davidson**

**ARCHITECTURAL PORCELAIN**

*the modern building material . . .  
engineered for Architects*

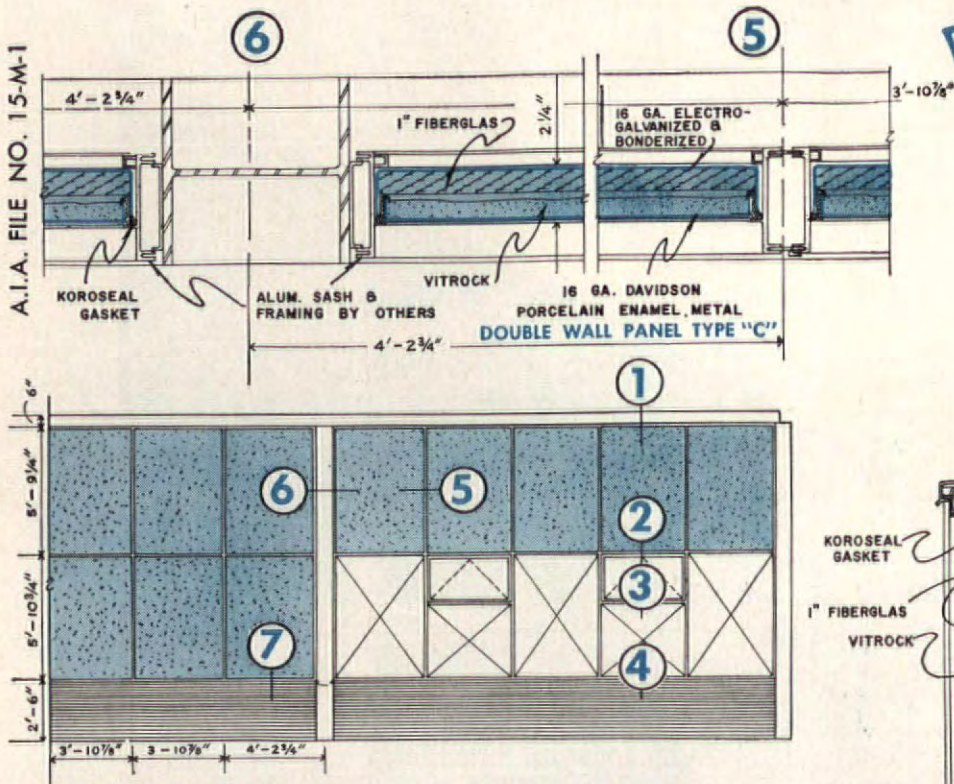


See next page for study of  
porcelain construction details  
of the building shown above.



Watch for Design Study Number 2 which  
will appear in this publication in July.



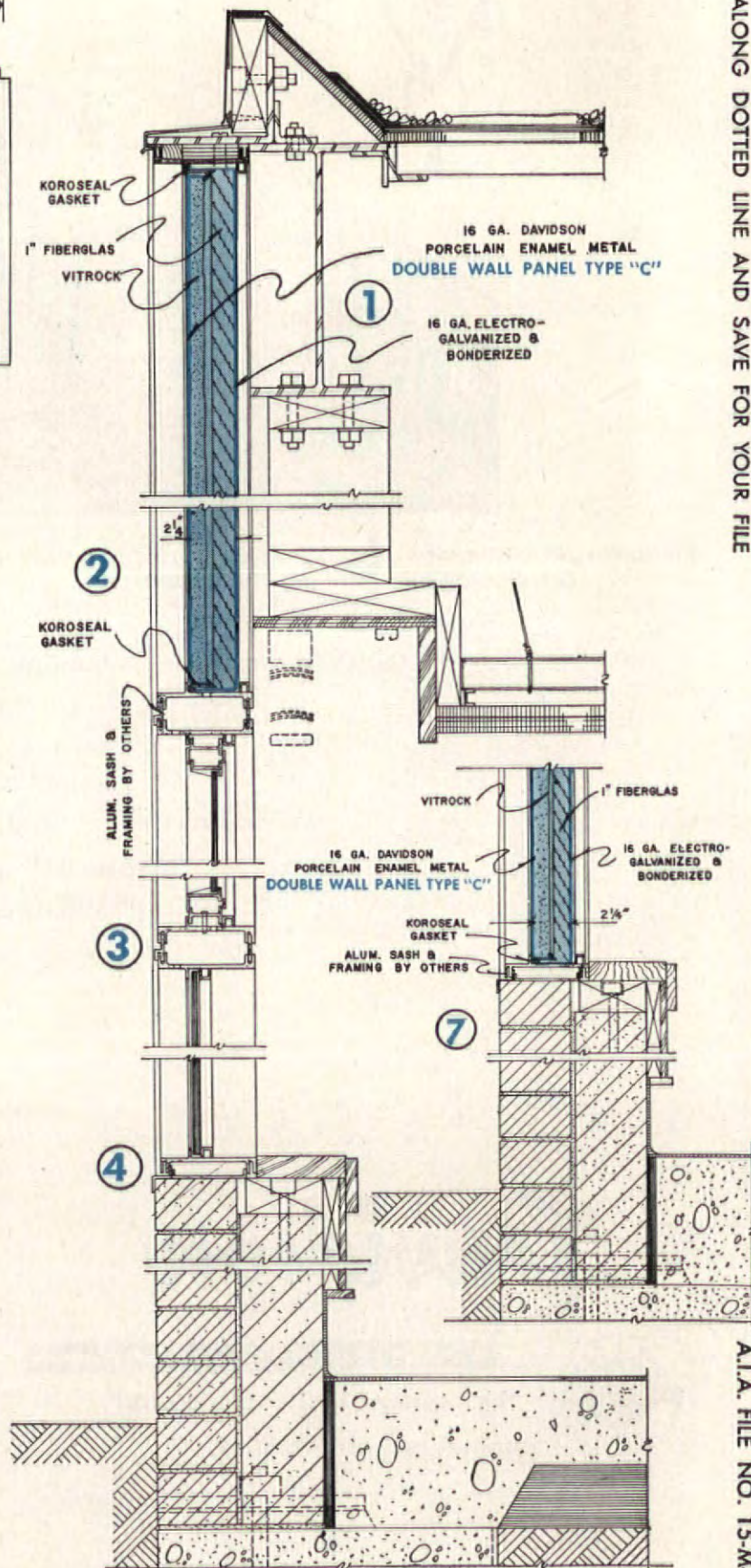


# DESIGN STUDY NUMBER

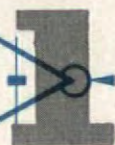
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## Davidson "Double-Wall" TYPE "C" Porcelain Panel

CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE



DESIGN  
STUDY



### DESIGN & DETAIL STUDY OF ARCHITECTURAL PORCELAIN



Standard Tool Co., Detroit, Michigan

For further information on the application of Davidson Architectural Porcelain check the following:

- ☐ Full scale drawings showing the application of Architectural Porcelain for the Standard Tool Company, Detroit, Michigan
- ☐ Detailed, 16-page Architectural Catalog, 1956 Edition
- ☐ Porcelain Panels for Store Fronts
- ☐ Porcelain Panels for Shopping Centers
- ☐ Porcelain Panels for Schools
- ☐ File of Typical Construction Details
- ☐ Reference File Jacket on Architectural Porcelain
- ☐ Reprints of this Study #1. Quantity \_\_\_\_\_

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# Announcing the kno-draft "ARCHITECTS' GROUP"

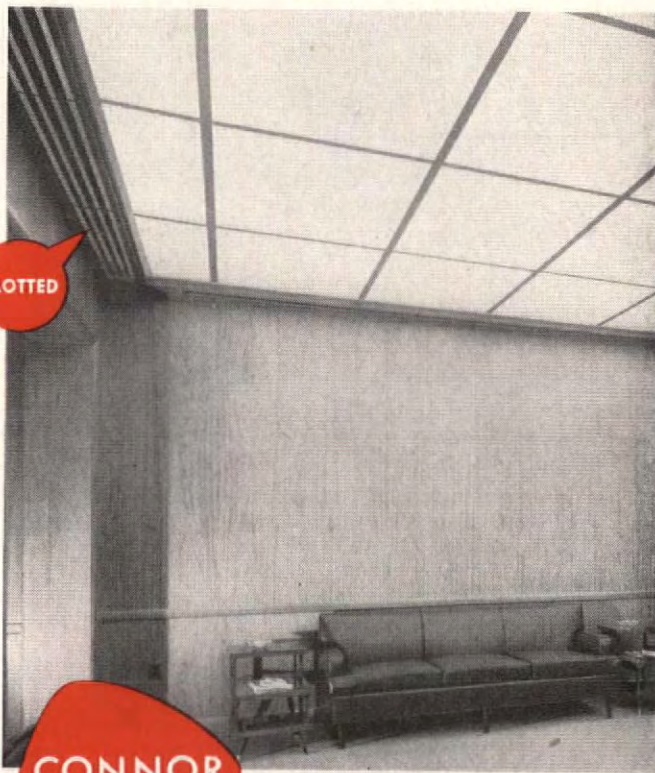
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**A**rchitects and engineers now have wide new latitude in selecting air conditioning outlets. The addition of this "Architects' Group" of square and slotted units to the famous line of round Kno-Draft Air Diffusers offers the industry's most complete line of engineered diffusers.

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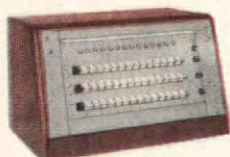
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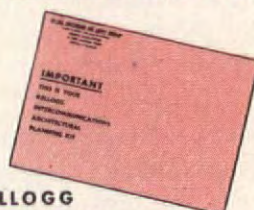
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## EXCERPTS *cont'd.*

But the speculators forgot that if a vacancy remained for any period of time, the owners would be tempted to rent for whatever they could get and would thereby weaken the whole structure. This, together with the general price deflation, caused the cessation of building and the almost complete disappearance of land values.

Today, there is quite an apartment building boom going on on the East Side of Manhattan. Here again the question whether \$55 or \$60 per room is an obtainable rental rate determines whether or not the land is valuable. This is where the greatest capital gains are being made today. People who are buying these properties do not care whether they earn or not, because the purchasers are usually in the income tax brackets where the earnings could not be kept in any event. Here is the spot for long-term gains. They depend upon the exercise of the real estate man's judgment, his courage, his ability to assemble plottage, his command of finances, and his ability to foresee the type of building that could profitably be erected upon the site.

Let us analyze the case of a big building containing large apartments which was operating in the red. Rents were frozen and expenses were high. Each year the depreciation would be written off and the loss would be set up on the books of the corporation. Unless this loss is absorbed by earnings in the following year or a subsequent year under the carry-forward provision (which presently covers a five-year period), these losses are wiped out. In this particular case there are no offsetting profits and no method of making any additional profits, but each year the depreciation had to be written off.

Eventually the property was sold. While the sales price was higher than the property's written-down cost, it was still considerably less than the original cost. Thus, the owners got no benefit of the depreciation which had been written off, but instead were forced to pay a long-term gain on what in actual fact was a loss. They should have held the property in a corporation only if the corporation had an asset which was also earning money, so that the profit from the other property could have used the losses from the apartment house property. Otherwise the property should have been taken out of the corporation and held individually so that the losses could be used as an offset against other income.

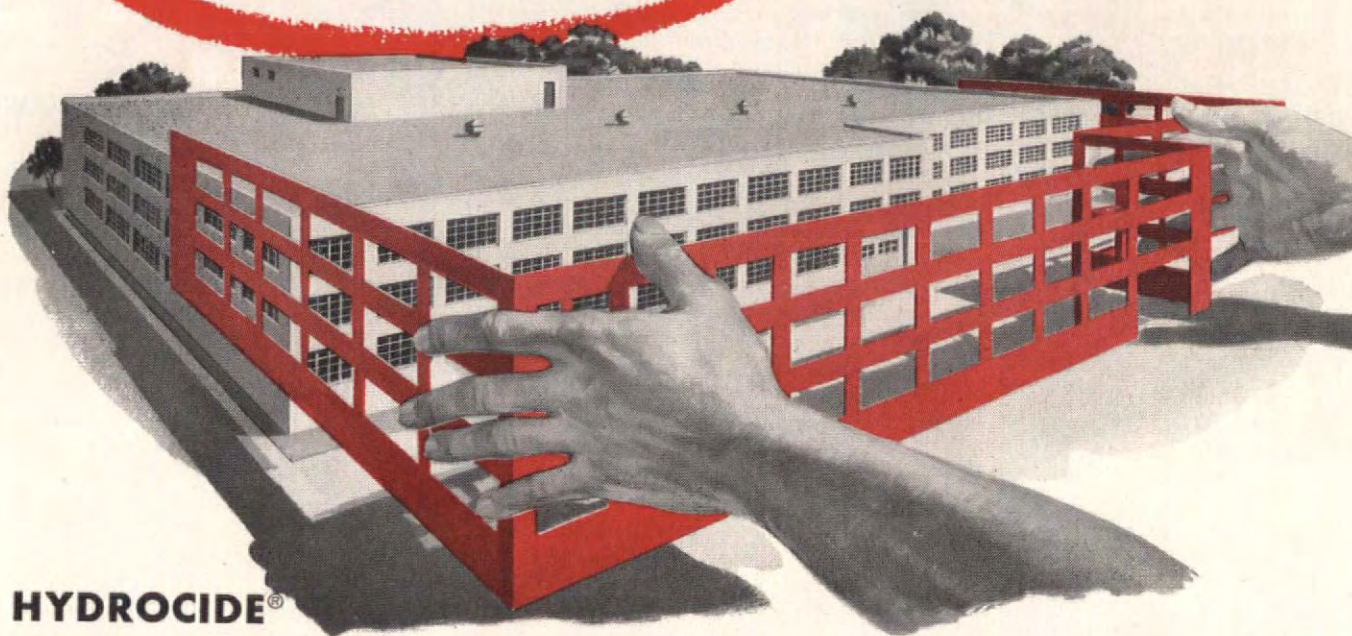
Here is another case: In arranging the sale of a business building at the corner of 42nd St. and Madison Ave., we noted that the land was much more valuable than the building and the depreciation would not have been as much as the amortization on any mortgage which we could raise.

Our solution was to sell the land and building to an insurance company and take a leaseback from the insurance company for 23 years with renewal options. In an

*continued on p. 96*



**PROTECT BUILDINGS WITH  
THIS ALL-WEATHER COAT!**



**HYDROCIDE®**

# COLORCOAT

\* Pat. pending

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Just one coat of this resin-base masonry finish decorates, protects and makes most exterior walls water-repellent. The extra thickness of Colorcoat gives extra hiding power and extra weather resistance.

Colorcoat's decorative, textured finish increases the value of buildings old or new. Its toughness and long life cut maintenance costs. Colorcoat is applied by either brush or spray—to stucco, brick, concrete, block construction, and asbestos cement shingles.

- Contains Silicone to impart water-repellency
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- Can be applied over surfaces previously painted with either oil or water-base coatings
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- Gives lasting protection, plus a colorful, textured finish



**IN 10 BEAUTIFUL COLORS!** *Mint Green, Desert Tan, White, Concrete Gray, Slate Gray, Tile Red, Old Ivory, Ranch Rose, Cloud Gray, Canyon Tan.*

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- ☐ I would like full information on how Colorcoat saves maintenance costs on old or new buildings.
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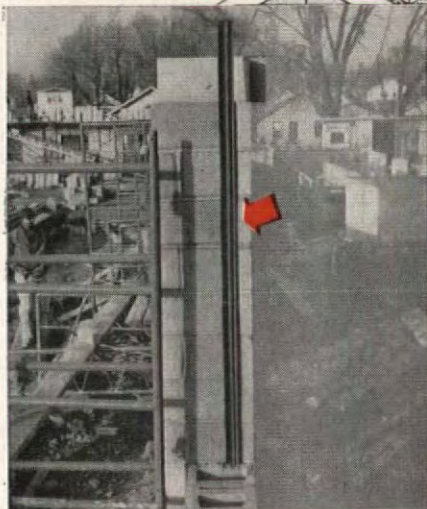
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- No Building Paper or Mortar Filling Needed.



**BLOK-JOINT'S** "cross-shaped" rubber extrusion design simplifies construction of masonry wall control joints. Use BLOK-JOINT with any standard metal sash block!

"100 Year Life" rubber assures maximum effectiveness for the lifetime of the building. BLOK-JOINT forms a secure interlock, actually adds stability to the wall.

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Simplicity, Versatility and maximum effectiveness are yours with Carter-Waters BLOK-JOINT.

**NOW! See For Yourself** how BLOK-JOINT fits masonry wall construction!

Write Today for FREE sample!  
Use this coupon.



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## EXCERPTS cont'd.

ordinary sale of this kind about 80% of the price paid by the original purchaser is paid by the insurance company, which then leases it back to the original purchaser for 7% of this amount for 23 years and three months. At the end of this time, the insurance company has had a complete return of its investment and usually a renewal option at between 3% and 3½%. This is a very good deal for the insurance company; it not only has a safe investment, but it gets its money back and still has the ownership of the property in perpetuity subject to the terms of the lease.

Our client bought the leasehold position with 20% cash. Their yield started off at about 6% and at the end of the year went to 12%. They are now obtaining 15%, and next year will get 18%. The leasehold is being amortized over the first term of the lease at a rate of 5%. Therefore, the return for the first year of 6% was almost all tax-free and at the present time about one-third of the return is tax-free. Actually, it is a return of investment because at the end of the first term, the entire investment has been recaptured and all income is fully taxable.

It is not possible for the lessee to have an option to repurchase the property as it might possibly be construed that all the rent payments were actually installment payments of the purchase price and thus invalidate the transaction.

The reason that it is possible to make this type of a deal is that an insurance company is not subject to the same taxes as an individual, and depreciation is not a great factor with them. A foundation or a pension fund which is not subject to tax would also be a logical purchaser for this type of an investment.

### Air pollution

*Excerpts from an article in Air Conditioning, Heating and Ventilating by William W. Cook of Pendray, Cook & Hoving, New York public relations counselors*

Recognizing that industrial air pollution is frequently as much a public relations as an engineering problem, we undertook recently to find out how two major groups, whose interests are most directly linked with the problem, viewed the situation.

► First, from top executives of major corporations in all parts of the country, we chose 177 companies which were leaders in their branches of industry, and all of which were likely to have had air pollution problems because of the nature of their operating processes.

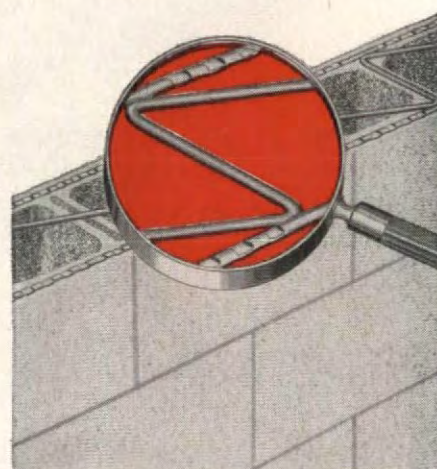
*continued on p. 100*

## For Better Reinforcing With "Deep-Grip" Swedging

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### MASONRY WALL REINFORCING

- Exclusive Deforming Provides Large, Well Defined "Squared Edges"
- Provides "Sure Lock" Between Reinforcing and Mortar
- Requires No More Area in the Joint Than Superficial Deforming
- As Easy to Handle as Other Types



You can see at a glance the extra "grip-ability" of Carter-Waters BLOK-MESH. The horizontal and vertical surfaces provide a sure lock even under lateral pressure and shrinkage.

**BLOK-MESH** Minimizes Cracking above lintels, below sills, at corners.

**BLOK-MESH** Is Best to tie brick to back-up blocks, for cavity wall construction, double walls, ordinary block wall construction.

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**CARTER-WATERS**

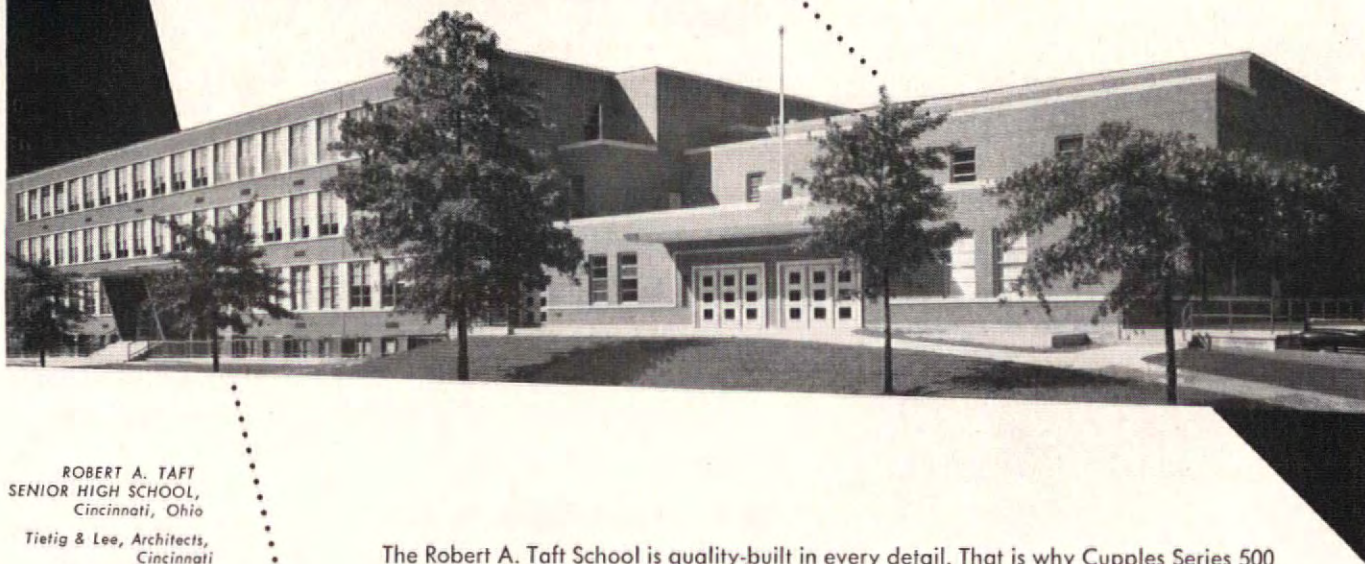
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Cincinnati

The Robert A. Taft School is quality-built in every detail. That is why Cupples Series 500 double-hung and Cupples projected windows were specified. There are 493 double-hung and 74 projected windows in the building.

The Cupples 500 is proved to be stronger and heavier than other commercial double-hung units. Although it considerably exceeds all of the specification requirements of the Aluminum Window Manufacturers Association's DH-A3, it is competitively priced. It is weather-tight, never requires painting or maintenance, operates silently . . . easily. Cupples projected windows, too, are superior in design and construction. They have wide acceptance among architects and are found in some of the nation's most outstanding buildings.

Cupples is a foremost designer and manufacturer of many types of commercial and residential aluminum windows, curtain walls, doors, Alumi-Coustic grid systems for suspended ceilings and special ornamental products. Our catalogs are filed in Sweet's.

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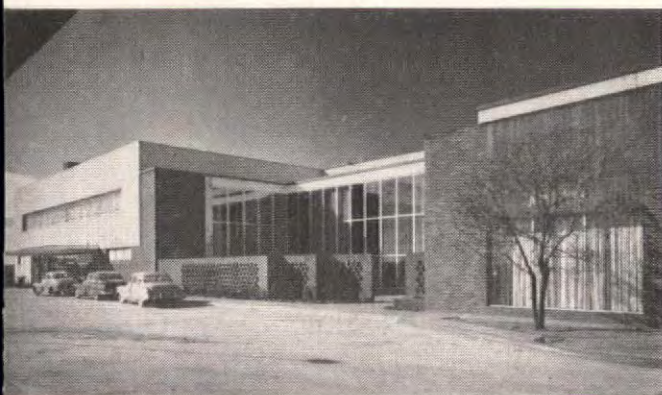
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*For Factories of the Air Conditioned Age!*

## **genetron 11** ORANGE LABEL

### TRICHLOROMONOFUOROMETHANE

#### Quality Specifications

Moisture wt. %, max.....	0.0010
Chlorides .....	none
High boiling impurities—vol. %, max.....	0.01
Boiling pt. at 760 mm. Hg °F.....	74.7
Boiling range °F (to 85% pt.), max.....	0.5

## **USES**

Trichloromonofluoromethane ("Genetron" 11) finds widespread use as a refrigerant in industrial and commercial air conditioning systems using single or multi-stage centrifugal compressors. It can also be used for either direct or indirect expansion-type systems.

## **genetron 12** WHITE LABEL

### DICHLORODIFLUOROMETHANE

#### Quality Specifications

Moisture wt. %, max.....	0.0010
Chlorides .....	none
High boiling impurities—vol. %, max.....	0.01
Non-condensable gases (gases insoluble in perchloroethylene)—vol. % in vapor phase, max. 1.5	
Boiling pt. at 760 mm. Hg °F.....	-21.6
Boiling range °F (to 85% pt.), max.....	0.5

## **USES**

Dichlorodifluoromethane ("Genetron" 12) and Monochlorodifluoromethane ("Genetron" 141) are the most widely used organic fluorine refrigerants. They are used in virtually all types of air conditioning equipment, large and small, household and industrial, direct and indirect expansion systems.

## **genetron 141** GREEN LABEL

### MONOCHLORODIFLUOROMETHANE

#### Quality Specifications

Moisture wt. %, max.....	0.0010
Chlorides .....	none
High boiling impurities—vol. %, max.....	0.01
Non-condensable gases (gases insoluble in perchloroethylene)—vol. % in vapor phase, max. 1.5	
Boiling pt. at 760 mm. Hg °F.....	-41.4
Boiling range °F (to 85% pt.), max.....	0.5

Some of the typical units in which "Genetron" 12 and 141 are used: window air conditioners, home or office console units, large store units, large custom-built units for commercial comfort, large home units for addition to present hot air heating systems, and mobile units for transportation equipment.

## **genetron 226** PURPLE LABEL

### TRICHLOROTRIFLUOROETHANE

#### Quality Specifications

Moisture wt. %, max.....	0.0025
Chlorides .....	none
Boiling pt. at 760 mm. Hg °F.....	117.6
Boiling range °F (to 85% pt.), max.....	1.8

## **USES**

Trichlorotrifluoroethane ("Genetron" 226) is used in 25-ton and larger centrifugal compressors, primarily for large comfort cooling systems, brine cooling systems, and other commercial and industrial air conditioning systems.

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--TOO LATE?**

**A** **Answer:**

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**WROUGHT  
IRON  
PIPE**

## EXCERPTS *cont'd.*

► Next, from law enforcement officials charged with protecting residents of major cities against harmful or unpleasant odors and fumes discharged in violation of local ordinances. Our questionnaire was sent to the chief public official responsible for control of air pollution in 67 major industrial cities.

Responses from the *industrial companies* revealed six major conclusions:

1. Public opinion determines the pace of industry's attack on air pollution. Top management classifies air pollution as a major public relations problem.

2. The great majority of business executives feels they have improved the air pollution situation in their communities during the last five years and that business spending in this field is on the downgrade. However, the 20 firms that described specific plans will spend alone a total of \$52,730,000 in the next five years.

3. However, almost half of them feel there is need for additional encouragement, in the form of changes in the federal income tax law such as accelerated amortization, etc., to get business to do more about air pollution control.

4. Although concern was expressed that local communities sometimes force companies into expensive and unreasonable action, there is vigorous opposition to any additional federal or state activity.

5. Many contend that industry has done its share of "cleaning up," but that other causes, such as private dwellings and automobiles, are now primarily responsible for air pollution.

6. While a majority report a need for more research into causes and cures, the respondents divided almost evenly on the need for a unified national research program or other industry cooperation.

In the survey of *law enforcement officials* responses yielded five major conclusions:

1. Public complaints about odors and fumes are on the increase, although the problem now is ranked fourth in importance by enforcement officials.

2. Industry is felt to be the major offender, although vehicles and domestic sources rank high. The industries most frequently cited were chemicals, paint and varnish, food processing, rendering plants and plastics.

3. Industrial firms have found it both difficult and expensive in most cases to solve odor problems.

4. A great deal more research into causes and cures is desired.

5. Public officials feel that enforcement is particularly difficult because of a lack of objective, scientific standards.

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\* See LIGHTING — December 1955

NATIONAL HOUSING CENTER

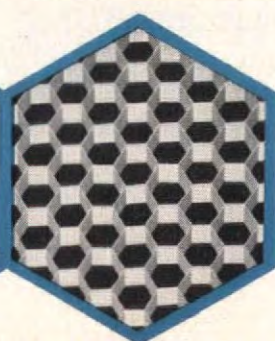
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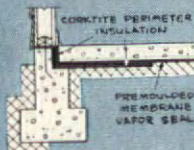
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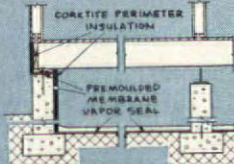
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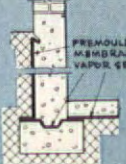
This illustration shows how the installation of Premoulded Membrane and Corktite completely isolates the slab and superstructure from soil moisture.

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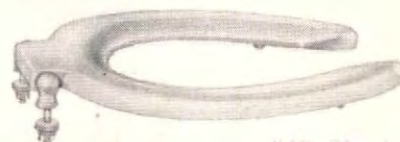
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# HIGH AND MIGHTY



## Havana Builds World's Tallest Concrete Apartment Building



**"17 y M" COOPERATIVE APARTMENT BUILDING**  
Vedado, Havana, Cuba

Owner:  
**FOMENTO DE OBRAS Y CONSTRUCCIONES, S.A. (FOCSA)**

Architects:  
**ERNESTO GÓMEZ SAMPERA, MARTÍN DOMÍNGUEZ,  
BARTOLOMÉ BESTARD, MANUEL PADRÓN**

Structural Engineers:  
**LUIS SAENZ, E. R. CANCIO, IGNACIO MARTÍN**

Contractor: **PROYECTOS OBRAS Y CONSTRUCCIONES, S.A.**

● Nearing completion in Havana's Vedado section is one of the world's outstanding buildings—the tallest concrete apartment house, rising 39 stories, a total of 402 ft. above its footings.

Floors of this high and mighty structure are two-way reinforced concrete slabs. Walls instead of columns support the building's full weight, serve as partitions between apartments and as wind bracing, in a fire-safe, rigid, monolithic structure built to resist winds of hurricane force. The cellular structure provided the architects with ideal clear floor areas.

Framing in concrete saved almost a million pesos, as compared with alternative methods, again emphasizing the economies inherent in reinforced concrete.

With 30 floors of apartments selling at an average price of \$20,000 per apartment, and income from rental space on the other floors, the owners will recoup their investment of 6-million pesos (1 peso equals 1 dollar) when 80% of the apartments are sold.

Cuba's designers have a way with concrete, as is well exemplified by this dramatic structure, in which, when completed, a total of over 110,000 bbls. of cement produced by Lone Star's Cuban subsidiary, La Compañía Cubana de Cemento Portland, will have been used.



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architectural

# FORUM

the magazine of building

## About this month's FORUM

Some time ago one John Clarence Laughlin dropped into the office, and shortly had half a dozen editors neglecting their work to look at a boxful of 11" x 14" glossy photographs which he held forth one by one, taking special precautions not to break the corners. They were "out of this world" quite literally, for the buildings they showed were all survivors of a past that now seems almost alien. Dreams were what they spoke of, and personal emotion was hot, still, on all of them. They promised to fit just fine into our series on "Architecture in America." Among "the forces that create it" the feelings of individuals are one of the strongest!

A short selection of Clarence's pictures begins on the next page, and meanwhile FORUM wishes him luck in finding a book publisher who will do right by the whole caboodle of them.

Another day there dropped on an editor's desk a 274-page typed transcript weighing 3 lb. and far weightier than that in its content. The subsequent work of boiling down the message to 24 typed pages made that editor wish he had gone into some "sugar-bush" instead, where, in the same month of March, you can far more easily boil 30 gallons of maple sap into one gallon of pure sweet maple syrup.

The typed distillate does, however, have its own sweetness. Highly promising ideas are what it contains on the urgent subject of how to get "urban renewal"—the rebuilding of our sagging cities—really going. Condensed in the re-

port is the juice of two days' concentrated thinking together, at a round table, by 20 of the building industry's ablest statesmen.

The US might clear its slums in ten years, say they, if we only organized resources that we have, and in the process put up new building construction in an amount of perhaps 18 billion.

Now how do these two stories hang together, except by following one another on FORUM pages? One deals in art, the other in economics; one in fantasy, the other in disciplined calculation. Between them they light a great mystery in man the builder. There is a different joy in each approach, but *the only possibility of full architectural consummation lies in linking them together.*

A footnote now, about last month and next month.

Last month FORUM gave the subject of Eero Saarinen's two new buildings at Massachusetts Institute of Technology to three invited critics. Saarinen accepted this ungrudgingly for the compliment that it really was, since only major works of architecture merit such attention. Should he, however, wish to reply to any part, space is saved for him in next month's FORUM.

Meanwhile the editors chose to risk *not* being first in showing the completed St. Louis airport this month when it was not quite ready. (FORUM preview, Nov. '52.) Next month it will be shown as photographed *after* the opening, and in color.

THE EDITORS







*Another in a series of articles exploring where architecture stands in America:  
This time a portfolio of photographs by Clarence John Laughlin exploring the curious  
and (temporarily?) almost vanished art of personality expression*

## FANTASTIC ARCHITECTURE

These offbeat offshoots from a time of unashamed individualism might seem to have little enough to communicate to 1956 beyond nostalgia and a smile. But the fact that no sane person would dream of copying them or their ilk does not mean they have nothing useful to tell. These buildings cry out for people—for dreamers, boasters, buttonholers, cigar smokers. To a generation whose most admired architecture is complete, beautiful and finished without humans—and sometimes intruded upon and cluttered by them—this cry for inhabitants is worth a little thought.

Understandably, in the light of its revolt from fraud, contemporary architecture has been, and remains, preoccupied with *itself*; its structure, form, use. The loser in this revolution has been expression of the dreads, desires, whims and aspirations that have to do with the roots of individuality, the world of imagination and inner needs. What kind of form follows this function? Photographer Laughlin suggests that extreme examples of "inner-need functionalism," like those shown here, can throw light on the needs of the normal imagination, much as psychiatry throws light on the normal psyche by study of the abnormal extreme. Here may lie clues for analyzing the obscure and baffling problem of architectural enrichment, for instance—a realm in which techniques are satisfying as means but not as ends.



### BOATMAN'S REVERIE:

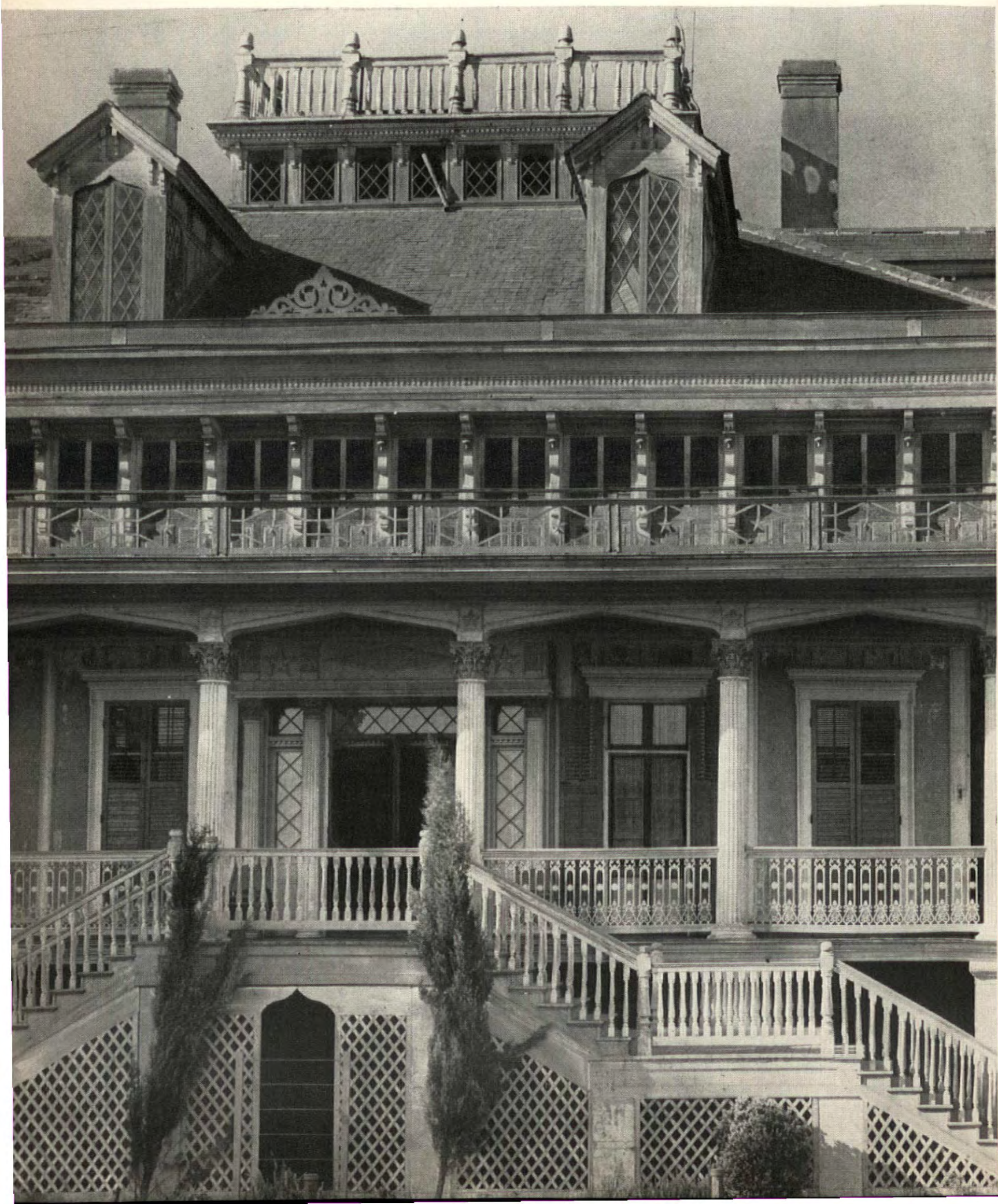
a Mississippi pilot, Capt. Doullut, designed and built this all-but-floating fantasy in New Orleans in 1905, and finally retired here to watch the river from his pilot house and enjoy the ropes of wooden balls swaying in the wind. An extraordinary example of "inner-need functionalism"—in this case expression of a man's consuming love for the scenes of his youth.

### FIREMEN'S STRUT:

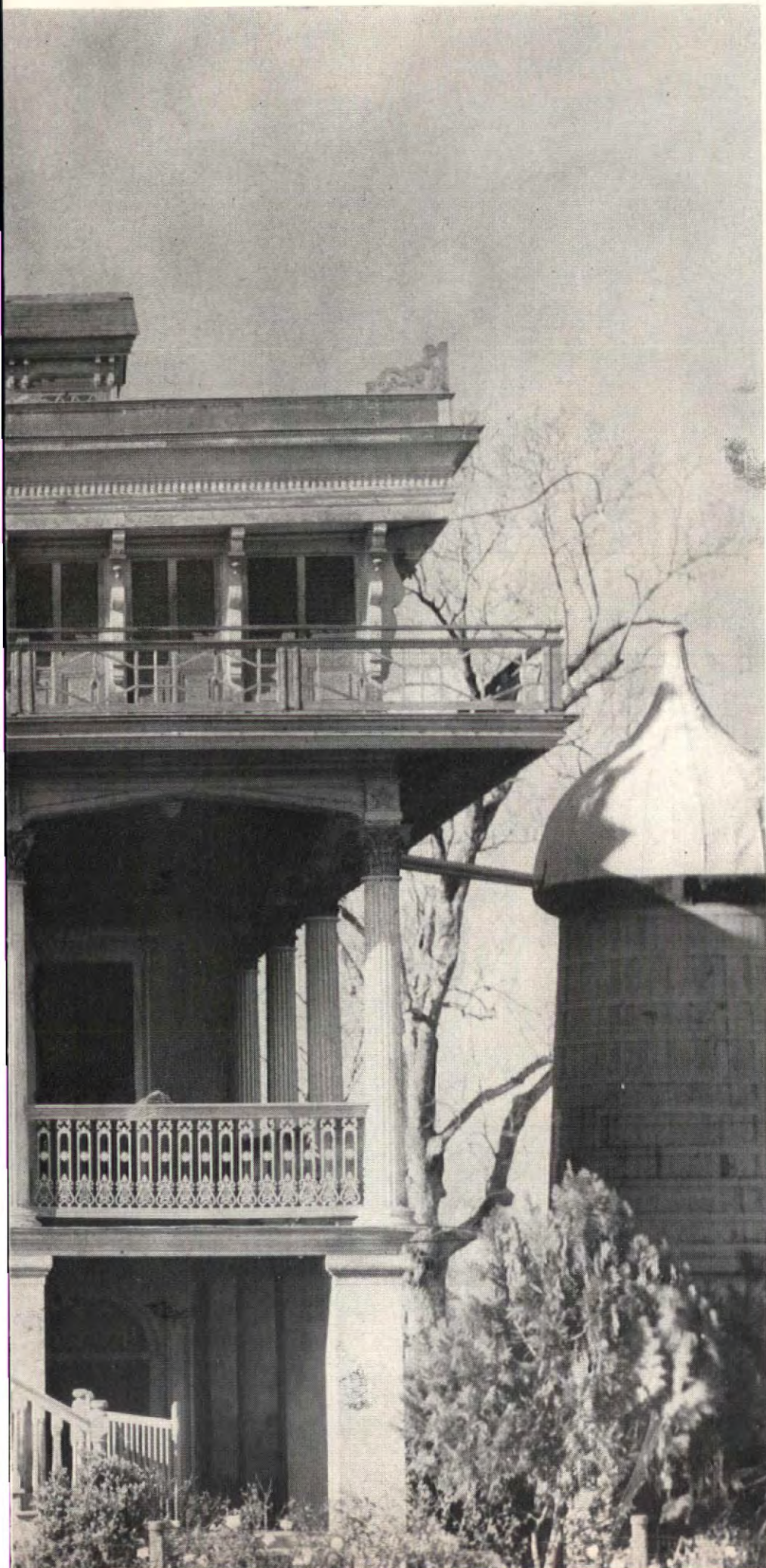
this cheerfully brash Gothic revival engine house in San Francisco (see also cover) boasts a watch tower crowned with a screaming eagle, a pinnacle capped with a fire helmet, two unsleeping owls, two heads of revered chiefs and assorted doodads all lovingly picked out in brownish red against cream stucco. Built 1880; architect unknown.











#### ROMANTIC JOY:

"San Francisco" plantation near Garyville, La., was the creation of its owner, Valsin Marmillion, an individualist who rejected the stately classic revivals of the time (1849) and place. To him, the floating steamer palaces were the embodiment of life and joyousness, and on them he modeled this confection of decks bedecked with leaves of iron and lace of wood. Passenger Marmillion's interpretation of river life makes an interesting contrast with Pilot Doullut's, shown on the preceding page. Indoors, "San Francisco" is a painted bower executed by Dominique Canova, famed for frescoes; the birds circling the chandelier are in a drawing room. "San Francisco" is a corruption of the wry *Sans Fruscin* ("last red cent"); lighthearted Marmillion's resources were almost gone and he was dead before the house was finished.





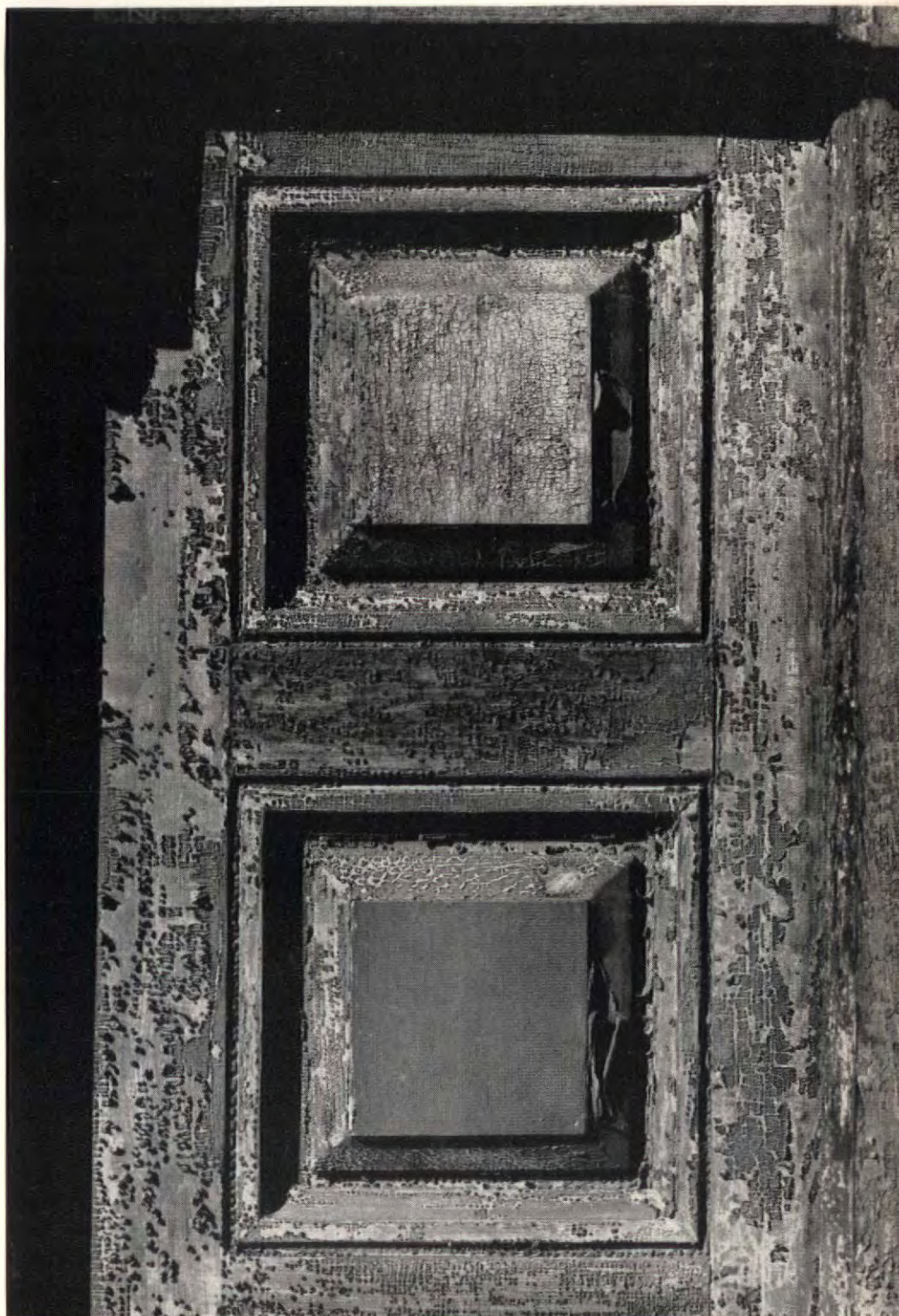




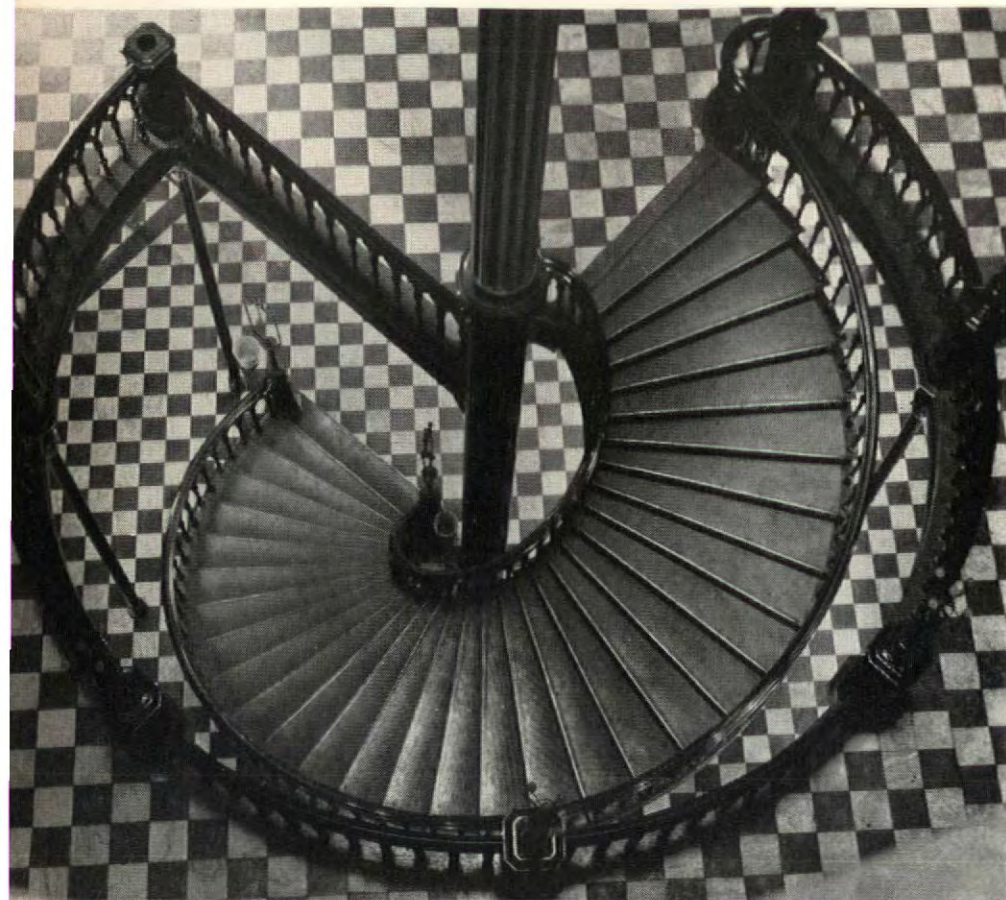
The pictures and records on which this article is based are from those carefully made and preserved by Photographer Clarence John Laughlin over a period of years in the hope that a sponsor will be found for the publication of the entire fascinating collection

#### INDUSTRIALIST'S LOGIC:

this house, one of two built for a San Francisco businessman in 1890, has striking elements of prophecy with its clearly stated structural grid holding its opaque and transparent panels. Many of the parts are identical to those used in a twin house—but always with an exuberance of minor variation. Quite possibly this house was built without a formal architect, from a rough design by its owner, improvised upon by craftsmen. San Francisco in the eighties and nineties was a great place for panel architecture. The imprisoned head, above, is from a huge 1887 mansion whose entire wall was organized in panels. The bay window spandrel at right is from still another. Incidentally, this is a baffling photograph. Turn the page upside-down. Do the inner squares retreat or project?







#### CIVIC FLAMBOYANCE:

behind the Gothic revival façade of the old Louisiana State Capitol in Baton Rouge is an uninhibited Victorian ode to the iron age—a grand cast-iron staircase parasoled with the ultimate grandeur of a cast-iron and glass dome. The solid central column reaches 80' from the floor to the point where it unfolds into ribs. The iron window frames are cast into converging shapes to fit the dome, a triumph of craftsmanship for the Shakespeare Iron Works of New Orleans. The Capitol, originally built in 1849, was burned during the Civil War, rebuilt with the dome in 1880-82 (William A. Freret, architect) and used as the seat of government until 1932. Its glorification of technique may seem naïve (a failing this generation should certainly view with charity), but there is nothing naïve about the seashell stairway in the checkered floor.









# HOW TO MAKE URBAN RENEWAL WORK

Starting with proposals for getting the sand out of government machinery, a panel of experts ends with a new "land reserve" concept aimed toward clearing our slums in ten years

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OSKAR STONOROV

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construction economist

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chairman, Cleveland City Planning Commission

ALBERT M. COLE  
administrator, Housing & Home Finance Agency  
(observer to the Round Table, not a participant)

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WILLIAM ZECKENDORF  
president, Webb & Knapp  
(although absent from the Round Table meeting  
he indorses its findings)

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STEPHEN G. THOMPSON  
associate editor, ARCHITECTURAL FORUM

Seven years ago the American people through their Congress decided to do something drastic and comprehensive about rebuilding their decaying cities. Beginning with famed Title I of the 1949 Housing Act they embarked on new ambitious urban renewal legislation.

Seven years later this Round Table met because of the urgent need for re-evaluation.

Urban redevelopment seems to be in almost exactly the same position as flying was in the early days of the Wright brothers.

They had proved the all-important thesis that man could fly but their flights were so short and intermittent, with their primitive contraptions, that bystanders who were looking straight at human flight failed to recognize it as such, and almost nobody dreamed that it would ever become a steady production and a daily mass habit that would compete in the end with the busses.

So, too, we have proved abundantly that urban renewal can indeed be gotten off the ground, but our present





machinery has to be cleared of all kinds of sand and brush; meanwhile we must work to replace our present hand-cranked, one-lunger, spit-and-stop development procedure with a new ever operating production model.

*It must be recognized that large-scale urban renewal is potentially the most profitable financial enterprise ever proposed to American cities*

The social and architectural advantages of clearing and rebuilding large slum areas have never been seriously questioned. The fact that only large-scale enterprise on big parcels can be planned so as to differ from today's obsolete, undifferentiated, and unworkable patterns, will be acceded by the most hard-headed realty operator.

Moreover we have been very proud of the level-headed decision made in 1949 that the community could better afford to pay as a community for past mistakes—if it could thereby gain a clean slate for positive action—than it could afford to stick with “punitive” attitudes toward owners in blighted areas, attitudes that would merely fasten on the children the sins of their fathers, and would perpetuate bad conditions.

Yet after seven years there are still too many people who think that confession, because it is good for the soul, must therefore also be costly. Too many mistake our urban renewal program for a money-out-of-pocket “subsidy” operation, with nothing but outgo connected with it.

After seven years the other half of the original propo-

sition is too often lost sight of:

Urban renewal can and should be profitable to all concerned: to the city treasury most of all, in the form of immediately collectible and very much bigger realty revenues; to the business sponsor as a profit rewarding him for the bigger risk, the broader powers of organization, the more strenuous enterprise, and the vast variety of nonconstruction functions and responsibilities that go with it; and finally to the federal government as a means of major activity of the sort that federal revenues directly depend upon.

*Profit and solvency for the city treasury.* The fiscal profitability of urban renewal to city treasuries was proved even before adoption of the 1949 legislation. For example the large Stuyvesant Town project in New York, undertaken by Metropolitan Life Insurance Co. in cooperation with the city, not only lost no tax income to the city within the area but tripled taxable values in a large surrounding area.

Tax receipts in certain redevelopment areas in Chicago have gone up from \$1 million to \$3 million.

On one of the smaller Chicago projects now being processed, the annual tax bill will be raised to \$58,000 from today's \$7,500. This eightfold gain to the city may easily be redoubled once again by *savings* in policing crime and protecting against fire.

Two Round Table members worked out the equation comprehensively for the District of Columbia (meaning the city of Washington). The District recently worked out a ten-year public works program such as all cities have ahead of them if they will actually face it. For the ten years it added up to \$350 million. Now

Photos: Robert Phillips







NELSON AND DOLAN

the total cost of slum elimination in the District, as we arrived at it, would be \$200 million. Under the law the District's contribution would be one-third, applied through public works. This means that \$67 million in public works, properly planned and directly related, would pay the District's (i.e. the city's) whole way in a complete program of total slum elimination carried out in the same ten-year period.

Here, then, is a ten-year program of total slum elimination costing \$200 million, of which the city's \$67 million contribution would be covered by 20% of its normal scheduled public works program. New tax revenues would gradually increase until at the end of the ten years they would be \$7 million annually. Therefore during a second decade, having eliminated the slums, the city would more than recoup the entire cost, and could put all its savings from reducing costly policing and fire prevention, now spent on those areas, back into its pocket.

*Profit to the economy and to federal government.* In our country economic activity and government solvency are closely interrelated, for productivity is what the government literally lives on since it taxes income. Thus in the example above, the federal government would ultimately recoup through taxes on the profits of new construction, which in the city of Washington would be \$300 million (carefully estimated) and rehabilitation adding another \$80 million. If 180 other cities over 100,000 followed suit the new construction would be no less than \$18 billion and rehabilitation another \$5 billion. Even should the pace be slower, the building industry is the most prolific stimulator of other industries: every dollar spent on construction of new homes, new offices, new industrial or commercial establishments, means other dollars put into paint, furnishings, refrigerators, air conditioners, washing machines, garden machinery and what not else, plus the fuels and electricity to operate them. Every dollar spent on well-considered slum elimination rescues the trade of city commercial establishments that are now waning. And every gain through improved public health and morale increases the productivity (and the taxable income) of the individual



COLE, LOWE AND KRAMER

citizen, while it diminishes the need for sizable appropriations made today to combat disloyalty and disaffection.

*It must be recognized that despite the great potentials our immediate results are negligible because of obstacles caused by confusion and misunderstanding, not to mention special problems*

We have to explain to ourselves:

Why is it that after seven years the insurance companies which jumped into action almost at once with large slum-clearance projects are no longer tempted?

Why is the handful of rental projects, initiated by private redevelopers under urban renewal programs, confined to special cases? Why is virtually all in cooperatives which only those people can afford who can command a big cash equity investment? Our vast outlying homebuilding program, which competes directly with the cities, suffers under no such limitation.

Why, after seven years, is no project known to us, composed of rental homes for the middle-income market, that has been built by a developer other than an insurance company under Urban Renewal legislation?

Why, apart from a small group of imaginative promoters, have the larger prestige builders not been attracted?

Not all these questions imply culpability. Some point to intrinsic difficulties. But all add up to realization that the potential is not being realized.

*Obstacles must be removed by straightening out the various government agencies that work at cross-purposes*

The Round Table did not come to an agreement on the proposal that all federal housing of whatever kind should be completely handled by just one agency, instead of being dispersed as now through a Housing & Home Finance Agency, an Urban Renewal Administra-



tion, a Public Housing Administration, a Federal Housing Administration, a Veterans Administration, a Home Loan Bank system, and all sorts of other things. On the following proposals, however, all agreed:

1. On any urban renewal project the private sponsor or developer should have to cope with federal agencies numbering not more than two: one of them administrative (probably the Urban Renewal Administration as an administrative subdivision of HHFA) and one of them financial, appraising the project for purposes of any underwriting involved (combining functions of today's FHA, VA, etc.).

2. The administrative agency, which certifies that a project is in accordance with federal legislation, and the financial agency, which appraises any insurable portions of it, should collaborate from the outset.

There is no good reason why every project must run the whole gauntlet twice, as it does today, clearing itself all over again with the FHA or VA or others after it has already cleared the complexities of Urban Renewal approval.

The present situation, in which Urban Renewal's certification of a project carries no weight with FHA, is not rational. It means that the sponsor must tie up funds that can run into six figures, not only in his own planning but in sizable deposits with the government, while one agency redoes—or undoes—the work of another.

Certification by Urban Renewal that the program is proper and workable, and that the resources are available, should carry with it every presumption of FHA acceptance for substantial underwriting. This means that FHA must be apprized and must participate from the beginning. Once Urban Renewal acceptance is obtained, the burden of proof must be on FHA if it chooses to challenge the weighty reasoning behind the certification, on which FHA has already been given its chance to enter any objections. The burden of proof must no longer lie on the sponsor.\*

\*HHF Administrator Cole (who was the guest of the Round Table during its first session) reported he had already moved to put this into effect.—ED.

#### LEGISLATIVE DIGEST—URBAN RENEWAL AND RENTAL HOUSING

**"OLD LAW" TITLE I PROGRAM.**—This consists of projects authorized by HHFA's former Division of Slum Clearance and Urban Redevelopment under the original Housing Act of 1949. These projects must wipe out predominantly residential slum areas, or else provide predominantly residential redevelopment, federal assistance: cash grants to cover two-thirds of the "write-down" loss in resale of the former slum site for redevelopment (also planning advances and loans to finance a city's acquisition and clearance expenses before resale). Cities can pay their one-third of "write-down" losses in cash, or else through land donations, site improvement and clearance work, or public works serving the project.

**"NEW LAW" URBAN RENEWAL**

**PROGRAM.**—This consists of both redevelopment and rehabilitation projects under the Housing Act of 1954, which converted DSCUR into Urban Renewal Administration, but restricts grants to cities that are certified to have a comprehensive "workable program" for blight prevention, conservation, rehabilitation, code enforcement, relocation of families evicted from renewal sites, etc. Under this two-thirds assistance program, up to 10% of the US grants can be used for projects that do not meet the regular "predominantly residential redevelopment" requirement.

**FHA SEC. 220.**—This authorizes FHA insurance on private mortgage loans for residential construction and rehabilitation within approved "urban renewal" areas. For new con-

struction, loans may be made up to 90% of replacement cost, provided loans do not exceed an average of \$2,250 per room in walkup buildings, or \$2,700 in elevator buildings, and dwelling units in the project average at least four rooms per unit (subject to cost certification). For rehabilitation, FHA also will insure on a sliding scale loans up to \$84,000 for 11 units if the owner occupies one of them, up to \$71,400 for 11 units for a nonoccupant owner.

3. The Urban Renewal Administration itself must be greatly tightened, and better correlation established not only between it and FHA but between its own local offices and the Washington office.

The time lag for processing a single medium-sized project now runs three to five years, a situation that could be condoned while we were learning the ropes of a new procedure but cannot be condoned much longer. It makes participation in redevelopment all but impossible for smaller builders; and only one life on this earth is vouchsafed to even the biggest operator.

This task for Urban Renewal will of course be greatly eased once projects begin to flow in a steady stream so detailed regulations can be simplified and not every inch of every project draws the concentrated local attention that it does today because the fewness of the projects exaggerates their individual importance.

*An active philosophy of urban renewal must be implanted in the FHA, where today it is conspicuously uneven*

The Washington FHA is cold to the program and except for some conspicuously devoted local administrators the local offices reflect the Washington attitude.

Today there is no real zeal or enthusiasm or pep in a great many FHA offices about this program, or indeed about any rental program that could serve our cities.

There are large cities where builders cannot be brought even to think about FHA financing for any sort of rental program, because of past frustrations.

We have ample proof in the US that 90%-mortgage programs can get large quantities of rental housing built unless some restriction is bucking it. The differences in effect between noncooperation and cooperation by FHA was illustrated in the early days of the so-called Defense Housing program. During the first post-war years FHA took a dim view of the need for rental housing. But pretty soon word was sent down the line, "this must be built." FHA then went into local communities, appointed industry committees, set up lunches,

the regular FHA program on multi-family housing loans with 80% mortgages; 213 is a 90% program (95% to veterans) for cooperatives whose "purchasers" make down payments equaling the equity. 207, 213 subjects to cost certification.

**COST CERTIFICATION.**—After completion, builders of projects subject to FHA cost certification must submit an accounting of all actual costs. If such costs (with an FHA-approved allowance for profit and overhead if the mortgagor is also the builder) are less than FHA's original commitment valuation for the project, the mortgage loan must be scaled down correspondingly, to eliminate any possibility of a "windfall."

**OTHER FHA SECTIONS.**—221 authorizes private mortgage loan insurance on new single family houses for "displaced" families. Maximum 95% loan is \$7,600 (on an \$8,000 house). 222 lets "displaced" veterans get 95% loans up to an \$18,000 house. 207 is



"fanned it up": there was real determination to make the program work and it did work. There had been no change in the law or the regulations; the change was in the spirit.

Today we have the spectacle of the FHA director in Chicago and his assistant testifying before the Rains committee that it is impossible to do a multistory building under the Section 220 (Urban Renewal) program. This was palpably not so, for there are ways of doing it and we are going to do it. The effect is that the FHA, along with its bigger partner VA, underwrites the major part of outlying homebuilding activity which competes with the city, but has virtually removed itself from rental housing that could serve the city, thus throwing the government's housing policy all out of balance.

*The Urban Renewal Administration should be equipped with an adequate technical service to educate states and localities actively to the workings of the program*

To our states and localities this is a new thing, and many of them would line up their state legislation and local rules far better if they understood it. For example, in states like North Carolina where 80% of an area must be blighted before it can be treated as a redevelopment area, enlightened groups like the state chapter of the AIA have pressed for the usual 60% definition; with more information and support they could open up the state to a major opportunity. Some other states have laws seriously cramping redevelopment financing.

*Our law and our administrative regulations must recognize the facts of building economics and the nature of legitimate incentive*

1. A sharp distinction must be drawn between legitimate enterprise and the search of a few less responsible elements for "windfall" profits. As responsible men in

our field we wish to promote only transactions that can stand the full scrutiny of any honest person. We recognize that public authorities, by assembling large parcels through public condemnation and by assuming the cost of land "write-down," have acquired the right of supervision and the right to demand that the developer's profit be held to reasonable limits. But they are doing him no special favors. Justifiable public assistance simply sets the stage for a large-scale business operation to be conducted in a normal manner.

An element of public spirit must be recognized not only in the government but in the enlightened redevelopment sponsor. A large investor, for example, who pays roughly \$22,000 per acre in a renewal area as one recently did, and gets rentals of \$28.50 per room after many headaches and delays, could have bought a golf course in an outlying area devoid of population clashes and built without inhibition to rentals of \$40 to \$50 per room.

Our own proposals all look to steady and reasonable profits even though the theory of business enterprise does allow the occasional high profit as an offset to those genuine losses that can occur in the course of taking genuine risks.

2. To make urban renewal competitive with other legitimate business opportunity the first step is to amend the cost certification requirements now imposed without the usual protection of statutory time limits against prosecution both civil and criminal.\*

The renegotiation procedure acknowledges all this.

A workable condition will exist in urban renewal only when renegotiation is carried out promptly upon completion of the job—90 days would be a fair limit—without any criminal penalties involved thereafter except for outright fraud, as in any other business dealings. No longer must a redevelopment sponsor be compelled to spend the rest of his life under a cloud, liable not only to civil but to criminal action any time in the future when some zealous government officer disagrees with his accounting procedures.

3. Today the operator is given an appraisal allowance

\*Since the Round Table the Capehart bill has introduced this.—ED.



LANIGAN, ROUSE, SCHEUER AND GREENWALD

LOWE AND KRAMER





in the mortgage for 7% of his field costs only, without allowance for architects' fees, etc. With all the extra payment to various professionals and the big overhead, this is not competitive with normal investment outlets. We agree that an allowance should be made of 10% of the over-all project cost including overhead and land cost, in accordance with the Banking & Currency Committee report of 1954.

4. Today's FHA requirement that the redeveloper keep 30% of his equity tied up in rental housing for the full life of the mortgage runs squarely against the facts of life in the whole field of building. The function of the developer is to create building projects, one after another, turning them over thereafter to those whose business is investment. There is no better reason to hold a rental housing developer than to hold a home builder, who gets out his full equity just as fast as he sells his houses.

We propose nothing more radical than bringing FHA rental housing regulations in line with the Internal Revenue Bureau Act of 1954 that is in use on conventional financing, with amortization procedures that permit the developer to take advantage of tax formulas for accelerating depreciation and retiring his capital on a taxfree basis in relatively short time. (For a full discussion, see three articles by Miles Colean on "The Realities of Real Estate Investment" in FORUM, April, May, June '55.)

5. We propose that encouragement be given, both in FHA and in further legislation by the states, to fruitful devices such as the "naked land trust." But FHA's refusal to acknowledge this instrument has helped remove FHA from 90% of Illinois rental financing.

6. It must be recognized that the redeveloper acts in a capacity of far greater public responsibility than any routine builder. The handling of delicate problems like the open occupancy requirements in a publicity supported program is something which in itself calls for a great deal of tact, patience and expense; and once again means that responsible operators must be chosen and rewarded, not hamstrung. It has been the experience of Round Table members that through patience and judgment, and only through these, can the open occupancy transition be gradually effected.

*Redevelopers must be relieved of spending endless time and their own funds on preliminary planning which is the proper province of the city*

Regulations should be changed that require cities to submit worked-out area plans, complete and approved in complicated detail, before demolition can be undertaken in a redevelopment area.

Laws should be changed in many states such as New York, where an approved sponsor is demanded, too, before demolition starts.

The ultra-cautious approach was well intended and perhaps suitable enough during urban renewal's early trial period. Unfortunately nobody could foresee all the side-consequences.

What it does to a man of business enterprise is to nail him, and his time, and his money, to what is really a public function. As events have proved, projects require from three to five years for even the most modest redevelopment venture before building is ever started. More often this is a minimum before the plan can even get to FHA for approval. Such details as density per acre, rent per room, and even chains across driveways shuttle back and forth between local and Washington offices, and meantime there are endless other negotiations to carry on locally involving the mayor's office, the planning commission, building department, zoning board, comptroller, and possibly art commission.

Moreover, so great is the delay in getting an allocation from Washington of preliminary planning funds that New York's energetic City Coordinator of Construction has at times approached possible sponsors to say, "Will you advance forty or sixty thousand dollars for this? If you will advance it and we get it approved and you or anybody else gets the project you will get the planning funds back again."

Still further, during the protracted negotiations the sponsor's preliminary cost estimates are more than likely to change and he has to keep going back and getting new ones, adding still further delays and still greater expense.

*Clearance and demolition must be sharply separated from redevelopment planning as two separate functions*

This means that there need not be any developer on hand at all during the first, clearing, phase unless he himself so proposes. This first phase is simply the process of tearing down city areas that are not paying their way, that are blighting the city, that are eating up the taxes from other areas with their high crime and delinquency and health and fire costs. It is the process of clearing away past errors.

Naturally no city is going to enter into such demolition and the unsettlement it entails unless there is a likely redevelopment prospect. Such procedures do not proceed in darkness. In most city planning commissions enough is known about over-all business trends to permit safe general forecasts, and real estate and lending organizations and architects are available for consultation.

*The city itself should be given freedom to release clearance from specific prior redevelopment plans*

1. If the first sponsor fails to carry on through the whole complicated process, the new sponsor that the city has to find need not be held to the same plans, and if he



proposes new ones the city is not held to the expense of planning streets, water, sewers, and other utilities all over again.

2. The city is not compelled to tie redevelopment, against all good economic reasoning, to past conditions. There is a natural hesitancy today to cast redevelopment loose from past shackles, because of an implied obligation that today's inhabitants should ultimately be rehoused in the same area. More than likely it was a wrong occupancy that blighted the area in the first place, and in linking redevelopment too closely with demolition the city may perpetuate the very conditions which redevelopment was intended to remove.

3. The minute the city can proceed on several redevelopment projects simultaneously or in rapid succession it gains the freedom to effect an economically and socially sensible interchange among them.

*Redevelopment must be freed from irrelevant and economically impractical restrictions*

Today it is required either that substandard residential construction must be demolished (if commercial or other nonresidential redevelopment is to be undertaken) or that redevelopment itself must be predominantly residential.

We have already seen that whereas the emphasis is on middle income rentals and Urban Renewal says "You must," FHA must look to cold economic appraisal and often says "We dare you to." The fact that the national FHA office is today cold to all urban rental housing must not blind us to the fact that even a hospitable FHA local office might many times be correct in disapproving specific redevelopment plans which do indeed clear the slums but are still the wrong place for middle-income housing.

*Only by placing the housing share of urban renewal—which is of course far from being all of it—into a general perspective can we make urban renewal housing part of a balanced housing policy*

The main elements of a national housing program are:

*Public housing*, chiefly for those who today cannot enter other than slum quarters because of income or social pressures which are deplorable but present; they get rent subsidy. *Rehabilitated housing*, chiefly for low-income groups that cannot pay an economic rent for new housing—though some rehabilitated housing can be very good. *So-called middle-income housing*, the mainstay of the FHA empire, includes the vast home-building program chiefly in outlying areas, suburbs, new towns. It includes also rental housing there and in cities. *Luxury housing* is conventionally financed, no problem.

Only by placing their housing on a broad economic

base can large redevelopment projects be kept financially sound and protected against becoming new slums. Yet in general this outcome is better obtained through enlightened appraisal procedures in the course of lending than through today's tight legal and administrative stipulations.

*There is virtually no problem of urban renewal that cannot be made easier instead of harder by making the program vastly more comprehensive*

1. Only where plenty of land is available regularly for redevelopment will city planners and fiscal authorities feel free to let in many small builders to pick up small parcels for unilateral redevelopment, because in the long run the market will balance out the detailed results under broad over-all land use policies set up by the city.

2. Only when plenty of land is available regularly for redevelopment will the federal government feel justified in relaxing its present legislation which demands that every single project must have some connection with housing, even though this is an unbalanced demand in over-all economics.

3. Only so will each separate redevelopment project be released from today's endless bickering and delay over every single planning detail. What minor error might be made on this month's redevelopment scheme in any one city can be corrected substantially on next month's.

*Accordingly this Round Table proposes an immensely accelerated pace for urban renewal and redevelopment*

We propose that it be removed from the one-at-a-time, every-case-a-special-case, watch-the-expenses category, and recognized for what it is: potentially a great boon to the whole national economy, potentially not merely a device of national strength and health but of additional prosperity.

For this purpose the renewal process must become a regular pipe line into which there is constantly flowing cleared land and out of which rebuilt projects will emerge in our larger cities monthly. We say that the slums of America could be cleared substantially within a decade.

*An ever active Land Reserve should exist in every sizable city, consisting of land cleared and ready for the proposals of enterprising redevelopers, subject only to guiding determinations of city planning*

The Urban Renewal Act and State legislation should be amended to separate the clearing and relocation process wholly from the redevelopment process.





KEITH, STONOROV AND COLE



DOLAN, NELSON, KRAMER AND LOWE

1. Cities must now submit plans for the redevelopment area in considerable depth of detail before federal approval can be obtained and this must be obtained before land acquisition can be started; instead of all this the city should be allowed to submit: a) proof of a public works program involving adequate schools, streets, parks, etc.; b) a general plan for the city, which will *not* be a master plan but a series of determinations that are constantly being adapted to changed conditions; c) area determinations including such things as land use, zoning, densities governing future use of areas to be demolished; d) evidence that redevelopment is possible within reasonable write-down limits, aided by law enforcement.

2. Since the land will stand idle between the time when it is acquired and the time when a redevelopment proposal is adopted, a "land bank" operation must be inaugurated to tide the city through. The analogy to today's "soil bank" in agriculture is patent.

3. Upon federal approval the land should be cleared and held for redevelopment sponsors' proposals, redevelopers being secured through negotiation, and allowed to go to work immediately on showing compliance with the over-all planning stipulations which the city has cleared with the Urban Renewal Administration.

*In line with our new method of constant over-all renewal there must be a new concept of the city*

1. Once rebuilding is separated from demolition, all local public agencies will be relieved of pressure to make hasty decisions in order not to hold up acquisition and demolition. And everybody will be relieved from the pressure to overload single redevelopments with excessive densities which can only rob some other later project of its basic soundness.

2. The chance will be gained to build the kind of city, *never before seen*, which can attract the voluntary preference of large numbers of people who now prefer outlying areas. But unless there is a wholly new stand-

ard of traffic separation, family-scale housing, and green areas for children, we can only build new slums replacing old ones.

Obviously such a broad approach, which we can here only sketch, will have the power, which today's approach does not have, to fire men's blood. At such scale the city can really make big plans, really undertake those large-scale changes in city pattern, which *alone* can make our obsolete, nineteenth-century cities competitive with outlying areas as fine, pleasant, happy places to live and work and play in. At such scale and only at such scale can we recreate our cities in patterns of new neighborhood instead of sticking with today's amorphous and shapeless conglomeration.

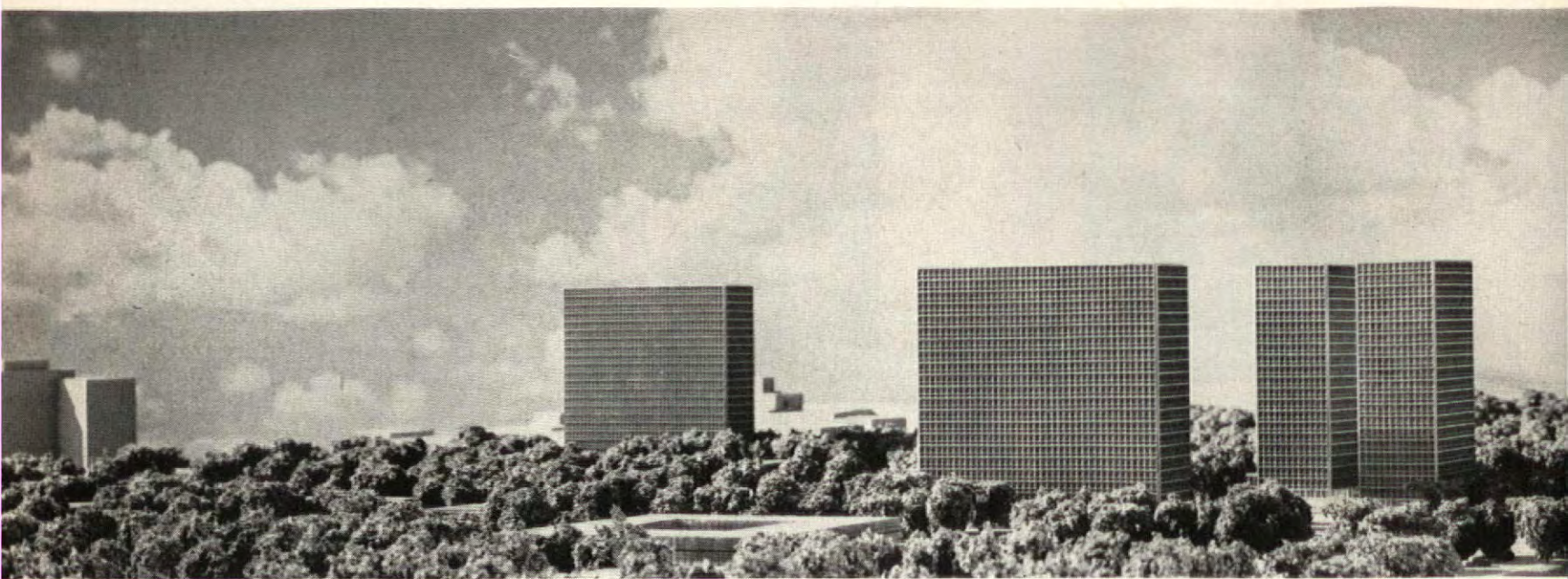
Opportunity speaks louder to Americans than programs composed of elaborate limitations.

If our highways were being handled in the skimpy cost-saving watch-everything way that urban renewal now is, we would still confine our road-building to patch-and-mend; we would not be considering public "subsidy" to an \$18 billion 10-year program. Yet our \$35 billion automobile manufacturing industry would be completely impossible and unthinkable without such major *ever continuing* highway programs.

If our outlying homebuilding were being handled in the skimpy watch-everything way that urban renewal now is, we would not have built 9 million outlying new homes during the same seven years during which our cities, despite one-lunger urban renewal, have been further decaying. We would have stopped FHA homebuilding insurance the moment the depression was past instead of making it an *ever continuing* mass production program.

Let us no longer fasten our minds on slums and blight except as a momentary weakness in the American economy, an area that got left behind through antiquated procedures. We can clear the slums in ten years if we will fasten our imagination on a bountifully profitable ever operating renewal economy, giving rise to other new activity in ever widening circles, and pointed to a realizable dream of wonderful new cities.





## DETROIT REDEVELOPMENT

*Interior park replaces interior  
road in new Gratiot plan  
—a progress report*

For three years 50 acres of run-down town Detroit real estate have been lying cleared, a muddy meadow in the center of the motor city. No one has estimated how many acres of tracing paper have been expended in plotting the possible architectural future of this tract, known officially as the Gratiot Redevelopment Area, unofficially as the Black Bottom. Last year's design by Architects Minoru Yamasaki, Oskar Stonorov and Victor Gruen for the Citizen's Redevelopment Committee (AF, March '55) attracted wide interest in the architectural profession—but none from prospective redevelopers.

Then six weeks ago it was announced that the Citizen's Redevelopment Committee had received a firm offer from two prominent Chicago builders, Herbert Greenwald and Samuel Katzin, to midwife the rebirth of the area as a middle-income neighborhood, with the services of a world-renowned architect attached to the offer (AF, March '56). Immediately a great question was presented: what would Ludwig Mies Van der Rohe do with it?

In ensuing weeks, Architect Mies (with associates Joseph Fujikawa and Joseph Burnett and Planner Ludwig Hilberseimer) has given some major indications of his evolving ideas, but only some. Known for his long, productive silences, the architect has so far produced only a schematic model to explain the generalities for preliminary governmental approval; it shows a combination of low-rise and high-rise dwellings in the same ratio suggested in the earlier Citizens Redevelopment Committee proposal. The outstanding difference is a campus plan, with access by cul-de-sac roads, in which a 17-acre central municipal park replaces the interior road planned earlier to run down the center of

the project (see drawings). This revision immediately enlisted the vigorous approval of the Detroit City Planning Authority, who like to have redevelopment neighborhoods free of through-streets. (To simplify the Gratiot redevelopment further, the Authority has redefined it to end at a RR track which formerly sliced off a portion; this east slice has been added to the next neighborhood—which is also set for residential redevelopment on the city's master plan.)

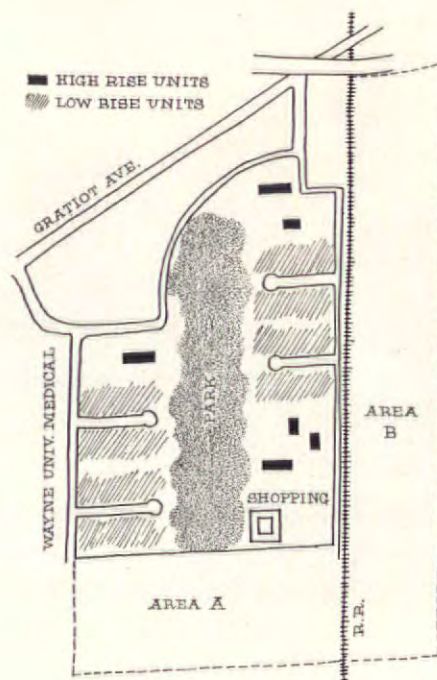
The first building to be put up in the Gratiot redevelopment area will be a 340 unit high-rise apartment, and preliminary designs indicate it will be in the recent Mies vocabulary, a spare simple, concrete-framed structure walled with aluminum and gray glass, air conditioned. But one feature of the earlier scheme which attracted a great deal of attention was the low-rise housing, a cellular subneighborhood including private yards and courts, designed to bring the middle-income house owner back to the city. A solution to this intricate problem would alter the homogenous character of most city housing projects.

Developers Greenwald and Katzin have endorsed this idea, with the caution that what is finally to be built must be determined by the market. Meanwhile the Mies office is at work on the design of the first low-rise units; the low block buildings shown on the model are merely symbols. Architectural historians who recall Mies's early designs for houses built around courts are looking for a return to some ideas expressed on this same problem 20 years ago. According to Developer Greenwald the Mies office may not be the only architectural firm to work on this problem after the project gets under way.





Bill Engdahl, Hedrich-Blessing



**New plan** will start construction in northwest corner. Access roads in new plan are wide cul-de-sacs which will have center strip of green parkway separating traffic in and out. Hatched areas indicate low-rise housing. Proposed highway will be built along tracks. Developers want city to clear area A also and add it to first project. Area B, east of railroad, was in original plan but has now been allocated to adjoining redevelopment area.

The redevelopers hope to get the first Gratiot high-rise building—the 340-unit slab located in the northwest corner of the area—under way this year, with either FHA-backed or conventional mortgaging. A rental market for small “efficiency apartments” exists in the Wayne University Medical Center across the street and this should give the enterprise a good push-off. The Citizens Redevelopment Committee, a civic-minded and vocal group which includes bankers, automobile executives and Walter Reuther, will continue a legal role as Gratiot codeveloper with Greenwald and Katzin and must also pass on designs before they are built.

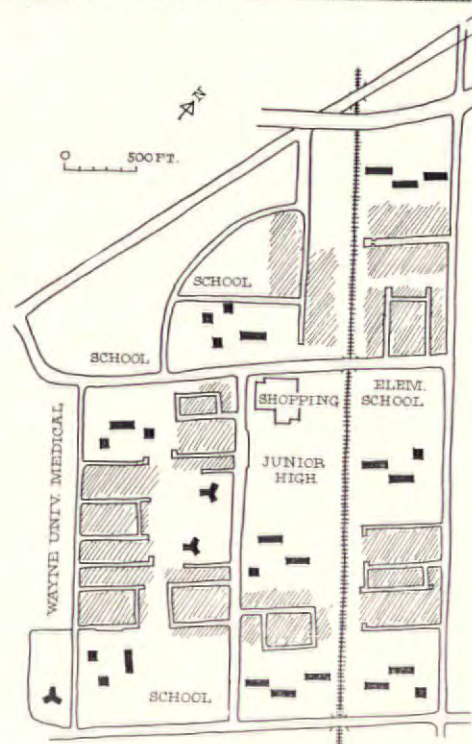
Together with the financing and the specific design of the low-rise housing, the issue that is now dominating the horizon of this proposition is schools. There are three existing elementary schools on the site; two of them are special purpose schools, one of which is being reconverted for general use. But in Detroit the question whether middle-income white families will rent or buy into a co-op apartment or town-house development where existing public schools are 95% Negro is usually answered *no*.

Work on the future of this project goes on in four cities: in Washington at the Housing and Home Finance Agency (who have a \$4.7 million Title I stake in project); in Chicago in the Greenwald and Katzin, and Mies offices; in Detroit, where redevelopment-minded Mayor Albert Cobo and the Citizens Redevelopment Committee are pressing for action; and in New York, the faucet of most big investing money. Easing into front-row seats to study this evolving redevelopment technique are many other US cities with similar problems.

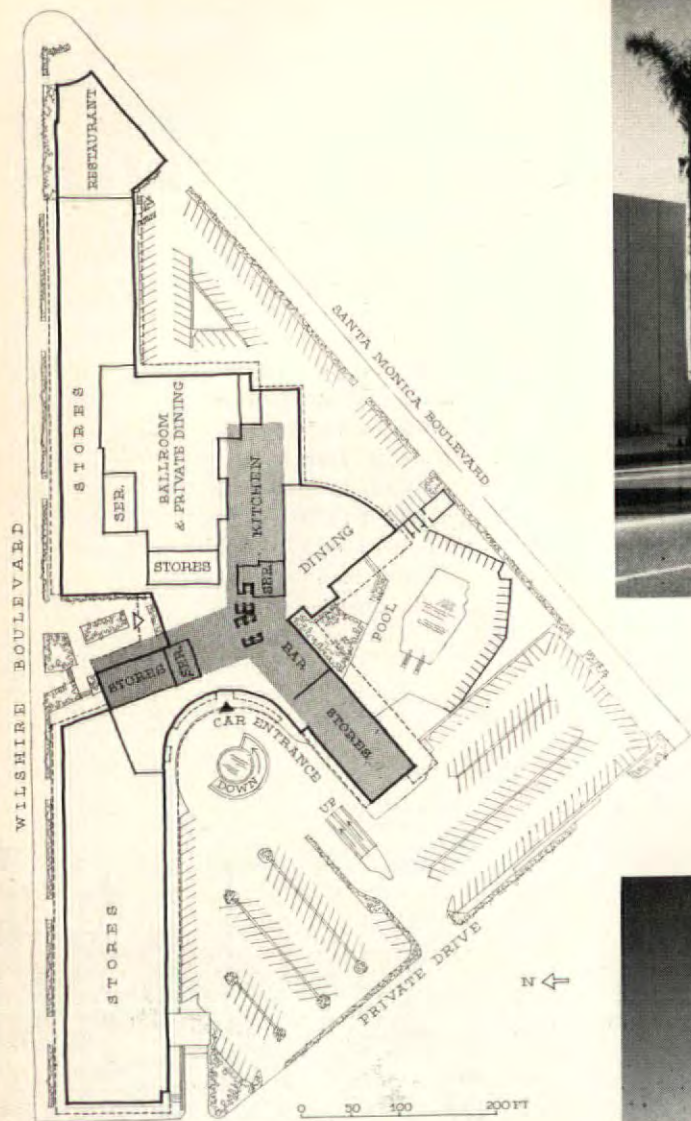
Photograph House



**Old plan** covered area more than twice as big as new plan including section east of tracks. More streets are used, creating smaller superblocks.







**Star** of Hilton's international show sits behind its 1,000' strip of stores on one of Wilshire boulevard's most coveted corner lots (plan, left). Behind, customers drive right in and their cars are ramped down to a 600-car garage (below). Third side of hotel is seen on opposite page.



**THE BEVERLY HILTON, Beverly Hills, Calif.**

**ARCHITECTS & ENGINEERS:**

Welton Becket & Associates

**STRUCTURAL ENGINEER:** Murray Errick

**INTERIOR DESIGN:**

Welton Becket Assoc. and David Williams

**GENERAL CONTRACTOR:**

Del E. Webb Construction Co.



# TWO KINDS OF HILTON HOTELS

In Beverly Hills, the world's biggest innkeeper dreams up  
a flashy entertainment center;  
in Dallas he takes over the serious work of an experienced hotel-builder

## 1. THE BEVERLY HILTON: MOTEL IN CINEMASCOPE

Up until Hotelman Conrad Hilton came back home to Beverly Hills, he was a shrewd businessman who bought hotels or built them through his organization, often in close association with others who financed or owned them and leased them to him. These hotels included the sober and efficient Statlers. Back home, however, he was on his own, and took strong personal interest. He was full of gusto and ideas; he had his youth again.

To be sure, the Beverly Hilton has its bedrooms (450 super deluxe ones—see p. 134), its parking spaces (1,000 of them) and its shops (100,000 sq. ft. of them), but that is just the beginning. There are six restaurants and bars, ranging from an English pub in the basement (not illustrated) to a gourmet's paradise on the roof (overleaf), plus banquet rooms freely derived from Versailles, Oslo, the Caribbean, the Mediterranean and the Bosphorus (not illustrated). In back, the customary palm trees and bathing girls adorn the customary king-size, free-form pool nestled in a rainbow of *cabañas*. A press agent summed it up: "The queen of the Hilton Empire . . . the most beautiful hotel on earth." A week-long, \$500,000 coronation was held, with more than the customary number of searchlights, aquacades, blimps, rose petals and girls on technicolor elephants.

Once things had settled down into the smog again, a few Angelenos began asking the inevitable second question. Hilton's quick inspirations and countless added thoughts had to prove they could fit together. What the hotel fraternity might think about the Beverly Hilton as a business operation was a question for the future. In the meantime, the show was on.

Photos: Julius Shulman







**Starburst**, the hotel's trademark, is a 15'-wide construction in metals by Bernard Rosenthal, mounted on a gold mirror over lobby stair leading to pool level.



**Superbedrooms** are livingroom size, have a new kind of storage unit (see p. 136). Glass walls slide open to technicolor balconies (below).



**Motor entrance**, in back, off a private road, is far more used than pedestrian entrance on Wilshire. Here magic carpets open the portals to Hiltonland.





**Crow's nest** for well-heeled birds is "L'Escoffier," Hilton's version of the Top of the Mark and the top of Cincinnati's Terrace Plaza. Here 88 gourmets may sit on ivory leather banquettes, choose delicacies from a menu without prices on it, or look out to an unmatched view of movie studios, oil wells and general suburban sprawl. Photo at left shows the rooftop restaurant behind its bulging antechamber, the Star on the Roof bar; below, at pool level, is its larger cousin, the Bali room.

Photos: Julius Shulman



**Coffee shop** is a pleasant workaday restaurant on the lower level, with its own view of the Esther Williams Swim Club.



## 2. THE DALLAS STATLER-HILTON: STUDIED ECONOMY

ARCHITECT: William B. Tabler

Henry J. Stojowski, associate for design

ENGINEERS: Seelye, Stevenson, Value & Knecht

Jaros, Baum & Bolles (mechanical)

Smith & Silverman (electrical)

INTERIOR DESIGN: Statler Hilton Studios, Inc.

Ernest Wottitz, chief designer

GENERAL CONTRACTOR: Robert E. McKee



Photos: Ulric Meisel

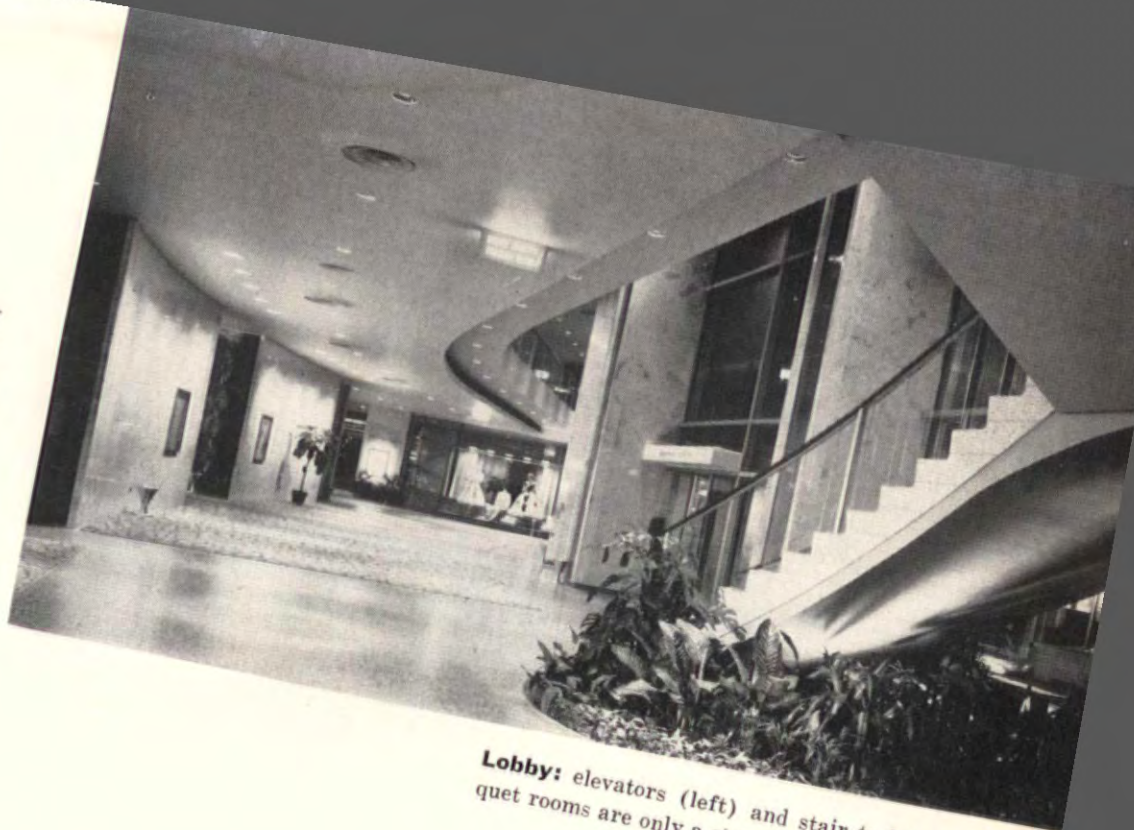
**Y-tower** of new hotel rises 20 stories above downtown Dallas. Ballroom wing behind court is removed and clear-spanned. Note tower's end shear wall, open stairwell louvers, heliport on roof.



When Hilton acquired this hotel along with the rest of the Statler chain, he acquired the sum of his competitor's long experience in planning and building increasingly efficient hotels from Los Angeles to Hartford. Unlike the resort-type Beverly Hilton, the new Dallas Statler-Hilton is a straight commercial hotel, right in the heart of downtown. It was designed to work like a well-oiled machine, and it looks smart to boot. Architect Tabler first concentrated on the hotel's proposed 1,000 rooms as the highest-margin and most depressionproof source of profit, then on keeping them full with the aid of some highly versatile convention and dining facilities (see overleaf). It's no secret among Statler planners that a hotel's bread and butter is in the bedroom (where it can often clear \$7 on a \$10 price), and that it can lose money serving "too many desserts," especially in lean years. Says Tabler: "A self-sufficient commercial hotel can be built today within a construction budget of \$10,000 a room and run at a profit, if you build long-range economies into every detail." Some of the savings that helped bring the Dallas job down to an unheard-of \$9,900 a room:

- ▶ Bedrooms are made as small yet as big-seeming as possible (see p. 136); reduced building cubage decreases all costs (including mechanical, which can run as high as 45% in hotels).
- ▶ The structural system, new to multistory building, uses only two rows of columns in each wing of the Y-plan tower. Flat-plate, lightweight-aggregate floor slabs 8" thick are cantilevered 8' on each side. This not only cut costs but allowed great flexibility in room plans (see AF, June '54).
- ▶ Slabs were poured in plastic-coated plywood forms that leave a smooth ceiling finish that could be painted instead of plastered. Carpets were laid on concrete slabs that had been wood-float finished. Since hard-wearing corridor carpets are about three times as costly as bedroom material, corridors were kept to the carpet module of 6'.
- ▶ The lightweight curtain wall of insulated porcelain enamel panels uses glass judiciously to cut the initial and operating cost of air conditioning (for 1,000 rooms and all public areas the hotel has only 1,400 tons).

Actually there are 1,001 rooms: 67% furnished as studios with daybeds, only 27% as conventional twins and doubles, 4% as parlors and 2% as sample rooms. The 1,001st is Conrad Hilton's own idea: a little chapel for the weary businessman.

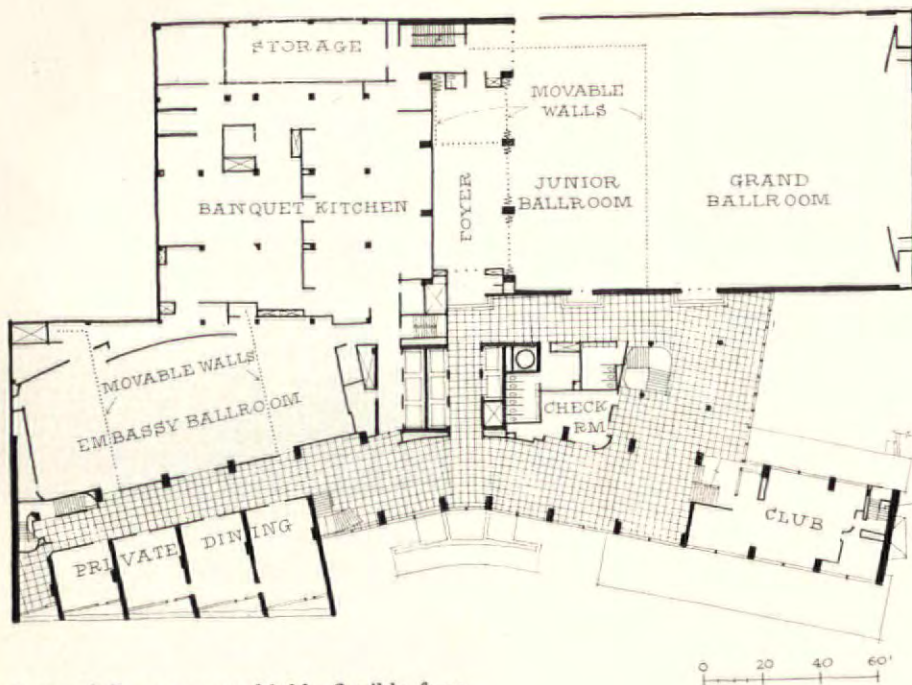


**Lobby:** elevators (left) and stair to banquet rooms are only a step from front door.

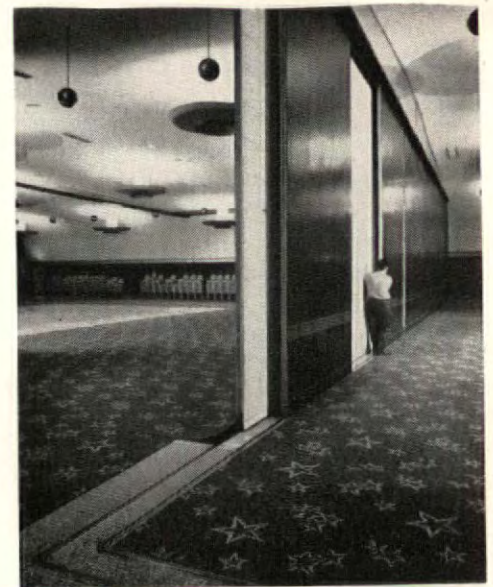
**Entrance** at apex of the Y allows off-street loading. Incurving face also makes a welcoming break along the street.



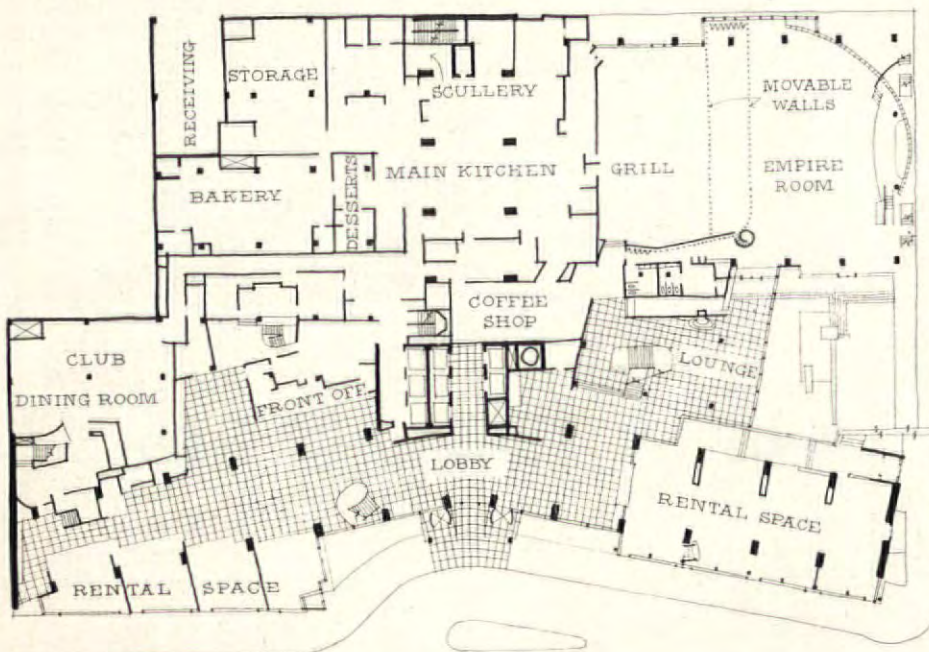




**Second floor** groups highly flexible function rooms around a banquet kitchen over the main kitchen: five sizes of private dining room, two triple-sectioned ballrooms, two clubs, central checkroom.



**Divisible ballroom** seats 2,000, can be split for smaller groups by rolling in twin sets of sliding panels (see plan). Faced inside with acoustical tile, the 8' x 15'-6" panels are 5" apart, give a high 45 db of sound insulation between rooms.



**Ground floor** is organized for direct traffic flow: elevators at front door, registration area removed to the left, lounge and garden removed to the right near corridor to a side street entrance.



**Divisible dining room** has two lines of curtains enclosing 100 seats which can be thrown into the grill (background) for breakfast and lunch and into the supper club (foreground) for dinner, dancing. Three spaces together seat 500.

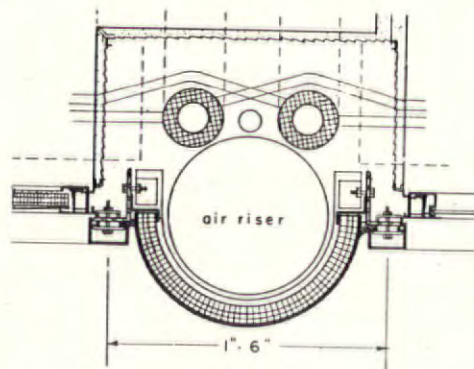
**Typical bedroom** is furnished as a studio with twin daybeds. Jog in partition at left shows the big flattened columns from which the floor is cantilevered 8' to the outside wall. Rooms are 12' or 15' deep, 8'-6" to 23' wide. (See also p. 136.)







**Lounge** overlooks sculpture garden, leads back to supper club. Under stairs to ball-room level is a clamshell fireplace trying to be both decorative and functional but not quite succeeding in either. At right is stair to side entrance.

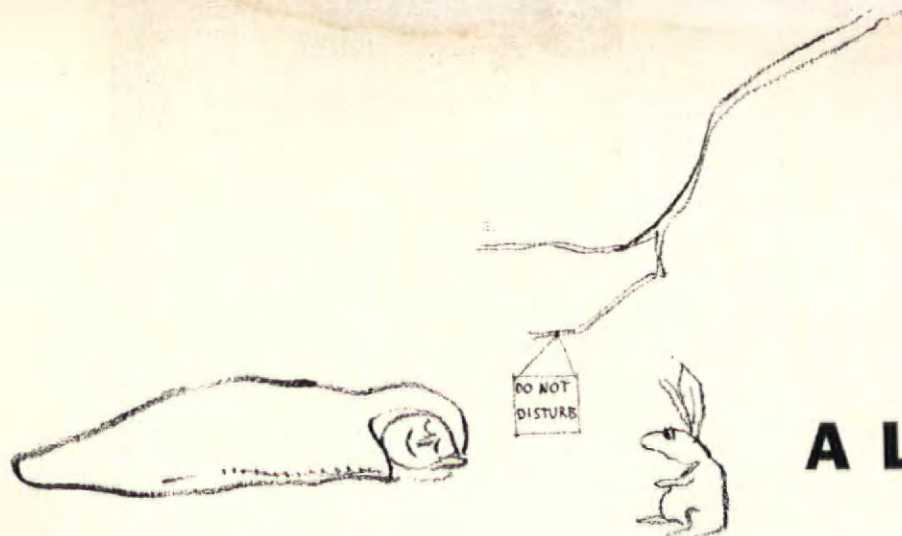


**Curtain wall** is a cool, bright skin of blue-green glass and blue-green porcelain enamel panels set in aluminum sash. Bold pattern is set by the verticals of aluminum-clad air-conditioning risers and by pairs of projecting tetrahedral pyramids that glint as the observer moves. Sculpture by José de Rivera in the landscaped court below revolves above a base of water jets.

*Photos: Ulric Meisel*







## A LOOK AT



Photo: Domke

Bedroom of the former president of Peru



## BEDROOMS

*The commercial bedroom*

*is getting smaller, but sleeker*

There are 2,650,000 bedrooms renting tonight in US hotels and motels. In Chicago alone hotel-keepers could put up the entire population of the city of Springfield, Ill. (if they wired early enough for reservations). Los Angeles, another capable convention town, would not blink a headlight at accommodating the total population of the American colonies of 1670. The US sleeping-out industry is neither small nor sedentary.

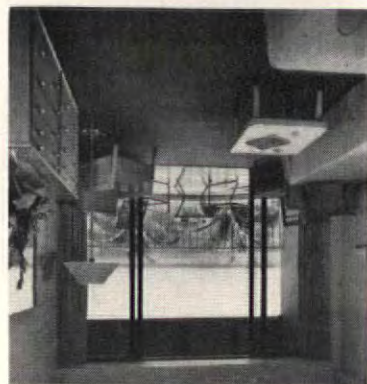
More surprisingly, the hotel business today has a new product, even newer than the motel. This new product is, in fact, the weapon which the big central hotel is expecting to wield against the competition of the outlying small motel. New hotels are building-in the new feature; old hotels are remodeling it in. It is the convertible sitting-sleeping room, a luxurious suite for transacting business, for entertaining and for transient residence, all telescoped into a single, small, suave room. It was invented by architects and their own preferred periphery of "architectural" furniture designers and decorators as a commercial necessity. For if it had not been developed, no money-making new commercial hotels could be built.

Architect William B. Tabler defines the squeeze this way: "Most people think of commercial hotels 'selling a bed for the night,' but the attendant supporting facilities such as laundries, dining rooms, kitchens and ballrooms actually are responsible for 60% of the construction cost and 75% of the furnishing and equipment cost. Yet the hotel has to make its money from room rent, not from food, beverages or laundry. This being the case, there have to be a lot of bedrooms, so their size *must* be kept small."

Even as the cubage of hotel rooms has been compressed, their seeming luxury has been expanded—that was necessary too. For some of the methods, see the following pages, plus a further installment on this subject to be published later.



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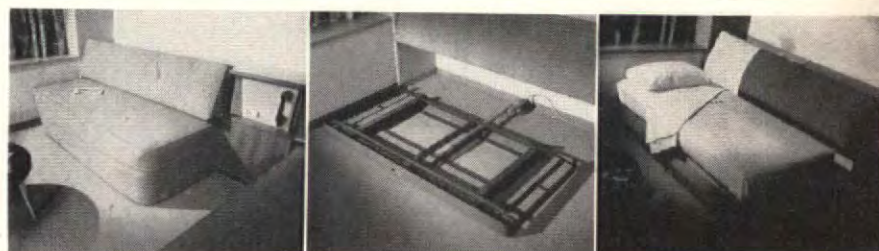
### DAY-SOFA; NIGHT-BED

Here are a few diverse bedrooms which share one important trait; they get dressed in the morning to serve as sitting rooms until the sun slides down again: (1) Architect Warner-Leed's room for the Caribe Hilton in Puerto Rico, designed with Toro, Ferrer & Torregrossa; (2) Gardner A. Dailey's Surf Rider in Honolulu; (3) Rufus Nims's Admiral Motel in Redington Beach, Fla.; (4) Richard J. Neutra's Holiday House, Escondido, Calif.

These hostelryes' beds all have bolster or pillow backs, but differ in complexity of mechanism. (Photos below show operation of motorized bed installed in Cincinnati's Terrace-Plaza Hotel by Architects Skidmore, Owings & Merrill.)

There are many advantages which have made the hotel industry enthusiastic about this bed type (apart from the smaller room dimensions possible and the engaging quality of newness): hotel guests seem to feel more comfortable stretching out during the day on an upholstered couch than on a bedspread; traveling businessmen can be more businesslike in these rooms—and most traveling businesswomen insist on this type accommodation; mixed entertaining can be more apartmentlike without the ajar door many hotels still request after 5 P.M.; room service receipts run higher for the hotel, especially with the added ingredient of TV.

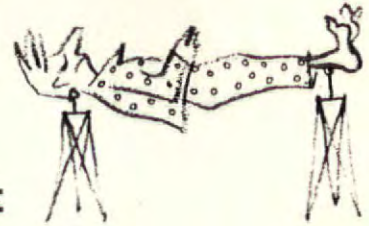
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## NEW FURNITURE

The simplest but most persistent demand by the hotel industry on furniture people and architects is to design a good luggage rack. Necessary qualities: stability, compactness, convenience, and easy maintenance of both the rack itself and nearby wall surfaces (which suffer frequent scarring from suitcases put on most racks). For Intercontinental Hotels Corp. Holabird & Root & Burgee designed one good rack as a continuation of a desk and bench (6). Architects Skidmore, Owings & Merrill also produced successful suitcase storage space for the Terrace Plaza several years ago by combining its function with a plastic-topped bar, an investment in easy maintenance for hotel men (7). Warner-Leeds designed the dressing table (9) and radio-telephone (8) for the Caribe Hilton. As in all architecture, the tendency is to build in as many other storage and furniture items as possible, when the client can afford this site cabinet work. At the Beverly Hilton, every room has an "inner core" which

11

10





includes a small refrigerator and a private dressing area with dressing table (10).

Not all built-in furniture has to be expensive. Architectural Designer Ira Grayboff designed a wardrobe-desk unit (11) for Yale University dormitories from stock industrial shelving. Cost estimate: \$47 each.

Architect Francis Keally, consultant to the American Hotel Assn., points out that most hotels now combine the bureau and writing desk. Another seemingly small, but eventually important detail in furnishing, is the kind of caster put on the legs of beds and other movable furniture. These must be at least 3" rollers to avoid damage to carpeting, Keally points out, adding: "Most maintenance in the hotel bedroom takes place from the floor up to 3' high on the wall. Because of this, hotel men are now experimenting with wainscotings of wood, plastic or rough wallpaper."

## THE BIG BASIC BEDROOM

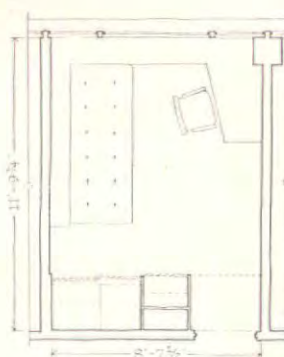
"The worst thing an architect can do for a hotel owner is give him only one or two kinds of bedrooms," Architect Gardner A. Dailey points out. This means that a few spacious master bedrooms will survive; there will always be customers willing to pay for them. One example: Architect Morris Lapidus' famed Fountainbleau Hotel in Miami Beach (12).

Actually motels go more for big beds these days than hotels. With two double beds in a room, the motel owner can sleep a sizable family in a single room. Below, a room (13) in the expanding chain of Howard Johnson motels, by Architect Rufus Nims.



14

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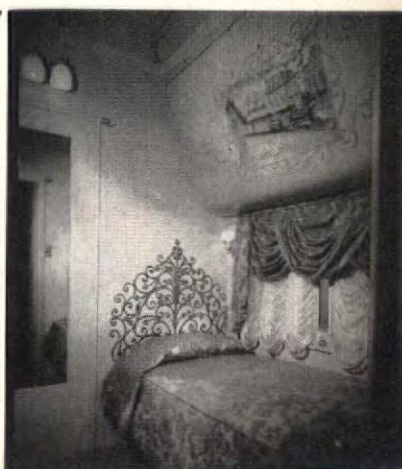
## SMALL BEDROOMS

Room sizes in most new hotels run something like this: double rooms, 130 to 170 sq. ft.; luxury doubles, 225 sq. ft.; single rooms, 90 to 120 sq. ft.; twin bedrooms, 160 to 180 sq. ft. Built-ins, wall-to-wall carpeting and low ceilings have helped ease this contraction from a grander scale which existed in the hotel business a few years (and bankruptcies) ago.

The compartmented rooms in Architect Alvar Aalto's dormitory at Massachusetts Institute of Technology (14) are a further step in concentration. The new standard YMCA specification for rooms without baths (plan, 15) is about 100 sq. ft., and omits the old washstand. Another neat dormitory design is Paul Thiry's at State College of Washington (16).

Luxury is not necessarily squeezed out of small bedrooms, of course. Witness (below — 17) one of the bedrooms decorated by Robert Hanley, Inc. in the private railroad car of a couple of noted *bon vivants*, Lucius Beebe and Charles Clegg, a room with a really wide view.

17

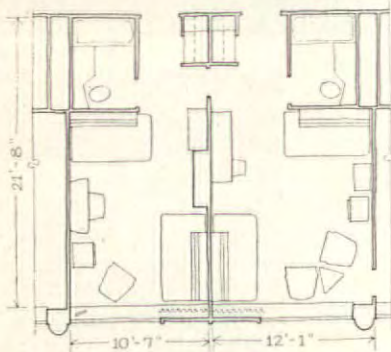


Photos: © Ezra Stoller; Chas. R. Pearson; Maynard Parker; Gottsch-Schleisner; Julius Shulman; Ira Grayboff; Ben Schnoll





18

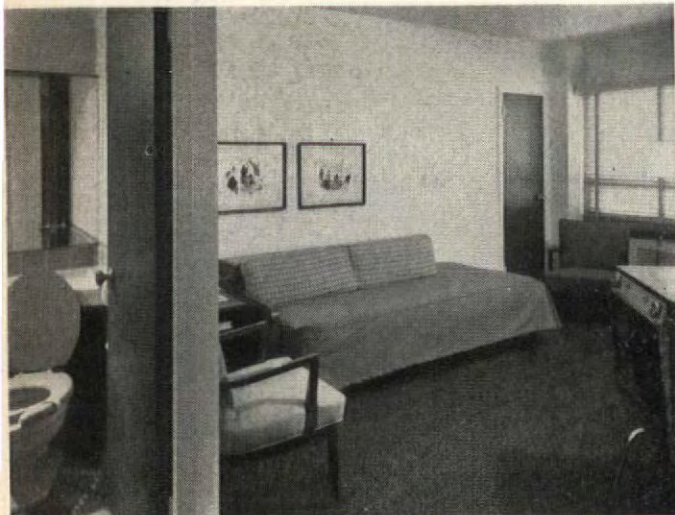


### CONTRAST: DALLAS STATLER

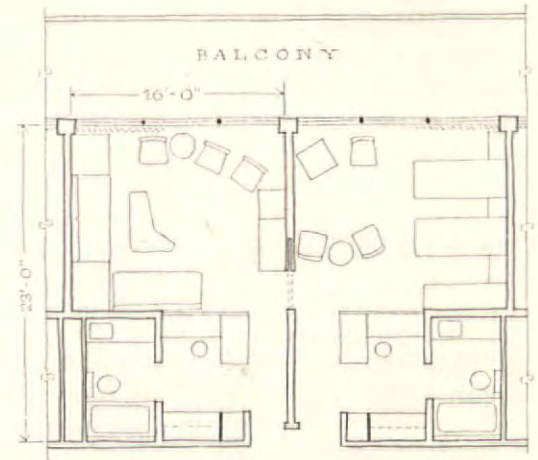
Bedrooms in two new hotels in the Hilton chain, the Dallas Statler-Hilton in Texas and the Beverly Hilton in California (see also pp. 124-131) emphasize each other's special qualities. Most hotelmen expect the Dallas Statler (18 and 19) to make money, and are equally sure the Beverly Hilton will not, despite the inclusion of such grandeurs as penthouse suites rented for five years at \$1 per sq. ft. per month (one "guest" has a five-year lease for \$125,000). But it should be added that the Beverly Hilton is intended to be the signet diamond in Conrad Hilton's double-handful of hostelries, and thereby has special value.

Typical of the canny approach which Architect William B. Tabler used in Dallas is the entryway lighting he designed (18); the closet top is left open, so one bulb can serve to light two spaces. Other terse economies:

19



### BEVERLY HILTON



- 1) Two rooms per bay; 2) Narrow rooms (less exterior wall, less heating and cooling, less corridor partitioning and expensive corridor carpet, less drapery, less non-revenue producing space); 3) 8'-4" ceiling (9' is too high, 8' too low); 4) Exposed concrete ceilings; 5) No wall-to-wall or floor-to-ceiling windows which increase drapery cost and sun fading as well as heating and cooling costs; 6) No built-in furniture, lamps, etc.; 7) Asphalt tile base; 8) Bathroom door undercut; 9) Minimum number of electric-outlets with maximum load.

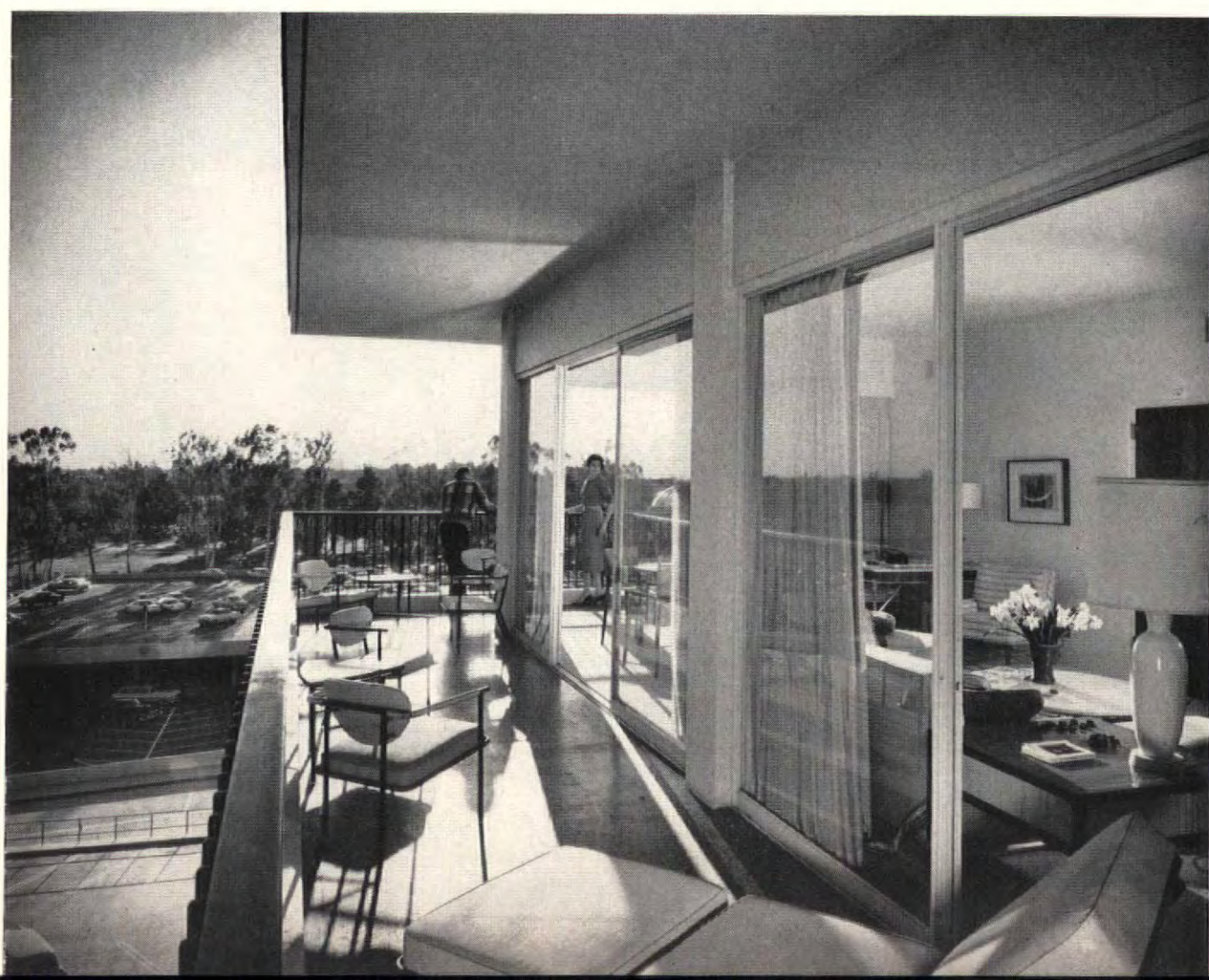
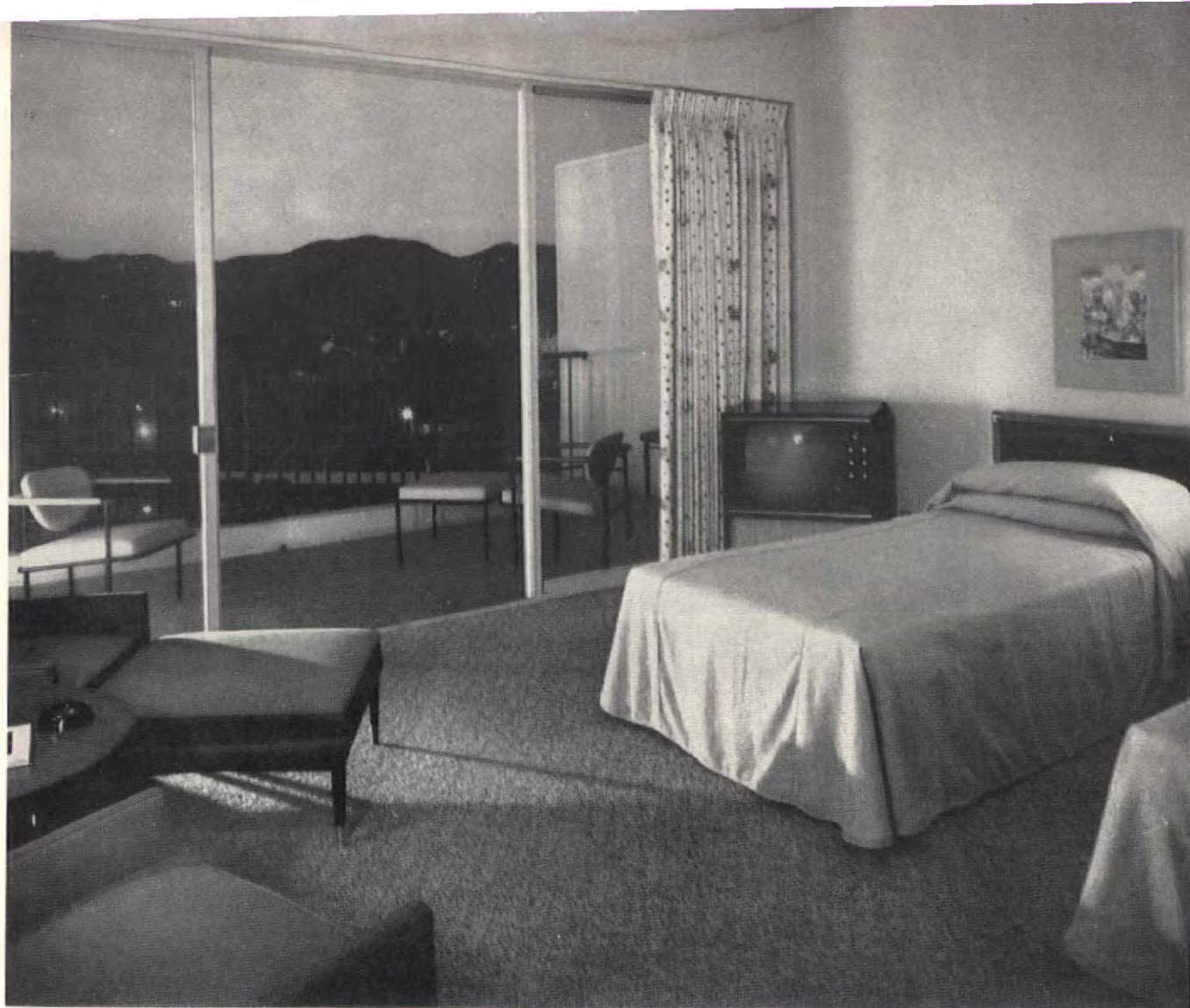
The Beverly Hilton by Architects Welton Becket & Associates is frankly luxurious (rates: \$15 minimum for a double to a top of \$65 for a three-room suite). Minimum room is shown (20); across page is a twin-bedded double with 16' sliding glass wall and balcony beyond; and, below it, a suite viewed from its balcony.

20

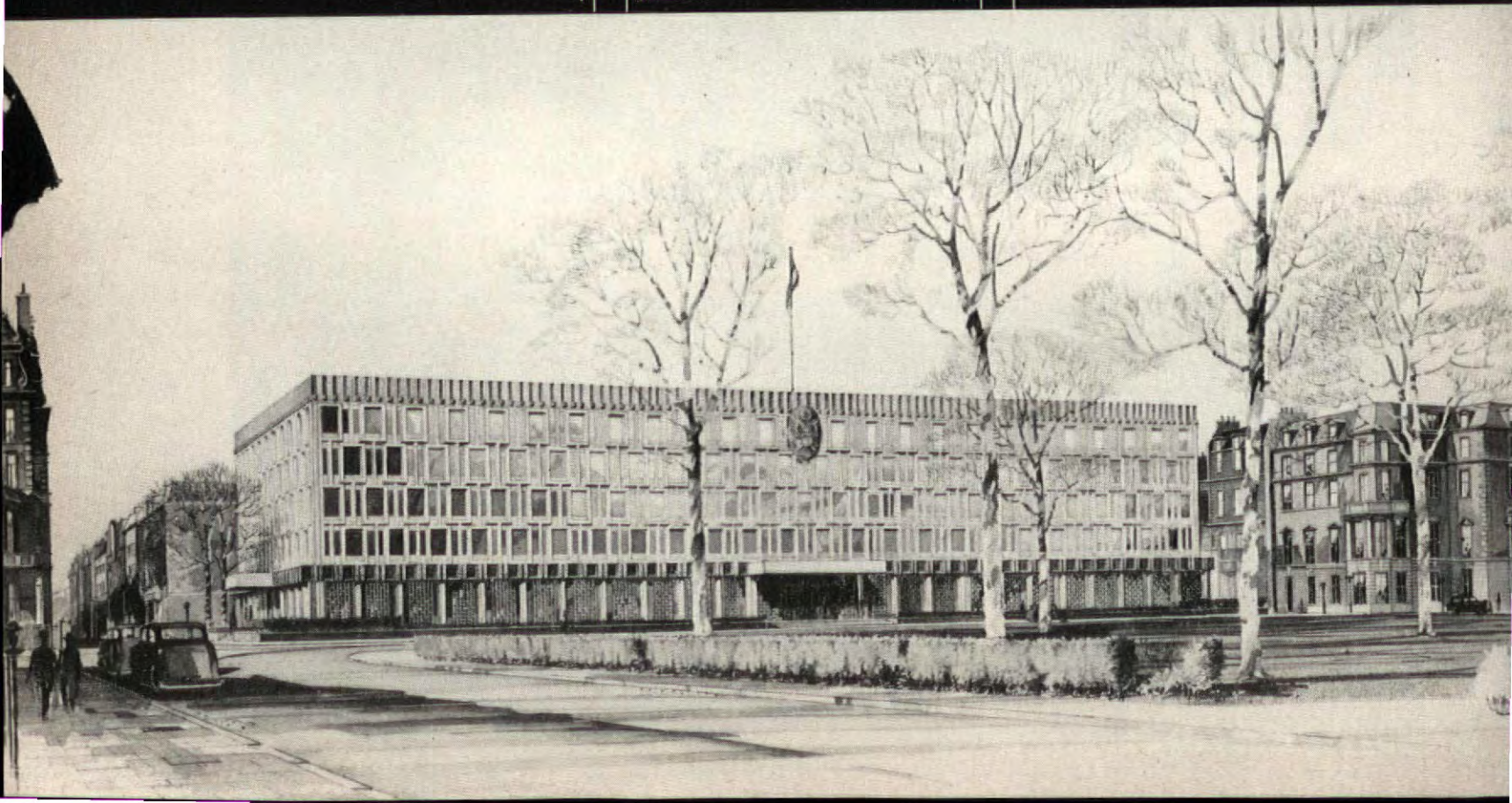
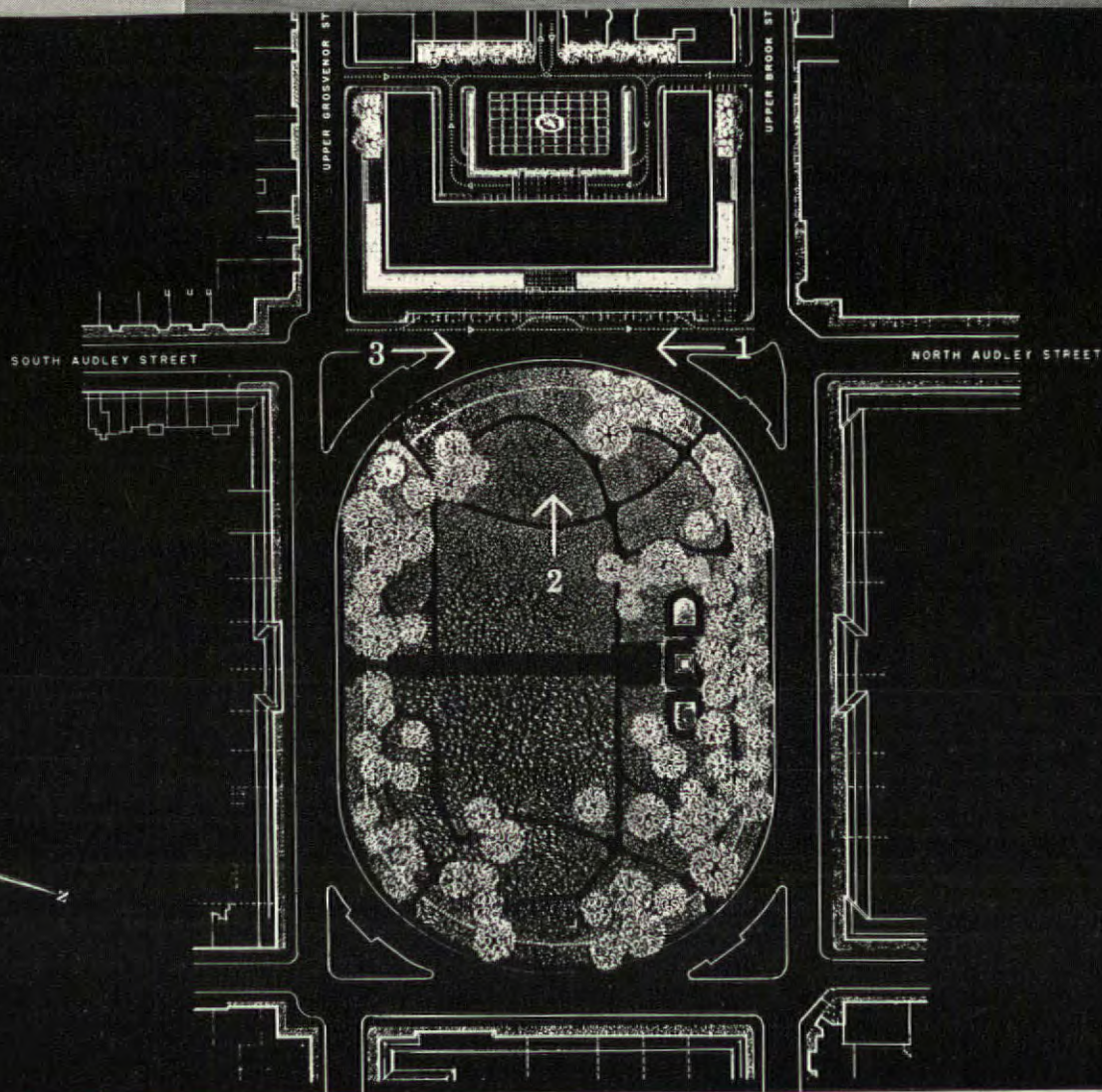
Photos (below & opp. p.) Julius Shulman; (others) Ulric Meisel













# NEW US EMBASSY FOR LONDON

Saarinen wins government design competition among eight of country's leading architects

For the first time in years, the architect and architecture of a major public building have been determined by formal competition. Eero Saarinen's design for a new London embassy (sketches opposite and below) has been picked by the State Department's Foreign Buildings Operations from an array of eight invited presentations, and construction is expected to start next year. Here is a rare opportunity to see how several leading architects would handle an always-controversial problem: a contemporary government building in traditional surroundings. (Some of the ideas might even stimulate new thinking about public buildings at home.)

*The site.* In London FBO faced an especially delicate situation, where a big new building would take up the whole west side of conservative old Grosvenor Square. The land is occupied by a row of old houses that reflect the square's earlier charm and scale (photo 2, opposite.) The square is slowly losing these to newer, bulky pseudo-Georgian apartment buildings (photos 1 and 3). One such structure houses the present US Embassy to the east, and the Duke of Westminster's estate says it will continue building others like them.

*The program,* drawn up and conducted for FBO by Architect Robert McLaughlin, dean of Princeton's

school of architecture, stressed the "creation of goodwill by design of distinguished architectural quality . . . by intelligent appreciation, recognition and use of architecture appropriate to the site and country." It asked that the building be related in scale and materials to the square and surrounding London, yet inevitably asked that it "represent the US at this time." To assure careful study, the government paid each of the eight competing firms \$4,000 and insisted that they visit the site.

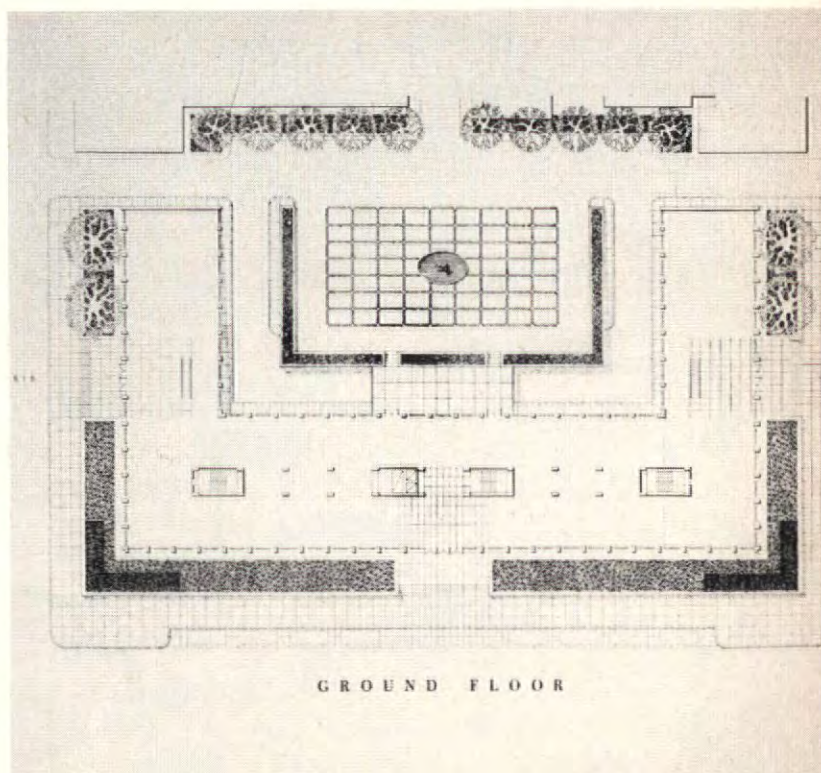
Not to be air conditioned, the expandable office building had to accommodate 750 people, but could not be more than 100', eight stories and 150,000 sq. ft. above grade. Other requirements: an entrance lobby toward the square, a consular-visa section entered from one side street and an information-library section on the other, an employees' cafeteria, an underground space for 25 cars.

*The jury* consisted of Pietro Belluschi, Henry Shepley and Ralph Walker of FBO's architectural advisory panel, AIA President George Cummings, Deputy Under Secretary of State Loy Henderson, FBO Director William P. Hughes, Assistant Secretary (for Europe) Livingston Merchant. The jury narrowed the entries down to three before picking Saarinen. No other awards or rankings were given.

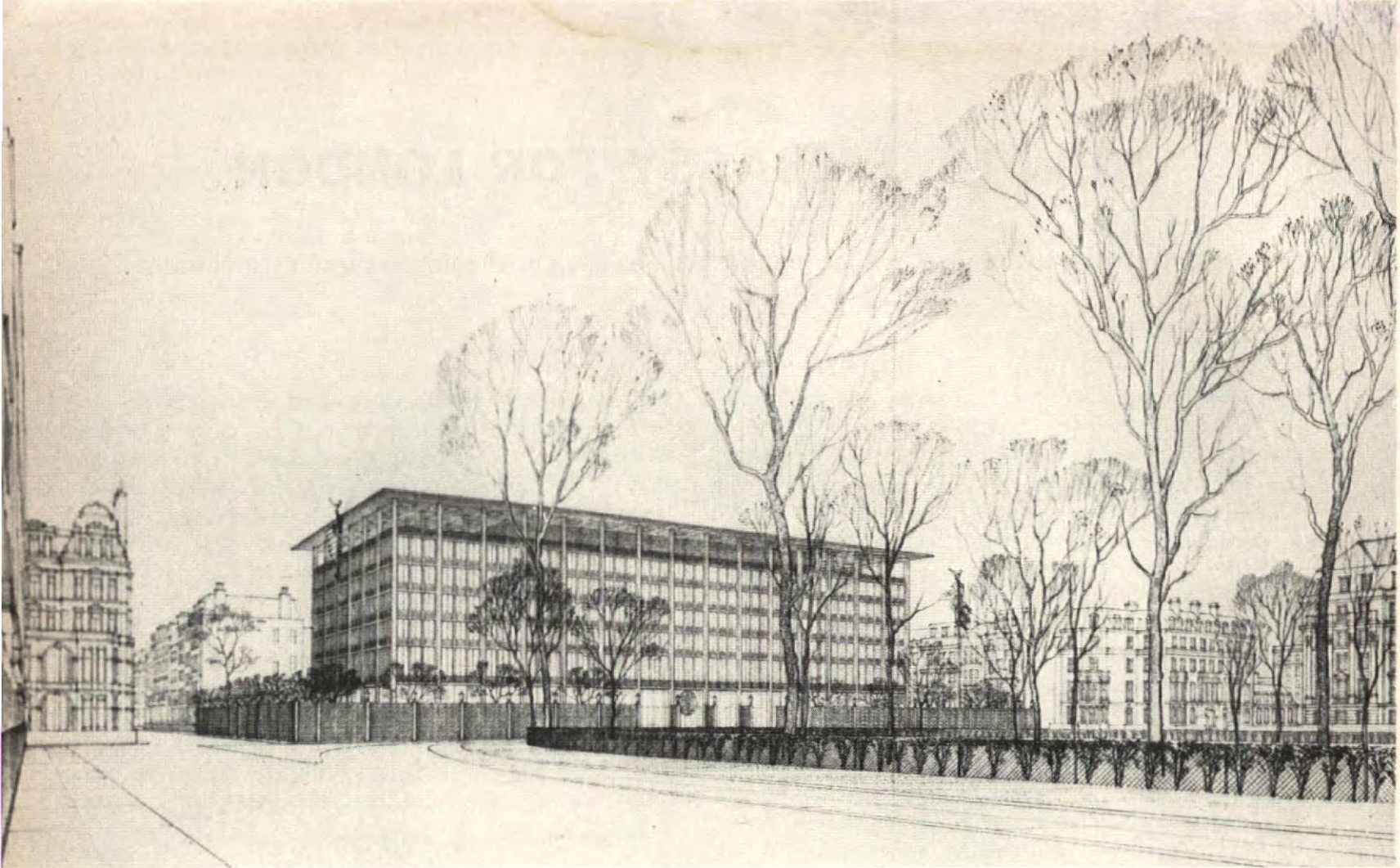
## EERO SAARINEN & ASSOCIATES

The face of the winning design is a structural grill. Though successive ranges of windows are offset in a glass wall their frames and intervening mullions furnish vertical support. Facing is Portland stone, used for official buildings in London and for trim around Grosvenor Square. The façade pattern carries out the general window rhythm and scale of neighboring apartments and their classical divisions of base, middle and top: a low wall and hedges form a "pedestal," columns and bronze window grilles, a "base," topped by a shallow balcony bearing a frieze of black oxidized bronze with state seals in low relief. Ending the 71' façade against the sky is a patterned cornice and the "Great Seal"

of the US in black bronze. Says Saarinen: "I wanted to create a façade with enough life and broken-up surfaces to give the stone a dramatic effect as it weathers black and white, and to hit a balance between vertical and horizontal." Said James Richards of the *Architectural Review*, in the *London Times*: ". . . strictly symmetrical, retaining the traditional formality of the square, but not too strong a cross-axis, so that the continuity will not be interrupted by a highly centralized design . . . fresh . . . a welcome acquisition to the rapidly changing face of Mayfair." Ambassador Aldrich seems satisfied with the design, and FBO has pronounced the competition "very successful." (For other entries, turn page.)

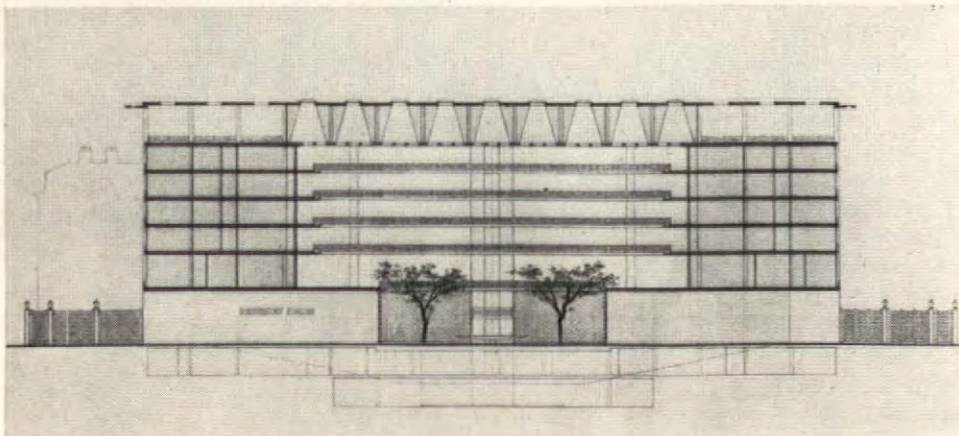
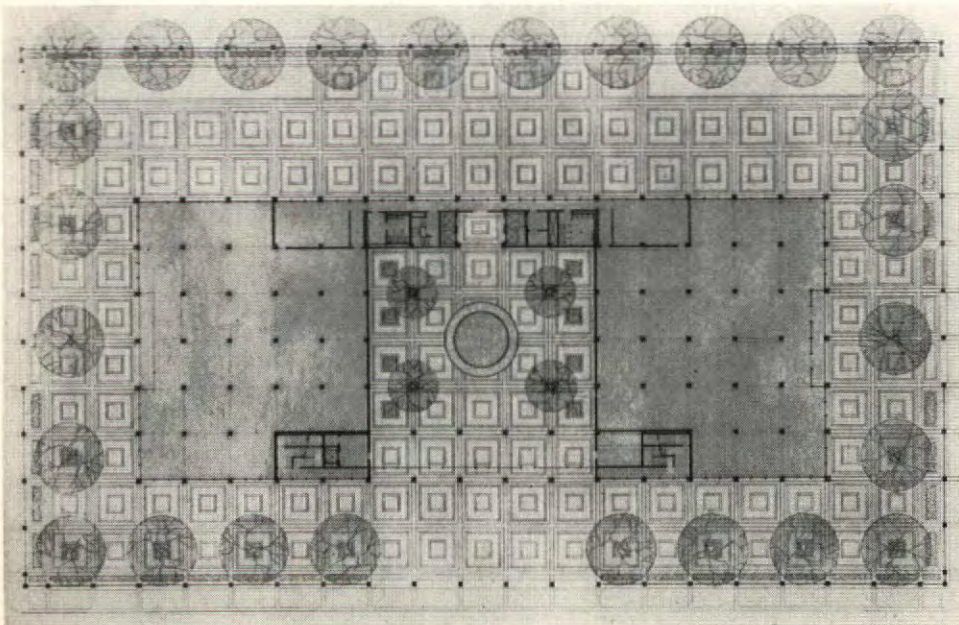






#### EDWARD D. STONE & ASSOCIATES

In this scheme the court is the main entrance and the core of all floors. On the ground floor (plan, left) it is flanked by out-facing information and consular areas treated as two-story public spaces with mezzanines. Upper floors are set back behind planted balconies used for interior circulation and spacious up or down views (see section). Says Stone: "In London's climate a courtyard open to the sky would not be pleasant at all seasons as in the Mediterranean countries, so we used deep-well skylights aided by artificial light. The interior showed possibilities of being very dramatic indeed, with fountains, trees, planting setbacks and hanging gardens at various levels." By using 93' of the 100' height permitted, Stone left space around the building inside the fence so that cars could enter and park front or back, or ramp down to basement parking from the rear. The bold paving pattern continues the bay module across the grounds and is repeated at smaller scale in balcony grilles. Projecting columns leave interior wall surface unobstructed. In-swinging casement windows in the European manner extend to the floor, giving employees a full view of the square; protective ironwork rails help unify the building with others on the square. Says Stone: "In a way, the result resembles the office buildings of Sullivan with columns expressing great horizontal plans terminating the building; or it resembles a *palazzo* with *loggia* on top."

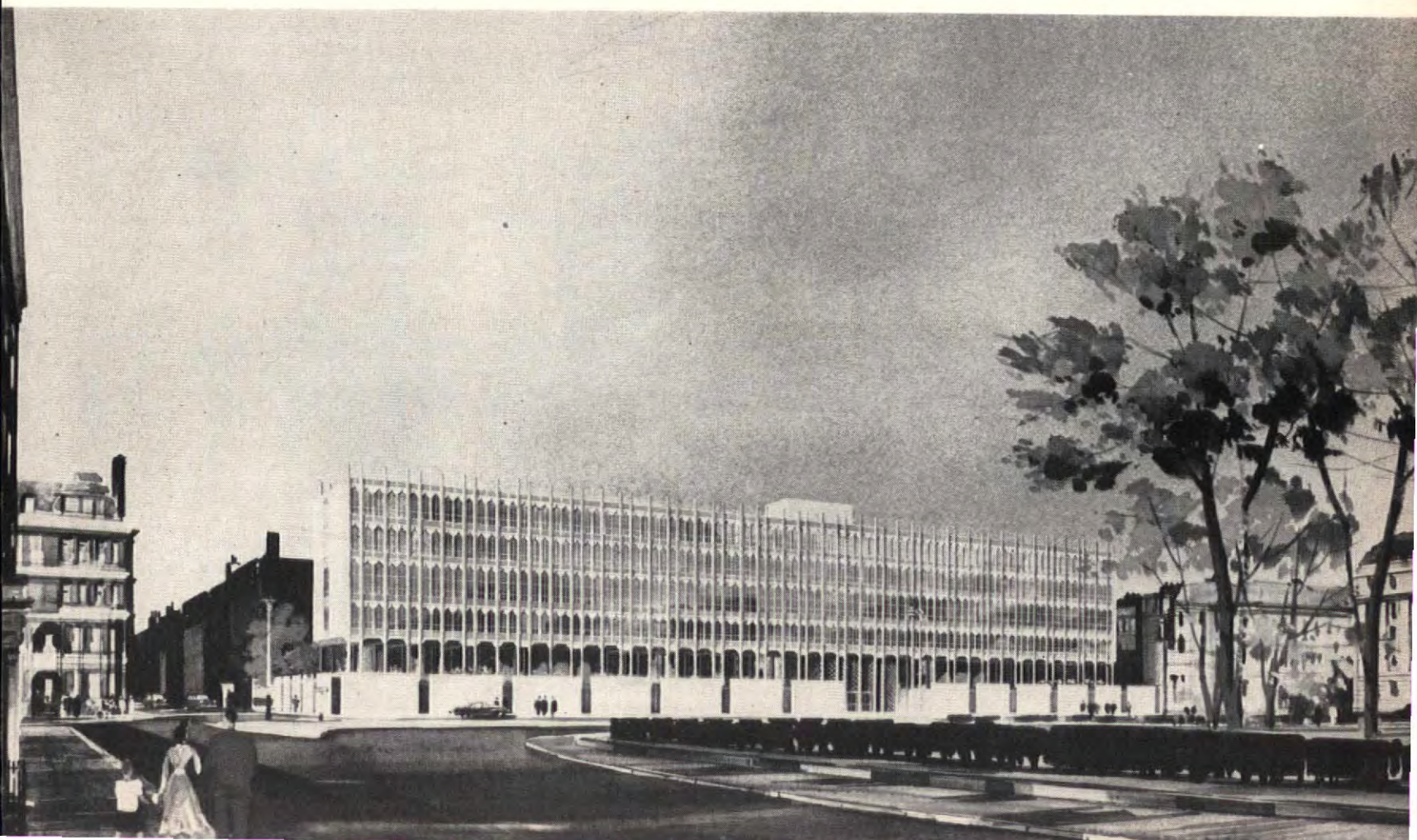
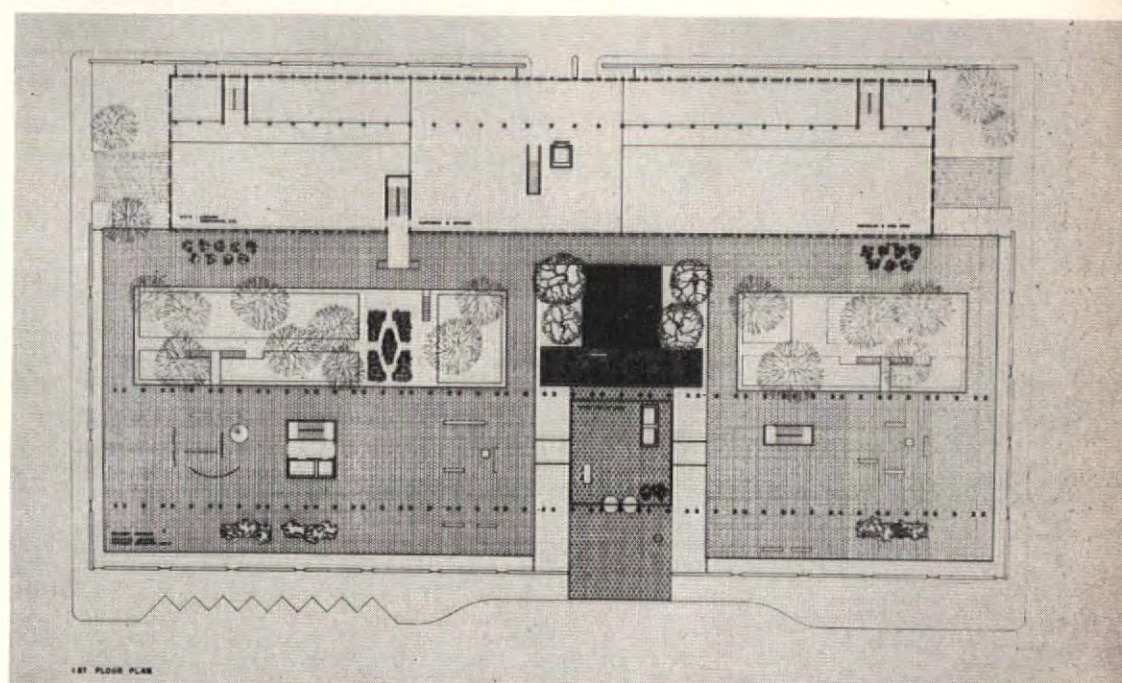
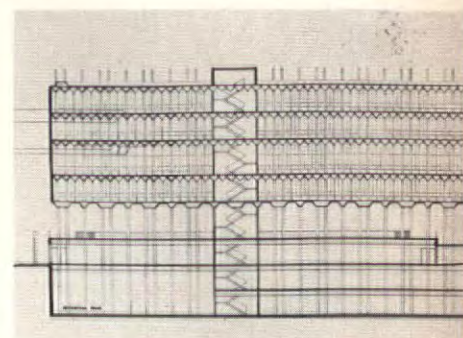
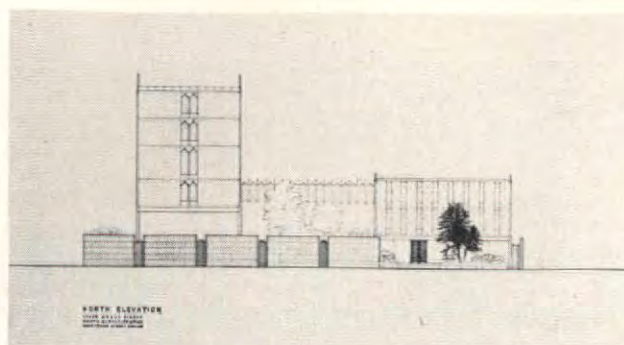




## YAMASAKI, LEINWEBER &amp; ASSOCIATES

This is one of the most original and evocative schemes in the group—a modern building that recalls Britain's Crystal Palace, her Houses of Parliament and perhaps a Venetian Gothic palazzo such as Ruskin loved. Two parallel buildings are bridged together at two levels around a strip of inner gardens for employees and public. The front building raises the Ambassador, and "sensitive" offices requiring security, above open second-story terraces (plan, right). The lower building places information, consular and service areas at ground level for easy public access from sides and rear, and raises the employees' cafeteria to second-floor terrace level. The lobby is a separate element enclosed in bronze grilles.

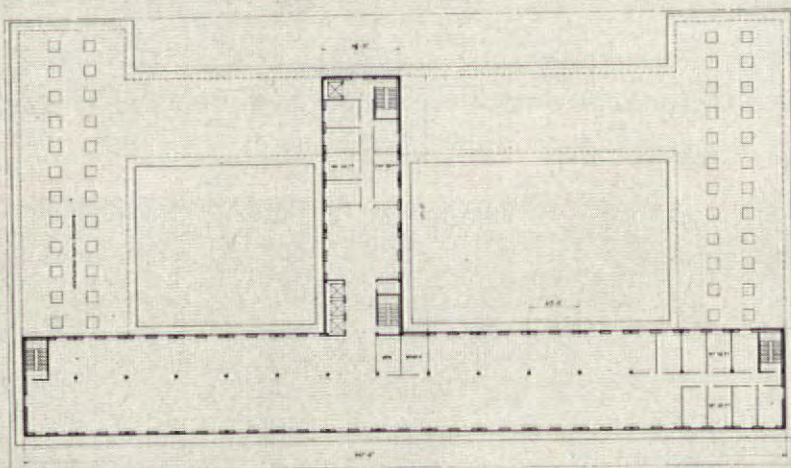
The façade has the lacy quality of late English and Italian Gothic, with close-spaced columns (3'-9" and 7'-6" apart), continuing upward as finials against the sky. The main building, 78' high and 45' deep, is spanned by a steel framing system with triangular corrugations housing ductwork and lighting fixtures (see section). These are expressed on the exterior as triangular, stone-clad spandrels. Says Yamasaki: "The cathedral and tower on the Piazza San Marco in Venice, the Palazzo della Signoria in Florence and the cathedral in Milan all dominate the squares on which they stand. Their architecture is of an entirely different era from the surroundings, yet they achieve an architectural magnificence."



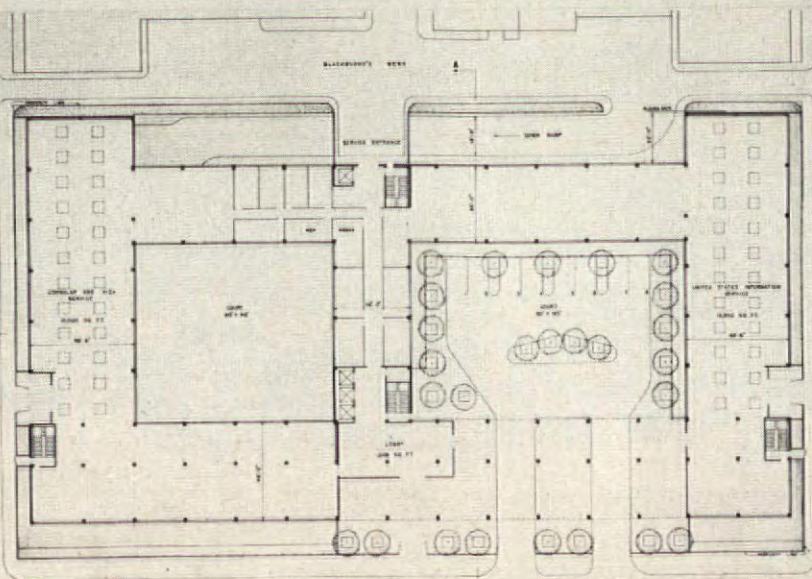


**WURSTER, BERNARDI & EMMONS:**

"While many cities such as Copenhagen and Paris are a dove gray, London appears violent in contrasts. As Peter Shephard, London architect, puts it: 'London is black and white.' This accounts for our choice of black brick and white Portland stone. The stone is flush with the brick, unprotected by ledges, and thus, washed by the weather, would stay white. The building might well have a degree of residential character as the other three sides of the square will eventually be luxury apartment buildings. To complete the square we took the identical skyline, both the top of the brick parapet and the top of the mansard roofs; hence the two-story setback which also gives a desirable eastern exposure. Since there is to be no air conditioning, the wings are shallow to allow all workers to be near windows, with the maximum number of offices facing the desirable view of the square. Side streets are narrow and apt to be noisy so as few offices as possible face them. The entrance is arranged like an old porte-cochere to allow automobile arrival under cover with some degree of privacy and to yield off-street parking and pedestrian entrance without dodging cars."



FIRST FLOOR SCALE 1/4\"/>

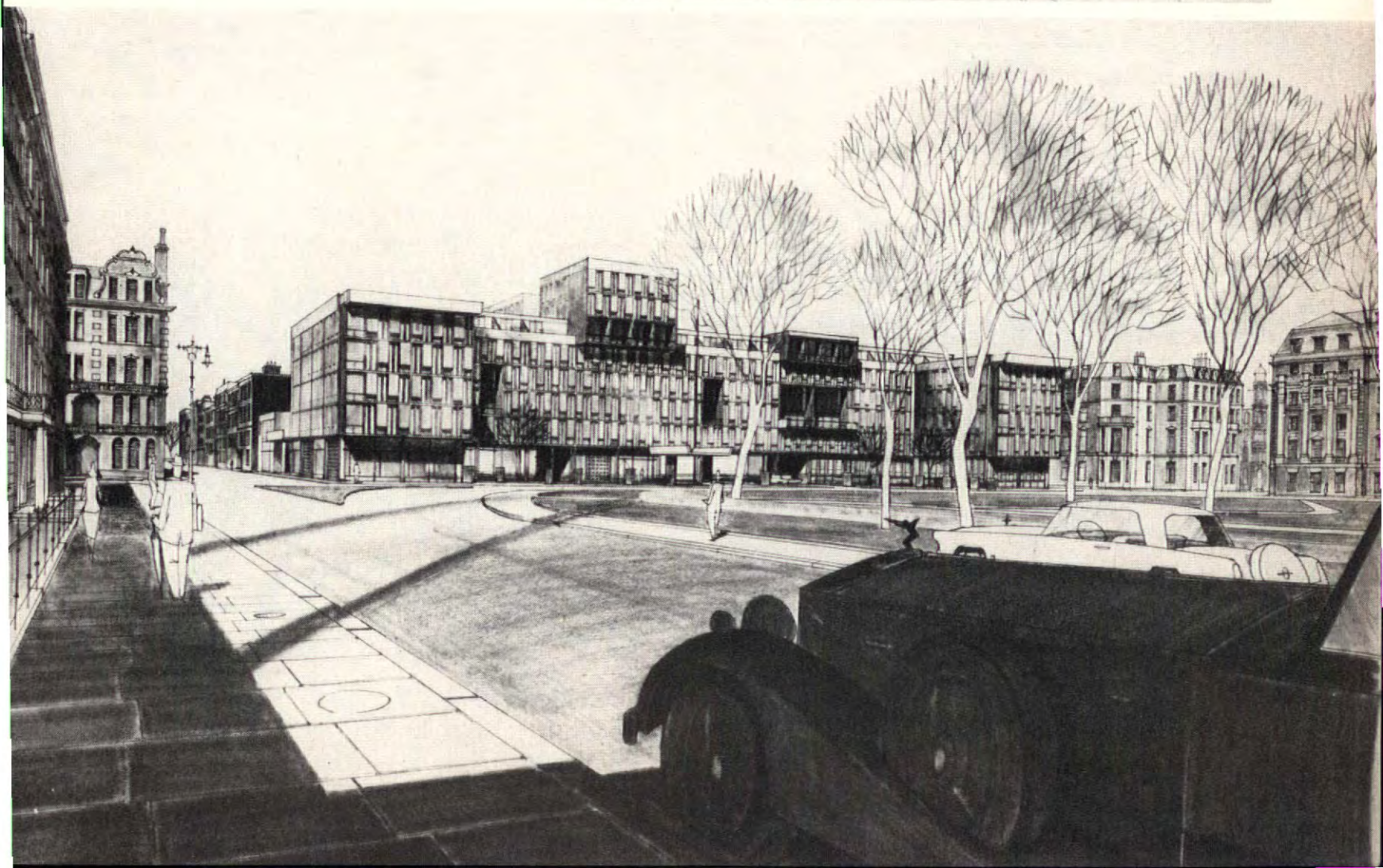
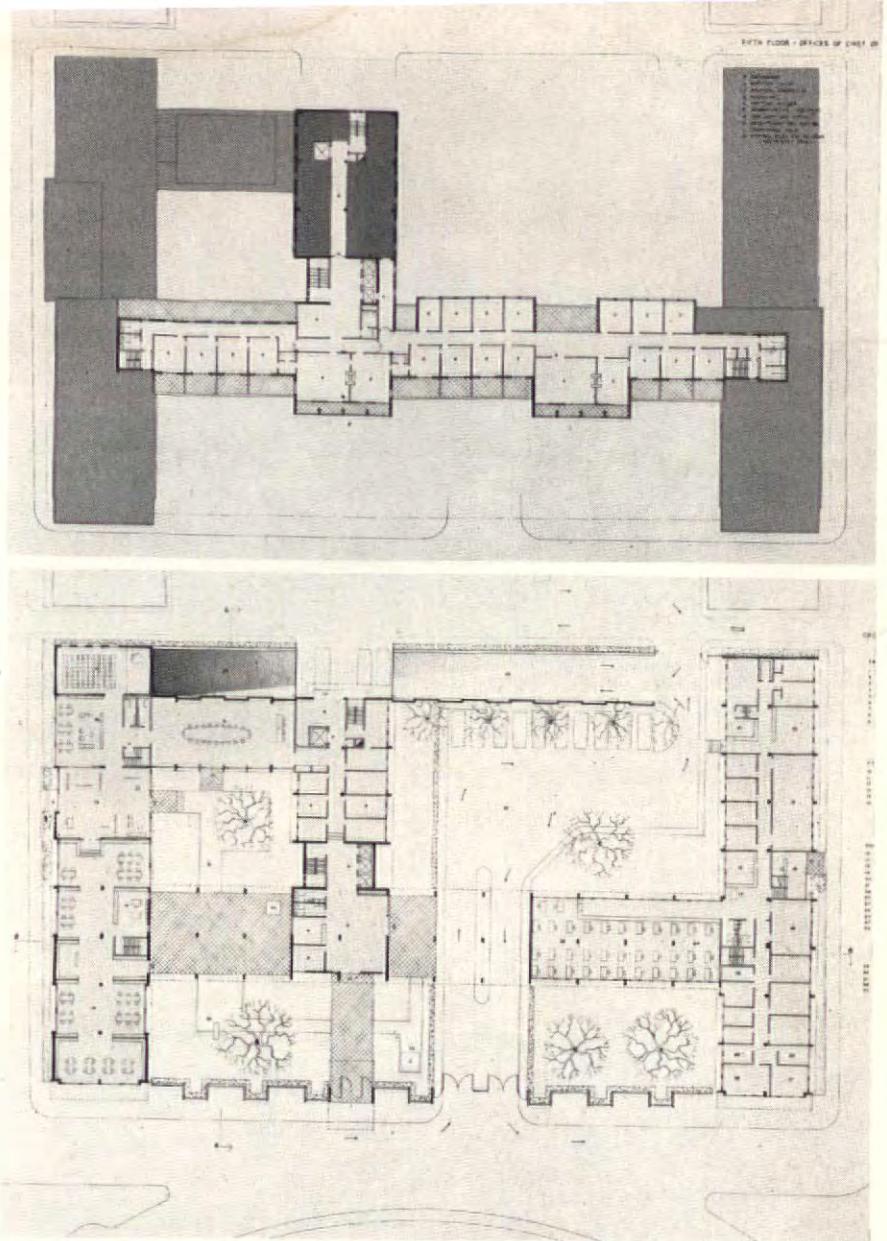


GROUND FLOOR SCALE 1/4\"/>

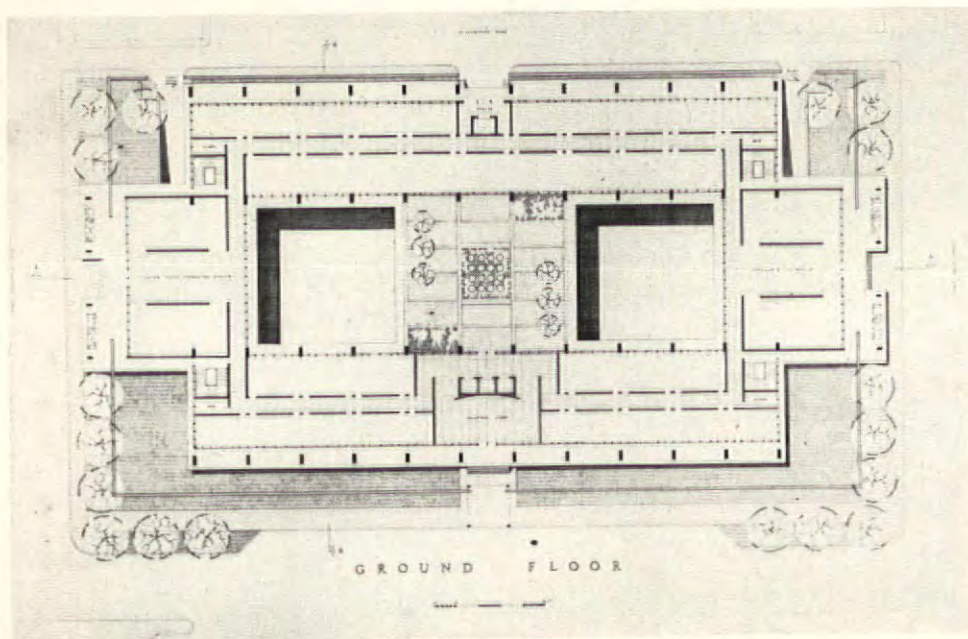
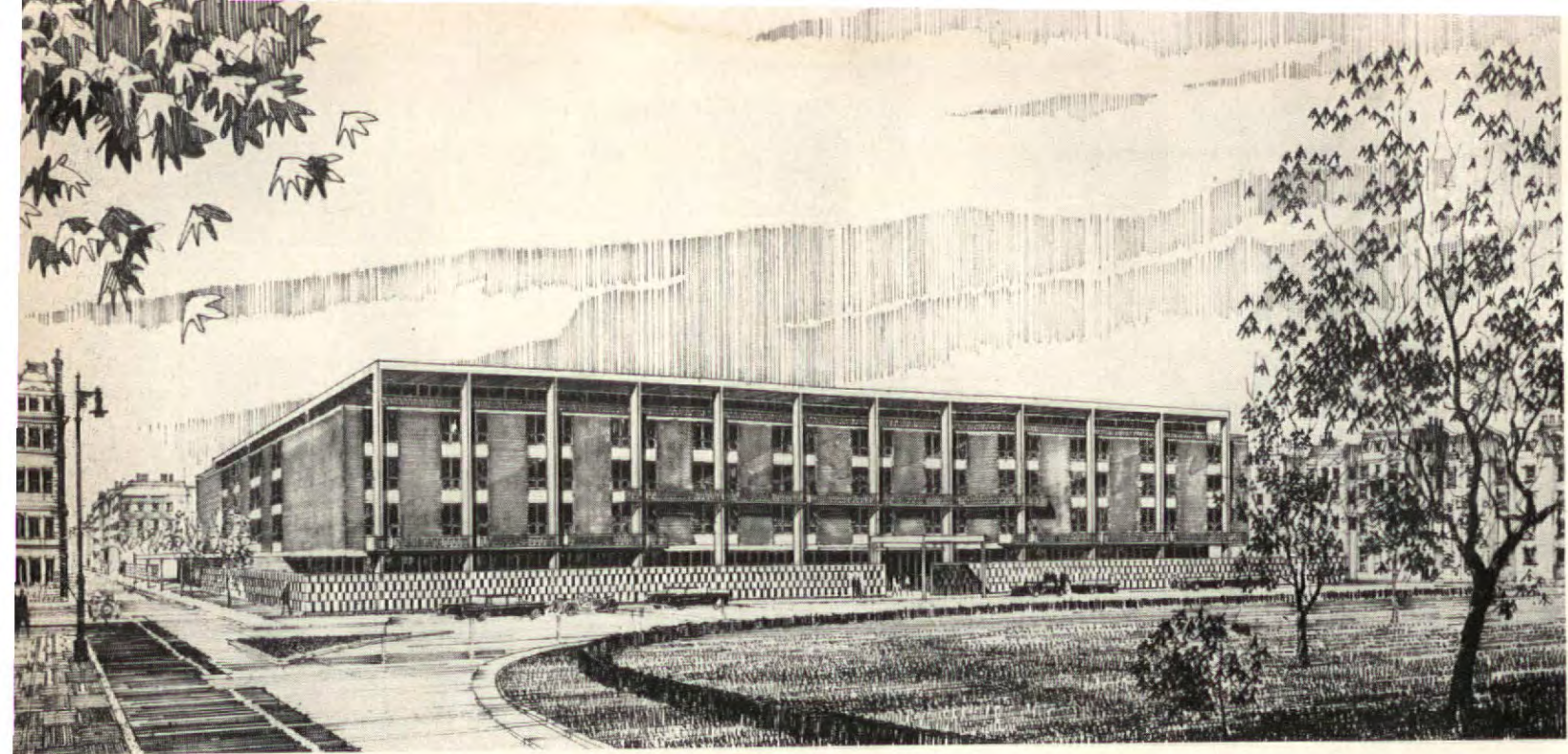


**JOSE LUIS SERT, WITH HUSON JACKSON  
AND JOSEPH ZALEWSKI**

This scheme varies sharply from the other entries in the plastic quality of its façade, and the expression of special interior features on the exterior. The ambassador's and deputy's offices project atop the front of the central wing, the political officer and conference room project at the right, and lighting lobbies in the corridors are inset. The main body of the building is set back from the square behind landscaping, and wings containing consulate and information sections advance to strengthen the corners and frame the entrances to side streets. Windows form a deep pattern in two planes: view windows advance to the edge of the dark brick piers and are set in contrasting white-painted steel frames; narrow panels set back from the view windows serve as fixed units or as movable units for ventilation, filled with clear or translucent glass or an opaque material. Expansion leaves the main façade unchanged: the consular wing can grow toward the rear with four new floors, the central wing can also expand to the rear and one story can be added over the parking space, ramp and wall of the rear court. Two portions of the main façade are on freestanding columns to allow entrance to a pedestrian court on one side and a motor court on the other. This openness allows perspectives from the square.

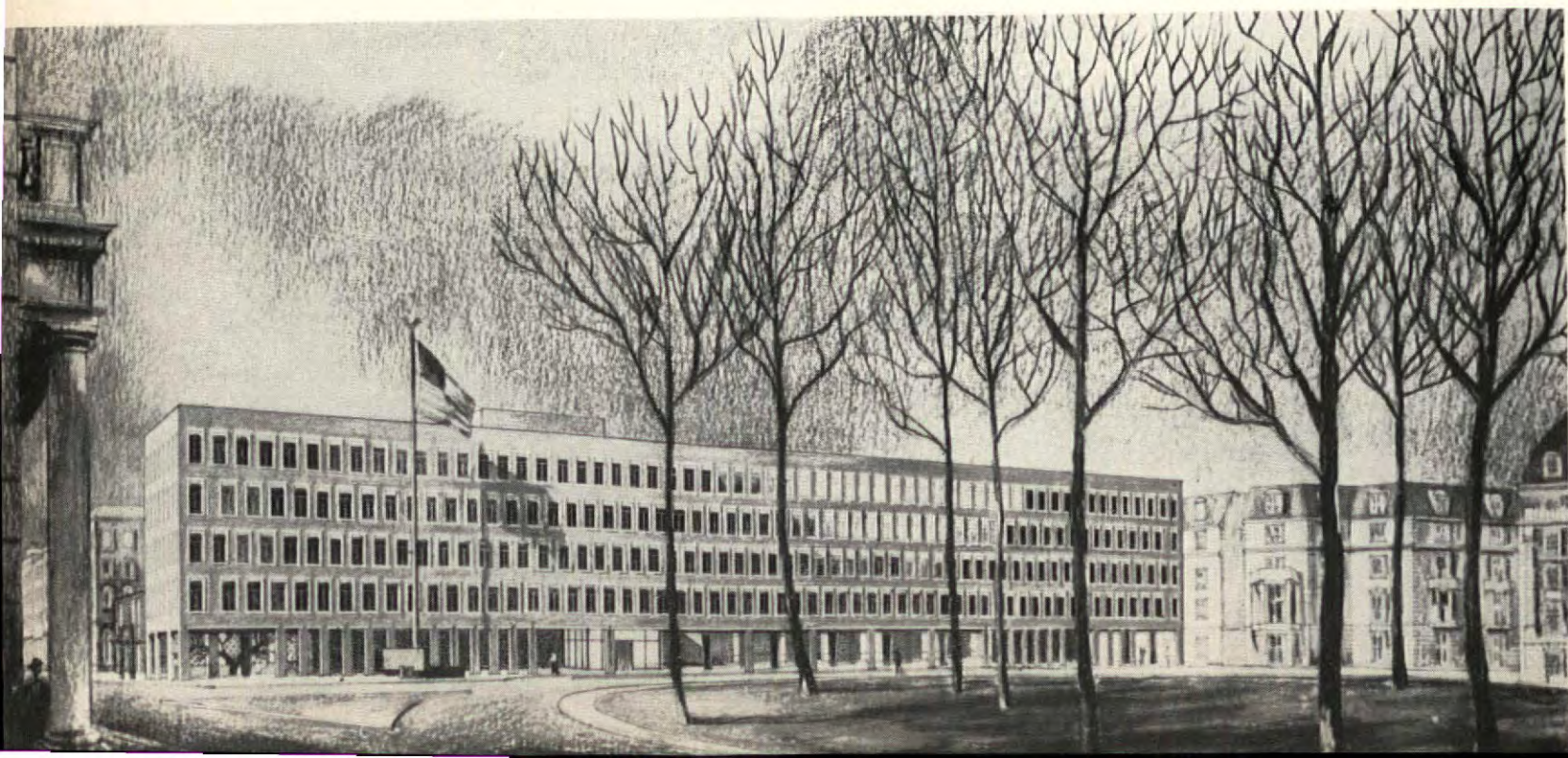




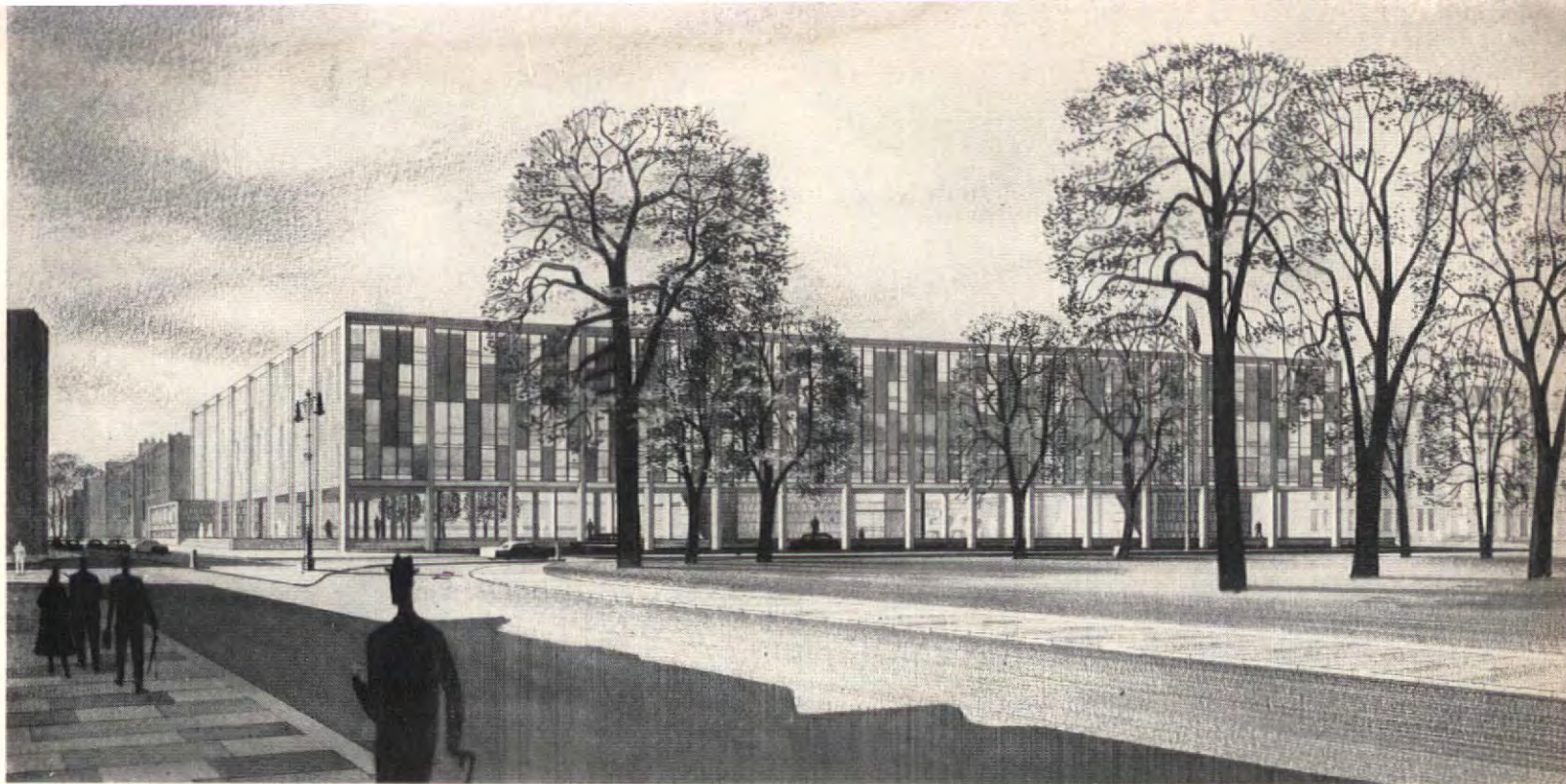


### ERNEST J. KUMP

The profile of this design is related to the main architectural strata of the square: dark gray mansard roofs are recalled in a shadow where the top floor is recessed; the heavy masonry around the base of neighboring buildings is echoed in a pierced stone wall screening the glass wall of the ground floor; and the wrought-iron balconies and parapet are idioms of the square. The proportion of glass to brick on the main façade is about the same as that of others on the square but windows are unified behind a giant, five-story portico of projecting columns that might dominate the square. Offices open in toward twin courts through glassy walls that contrast with the restrained exteriors of brick and stone (plan, left).

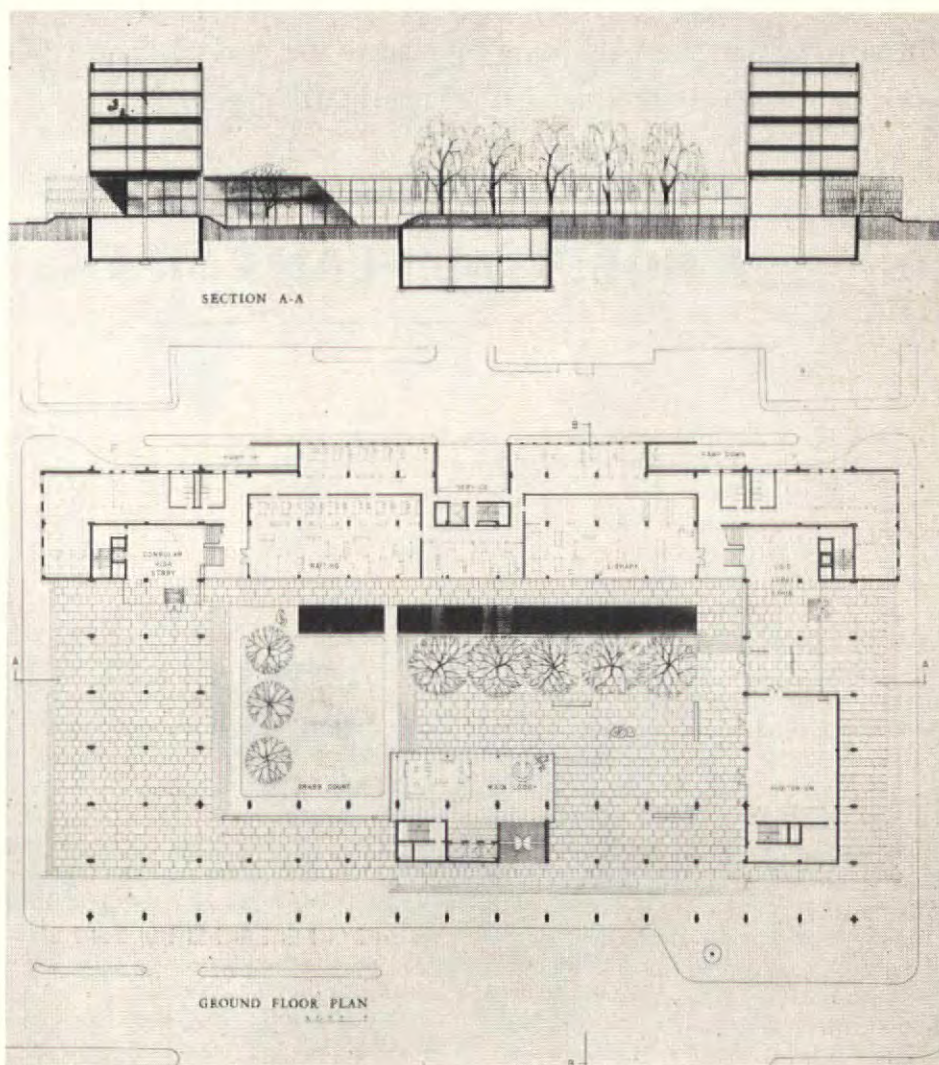






#### HUGH STUBBINS ASSOCIATES

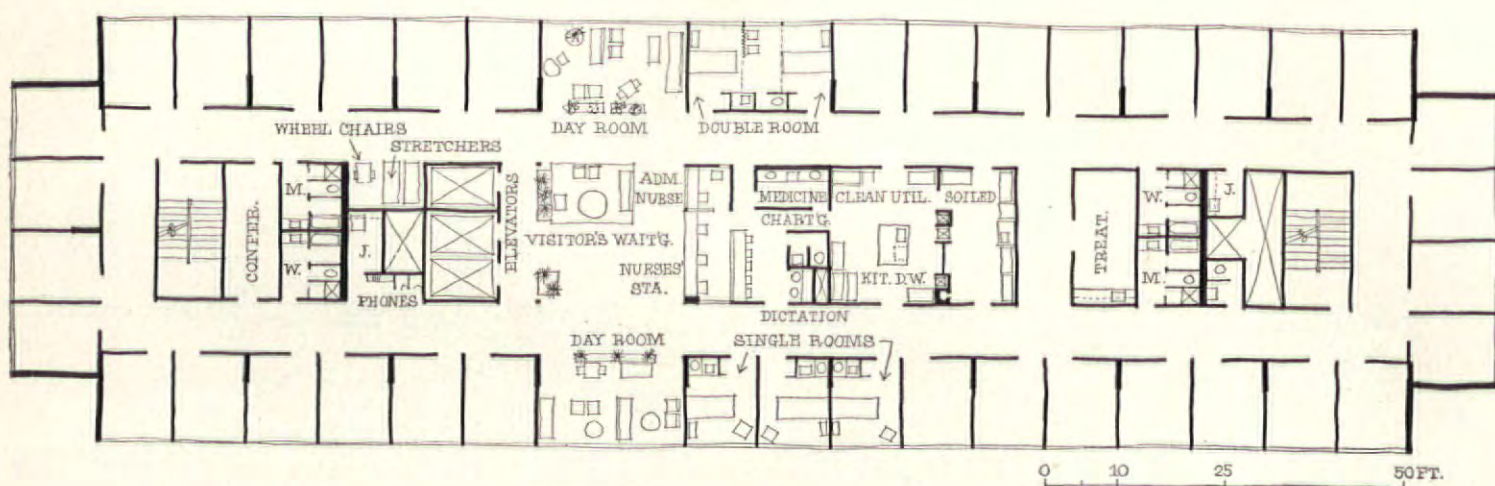
The authors of this raised "U" plan filled out the end of the square to retain its original proportions and the impact of entering the big space from narrow side streets. A lower consular-information building open to the public shields a spacious court from the rear and one side. Says Stubbins: "Though raised slightly, this court has a feeling of accessibility that expresses the traditional accessibility between the two countries; the arcade allows passers-by to come in friendly contact with the building. We tried a new kind of fenestration: columns covered with Portland stone, ribs of dark gray aluminum holding obscure glass (to sill height), clear glass and slabs of rough pinkish granite."



#### ANDERSON BECKWITH AND HAIBLE:

"Obviously the choice and arrangement of windows was of critical importance in making such a large building seem to belong in the square. The program emphasized the small 200 sq. ft. office as the typical plan module. Londoners prize daylight and in winter are starved for it. The building had to be shallow and the windows closely spaced. In order to be in tune with the old buildings, a wall punctured by many vertically proportioned rectangles appeared inevitable. The heavy oval of trees in the park makes it impossible to see a façade from a distance except as filtered by trees; we were led to avoid emphasis on a central motive and to think in terms of an uninterrupted fabric. No new building ever had greater need for architectural tact."





Once the comparison of hospitals to industry was anathema. But "production line" thinking applied to the nursing floor can mean more—not less—individualized treatment for the patient

## A HOSPITAL PLAN FOR EASY OPERATION

To hospital planners, "economy" means primarily building economy. But after a hospital is up, costs go on and on, about 5% higher each year on the average than the year before. The lion's share of the day-after-day cost is payroll, and because hospitals are service operations, it is tempting to assume that not a great deal can be done to lower operating expenses. "You can't mechanize hospital care," the saying goes.

However, in the supposedly unmechanized hospital, one thing usually is mechanized and that is the patient's regimen. His hours to receive visitors are regimented. Floor specialists for taking blood pressure or temperatures wake him from naps to fit him into their rounds. His meals come at outlandish hours and so do his bedtime and awakening, all for the convenience of a hospital which is doing its best with a design half-heartedly rationalized for supply, service and personnel distribution.

This paradox—the unmechanized hospital with the regimented patient—comes from failure to make a clear organizational and design distinction between patients' care, which should be as personal as possible, and the supporting services and supply, which should be planned like a production-line, says Consultant Gordon Friesen. "First a method of organization that makes

that distinction must be worked out, then the building planned to accommodate it."

The proposed surgical-medical nursing floor shown here is notable because Architects Ketchum, Gina & Sharp and Addison Erdman, working with Friesen, have done an excellent job of putting production line efficiency where it belongs and keeping it out of where it does not; and moreover they have done it without any construction extravagance or gadgety architecture.

The size of the unit, 44 beds, is based on approximately the largest number of patients one supervisor, with practical or student nurse assistance, can take care of during the low-key midnight shift. Fewer than 40 beds wastes supervisor service; more than 45 or so means either skimping care or adding a graduate nurse.

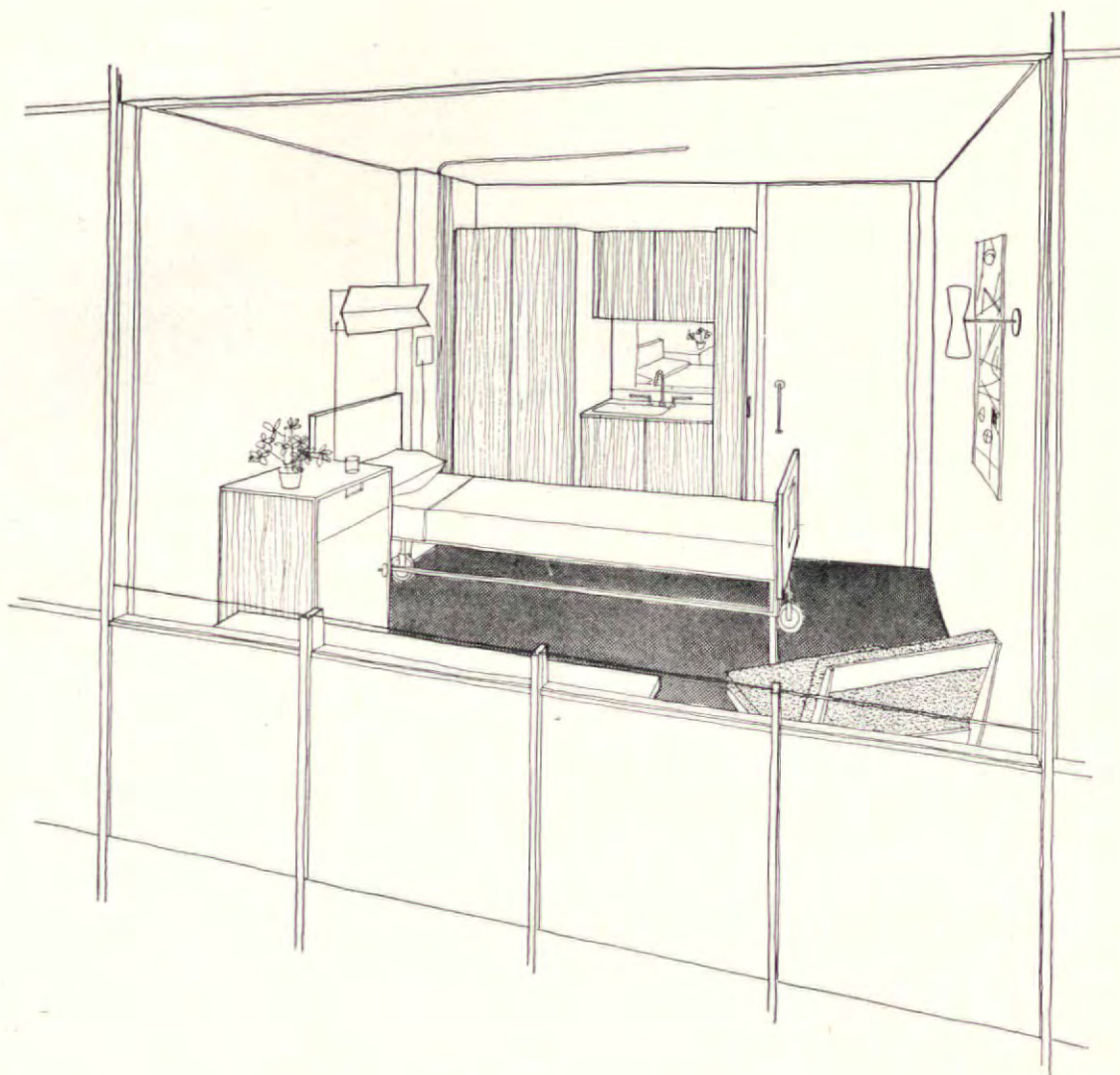
The unit is designed for daytime team nursing (one graduate with assistants responsible for everything pertaining to patients numbering eight to twelve). But it combines this decentralized nursing with the economy of centralized service rooms, which is quite a trick. Diagrammed, the unit is a circle with the nursing station at its heart, surrounded by the service rooms, which in turn are surrounded by a circulation ring and the outer ring of patient rooms. Pulled into a double-corridor ob-

long, this scheme brings the service core close enough to every room to eliminate the substations desirable in less compact team nursing designs. (Each room also has its own toilet-bedpan washer, two-way voice and light communication with the station, and various self-helps to save extra nursing steps.) The conference room is an on-the-floor classroom for the teams.

Behind the centralized service core is a still greater production-line and personnel economy because this plan assumes a central hospital dispatching station for all supplies other than food, a scheme first devised by Friesen for the United Mineworker hospitals (AF, Sept. '53). Wheeled utility shelving is routinely filled at central dispatch; special requests of every kind are filled by dumb-waiter from central dispatch. Food arrives at clean utility via automatic food tray conveyor; five minutes from kitchen to the patient's bed.

The plan also assumes the very humane provision of unrestricted visiting hours for the patient's family. One of its nicest features is the easily supervised, pleasant area where visitors' waiting, elevators, lobby and day rooms are combined. This seems a happy solution to the dayroom problem; a patient who goes to a dayroom wants company and at least the sight of activity.

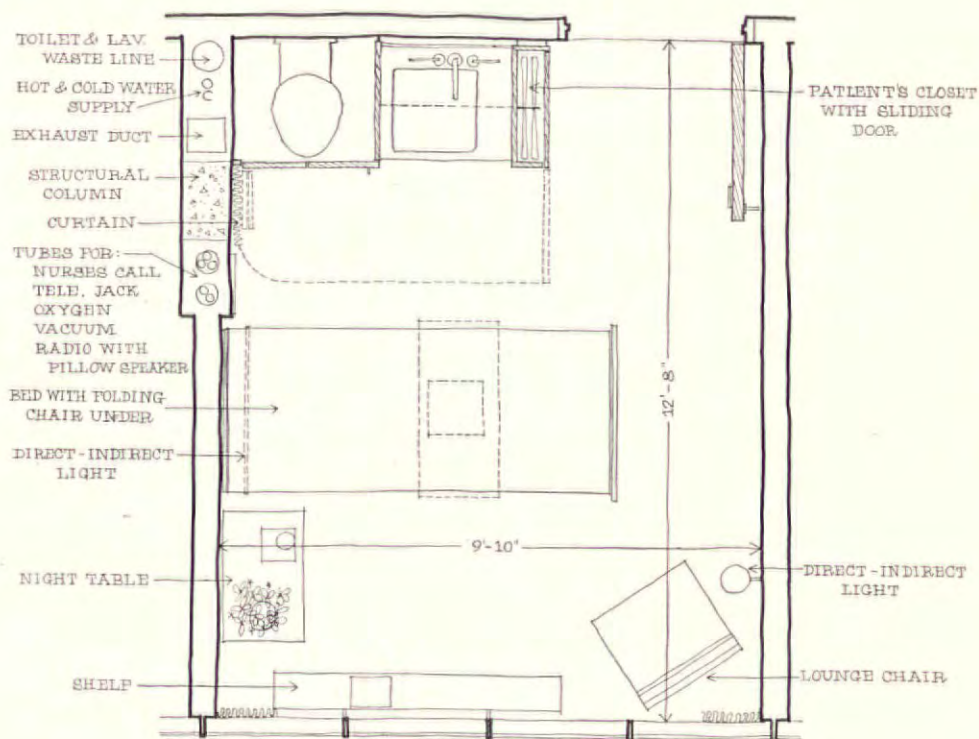




### Single rooms for economy

If only they did not take up so much space, single rooms would be the most economical arrangement for general surgical-medical floors because they permit close to 100% occupancy. The Kaiser hospitals, for instance, have discovered that to be self-supporting on low prepaid rates, they *must* have single rooms (AF, July '54).

A main trouble with the single room is the space taken by the toilet and the space and expense of all those plumbing runs. Ingenious attempts have been made to combine one toilet with two rooms but none of these is very satisfactory. Here the architects have worked out a scheme that looks like the most sensible single room yet, with all the fat squeezed out. The plan puts two toilets and lavatories on each compact mechanical run; the toilet door closes only when the toilet is not in use. Ordinarily, when the patient uses it, he will close his room door, just as a Pullman roomette passenger does. However, a privacy curtain is provided too. Patients control the motor-operated window curtains and lighting. The overbed table slides to the foot of the bed and pivots to footboard position. The floor plan indicates how the single-room scheme could be adapted to double rooms.



ARCHITECTS: Ketchum, Gina & Sharp, and Addison Erdman

CONSULTANTS: Gordon A. Friesen Associates



A complex program for a college auditorium, theater and chapel gets a sophisticated and seemingly simple solution

## FOUR HALLS IN A PAVILION

This college building has a simple name: "the chapel." But actually it is a diverse and difficult-to-handle group of spaces: a 1,200-seat auditorium, a 450-seat theater and a little chapel seating about 75 (plus the associated classrooms, offices, rehearsal rooms, shops). It also has a "fourth hall" which was not in the program but which has proved a most lively and usable meeting and ceremonial space—a court colonnaded to form a focal outdoor room.

All this diversity of shape, purpose and requirements is handled with such order and clarity that it looks almost as easy—after the fact—as Columbus' demonstration of how to stand an egg on end.

To understand the reasons for the building's success, it helps, first, to divide Architects Schweikher's and Elting's concept into strategy and tactics. Strategy: the shapes are set rather loosely within a unifying, skeletal pavilion (see plan overleaf). Tactics: detailing, inside and out, consistently asserts the existence and rhythm of the skeleton. While the separate spaces are eloquently expressed, nothing—neither roofs, nor masonry curtains, nor stairs, nor openings—blurs that pavilion.

### SAMUEL TYNDALE WILSON CHAPEL

OWNER: Maryville College, Maryville, Tenn.

ARCHITECTS: Schweikher & Elting

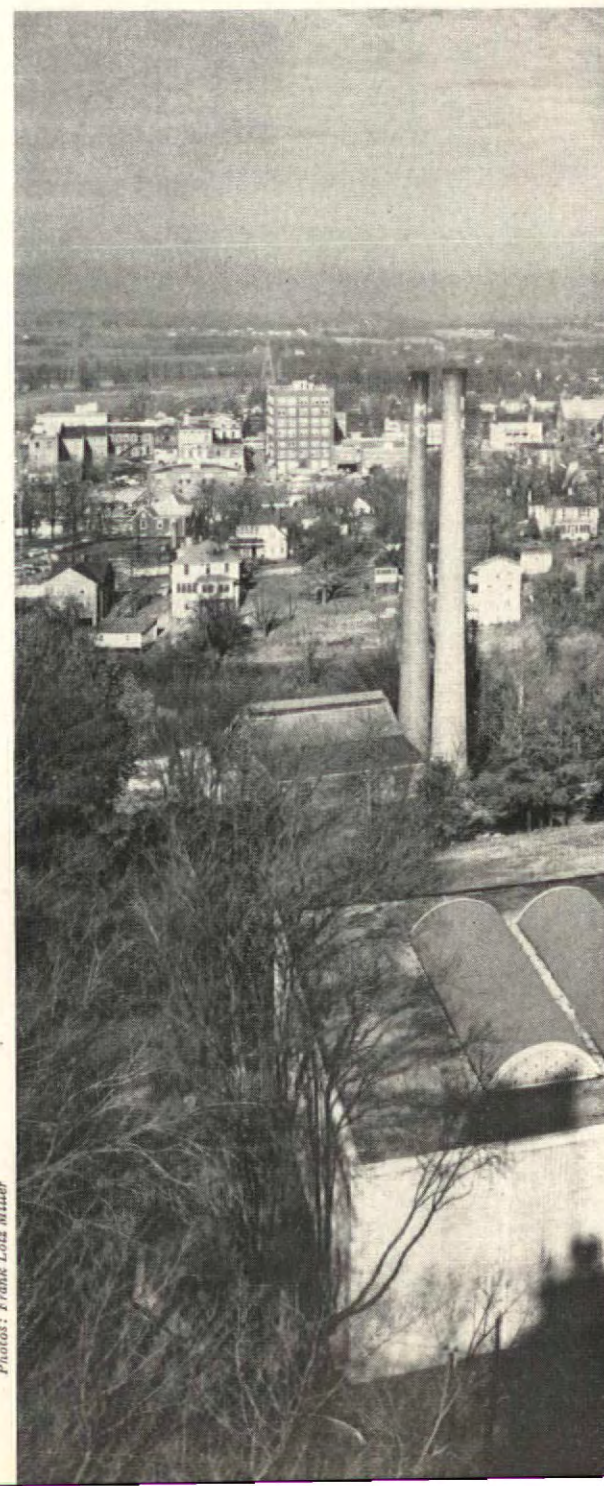
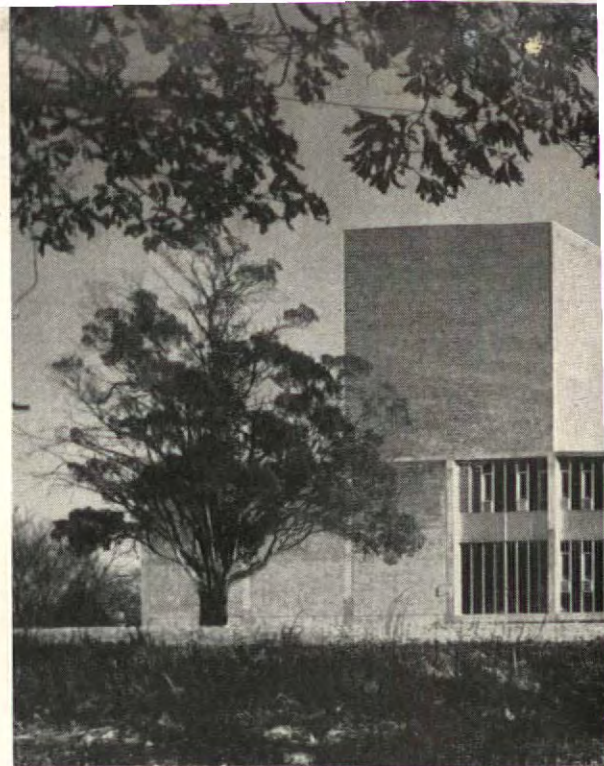
ASSOCIATED ARCHITECTS: Barber & McMurry

SHELL VAULT CONSULTANT: Joseph Passonneau

MECHANICAL AND ELECTRICAL CONSULTANTS:

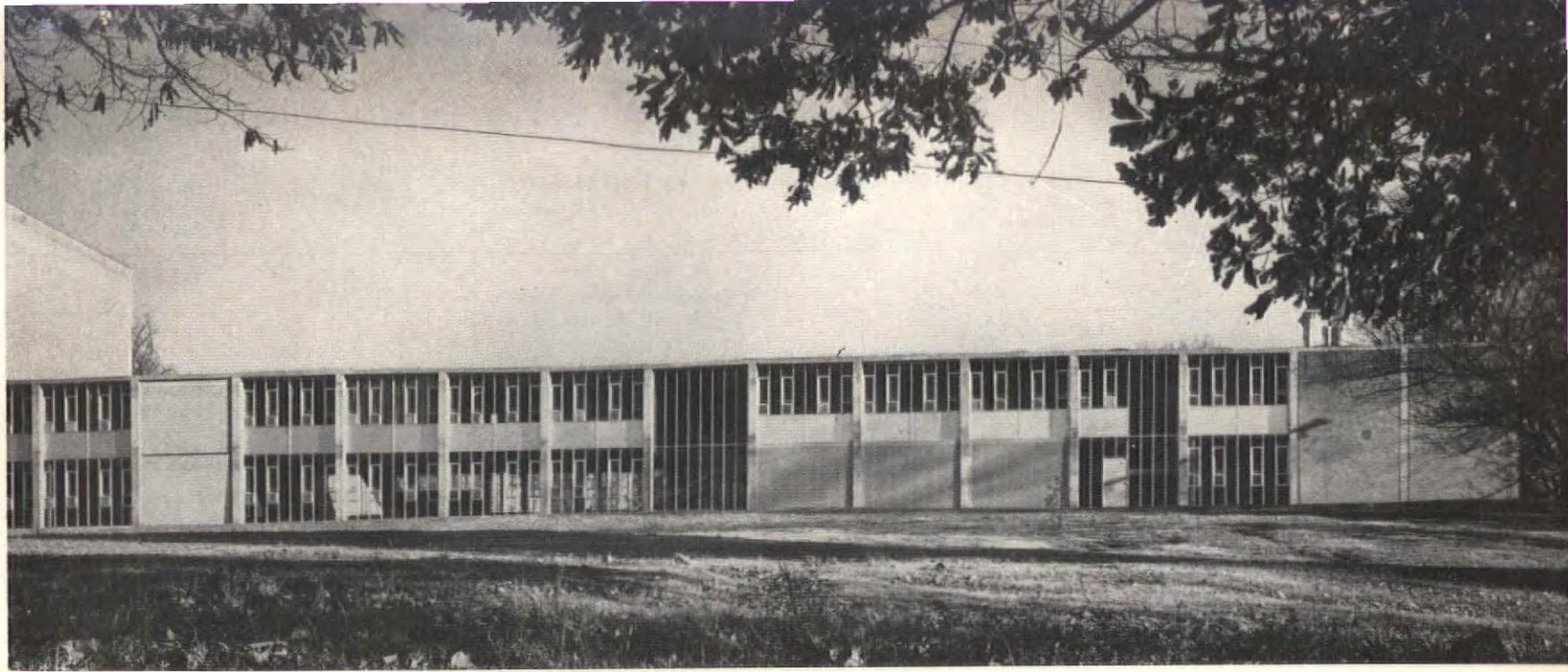
Samuel R. Lewis & Assoc.

GENERAL CONTRACTOR: Johnson & Willard



Photos: Frank Lutz Miller



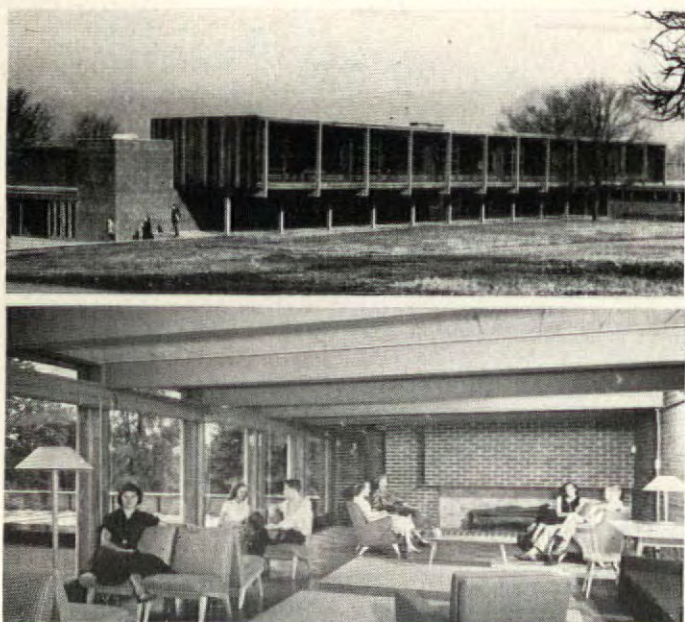


*Tall stagehouse marks theater; thin-shell vaults, auditorium; flat-roofed strip, adjunct rooms*





## PREDECESSOR: SAME ARCHITECTS AND CLIENT



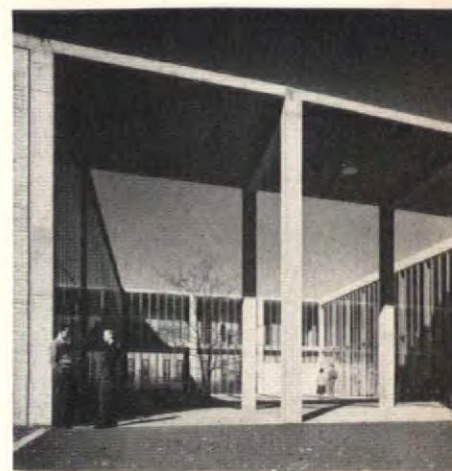
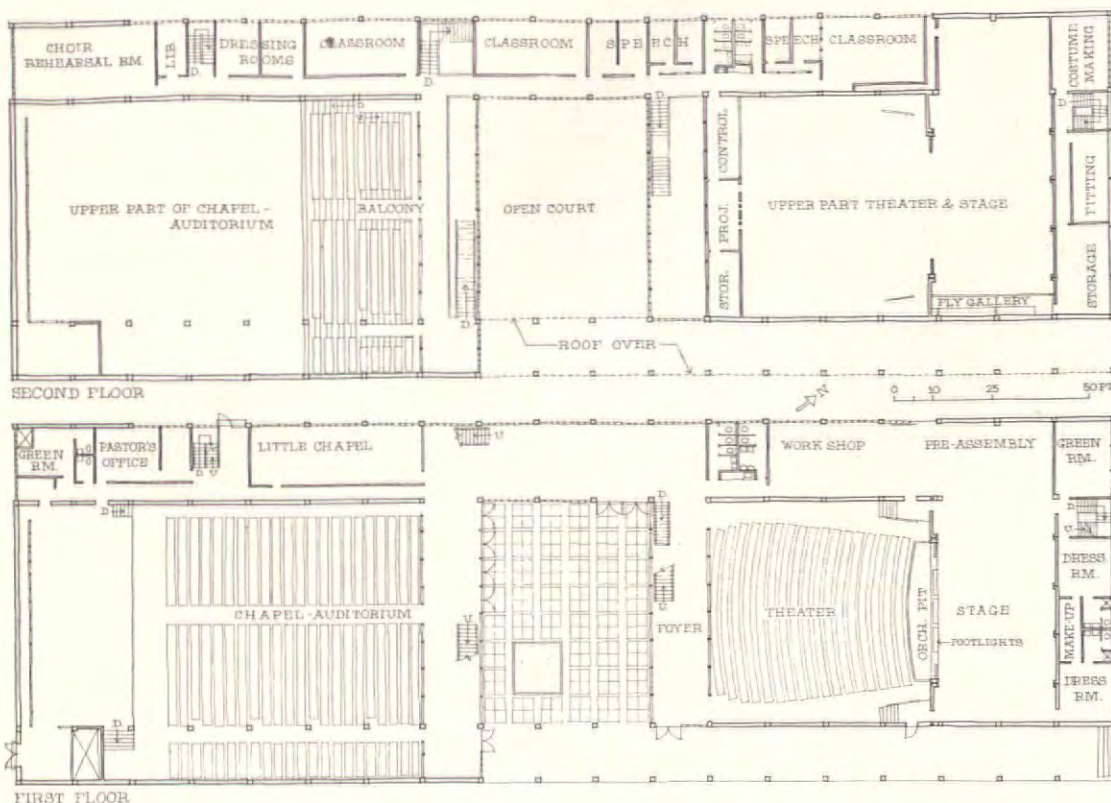
Photos (above): J. W. Molitor; (others) Frank Lotz Miller

Next door to the new chapel is Maryville's fine arts building, completed in 1951. As the views at left show, this is an exuberantly romantic building, and a handsome one. It and the chapel make fine neighbors for each other. As might be surmised from these two additions, Maryville knows what it is doing. Thumbnail of a good client by Architect McMurtry: "Dr. Ralph W. Lloyd, the president, has the interest and takes the time to pay attention to the most detailed matters, always with a constructive attitude. He has the good sense to accept the judgment of his architects in architectural matters but he is firm in insisting that the functional requirements be completely and properly met."

Contemporary elegiac:







**Court**, serving as entrance, central lobby and outdoor hall, counts for great deal in conveying ceremonial feeling of "campus spiritual center."

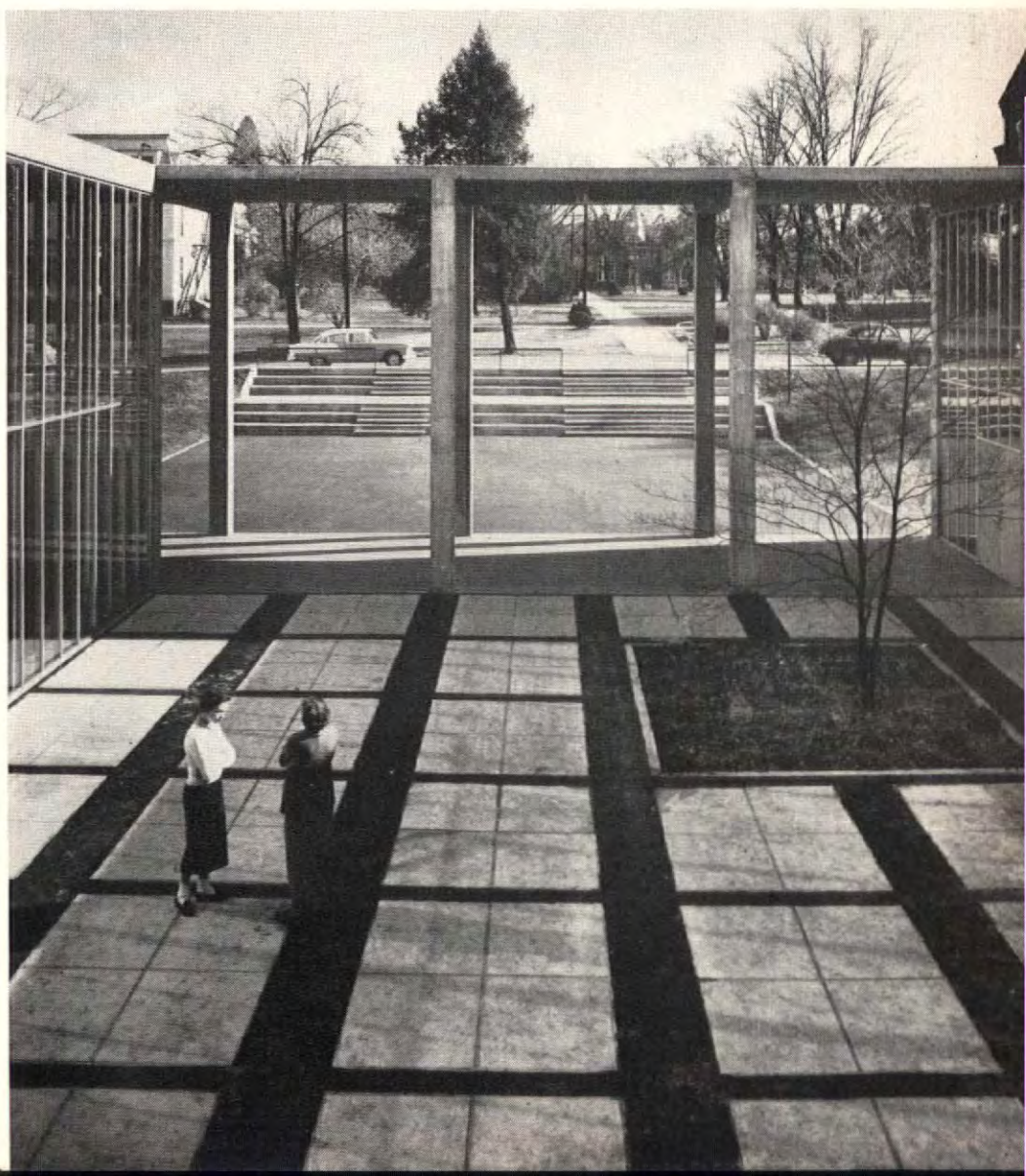
## cool classic discipline with warm romantic proportioning

This marriage of the classic and romantic is a form of architectural expression we do not often see. Its most notable examples have been the work of the elder (Eliel) Saarinen, whose superb elegiac design blended these same two veins of the classic and romantic.

But Architects Schweikher & Elting are by no means imitating the elder Saarinen. They arrived at the Maryville chapel in their own way, by their own route.

The earlier work of this firm was thoroughly, knowingly and skillfully romantic. (For a 1951 example, see opp. p.) Given this point of departure, and given also the opposing, pervading influence of contemporary classical—the influence which now dominates contemporary architecture—the Maryville chapel is a logical, interesting and sensitive development in the work of this firm. A very personal development.

**Colonnade** proportions make two-story building tall, monumental. Comment by dean of curriculum: "The upended rectangles send the eye and spirit upward." Unfortunately colonnade does not lead visually into court, but off to side. Proposed bell tower near entrance may help.







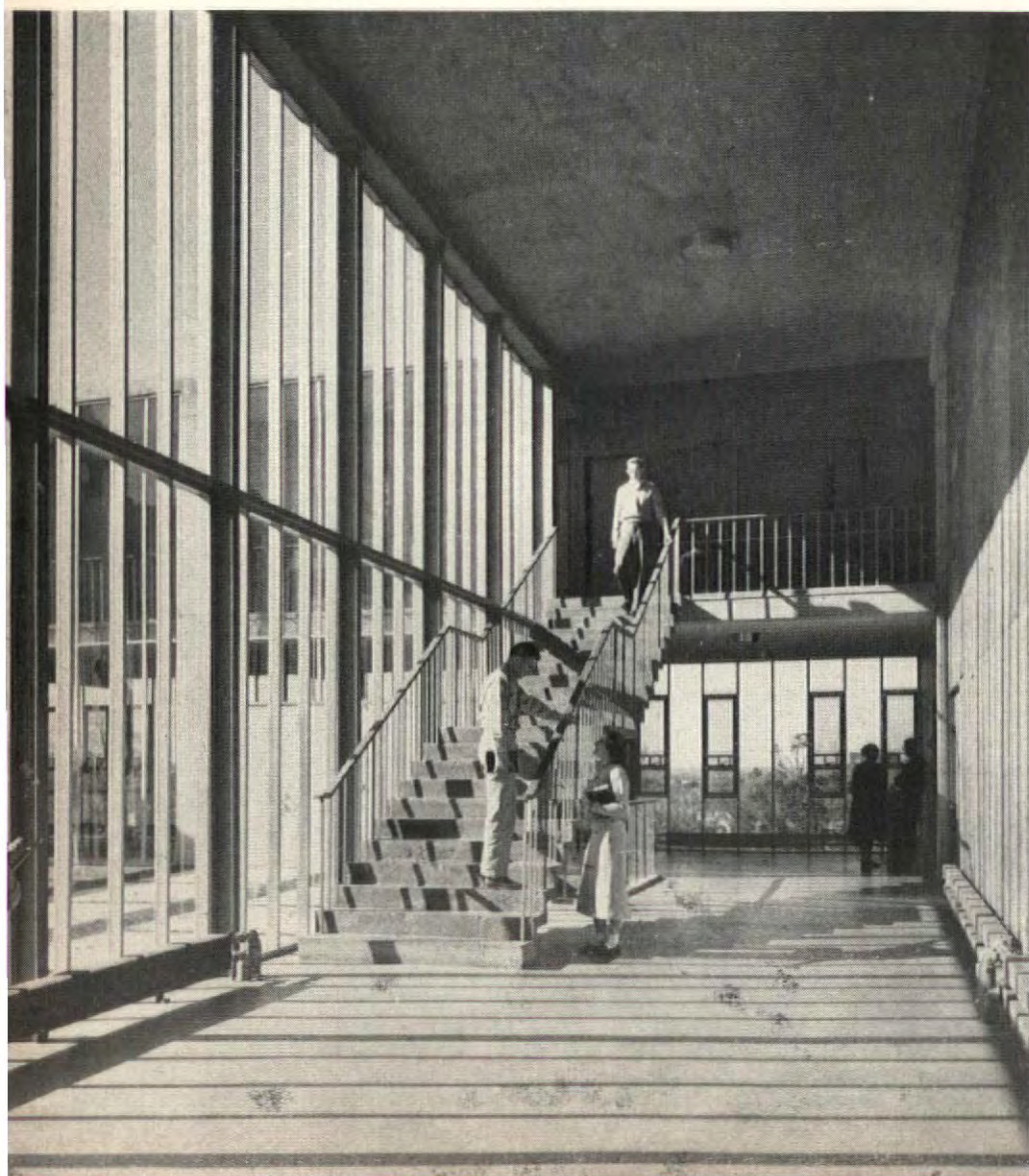
Photos: Frank Lotz Miller



**Small chapel** for meditation, weddings, has effect of untextured whiteness (painted plaster), distinctly different from warmer, earthier effect of other rooms. Aluminum-screen window treatment is also distinctive for this room.

**Classroom windows** have same aluminum grid as used in all open bays. Full chalkboard wall is handsome and used with freedom. Flaw: with no chalk rail, dust falls to floor.

A variety of panels within an undeviating, dominating frame

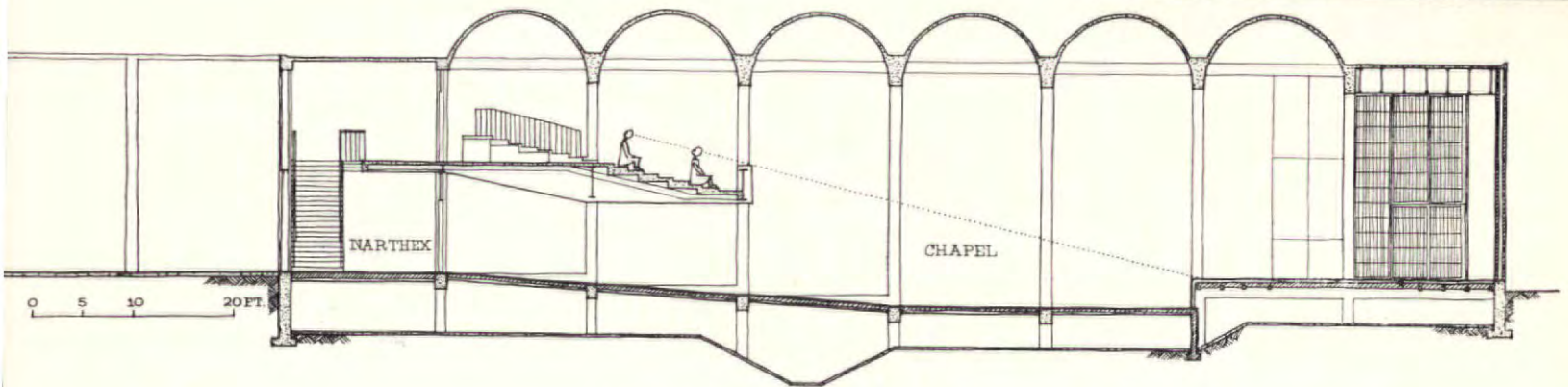


Inside and out, structure is exposed and emphasized. Structural and nonstructural parts are "joined by separation." Masonry panels are separated visually from the concrete frame by deep-raked perimeter joints, and the nonstructural quality of the panels themselves emphasized with unusually fat, untooled mortar joints. All bays are clearly "open bays" or "closed bays." Open ones are organized with an aluminum grid which receives, with the same section, fixed glass, sash, door frames and aluminum-plywood panels. Stairways are freestanding; railings at stairs and balconies do not meet walls or columns. Interior plywood sheets are held apart, with the framing behind them painted black. The vaulted auditorium ceiling has an acoustic block finish which stops at the beams. (The college is delighted with the acoustics.)

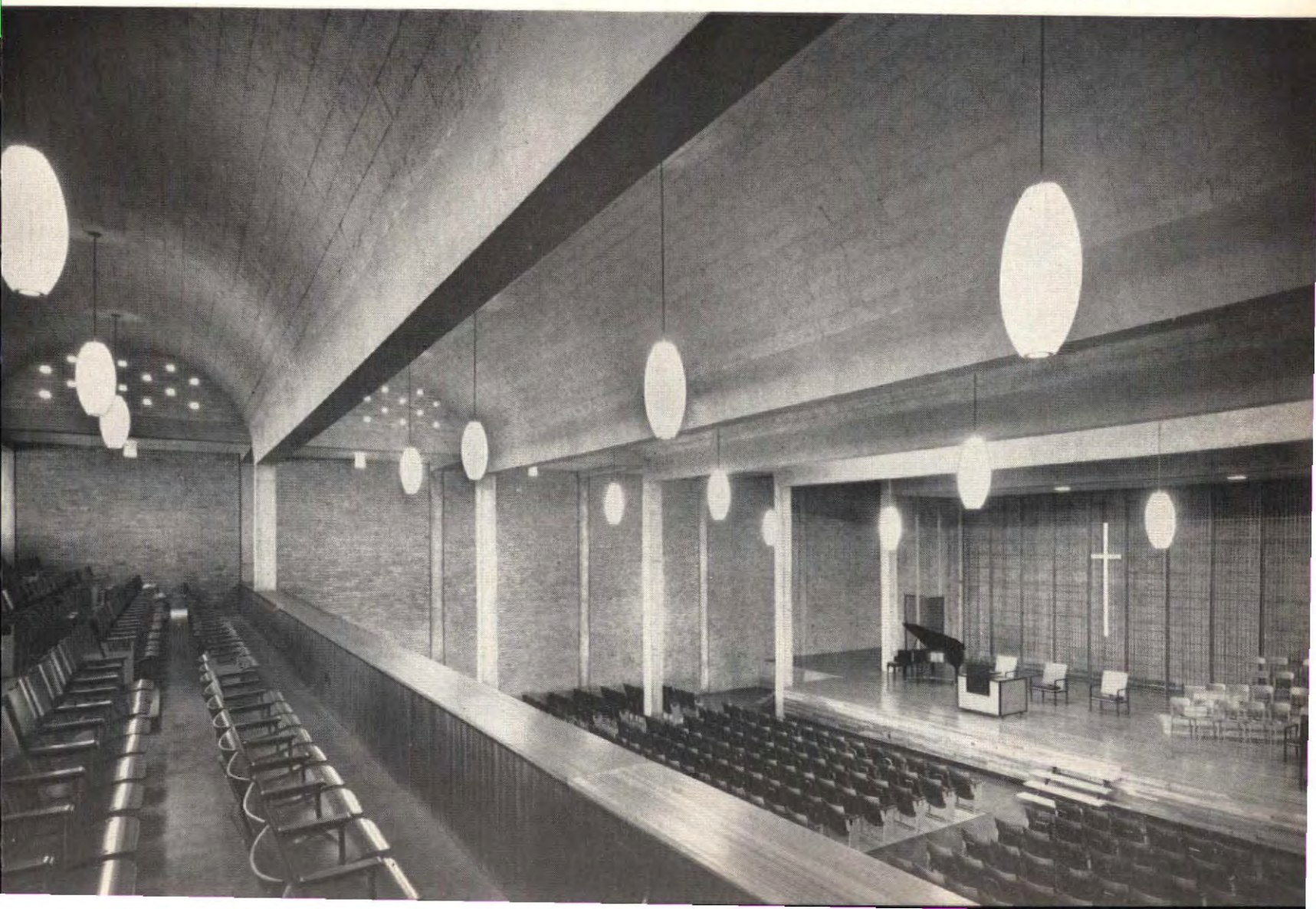
Concrete is left as it came from the forms, aside from inevitable touching up. The idea was to exploit its texture, but the effect is somewhat dingy, not up to the other finishes. Given the problem again, the architects would probably plan to finish the concrete surface while still preserving a rough, unrubbed texture.



**Theater** seats 450, has standard-sized stage and first-class production facilities. Ceiling is hard sand-finish plaster, sides brick, back plywood. Acoustics are reported excellent.



**Auditorium** seats 1,200; balcony sight lines totally exclude view of audience below









# THREE COLLEGE DORMITORIES

Three residence groups that happen also to be interesting as regional architecture: metal and matter-of-factness in Pittsburgh (p. 157), rough-cut ruggedness in Ft. Collins, Col. (p. 158), and, below, delicate, deep-shadowed galleries in New Orleans

## 1. BOAT DECKS FOR TULANE

Here is the happy instance of design that looks thoroughly in touch and in sympathy with the joy of living and turns out to be as practical as they come.

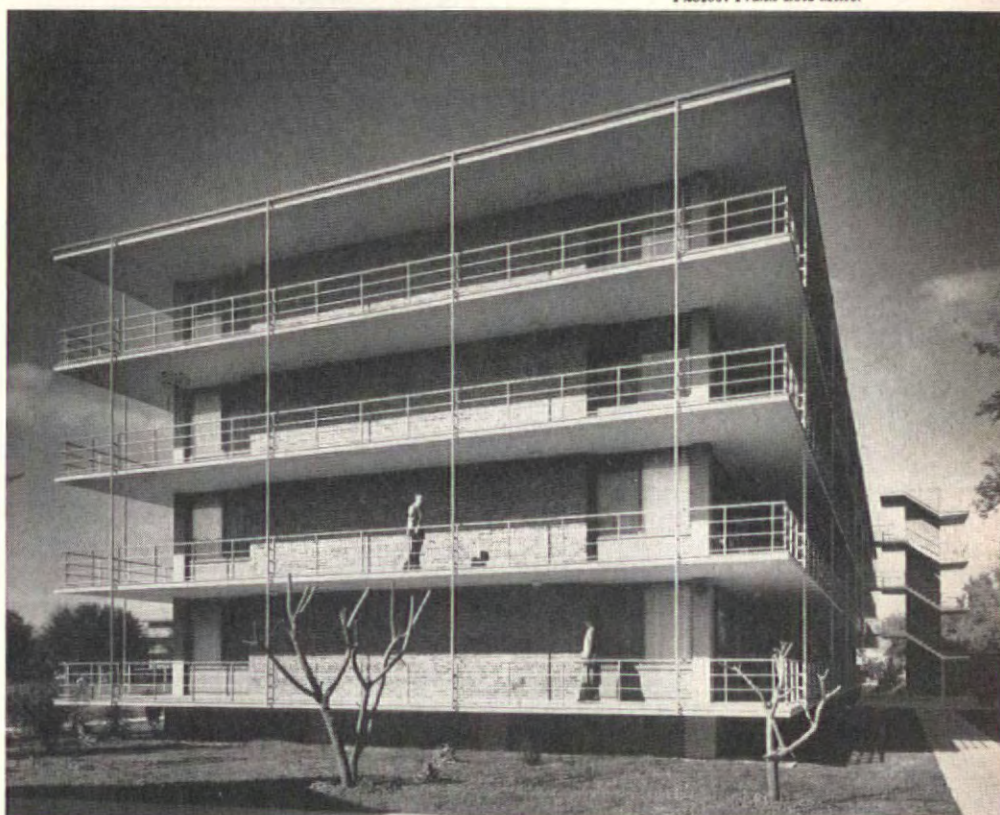
The direct inspiration for these two dormitory buildings was the gallery-encircled Louisiana plantation house (for an example, see p. 107), which in turn took its inspiration, so they say, from the many-decked Mississippi steamers. Along the Gulf, where it is often most comfortable to leave windows and doors open when it rains and where the best lounging space is in breeze-catching outdoor shadows, this gallery-and-outdoor-stair architecture still makes excellent sense. And in this scheme, the architects have added still other advantages: with the galleries used for circulation, they were able to back rooms against an economical consolidated utility core. With stairs removed from inside, every bay on the three upper floors could be economically identical in structure. (The floor level of public rooms on the ground floor is dropped 2'-11" below the bedroom level.) Design was for either lift-slab or flat-plate reinforced concrete; the reinforced concrete bid proved lower.

These are the first Tulane buildings done under a new policy of design control by the School of Architecture, whose office of planning research prepared preliminaries from which three firms of associated architects (all Tulane alumni) developed final plans.

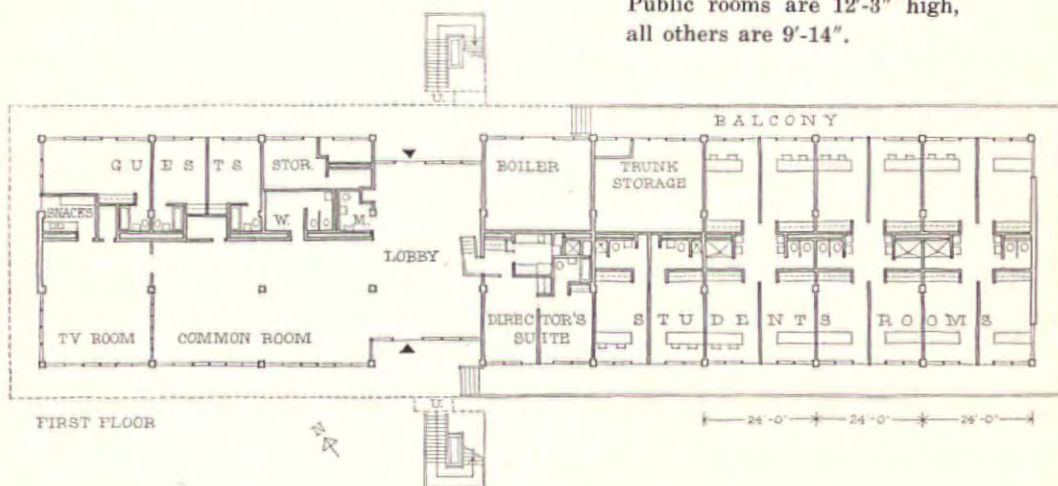
The buildings house 452 students. Cost, including fees, was \$1,343,120; \$11.41 per sq. ft. figuring galleries as full space. Cost per student, \$2,970.

**Galleries,** cantilevered out 7', serve as corridors, extra study-sitting space, rain and sun shields.

Photos: Frank Lotz Miller



Plan of two-level ground floor includes typical bedroom bays. Public rooms are 12'-3" high, all others are 9'-14".



ASSOCIATED ARCHITECTS: Freret & Wolf; Andry & Feitel; Ricciuti, Stoffle & Associates

DESIGN CONSULTANTS: Buford L. Pickens, John W. Lawrence,

George A. Saunders & John Rock, Tulane School of Architecture

GENERAL CONTRACTOR: Farnsworth & Chambers Co., Inc.

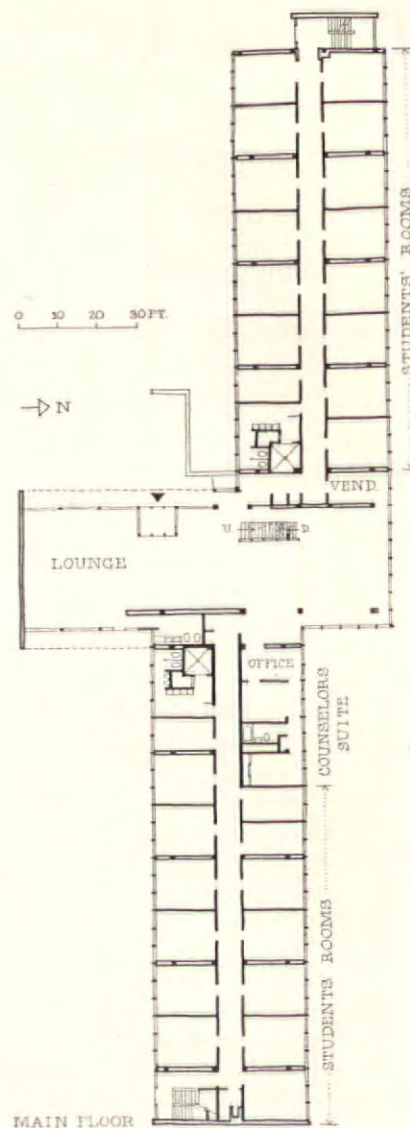
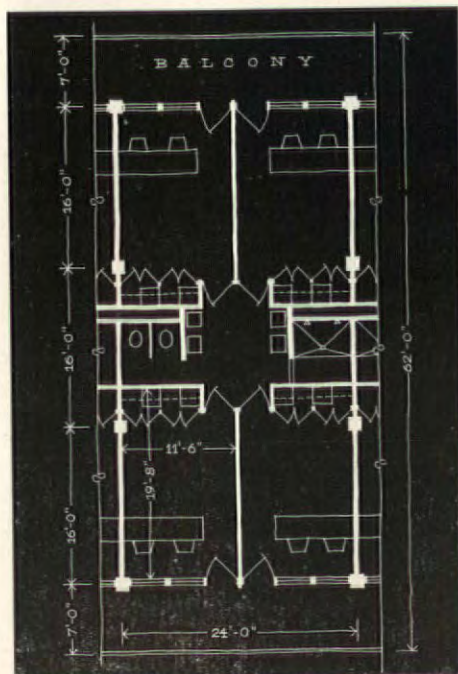




**Open stairs** and landings are cantilevered from rectangular center pylon, creating handsome sculptural effect. Thinned edge of slab gives profile visual lightness. Delicate railings grow out of New Orleans' tradition of wrought iron.



**Students' rooms** back on bath and toilet units shared by eight students; scheme combines economy of gang units with location convenience of private units. One bay on each typical floor contains cross-corridor between stairs, large study hall, master's room.

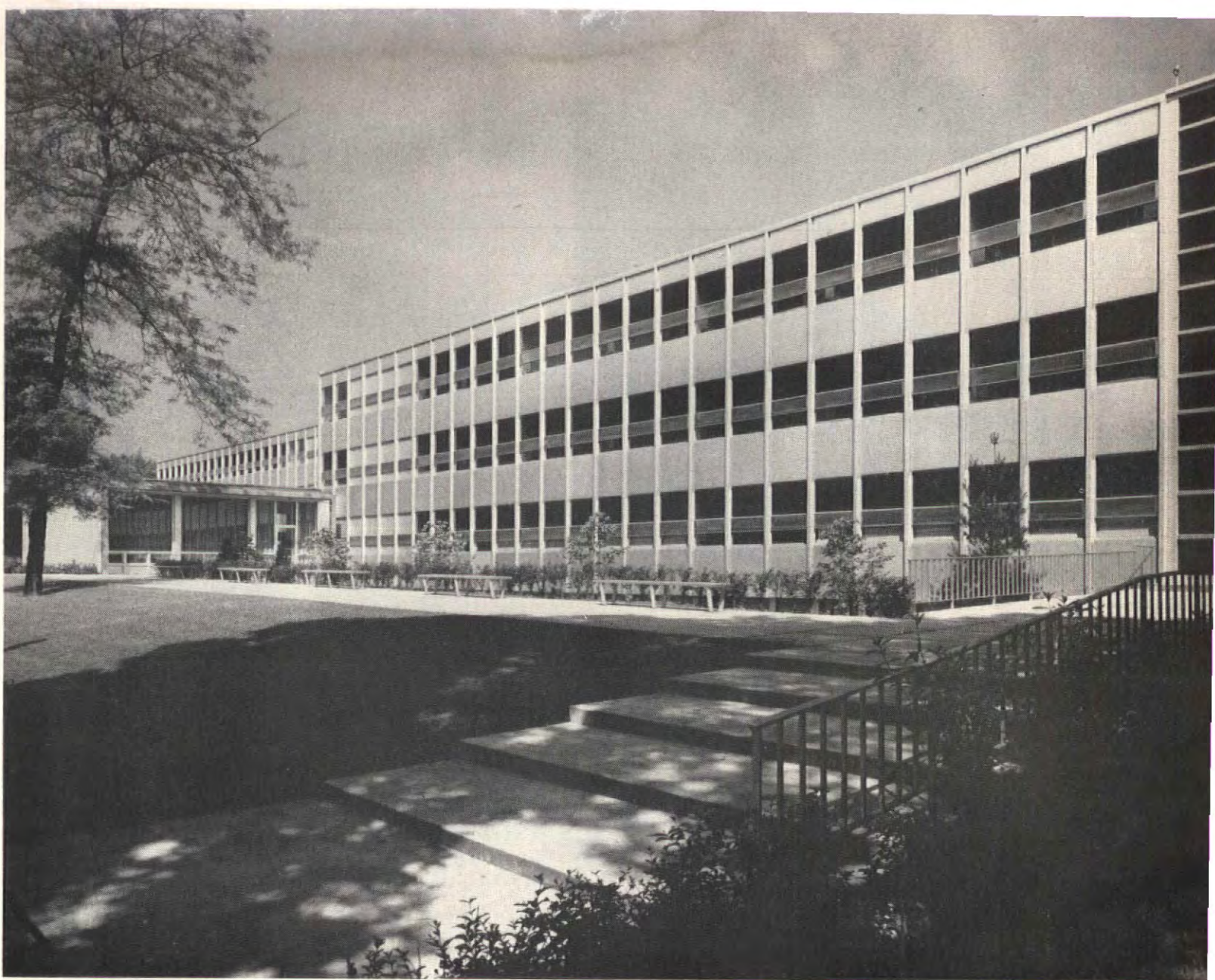


## 2. ALUMINUM AND

It may be stretching things to designate this residence as a regional expression for Pittsburgh because it is the sort of building that can and does turn up everywhere. But it is a forthright expression of industrialization—workaday industrialization—with rather more than less of Pittsburgh's metal in it. If it is found in other places, perhaps the other places have been, in effect, Pittsburgh-ized.

The building's most interesting point, aside from its enlivening of a hitherto drab and exceedingly conservative campus, is its aluminum curtain wall. The rectangular spandrel panels have an absolutely smooth, precise surface. No stampings, no castings. Each panel is an inverted 2"-deep pan, formed from 0.125" sheet aluminum, braze welded at the corners. The result is a rigid, drumlike structure; instead of oil-canning, the metal expands evenly in four directions. The panels interlock with the aluminum mullions. The panel surface is etched a frosty white, mullions are gray, upper lights in windows are blue-green,





Photos: Marc Neuhof; (opp. p.) Frank L. Miller

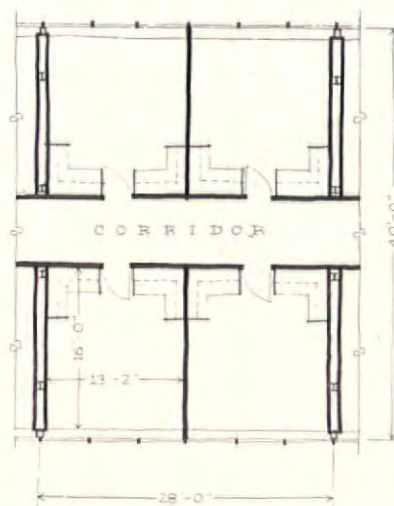
## STEEL FOR CARNEGIE TECH

ceramic tile end walls are green.

Framing is steel with concrete floors on steel decking over steel joists. Spandrels are backed with concrete block.

The building sets into a slope overlooking the football and track practice bowl; its lowest level incorporates an athletic field house plus employees' quarters and services. The great length of the building is mitigated by its division into two wings, joined on the second and third (main) levels with social areas.

The residence houses 243 students. Cost, including fees, was \$991,000; \$14.61 per sq. ft.; \$4,080 per student.



**Dormitory rooms** are on four upper levels with field house at lower slope ground level. Main floor (see plan, p. 156) is the third, at ground level on upper side of slope.

ARCHITECTS: Mitchell & Ritchey  
 STRUCTURAL ENGINEER: R. A. Zern  
 MECHANICAL ENGINEER: T. Rockwell  
 ELECTRICAL ENGINEER: Carl Long  
 LANDSCAPE ARCHITECTS: Simonds & Simonds  
 GENERAL CONTRACTOR: George R. Chilli



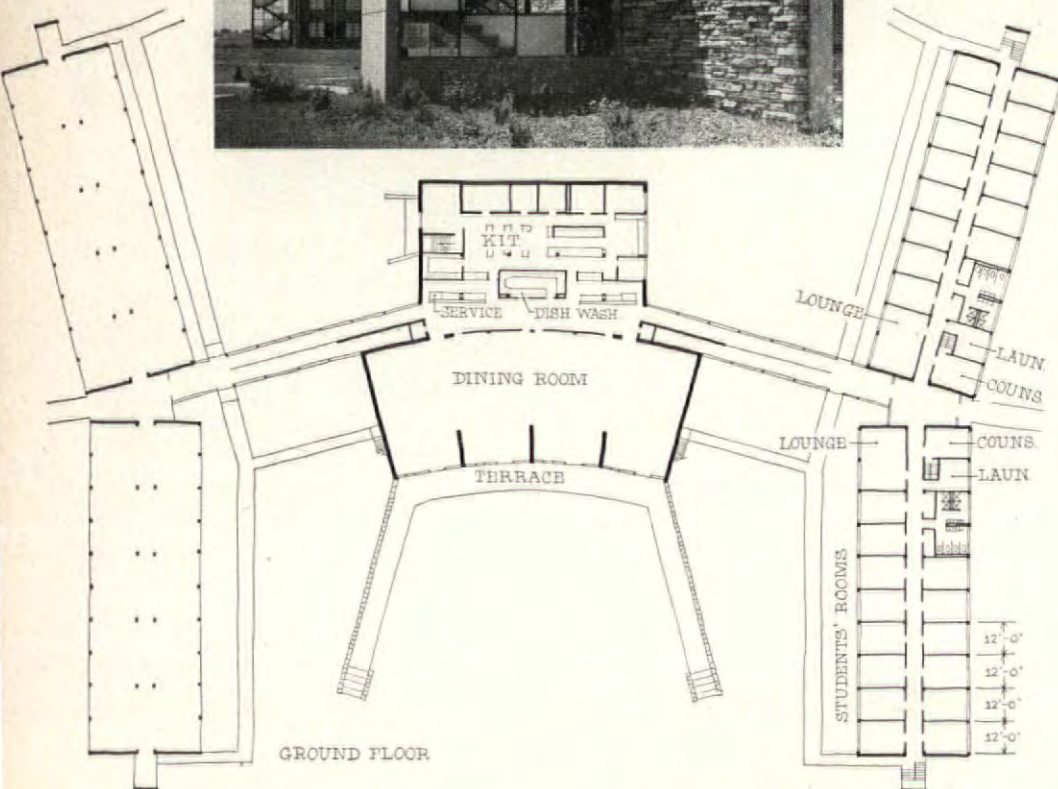


### 3. STURDY ROUGH-HEWN

The photographs show how pleasantly this residence group echoes the ruggedness of its mountain setting and is pierced with hints of the limitless surrounding space. Like the very different Tulane dormitories, this group succeeds in being romantic and evocative without affectation.

What the photographs do not tell is the social experiment the building represents. To get away from the hotel-like residence and approach more closely the fraternity or sorority-sized community, the dormitory is divided into four 100-student units linked to central facilities. (A huge balconied lounge is above the dining hall shown in the plan, left.) The scheme is considered by the administration as a subtle method of teaching the amenities of living within manageably sized groups. Architect Hunter rejected the aim of "indestructibility," banked instead on students liking their quarters so well they would respect the fragility of glass walls or shoji screens. Both the women who now occupy the building and the men who preceded them temporarily have justified his reasoning. Four more almost identical groups are built, building or in plan for a total of 2,000 students.

Cost, including fees, \$1,315,728 or \$13.28 per sq. ft.; \$3,290 per student.

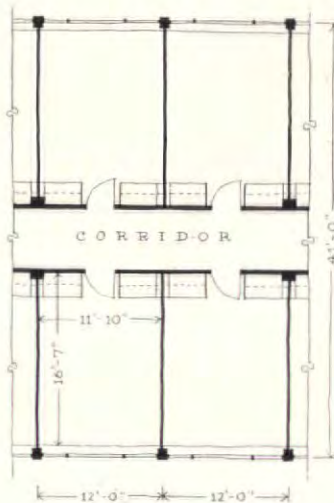


Central service block has kitchen below, administration above





## ROCK FOR COLORADO A & M



ARCHITECT: James M. Hunter  
GENERAL CONTRACTOR:  
Mead & Mount Construction Co.

**Dormitory rooms** are equipped with sliding shoji cloth screens at windows, which are also sliding. Closet-bureau units are unusually well worked out for personal storage.



*Photos: Warren Reynolds*

**Glazed arcade**, ramping down from second story, leads from central block to dormitory wing. Stone wall at left encloses part of lounge. There is nothing rough about way roughcut stone was laid.

**Stone end walls** are repeated, inside and out, at central lounge, dining and service areas, dormitory stairhalls. Curtain walls are porcelain enameled steel and glazing set in steel grid.





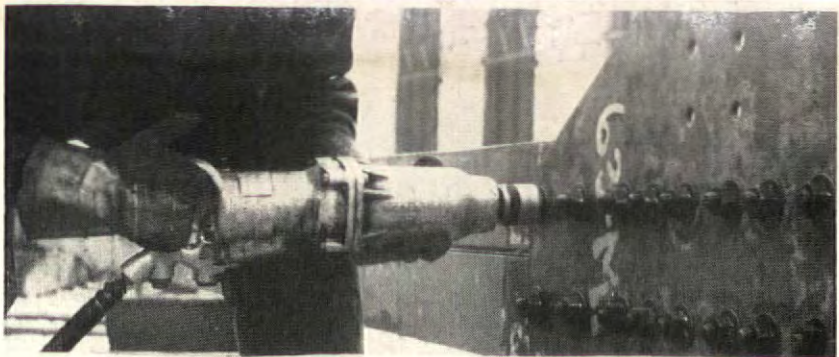
# TECHNOLOGY

New ways to fasten structural building materials (below)

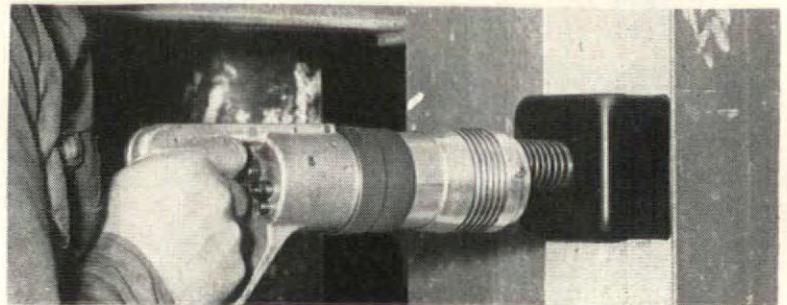
A sway-back roof of steel plate for a 115' span (p. 164)

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BOLTING

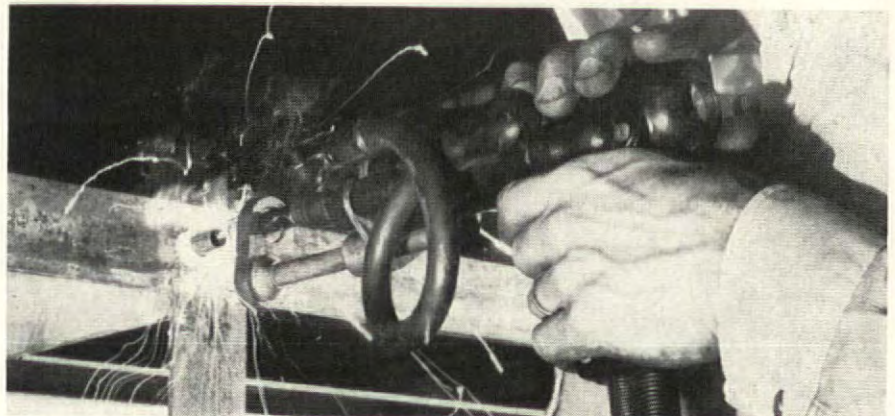


POWDER-ACTUATED FASTENING



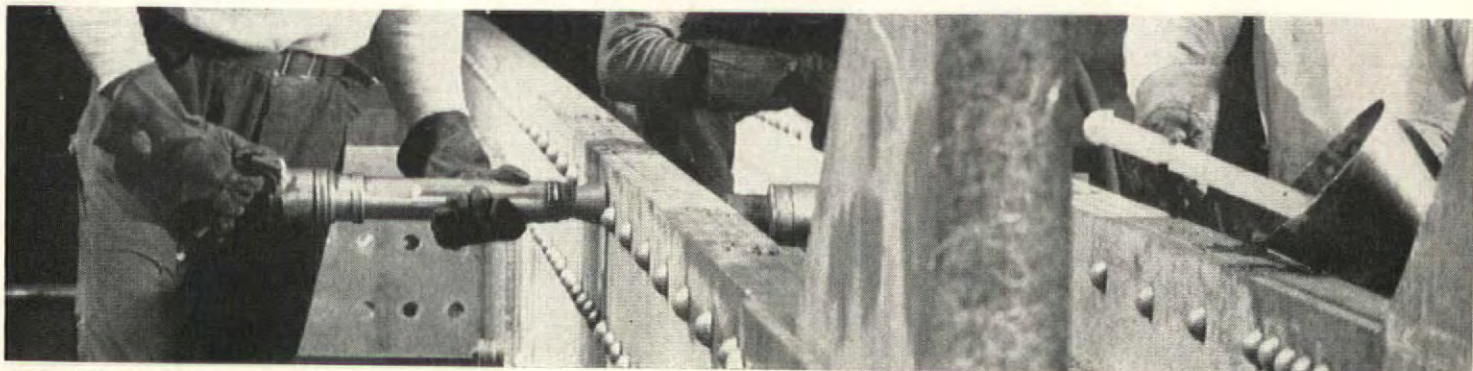
Paul Dorsey

WELDING



KSM Products, Inc.

STUD WELDING



Associated Photographers

RIVETING

## NEW TRENDS IN STRUCTURAL FASTENING

*In the builder's search for faster, stronger connections gunpowder, electricity and the impact wrench are moving in on the rivet gun*

The problem of knitting together a structure composed of variegated materials in a bewildering array of shapes and sizes into a sturdy whole has always been a major concern to architect, engineer and builder. Moreover, the problem of making connections between elements has been complicated by the requirements of the

connections themselves. Rigidity, flexibility, strength, lightness, speed economy and simplicity have all at one time or another been sought for fastening devices and methods.

In 1952 less than 2% of all structural steel was bolted together, in 1955 almost 17% was bolted. By 1960, some authorities believe that bolting will pass riveting on a percentage basis. Meanwhile, bolting sets records along the way. The 38-story Fifth Ave. building adjoining Rockefeller Center with 13,000 tons of steel will be the tallest building yet designed for nut and bolt. (Architects are Carson & Lundin.) Weld-

ing, too, is making headway as a fastening method. The tallest all-welded steel building so far is Architect Preston Geren's 30-story Continental Bank building in Fort Worth.

Riveting, because of the availability of equipment and the years of reliable experience in its use, though losing ground, is still the major field method of fastening and still holds its own in shopwork.

Two methods of applying fastening studs are also gaining in new uses and popularity: 1) stud welding applies a threaded, or plain stud to metal by means of a special electrical resistance gun, and



2) powder-actuated tools fire studs of various kinds into metal, concrete or wood. Stud welding was used to make a fastening for the curtain wall panels of the Mile High Center in Denver; gun powder was used to make the connection for the aluminum curtain wall on the office tower at 625 Madison Ave. in New York.

A review of these trends starting with stud welding and going on to powder-actuated tools, bolting, riveting and welding follows:

### Stud welding

Basically, stud welding is an electric arc welding process developed to affix fastener studs to steel surfaces. The equipment—stud welding gun and timer control unit—is operated by standard electric or gasoline driven DC welding generators. The special studs contain their own flux (different companies have their own methods of making studs, although the gun is fairly standard) and when welded the bond is stronger than the stud itself.

Newest uses of stud welding are for attaching roofing and siding (of various materials) for making anchoring studs for windows (first used on the UN building) for attaching metal curtain wall panels (Mile High Center) and for shear connections for concrete slabs resting on steel beams.

A new stud weld fastener with an aluminum cap permits faster field assembly and improves the appearance of insulated metal sandwich walls. This fastener, when in place, has a holding power of more than 800 lb. on a direct pull.

Rust and galvanic action are prevented by use of the new studs and the aluminum caps. The method also avoids drilling of structural members and the use of tees or channel spacers, and all of the work is handled from one side.

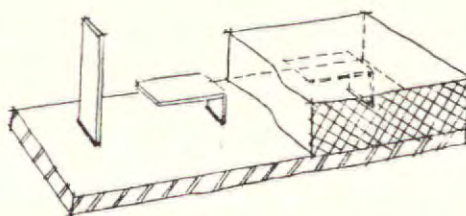
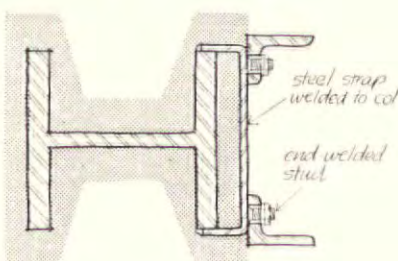
In fastening curtain walls, as at the Mile High Center, a series of straps, like the rungs of a ladder, were welded to the column and left with an exposed surface when fireproofing concrete is poured around the column (see sketch). The studs are welded to these straps and a tie is made to the panel by means of angles and bolts or welds.

The latest use of the stud weld technique is in bridge building, but it has a future in building construction, too. This is to make composite structures by the use of shear connectors.

A composite structure is one in which the concrete slab is integrated with the

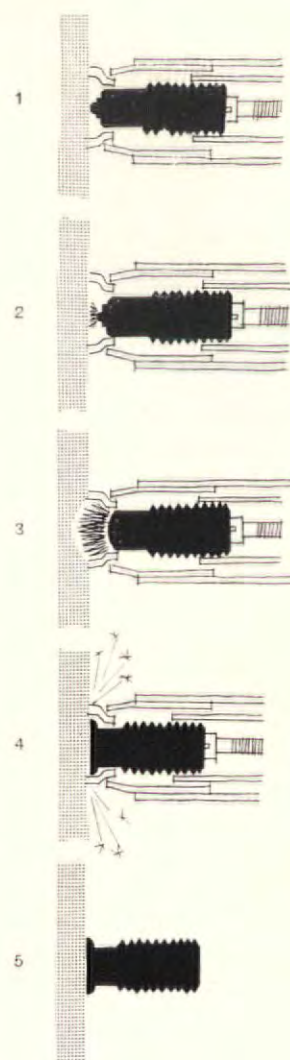


STUD WELDING  $1/2'' \times 1/2''$  threaded studs to a series of ladder-rung straps provided fastening anchors for curtain wall of Mile High Center in Denver.

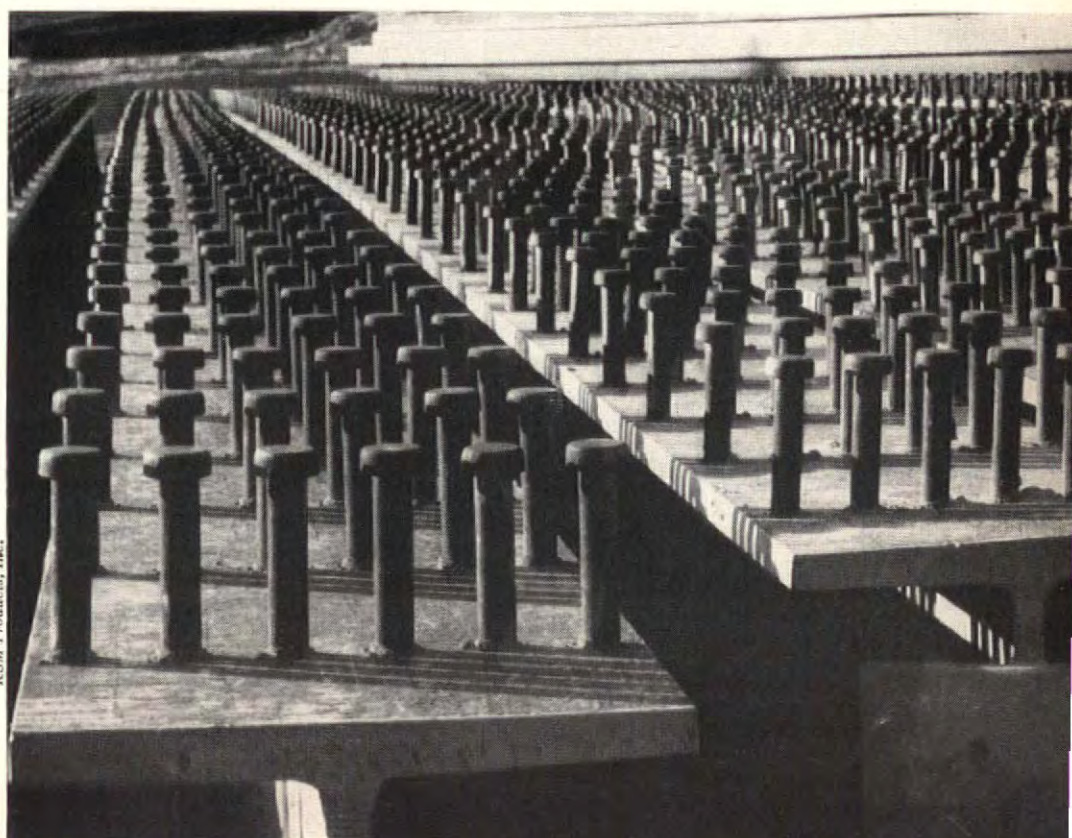


RECTANGULAR STUDS are end-welded to plate and bent for use as key for plaster or other plastic coating.

SHEAR CONNECTORS on beams were made with large-size stud welding gun and studs.



HOW STUD WELDING WORKS: 1) Gun is pressed against work. 2) Trigger pulls stud slightly away from work. 3) Portion of stud and work are melted by electric arc. 4) At end of arcing period (set by timer) stud is plunged into molten metal. 5) Gun is removed.



KSM Products, Inc.



supporting steel beams. This design permits lighter structural members than would be necessary on a noncomposite structure where the slab is allowed to float freely.

To accomplish this, a shear connector is required to bind the concrete slab to the beam, preventing movement between the two, and at the same time, transferring the horizontal shear from one element to the other. The connector is rigidly attached to the top flange of the beam and is imbedded in the concrete.

A series of heavy studs can be substituted for equivalent lengths of channel, bulb angles or heavy wire spirals (the usual shear connectors) to make effective connectors.

Rectangular section studs, another new development, are useful for keying for plaster and for chair seats for wire lath and wire mat reinforcement.

#### Powder-actuated tools

The powder-actuated fastening tool, described by some engineers as the most significant advance in construction fastening since the rivet, is also making strides in the building field. Sales of tools and fasteners are more than 12% higher than last year's sales. And builders are still finding new time and money-saving uses for it.

The powder-actuated tool works this way: a force generated by a specially loaded powder cartridge is used to seat a specially constructed fastener into suitable materials. It fastens together such building materials as steel, concrete and wood. It cannot be used to join such brittle materials as tile, hard-faced brick, sandstone and fieldstone.

Use of the tool eliminates the usually necessary steps of drilling, chipping and plugging of concrete. Used with steel it does away with the necessity for drilling, bolting and clipping.

The average time to install a fastener by powder-actuated tool is about one minute.

There are two main groups of fasteners, simple ones used for nailing operations and more complex ones with internal and external threads. The simple fastener is used to connect steel to concrete, wood to steel, steel to steel, steel to brick or fabricated hard materials to steel. The threaded fastener is set into the material and other devices or materials secured to it.

Fasteners seated with a powder charge are capable of supporting heavy loads. The

Pittsburgh Testing Laboratories determined that fasteners  $\frac{1}{4}$ " and  $\frac{5}{8}$ " thick in carbon steel have a holding power of 2,175 lb. and 7,090 lb. respectively.

Underwriters Laboratories discovered that it took a pull of from 3,300 to 5,000 lb. to extract powder-actuated fasteners from concrete blocks after they were subjected to about 2,000 vibrations per minute for 115 hours. This led to underwriter approval of this method of fastening for sprinkler systems.

One of the newest uses of the powder-actuated tool is in the hanging of the new aluminum curtain wall panels on the 20-story renovation of 625 Madison Ave. in New York City. The tool was selected because speed was essential. The contractor estimates that one man sets 15 studs in the time it formerly took two men to drill out one hole by other fastening methods. After the studs were set in the concrete a slotted angle bracket was bolted to them. The aluminum panels were then fastened to the bracket.

#### Bolting

By far the most experiment and investigation is going into the use of high tensile bolts in making construction fastenings. The literature of bolting grows daily, and its invasion of the rivet's traditional field is rapid, although far from complete.

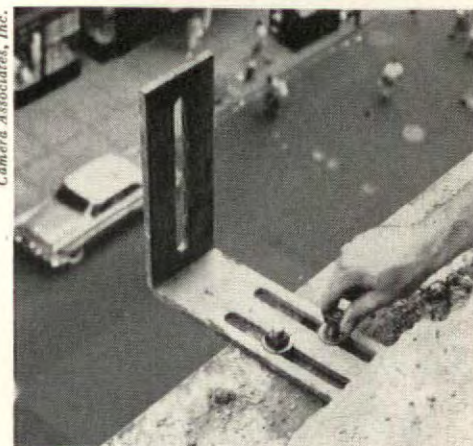
Most engineers look forward to a day when bolting will be as economical on a pound-for-pound basis as riveting is at present. (Bolting's advantage still is in labor saving rather than material cost.) That day will come when design rules for bolted joints are developed which do not depend on rivet design rules. Now, although a high tensile bolt is admittedly 1.5 times stronger in shear than a comparable rivet, the American Institute of Steel Construction recommends only that "... bolts of the same nominal diameter may be substituted in any joint for rivets ..."

Here are some recent conclusions from the large body of test and experiment on high tensile bolts and bolted joints:

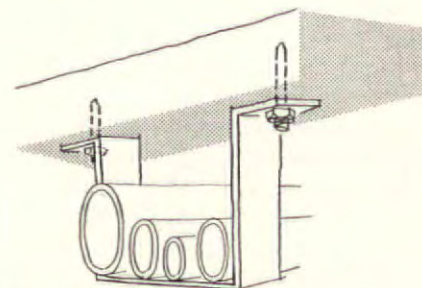
- ▶ Bolts (installed according to specifications) will not loosen.
- ▶ While shear strength of a high-tensile bolt is 1.5 times that of a rivet, bearing capacity is not increased so long as the plate material remains the same.
- ▶ Statically, bolted joints cannot be weaker than comparable riveted joints; and will be stronger, even though insufficiently



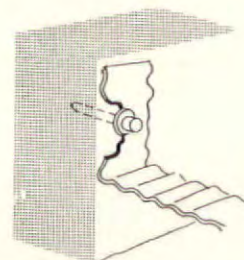
Camera Associates, Inc.



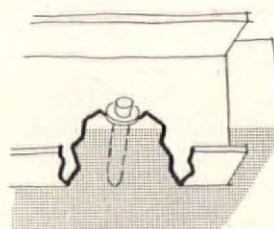
**POWDER-ACTUATED TOOL** is used to fire stud into concrete to anchor angle bracket. To this is fastened aluminum curtain wall of building at 625 Madison Ave.



**BRACKET** for hanging pipe is fastened by powder-driven threaded-end stud.



**BRICK TIE** is attached to concrete wall or block by powder-driven shouldered stud.



**STEEL CHANNEL** or wire way is attached to concrete floor, wall or ceiling by stud.



tightened to prevent slip, in cases where bearing does not govern.

► Bolts are not subject to fatigue. The fatigue strength of the bolted joint at 2 million cycles is greater than the maximum stress permitted statically.

► Bolted joints can be relied upon to resist slip at working stresses.

► Bolts tightened beyond the minimum requirement do not adversely affect the static or fatigue strength of the joint.

### Rivets

But all of this cumulating data on bolting has not halted attempts to achieve more economical riveted joints, and better rivets. At present some studies are being made of the effect of bearing pressure on the strength of riveted joints. The point at issue is the ratio of unit tension to unit bearing, which at present varies from 1:1.5 (bridges) to 1:2.0 (enclosed bearing in buildings). This ratio is considered unduly conservative and is thus compelling the uneconomic addition of rivets, or undue thickening of main material. Despite some difficulty in isolating this design factor in actual joints, a move to increase the ratio and thus reduce the number of rivets is under way.

Rivet pattern, too, is under study, looking forward to a more efficient joint. However, the results here are not encouraging for someone looking for a startling change in design. Results, so far, indicate that it is impossible to obtain efficiencies higher than about 87% even for plates with drilled holes in laboratory tests.

Other test results:

► Little difference in unit stress at failure is found for rivets of varying diameters.

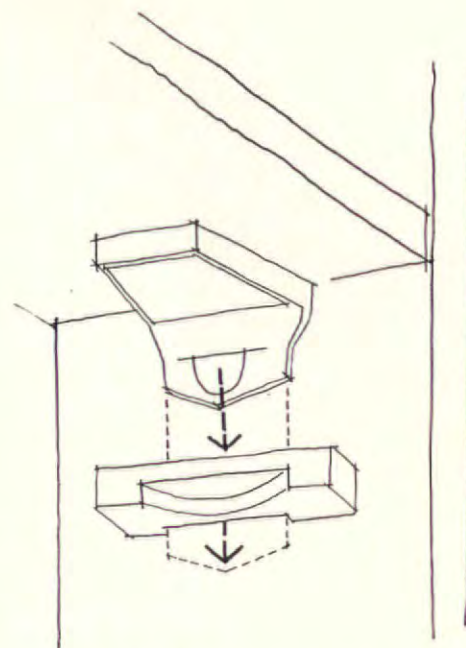
► The method of rivet manufacture and the method of driving has little effect upon the ultimate strength of rivets.

### Welding

A lot of information has been accumulating on behavior of welded steel structures in the last 15 years. One of the newest areas of research is based on the economies resulting from the application of the plastic theory of analysis based on the true ultimate load capacity of rigid frames and other types of continuous construction. Welded details and connections with their greater inherent rigidity and compactness, and calculable degree of rigidity, permit design assumptions to be realized more accurately. Although most engineers would be loath to reduce the

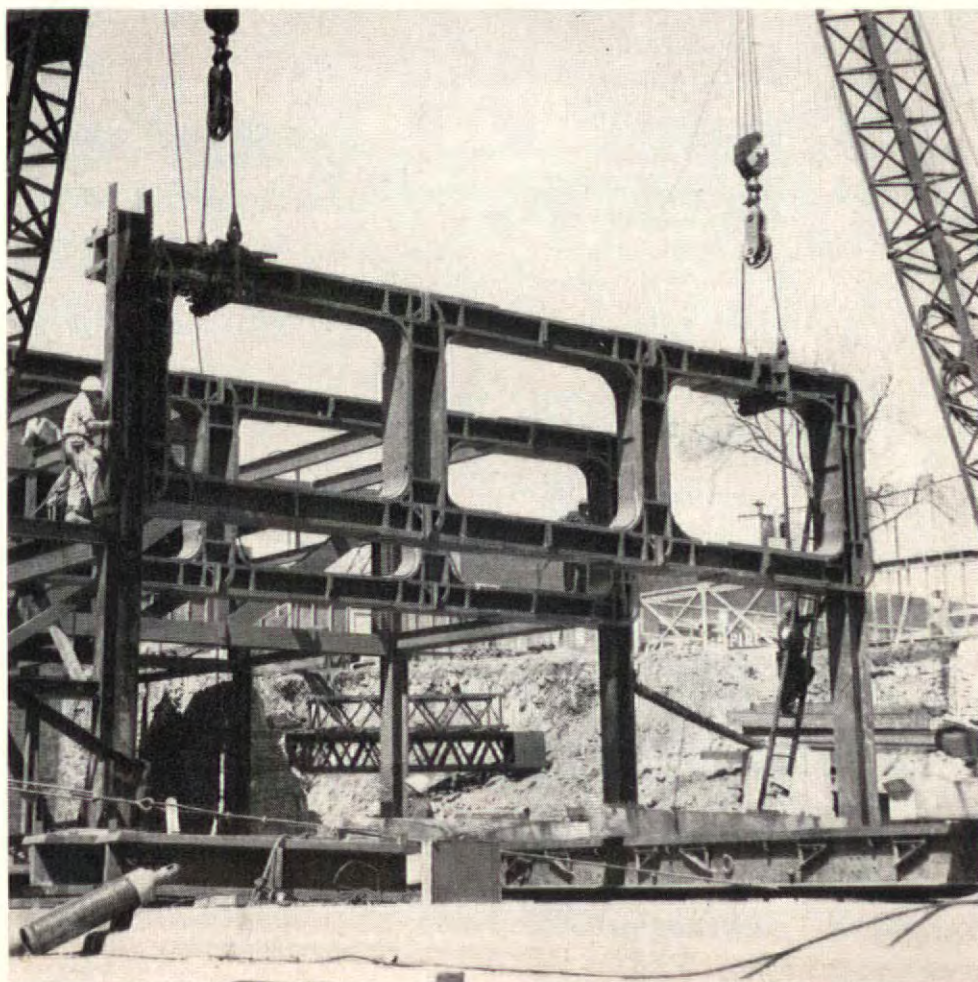
safety factor (a step which may be justifiable) a reduction in costs is possible anyway. Researchers at Lehigh University have formulated rules of design to take advantage of cost saving by using welding with ultimate strength design. The rules are based on the recognition that plastic "hinges" occur at beam ends even though they are not recognized in conventional design. (Conventional design assumes freely hinged ends.)

In advanced stages of loading of continuous frames designed by this method, plastic "hinges" occur, successively, at the various locations of maximum bending stress, thus redistributing bending moments to other less highly stressed portions or locations in the structure. The maximum useful moment capacity is therefore utilized at more locations. A balanced design results and material is used more efficiently. In some cases, only welding will permit full realization of the economic benefits of this method of design.



**WELDED CONNECTIONS** eliminate temporary field bolting by clipping members together. The connections position the steel into a self-supporting rigid structure before welding and thus aid in alignment.

**WELDED TRUSSES** of Vierendeel type are used for Hartford, Conn. public library. Welding was considered the "one best" means of putting together these huge trusses. This half section weighs about 54 tons.







STEEL BLANKET of  $\frac{1}{4}$ " plates forms roof over gymnasium. Strips of  $3" \times 3" \times \frac{1}{4}"$  angle are welded to seams for rigidity.



VERMICULITE CONCRETE 3" thick is poured over deck for fireproofing, insulation. Concrete weighs 25 lb. per cu. ft.

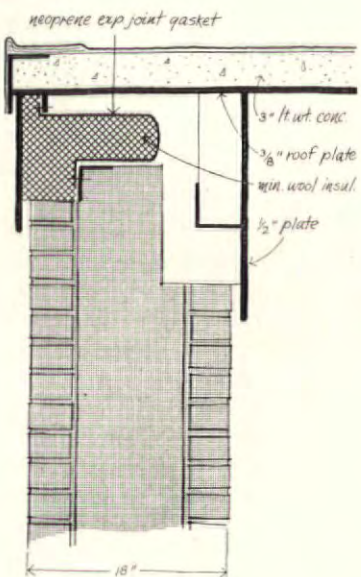
HANGING ROOF, suspended from the H-columns at each end of building, sags 10' at center, 11' at the edges for drainage.

## SUSPENDED STEEL BLANKET ROOF

*Steel plates welded together form 122' x 156' roof and an unobstructed gymnasium for high school*



WELDED SEAM OF PLATES



NEOPRENE GASKET AT EDGE

The first of its kind, a 150-ton steel blanket forms a clear span roof over the gymnasium of the Notre Dame High School in Niles, Ill. Because the steel blanket is hung from columns on the end walls the roof has an unusual saddle shape, sagging 10' in the center and 11' at the sides.

Most of the roof was fabricated of  $\frac{1}{4}$ " steel plates each about 8' x 29', lap-welded into one continuous sheet; the end and side plates are a little thicker— $\frac{3}{8}$ ". Parallel lines of  $3" \times 3" \times \frac{1}{4}"$  continuous angles were welded to the longitudinal seams of the plates in an inverted "L" position. Besides stiffening the roof, the angles served as a screed for the pouring of the 3" concrete roof deck.

The entire roof is supported by 20, 36" w.f. 260-lb. columns, ten at each end wall. These columns are 34' high (from floor to roof line) and spaced 11' on centers. Non-bearing side walls consist of two 8" thicknesses of brick with an insulating air space between.

Overturning moments induced in the end columns by the horizontal forces of the roof are resisted by the concrete bleachers at either end of the gymnasium, which were designed to act as buttresses.

A continuous neoprene molded gasket along the side walls seals the blanket roof at the sides and the loose fit—a  $1\frac{1}{4}"$  space—permits expansion and contraction of the roof.

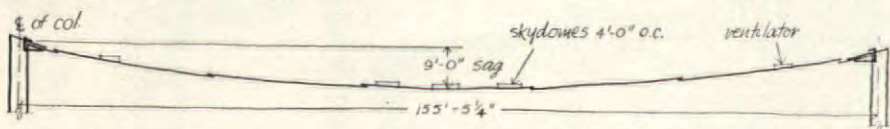
A 3" layer of 1:8 mix of lightweight (25 lb. per sq. ft.) vermiculite stabilized concrete was applied to the roof deck's 19,980 sq. ft. This gave the roof the lightweight, fireproofing and insulation required. The unusual shape of the roof necessitated using a drier-than-usual mix when making the pour.

Welding and fabrication of the roof took about three weeks; the concrete roof pour took about three days.

The roof is pierced by 15 skydomes, each 4' in diameter, and by 10 ventilators, which are also 4' in diameter.

The cost of the roof (steel structure only) including design, fabrication and erection was estimated at about \$76,000. The total cost of the school including a library, study hall, chapel and theater was \$2,800,000.

Designed by Belli & Belli, Chicago architects, the structure, except for the roof was built by J. W. Snyder. The steel roof deck was fabricated and erected by Chicago Bridge & Iron Co.

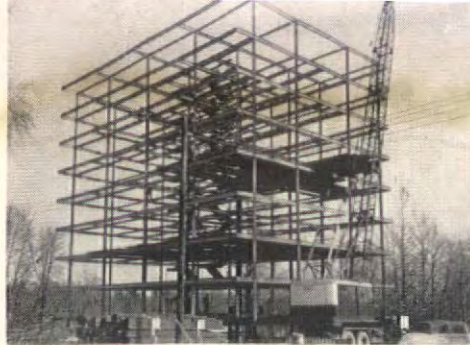


SECTION THROUGH 155' SPAN

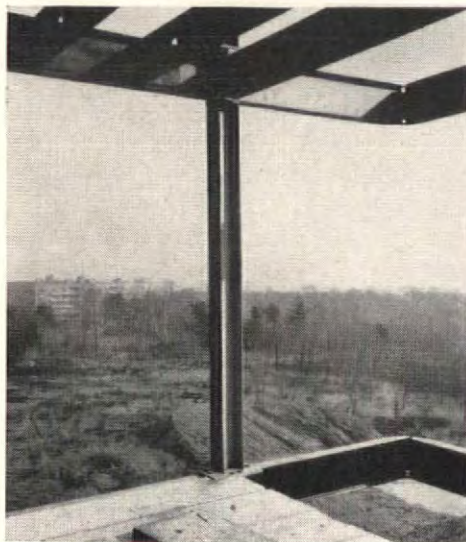


CONCRETE STANDS at each end of gymnasium act as buttresses against overturning moments acting on end columns.





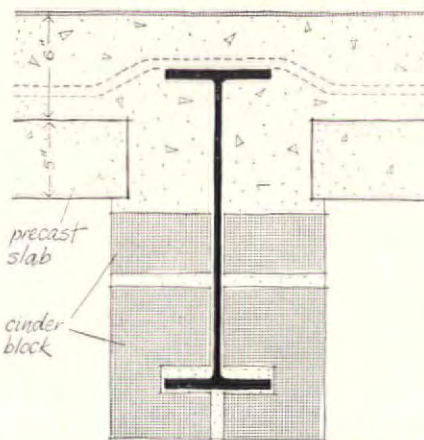
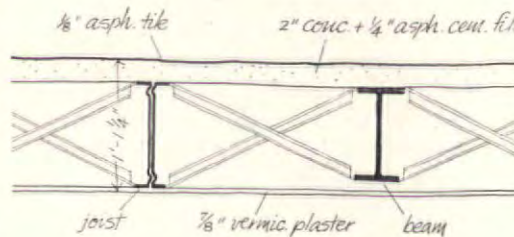
**LIGHT STEEL FRAME** of Levitt apartment project is the result of careful study and use of light materials to reduce dead loads. Note cantilevers which increase area without much increase in weight of steel.



**CANTILEVER** requires no filler beams; code permitted bridging cantilever with plank alone. Note that corner column has special connection to pass cantilever beam without requiring that beam be cut.



**FLAT BUTTON HEAD BOLTS** for splicing 8" column to 6" column prevent connection from becoming bulky. Connections have to be slim to permit use of modular cinder block fireproofing.



#### DESIGN LOADS (lb. per sq. ft.)

##### FLOORS

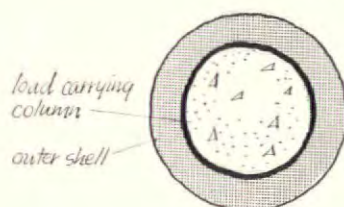
Live load	40
Partitions	6
2" Porete plank	
plus asphalt cement fill	15 1/2
1/8" asphalt tile	1/2
10" steel joist	3 1/2
Plaster	7 1/2
<b>Total</b>	<b>73</b>

##### BALCONIES

Live load	40
2 3/4" dense concrete plank	25
<b>Total</b>	<b>65</b>

##### SERVICE CORE

Live load	40
1/8" asphalt tile	1/2
4" cinder concrete	36
<b>Total</b>	<b>76 1/2</b>



**PIPE COLUMN** which supports the first floor is filled with concrete and has a fireproofing outer shell. The column is exposed because the first floor is an unenclosed pedestrian area (except for a service core).

## LEVITT'S STRUCTURAL DETAILS

*Intensive concentration on detail plus a "dry work" concept keeps costs down on apartment building*

To keep costs down on his \$16 million project of 40 eight-story apartment buildings (AF, Feb '56), Alfred Levitt resolutely sticks to the "dry wall" concept of his homebuilding days. To this concept, he adds examination and re-examination of every structural detail with this thought in mind: can it be made lighter (i.e. cheaper)?

The result is a steel frame totaling 135 tons, averaging 6.43 lb. of structural steel per sq. ft. To this weight is added about 3.7 lb. per sq. ft. for steel filling-in joists. Together they weigh only about 75% of an average all-steel frame and (exclusive of joists) about 50% of the average steel frame and wood joist building.

The light frame is made feasible by the light loadings. Combined live and dead loads are 90 lb. per sq. ft. for the first floor, 73 lb. for the typical floors and 68 lb. for the roof. The spandrel walls weigh 200 lb. per lin. ft.

The main girders span 14'-6" between columns and cantilever 5'-4" at the front and back of the building. This cantilever gains floor area with little or no increase in steel weight or section.

Because some narrow flange beams (which integrated with other materials) had to be cantilevered past the columns at each floor, a specially designed connection had to be made at these points. The column loads were transmitted through the beams by means of shear plates and stiffeners in the webs of the beams.

Carrying the "dry work" concept into the structural details required ingenuity. For instance, for fireproofing beams and columns, cinder concrete blocks with special key slots were used instead of the usual formwork and poured concrete.

Use of cinder concrete block (which is also used on the exterior of the building) required careful limitation of the size of the projecting flanges of the steel. A module of 4" for beam flanges was set up and so rigidly adhered to that for only one set of members was it found necessary to use a 5" flanged beam.

The floors (above the first floor) and roof were made of 2' x 10' precast concrete slabs. However, Levitt deviated from his dry construction principle to spray on a vermiculite acoustical plaster ceiling.

The round columns supporting the first floor of the building are also, in a sense, a prefabricated dry column.

Structural engineer: Edward Schnitzer, Rockville Centre, N.Y.



## TECHNICAL NOTES



### STEEL BEAM SHORING

*Lightweight steel beams used as shores clear working space*

Instead of vertical supports for concrete forms, a Pittsburgh contractor used lightweight rolled steel beams in pouring concrete slab floors. The contractor, Ragnar Benson, Inc., estimates that the system saved 25% of the cost of conventional vertical shoring.

The shoring technique was devised for the construction of the University of Pittsburgh's new \$15-million schools of the health professions building.

Ragnar Benson's shoring technique uses the light beams as temporary joists between the steel framework. After the concrete has been laid and is cured, the beams are removed and reused. About 900 beams 12" deep were used on the Pittsburgh project. The concrete slab flooring varies between 7" and 8½" in thickness to carry an ultimate live load of 75 lb. per sq. ft. and an average dead load of 90 lb. per sq. ft. Most of the floor bays are 18' wide; some are 20', and others odd widths.

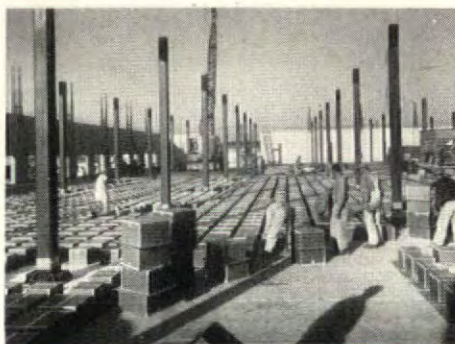
Only two different lengths of shoring beams were used for the entire project. One length served most of the spans, while another length with adjustable ends served the odd spans. The beams were spaced about 4'-6" o.c., and were held in position by removable steel supports hung from the steel structure. They were also firmly braced at the one-third points, at both the top and bottom chords to give lateral stability against moving loads. Camber was regulated by a wood nailer attached to the top flange of the beam.

About 560,000 sq. ft. of floor slab was formed for the building, which has a 13-story central tower, with ten-story

wings and a five-story auditorium.

The contractor decided on the technique because "the length of the span and heavy concrete slabs put it out of reach of lumber . . ." and the steel beams "are light enough to be manhandled, and yet are strong enough to support the weight of the concrete, working loads and motorized concrete buggies." The system left the work areas of the floor below clear. Conventional shores, according to the contractor, would have required nine upright adjustable shores for each bay, plus cross-bracing.

The architects and engineer were Schmidt, Garden & Erikson of Chicago.



### COST CUTTING SYSTEM

*Combining several new techniques in one construction system cut costs*

Substantial savings in construction time and costs on a two-story Los Angeles warehouse resulted from the combined use of several new building techniques:

- ▶ Design by photoreflexive analysis of a scale model.
- ▶ Use of cardboard box inserts to form coffered floor slabs.
- ▶ Raising precast floor by the lift-slab method.
- ▶ Precast concrete wall panels.
- ▶ Tubular steel, rolled square and filled with concrete, to support the second floor slabs.
- ▶ Using flanged columns to support the steel roof framing.
- ▶ Lightweight roofing composed of gypsum poured on insulation formboard.

The eight acres of warehouse were built for \$2.77 per sq. ft. (shell only) to which \$1.25 per sq. ft. was added for finishing and for some fairly elaborate mechanical installations, including elevators and a spur track.

The design and construction of the second-floor slabs were the most significant factors in the construction of the building. The slabs were designed through photoreflexive analysis of a scale model which gave a maximum of strength for

a minimum of weight and material. For the construction, which used cardboard boxes with eggcrate inserts to form the coffered or waffled second floor slabs, the innovation lay in the way the boxes were handled. The cardboard forms, made to order, were delivered flat and assembled on the job. When placed in position for pouring, they easily bore the weight of all necessary equipment. Ready-mix concrete was poured over the forms using a crane and bucket.

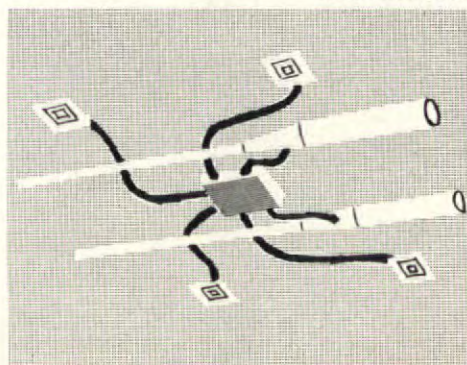
The lift-slab method used to raise the precast second-floor slabs involved 22 such slabs with an average area of about 7,000 sq. ft. each.

As the concrete dried, many of the cardboard forms fell out; the remainder were easily stripped. After stripping, the finish was smooth enough, and the coffered pattern attractive enough, to require no additional finishing work.

The design is quite strong, too. Despite first floor columns which are 24' apart, the second floor supports live loads of 200 lb. per sq. ft.—an important factor in warehouse design.

The team of architects, engineers and contractors which devised the method included: Albert C Martin & Assoc., architects of Los Angeles; William Simpson Construction Co., general contractor; Presan Corp., photoreflexive analysis for design; and Vagtborg Lift-slab Corp.

Herbert Bruce Cross



### AIR DUCT OCTOPUS

*Space use changes are less costly with flexible air-conditioning outlets*

An "octopus" unit, designed to permit easy relocation of diffusers without moving and rehanging ductwork, is being installed in several new office buildings, including the Socony Mobil building in New York.

Here's how the octopus works in the Socony building:

The interior zone air-conditioning sys-



tem (a separate system serves the exterior zone) is a high velocity, double-duct riser and a single-duct horizontal type.

Each floor gets air from two pairs of risers, with a mixing box for each pair where air from the hot and cold ducts are blended. In the cold riser, the temperature is held at 50° F.; the hot air varies from 64° F. to 90° F. Thermostats in the return air ducts regulate the proportions of air supplied in the mixing boxes.

From the mixing box, air is fed at high velocity through a horizontal duct to each octopus attenuator chamber at about 400 cu. ft. per minute. Here the air is reduced in pressure and velocity and supplied to the individual diffusers at 100 cu. ft. per minute through flexible hose. The attenuator chamber also reduces the noise level, which is engineered for 40 db throughout the building.

Architects for the building are Harrison & Abramovitz. Mechanical engineers are Jaros, Baum & Bolles; Kerby Saunders is mechanical contractor.

## AIDS TO NATURAL LIGHT

*Properly located walks and terraces bounce light into buildings*

To get an auxiliary source of natural light for a one-story building, light colored walks and terraces should be located in a zone between 10' and 40' from the edge of the building. This advice comes from Bob H. Reed, research architect, Texas Engineering Experiment Station.

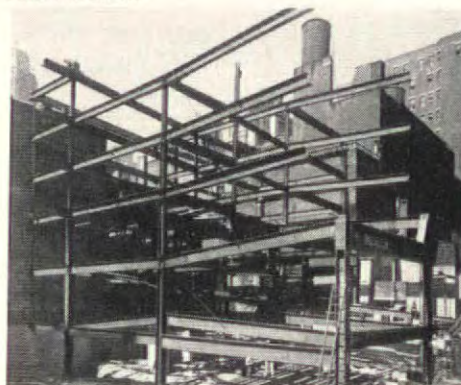
Reed's first experiments show that walks and terraces of concrete (or other light reflective material) improve the quantity and distribution of natural light in a building—provided that the reflective areas are properly located. The optimum zone where 90% of the useful light bounce comes from, is between 10' and 40' from the edge of the building. The first 10' from the edge of the building should not



be surfaced with the reflective material because this will tend to increase the brightness next to the windows and increase interior contrast.

The investigation was conducted with scale models using a 20'-diameter artificial sky. The station is now experimenting with the effect of trees, hedges, screens and reflections from other buildings.

*Photo-File Service*



## SLOPING GARAGE

*Cars are parked on a fifth of a mile of continuous sloping floor*

The unusual sight of steel beams tilted at 5° to 8° angles with the horizontal has evoked comments ranging from "mistake" to "theater seating" from sidewalk superintendents watching this building going up at Sixth Ave. and 45th St. in New York City. The true reason for the angled beams was the function of the building: it is a five-story parking garage with basement and roof parking. The building has a continuous sloping floor, a fifth of a mile long, with cars parked on the slope.

The building includes two circular ramps; one from the rear of the first floor to the second floor and another from the first floor to the basement.

The floors have pitches varying from 5% to 8%, maintained by keeping the floor-to-floor heights to 9'-1".

Due to this low floor-to-floor height it was necessary to construct the floor system of long-span, two-way construction giving a clear height about 7' under the girders. The girders themselves had to be limited to 18" in depth to clear this headroom. Thus the girders had to be designed as continuous spans running both longitudinally and transversely, welded in both shop and field.

Charles N. & Selig Whinston were the architects and engineers. C. B. Fish was welding consultant.

## SHRINKAGE IN CONCRETE

*Strain meters set in concrete for 16 years provide shrinkage record*

Back in 1939, engineers for the Kodak Park Works in Rochester decided to construct a 275' length of concrete frame without a contraction joint.

After making the decision to construct the building as a single unit, it was then decided to make a study of the shrinkage in the frame. For this purpose, electric strain meters were buried horizontally and vertically in the concrete in several locations in four floor slabs. Reading these meters has provided basic data for a 16-year log of shrinkage.

The results, so far, show that drying shrinkage of about 0.6" horizontally and about 1.1 vertically has taken place during the 16 years.

*Dick Dillon*



## LOW-COST STRUCTURE

*Prestressing and a combination of materials keep school's costs down*

A unique roof system incorporating prestressed concrete beams and wood fiber planks kept costs on additions to the Stuart (Fla.) Elementary School below budget estimates. A library and two classrooms (4,140 sq. ft.) were added to the school under one contract which was budgeted at \$33,840. The actual cost of construction was \$28,838—\$5,000 less than budget—or \$6.96 per sq. ft.

The main framing girders were reinforced concrete spanning 22' with a 7'-9" cantilever to provide a roof for an outside corridor. The roof beams were 44 prestressed concrete tee beams designed with a special lip to take the fiber tile roofing. The tiles were set 2'-8" o.c. Each roof beam spanned 33'-10".

The architect was Starratt & Armstrong, Stuart, Fla. Prestressed concrete fabricator was R. H. Wright & Son, Ft. Lauderdale.



# for all concerned

## THE CAPITOL CAN STILL BE PRESERVED

Nothing FORUM has recently advocated has drawn a wider favorable response than the renewed push to preserve the Capitol in Washington. Editorials urging Congress to take a second look have appeared in newspapers large and small—from the *St. Louis Post Dispatch*, the *Detroit Free Press*, and the *Akron Beacon Journal* through many others up to the *Troy, N. Y. Times Record*, with returns still coming.

The Society of Architectural Historians, on reading FORUM's report, joined up with the AIA, which had made a still earlier protest, and sent a petition to preserve the Capitol, to Speaker Rayburn.

Rayburn's reply to Francis P. Douglas, *Washington Star* reporter, was that "the work would proceed" and that he hopes to remove the parked cars from across the street in front of the building—a move he is perfectly free to make right now without touching the East Front in any manner whatever.

It is hard to believe that Speaker Rayburn can long remain in his present position of backing a \$16 million boondoggle (the budget figure, released since our February issue, tops FORUM's \$15 million estimate by another million)—a monumental folly, against the manifest wishes of a great majority of his fellow countrymen.

Let's repeat what the situation is. The proposal to move the East Front of the Capitol some 36' forward is officially intended to secure a few hearing rooms and lunch rooms for congressmen, plus a needed corridor across the building by-passing the public lobbies. To achieve these official aims

it is not necessary at all to push forward a whole monumental wall. We note the offer of the AIA's board of directors to find a solution for these official aims *within* the present envelope. *Just to make doubly sure, both FORUM and the Historians have suggested an amendment to the Act so the first step can be a dispassionate report by a front-rank architect.\**

But obviously such practical considerations are not the real goal—or Congress would have jumped at the money-saving opportunity. The real push behind the Capitol-extension move arises out of that ancient desire which springs up in the human breast to do some lily-gilding. The real push comes from those who would "improve" the Capitol's design by "correcting" its errors.

Several times in a row the AIA, on weighing the probabilities, has declared against this fond delusion. In quick review, here is what they said: 1) the cascading central front of the Capitol as it is now is a unique, and uniquely effective, architectural experience even though its design goes, as so many fine buildings do, against the textbooks. 2) Pushing for-

ward the central front to secure "an adequate visual base" would destroy the fine courtlike effect where we have inaugurated most of our presidents. 3) Fooling with that front will almost surely destroy what is left of the sensitive architectural effect put there by our early ancestors, an effect no one since then has been able to duplicate. In this context it is true, as Dean Hudnut says, that art does not progress—it only changes.

Little as FORUM itself believes one should build a new building in an unchanged old style, it believes still less in destroying the inspiration and sentiment of history that we find in our old ones.

But the Capitol can still be preserved. According to Architect of the Capitol J. George Stewart, no architect has yet been appointed (FORUM's previous report was in this respect mistaken). There is still time. And surely Speaker Rayburn and his fellow Congressmen, despite all the private arrangements they have made in this matter with the Senate, will not insist on their cake at such a price both in money and in culture.

For perhaps \$6 million of the present \$16 million they can get all they need in practical facilities, and in abundance.

For the other \$10 million, FORUM now proposes an alternate use.

Even at the generous rate of \$2,000 per parking stall, an appropriation of \$10 million will remove from the Capitol grounds and into garages no fewer than 5,000 cars. By giving up a highly dubious "improvement" covering a measly 36' Congress can clear Washington's clutter literally by the acre.

Right now AIA's ex-President Ralph Walker and Architect Lorimer Rich are endeavoring to interest the AIA chapters in a renewed drive to stop this desecration.

Surely Speaker Rayburn will not want to saddle on the Democratic Party an untested procedure that is against the resolution passed by the official body of US architects, against the advice of the architectural historians, against the expressed opinions of leading newspapers, and against the manifest desires of the American people and all without public hearings.

*Douglas Haskell*

\*Latest comment of AIA's director Edmund R. Purves was that "while the group historically has opposed the extension, it is far more concerned about the whole setting of the Capitol"—a mystifying way of phrasing the opinion of AIA's latest national convention, which resolved "strong opposition" to the proposed Capitol alterations and resolved also that "the Institute should offer its services to the Congress to advise how additional space might be obtained without sacrificing the historical values of the building" (quotes from AIA's *Memo*).



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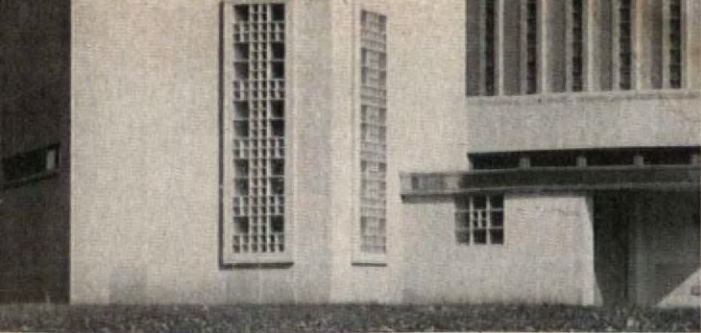
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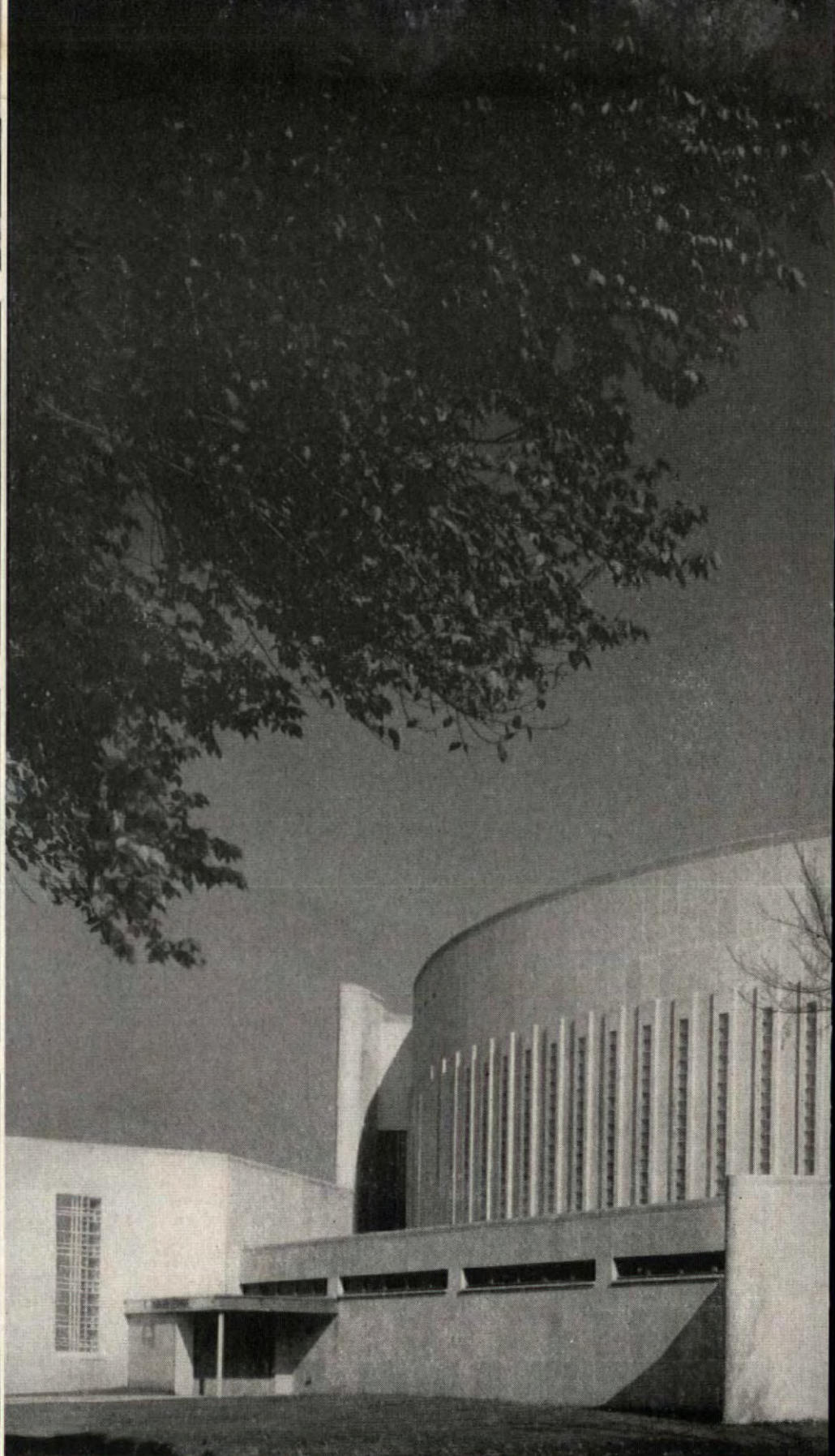
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# INDIANA LIMESTONE







## BOOKS

**THE STORY OF THE TOWER.** By Frank Lloyd Wright. Published by Horizon Press, 220 W. 42nd St., New York, N.Y. 134 pp. 8 3/4" x 11 1/4". Illus. \$6

This is an unusual book about an unusual building—a picture story of the step-by-step construction of the office-apartment tower which Frank Lloyd Wright designed for the H. C. Price Co. in Bartlesville, Okla. It is a handsome book and an interesting collection of pictures, many of

which were used in FORUM's presentation of the completed tower (AF, Feb. '56).

In the one text chapter in the book (nine pages) Wright describes the tower on the rolling plains of Oklahoma as "a fresh realization of the advantages of modern architecture yet unknown to the great city, . . ." a "release of the skyscraper from the slavery of commercial bondage . . ."

In his introduction to the book Harold C. Price, the client, explains the building's background: "We all appreciated the benefits we had received from living in our community, a community that had been very helpful to a young man with no material assets. Therefore, we desired to build a structure which would be a credit to our city for years to come . . . My two sons . . . suggested we get Frank Lloyd Wright to design the building."

**LAW OF ZONING.** By James Metzenbaum. Published by Baker, Voorhis & Co., Inc. 25 Broad St., New York, N.Y. 2nd ed. 3 Vols. 6 1/2" x 9 3/4". 2,531 pp. \$49.50

Few philosophies for the improvement of the public welfare have become so firmly rooted in so short a time as has zoning. It has come to touch the well-being of more than 100 million people within the short span of 40 years.

Zoning has helped to restore the original concept of the American form of government—the town meeting theory—for, unlike changes in the average law which are voted by those in authority with no specific notice to those affected, zoning changes may not generally be made without notice to all those affected and without an opportunity for them to be heard.

In the first of his three volumes the author traces the origin of zoning from Napoleon, who issued the first restriction against use of property. He shows how the kernel of zoning was first introduced into American soil, by a quaintly printed act passed way back in 1692, during the reign of William and Mary:

"Because of Great Desolation and Ruins having sundry times happened by Fire breaking out in the town of *Boston*, principally occasioned by Reason of the nearness of Buildings, being mostly of Timber, and covered with Shingles.

"BE IT ORDAINED that henceforth, no Dwelling-House, Shop, Ware-House, Barn, Stable, or any other Housing of more than eight feet in length, and seven feet in Height, shall be erected and set up in *Boston*, but of Stone or Brick covered with Slate or Tile."

Indeed, the very first Act passed by the State of Massachusetts regulated the "Prudent Storage of Gun-Powder within the Town of *Boston*."

In the wake of such enactments came the later tenement house codes, the sanitary codes, the building codes, the fire zoning

*continued on p. 180*

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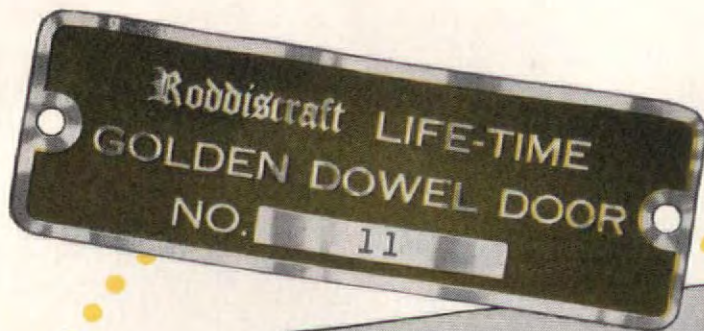
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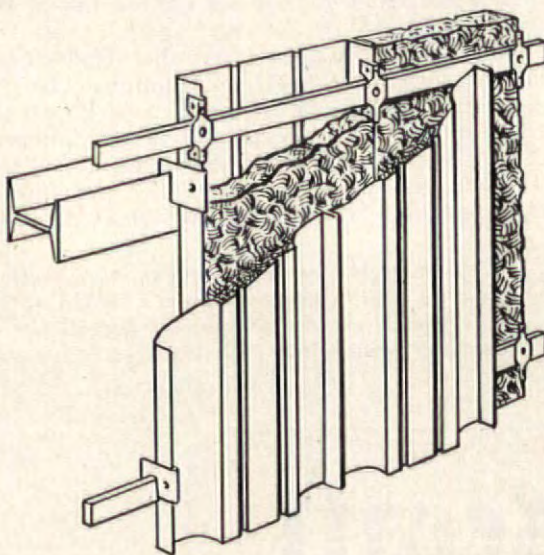
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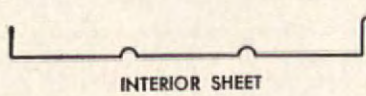
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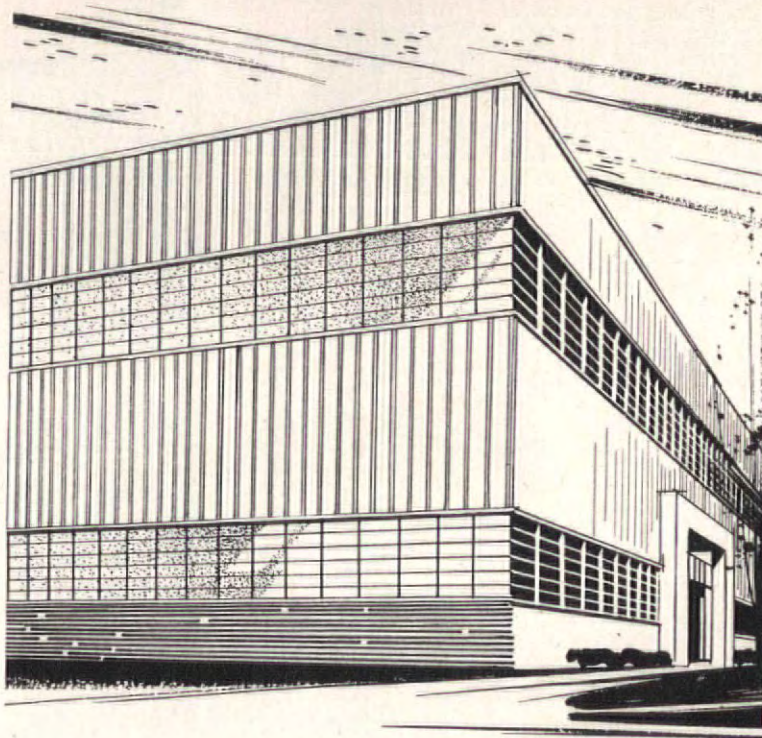


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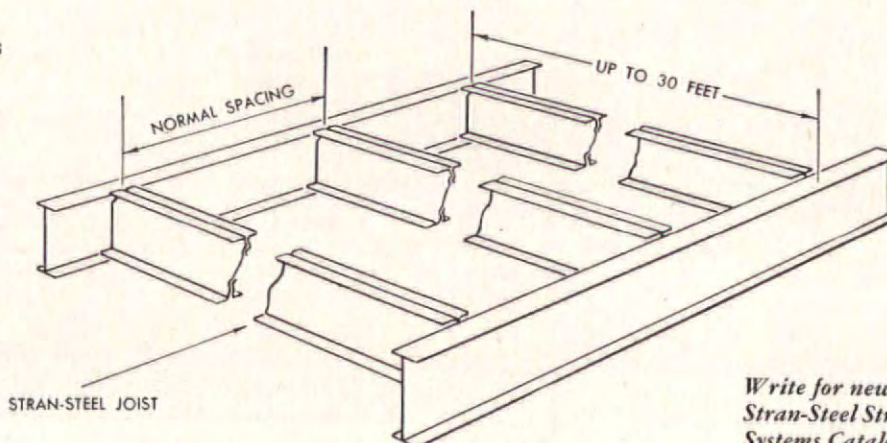
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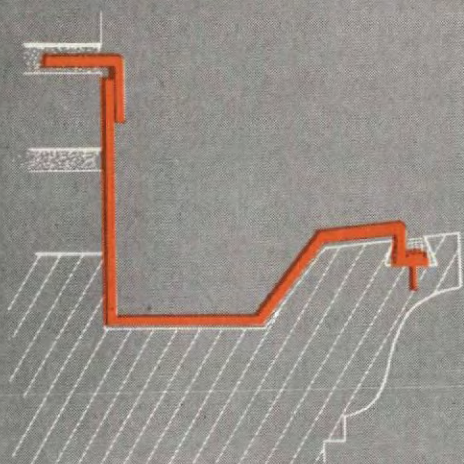
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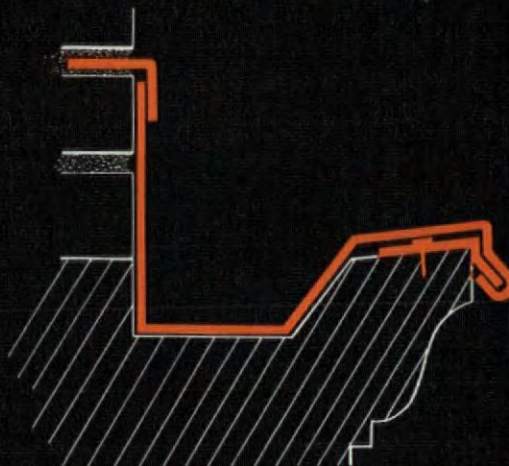
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GUTTER LINING DETAIL  
IN STONE CORNICE

Fig 1

... or this way?



GUTTER LINING DETAIL  
IN STONE CORNICE

Fig 2

In Fig. 1 the detail illustrates a method of securing the outer edge of a gutter lining in a stone cornice and a masonry wall. The metal is turned down into a reglet in the stone and securely fastened with screws in lead shields.

In Fig. 2 the outer edge of the gutter lining is secured by being hooked over a previously placed edge strip. The edge strip is made from 8'-0" long pieces and secured to the stone by brass screws in lead shields. The edge strip is extended to form a drip as shown and the copper sheets used for the gutter hook over the edge strip to form a  $\frac{3}{4}$ " loose lock.

The method illustrated in Fig. 1 is most unsatisfactory. As all materials expand and contract, with the outer edge securely held, movement is restricted resulting in broken seams and the formation of buckles and pinches in the metal that lead to eventual failure.

When the outer edge is hooked over an edge strip as shown in Fig. 2, freedom of movement is provided.

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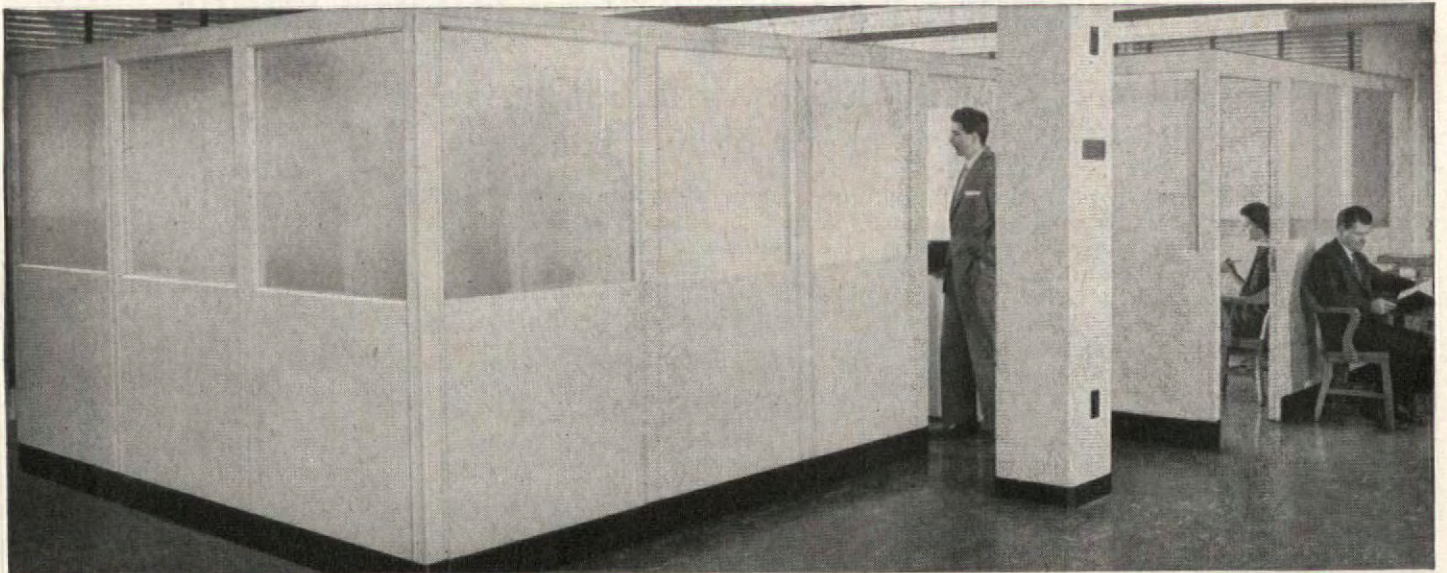
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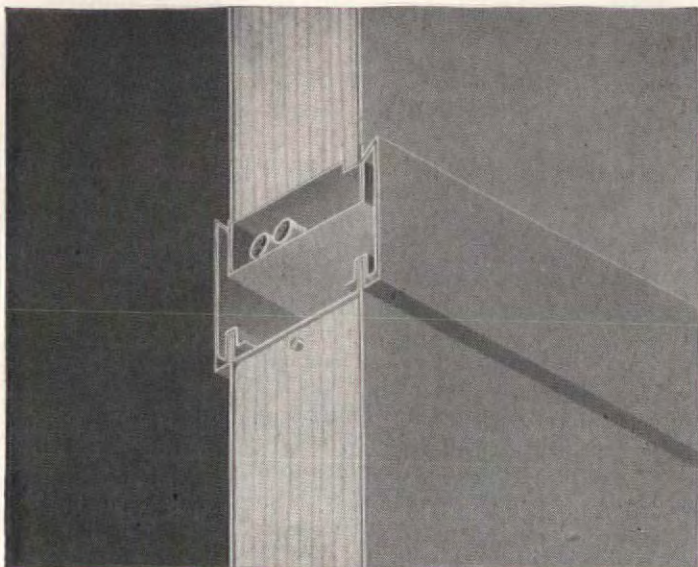
hours by trained local crews. Wherever installed, VMP MOBILWALLS make a major contribution to efficiency and attractiveness.

A new design of movable, metal office partitions—VMP's greatly improved RF ROYAL FLUSH MOBILWALLS—gives architects the opportunity to build-in dignity and simplicity, and to gain many added functional features. New-style RF partitioning blends and *interlocks* perfectly with previous VMP installations, presents no special detailing or erection problem.

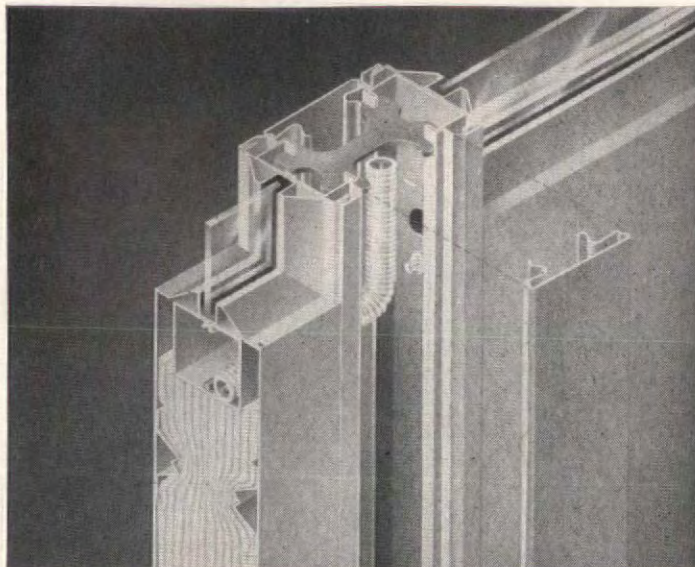
The high-style RF line has flush-surfaced, non-recessed panels; 3" thickness with new increased

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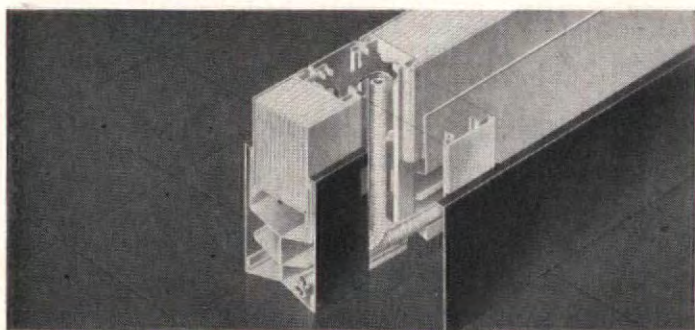


**SNAP-ON MOLDINGS AT CORNICE** are truly aligned to keep top edges firm and even. They are modern, flush, and provide a hanger edge for pictures. The cornice thus formed is adaptable to receive mineral board or steel top filler. You are assured that the installation will be attractive and uniform, and the architect's work simplified.

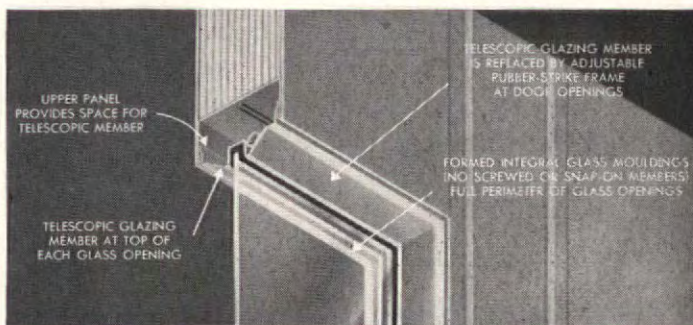


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**EASY ACCESSIBILITY OF WIRING** is an added benefit when you use RF partitions. Wiring can be laid continuously through the bases and posts. Additional wiring facilities are available in the cornice, chair rail, transom rail... even through the panel itself. Wiring is accessible without tools. No exposed wiring—no dirt or delay.



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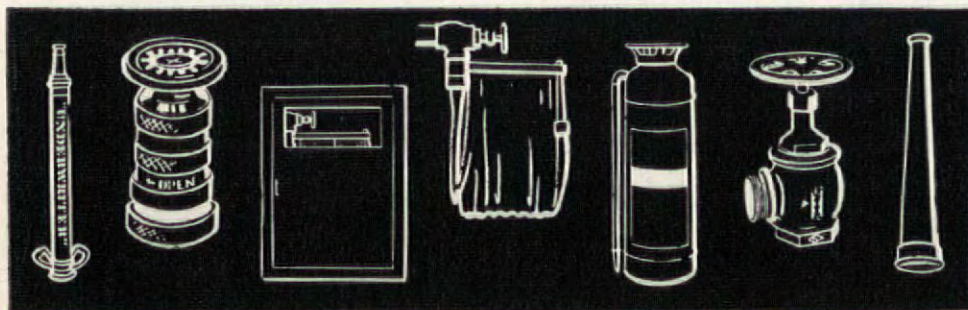
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**BOOKS** *cont'd.*

ordinances, the height ordinances and many similar restrictive legislations. But despite all of these enactments, cities still found that structures were being "tumbled" together—factories were being built in the midst of residences; stores crowded their way in among homes; neighborhoods were being blighted; values being torn down.

It was gradually seen that neither building codes, nor fire zones, tenement codes nor height ordinances nor other such restrictions could cope with the situation and save municipalities from injurious "hodge-podge" development.

So at the instance of New York City, a study commission was appointed. After six years it reported that the only feasible way to bring order out of that phase of municipal chaos was to integrate all of the previously established restrictive enactments and henceforth to regulate the use of property. As a result of that study, the city passed the first comprehensive regulation of property use in the US, and the highest state court held that it was a proper exercise of a municipality's so-called "police power for the general welfare" and that it did not violate constitutional limitations.

Within a few years, four other states—where zoning regulations had been enacted—upheld them, while three states tended in the opposite direction. Then the great industrial, railroad and commercial interests (which at that time stood in fear of zoning) tried to stop the zoning movement.

The author of these volumes took the case to the Federal Supreme Court which ruled that zoning, if reasonably exercised, was within the power of municipalities.

Since that validation, zoning has gone forward by leaps and bounds, in small as well as large municipalities. In the form of rural zoning, it now embraces many townships.

These three books cover every important zoning decision—state by state as well as under each subject. The zoning ordinances of many big cities are set forth in full—including New York and Los Angeles, which is deemed to have the best ordinance in the land. And the books are not without humor. Thus at one point Metzenbaum exhumes a sadly erroneous predication concerning airports and aviation made only 18 years ago when the court of one state wrote: "The number of persons using the airport will be about equal to the total number of persons who engage in big 'game hunting trips to the African wilderness, and voyages of North Pole exploration. . . . In the very nature of things, the vast majority of the inhabitants of the city, a 99% majority, cannot now and never can reap benefit from the existence of an airport."

Metzenbaum is a lawyer, a former state senator (Ohio) and an author of other books on zoning.



### HOW TO GET BETTER SCHOOLS.

By David B. Dreiman, foreword by Roy E. Larsen. Published by Harper & Bros., 49 E. 33 St., New York, N.Y. 5 1/2" x 8 1/2" \$3.50

This distillation from the experience of the National Citizens Commission for the Public Schools is a useful handbook for those interested in initiating or intensifying activity on behalf of better schooling. It includes case histories of effective citizens' groups along with basic practical information on the mechanics of organization, means for reaching the public and methods for attacking the gamut of schooling problems—from redistricting and financing to teacher recruitment and textbook evaluation.

### SYNAGOGUE ARCHITECTURE IN THE UNITED STATES.

By Rachel Wischnitzer. Published by The Jewish Publication Society of America, Philadelphia, Pa. 204 pp. 11" x 9". Illus. \$6

A history and an interpretation of development of synagogue design from the oldest known synagogue still in existence (Mikve Israel in Curacao—1732) to the newest ones by Architects Sam J. Glaberson, Percival Goodman, Harrison & Abramovitz, Philip Johnson, Eric Mendelson, Daniel Schwartzman, Frank Lloyd Wright and their contemporaries.

**ARCHITECTURAL ENGINEERING.** By the editors of the "Architectural Record." Published by Dodge Books, 119 W. 40th St., New York 18, N.Y. 494 pp. 9" x 12". Illus. \$11.50

A reprint (by the photo offset process) of technical articles which have appeared in *Architectural Record* during the past nine years.

### ARCHITECTS' WORKING DETAILS.

Edited by D. A. C. A. Boyne, The Architectural Press. Distributed by Frederick A. Praeger, Inc., 105 W. 40th St., New York 18, N.Y. 160 pp. 8 1/2" x 12". Illus. \$5

The third in a series of volumes of unusual architectural details from new British buildings of all kinds. Each is shown in large-scale (1/4" to 3/4") drawings and large photographs. Says the author: "Details have not been chosen because of their 'fashionable' value as depicting the latest tricks in design. They have been chosen because they contain information of lasting value."

**ARCHITECTS' YEAR BOOK 6.** Trevor Dannatt, editor. Published by Elek Books Ltd., London. Distributed by Frederick A. Praeger, 105 W. 40th St., New York 18, N.Y. 260 pp. 7 1/2" x 10". Illus. \$8.75

A collection of articles by some of Britain's leading architectural critics, a collection of photos of new European furniture and buildings and, in the back, a collection of advertisements.

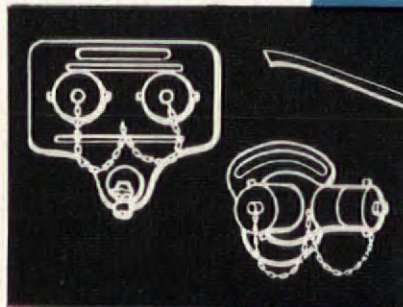
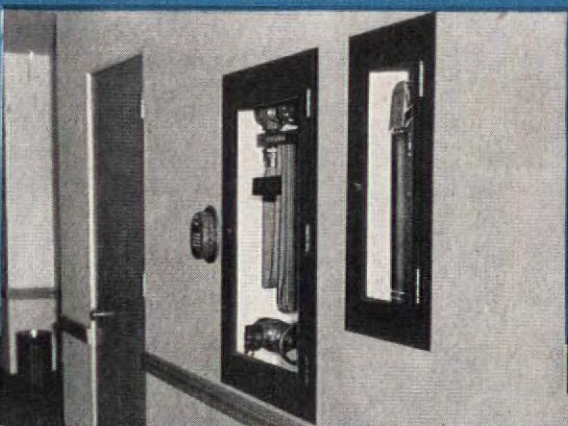
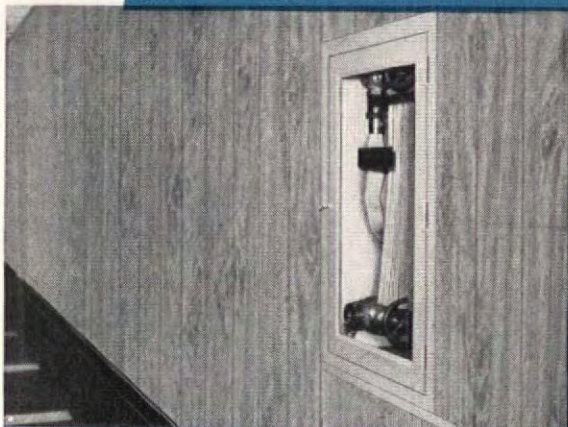
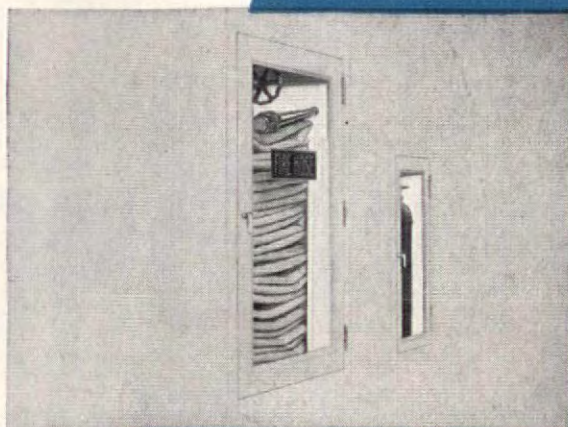
*continued on p. 186*

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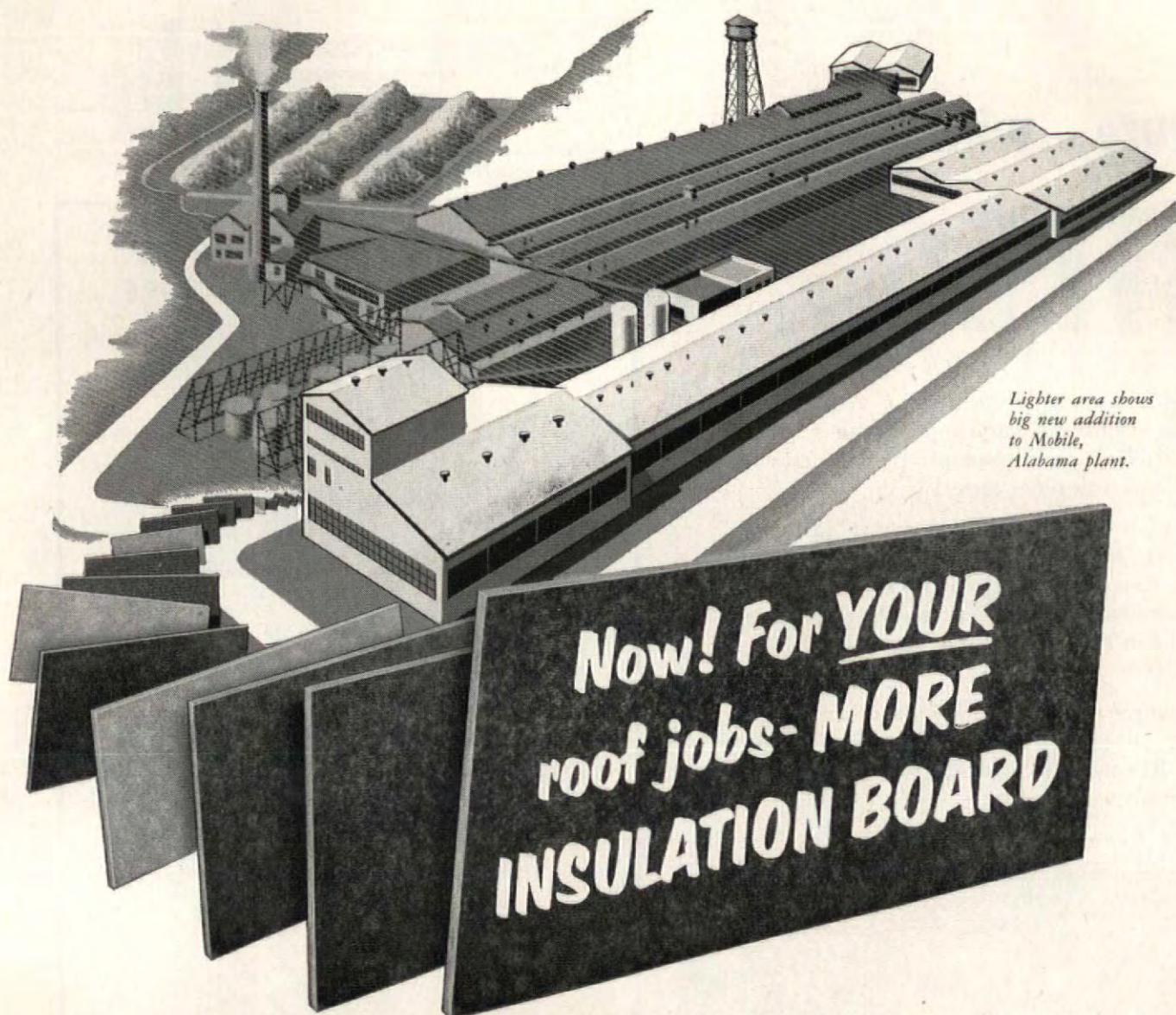
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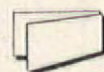
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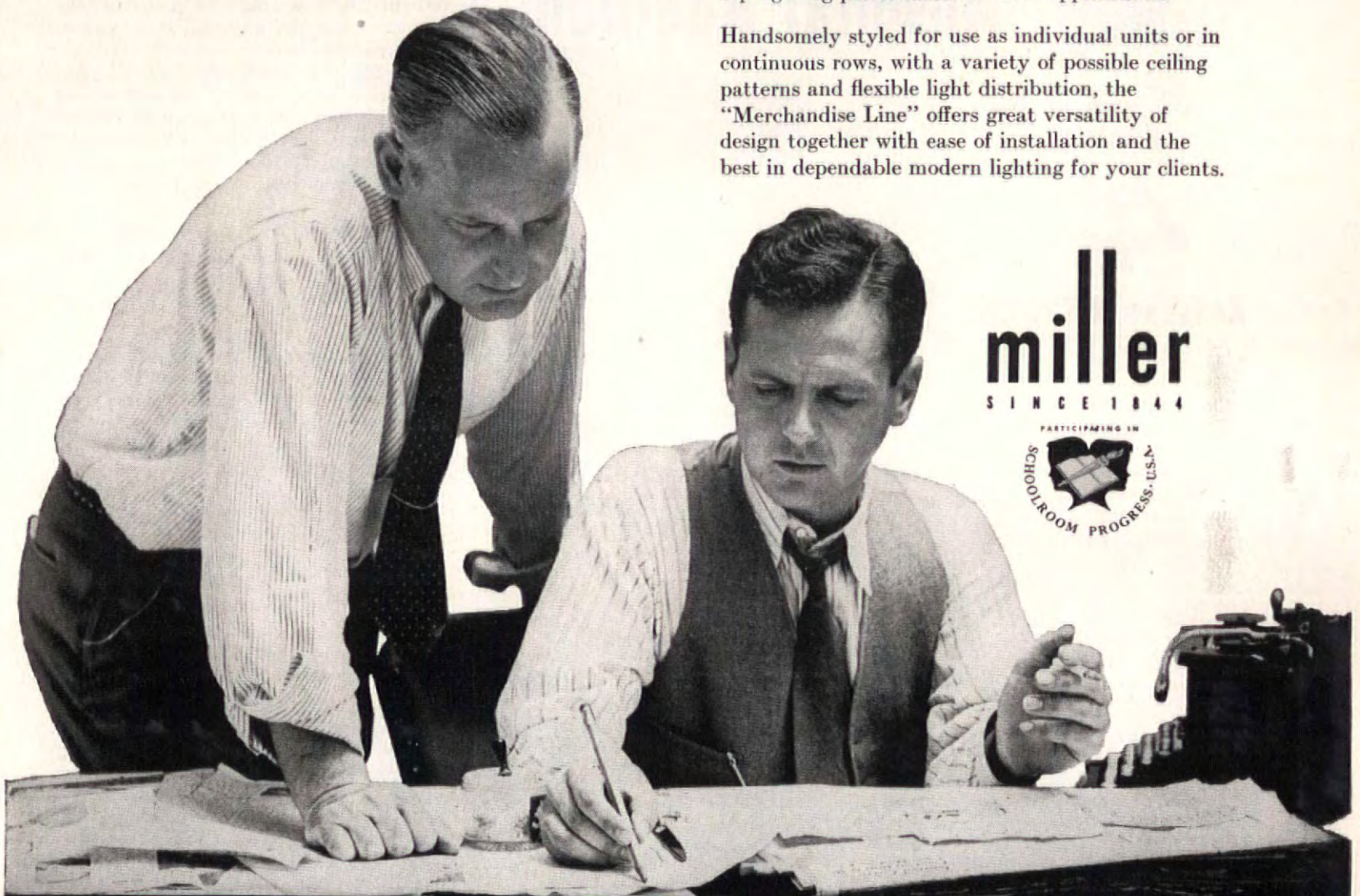
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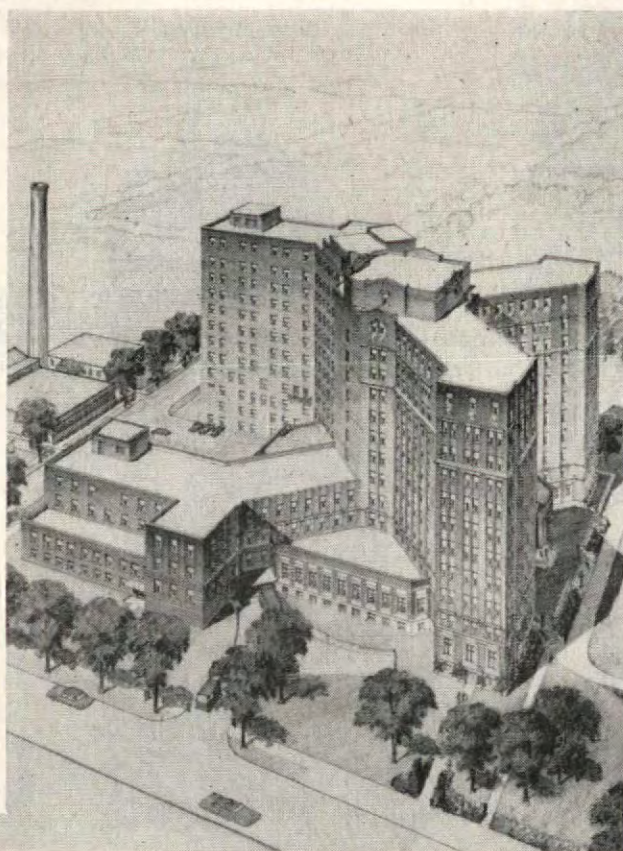
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## BOOKS *cont'd.*

**THE NATURE OF CITIES.** By L. Hilberseimer. Published by Paul Theobald and Co., 5 N. Wabash Ave., Chicago, Ill. 286 pp. 8 1/2" x 11 1/4". Illus. \$8.75

*The Nature of Cities* embodies three parallel studies. Each deals with one aspect of the city; together they form a unity. The first study deals with the city's origin, growth and decline. It is a history of city types rather than of particular cities. The second study, on pattern and form, has to do with the two orders of planning: the geometric and the organic, which govern city types, city architecture and city landscape. The third study considers the planning problems with which the modern city and its region are confronted in our industrial age. The author is professor of city planning at the School of Architecture of Illinois Institute of Technology.

**ROBERT MAILLART.** By Max Bill. Published by Verlag Girsberger, Zurich. Distributed by George Wittenborn, Inc., 38 E. 57th St., New York 22, N.Y. 184 pp. 8 1/2" x 8 3/4". Illus. \$10.50

This book comprises the most important work of the famous Swiss Engineer Robert Maillart (1872 to 1940). His pioneer creations, especially his daring and beautiful bridges and mushroom-constructions, are shown in numerous photographs and plans, accompanied by short commentaries (in English as well as German and French). In addition, the book contains various articles by Maillart's own pen.

**ENGINEERING DRAWING AND GEOMETRY.** By Randolph P. Hoelscher and Clifford H. Springer. Published by John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N.Y. 8 1/2" x 11 1/2". Illus. \$8

A well-presented textbook for the instructor and student of engineering drawing and engineering (or descriptive) geometry.

**BAUTEN DER INDUSTRIE.** Planung Entwurf Konstruktion (Vol. I) and Ein Internationaler Querschnitt (Vol. II). By Walter Henn. Published by Verlag Georg D. W. Callwey, Munich. 240 and 303 pp. respectively. 8 1/2" x 12". Illus.

Unfortunately for US architects and manufacturers, these two exhaustive volumes on the planning and design of industrial buildings are printed only in German. However, the hundreds of beautifully drawn sketches, diagrams and construction details and the hundreds of handsome photos speak a universal language. The factories illustrated are not exclusively German; the selection is world-wide and in very good taste.

**ALSO RECEIVED**  
**ETERNAL EGYPT.** By Clement Robichon and Alexandre Varille. Published by Philosophical Library, Inc., 15 E. 40th St., New York 16, N.Y. 160 pp. 7 1/4" x 10". Illus. \$6





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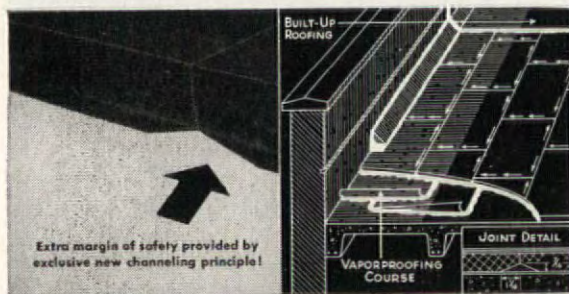
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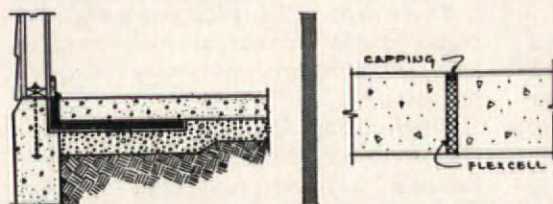
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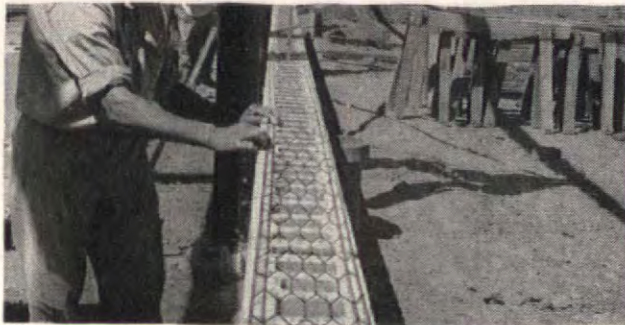
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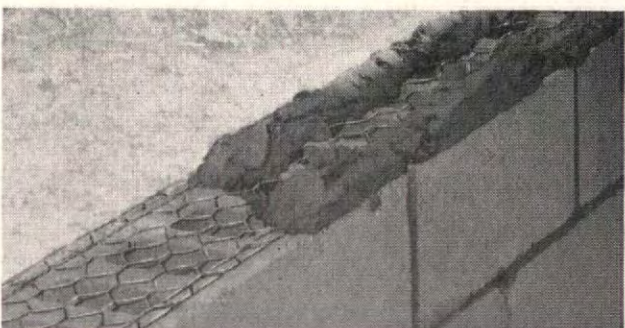
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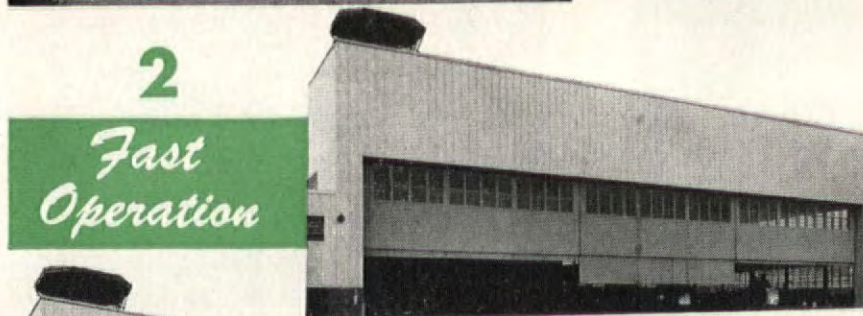
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*A spotlight on new tests,  
new standards, new studies*

### HOUSING CODES

An analysis of 56 housing codes in force throughout the US, nearly all of them adopted within the last five years, has recently been made by the Urban Renewal Administration of the Housing and Home Finance Agency. The report is entitled "Housing Code Provisions in Various American Cities."

An increasing number of cities engaged in urban renewal have recognized the need for local public action to establish minimum housing standards and to eliminate and prevent the recurrence of the substandard conditions in existing dwellings.

For this purpose cities have adopted local ordinances which require minimum standards for space, light and ventilation, sanitary and other facilities, structural condition and state of repair to be achieved and maintained for all existing dwellings. These ordinances also confer powers on designated local officials to enforce the observance of the standards.

The Urban Renewal Administration has announced that it has made an appropriation of \$96,600 to the New York State Division of Housing to establish minimum housing standards to guide communities. The state will also appropriate \$48,300 to carry out the study.

Six other grants, amounting to \$127,775 to cover a variety of other investigations aimed at helping localities shed light on some problems of blight are also announced by the URA.

### NEW YORK STATE BUILDING CODE

After six years of intensive effort the New York State Building Code Commission has promulgated its complete building code.

The code is drafted along performance standards so as to permit the fullest latitude in the use of materials, devices, equipment and systems of construction.

The code was developed in three portions. The first part, concerned with one- and two-family dwelling construction, was published in 1951; the second part, concerned with multiple dwellings, was issued in 1953; and the final portion, concerned with nonresidential construction, was issued in March.

The code is now in use in more than 180 municipalities of the state which have voluntarily accepted the applicability of the code.

*continued on p. 200*



## A Leading Tennessee Master Plumber reports **Copper Tubes** Cut Installation Time Over 50%



**Light Weight**—"The light weight of copper tube and fittings makes installation easier and faster—makes possible prefabricated sections like this, for example."



**Prefabrication**—"This double-Y and other sections can be pre-assembled out in the open or at the shop where men can work easier and faster—no lost time waiting for construction."



**Easy to Handle**—"The light weight of copper tube and fittings makes installation easy and fast even in cramped working areas. Our men like to work with copper."



**Save Space**—"Preassembled sections are connected easily. Stacks with fittings were installed in standard width partitions—gave me an extra 10 square feet of useable floor space."



When Harold E. Orr, president of Leopold & Orr, Knoxville, Tenn., built his new home recently, he installed an Anaconda all-copper drainage system. Mr. Orr, who is also a vice-president of the Associated Plumbing, Heating & Mechanical Contractors of Tennessee, Inc., reports that installation time was cut more than 50 per cent. His explanations for the saving are quoted under the photos.

For complete information, write for our free booklet, "Copper Tubes for Sanitary Drainage Systems." Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

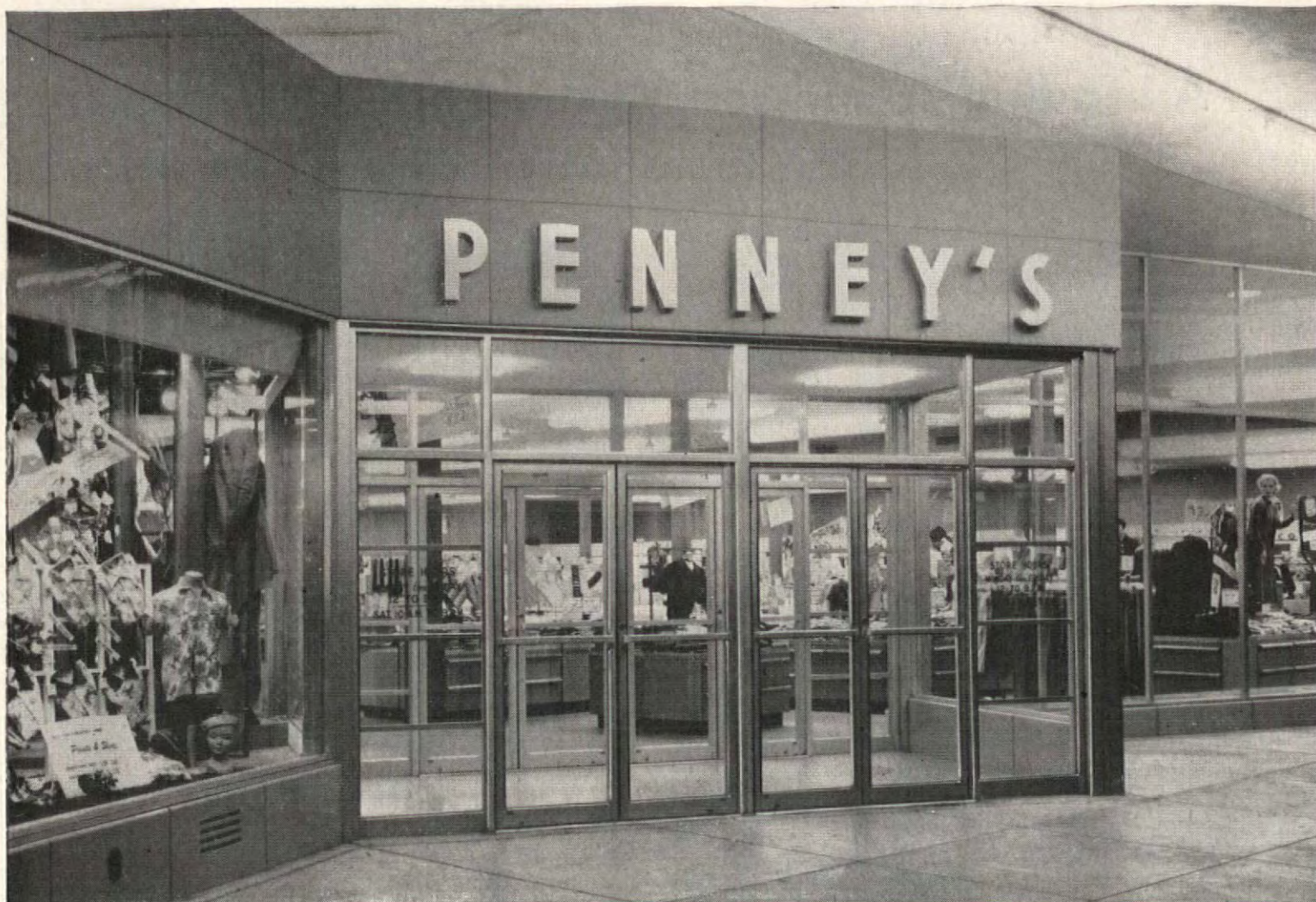


# ANACONDA®

## COPPER TUBES

Available through plumbing wholesalers





# **TUBELITE®**

This store front of unusual design — the new J. C. Penney Co. store in Columbus, Ohio — makes effective use of Pittsburgh Tubelite Doors. Tubelite doors and frames are noteworthy for their simplicity of design. This results in exceptional adaptability to practically any architectural

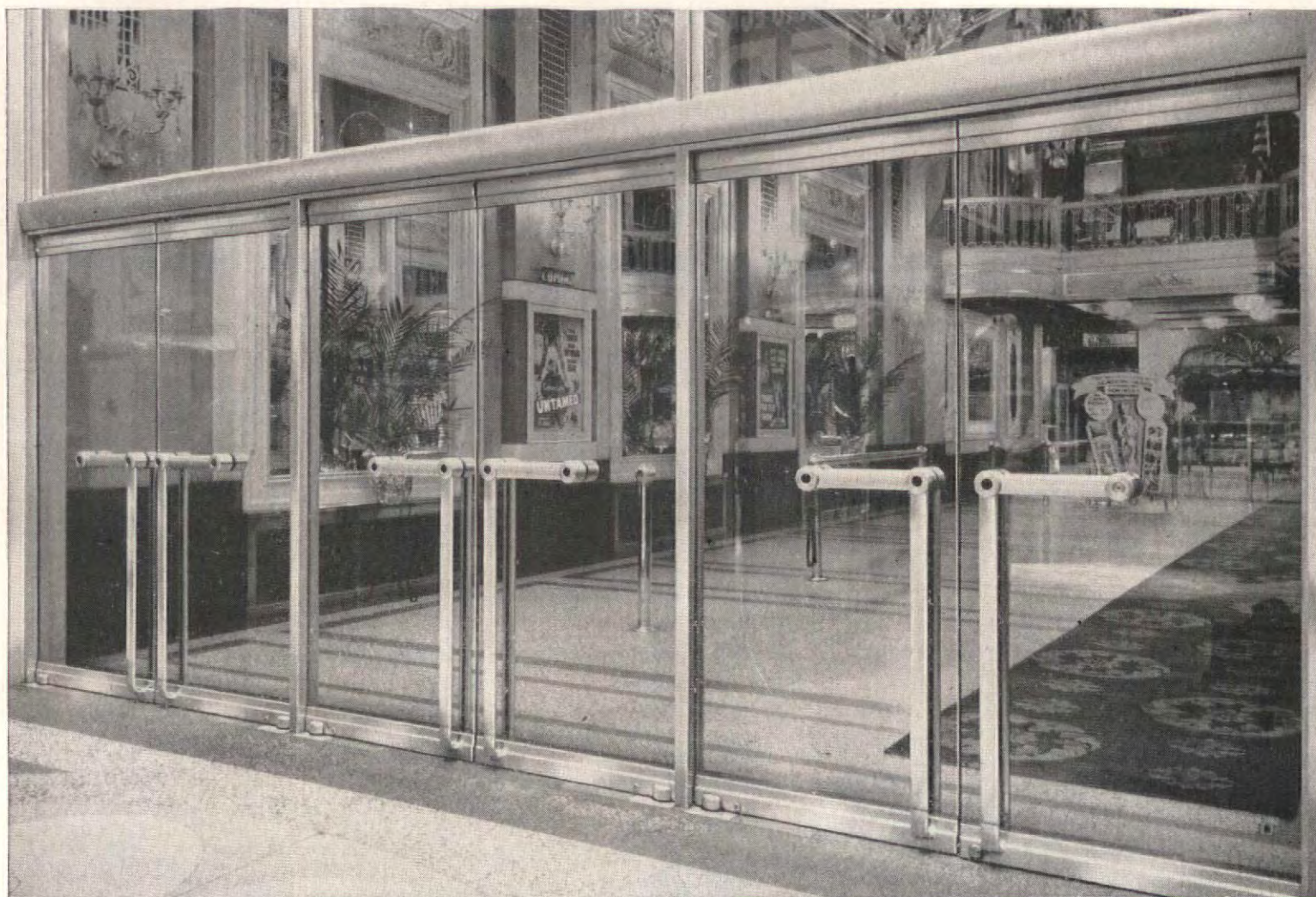
demand. Tubelite marks an impressive step forward in hollow metal entrance design. The unique interlocking feature of these doors assures maximum rigidity through long and continued rigorous use. Tubelite Doors are quickly and easily glazed and installed . . . they offer the greatest value at the lowest possible cost. Architect: C. Melvin Frank, Columbus, Ohio.

In flexibility of application,  
dependability, beauty and long life—  
*Pittsburgh Doors are unsurpassed!*

Many hundreds of installations all over the country have proved the extreme design adaptability, trouble-free operation and long-lasting dependability of Herculite and Tubelite Doors by Pittsburgh. Today, more and more architects and building owners are

specifying Pittsburgh Doors. Whether your entrance involves a single door or an installation comprising many units, it will be greatly to your advantage to make sure that these nationally-proven Herculite or Tubelite Doors by Pittsburgh are used.



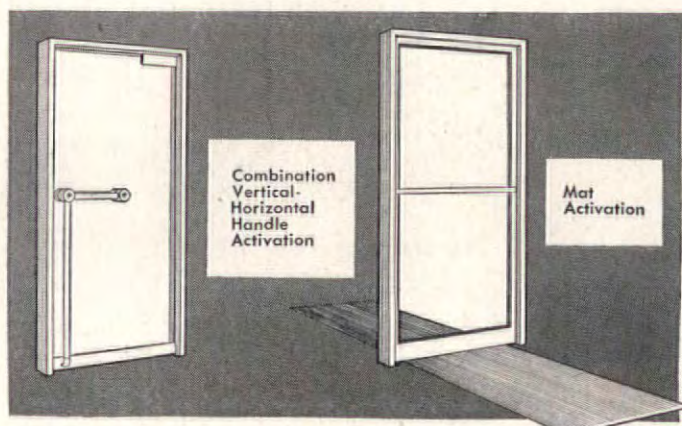


## HERCULITE®

In remodeling the entrance of the Denver Theatre, Denver, Colorado, Pittsburgh's Herculite Doors were employed. These doors help to give the building an open and more spacious appearance . . . make it an intriguing "showcase." Made from Pittsburgh Polished Plate

Glass, Herculite undergoes a special tempering process which makes it four times stronger than ordinary glass of the same thickness. Adding to the modern elements found in this renovated theatre is the utilization of the Pittcomatic—"the nation's finest automatic door opener." Just a light touch and the doors open instantly. Architect: Walter H. Simon, Denver, Colorado.

## The Pittcomatic® opens Herculite and Tubelite Doors *at a touch!*



TYPICAL PITTCOMATIC INSTALLATIONS

**HOW THE PITTCOMATIC OPERATES:** Smooth hydraulic power is supplied by the power unit, through  $\frac{3}{8}$ " 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. Here is the safest automatic door opener to operate—the easiest to install and maintain.

For detailed information on Pittsburgh Doors, see Sweet's Architectural File . . . Sections 16a and 16d . . . or write direct to Pittsburgh Plate Glass Company, Room 6185, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.



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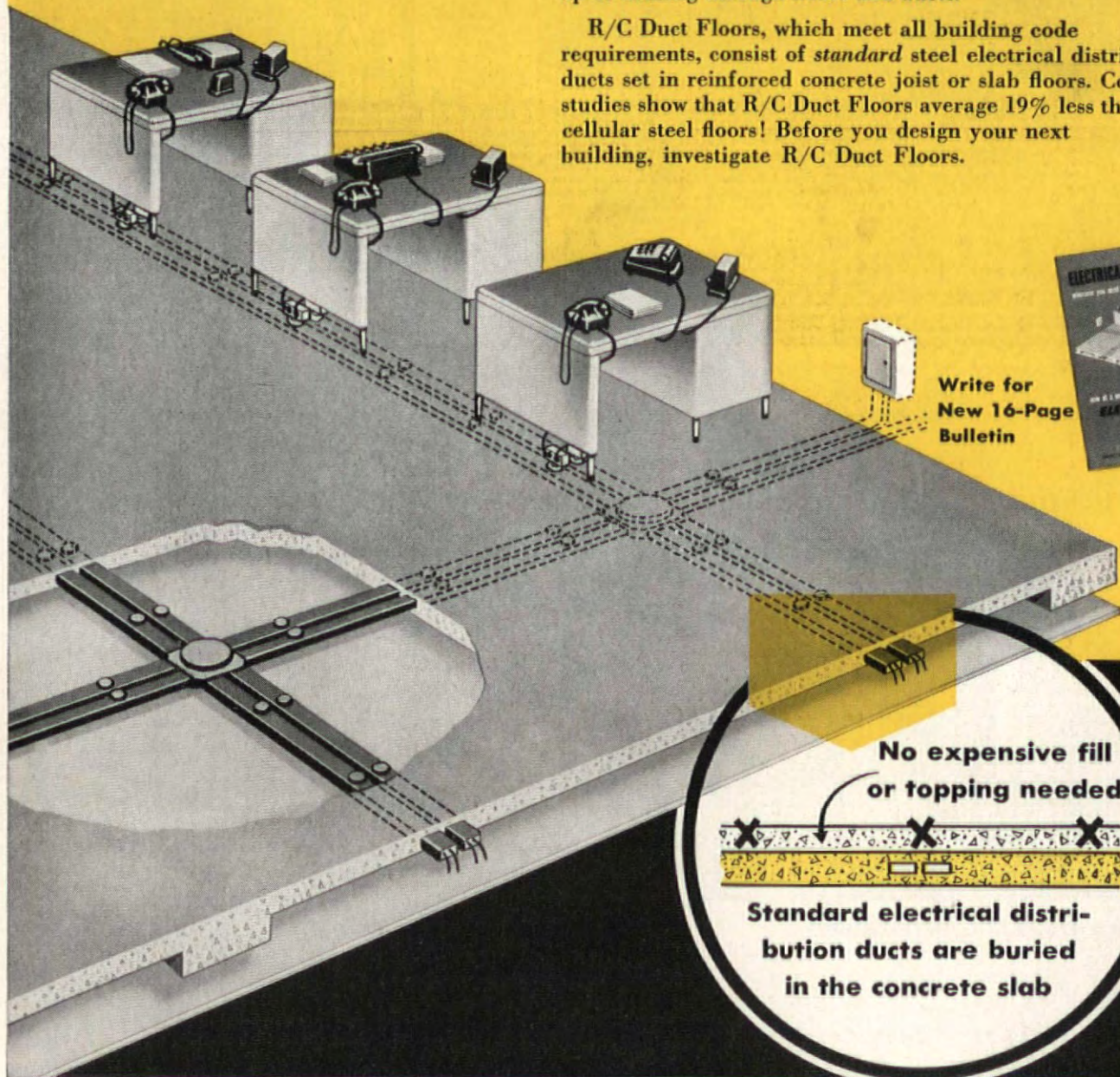


# R/C DUCT

## provide 100% electrical flexibility

For this distinguished, 12-story office building, the architects chose a reinforced concrete frame with shallow beam and flat slab R/C Duct Floors which provide a complete network of underfloor electrical outlets for power, light, telephone, and intercom systems—at a new low cost. Outlets can be connected to convenient risers in a matter of minutes without ripping up or drilling through floors and ducts.

R/C Duct Floors, which meet all building code requirements, consist of *standard* steel electrical distribution ducts set in reinforced concrete joist or slab floors. Cost studies show that R/C Duct Floors average 19% less than cellular steel floors! Before you design your next building, investigate R/C Duct Floors.



Write for  
New 16-Page  
Bulletin



No expensive fill  
or topping needed



Standard electrical distribution ducts are buried in the concrete slab



# FLOORS

SHALLOW BEAM AND SLAB SYSTEM

SIMMS BUILDING  
Albuquerque, New Mexico

Architects:  
Flatow, Moore, Bryan, and Fairburn

Mechanical Engineers:  
Bridgers and Paxton

Electrical Engineer:  
M. V. McIntyre

Structural Engineer:  
E. M. Hicks

General Contractors:  
Lembke, Clough, and King



## REINFORCED CONCRETE

*provides economy and design flexibility*



An outstanding example of the simplicity of architectural detailing and design flexibility achieved by the use of reinforced concrete is the new Simms Building in Albuquerque, New Mexico. The building is framed in reinforced concrete, employing a shallow beam and slab system. The architect, Garlan D. Bryan, states, "When the question of fireproofing for steel structure was analyzed, comparison figures showed that reinforced concrete would be cheaper in initial construction and in the lower insurance rates for this location." On your next job . . . design for reinforced concrete.

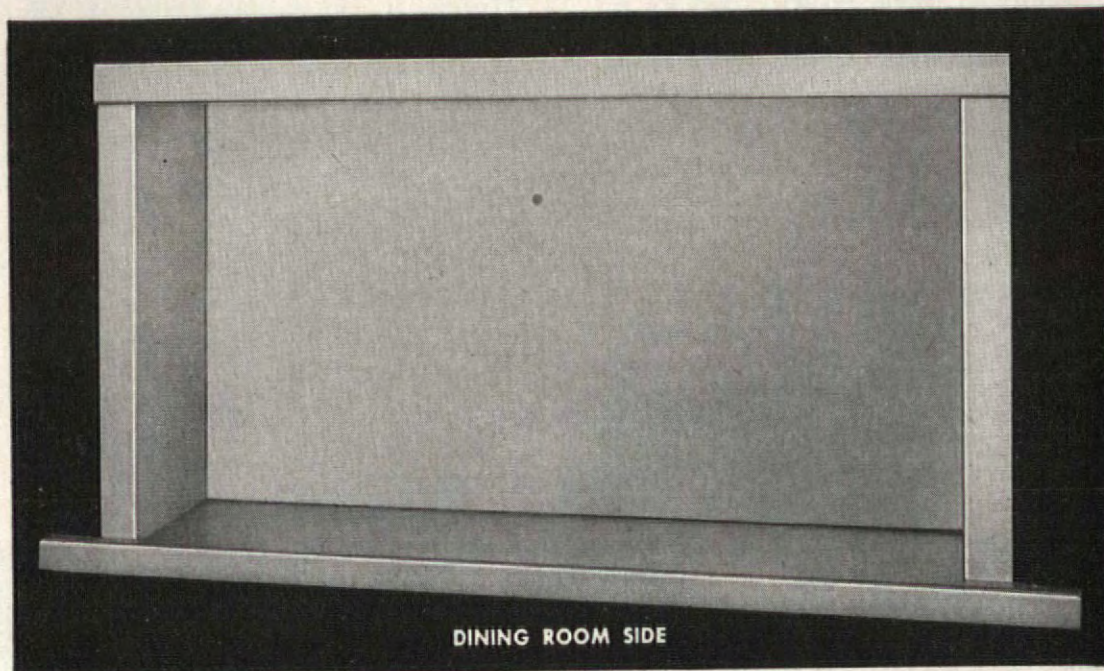
### CONCRETE REINFORCING STEEL INSTITUTE

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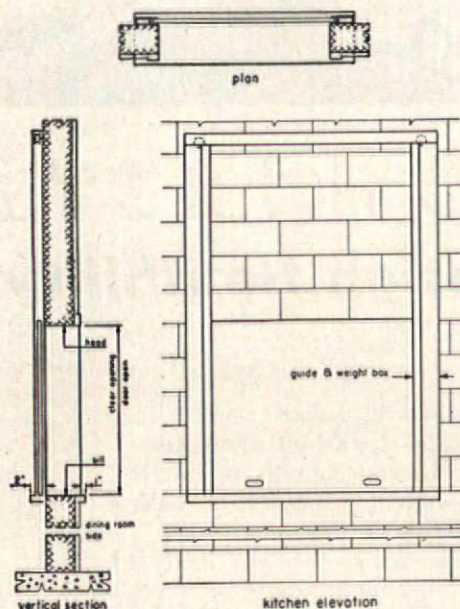
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## pass windows



## ease service

### between kitchen and dining room in many prominent schools



The standard Peelle pass window unit is used between kitchen and dining room and other similar locations. It consists of an integral door and frame. Special extended counter sills will not be furnished except when architectural drawings indicate specifically where this is to be done.

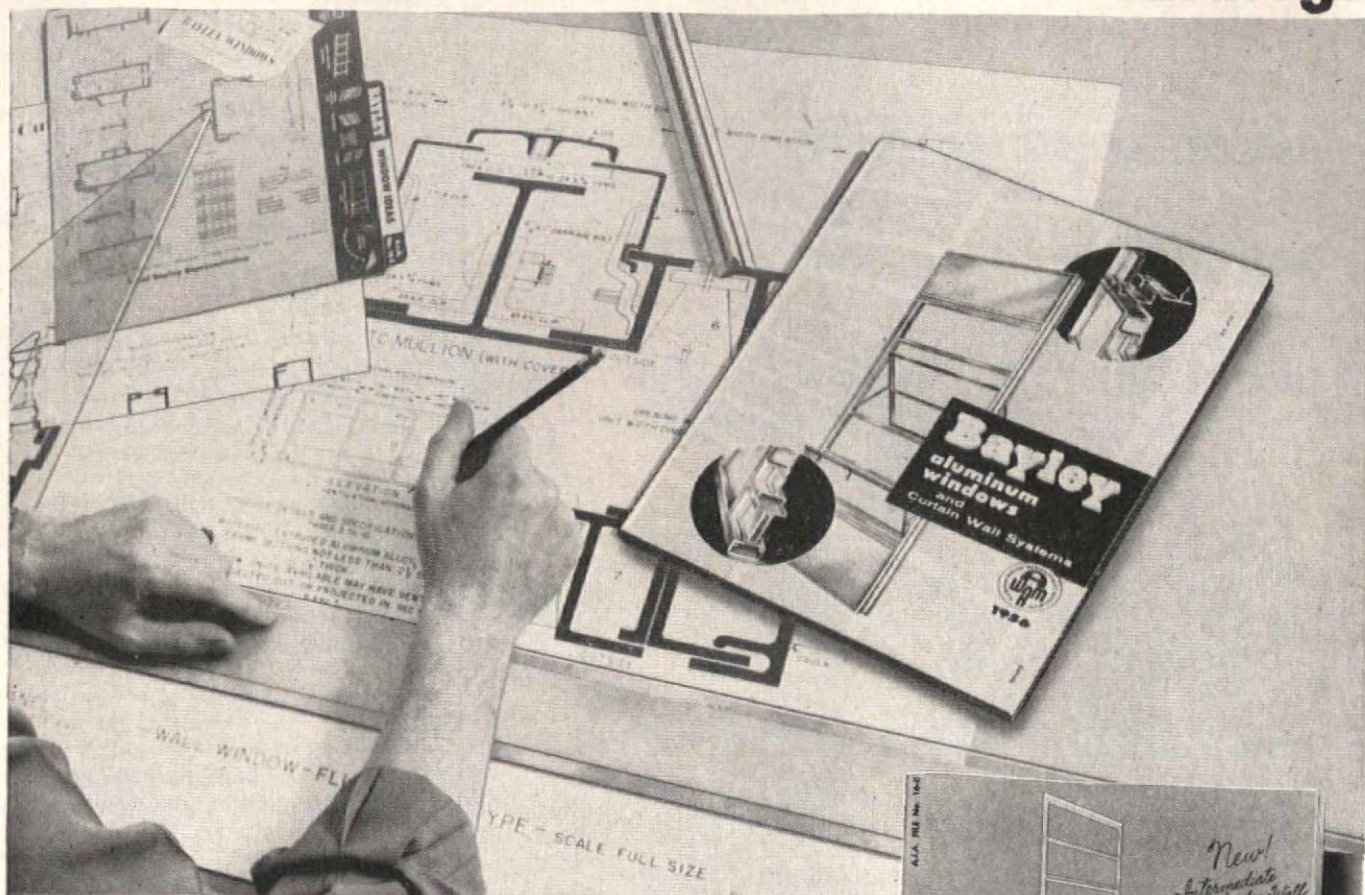
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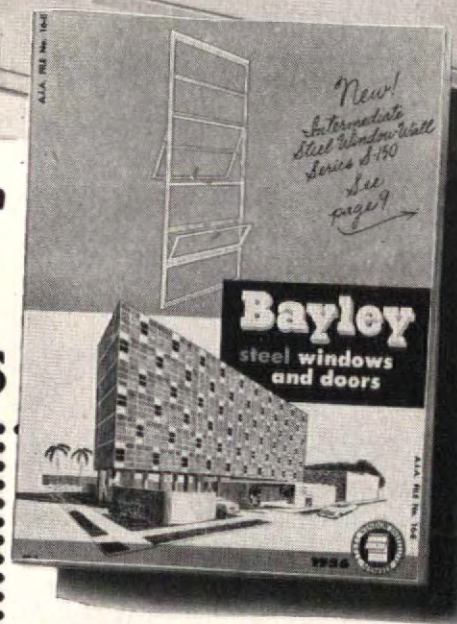
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For Sweet's reference see Bayley Aluminum Windows  
File 17a/Bay and Steel Windows File 17a/Ba

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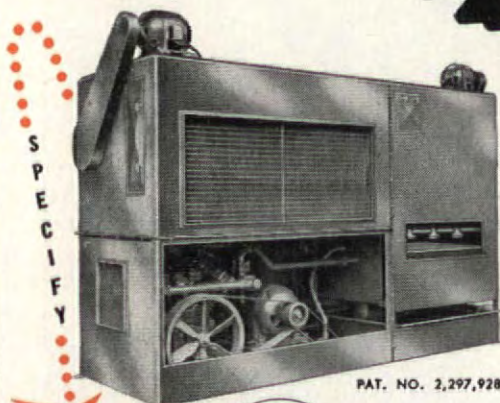
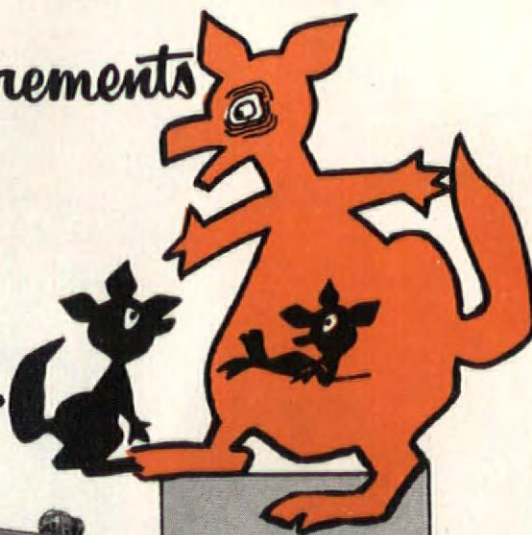
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of reliability



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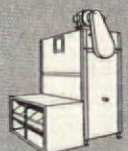
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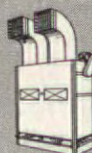
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FOR HEATING  
AND COOLING

## RESEARCH cont'd.

### CONCRETE CODE

The American Concrete Institute has voted to approve its updated 1951 building code. One of the significant revisions introduces ultimate-strength design as an alternate method to the straight-line elastic theory. Areas of the building code where future improvement is expected are those that deal with shear and diagonal tension.

### TEST RESULTS

The American Society for Testing Materials has released a book entitled *Significance of Tests and Properties of Concrete and Concrete Aggregates* (393 pp., 6" x 9", cloth cover, \$6; heavy paper cover: \$5.25).

This is an excellent series of papers by many leading authorities on the subject of concrete. The scope has been expanded greatly over the previous editions (1935 and 1943), which dealt only with *significance of tests* of concrete, to include also the *significance of the properties* of concrete. Numerous innovations in concrete technology and testing are well covered.

While the statements made represent the views of individual authors, all manuscripts were carefully reviewed by a special subcommittee of ASTM Committee C-9 on Concrete and Concrete Aggregates, and the material has been approved by the committee as a Society publication. It is probably the most important book sponsored recently by the committee.

The subject matter has been divided into four principal groups. Part I includes four papers on sampling, statistical considerations, evaluation and needed research. Part II contains 22 papers on the tests and properties of freshly mixed concrete, hardened concrete and special categories including ready-mixed and lightweight concrete and aggregates. Part III contains nine papers on tests and properties of concrete aggregates. Part IV contains four papers on tests and properties of other materials: water, curing materials, air entraining and mineral admixtures.

Practically every paper is supported by a list of references numbering from half a dozen to over 100. Papers are amply supported by tables of data, charts, dimensions and photographic illustrations.

### NEW STANDARDS

The American Standards Assn. has established approval or listing requirements, mostly revisions, for numerous gas-burning appliances, such as ranges, incinerators, water heaters, room heaters, gravity and forced air central furnaces, gravity and fan type floor furnaces, etc. Sponsor: American Gas Assn.

The National Automatic Sprinkler and Fire Control Assn., 205 E. 42nd St., New York 17, N.Y., has prepared a sprinkler code for nursing homes and homes for the aged.



*in the wake of a junior tornado!*

Havoc reigns when Junior takes a bath! But, as informed architects and builders know, Pomona's "Space-Rite" Perma-glaze deck tile is impervious not only to Junior's hard, scratchy toys and the dirt and grime of his day's foraging—but also to soapy water and even corrosive chemicals, harmful to ordinary surfaces!

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**OVERLAID FIR PLYWOOD**—Exterior panels with hard, smooth, glossy fused resin-fiber surfaces. Forms finest architectural concrete. Gives as many as 200 re-uses.



NEW PLYFORM CATALOG contains specification, application data. For free copy, write Douglas Fir Plywood Assoc., Dept. AF, Tacoma 2, Wash. (Good USA Only)

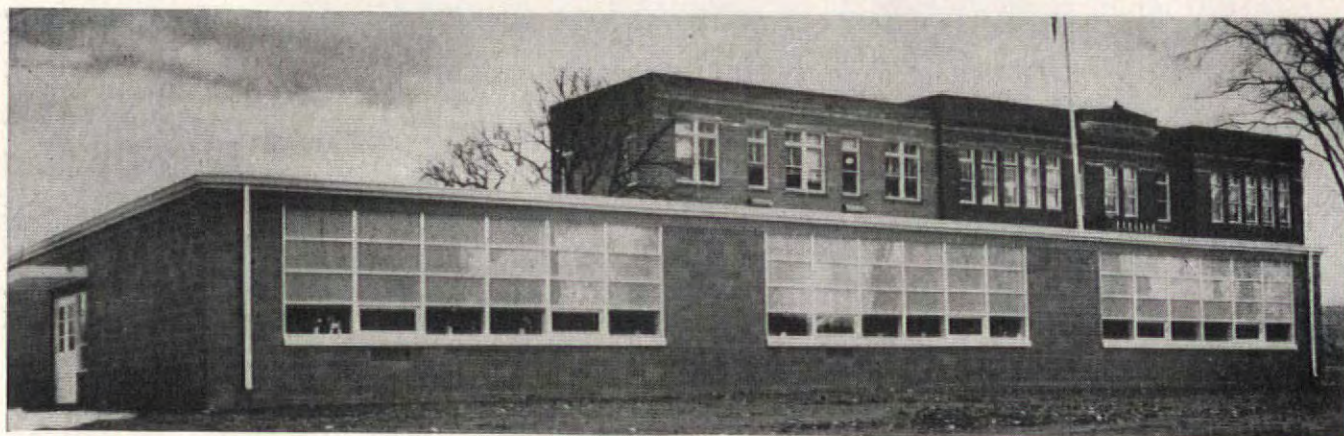
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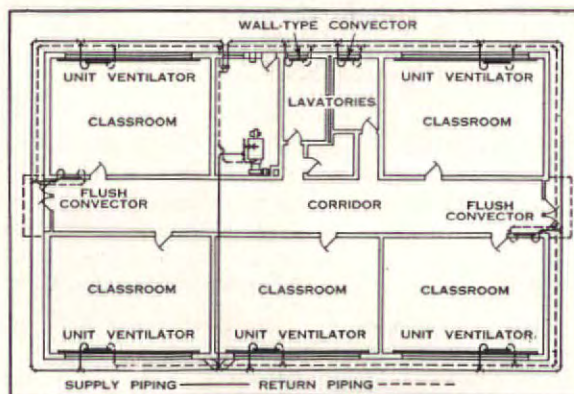
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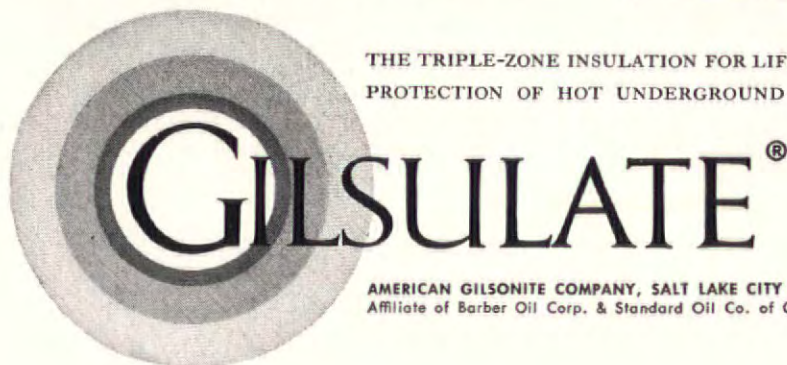
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Cadott School floor plan



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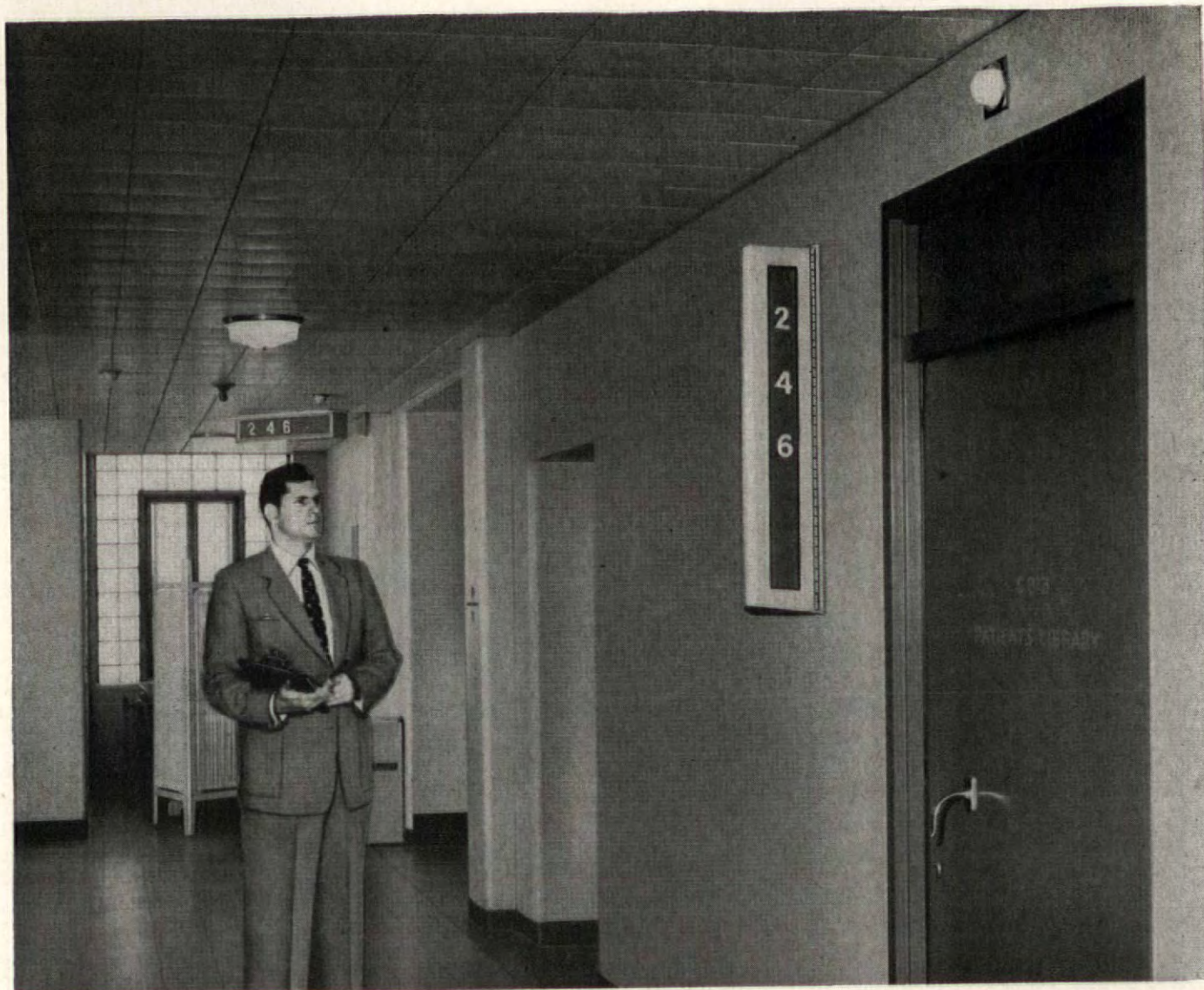
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In any hospital the rapid location of staff members and visiting doctors is of prime importance. The larger the hospital and the number of doctors, the more essential it is to overcome this problem without annoyance to patients and others. Voice paging through loudspeakers is frequently found objectionable because it disturbs patients and ties up the telephone operator's time. The great majority of hospitals, therefore, utilize the silent "flashing light indicator" types of doctor paging systems.

These systems cause no annoyance to patients and greatly simplify the telephone operator's work. Efficient and economical, they permit the operator to page from three to six doctors simultaneously, and consume no more of her time than is required to press four buttons whenever she initiates a call. She usually gets her man...quickly and quietly.



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For many years the Auth Electric Company has developed and produced fine hospital signaling and communication systems. These include Nurses' Call, with or without voice communication between patient and nurse; Staff Register (In and Out); and Doctor's Paging Systems. Whenever finer signaling systems are designed, Auth will produce them.

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# **announcement**

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announcements  
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and building.*



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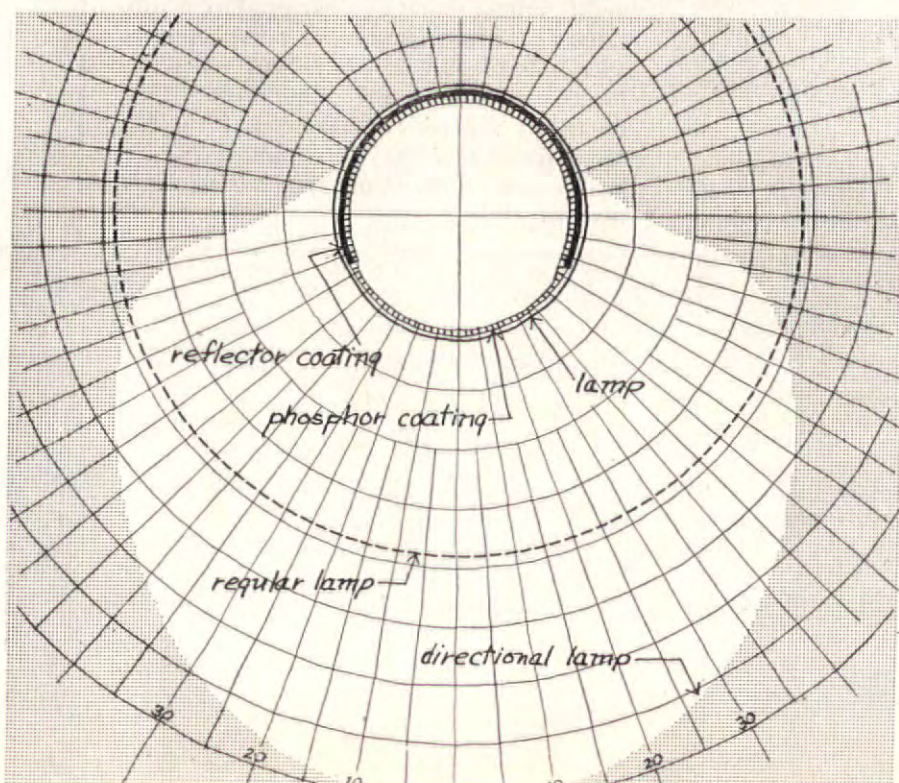
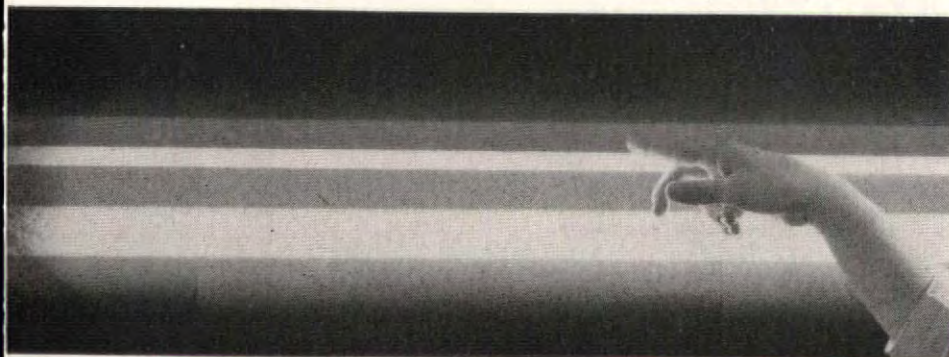
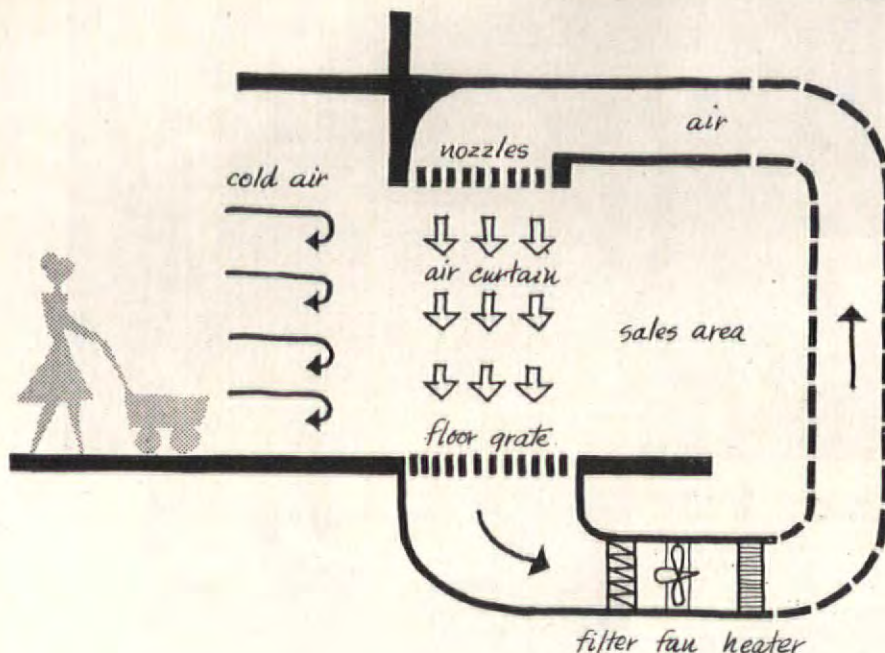


### AIR SHEETS make invisible door against drafts, bugs and dust

Outdating the "when is a door not a door" riddle, the Swiss engineered *Air Curtain* creates an inviting opening for people, while setting up a gentle, positive closure against the elements. Especially suitable for department stores and supermarkets where the first selling step is to get the customer inside, the invisible insulating wall of air is expensive—between \$500 and \$1,000 per lin. ft. of entrance. It does, however, obviate the cost of revolving doors, electric eyes and other mechanical devices and is about the safest emergency exit possible. A simple folding closure can be used at night.

The *Air Curtain* works by discharging vertical blankets of air downward which neutralize the building's internal and external pressures. Usually set up to stop a 40 mph wind, its directional air nozzles can be adjusted manually or automatically to counteract changing wind conditions. The downstream is drawn through a grate into a floor pit. Insects and dirt are trapped in metal filters and flushed away by a water spray. Blowers send the cleaned air up to the overhead plenum for recirculation. Both heating and refrigerating coils can be included in the installation to keep the *Air Curtain* at a comfortable 5° higher than inside temperature. Normally, the blower motor is driven at half speed. Only a gentle breeze can be detected at head level—not enough to muss a lady's hair-do (reported as the door's most critical operating condition). Maximum velocity is used when winds are strong, and then the rate of discharge is still half the velocity of the wind. The *Air Curtain* also may be used to ventilate interior space by directing some nozzles inward and setting others to exhaust outside. The external flow also keeps the area around the entrance dry and ice free.

**Manufacturers:** American Air Curtain, Corp., 10408 Manchester, St. Louis 22, Mo.; Sulzer Brothers, Ltd., 50 Church St., New York, N.Y.



### FLUORESCENT LAMP carries its own reflector inside tube

Realizing that flattering effect is as basic a lighting function as brightness efficiency, Sylvania last year threw away a few foot-candles and marketed *Softlite*, a pretty pinkish incandescent bulb. Now the same firm is pioneering a fluorescent lamp that is almost a fixture in itself. The remarkably simple modification which converts a regular diffusing lamp into a directional one is a reflectant coating covering two-thirds of the tube's inside surface. About 70% more downward light is distributed through the uncoated aperture. Practical for dark-ceilinged rooms and for show-cases where there is little space for external reflectors, the lamps can be mounted bare in holders. They may be turned up-

*continued on p. 210*



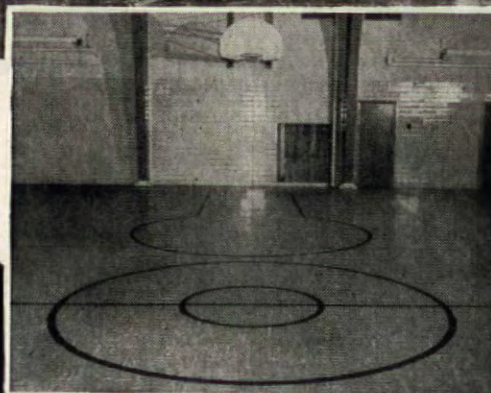
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Gymnasium at Platte Valley Elementary School, St. Joseph, R.F.D., Mo., doubles as lunchroom during the noon hour. (Architects: Eckel and Aldrich, St. Joseph, Mo.)



Beautiful, fast-play gymnasium floor in Oakwood Junior High, Kalamazoo, Mich. (Architect: M. C. J. Billingham.)

*Climaxing years of research in Hillyard laboratories, this new "test tube" finish*

**Is formulated for asphalt tile, yet safe for all floors**

Will not soften, fade, darken or discolor any resilient flooring material.

**Gives complete surface protection**

Forms a hard, smooth, unbroken surface that repels dirt and grease, keeping them from grinding in. Protects floor against food fats, that otherwise would create an unsightly, slippery condition. No water spotting.

**Makes maintenance easy**

The hard, smooth surface makes sweeping fast and simple. Although non-slip, it is *not* tacky, will not catch and build up dirt.

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The finish *stays*. After repeated washings, the rich velvety lustre buffs back easily. Eliminates frequent stripping and refinishing.

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(A)



(B)

Available with (A) regular arm or (B) holder arm  
...4 sizes to meet all requirements

Only The **"INADOR"** Offers All These  
Exclusive **NORTON** Features:

Rack and Pinion Construction gives uniform, positive  
checking at every point!

New Aluminum Shell for lighter weight, robust wear.  
Proved by use on our surface closers for over 7 years!

Special Spring—of highest-quality steel!

Non-Gumming, Non-Freezing Hydraulic Fluid  
permanently lubricates every moving part!

Double Adjusting Levers, easily moved by fingers,  
control speed of closing action and latching action!

Regular Arm Series, as well as Holder Arm Models,  
so suitable for hospital use!

Famous Guarantee for 2 full years, provided proper  
recommended sizes are used!

Write today for **FREE CATALOG** on full Norton Line  
of concealed and surface door closers.

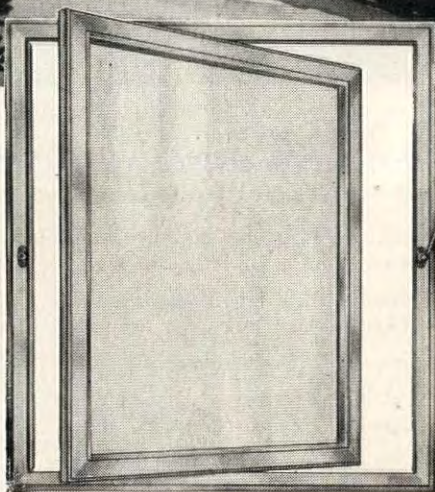
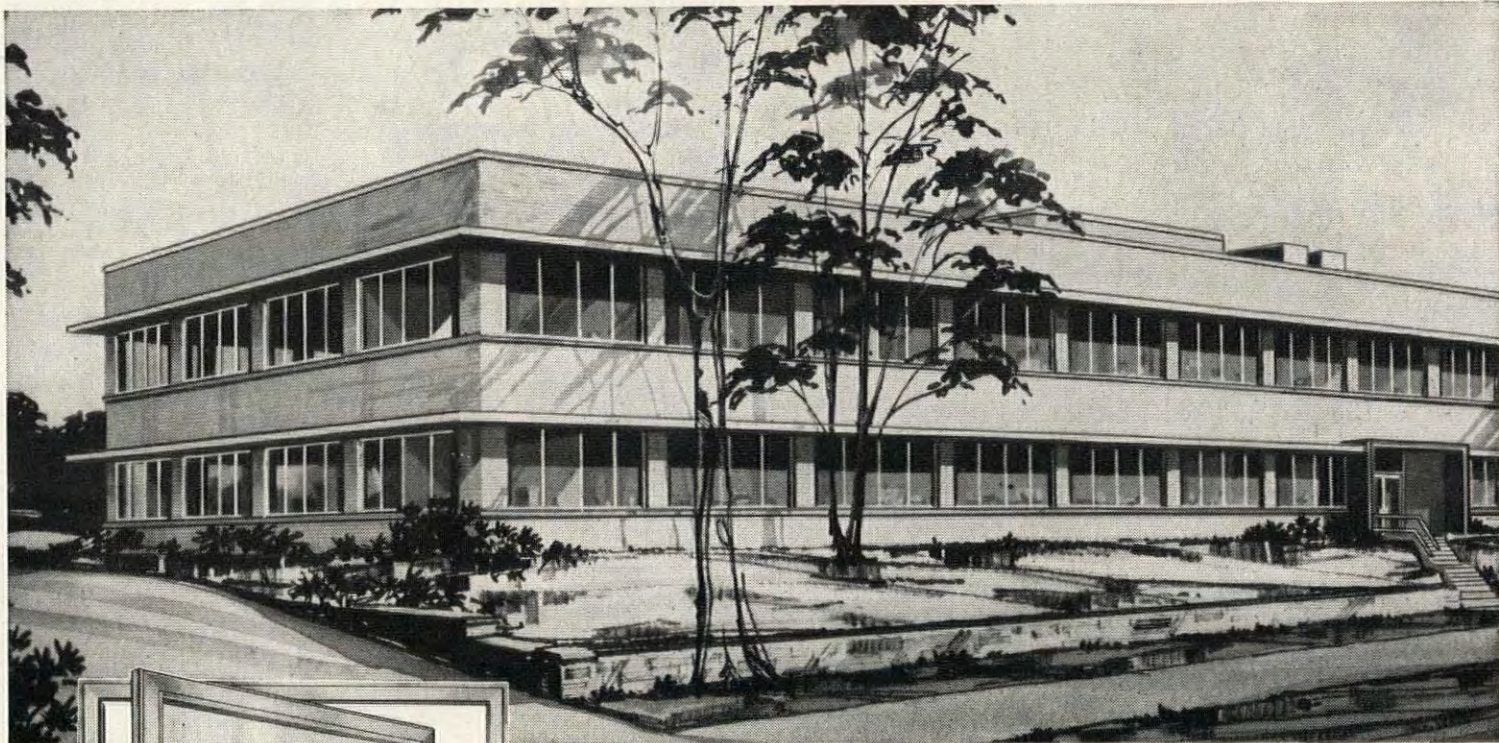


REYNOLDS ALUMINUM IN MODERN ARCHITECTURE

## Three new office buildings of a major mid-west oil company

*Architects and Engineers:*

Owner's Construction Division. R. A. Niles, Manager. George W. Terp, A.I.A.



### *Kansas City Building*

*General Contractor: S. Patti, Kansas City, Mo.*

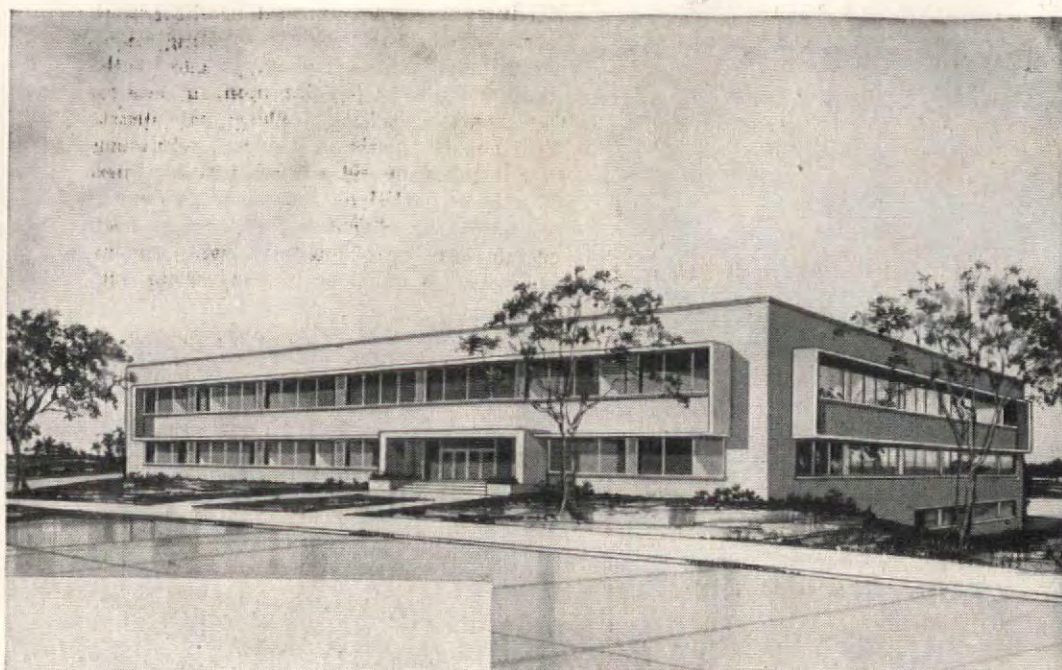
*This building features Reynolds Aluminum  
Vertically Pivoted Windows, Series 100.*

### **REYNOLDS ALUMINUM SERVICE TO ARCHITECTS**

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

# REYNOLDS

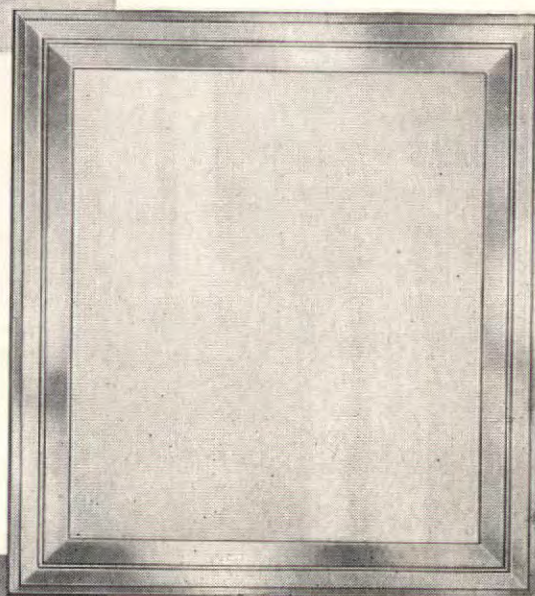




**St. Louis Building**  
**General Contractor:**  
 Murch Jarvis Construction Co.,  
 St. Louis, Mo.



*These two buildings  
 feature Reynolds Aluminum  
 Fixed Windows  
 —with site lines equal  
 to pivoted windows.*



**Minneapolis Building**  
**General Contractor:**  
 Naugle-Leck, Inc.,  
 Minneapolis, Minn.

**Architectural Metal  
 Fabricators & Erectors:**  
 Crown Iron Works,  
 Minneapolis, Minn.

See "FRONTIER," Reynolds great dramatic series, Sundays, NBC-TV Network.

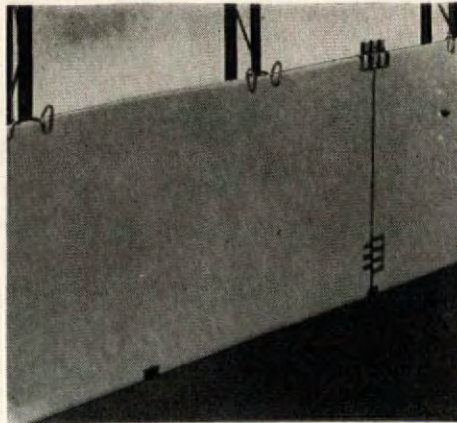


# ALUMINUM



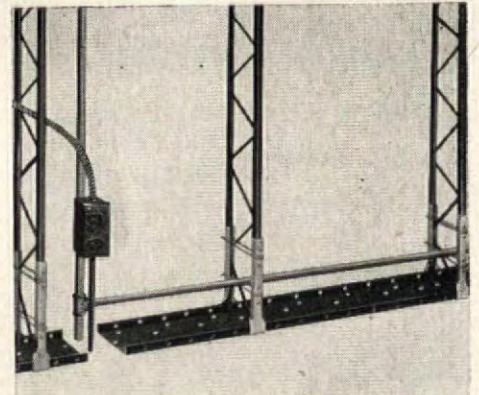
## PRODUCTS *cont'd.*

side down for indirect lighting or at an angle to illuminate a bulletin or school chalkboard. Dust collecting on top of the opaque coating cannot rob the lamp of useful light and so the tubes do not have to be cleaned as often as uncoated ones. The first batch of directional fluorescents are being made in 4' and 8' single-pin types. A 4' cool white sells for about \$2.25. *Manufacturer: Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N.Y.*



### WEBBED STUDS open way for utilities in plaster partitions

Holding the edge over most prefabricated partitions on initial cost, fire rating, sound control and the solid look, plaster walls still are the most popular nonload bearers for hospitals, schools, offices and apartment houses. National Gypsum, admitting that installation and service of utility lines in plaster partitions has been awkward, developed the *Holostud Partition*, a half prefab and half job-built wall system which makes it easier to run wiring and



and makes utilities more accessible for repairs and updating. Quickly assembled with lather's tools, the factory half of the lightweight, shock-resistant wall consists of three steel parts: the *Holostud*—a trusslike diagonally webbed member 2½" to 6" wide with ½" angle outer chords; a channel-shaped perforated track fastened at floor and ceiling; and an 8½"-high galvanized shoe which acts as a rigid connector between stud and track and allows for variations in ceiling height. Ducts and BX can be run horizontally through the open studs as well as vertically, and the wire web can be cut easily to make room for large pipes and conduits. Diamond mesh lath is tied to the studs at 6" intervals and through perforations along the track legs. The *Holostud* system is also supplied with special joint and finishing clips for attaching gypsum lath. For repairs, sections can be cut out and new lath attached as a base for fresh plaster.

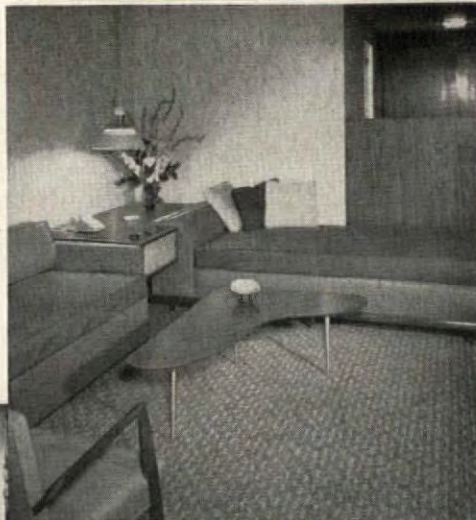
Both types of walls are excellent sound deadeners. The gypsum lath and plaster partition has a sound transmission rating of 49 db and the metal lath, with studs 16" o.c., rates at 40.5 (better than a 3" thick masonry wall plastered on both sides) and with studs 24" apart, 46 decibels (still better than FHA minimum requirements for party walls). A 1½-hour fire rating can be obtained with the gypsum lath and 1 to 2 hours with the metal lath, depending on the kind of aggregate and proportion in the plaster mix. Finished walls weigh between 10 and 15 lb. per sq. ft. and can be erected up to 26' high. In the New York area *Holostud* partitions plastered on both sides run about 92¢ per sq. ft.

*Manufacturer: National Gypsum Co., Buffalo 2, N. Y.*

In the famous  
BEVERLY-HILTON

**P**arkwood  
*tops anything*

In the new  
DALLAS STATLER



Beverly-Hilton bedroom showing coffee table and built-in radio-night table surfaced in Parkwood Genuwood Flat Cut Walnut.



Lobby of the Beverly-Hilton has variety of Parkwood applications both on built-ins and occasional pieces.

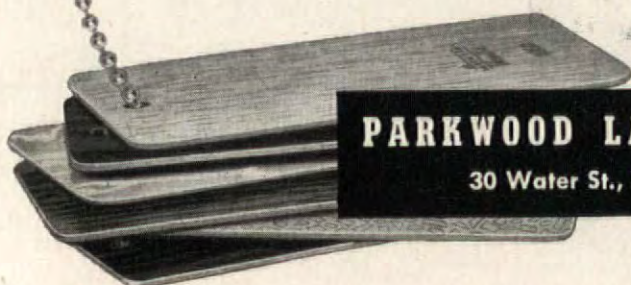
Warren Meyerhoff Woodwork

Genuwood, Parkwood's superb genuine wood veneer laminate, generously used in both public and private rooms, contributes handsomely to the aura of luxury that characterizes the Beverly-Hilton Hotel. It is being widely used also in the new Dallas Statler.

### Reach for the Parkwood chain

Whatever your requirements: brilliant patterns, solid colors, fine wood grain reproductions or magnificent genuine wood veneers (all protected for life by lamination with genuine Melamine) . . . you'll find the Parkwood chain a source of excitement and inspiration. Yours for the asking on your letterhead.

See our insert in SWEET'S 14-a PAR—  
or write for your copy and name of  
your nearest distributor.

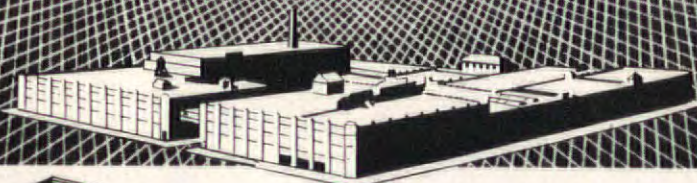


**PARKWOOD LAMINATES, INC.**  
30 Water St., Wakefield, Mass.

*continued on p. 216*



# BEHIND THE MANUFACTURE OF WIRING DEVICES...

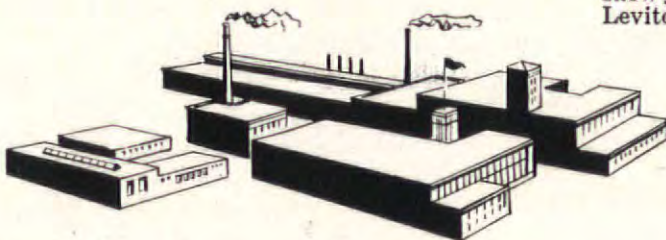


This is Leviton — one of the world's largest manufacturers of electrical wiring devices. **BEHIND THE LEVITON NAME** stand four plants, staffed by over 5,000 specialists, manufacturing a staggering total of 10,000 different items... 3,800 of these items mass-produced by the millions and sold at modest prices.



But you get more than big production! You choose from the world's most complete line of electrical wiring devices. Leviton assures superior quality — through precision manufacturing of each component part from raw material to finished product. And each part as well as the final assembly must pass the new Leviton Testing Laboratory's high standards.

So whatever your needs in wiring devices, you know you can specify Leviton with confidence. It's a name backed by *nearly a half-century of experience in the manufacture of a complete line of wiring devices*. Let us show you why so many architects, electrical contractors and builders specify Leviton. Send for our complete catalog today.



YOUR BEST JOBS ARE DONE WITH

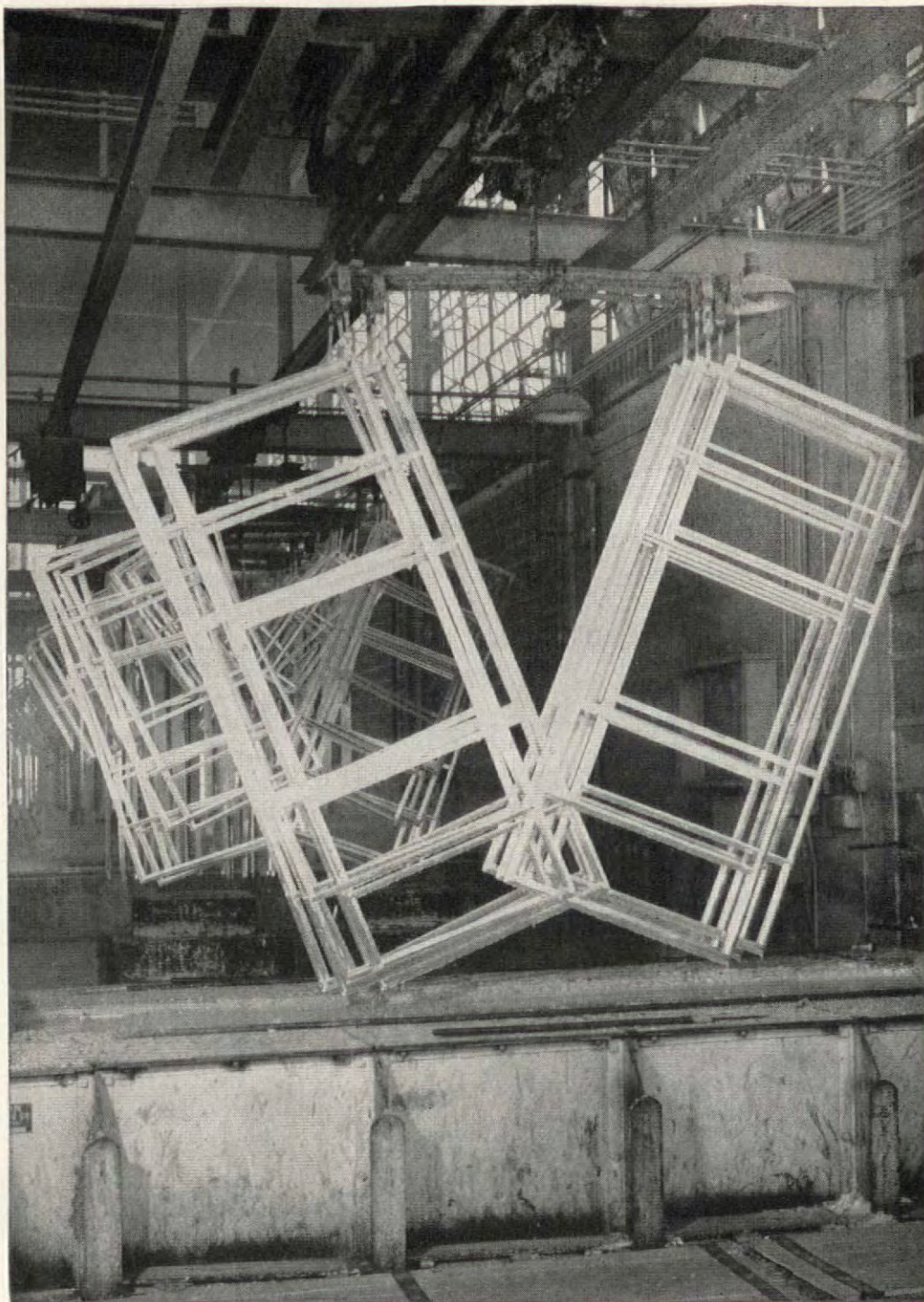


**LEVITON MANUFACTURING COMPANY BROOKLYN 22, N. Y.**

Chicago • Los Angeles • Leviton (Canada) Limited, Montreal

For building wire and cable contact our subsidiary: AMERICAN INSULATED WIRE CORPORATION





## FACTS ABOUT THE FENESTRA

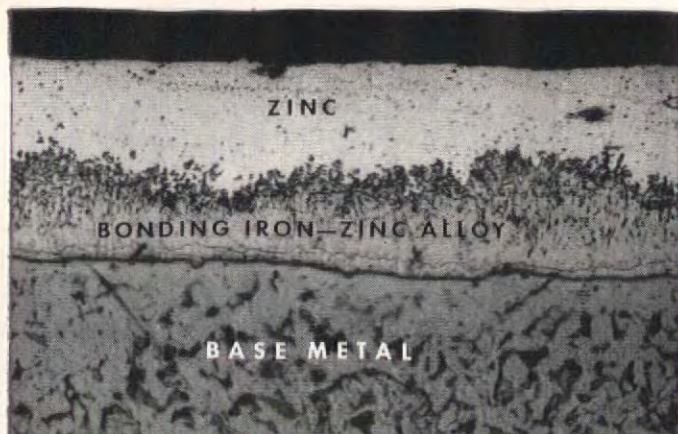
Fenestra Windows are cleaned, pickled, rinsed, fluxed, dried and then galvanized by completely immersing in molten zinc. Bonderizing adds extra protection and a smooth silver-gray finish.

The Fenestra process controls automatically the exact time and temperature for the finest finish.

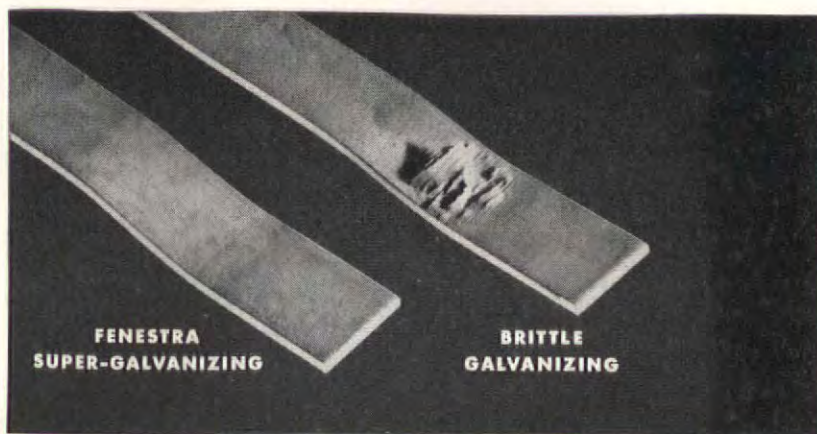
Fenestra Galvanized-Bonderized Industrial Windows used in this building for John Hassall, Inc., Westbury, New York, to reduce window maintenance costs. Ask your local Fenestra representative for information on the complete line of Fenestra Industrial Windows. *Architect-Contractor* — Winner Construction Corporation, New York.







This microphotograph shows how the zinc coating alloys with the steel base. Fenestra's Galvanized-Bonderized Finish is *self-healing*—small breaks in the surface are automatically closed by sacrificial action of the zinc, leaving the steel protected underneath!



Bend Test demonstrates the durability of Fenestra Super Hot-Dip Galvanizing. A gradual iron-to-zinc transition from the base metal, through zinc-iron alloys, to the outer layer of relatively pure zinc assures a lifetime bond. Ask your Fenestra representative for this demonstration.

## GALVANIZED-BONDERIZED FINISH

Exclusive Fenestra Process gives you steel-strong windows with a self-healing lifetime finish that needs no paint!

Many people ask us, "How long can Fenestra Galvanized-Bonderized Steel Windows go without painting?"

The best answer we know is to refer the inquirer to some of our older installations. Like the Fenestra Windows in Mill No. 2 of the American Woolen Company, Shawsheen Village, Massachusetts. They were installed unpainted 35 years ago and haven't been painted since, inside or out. They're still in excellent condition in spite of extremely high humidity conditions in this building.

Or, the Fenestra Windows in the Galveston Wharf Company building, Galveston, Texas. These windows were installed unpainted in 1926, have never been painted and are in excellent condition after 30 years of fog, pounding storms and destructive salt spray and air.

The pictures on these pages show you why Fenestra Galvanized-Bonderized Windows need no paint. They also show a couple of our customers who will never again need to worry about costly window maintenance.

When you combine all the advantages of the strength of steel with Fenestra's Super Hot-Dip Galvanizing, the result is a window that gives you the lowest lifetime window maintenance cost. And, best of all, the Fenestra Galvanized-Bonderized Finish costs no more than the average 2 coats of field paint.

This lifetime finish is available on all types of Fenestra Windows—Intermediate, Industrial and Residential. Ask your local Fenestra representative for complete information or mail the coupon below.

**Fenestra®** GALVANIZED-BONDERIZED  
STEEL WINDOWS

**INTERMEDIATE • INDUSTRIAL • RESIDENTIAL**

YOUR SINGLE SOURCE OF SUPPLY FOR  
WINDOWS • DOORS • BUILDING PANELS

**Fenestra** AF-2296 East Grand Boulevard  
Detroit 11, Michigan

Please send complete information on Fenestra Galvanized-Bonderized Steel Windows.

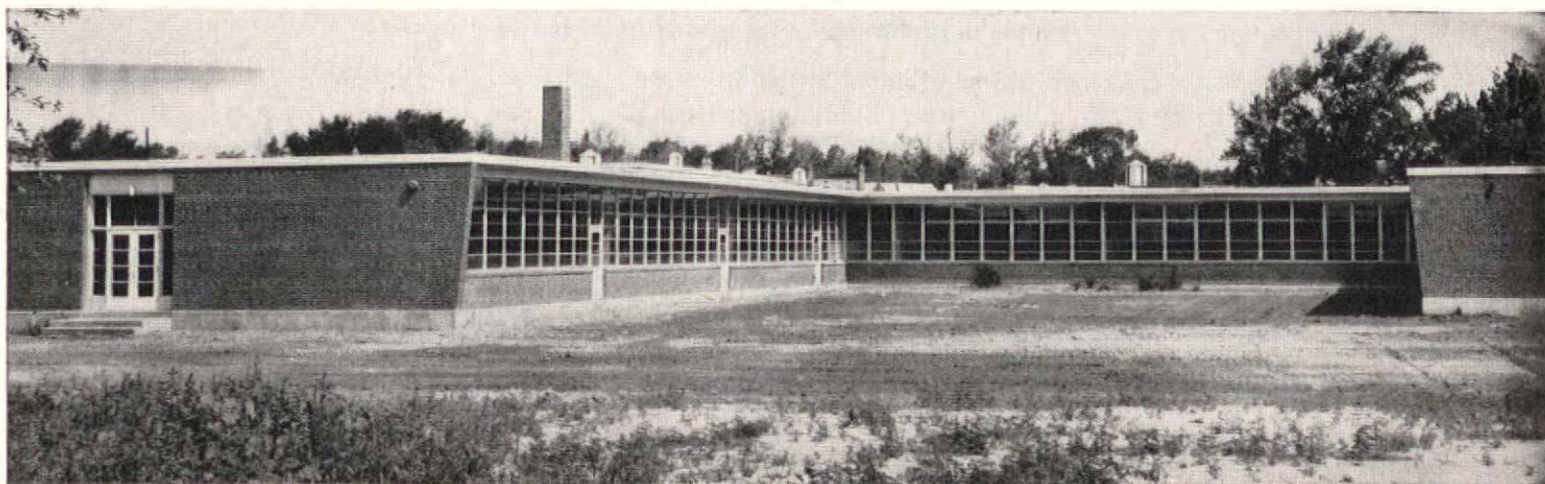
Name

Firm

Address

City  State

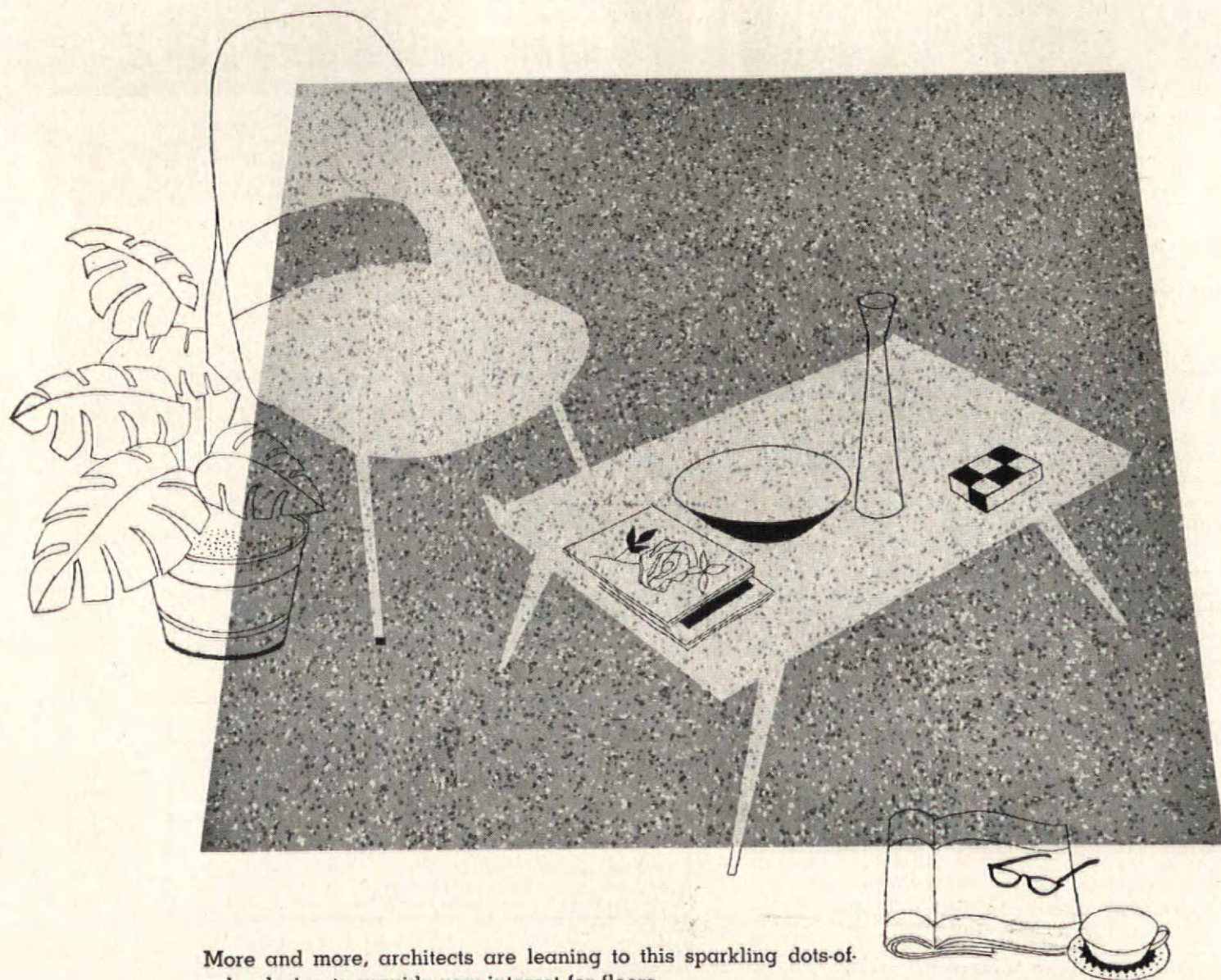
School Board Members like the good looks and low maintenance costs of Fenestra Galvanized-Bonderized Intermediate Windows. Here's one of many recent installations. Darby Elementary School, Darby, Pa. *Architect*—Horace W. Castor, Philadelphia. *Contractor*—Sidney Elkman, Philadelphia.





# 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.

**Moultile**

PRODUCTS  
SINCE 1929

**MOULTILE INCORPORATED • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.**



# Guard® . . . revolutionary new vinyl wall covering cuts maintenance and cost

**Guard is the first heavy-duty  
vinyl wall covering designed specifically for use on walls.  
You can install it and forget it!**

Most of your commercial and institutional clients would jump at the chance to cut the never-ending job of wall maintenance. But suppose you could show them how to cut both maintenance *and* cost?

Then it will pay you to investigate Guard, the first true heavy-duty vinyl covering *for walls*.

Guard is produced by laminating a vinyl sheet to a strong cloth backing. Decorative effects are achieved through printing, rather than embossing, and then protected with sealing coats of clear vinyl.

## **Advantages of Guard**

**Multi-color decoration.** Printing makes possible a range of multi-color patterns that cannot be obtained by any other process.

**Perfect match.** A Guard laminate-print is patterned so that adjoining strips match identically on the wall.

**Accurate pre-trimming.** Guard is pre-trimmed. Application is neater, quicker, more economical.

**Protective coating.** The printed surface of Guard is sealed with clear vinyl coats which lock in the colors and protect the pattern against washing, fading, scuffing, chipping or denting.

**Fire-proof.** Guard will not support a flame on or off the wall.

**Controls plaster cracks.** Guard actually strengthens walls, helps prevent plaster cracks from spreading or showing through.

**Economical to install.** Guard goes on over any flat surface. No special tools or wall preparation required.

## **Special Guard Adhesive**

Introduced with Guard is a new latex adhesive, FC-100.

It spreads smoothly with a brush. It will not mildew. It is water-resistant. It ages well, keeps Guard from curling or loosening on the wall.

## **Better Than Tile**

Guard is now made in more than 40 beautiful patterns and colors. It is ideal—cost-wise, service-wise,—for corridors, stairways, dining rooms, bars, kitchens, every area where traffic is heavy and usage is hard. For walls where tile is commonly used, Guard is not only more practical but offers the warmth, texture and design that tile can never touch—and at half the cost.

Many Guard patterns are matched to popular patterns in Wall-Tex wall canvas. A Guard wainscoting with Wall-Tex above makes a handsome and inexpensive combination for stairways, recreation rooms, bathrooms and elsewhere in private homes.

In spite of its advantages, Guard is priced below most vinyl wall coverings. It is one of the most

profitable investments you can make for your clients. Look into Guard now.

## **Guard Meets All These Specifications**

**Fold Strength:** Will fold more than 30,000 times under 6 pounds pressure.

**Fadeometer:** 125 hours with no noticeable change.

**Abrasion Resistance** using Taber Abrader with emery wheel: 1500 cycles before color damage.

**Abrasion Tests** using Gardner Washability Tester: Guard withstood 40,000 passes with sandpaper.

**Yellowing,** TT-P-141G method 613.2: No noticeable yellowing of film. No change in color after 30 days in the dark.

**Resistance:** No change in Guard film after being subjected to dilute solution sulfuric and hydrochloric acid, vinegar, ammonia, caustic, lye, soap, detergent, turpentine, glycerine, mineral spirits.

**Outside Exposure:** No change in color or film properties of Guard after 30 days.

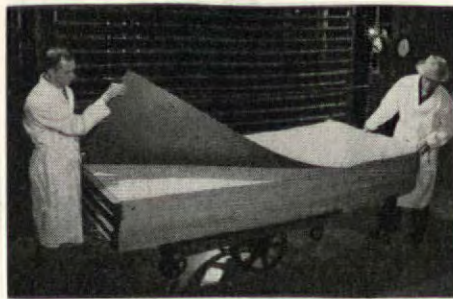
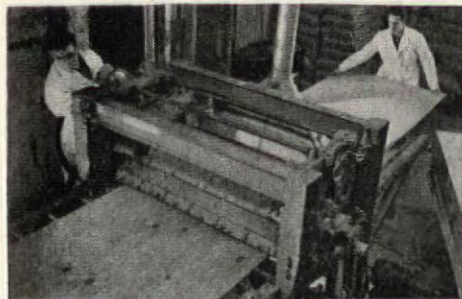
**Write Today for Guard Color Swatches,  
Prices and Full Details on Installation.**

## **Columbus Coated Fabrics Corporation**

**Dept. AF-46 • Columbus 16, Ohio**



## PRODUCTS *cont'd.*



### **KNOTTY PLYWOOD** made weather-proof by plastic surgery

Knotholes, until recently esteemed only by small boys outside ball parks and by sidewalk supers, can now be considered a virtue in the new *Duraply* plywood. Thanks to an important wood doctoring machine developed by William Works of Crown Zellerbach and built at US Plywood's Seattle plant, second growth and knotty small trees are being used to make a quality plywood without biting into the scarce supply of big old high-grade Douglas fir. As the plys are fed into the machine, an oscillating blade fills cracks and knotholes with plastic, and the entire panel is heat-cured. Overlays of *Crezon*, a sheet of cellulose fibers impregnated with phenolic resins, are placed on each face and fused to the plywood under heat and pressure. Far from being a second-rate plywood, the *Duraply* has some unusual physical properties. It has gone through boiling, baking, steaming, freezing and other torture tests without distorting or wrinkling its smooth, splinterfree faces. Suitable even for marine use, *Duraply's* dimensional stability and fine paint surface make it excellent for cabinetwork and siding. It is produced in 4' x 8' panels in  $\frac{3}{8}$ " and  $\frac{1}{2}$ " thickness at prices of 35¢ to 60¢ per sq. ft.—about 16% less than other resin-faced plywoods.

Manufacturers: US Plywood Corp., 55 W. 44 St., New York, N.Y., and Crown Zellerbach Corp., Portland, Ore.



BURDINE'S, INC., Miami Beach, Fla., Mrs. Mabel L. Walter, Food Service Mgr.  
Architect—Edgar Mandel Dealer—Jack Conkle, Inc.

### **CUSTOM-BILT BY SOUTHERN**

Food service equipment designed, engineered, fabricated and installed in any type operation, expertly fitted to available space. You can depend on thorough cooperation by your Southern Dealer, from initial analysis of your food service problems through complete installation and reliable maintenance for the years to come. Get expert help with your next kitchen equipment problem or layout—call your "Custom-Bilt by Southern" dealer, or write Southern Equipment Company, 4550 Gustine Ave., St. Louis 16, Missouri.

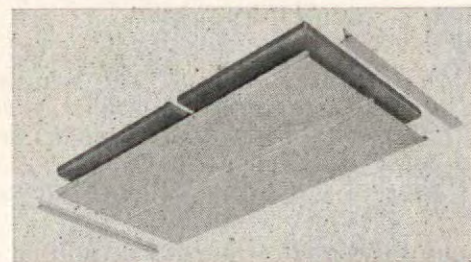
## **SOUTHERN** EQUIPMENT COMPANY



"CUSTOM-BILT BY SOUTHERN" DEALERS: ALABAMA, BIRMINGHAM—Vulcan Equip. & Supply Co.; MOBILE—Mobile Fixture Co. ARKANSAS, LITTLE ROCK—Krebs Bros. Supply Co.; TEXARKANA—Buckelew Hdw. Co. COLORADO, DENVER—Carson Hotel Supply. FLORIDA, DAYTONA BEACH—Ward Morgan Co.; JACKSONVILLE—Wm. H. Morgan Co.; MIAMI—Jack Conkle, Inc.; ORLANDO—Turner-Haack Co.; TAMPA—Food Service Equip. & Engr. Corp. ILLINOIS, PEORIA—Hertzel's Equip. Co. INDIANA, INDIANAPOLIS, MARION—National China & Equip. Corp. IOWA, DES MOINES—Bolton & Hay. KANSAS, WICHITA—Arnholz Coffee & Supply Co. KENTUCKY, LEXINGTON—Heilbron-Matthews Co. LOUISIANA, NEW ORLEANS—J. S. Waterman Co., Inc.; SHREVEPORT—Buckelew Hdw. Co. MICHIGAN, BAY CITY—Kirchman Bros. Co.; DETROIT—A. J. Marshall Co. MINNESOTA, MINNEAPOLIS—Aslesen Company. MISSOURI, KANSAS CITY—Greenwood's Inc. MONTANA, BILLINGS—Northwest Fixture Co. NEBRASKA, OMAHA—Buller Fixture Co. NORTH DAKOTA, FARGO—Fargo Food & Equip. Co. OHIO, CINCINNATI—H. Lauber & Co.; CLEVELAND—S. S. Kemp Co.; COLUMBUS—General Hotel Supply; TOLEDO—Rowland Equip. Co. OKLAHOMA, TULSA—Goodner Van Co. PENNSYLVANIA, ERIE—Arthur F. Schultz Co. SOUTH CAROLINA, GREENVILLE—Food Equipment Co. TENNESSEE, CHATTANOOGA—Mountain City Stove Co.; KNOXVILLE—E. Carleton Scruggs; MEMPHIS—House-Bond Co.; NASHVILLE—McKay-Cameron Co. TEXAS, AMARILLO—Arnholz Coffee & Supply Co.; CORPUS CHRISTI—Southwestern Hotel Supply, Inc.; EL PASO—El Paso Hotel Supply Co.; SAN ANTONIO—Southwestern Hotel Supply, Inc. UTAH, SALT LAKE CITY—Restaurant & Store Equip. Co. VIRGINIA, RICHMOND—Ezekiel & Weillman Co. WEST VIRGINIA, CLARKSBURG—Parson-Souders Co. WISCONSIN, MILWAUKEE—S. J. Casper Co.

### **ACOUSTICAL CEILING** of large pans is easily installed, washed

As buildings grow bigger, larger material components seem to make good sense visually and financially. *Gold Bond Panelcoustic* ceiling going up in 2' x 4' units, qualifies for the wide-open office spaces in efficient installation and upkeep as well as appearance. The simple metal pans are



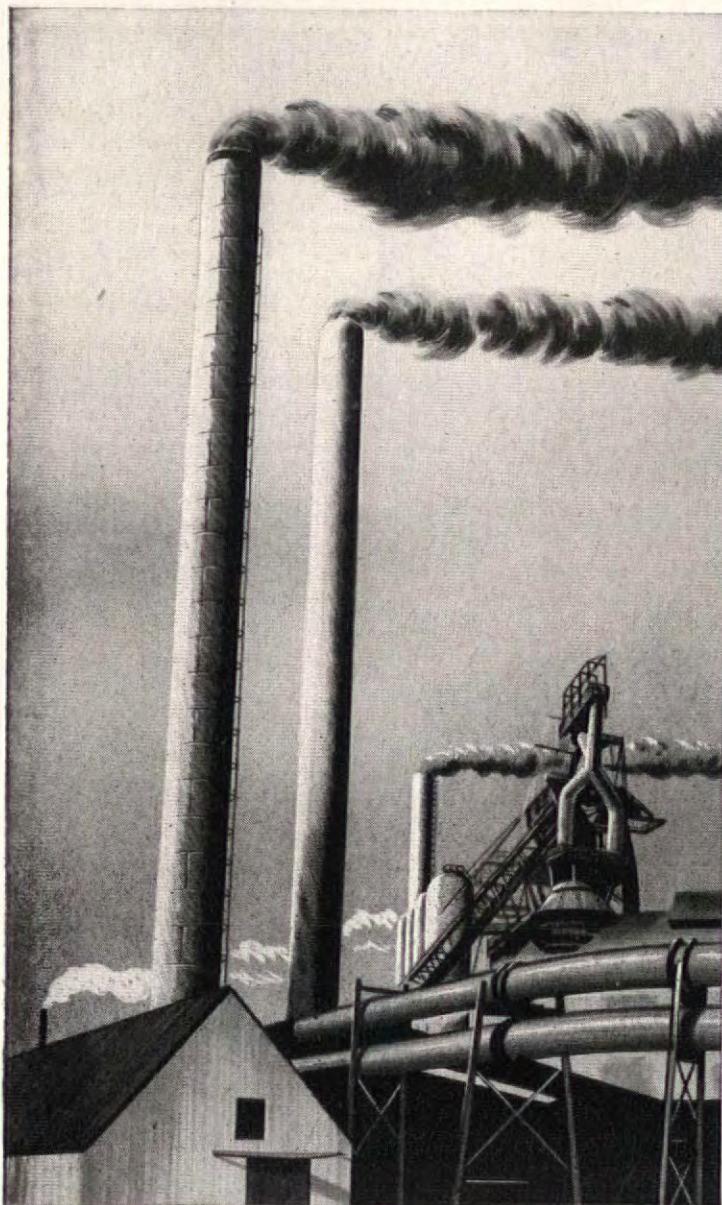
set on a grid of stock tee runners and can be lifted out at any time for access to pipes and conduits above. Sound-absorbing pads 1", 1½", 2" thick with noise reduction coefficients of .60 to .90 are supported on top of the pans by integral ribs. *Panelcoustic's* baked enamel surface can

*continued on p. 222*



# Three-area exposure tests of Alclad screen wire cloth prove protective qualities of Architectural Alodine® finish

**There is little or no corrosion of the base metal after extended exposure—and build-up of salt, industrial soil and dirt can be removed with a soft bristle brush, tests show**



**ALODIZED: 2 to 1 in Pittsburgh.** Untreated cloth showed serious pitting of the base metal after 1½ years. Alodized cloth showed only minor base metal corrosion after 3 years.

Alclad screen wire cloth has been under exhaustive corrosion resistance tests in industrial sections of Miami, metropolitan Pittsburgh, and the West Coast for some time. At each test farm, the results have been the same—little or no corrosion of the base metal when treated with Architectural Alodine, much corrosion of the base metal when untreated. And in every case, the cloth with the Alodine finish was exposed to the elements for much longer periods of time.

Write us today for more information about the use of Alodized Architectural Aluminum in the construction of industrial plants, commercial buildings, and dwellings.



**ALODIZED: 4 to 1 in Miami.** Untreated cloth showed objectionable corrosion build-up after 3 months' exposure. Alodized cloth showed no corrosion of the base metal after 1 year.



**ALODIZED: 6 to 1 in Tacoma.** Untreated cloth showed serious salt build-up after 2 weeks. Alodized cloth began to show minor salt build-up after 12 weeks.

**AMERICAN CHEMICAL PAINT COMPANY, Ambler 23, Pa.**

DETROIT, MICHIGAN

NILES, CALIFORNIA

WINDSOR, ONTARIO







**VERSATILITY  
THAT  
GIVES  
"Personality"  
TO  
COMMUNITY  
BUILDING**

***Ceco Curtainwalls Offer Architects  
Opportunity to Design Individuality into  
Whole Business Areas or Single Structures***

What is it that makes one shopping center, or one structure, for that matter, stand out over all others? It is individuality. That quality in people creates personality. And in building, distinctive character can result in "personality," too. To help architects achieve the unusual, we suggest Ceco Curtainwall Construction, tailor-made to each individual job, offering unusual versatility...adding new beauty to old neighborhoods...bringing a look of the future to new business communities. Here is fresh simplicity





Shopping centers—retail stores—achieve a pleasing appearance through the color of Ceco Curtainwalls made of aluminum or steel windows and insulated panels . . . erection time is speeded . . . dead-weight is cut.



Buildings radiate a clean, colorful, fresh look with Ceco Curtainwalls. Used with originality, they can symbolize the trademark of the creative designer . . . bring a look of the future to business communities.



Office buildings offer opportunity for individuality when built with Ceco Curtainwalls. Here is the Meramac Building, Clayton, Missouri. Benjamin Shapiro & Robert Tisdale, architects. Manuel Lasky, owner.

made possible by a "skin" of windows and panels. Erection time is speeded . . . dead-weight is cut . . . by this modern method of enclosing structures. If you want to put individuality into the buildings you design, so they bear the mark of your creation, you have a new medium in Ceco Curtainwall Construction. Ceco Engineers can help you in the planning stage with data concerning such important subjects as practical application, load transfer, anchoring and cleaning. So won't you call us?



**CECO STEEL PRODUCTS CORPORATION**

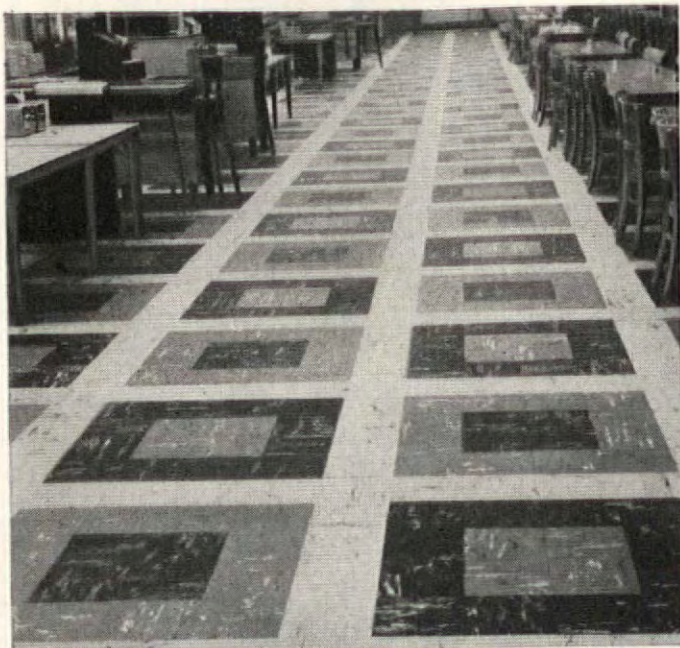
General Offices: 5601 W. 26th Street, Chicago 50, Illinois

Metal Windows and Doors • R/C Duct Floors • Steel Joists • Metal Roofing • Lathing Products

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE



**So easy to care for... saves up to 50% on maintenance costs!**



Despite constant exposure to heavy traffic and accidentally spilled food, the Terraflex floor in the Sperry Gyroscope Co. cafeteria at Lake Success, L. I., shows no sign of wear ... still looks fresh and colorful.



More than a million people use the Miami Terminal of Eastern Airlines each year. After several years of service, Terraflex has proved its durability ... still looks colorfully new ... has cut maintenance time and costs.

## Johns-Manville **TERRAFLEX** Vinyl Asbestos tile flooring ... beautiful, colorful, incredibly durable!

**A**CTUAL ON-THE-JOB FIGURES show that Johns-Manville Terraflex® floor maintenance expense is reduced as much as 50%, when compared to the next most economically maintained resilient type flooring.

A quick damp mopping usually keeps Terraflex clean and bright ... its nonporous surface requires no hard scrubbing ... frequent waxing is eliminated. Despite heavy traffic service ... spilled liquids and foods ... abusive treatment,

Terraflex retains its sparkling, new appearance.

J-M Terraflex vinyl asbestos tile, available in 17 attractive marbled colors, is the ideal flooring for restaurants, public areas, schools, hospitals ... wherever reliable floor service, long-wearing beauty and maintenance economy must be combined.

For complete information about Terraflex vinyl asbestos floor tile, write Johns-Manville, Box 158, New York 16, N. Y.

See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

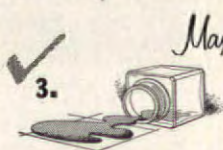
*Check these special TERRAFLEX advantages*



✓ 1.

*Lasts Longer*

Made of vinyl and asbestos, Terraflex will outwear any other type of resilient flooring of equal thickness.



✓ 3.

*Easy to Clean*

Dirt can't penetrate Terraflex's nonporous surface. A swish of a damp mop keeps it shining bright.

*Maximum Service*

Terraflex defies kitchen oils and greases ... strong soaps will not dull its lustre.



✓ 4.

*Wide Color Range*

Terraflex comes in 17 marbled colors that go all the way through the tile—won't wear off or wash out.



✓ 5.

*Greater Resilience*

Terraflex is flexible, provides comfort and quiet underfoot ... resists indentation.



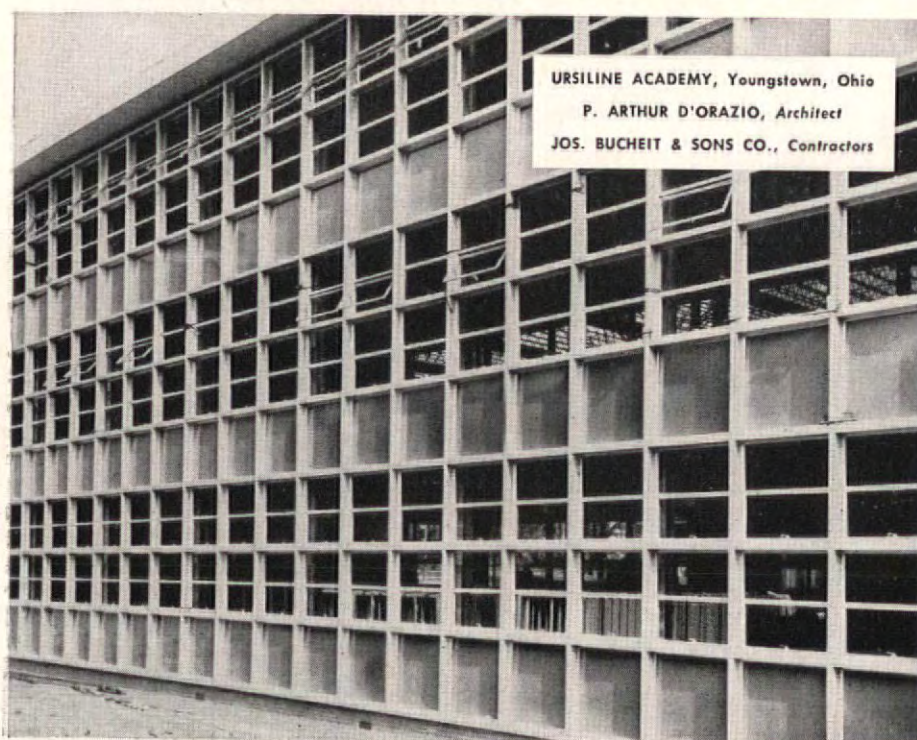
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NOTRE DAME HIGH SCHOOL, Detroit, Michigan  
WALTER J. ROZYCKI, Architect  
KREIGHOFF CO., Contractors

## THE DYNAMIC LOOK...



URSULINE ACADEMY, Youngstown, Ohio  
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## with *Versatile* VAMPCO aluminum Window Walls

These beautiful new school buildings are fine examples of how VAMPCO's unusual versatility provides the "Dynamic Look" that is so modern and inviting. Regardless of size or style of design, school architects everywhere are turning to VAMPCO's wide range of Aluminum Window Wall Sections for extra strength, durability and beauty at low cost! Find out how VAMPCO's special designing service can help you solve your lighting and ventilating problems most economically and efficiently . . . mail coupon TODAY!

### VALLEY METAL PRODUCTS CO.

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VAMPCO ALUMINUM PRODUCTS, Ltd.  
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VERY FINEST IN LIFELONG ALUMINUM WINDOWS

#### VALLEY METAL PRODUCTS CO.

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☐ Send Light Construction Aluminum Window Catalog.

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COMPANY.....

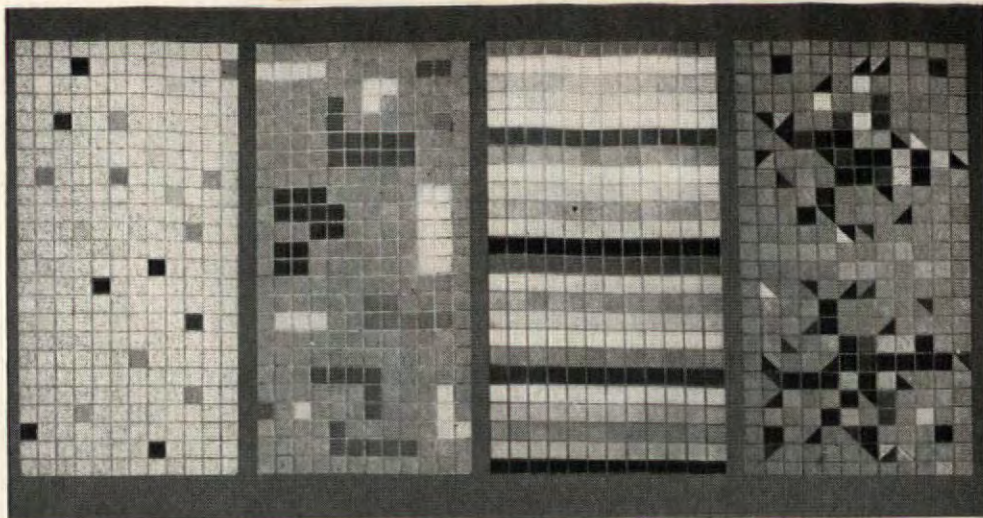
ADDRESS.....

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



## PRODUCTS *cont'd.*

be cleaned with soap and water and when redecorating is called for, can be brush- or spray-painted without impairing the ceiling's acoustical efficiency. Although material costs are somewhat higher than 1' mineral tiles, the manufacturer points out the quick application and easy maintenance compensate for the price difference. *Manufacturer: National Gypsum Co., Buffalo 2, N.Y.*



## WHEN CONSIDERING NEW BUILDINGS MAKE THE WASHING FACILITIES THE NO. 1 CONSIDERATION



- Help prevent spread of Dermatitis and other diseases.
- Save water with Bradley Washfountains.



Bradley full-circle Washfountains, City of Cincinnati, Waste Collection Garage. Architects: Felsberg & Gillespie; Engineer: W. D. Ehlers.

## BRADLEY Washfountains

- Foot-control eliminates all faucet contacts and maintenance
- No water waste—removal of foot cuts water supply immediately
- Bowl is self-flushing—no collection of contaminating used water
- Piping connections reduced 80%—installation costs cut
- Save 25 per cent floor space

Architects, building authorities, plumbing engineering firms recommend Bradleys . . . the most widely used sanitary washing facilities.

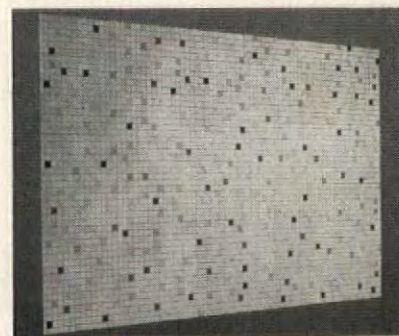


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**BRADLEY WASHFOUNTAIN CO.**  
2235 W. Michigan St., Milwaukee 1, Wis.  
*Distributed Through Plumbing Wholesalers*

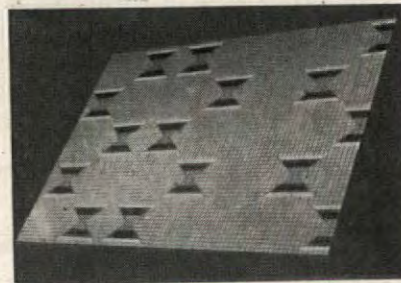
## CERAMIC TILE styled in elegant stock patterns by Muralist Spivak

Design interest in surface color and texture is growing fast. To develop contemporary patterns of its satin-glaze *Suntile* for walls and floors, Cambridge Tile went to an artist who knows more than a little about modern art in modern architecture: Muralist Max Spivak. The firm wanted several patterns which would express the versatility of the rugged little clay and porcelain 1" squares and triangles, but



wished to keep price within striking distance of most building budgets. Working with the manufacturer's standard colors and sizes, Designer Spivak assembled nine basic schemes on 1' x 2' paper-backed sheets for easy installation.

Thoughtfully arranged to be combined in any number of ways, the new Spivak ceramics include a random or buckshot pattern and Roman stripe which sell for \$1.75 to \$2 a sq. ft. in place. Installing



at about \$3.50 a sq. ft. are the invertable hourglass (photo above) and three playfully geometric animals which are primarily conceived as borders and accents. *Manufacturer: The Cambridge Tile Mfg. Co., Cincinnati 15, Ohio*

*continued on p. 228*



*New high school for  
a southern city...*



# WIRE BY PHELPS DODGE

This modern new Senior High School in Gainesville, Fla., one of the finest in the state, is smartly designed to handle both present and future student enrollment needs. One-third more students can be accommodated merely by adding extra classrooms to the present structure. The school's auditorium, gymnasium and cafeteria were constructed to provide for this future expansion of the student body.

To assure dependable, trouble-free electrical service at all times, Phelps Dodge wire and cable was specified and installed throughout this distinctive school.

\* \* \*

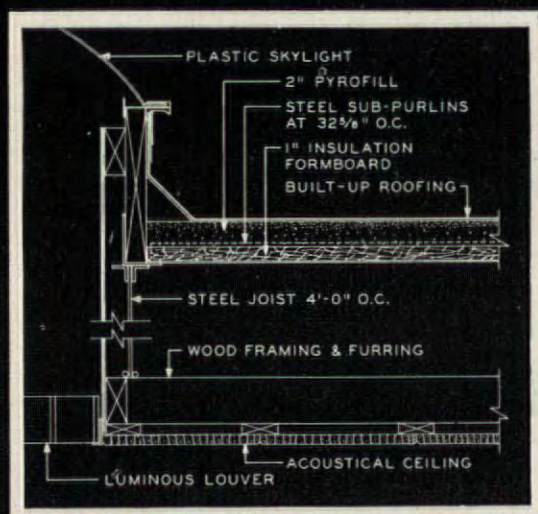
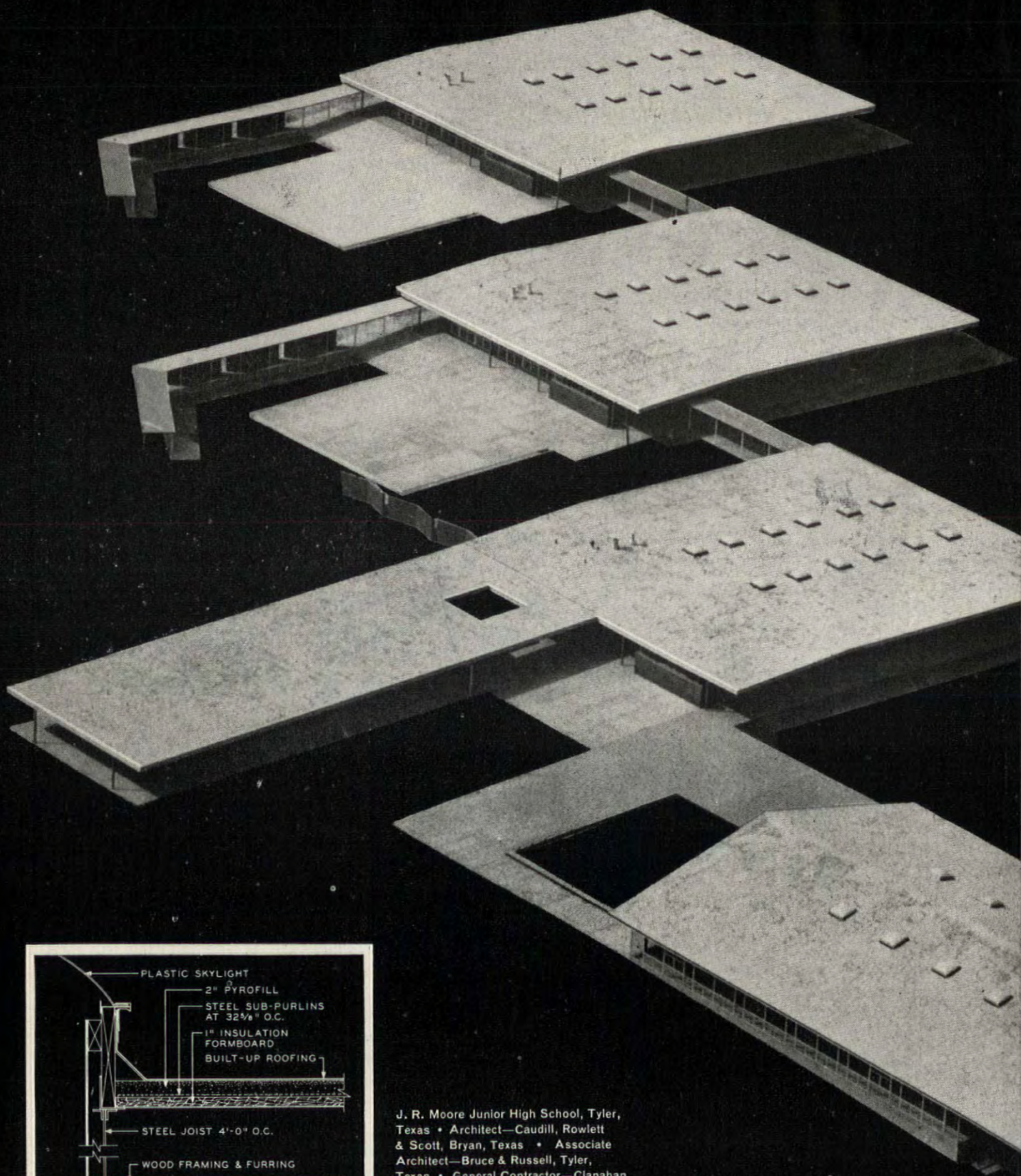
On every wiring job, large or small, where top quality materials, expert workmanship and experienced "know-how" are called for, *it pays to rely on Phelps Dodge and your Phelps Dodge distributor!*



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CORPORATION**

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J. R. Moore Junior High School, Tyler, Texas • Architect—Caudill, Rowlett & Scott, Bryan, Texas • Associate Architect—Bruce & Russell, Tyler, Texas • General Contractor—Clanahan Construction Co., Tyler, Texas • Roof Deck Contractor—Macatee, Inc., Dallas, Texas



*School design objectives are  
economically achieved with*

## **PYROFILL\*** ROOF DECKS

Integration of design among a group of decentralized classroom units was the objective here. It was economically accomplished with the help of PYROFILL incombustible gypsum, especially adaptable to the continuous, unifying roof design. PYROFILL was poured in place at low cost over permanent formboards with valuable insulating properties. PYROFILL also has all the other outstanding advantages listed below.

**PYROFILL**  
**ROOF DECKS**  
**FEAR NO FIRE**

**FAST INSTALLATION**—a single crew can pour up to 30,000 sq. ft. per day, ready for roof covering; sets within an hour to carry normal construction loads.

**INCOMBUSTIBILITY**—made of fireproof gypsum; often permits savings of 30% or more on insurance.

**LIGHT WEIGHT**—only 10 to 12 lbs. per sq. ft. Permits important savings in structural steel and footings.

**STRENGTH, DURABILITY**—have a safety factor of 10 or more under normal roof loads. Decks erected over 30 years ago still give excellent service.

**STRUCTURAL RIGIDITY**—bulb tee sections reinforce slab and along with incombustible gypsum provide lateral stiffening of structural steel framing.

For further information refer to Sweet's Catalog, Section <sup>2c</sup>Un, or contact your U.S.G. Architects Service Representative, or write Dept. AF-1, 300 West Adams Street, Chicago 6, Illinois

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



**UNITED STATES GYPSUM**

The Greatest Name in Building





Structural Corrugated glass partitions in offices of Davis Press, Inc., Worcester, Mass.

# *Glass* DIVIDES A ROOM WITHOUT GLOOM

## Translucent Mississippi Pattern Keeps Small Office Bright With "Borrowed" Light

Note how attractive, light diffusing, Mississippi glass partitions this room into cheerful, bright cubicles, yet avoids the cell-like atmosphere of conventional materials. Employees work better, see better, feel better in modern surroundings of beautiful glass whose rhythmic patterns never go out of style. Interiors are bright with copious quantities of softened, "borrowed light" ... always look new with these practical walls that never require painting, wipe shining clean with a damp cloth, can always be moved for future needs.

In your new building and remodeling projects, specify Mississippi Glass. Available in a wide variety of patterns at distributors of quality glass everywhere.



Unique installation of Mississippi Structural Corrugated glass. Photo courtesy Hauserman Company.

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FULLERTON, CALIFORNIA



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



**Knightley Parking Garage, Wichita, Kan.**  
*Architect: Overend & Boucher, Wichita*



## **Architectural Concrete PARKING GARAGES**

### **SOLVE OFF-STREET PARKING PROBLEMS**



**West End Parking Garage, New York City**  
*Consulting Engineer: John J. Dwyer New York City*



**Texas National Garage, Houston, Texas**  
*Architect: Kenneth Franzheim, Houston*

**Municipal Parking Garage #10, Chicago, Ill.**  
*Architect: McClurg, Shoemaker and McClurg, Chicago*

Finding close-in parking space for increasing numbers of automobiles is a vexing problem facing almost every city. Many have found that multi-story concrete parking garages provide the best answer to the problem.

These photos show the possibilities that architectural concrete offers architects for designing parking garages of outstanding beauty and service that should make any city proud. This versatile structural material has rugged strength, unequalled resistance to severe weathering, maximum firesafety and long life.

Architectural concrete parking garages are moderate in first cost, need little maintenance and have extra long life. As a result architects, municipal officials and investors are pleased with their *low annual cost*.

For more information about designing modern, efficient, low-annual-cost parking garages in architectural concrete, write today for free, illustrated literature. Distribution is limited to the United States and Canada.

### **PORTLAND CEMENT ASSOCIATION**

Dept. 4-7, 33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

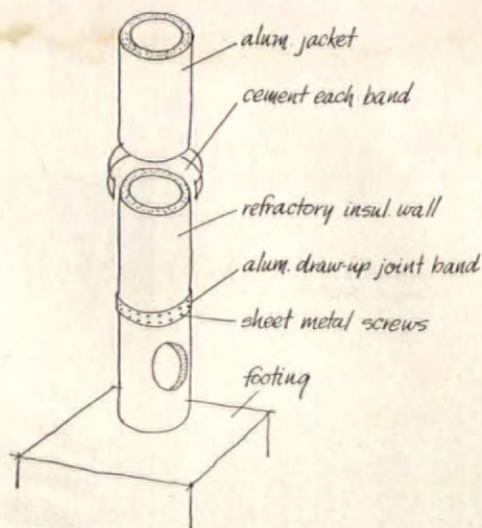
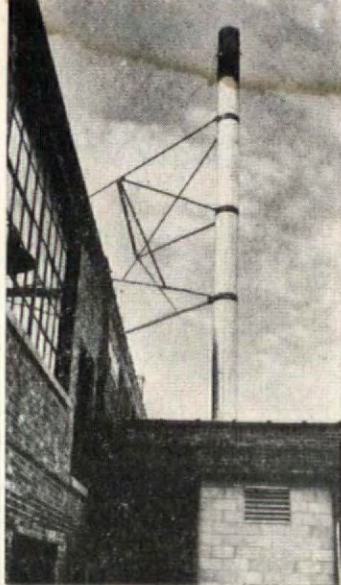




## PRODUCTS *cont'd.*

### PRECAST STACK efficiently handles hot industrial flue gases

Centrifugally cast of compressed vermiculite concrete Van Packer's sectional stack can be used with any coal oil or gas burning boiler, oven, furnace, retort or incinerator where flue gas temperatures do not exceed 1,600°F. An industrial modification of the manufacturer's popular packaged residential chimney, the alumi-



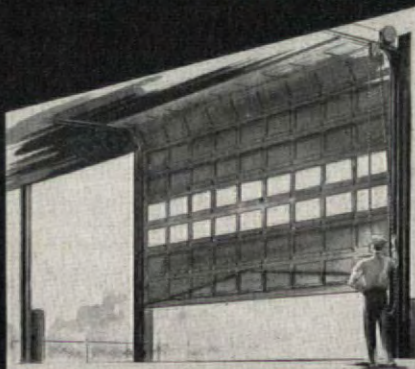
num-jacketed stack can be installed inside the building with proper clearance between it and combustible materials or may be exposed to weather as an outside chimney. It is available in six sizes with inside diameters of 10" to 24". The 15" costs \$7 per ft. plus installation. Joints between the 3' sections are sealed on the job with acidproof high-temperature cement, and to assure absolute tightness, draw-up bands are held in place around each joint with sheet metal screws. Thermal conductivity of the dense insulating stack wall is far lower than masonry. On draft pull tests, the Van Packer units proved 10 to 20% more efficient than unlined steel stacks of the same height.

Manufacturer: Van Packer Corp., Bettendorf, Iowa

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*Quality...*  
IS A PARADOX



It is automatically guaranteed though the need of warranty has evaporated. Guarantee is of value only where serviceability is uncertain—and then it is no longer given. Raynor adherence to quality—in materials from which Raynor Doors are fashioned; in graceful strength of design; in skilled and careful manufacture; and in responsible distribution—means a product guaranteed in service. This is at once an assurance of trouble-free operation. Raynor is proud to identify their doors with an easily recognized "mark of quality".

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Check your telephone directory for the name of your nearest representative or write direct.



**RAYNOR MANUFACTURING CO.**  
Dept. 1      Dixon, Illinois

### FOIL INSULATION is extra wide for use with steel framing

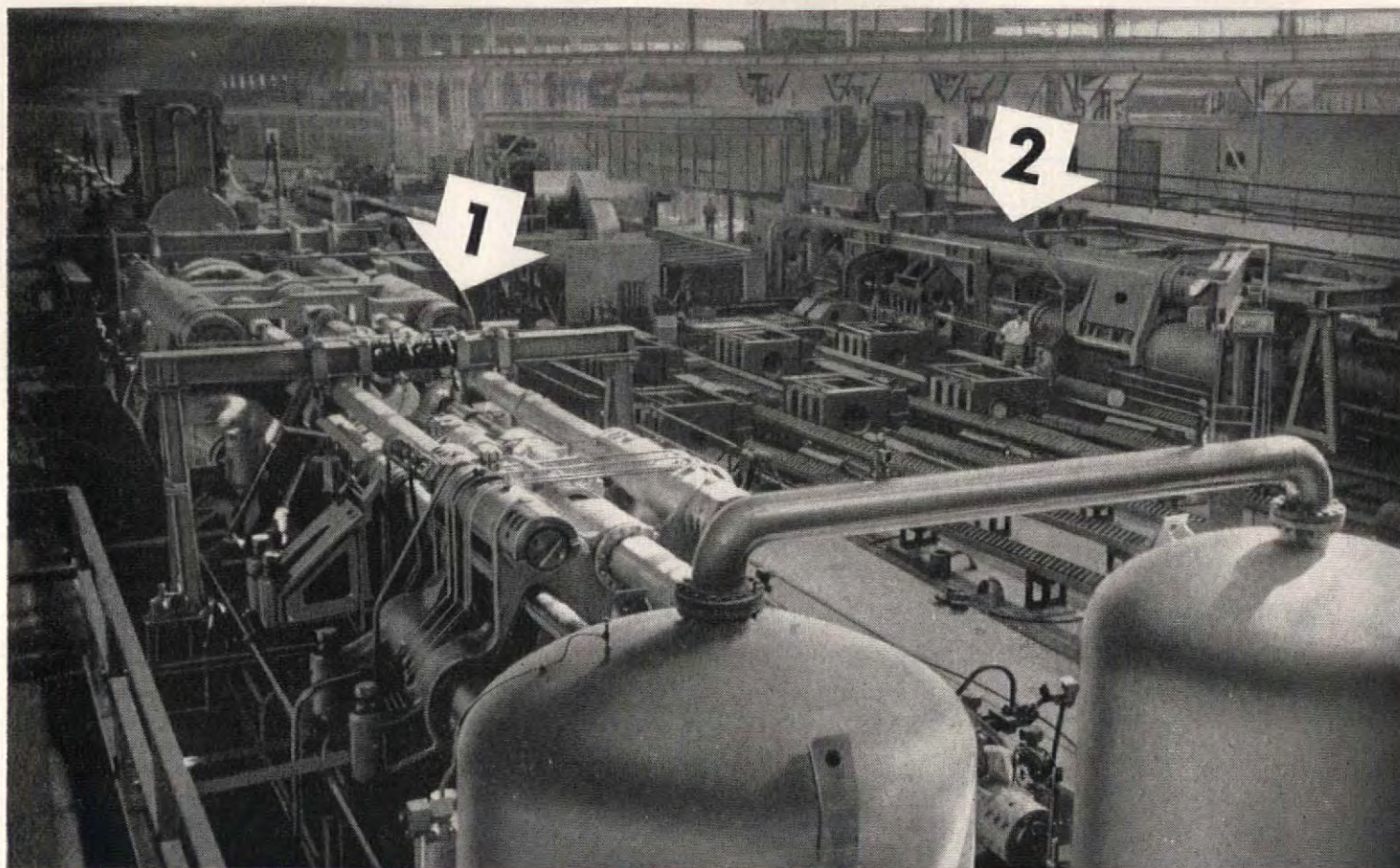
One man can install *Infra's* extra-width foil insulation on wide-span steel framing by means of a simple clip-on technique. While the multiple layer aluminum and kraft-paper laminate is still neatly folded in a continuous narrow strip, the applicator clips the flange along the stud purlin or beam. He then cuts the strip and expands it from web to web, inserting it behind electric outlets and other utilities and

*continued on p. 234*





# Our two new heavy extrusion presses to benefit the building industry



**I**N November the Kaiser Aluminum heavy press facility went into operation at our Halethorpe, Maryland plant.

Both 8,000-ton presses will provide important benefits to manufacturers of architectural materials. Each press can produce finished aluminum extrusions up to 17 inches wide, 85 feet long, and up to 1,200 pounds in weight. Substantially wider extrusions can be produced depending upon section design.

Attractive aluminum extrusions are ideal for architectural applications. The use of wide extrusions opens up exciting new possibilities in the design of spandrels and other architectural trim. Interlocking shapes can be combined to create an infinite number of designs with relatively low tooling costs.

In many cases, the application of these large aluminum extrusions can eliminate much of the expense of manufacturing and assembling smaller parts.

The two presses are identical in size and capacity, so dies can be moved from one press to another without modification

or delay. This duplication of equipment assures an uninterrupted source of large extrusions!

Kaiser Aluminum's new plant is completely equipped with the most modern facilities and fully integrated for the production of heavy extrusions exclusively.

Kaiser Aluminum engineers have had long experience in extrusion design and application. They will gladly work with you to determine how heavy aluminum extrusions can open new markets to you. Ask for a complete analysis of cost saving possibilities. You are urged to take immediate advantage of this service.

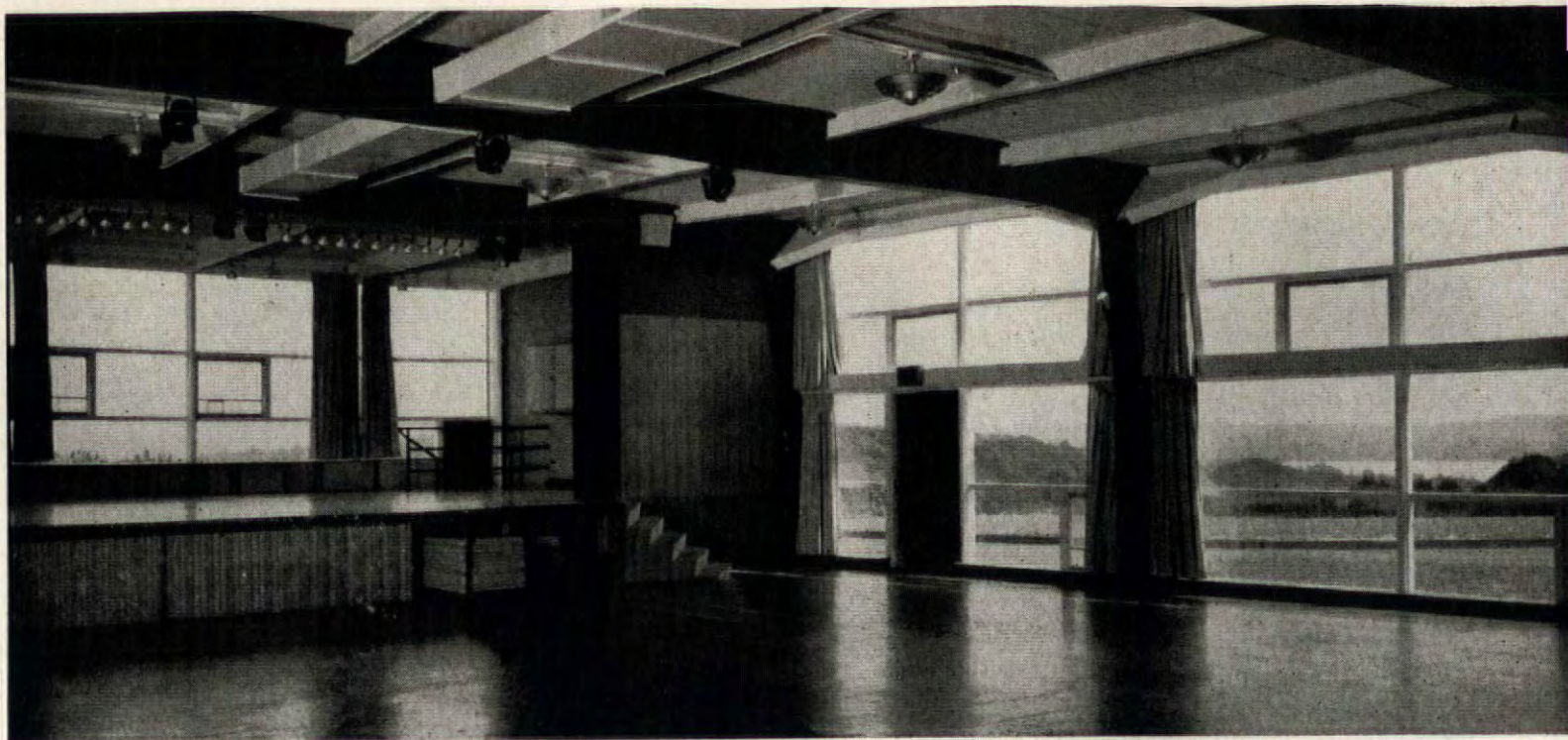
Contact Kaiser Aluminum and Chemical Sales, Inc. *General Sales Office*, Palmolive Bldg., Chicago 11, Illinois; *Executive Office*, Kaiser Bldg., Oakland 12, Calif.

*For details send for brochure, "Kaiser Aluminum Heavy Press Extrusions." Address: Room 6268, Industrial Service Division, Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland 12, California.*

## *Kaiser Aluminum*

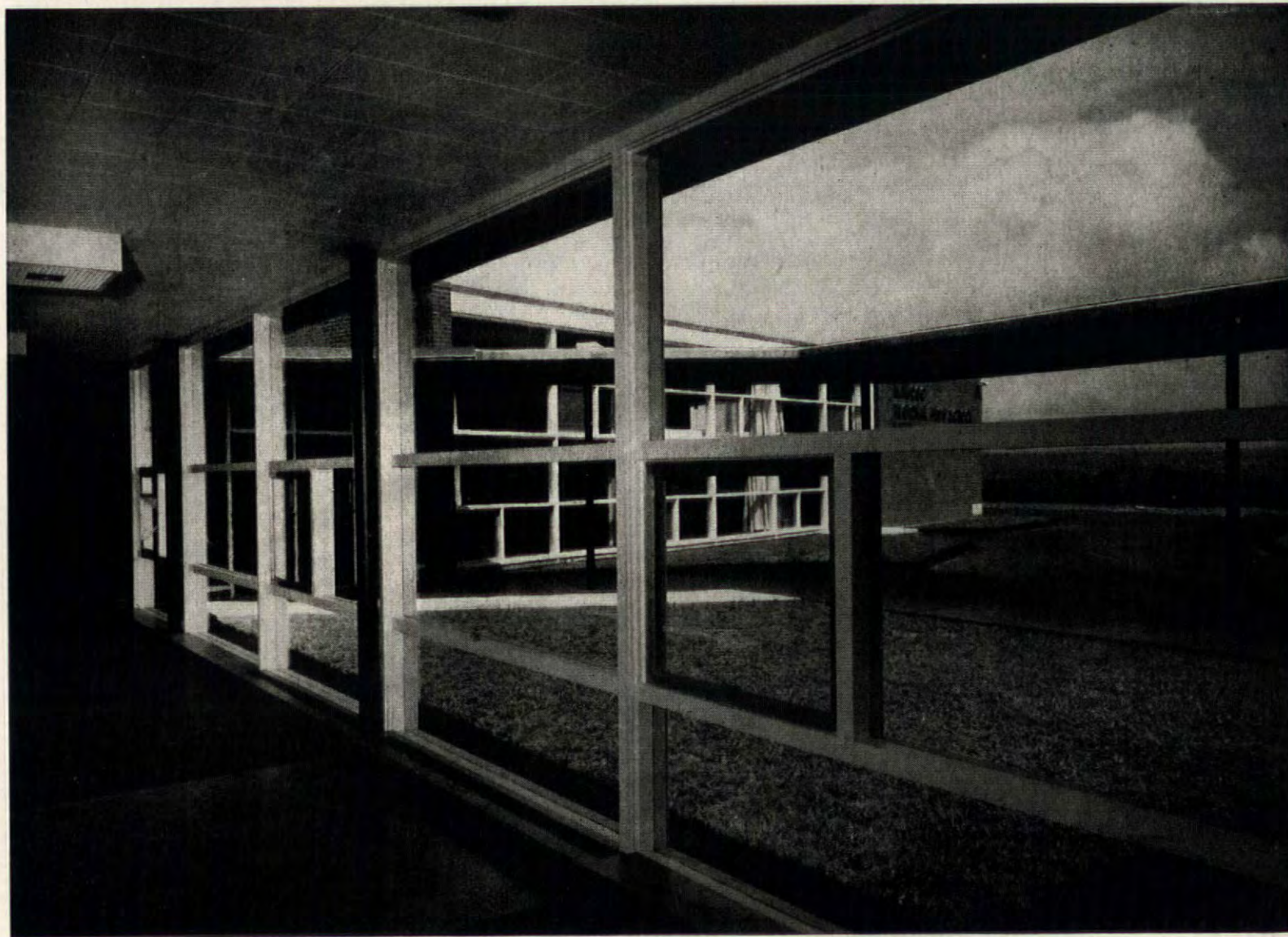
setting the pace—in growth, quality and service





The gym. Bantam Lake is visible through the Herculite windows.

Looking out from front of school. Notice covered walkway to protect students while boarding buses.

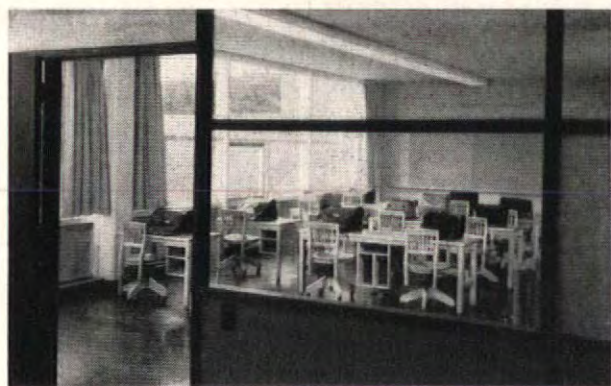






Approaching the school, which serves the three towns of Warren, Morris and Goshen.  
Architect: NICHOLS & BUTTERFIELD, WEST HARTFORD, CONN.

## *Pittsburgh Glass lets you SEE the view!*



Typical classroom—bright and cheerful.

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famous Pittsburgh Glasses:

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—heat and glare absorbing plate glass

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—for clear, undistorted vision

#### PENNVERNON® WINDOW GLASS

—sheet glass at its best

THE WAMOGO HIGH SCHOOL is right in the middle of a resort district, perched on the top of a 35 acre plot in the Berkshire Mountain foothills. It is surrounded by forest; and in the distance you can see the blue twinkle of Bantam Lake, the largest lake in Connecticut.

The architects said, "This is the finest site we've ever been offered to work with," and they proved it by using huge quantities of Pittsburgh Glass to bring that lovely view into the building. Every room is bright and cheerful. No student can ever complain about gloom, or dullness.

Classroom windows are glazed with Pennvernon heavy sheet glass. And in the gymnasium, good daylighting and safety were combined by using Herculite Plate Glass—heat treated and tempered to make it shock-resisting. Nucite® glass chalkboards were used throughout the school, and Pittsburgh Paints were dramatically applied in accordance with PPG's principles of Color Dynamics.

*Design your schools better with*  
**PITTSBURGH  
GLASS**

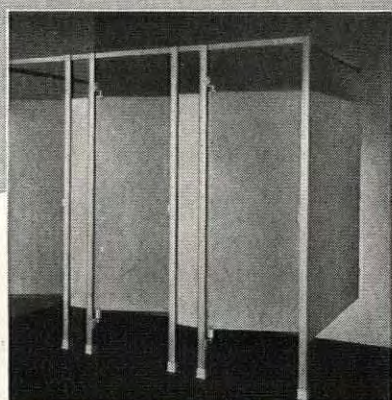
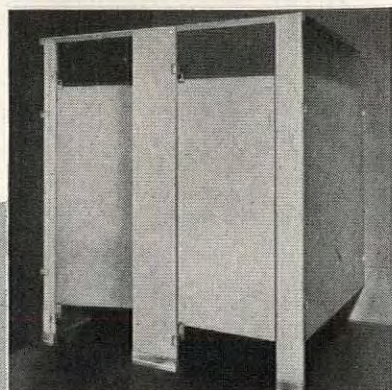
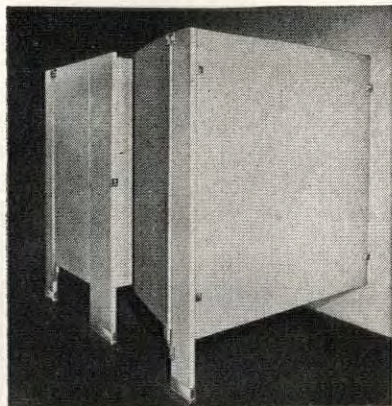


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*in standard colors*

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*Elementary School sizes ... with concealed hinges*

**Now ... Nicholson Toilet Compartments  
are stocked in standard styles and  
colors for quick delivery "from stock."**

Modern production facilities, housed in a new 67,000 square-foot plant, are busy building up a standard-size stock of these three most popular styles. From ultra-modern to rugged utility designs, you can get the toilet compartments you need in a hurry.

You can specify better-built compartments . . . Nicholson compartments . . . and have them shipped *right away!* No waiting. No delay in completion of important contracts.

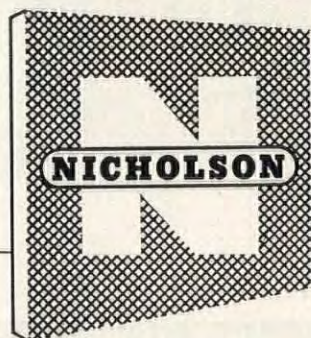
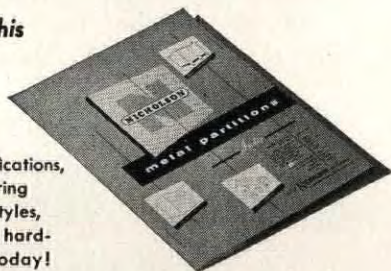
Specify Nicholson, for serviceability and service.

*Nicholson Toilet Compartments are immediately available in the following types . . . in standard colors:*

Type A—floor braced      Type AR—overhead braced  
Type B—flush style

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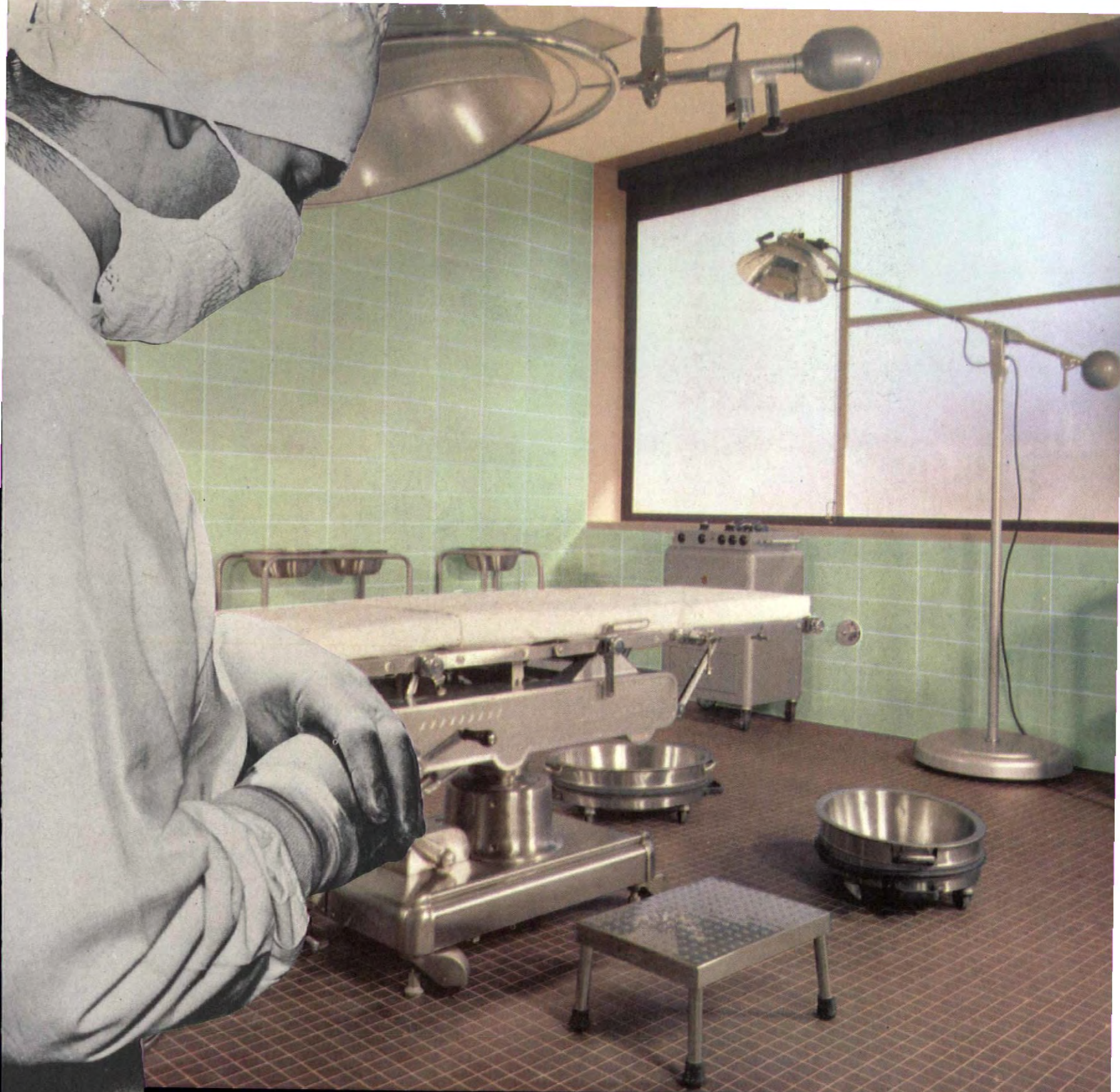
Contains complete specifications, illustrations and engineering drawings . . . facilities, styles, construction, layouts and hardware. Send for a copy today!



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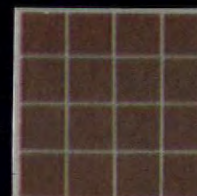




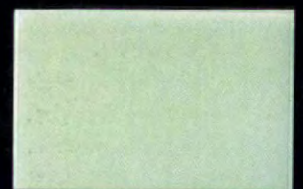
David H. Horn, A.I.A. & Marshall D. Mortland, A.I.A., Architects. Fresno Marble & Tile Co., Tile Contractors.

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*Since*

# HOPE'S

*1818*

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH



PEKIN COMMUNITY HIGH SCHOOL, PEKIN, ILLINOIS

*Architects: Foley, Hackler, Thompson & Lee*

*General Contractor: George D. Johnson Co.*

## *Hope's Multi-Story Window Walls*

### *Provide a Built-In Newness That Lasts*

This handsome, recently completed school building is another example of a Hope's Multi-Story Window Wall installation. The entire facade shown is comprised of Hope's pressed metal frames, painted white, with the large glass areas glazed directly into them. The ventilators inserted at intervals are Hope's Heavy Custom Casements. Floor-to-sill insulated panels are red porcelain enameled. These red panels and white frames create an effect that is most attractive and only occasional maintenance is required to retain this newness indefinitely.

The ease of construction using Hope's Window Walls is a contributing factor to the speed of enclosure and to independence of weather conditions and outside temperatures. The light weight of these systems results in structural economies right down to the footings. The tightness and rigidity of the structural elements of Hope's Window Walls keep air infiltration and leakage minimized so that fuel savings are materially increased. You will find Hope's Window Walls are the best way to clothe buildings which require large expanses of glass.

*Write for Catalog 134 AF for full information.*

## **HOPE'S WINDOWS, INC., Jamestown, N. Y.**

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS





50,000,000 Motor Vehicles spur demands for super-highways. Toll highways mean toll booths, gas stations, restaurants, motels and the like. View shows Tarrytown entrance to N. Y.

Thruway Toll Bridge across Hudson River opening day. Thruway and New Jersey's Garden State Parkway use Monel Roofing Sheet on booths and service buildings for long life at minimum maintenance.

## Thruway buildings adopt light-gauge Monel ...to lengthen roofing life...cut maintenance

Monel\* nickel-copper alloy Roofing Sheet is stronger and tougher than any other non-ferrous roofing sheet. It resists atmospheric corrosion. It's immune to rust.

Another advantage of this nickel-copper alloy is its low thermal-expansion rate. It is less likely to crack under extreme temperature changes. It resists heat, as well as snow . . . ice . . . tearing winds. Stands years of flexing with no sign of fatigue.

That's why architects use light-gauge Monel sheet for jobs that otherwise call for heavier sheets of other materials. Time after time, this means a saving on every square foot.

\*Registered trademark

Performance of Monel flashings, gutters, leaders, fascia and gravel stops makes this nickel-copper alloy a trustworthy ally of architects, consultants, and engineers. Particularly those concerned with protecting clients from high maintenance costs.

Now is the time to specify Monel Roofing Sheet. It's a natural roofing material for parkway toll booths, gasoline stations, restaurants and service buildings of every type. We'll be glad to give you assistance with any specific job on your boards or in the field.

The International Nickel Company, Inc.  
67 Wall Street New York 5, N. Y.



One of 40 utility buildings on the N. Y. Thruway, utilizing light-gauge Monel Roofing Sheet. Consulting Engineers: Madigan-Hyland, L. I. City, N. Y. General Contractor: Beacon Construction Company, Boston. Sheet Metal Fabricator: Columbia Cornice Company, Cambridge, Mass.



**Nickel Alloys**

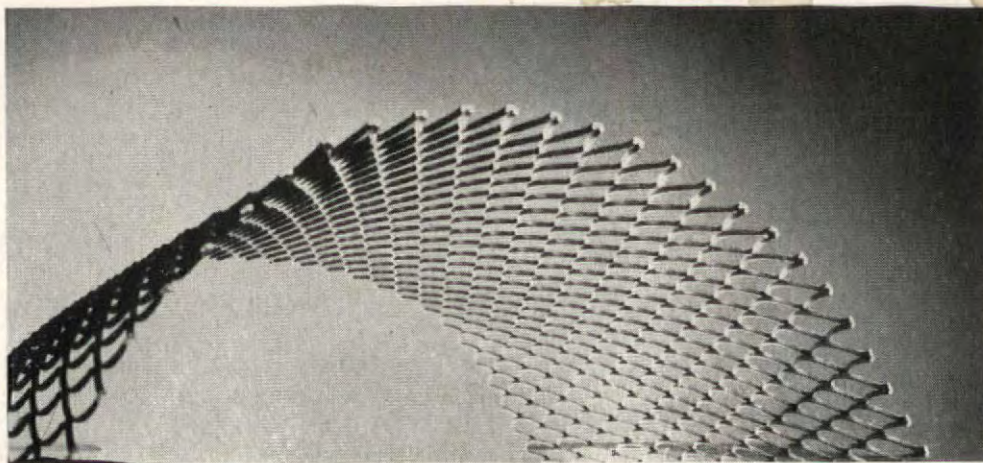
**Monel Roofing** ... "for the life of the building"



## PRODUCTS *cont'd.*

tucking it into odd-shaped areas—all without breaking or cutting the continuous vapor and heat barrier. Single strips are used for 24" spacing; several can be fastened together along the flanges for any width. Weighing only 1¼ oz. per sq. ft., 1,000 sq. ft. of *Infra* comes in a single 45-lb. carton. Price: 7¢ to 11¢ per sq. ft. plus 6¢ to 10¢ for labor.

*Manufacturer:* Infra Insulation Inc. 525 Broadway, New York, N.Y.



**NON-SLIP**  
WET OR DRY

### **ALUNDUM Aggregate in Terrazzo . . . Spells Safety and Long Wear**

Even on stormy days the floors and stairs in this entrance give walking safety because of ALUNDUM Aggregate in the terrazzo.

Here is attractive appearance as well as safety. In your plans for areas where ordinary floors would be slippery when wet, you can meet this condition by specifying terrazzo with ALUNDUM Aggregate — and you can be sure that your floors and stairs will show no signs of wear after years of heavy traffic.

See Sweets File or write for your own copy of the new edition of catalog 1935-F.

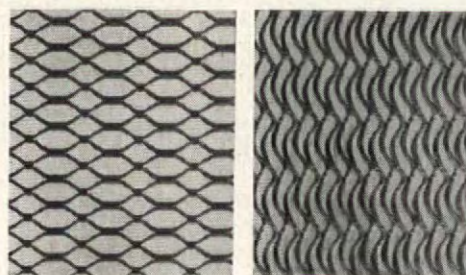
**NORTON**

NON-SLIP AGGREGATES

**NORTON COMPANY**  
Worcester 6, Mass.

### **EXPANDED METAL made in five new decorative patterns**

Years ago architects and designers began taking diamond mesh lath away from its plaster blanket and using it naked for display backdrops, room screens and other decorative applications. Manufacturers, startled at first by the respect paid a utility material, acknowledged the design interest and began to flatten the crinkles left in the slitted sheets by the cold-drawing process. The smoothed lacey metal soon found its way into furniture. Now U.S.G. has added four new patterns—*Rondo*, a rounded diamond; *Wavelength*, a



wing shape; *Feston*, a scallop; and *Armorweave*, a deep cut slot to its old standby *Expand-X*. The new meshes are produced at prices ranging from about 15¢ to 50¢ per sq. ft. in steel and \$1 to \$1.50 in aluminum. Possible uses for *Armorweave*, which is slotted at an angle: a hung ceiling to mask overhead utilities, and a sun control device. According to the way it is placed it can be used to cast light in different directions.

*Manufacturer:* US Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

*continued on p. 240*





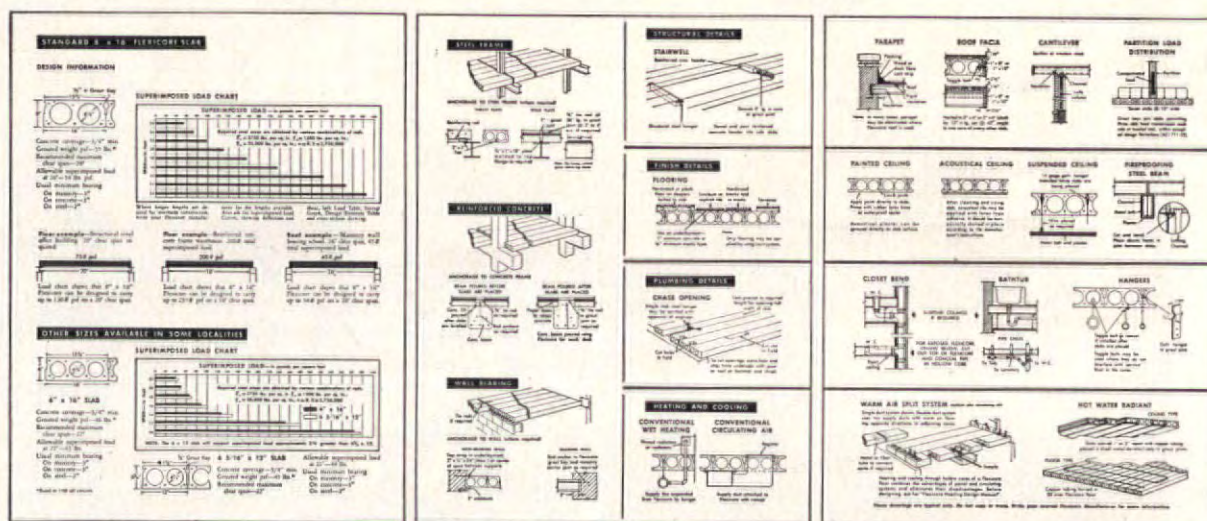


## New Booklet Tells How to Use Proven Precast System

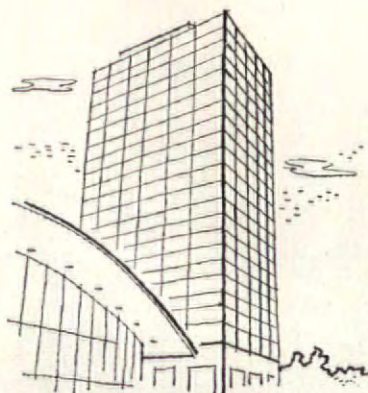
It took 20,000 jobs to gather the experience and information that has been compacted into the eight pages of this new design booklet.

Spend a half hour with it and you will understand all the basic principles of designing a building with the Flexicore precast floor and roof system. Load charts and design data make the design problem quite simple even though you never used a precast system before. The booklet helps you understand why the Flexicore system generally produces a better result in a shorter time and at less cost.

If you are an old Flexicore user, you'll want a copy too. Mail the coupon below to address nearest you. Today would be a good time. There will be no obligation.







*Honeywell Customized Temperature Control—a case history*

## How Honeywell helps give Denver's

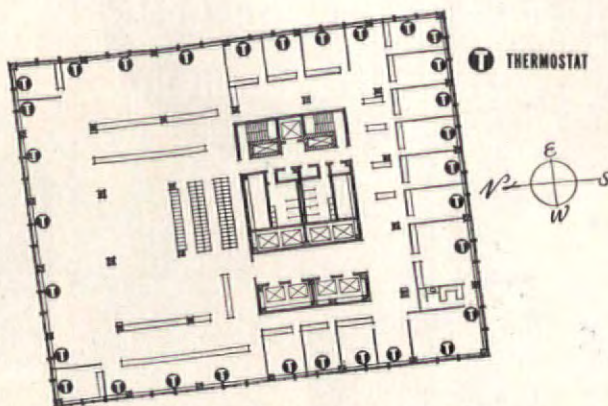


*Mile High Center office building, Denver. Owners: Webb & Knapp and George A. Fuller Company. Architects: I. M. Pei & Associates; Kahn & Jacobs and G. Meredith Musick. Consulting engineers: Jaros, Baum & Bolles; Severud-Elstad-Krueger. General contractor: George A. Fuller Company. Prime mechanical contractor: Kerby Saunders, Inc. Plumbing and heating contractor: Crabb Plumbing & Heating Co. Electrical contractor: Fishback & Moore.*





**Remarkable sense of space** is present in outside offices such as this one, occupied by Webb & Knapp senior vice president, Arthur Rydstrom. Open effect is created by strip windows at floor level and larger glass panels above. Despite such free use of glass, comfort is constant. In offices tenants need only dial their choice of temperature; the Honeywell Customized Temperature Control installation then maintains it accurately and efficiently.



**Individual office temperature control** is indicated in this typical Mile High Center floor plan, showing Honeywell thermostat locations. Flexibility and quick response of the Honeywell Customized installation helps solve another problem, too. At Denver's elevation, one side of the building often needs heat while the other needs cooling. Electronic solar thermostats on the roof activate cooling according to changes in the direction of the sunlight striking the building.

## Mile High Center ideal comfort

*Tenants of imposing new office building may  
choose individual comfort preferences*

**B**USINESS quarters completely modern in concept are provided by the new 23-story Mile High Center office building that dominates Denver's skyline.

Ideal indoor weather was assured by the building's planners. For they chose a Honeywell Customized Temperature Control installation to govern the year-round air conditioning system, giving tenants individual comfort control.

Adjoining the central structure is a three-level transportation building with a lower level concourse where shops and restaurants are located. Because of the flexibility of Honeywell controls, customized comfort is enjoyed throughout Mile High Center—from lofty offices to lower level shops.

That's what "customized" means—a control installation fitted to the needs of the building and its

occupants, in heating, cooling, ventilating and humidity control.

True customized control can be provided only by Honeywell. Because only Honeywell manufactures all three types of controls—pneumatic, electric and electronic. Hence only Honeywell is in a position to make truly objective recommendations.

Whether it's an office building, factory, bank or store—any building of any size, new or existing—Honeywell Customized Temperature Control can help solve your clients' problems of heating, ventilating, air conditioning and industrial control.

For full details on Honeywell Customized Temperature Control, and the economical Periodic Maintenance Plan, call your local Honeywell office. Or write Honeywell, Dept. MB-4-65, Minneapolis 8, Minn.

MINNEAPOLIS  
**Honeywell**



**Customized Temperature Control**



Yes, it pays to use the best  
in shower track installations!



Statler Hotel  
Dallas, Texas

that's why  
**STATLER HOTELS**  
specify  
**CAPITAL  
SHOWER TRACK**

*there are no replacements  
... no maintenance costs!*

**BRASS CONSTRUCTION** — Made of 14 gauge brass, chrome plated over nickel plate, *guaranteeing life-time service!*

**MODERN DESIGN! FUNCTIONAL VALUE!** — Last word in streamlined beauty! Smooth, unbroken surface makes a perfect drying rack for delicate lingerie and hosiery. A delight to the woman guest!

**NO LOST HOOKS! NO REPLATING PROBLEMS!** — Curtain hooks operate inside Capital Shower Track. They cannot be removed or lost . . . and they cannot scratch finished surface.

**SIMPLE INSTALLATION** — All fastenings are concealed.

**UTMOST ECONOMY** — Replacement of shower rods and hooks is an important overhead factor. Capital Shower Track eliminates this expense—once installed, *there are no maintenance costs to consider!*

The difference in cost of Capital Shower Track, in "ageless" brass, is surprisingly small, compared to ordinary shower rods. *But the differences in the appearance, performance, maintenance cost and long life are dramatic!*

Send for additional detailed information . . . include detailed installation requirements. We will submit specifications and cost. No obligation, of course.

HOOKS OPERATE INSIDE  
TRACK . . . CANNOT BE  
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FINISHED SURFACE



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Colors?

Do it the Easy Way  
...with Martin-Senour's  
Nu-Hue Custom  
Color System!

\*Developed by  
Container  
Corporation  
of America



Never before such a wide array of colors, such a simple and complete system of selection, so many decorating ideas. With Martin-Senour you can match colors *exactly* . . . choose colors that *really* harmonize! Thanks to Martin-Senour's Custom Color Paints keyed to the Color Harmony Manual\* and the Nu-Hue Custom Color Directory. Color specification aids are available through the nearest Martin-Senour office. Prices upon request. At the same time, ask for your free copy of "A Guide to Better Paint Specification."

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SENOUR  
PAINTS

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Up to 32x96" in size only **HANSOTONE\***  
Perforated Acoustical **FORMBOARD**  
is ideal FOR POURED  
GYPSUM ROOF DECKS



Only Hansotone\* Perforated Acoustical Formboard offers the size and strength, speedy installation and rigid permanence that add up to such **LOW COST** per foot. Its outstanding acoustical qualities and high thermal insulation assure a truly efficient, attractive base for economical poured-in-place gypsum roof decks. White factory shop coated—76 light reflection.

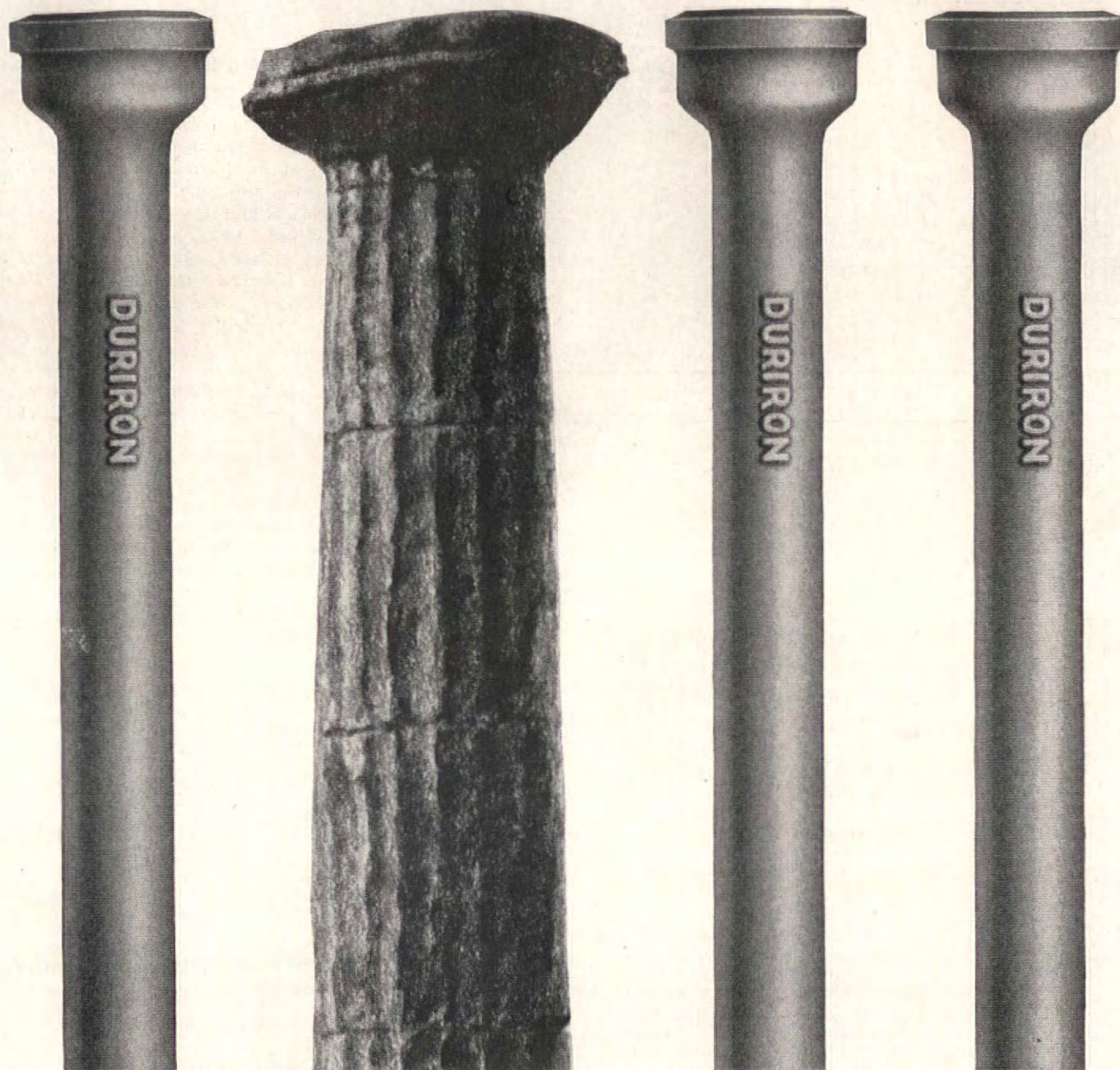
Hansotone\* Acoustical Formboard is distributed thruout U.S.—Can. by selected, experienced engineering-contracting firms who **KNOW HOW** to build structural roof decks . . . and maintain them economically. See AIA File 4-L and Sweet's Cat. 2e/Ha. \*Reg. U.S. Pat. Off.

ELOF HANSSON, INC., Acoustical Dept. 4-6-2  
220 EAST 42nd STREET, NEW YORK 17, N.Y.

We would like to hear the complete story on Hansotone Perforated Acoustical Formboard from a local distributor on . . . and/or just send us literature with a **FREE 9x12"** sample for testing.

NAME . . . . .  
ADDRESS . . . . .



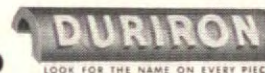


## **SYMBOLS OF PERMANENCE**

### **DURIRON® ACIDPROOF DRAIN PIPE**

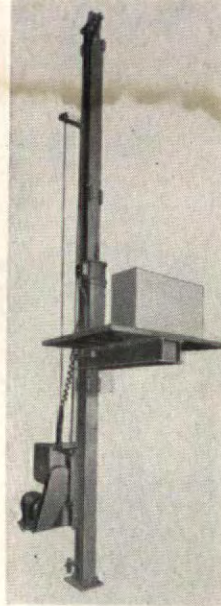
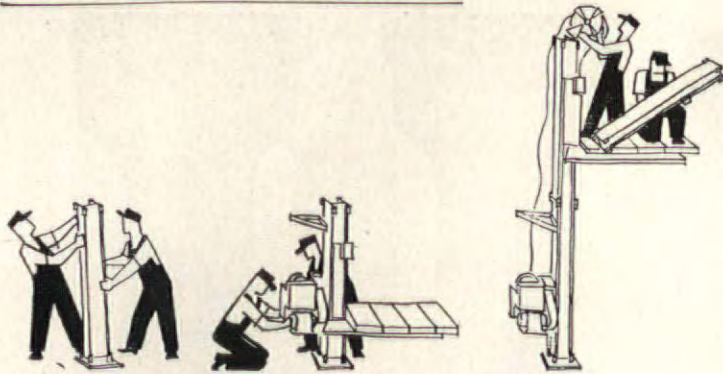
Duriron generally will outlast the building in which it is installed. Duriron resists practically all commercial acids and other corrosive solutions. Duriron is the one high silicon iron pipe specified for more than 30 years by architects and engineers for corrosive waste disposal systems. A complete line of Duriron pipe and fittings is stocked by leading wholesalers throughout the country.

**THE DURIRON COMPANY, INC., DAYTON, OHIO**





## PRODUCTS *cont'd.*



### **MONORAIL HOIST** for materials goes up on its own bootstrap

A platform hoist which rides a single H-column can be a boon to contractors caught in the middle stages of building between the time the truck crane leaves the job and the building elevators are installed. Eliminating the usual web of framing required for most outside hoists and materials elevators, the *Hawkeye-Hoist*, with 1-ton capacity, is a simple platform bracketed to a vertical H-member which is braced at intervals to building walls or columns. The H-member can be erected in 6' sections in several hours by two men using the platform itself as a workbase. A 5 hp electric motor or gas engine operates the hoist. Safety features include automatic platform lock in case of cable break and a dead-man control. Easy to rig and disassemble the *Hawkeye* also should be useful for indoor maintenance of industrial buildings and as an outside freight elevator.

Manufacturer: Hawkeye Engineering Co., Syracuse 4, N.Y.



### **GIANT DIGGER** cuts trenches 11' deep at 600 cu. yd. an hour

Grinding into the ground like a ferris wheel gone wild Gar Wood-Bukeye's 330 machine is unchallenged as champ ditch digger. The 16'-high, 54'-long trencher can cut a swath through wet clay soil 11'-3" deep and 5'-4" wide. It excavates 600 cu. yd. per hour—enough dirt to fill 60 dump trucks. Designed primarily as a ditcher for heavy duty 30" and 36" pipe lines and deep sewers, the continuously gnawing 330 is said to have eight times the efficiency of a  $\frac{3}{4}$  yd. swing and dump backhoe. One of the largest pieces of mobile construction equipment ever built,

*continued on p. 246*

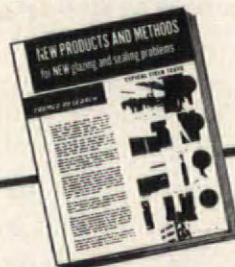


## PREVENT LEAKS IN CURTAIN WALLS

Tremco research, aided by representatives of leading glass manufacturers, has developed new glazing and sealing techniques for curtain wall construction.

You'll find these new specifications important to insure leak-free installations. Ask your Tremco Man for a copy of "NEW PRODUCTS AND METHODS FOR NEW GLAZING AND SEALING PROBLEMS," or write: The Tremco Manufacturing Company 8701 Kinsman Road, Cleveland 4, Ohio, or The Tremco Manufacturing Company (Canada) Limited, Leaside, Toronto, Ontario.

*"When you specify a Tremco product  
—you specify a Tremco service!"*

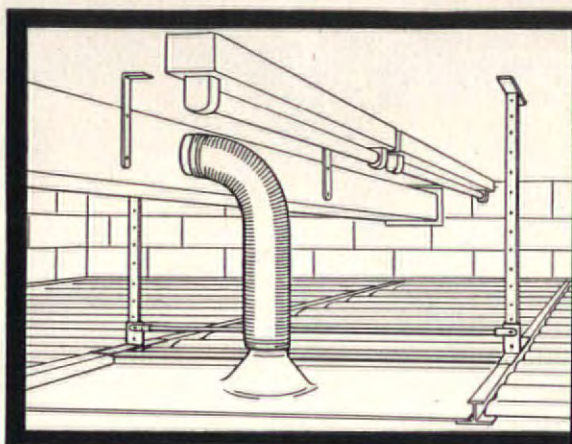
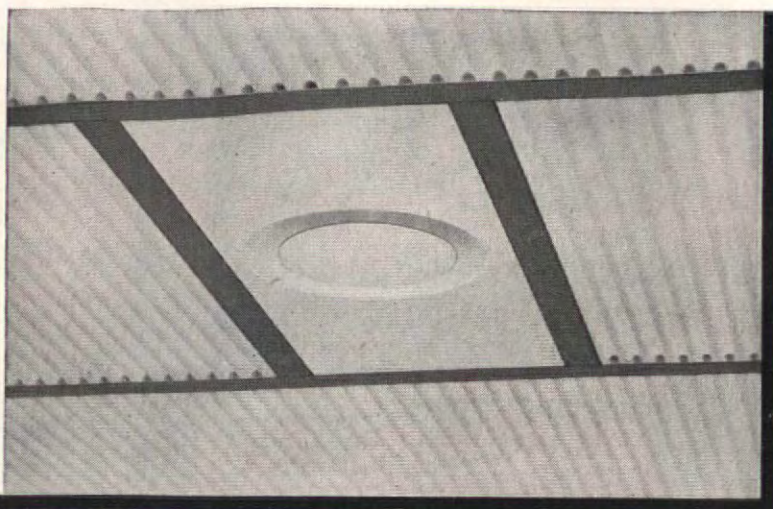


# TREMCO

PRODUCTS AND METHODS FOR BUILDING  
MAINTENANCE & CONSTRUCTION



*thermotank's*  
**New Lumenated  
 Ceiling Diffuser**  
 for  
**BETTER APPEARANCE,  
 DRAFTLESS PERFORMANCE**



Out of 50 years' experience in air conditioning, heating and ventilating has come this new translucent plastic ceiling diffuser. Designed originally for use with Thermotank's Lumenated Ceiling, it presents a pleasing overall effect when installed with any illuminated or acoustical ceiling. The new diffuser is centered in a 15 by 36-inch translucent panel, mounted flush to the ceiling. It discharges conditioned air in a draftless pattern. The nominal rating is 200 cfm at 38 db.

Write for further data on this new Lumenated Ceiling Diffuser

***thermotank inc.***

PRODUCTS DIVISION

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exhibition

**A NEW LOOK AT  
 STAINED GLASS  
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NEW —



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Paul Heinley has adapted these ancient Polynesian shutters into delightful modern decorative accompaniments. Some in-stock designs are carried, but most applications are created to order. Variety is infinite. Panels and designs are made in unlimited variations, and Paul Heinley's sources, through his own Hawaiian Island operation, offer imported and domestic grills, authentic hardware, permanently laminated rice paper, grills, and other special materials for inserts. However you desire Shoji Shutters to be made, Paul Heinley has the exacting facilities to accomplish the desired results. Write for free brochure.

TRADE MARK  
 TO AVOID IMITATIONS LOOK FOR THIS TRADE MARK



See Sweet's Catalogue,  
 Section 19e and 6b  
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*Paul Heinley's*

**MOVABLE SHUTTERS**  
 ORIGINATORS OF TODAY'S MOVABLE SHUTTERS

1620 A Euclid Street, Santa Monica, California





# DYNA

For America's ever-expanding Age of Aviation, huge twin-engine transport helicopters will be produced at the new Sikorsky plant for Army, Marine, commercial use.

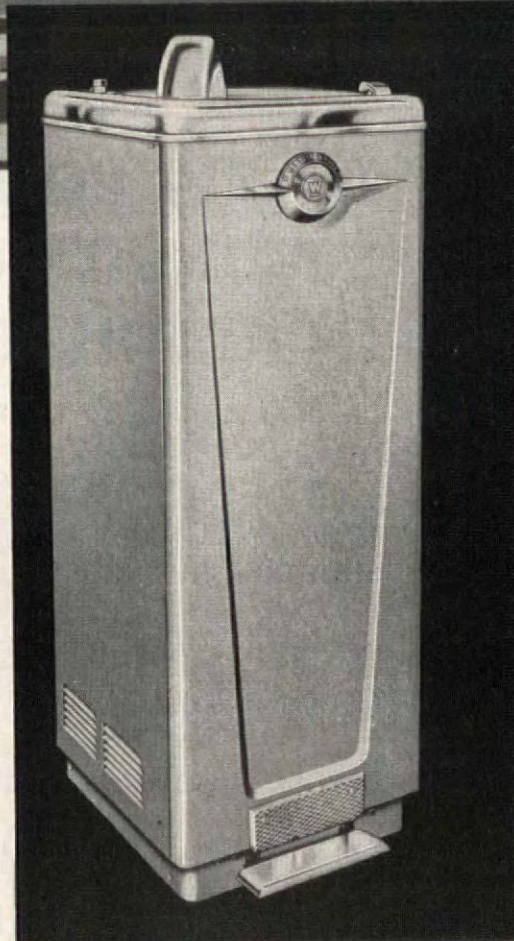


New Sikorsky Helicopter Plant, Stratford, Connecticut

**Architects Fairbrother and Miehl** made sure that *everything* about this new multi-million dollar plant reflects the dynamic, progressive nature of the company that operates it . . . the Sikorsky Aircraft Division of the United Aircraft Corporation.

**Architecturally**, as well as in landscaping, the new plant blends with the surrounding theme of the areas adjacent to Connecticut's Merritt Parkway, one of the finest in the country. *Spacious* . . . 800,000 square feet, providing plenty of elbow-room for fast, efficient production and further expansion. *Comfort-planned* . . . completely ventilated, light-conditioned and sound-proofed.

**And** . . . for the *daily refreshment* of the 4,500 men and women who work here, architects Fairbrother and Miehl specified Westinghouse Water Coolers.



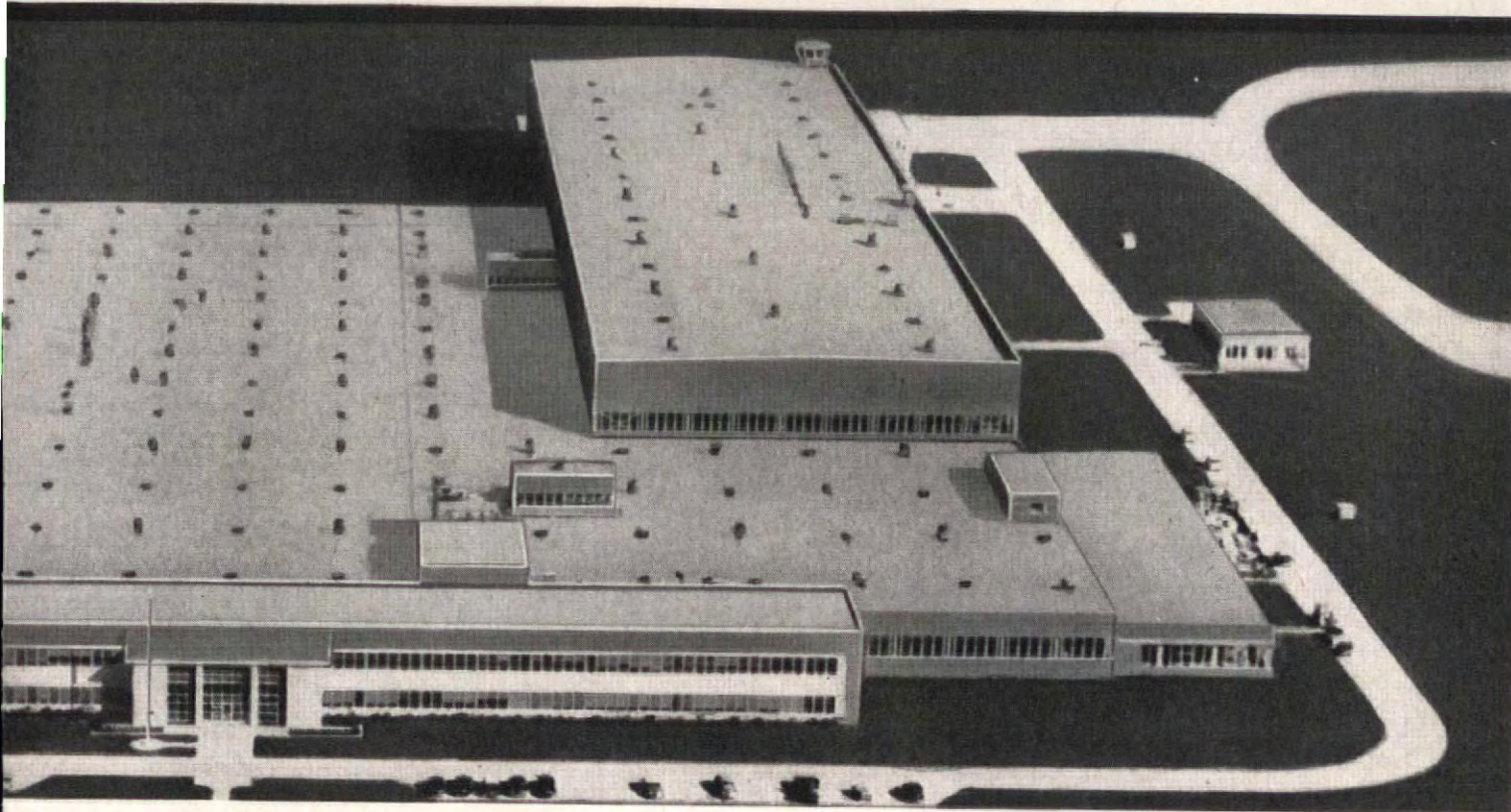
**EXACTLY THE RIGHT TYPE AND SIZE FOR EVERY NEED**



# MIC...by design

Designed by Fairbrother and Miehl, Detroit

Built by E&F Construction Co., Bridgeport, Conn.



**Today**, wherever big things are happening—in the nation's most dynamic factories, stores, offices and institutions—that's where you'll find Westinghouse Water Coolers. For . . . *by design* . . . they fit in best. They're more . . .

**Efficient** . . . Westinghouse Water Coolers deliver up to 60% more cool water at less cost — thanks to the patented Pre-Cooler and Super Sub-Cooler that use cold water to pre-cool incoming water and sub-cool the hot liquid refrigerant.

**Convenient** . . . Only Westinghouse offers Dual Electric Control—both finger-tip and toe-tip control at no extra cost . . . plus Automatic Stream Height Regulator for no-spurt, no-splash drinking.

**Dependable** . . . Westinghouse Solenoid Water Valve eliminates all possibility of leaks . . . Hermetically sealed Refrigeration System assures more years of trouble-free performance. All models backed by Westinghouse 5-Year Guarantee Plan.

**Compact** . . . Handsome, space-saving design occupies only 14" x 14" floor space. Stainless steel, splash-proof top is sanitary, unbreakable.

**Put Westinghouse in your plans** . . . specify the *newest* and *finest* of water coolers for your clients. With 18 models to choose from, there's a right type and size for every need. Call your Westinghouse Water Cooler Distributor today . . . ask him for a FREE PAY-WAY COMPUTOR . . . and learn how Westinghouse Water Coolers can pay for themselves.



Westinghouse Electric Corporation  
Electric Appliance Division  
Springfield 2, Mass.

YOU CAN BE SURE...IF IT'S **Westinghouse**





Here's the world's first commercially successful SPEEDWALK in operation at an eastern railroad terminal. In less than two years it has handled almost 2 million passengers. By eliminating a fatiguing uphill climb the moving sidewalk has increased commuter travel 4½%, countering a downward trend in revenue.



Carrying visitors to and from an elevated display at a midwestern exposition, two SPEEDWALK units eliminated the hazardous and fatiguing effort of climbing stairs. Fifty-two feet long, the passenger conveyors operated on a 14½ degree slope. Total attendance at the exposition ran over 3 million people.



At this Ohio industrial plant, employees are carried up an incline to the plant gates in an effortless and orderly flow. By regulating the pedestrian traffic pattern, this SPEEDWALK eliminates jostling and crowding. Other SPEEDWALK installations in industry are underway to boost employee morale and promote safer working conditions.

It's here now!

# Speedwalk\*

*the modern passenger-proven moving sidewalk system*

MINIMIZES TRAFFIC CONGESTION AND PEDESTRIAN  
FATIGUE...WITH INCREASED SPEED AND SAFETY!

SPEEDWALK passenger conveyors are operating *now!* . . . and have been since 1952! Backed by intensive research and testing, these passenger-proven Stephens-Adamson systems are making pedestrian travel easier, quicker and safer.

Wherever large crowds must be moved, whether inside or out, the SPEEDWALK has an important contribution to make . . . at a cost well within the budget limitations of most projects. Since the weight of SPEEDWALK systems on a per square foot basis is relatively low, they can be incorporated easily into existing structures.

The Stephens-Adamson SPEEDWALK is backed by over fifty years in the field of engineered conveyor systems. It is this

experience, coupled with intensive physiological and psychological research on people, which has already made the SPEEDWALK an acceptable mode of travel to thousands of passengers now using it daily.

Stephens-Adamson engineers welcome the opportunity to discuss your transportation problems with you. Your inquiry will receive prompt attention.



A Chicago museum is the site for this SPEEDWALK installation. It began operation in November of 1952 and has carried thousands of adults and children past a colorful industrial display. Visitors pass through the area at a measured speed which enables them to devote complete attention to the exhibit.

## WHERE YOU CAN USE THE SPEEDWALK:

- Railroad Terminals
- Industrial Plants
- Department Stores
- Shopping Centers
- Congested Metropolitan Areas
- Airports
- Parking Lots
- Bus Terminals
- Stadiums

• WHEREVER LARGE  
CROWDS CONGREGATE

## Get all the facts

write for detailed information concerning S-A SPEEDWALK passenger conveyor systems. A colorful illustrated brochure is available for the asking.



**SPEEDWALK**

\*A Registered Trade Name

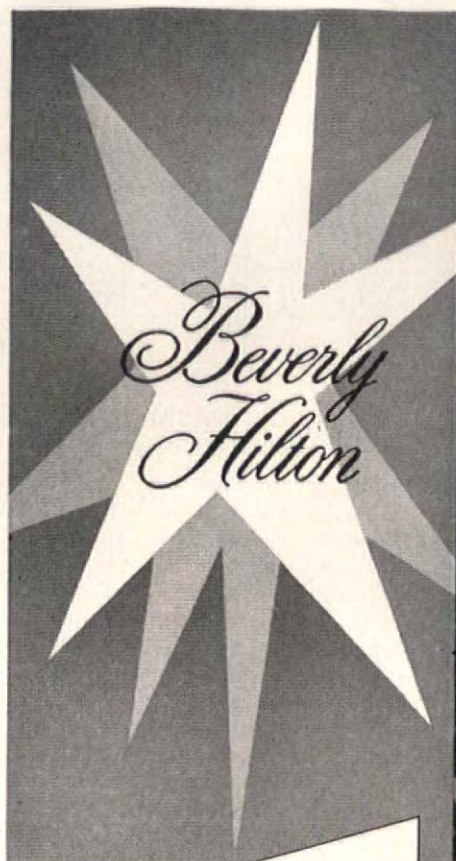
**STEPHENS-ADAMSON**  
AURORA, ILLINOIS      LOS ANGELES, CALIF.  
BELLEVILLE, ONTARIO, CANADA

Stephens-Adamson Mfg. Co.  
27 Ridgeway Ave., Aurora, Illinois

Gentlemen:  
Kindly send me detailed data on S-A SPEEDWALK systems.

Name .....  
Title .....  
Company .....  
Address .....  
City..... Zone... State.....





Carolyn Jones, featured in the M-G-M picture, "The Tender Trap", starring Frank Sinatra, enjoys the convenience of Beverly Hilton Hotel doors operated by Stanley Magic Door Controls.

**STANLEY**

*Magic Door*

**CONTROLS**

automatic selection  
for the entranceway to this new  
wonderland of luxury and hospitality



Across the country, hotels that are setting new world standards of comfort and convenience are equipped with Stanley Magic Carpet or Magic Eye Controls.

When plans were made to assure that the fabulous, new, 450-room Beverly Hilton Hotel would offer every conceivable luxury and service to its guests, the automatic courtesy of Stanley Magic Door Controls was included . . . of course. Welcoming visitors at the entrance, or speeding service between kitchens and dining rooms, doors at the Beverly Hilton are opened and closed quietly and automatically by Stanley Magic Carpet Controls.

Look into the advantages of installing Magic Door Controls. Write for complete information today.

**MAGIC DOOR DIVISION  
THE STANLEY WORKS**

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New Britain, Conn.

*Representatives in Principal Cities*



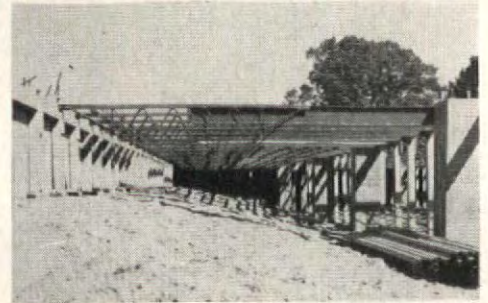
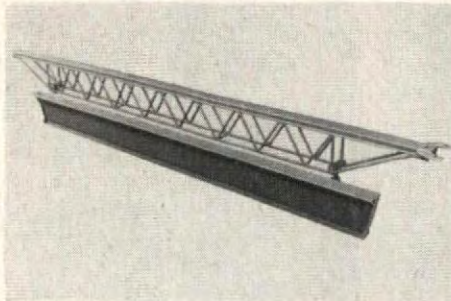
STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL



## PRODUCTS *cont'd.*

the ditcher is equipped with hydraulic power steering that gives the operator fingertip control of the 55-ton giant. Its digging wheel can be run at 15 different speeds, and the travel mechanism can be stopped while the wheel keeps moving to clean out the buckets. Horsepower for the 330, incidentally, is 220—somewhat less than many 1956 passenger cars.

*Manufacturer:* Gar Wood Industries, Inc., Wayne, Mich.



### **HORIZONTAL SHORING for concrete has adjustable camber**

Made up of few and relatively simple parts, the long span *S-L Spanall* web supports for reinforced concrete construction are currently said to be reducing formwork costs on many jobs by 40% and more. These horizontal shoring members developed in Europe are engineered to span up to 29'-6" without intermediate support freeing the space on the floor below the forms for other work and material storage while insuring safety during the pour. Camber, built into the *S-L's* to assure level floors when the concrete is placed, can be adjusted by turning a single bolt according to chart-prescribed settings. The members are assembled at the site by slipping one or more web plate sections into one or more lattice sections.

Weighing less than 8 lb. per ft., a full length *Spanall* can be handled by two men. Placement of these horizontal form



supports takes a fraction of the labor time involved in setting up conventional shoring. Once the concrete is set, stripping is easy and fast. The adjustment screw is loosened to relieve the stress so that the member can be removed. Sections can be telescoped for storage or shipment.

For the architect, *S-L Spanalls* hold a design trump, permitting him to vary span lengths throughout the building without subjecting the client to much added construction expense. Standard *S-L* lattice units range in length from 4'-2" to 11'-8" and the web plate sections from 6'-8" to 9'-11" and these can be assembled interchangeably for any required span. *Spanall* can be purchased or leased.

*Distributor:* Universal Builders Supply Co., Inc., 51 E. 42 St., New York 17, N.Y.

*continued on p. 252*

EXCLUSIVE!

# Humphrey

## FREE FLOW HEAT EXCHANGER

Never Requires Cleaning!

Soot never collects inside this Free-Flow Heat Exchanger. It is self-cleaning—a unique and valuable advantage.

You never have the dirty, bothersome job of rodding out soot. And, because there is no soot to impede heat transfer, Humphrey Gas Unit Heaters perform "like new" year after year.

The Free-Flow Heat Exchanger is used in all Humphrey Series "A" Gas Unit Heaters. It is one of many Humphrey-developed features contributing to better, more economical heating service.

*Write for descriptive literature*

**GENERAL GAS  
LIGHT COMPANY**  
Kalamazoo, Michigan

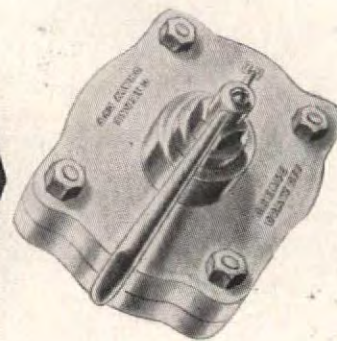
Humphrey Series "A" Unit Heater.  
65,000 to 250,00 b.t.u.

Humphrey GAS Unit Heaters



THIS DRAW-OFF VALVE\* IDENTIFIES

THE WORLD'S FINEST GREASE INTERCEPTOR



## Josam Series "JH" GREASE INTERCEPTORS

\*the only interceptor that draws off the intercepted grease at the turn of a valve

### JOSAM SERIES "JH" INTERCEPTORS PROVIDE THESE EXTRA ADVANTAGES:

No longer necessary to take off cover to remove grease.

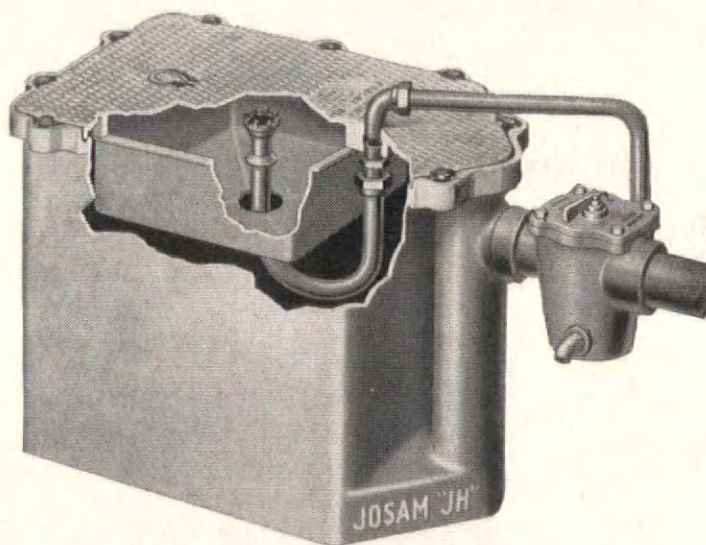
No longer necessary to remove grease from interceptor by hand.

Salvaged grease can be re-used or sold.

No odor . . . no mess . . . no inconvenience.

95% of grease from waste water is intercepted.

Prevents grease from clogging drain lines.



In installation after installation, Josam Series "JH" Grease Interceptors have turned the disagreeable task of manually removing grease from the interceptor into a simple, easy job. Because grease can be drawn off from Series "JH" Interceptor at the turn of a valve, any inconvenience in cleaning out grease interceptors is completely eliminated.

Josam Series "JH" Grease Interceptors solve the grease intercepting problems wherever food is prepared, served or processed . . . in restaurants, schools, hotels, hospitals, meat packing and food processing plants. Grease not only is kept out of drain lines, but mess,

odors, interrupted operations and repairs are eliminated. Moreover, the grease which is withdrawn is in a relatively clean saleable condition.

The superior efficiency of Josam interceptors has been proved for over 28 years and now, with the exclusive feature of automatic draw-off, they become a "must" wherever grease problems are present. They are available in a wide range of types and sizes for on-the-floor or recessed installations. Send coupon below for complete details on the exclusive Josam Series "JH" Grease Interceptors and intercepting devices for other types of waste materials.



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#### JOSAM MANUFACTURING COMPANY

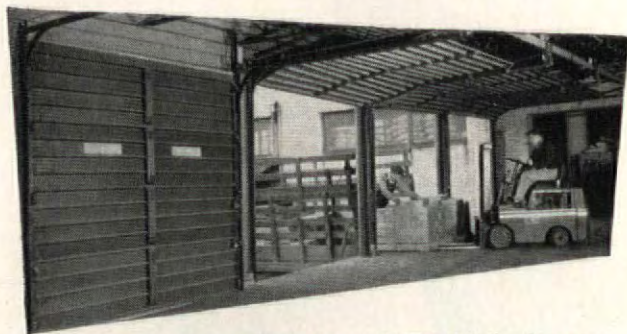
Dept. AF, Michigan City, Ind.

Please send complete details on Josam Series "JH" Grease Interceptors.

Please send complete details on interceptor for ..... wastes.

Firm .....  
By ..... Title .....  
Address .....  
City ..... Zone ..... State .....





● The "COMMERCIAL-INDUSTRIAL"—features extra strength, rugged durability and easy operation for every type of non-residential building.

## MORRISON *Roly-Doors* STEEL SECTIONAL OVERHEAD DOORS

### RESIDENTIAL... COMMERCIAL... INDUSTRIAL

**CLEAN, MODERN FUNCTIONAL LINES** that blend smoothly with all types of architecture are the hallmark of Morrison Roly-Doors.

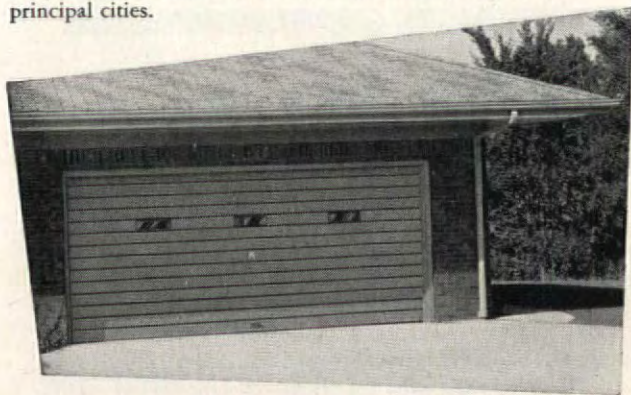
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# Where to get information on Stainless Steel in Architecture

## Armco offers data on the use of stainless in contemporary design

If you are looking for materials to give you added freedom of architectural expression, consider the use of stainless steel. And for information on how you can most effectively utilize stainless, get in touch with Armco.

For years we've been working with architects, finding out how stainless can be most useful in building design. Much of this information has been compiled and is available to you in concise illustrated booklets.

These free booklets can be helpful to you in designing with stainless steel for economy, durable beauty and low maintenance costs.

## Yours for the asking



### 1. How and Where to Specify Stainless Steel in Architecture

(AIA File No. 15-H-1)

This 20-page booklet describes stainless steels, outlines their properties and lists the forms and finishes in which they are supplied. It also lists available stainless components and about 300 different proved architectural applications for stainless, coded for easy reference.



### 2. Stainless Steel for Store Fronts and Build- ing Entrances

(AIA File No. 26-D)

Installations and structural details of entrances and store fronts designed by leading architects are illustrated in this 40-page booklet. It includes pertinent data

on economical designs and standard stainless steel products as well as a guide for specifying stainless.



### 3. The Design of Stain- less Steel Curtain Walls

Reprint of an article on the Princeton University School of Architecture's study of stainless steel curtain wall construction. Originally published in October, 1955.



### 4. Why, How and Where Architects Specify Stainless Steel

(AIA File No. 15-H)

A pamphlet outlining what stainless can mean to architects and their clients. Typical interior and exterior uses of stainless are listed and illustrated.



### 5. Stainless Steel for Roof Drainage

(AIA File No. 12-i)

Why stainless steel assures long-lasting, attractive roof drainage systems for homes and commercial buildings is discussed in this 8-page booklet.



### 6. Architectural Uses of the Stainless Steels

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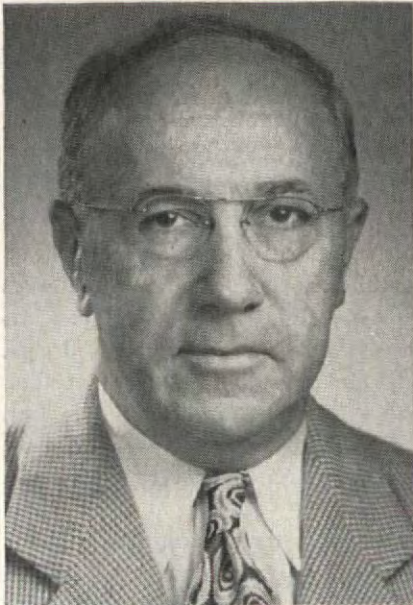
ONE OF A  
SERIES

how prominent architects use TECTUM

*city convenience in the country...*

*the integrated shopping center*

by C. Melvin Frank



Architect: C. Melvin Frank, A. I. A.,  
Columbus, Ohio

WITH THE GROWING TREND to country living, there has been a decided need for a variety of conveniently located shops. Erected independently in a given area, the result most often is that of incongruous hodge-podge. The solution to this came in the form of the shopping center with its homogeneous flow of line and a proximity of shops that provide the utmost in shopping comfort.

A leader in the design of shopping centers is C. Melvin Frank of Columbus, Ohio. His shopping centers—16 are completed or under construction—reach from the East Coast to Kansas City, Missouri. A pioneer in the use of Tectum, Mr. Frank's centers alone account for nearly 4,000,000 square feet. Town and Country Miracle Mile in Columbus, Ohio, was constructed in 1952, ultimately used more than 200,000 square feet. The latest of Mr. Frank's shopping centers, Truman Corners Town and Country Shoppers' City in Kansas City, calls for 600,000 square feet of Tectum.

Chances are that versatile Tectum can be used to great advantage in a building of your design—whether it be a commercial building, a plant, an institution or a home. Easily installed Tectum, in a single plank, serves four basic needs—it's a noncombustible roof deck; it furnishes both thermal insulation and sound control—and is a finished ceiling as well. For your next building project, consult your nearest Tectum distributor or Sweet's files, 2e/Te.



**Toledo Miracle Mile Shoppers Mart**, one of two shopping centers in the Toledo area designed by Mr. Frank. The other, Toledo Great Eastern Shoppers' City, is presently under construction. Combined, these shopping centers will use a total of 520,000 square feet of Tectum.



**Town and Country Shopping Center** at Monroeville, Pa., was constructed in 1954. Latest in the Pittsburgh area is Northern Lights Shoppers City, Conway. Combined, they used a total of 610,000 square feet of Tectum.



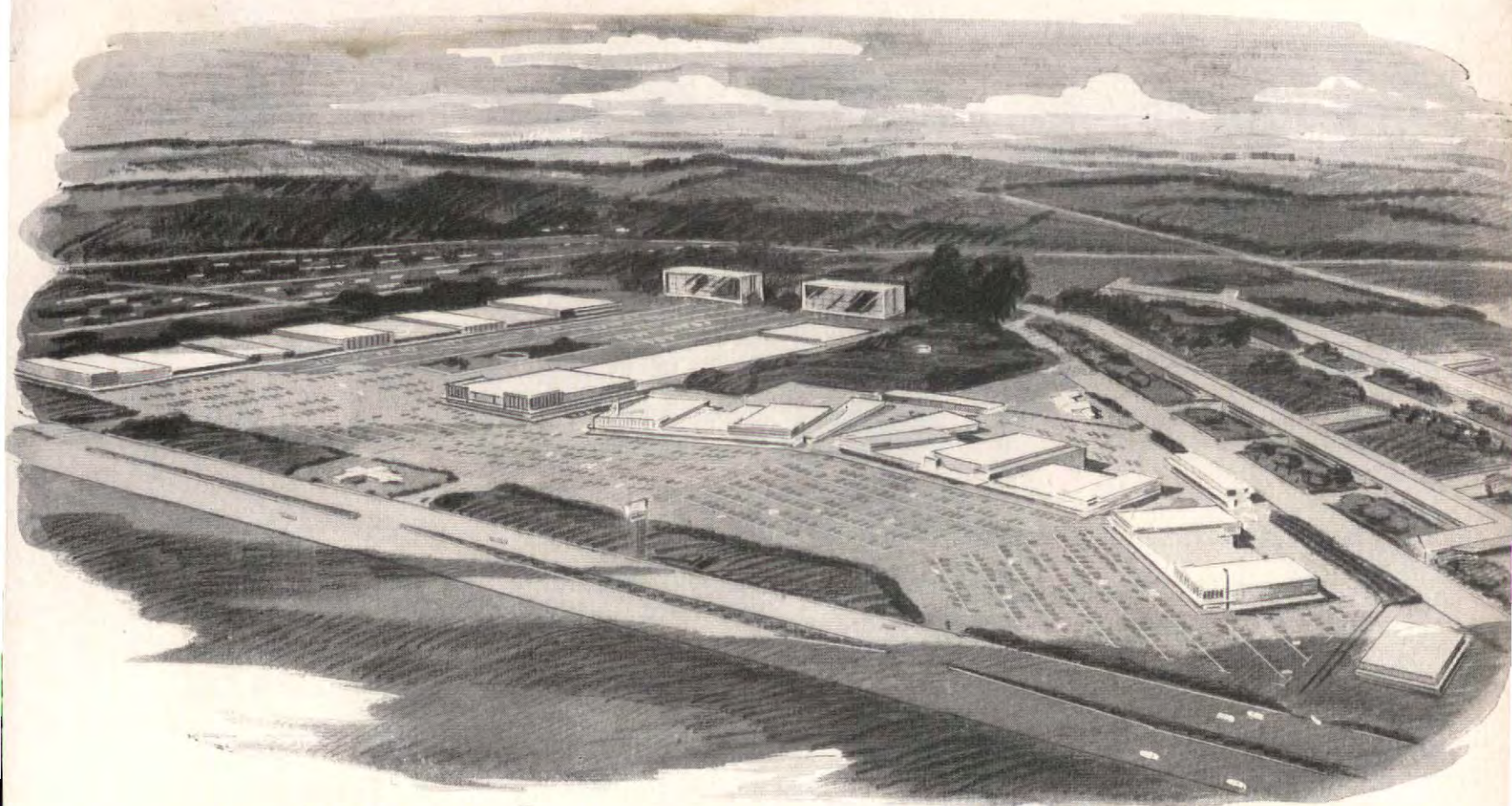
why lay a  
roof deck...



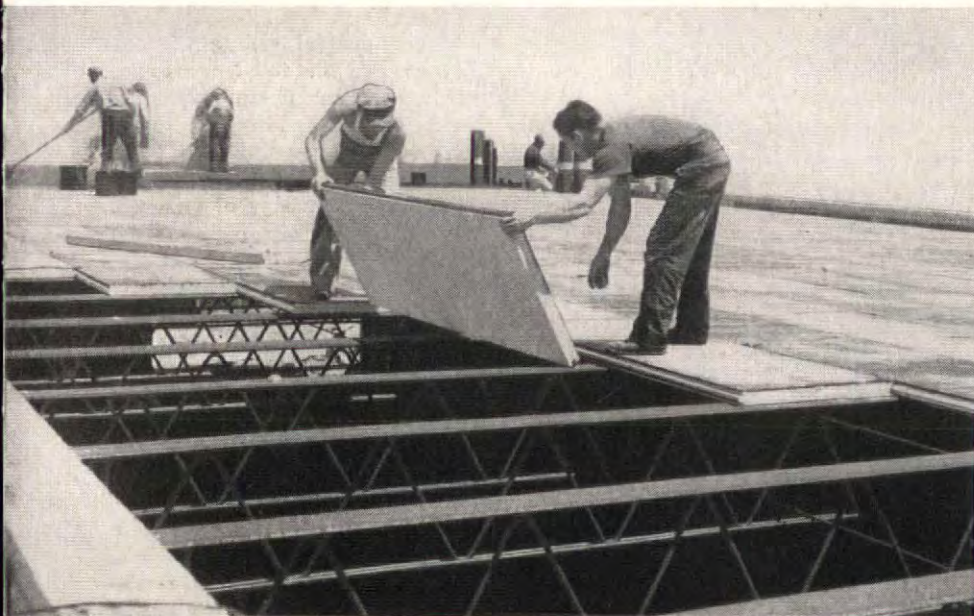
cover it with  
insulation...



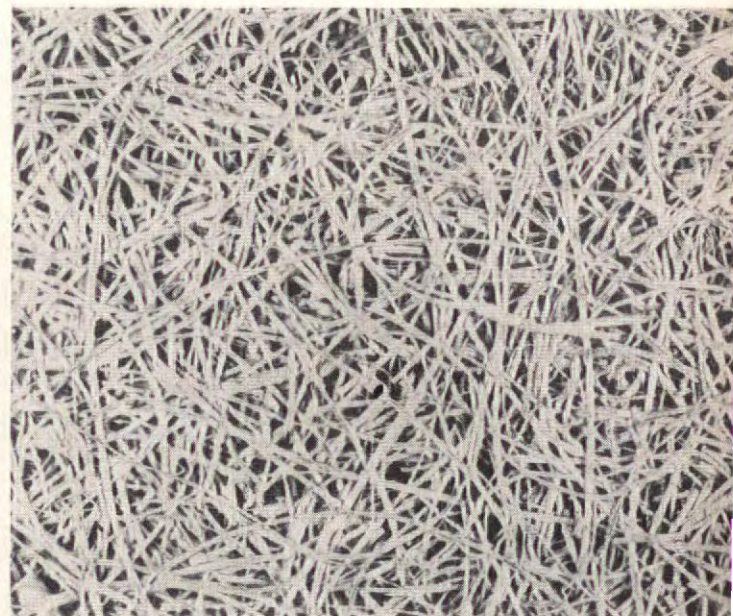




**Truman Corners** Town and Country Shoppers' City, Kansas City, Missouri. This, as other shopping centers shown here, was designed by C. Melvin Frank and developed by Don M. Casto-Don M. Casto, Jr., all of Columbus, Ohio.

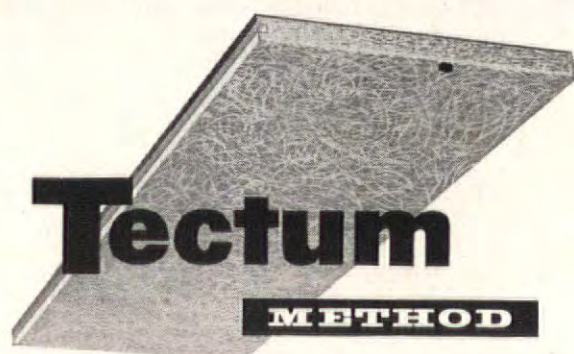
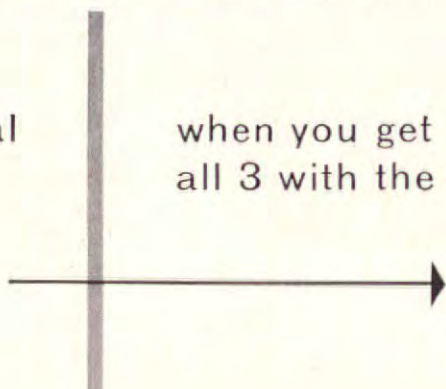


**Tectum** is shown being installed at Great Western Shoppers' Mart in Columbus, Ohio. Approximately 5,000 square feet of deck were laid in less than 3 hours. Planks were nailed to bar joists and deck was roofed in as laid. 350,000 square feet of Tectum was used.



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## PRODUCTS *cont'd.*

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date steam or hot water lines. During construction, galvanized steel sleeves for each chassis are delivered and built into the wall. Later, after electrical wiring and heating installations are finished, the conditioner components and enclosures are set in place. (As part of the structure, the room units become eligible for mortgage financing.) Especially practical for apartment houses, Amic units provide operation savings to both the building owner and

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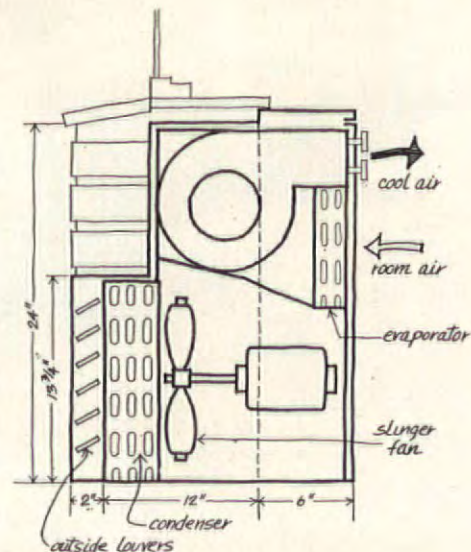
Architects, engineers and builders know that when they place a job with Michaels, every component will be fabricated to exact specifications; the materials will be at the location when needed, and the quality and workmanship will be the finest obtainable anywhere. So highly are Michaels products regarded, they have become an important part of some of the nation's most outstanding structures. Send us a set of specs for your next project—large or small. You'll find Michaels a thoroughly reliable source of supply for everything you need in stainless steel, aluminum or bronze.

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occupants. Unlike central cooling, the system does not require the full time service of an engineer, and each tenant pays only for the electricity he uses.

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For draftless conditioning, each Amic unit uses four centrifugal fans to move a large air volume at low velocity. The rooms are cooled by gradual diffusion similar in pattern to convection heating. No directional louvers are needed on the cabinets and the operation of the oversize, heavy duty components is extremely quiet. One feature sure to please designers is that Amic will tailor the enclosures for each job to architect's specifications and building needs. Outside louvers mount flush with the wall (above) and can be made up in anodized aluminum or stainless steel. Costs average \$250 a unit. The 1/2, and 3/4 ton units run on 110 v.; the 1 ton on 220 v. Manufacturer: Amic Mfg. Corp., 21-25 44th Ave., Long Island City 1, N.Y.

*continued on p. 258*





Many design possibilities are available with Flexachrome. Custom-made inserts, such as the Caduceus at the right, can do much to create special decorative effects.

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Holiday†...Mura-Tex\*...and Modnar†, the "plank-shaped" asphalt tile in wood-tone colors.



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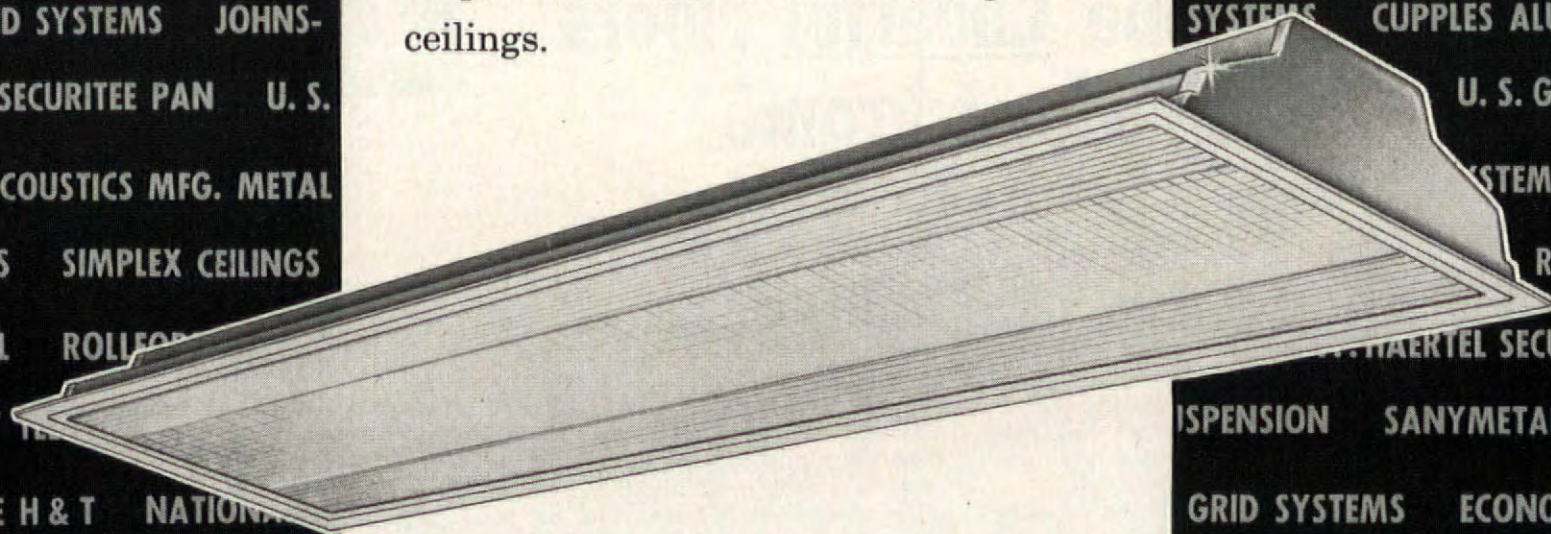


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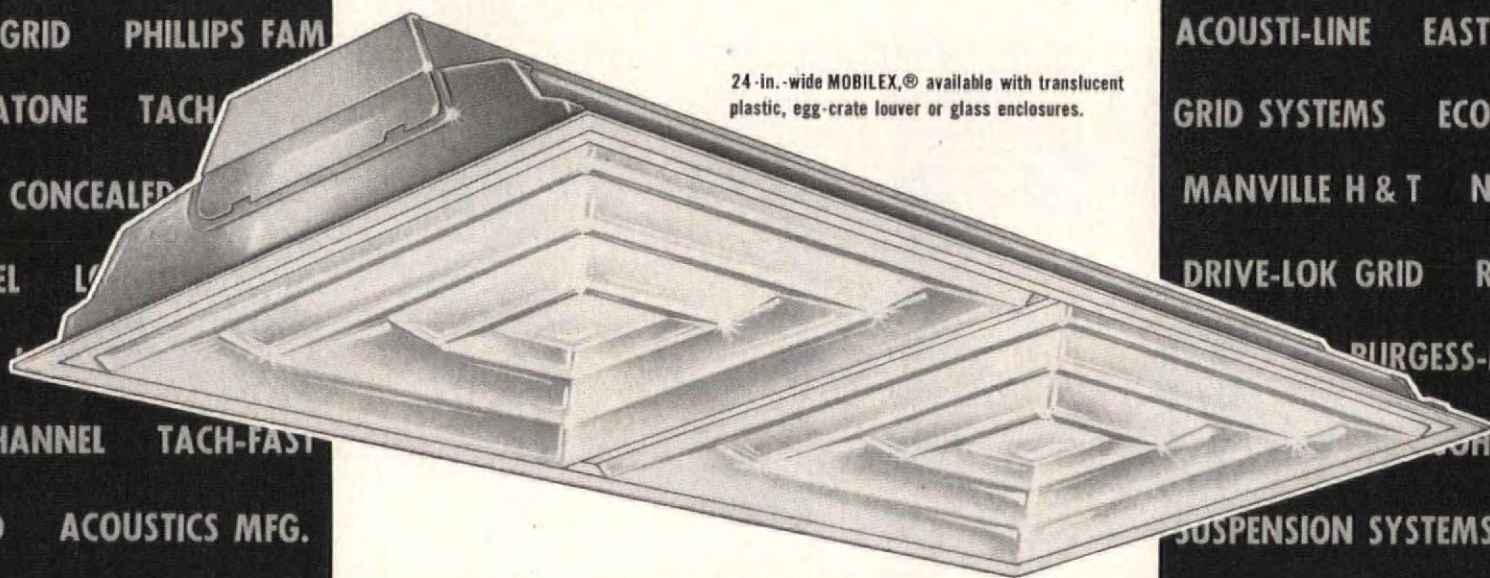
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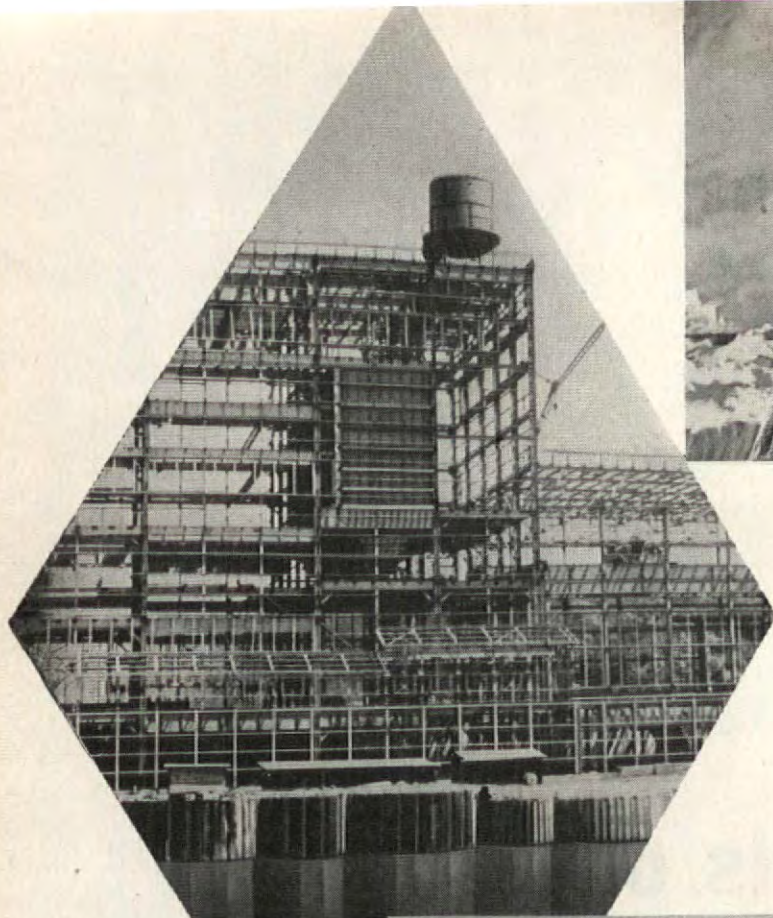
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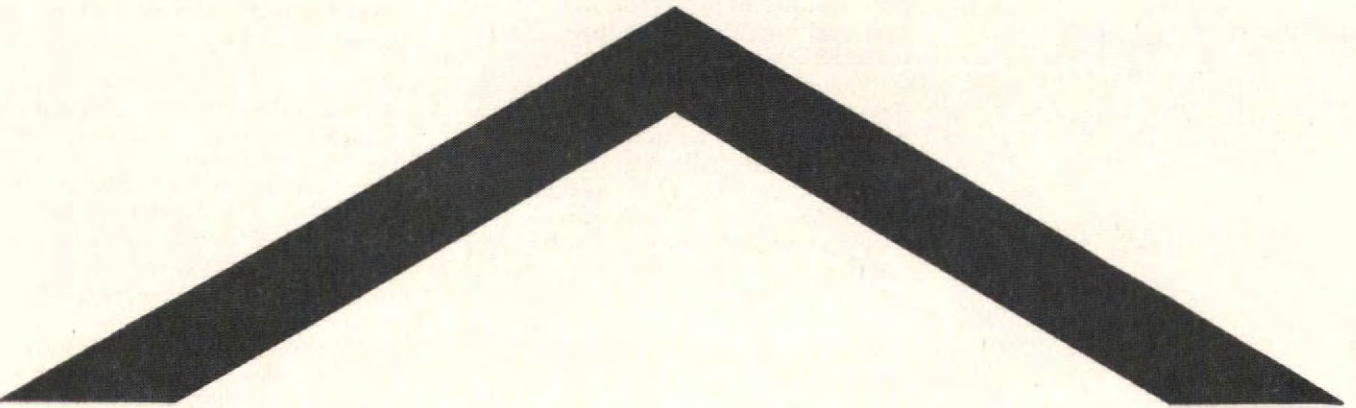
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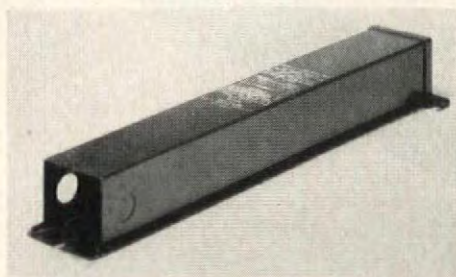
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## PRODUCTS cont'd.



### STORMPROOF BALLAST developed for outdoor fluorescents

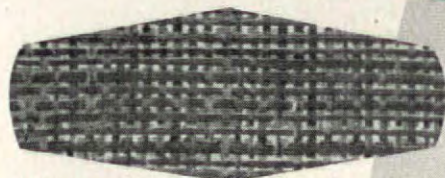
Keying its product development to current interest in fluorescents for billboards, pylons, luminous plastic signs and other outdoor lighting jobs, General Electric reports that it now has two raintight lamp ballasts engineered to meet Underwriters' Laboratories weatherproof specifications. The new high power factor ballasts—be-

lieved to be the first weatherproof units—are zinc-plated and bonderized and painted for protection against the elements. They are rated at 100 w., 532 v. and 105 w., 590 v., and sell to the trade for about \$11 each, not installed. Each has the junction box located at the bottom of the case with a pressure fit cover for easy inspection of connections. All leads are 6" No. 14 weatherproof cable.

**Manufacturer:** General Electric Co., Ballast Dept., Schenectady 5, N.Y.



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fortably seated or standing. Finished in smooth gray enamel, the *Spiroll* comes in four sizes for boards 42" to 60". Prices run from \$9.25 to \$13.50. The mounting is hinged for access to drawers under the board.

**Manufacturer:** Spiroll Products Co., S. Sudbury, Mass.

### SLIDE RULE colored yellow for easy focus on scales

While Spiroll Products is showing concern for the designer's spine (see above), famed slip-stick makers Pickett and Eckel are doing their bit for his tired eyes by turning out 6" and 10" trig and Log-Log rules in a restful shade of chromate yellow. The color choice is not based on whimsy but on the physical fact that violet and red rays focus in front of and behind the retina and the greenish yellow part of the spectrum coincides with the optimum point of seeing detail. The new rules are made of a light, noncorrosive alloy and will not warp or bind. Price: \$10.50.

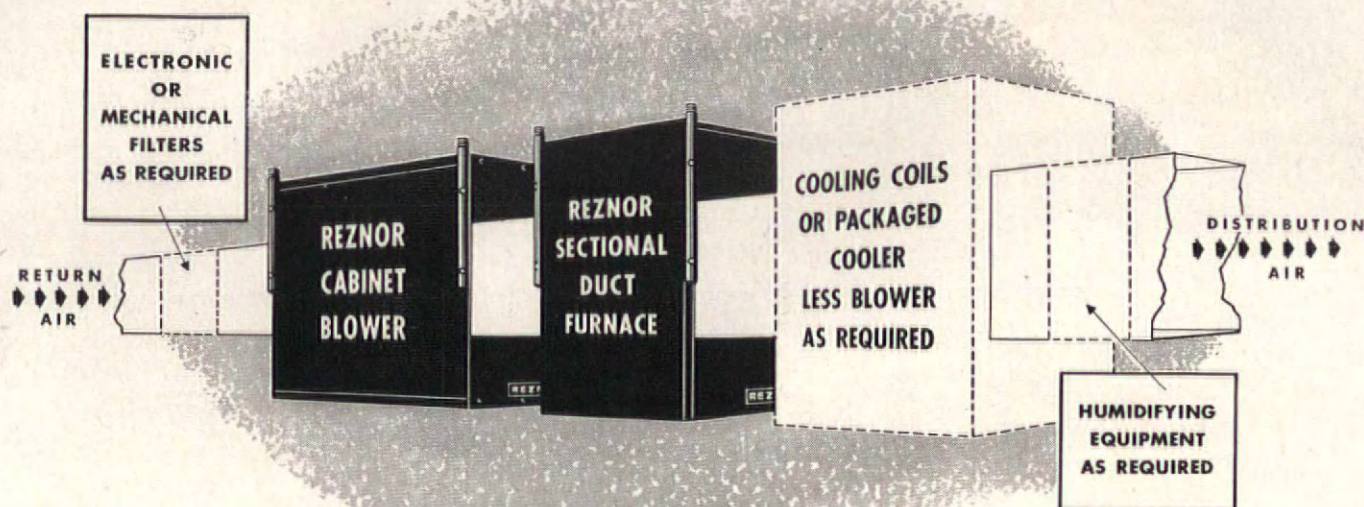
**Manufacturer:** Pickett & Eckel, Inc., 1109 S. Fremont Ave., Alhambra, Calif.

*continued on p. 264*

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You can choose, from Virden's wide selection, the fixture design that best fits your decor. You can use modern, contemporary, or period—gain almost any

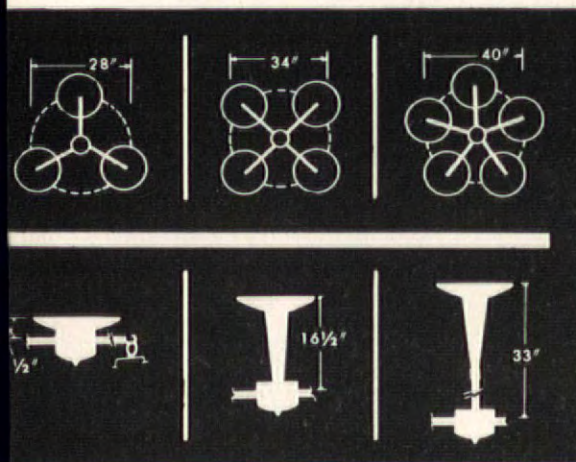
decorative and functional effect that you desire.

Installation is economical, too! In most cases, the Wondabar can be installed quickly and easily to the present fixture outlet—without rewiring or expensive and time-consuming remodeling.

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decorative lighting by **virden**

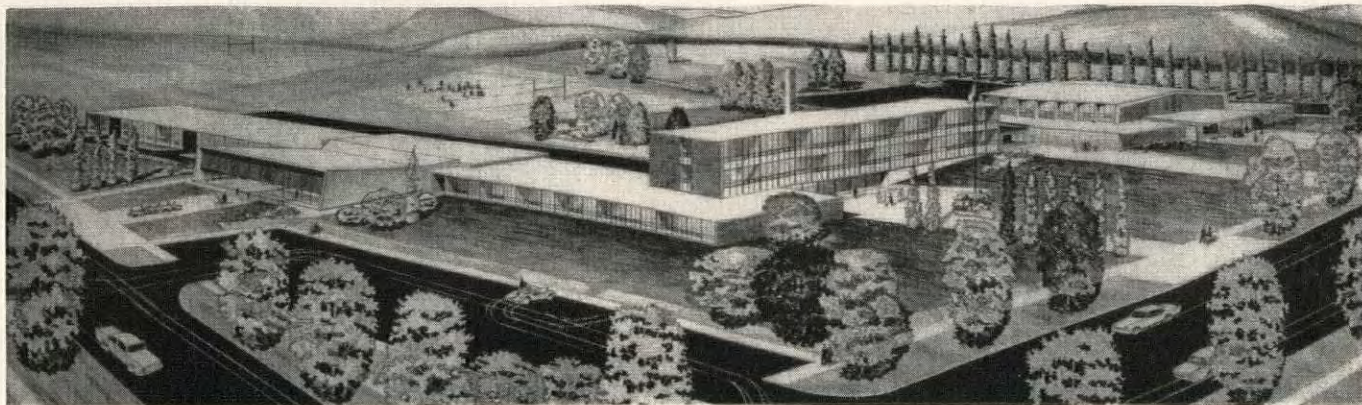


Wondabar kits are available in 3, 4 or 5 arm spreads, for use with any standard loop-equipped fixture. Almost any length ceiling drop is available. Finish is dove grey.

The Wallace Company, Poughkeepsie, N. Y. Warm, even lighting from smart, modern fixtures gives this furniture department an entirely new look—at a cost far below custom-made fixtures.

H. Weber Sons & Co., Zanesville, Ohio. Light to enhance fabrics; fixtures to create the buying mood; that's the twin advantage the Wondabar brought this store.





Foss & Company, Fargo-Moorhead, North Dakota, Architects  
Meisner-Anderson Company, Bismarck, North Dakota, Contractors

# Striking Appearance! with ALUMINUM WINDOWS

Here is effective beauty in business buildings! MARMET Curtain Wall Windows system is fast becoming popular throughout the country . . . MARMET Curtain Wall Windows offer architects the unit with which new ideas and designs can be achieved as illustrated in the above architect's sketch. Not only is it their striking appearance but simplicity of design that produces effective beauty. When you specify MARMET Aluminum Windows, you are sure of quality, service, reliability and satisfaction. MARMET offers ten window series whose features of design and construction contribute to the striking beauty of the finished installed windows. A complete line of aluminum windows for all types of construction:

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- Projected Sash
- Church Windows
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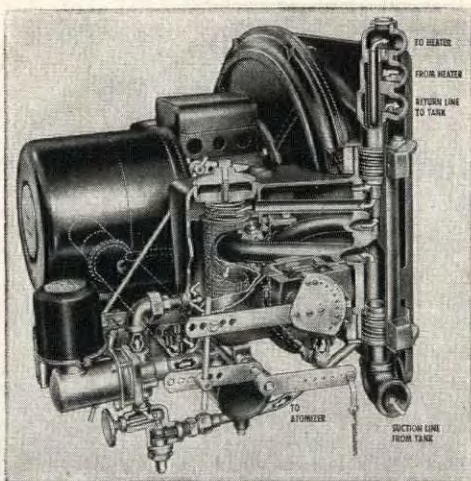


Full size details on MARMET Aluminum Windows are shown in this new MARMET Catalog 56-A, that will be sent upon request. Write, wire or phone to



MARMET CORPORATION  
OF  
WAUSAU, WISCONSIN

## NEW JOHNSON Model 53



For

### SURER, SMOOTHER "COLD STARTS" BETTER ALL-AROUND EFFICIENCY

This amazing new Johnson 53 virtually eliminates the problem of "Cold Starts" and varying Oil Viscosities. It's a masterpiece of advanced oil heat engineering. Metering Pump Control Quadrant provides calibrated reading of oil being burned. Make it a point to find out what it can do for you. There are 8 sizes from 25HP to 500HP with either Direct or Belt Drive. Combination Oil and Gas Models may be had. May we send you full details?

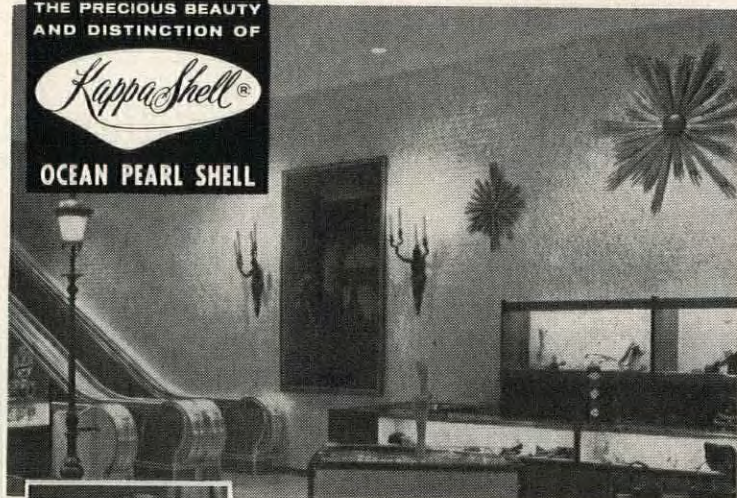


**S. T. JOHNSON CO.**  
940 ARLINGTON AVE., OAKLAND 8, CAL.  
CHURCH ROAD, BRIDGEPORT, PA.

## \* Chosen for the Interior of the NEW BONWIT TELLER STORE, Jenkintown, Pa.



THE PRECIOUS BEAUTY  
AND DISTINCTION OF  
*Kappa-Shell*<sup>®</sup>  
OCEAN PEARL SHELL



**WILLIAM PAHLMAN** of  
William Pahlman Assoc.  
Interior Decorators  
and Colorists for all  
Bonwit Teller Stores.

"We needed an elegant wall surface  
with an interesting texture and color.  
\* We chose *Kappa-Shell* because  
of its durability and ease of maintenance."

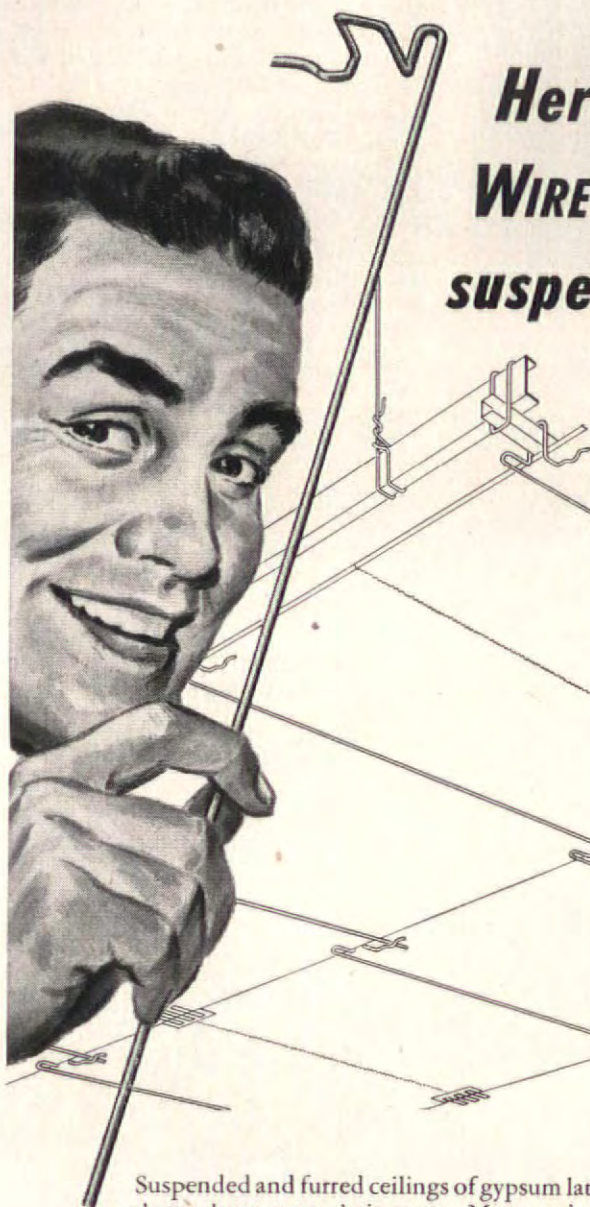
*William Pahlman*

Kappa-Shell covers the entire right hand, main floor wall—88 ft. L x 15 ft. H. This impressive blending of modern and traditional design dramatizes the versatility of Kappa-Shell's shimmering, ever-changing, precious beauty. Kappa-Shell, the natural ocean pearl shell, is providing America's leading architects, decorators and designers with an inspiring, everlasting material for walls and ceilings, furniture, lighting and accessories.

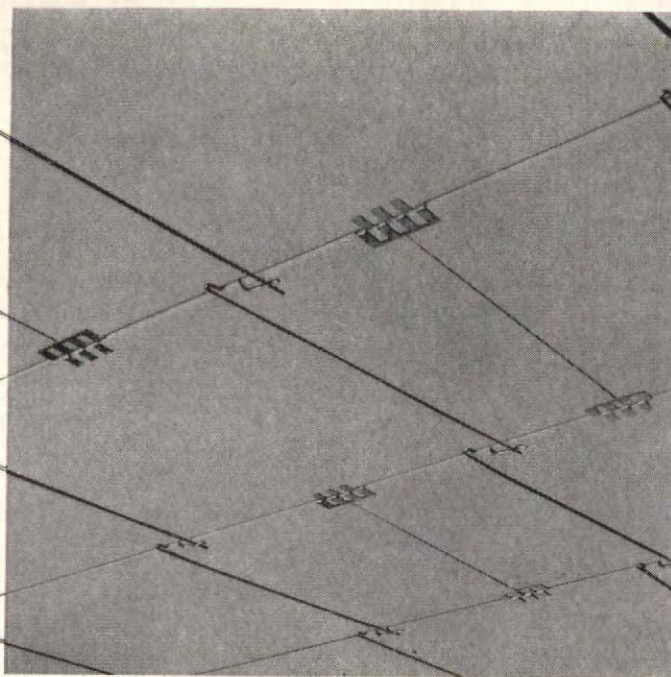
We'll be glad to give you all the facts about Kappa-Shell.  
Write for further information Dept. AF-4.

**KAPPA-SHELL PRODUCTS, Inc.** 121 West 17th St., New York 11, N.Y.





## Here's the key to Gold Bond's WIRETITE Ceiling System for suspended and furred construction



Suspended and furred ceilings of gypsum lath and plaster have won their spurs. More and more architects are proving to their satisfaction that this method of construction is the answer to low-cost fire protection. And now—Gold Bond makes the job easier—and more economical—with the NEW WireTite Ceiling System. Here's why:

**INTERLOCKING CLIPS.** The key to WireTite's popularity is the fact that FIELD CLIPS INTERLOCK...an exclusive Gold Bond feature! Clips are simply snapped over the channel, drawn taut across the face of the lath and the ends locked firmly into arms of preceding clips. Fast, positive, secure.

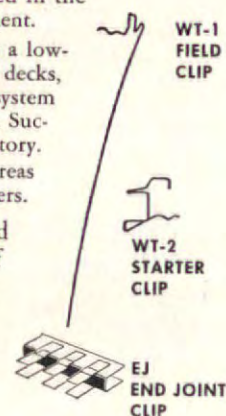
**SPEED OF ERECTION.** The WireTite System employs only THREE types of clips. (See illustrations at right.) All are quickly and easily installed by the lather.

**REINFORCEMENT.** WireTite clips are imbedded in the base-coat plaster, giving additional reinforcement.

**FIRE-RESISTANCE.** The WireTite System provides a low-cost method of affording fire protection to metal decks, steel joists and utility routings. Variations in the system make possible fire ratings from one to four hours. Successfully tested by a nationally-recognized laboratory.

**ADAPTABLE.** Easily installed around recessed ceiling areas to accommodate flush lighting fixtures and air diffusers.

Specify Gold Bond Gypsum Lath, Plaster and Finish Lime with this system. Take advantage of Gold Bond's "Undivided Responsibility" by placing your confidence in one reliable manufacturer—National Gypsum Company—for quality performance of all products. For data on Gold Bond WireTite Ceiling System, write:



NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Build better with  
**Gold Bond**



METAL AND  
GYPSUM LATH



GYPSOLITE  
PLASTER



GAUGING  
PLASTER



FINISH  
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EXTRA-FIBERED  
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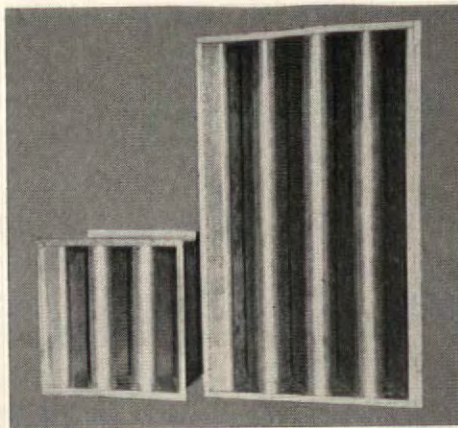
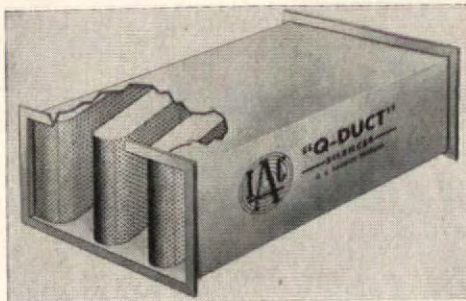


KEENE'S  
CEMENT

... LATH AND PLASTER



## PRODUCTS *cont'd.*



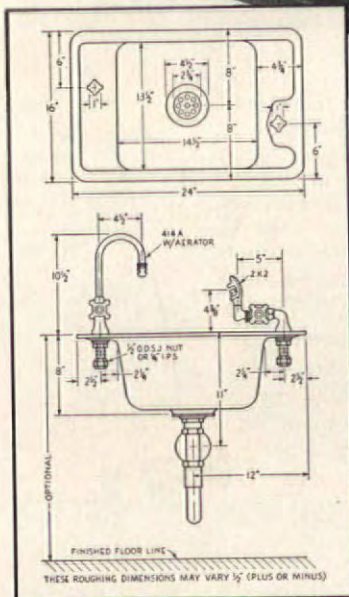
### STANDARD SILENCERS packaged for air-conditioning ducts

The whining trails left by high velocity supply air can be shushed effectively with Q-Duct standardized sound attenuating duct fittings. Available in 148 stock sizes to meet almost any dimensional and performance need, the packaged quieters attenuate sounds over a broad frequency range. Their construction is based on a system originally developed for aviation test cells to combat the horrendous noise of jet and turbo prop engines. Q-Ducts measuring 2' to 10' are reported to provide as much noise control as 30' to 100' of conventionally batt-insulated duct. Pressure drop has been computed for each model Q-Duct and so the units can be fitted into the air-conditioning system during installation. The units also can be attached to blower intakes and discharge systems or other locations where airflow noises are a problem. Prices start at \$50 per unit.

Manufacturer: Industrial Acoustics Co., Inc., 342 Jackson Ave., New York 54, N.Y.

## Haws leads with another **NEW** deck-type fountain

HAWS Model No. 2442  
Size: 16" x 24"  
Pat. applied for



Rough-in Detail of  
Model No. 2450

### ...for School Classrooms

...specifically designed to meet the demand for narrow deck-type installations! The new HAWS Series 2400 offers all the outstanding features made popular by the first deck-type fountain to be produced—the HAWS Series No. 2000...and, overall dimensions are 16 by 24 inches.

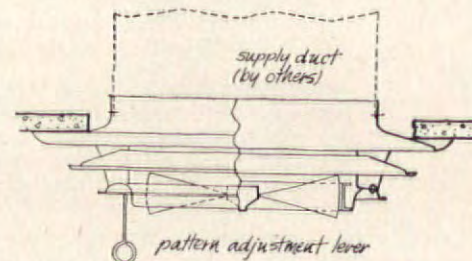
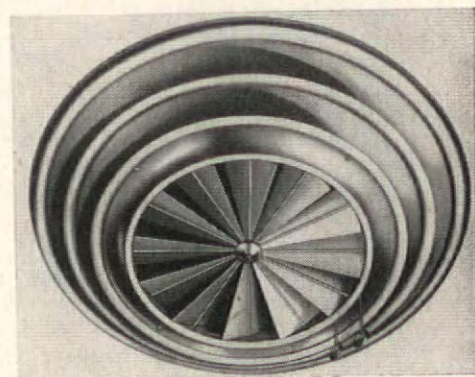
**SERIES No. 2400** is cast-iron constructed with acid resisting white enamel finish... stainless steel Hudee mounting rim prevents water running onto cabinet top and provides a water-tight bond...VANDAL PROOF socket flanges and fittings...chrome plated sink strainer with non-removable grid...and availability with any combination of HAWS Sanitary Faucets and Fixtures.

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**HAWS DRINKING FAUCET CO.**  
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### AIR DIFFUSER is designed for use in rooms with high ceilings

Capable of driving a downward stream of hot air 60' or more, Model BP Venturi-Flo ceiling diffuser is specifically engineered to provide air diffusion in factories, auditoriums, gymnasiums and other high-



ceilinged areas. Its air pattern can be varied from vertical to horizontal (best for cooling) and may be adjusted from the floor by using a pole and hook. Produced in 17", 20", and 24" diffuser sizes with volumes ranging from 1,400 to 7,000 c.f.m., the ceiling units are available with control blades to regulate supply air volume. Manufacturer: Barber-Colman Co., Rockford, Ill.

continued on p. 270

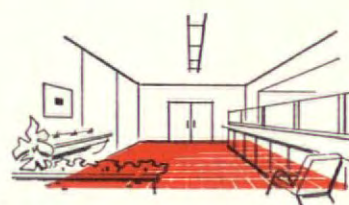
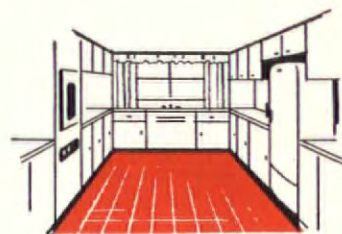
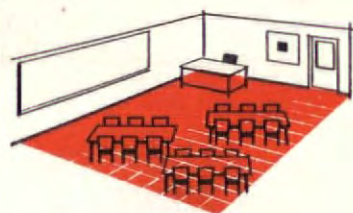
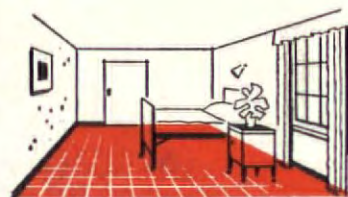


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WEARS LONGER,  
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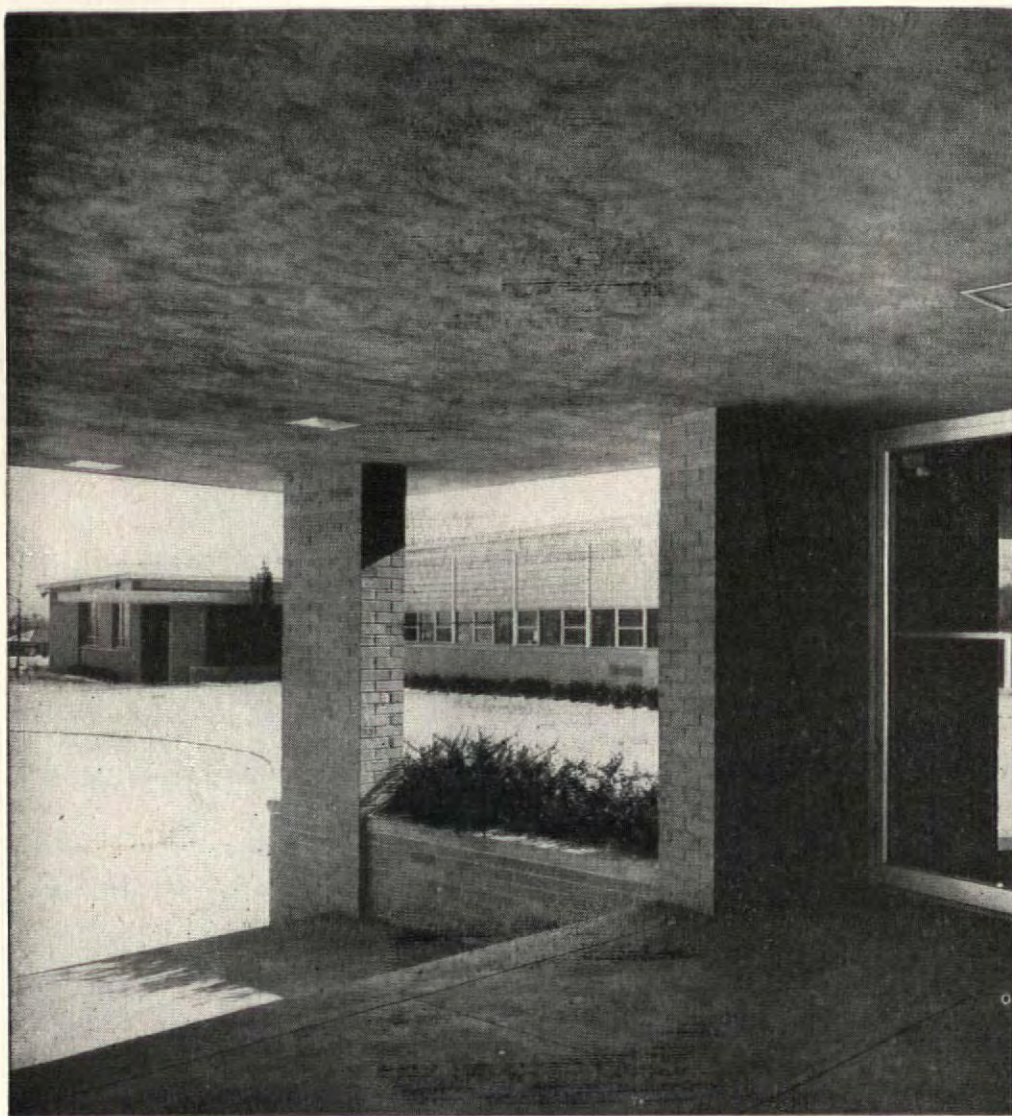
Specifying floor covering can be touchy business . . . you can save, but be sorry! With the high percentage of vinyl in Bolta-Floor, you're sure of a more dense surface for greater wearability, easier maintenance as well as a rich natural lustre that lasts years longer, with or without waxing.

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For top quality and performance, specify Bolta-Floor and be sure.

**The General Tire & Rubber Company, Flooring Division, Akron, Ohio**





**In Pennsylvania**—Monroeville Junior High School. Architect—Walter E. Schardt, Pittsburgh; Consulting Engineer—Leland W. Cook, Pittsburgh; Contractor—Guy Miller Company, Pittock, Pa.

## New Buildings Go Up Faster At Lower Cost With Steeltex®

Across The Nation, Designers And Contractors Use Pittsburgh Steeltex Because It Saves Money

In Daly City, Calif. . . . down in Austin, Tex. . . . at Monroeville, Pa. . . . in Hagerstown, Md., Pittsburgh Steeltex is:

- **Helping build better, stronger** buildings of all kinds.
- **Cutting construction costs**—"five per cent," said one builder; "five cents per square foot," said another.
- **Shortening building time**—"we saved six weeks," said the builder in California.

Steeltex, the sturdy steel wire mesh reinforcing which carries its water-proofed form right on its back, was the choice of the men who designed and constructed the representative buildings on these pages. They agree Steeltex does a better job at lower cost.



**In California**—Westlake Shopping Center's J. C. Penney Company Department Store in Daly City. Architect & Engineers—Lloyd Gartner, A.I.A. and Associates of San Francisco; Contractor and Owner—Henry Doelger Builder, Inc., of Daly City.



**J. C. Penney Company Store** in Daly City, Calif., (lower left) is a totally fireproof department store with 93,350 square feet in its basement, first floor and second floor. The architect said:

"The facility and speed with which Steeltex Floor Lath was installed and the whole operation was completed resulted in a saving of many weeks of valuable construction time."

Henry Doelger Builder, Inc., builder and owner of the Westlake Shopping Center which includes the J. C. Penney store, credits Steeltex with "about six weeks saving in time and about five per cent in cost."

**Monroeville Junior High School**, near Pittsburgh (upper left) used approximately 110,000 square feet on floor slabs with the contractor, Guy Miller Company, declaring:

"At a conservative estimate, 1½ cents per square foot was saved in time and material as a result of using Steeltex instead of other methods."

**The American National Bank Of Austin, Tex.**, (upper right) used about 7,000 square feet of Steeltex. Contractor J. M. Odom said: "On steel joist spans under 25 feet with a spacing of not over 32 inches we save approximately five cents per square foot over most other types of deck."

**Fairchild Aircraft Division, Office Building**, Fairchild Engine and Airplane Corp., at Hagerstown, Md., (lower right) Steeltex was used for 46,000 square feet of office space. The architect estimated "a Steeltex-supported slab over bar joists, spaced 24 inches on center, to be 40 to 45 per cent less expensive than a conventional four-inch reinforced slab using wooden forms, and over steel beams, six to eight feet on center."

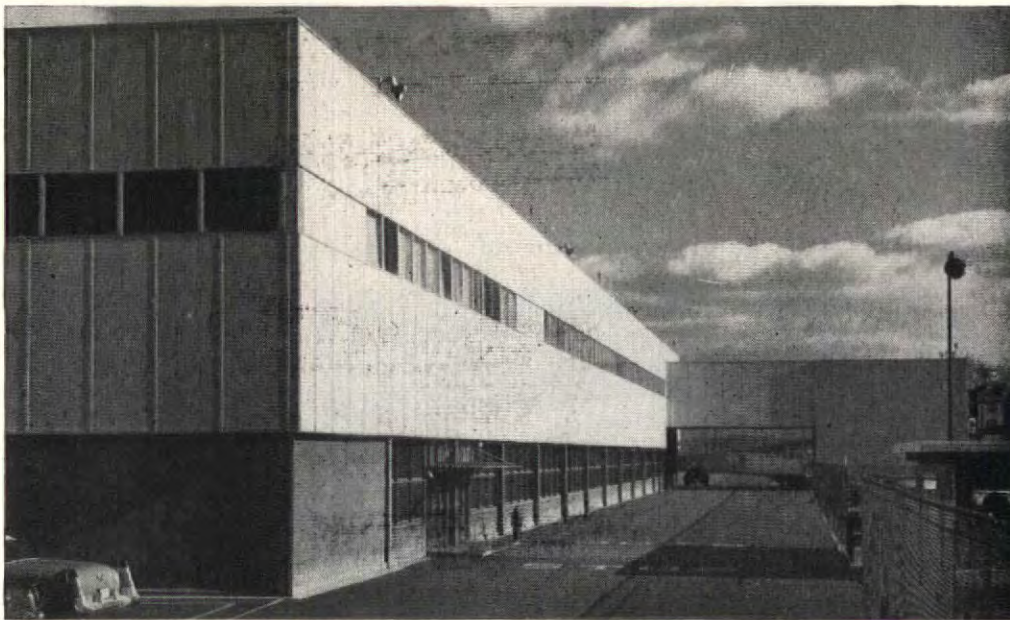
Peter A. Strobel of the consulting engineering firm of Strobel and Salzman said the savings due to the use of Steeltex on the Fairchild building "are quite substantial and, according to our estimate, vary between \$.40 to \$.70 per square foot."

The Steeltex story is the same in the East, West, North or South. Designers and builders favor Steeltex because it makes better roofs and floors and speeds construction.

You, too, can benefit from Steeltex's advantages. For more details on the Steeltex story, write for the new booklet "Steeltex, Backbone of Concrete, Plaster and Mortar." Or call the nearest district sales office to learn how you can do a better job in less time when you use Steeltex.



**In Texas**—American National Bank of Austin, Tex. Architect—Kuehne, Brooks and Barr, of Austin; Contractor—J. M. Odom of Austin.



**In Maryland**—Office Building for Aircraft Division of Fairchild Engine and Airplane Corp. in Hagerstown, Md. Architect—Fordyce & Hamby, New York City; Consulting Engineer—Strobel & Salzman, New York City; Contractor—Calabro Construction Co., Inc., Linden, N. J.

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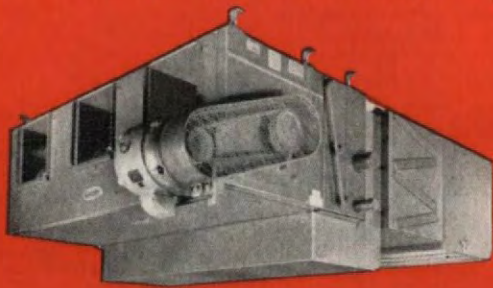
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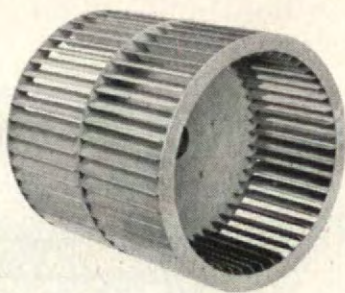


## Carrier Heating and Ventilating Units...



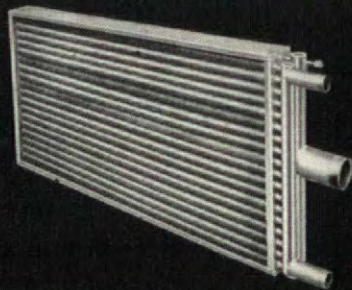
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for higher efficiency, quieter-than-ever operation

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YOU GET FIVE BIG ADVANTAGES WHEN YOU SPECIFY "FINELINE"

**1** You add unusual beauty to the architectural job, whether it be a hotel, public building, bank, institution or a home.

This is because "FINELINE" is a wood veneer, produced under an exclusive new process developed by Williamson... a veneer of perfect grain and without flaws.

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*Fountain Luncheonette and 25 stool off-the-floor counter at W. T. Grant, Bloomfield N. J.*

## New Bastian-Blessing Off-the-Floor Counter Combines Easier Cleaning, Smarter Styling



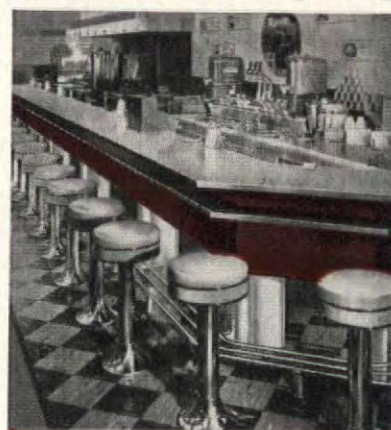
This streamlined, efficient and eye-pleasing fountain and food service installation was specifically designed for W. T. Grant to simplify sanitation problems. Recently, Bastian-Blessing installed similar luncheonette equipment in more than 40 Grant's Stores from New England to the Pacific Coast.

Perfectured by Bastian-Blessing in collaboration with the W. T. Grant Company, the new off-the-floor counter design is not only beautiful, it is entirely functional because it is easy to see under, easy to reach under, easy to clean under. Instead of resting on the floor, it is raised 18" on attractive stainless steel columns spaced about 6 feet apart. It combines a light, airy appearance having high consumer appeal with new service efficiency. The off-the-floor counter, like other Bastian-Blessing units, incorporates streamlined construction and all major sanitary advancements to carry the seal of approval of the National Sanitation Foundation.

The counter features are listed in the panel at right. For more details write The Bastian-Blessing Co., 4205 W. Peterson Ave., Chicago 30, Ill.

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### NEW OFF-THE-FLOOR COUNTER OFFERS MANY ADVANTAGES

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4. Electric and water ducts hidden within uprights
5. Available in variety of colors, materials and layouts

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WORLD'S LARGEST MANUFACTURER OF SODA FOUNTAINS AND COUNTER FOOD SERVICE EQUIPMENT



## PRODUCTS *cont'd.*



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Rivalling porcelain enamel's rugged sleekness, *Glascote* is a tough coating for all kinds of metal, masonry and wood surfaces. Practical for outdoor and indoor uses, the compound was first developed for marine maintenance work and is actually a polyester resin colored with permanent metallic oxides. The material's weatherproof and chemical resistance is well known in the familiar plastic and glass fiber laminates. Now it is available in liquid form as *Glascote* to which a heat-generating curing agent is added before application. Hardening takes about four hours at 72° F. Two coats are recommended for all surfaces—one of primer (regular or metal) and one of surfacer. Coverage runs about 200 to 400 sq. ft. per gal. depending on the porosity and roughness of the surface being covered. Cost of the finish runs from 8¢ to 25¢ a sq. ft. Self leveling, *Glascote* gives a strokeless, blurbless dull sheen finish when brushed or sprayed. It also can be rolled on in a thick coat for a textured finish. The coat-



ing comes in seven stock colors; other shades will be prepared to specification on large orders. Trial kits are available at \$5. *Distributors:* Ever-Shield Products Co., 202 E. 46 St., New York 17, N.Y. and 8964 Huntington Dr., San Gabriel, Calif.

### TECHNICAL PUBLICATIONS

#### ALUMINUM

Kaiser Aluminum Heavy Press Extrusions. Kaiser Aluminum & Chemical Sales, Inc., Kaiser Building, Oakland, Calif. 26 pp.

1956 Product Descriptions and Availabilities. Kaiser Aluminum & Chemical Corp., Industrial Service Div. PR 256, 1924 Broadway, Oakland 12, Calif. 24 pp.

#### COPPER

Modern Sheet Copper Practices. Manual C-1. The American Brass Co., Waterbury 20, Conn. 112 pp.

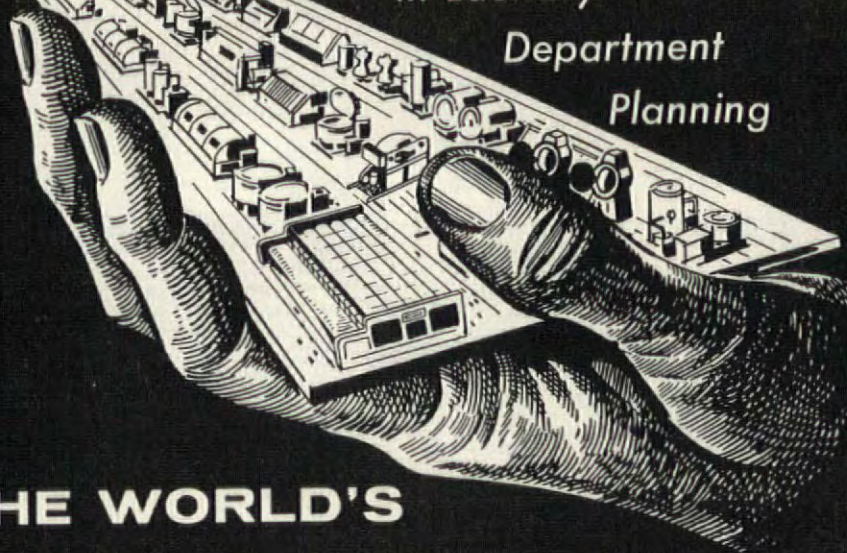
#### ELECTRICAL EQUIPMENT

McGill Electrical Specialties. Cat. 84. McGill Mfg. Co., Inc., Valparaiso, Ind. 52 pp.

Modern Panelboards. Cat. No. 3-205. Federal Pacific Electric Co., 50 Paris St., Newark 1, N.J. 78 pp.

*continued on p. 276*

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## THE WORLD'S MOST COMPLETE LINE OF LAUNDRY EQUIPMENT FROM ONE MANUFACTURER

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# American

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**True Glass** of the finest quality. Every piece is mechanically ground and polished. It permits true and even joints, without lippage or warpage.

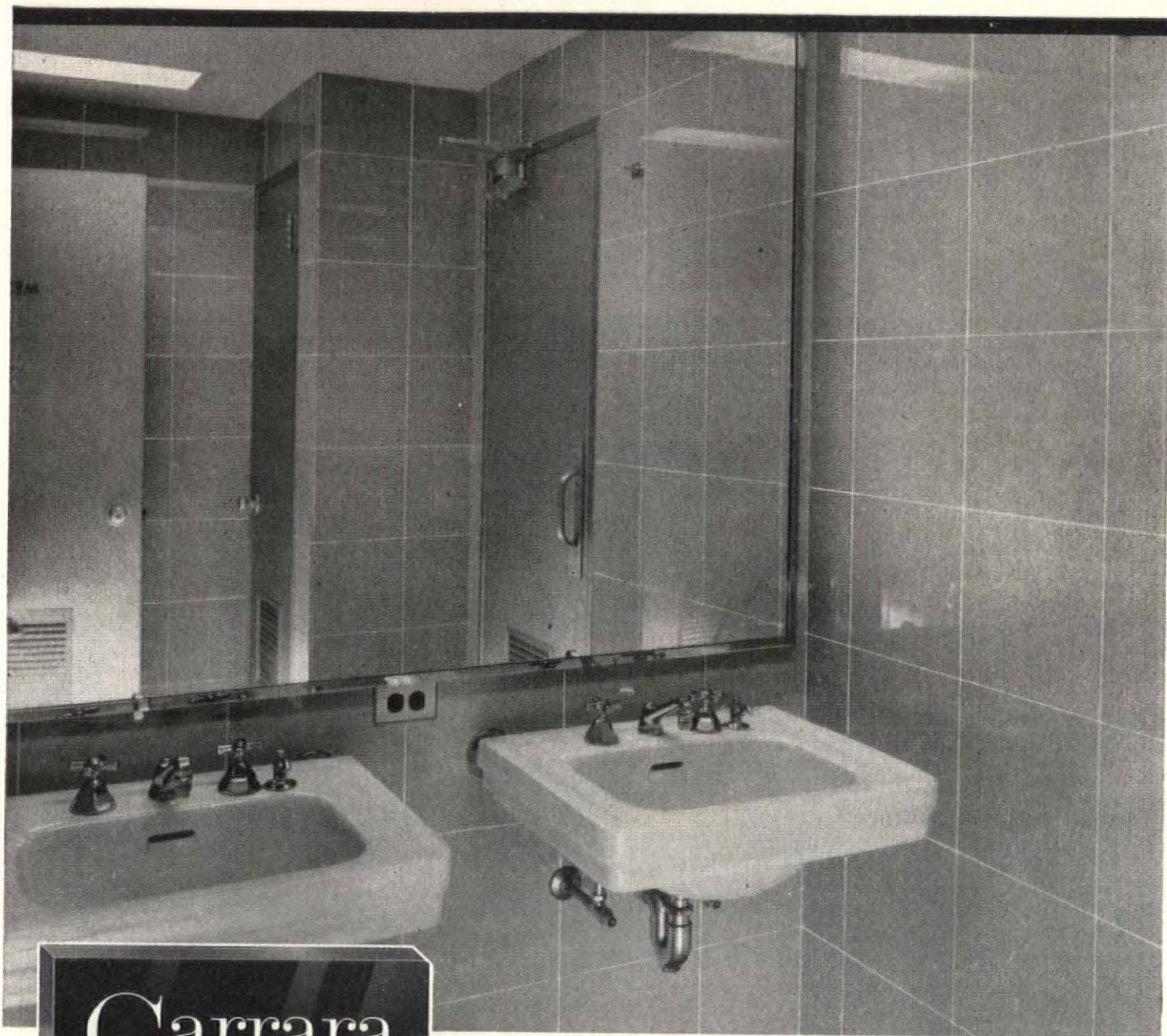
**Beautiful.** Available in ten lovely colors, gleaming Carrara Glass adds a note of distinction and dignity to every building in which it is used.

**Permanent.** Its smooth, homogeneous surface is unaffected by moisture, soap, damp atmospheres, and pencil marks. Carrara won't check, craze, stain or fade; it won't absorb odors.

**Sanitary.** Because Carrara is installed in large sections, it has fewer joints and crevices to catch dirt and dust. Its smooth, highly polished finish is easy to keep clean; an occasional wiping with a damp cloth is all that's required.



**Alcoa Building**, modern home office of the Aluminum Company of America, Pittsburgh, Pa., was designed by Architects Harrison and Abramovitz, New York, N. Y.



**Carrara**  
...the quality  
structural glass

Additional information on Carrara is available from Pittsburgh Plate Glass Company, Room 6148, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

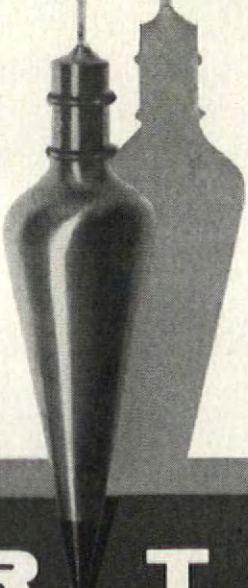


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Every year since 1930 more construction-engineering firms have used more advertising pages in FORTUNE than in any other general magazine.

This is because they know that FORTUNE concentrates on the management men who have the authority to act on such important matters as construction-engineering services.

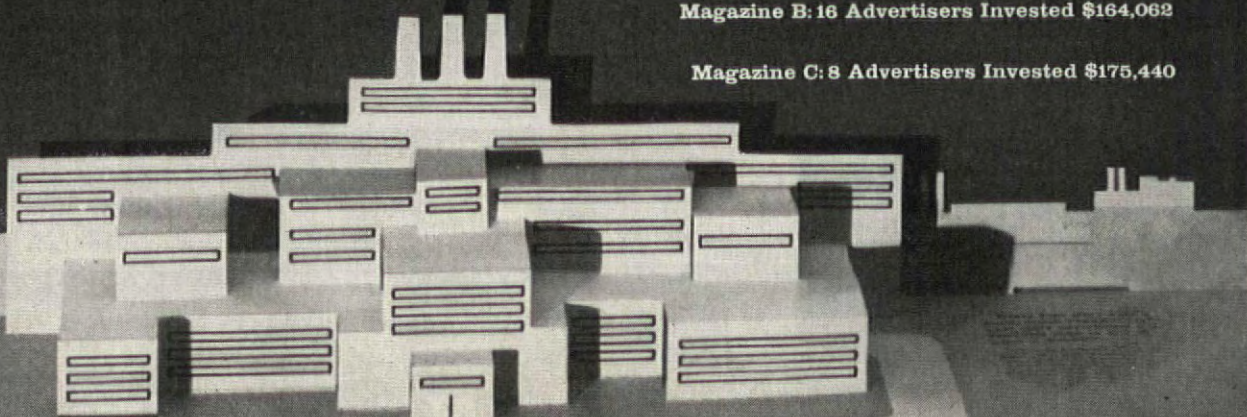
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28 ADVERTISERS INVESTED \$606,243 IN FORTUNE IN 1955

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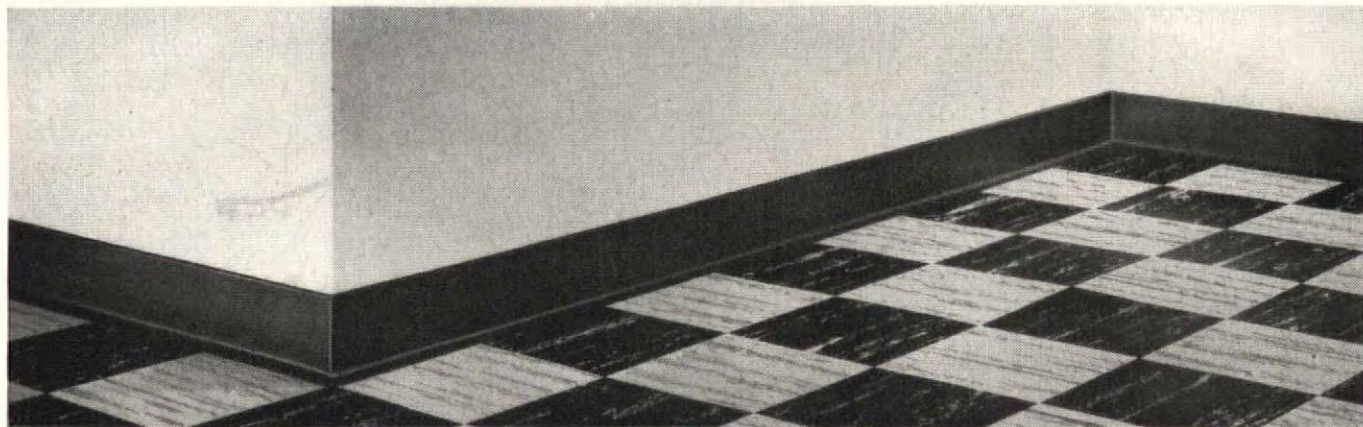
Magazine C: 8 Advertisers Invested \$175,440





# NEW KENCOVE VINYL BASE INSTALLATION METHOD

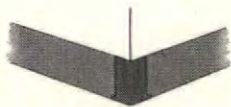
**Provides neater, better looking corners**



## KENCOVE VINYL BASE CORNERS GIVE YOU THESE ADVANTAGES OVER PRE-FABRICATED CORNERS SHOWN BELOW



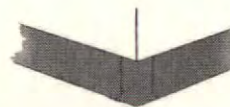
WON'T KICK OFF



NO COLOR VARIATION  
AT CORNERS



NO VARIATION  
IN HEIGHT

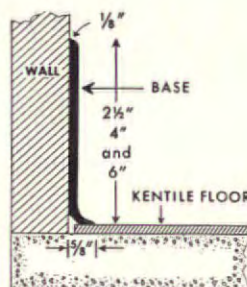


ELIMINATES JOINTS

New KenCove Vinyl Base installation method allows mechanics to mold corners right on the job. The cost is less than prefabricated corners with short 2" and 3" wings which do not allow adequate surface contact for the adhesive. 48" KenCove molded around inside or outside corners allows maximum contact surface. Rubber base cannot be molded without scoring which weakens it, and its factory-made corners seldom fit the irregular and off-plumb corner sizes found on the job. KenCove vinyl base resists scuffing, cleans easily, does not show mop marks.

**ASK FOR A FREE DEMONSTRATION** from your KENTILE Sales Representative. Contact any of the offices listed below:

### KENCOVE SPECIFICATIONS



KenCove Vinyl Wall Base, as made by Kentile, Inc., top set type, ribbed back,  $\frac{1}{8}$ " thick, ( $2\frac{1}{2}$ " high) (4" high) (6" high), rounded top,  $\frac{5}{8}$ " wide at bottom; colors (Sumac Red) (Black) (Brown) (Gray) (Green). Inside and Outside Corners to be molded on the job from KenCove Wall Base. Adhesive: KenFast No. 2 Adhesive as made by Kentile, Inc. for base.

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# Rotary Oildraulic® Elevator will lift



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ADVISORY ARCHITECTURAL COMMITTEE:  
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John B. Peterkin

ENGINEERS: Guy B. Panero

STRUCTURAL ENGINEER: Jacob Feld

GENERAL CONTRACTORS: Walsh-Fuller-Slattery (joint venture)

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installed by Burwak Elevator Co., New York



# 75,000 lbs. in mammoth New York Coliseum

## HUGE ELEVATOR CAR RISES 62 FEET ON 3 HYDRAULIC JACKS

The new \$35 million Coliseum in the heart of Manhattan is big... even by New York standards. It has a four-level exhibition hall, lobby a block and a half long, a 20-story superimposed office building... and one of the largest elevators in the world.

The elevator was designed and built by Rotary Lift Co. to handle any object that might be displayed in the vast expanse of the Coliseum, from a luxurious yacht to a complete highway tractor-trailer unit.

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Three 15" diameter oil-hydraulic jacks, powered by Rotary Oildraulic electric power units, support and raise the elevator. Sixteen equalized guide shoes on double guide rails, developed by Rotary Lift Co. for this installation, steady the giant car and its load during the 62-foot rise. Rugged construction of all mechanical parts and precise controls assure complete safety.

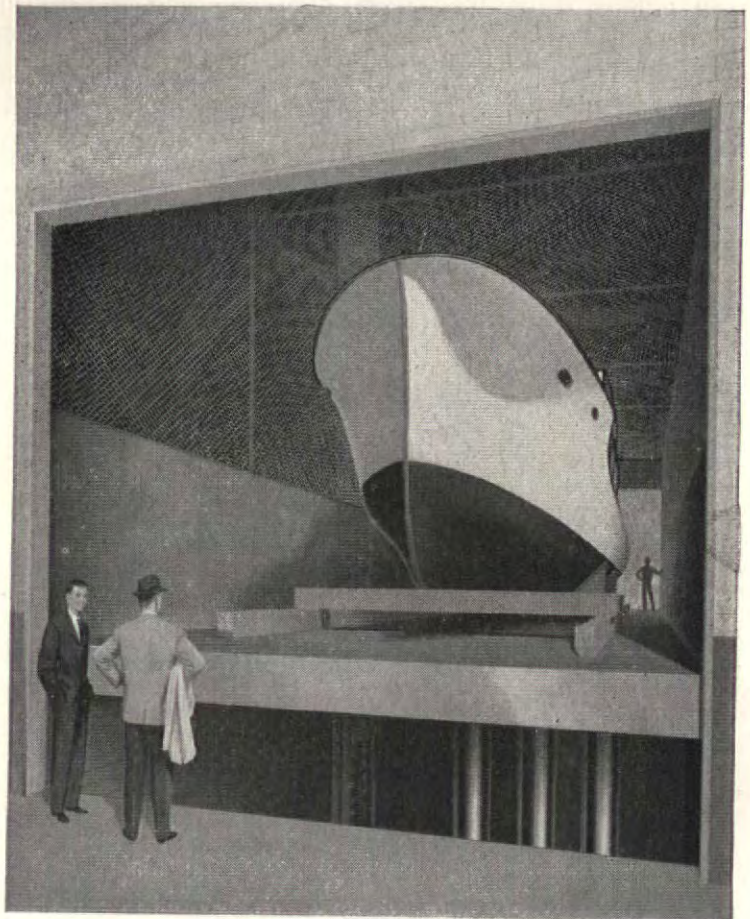
### Economical and dependable

In unusual applications like this, as well as in simple, small-capacity elevators, Rotary Oildraulic equipment offers many installation and operation advantages.

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*This big Rotary Oildraulic Elevator lifts heavy, bulky objects from ground floor truck ramp to any exhibition hall level in the New York Coliseum. (Vertical bi-parting elevator doors are not shown in this artist's drawing.) Three Levelator® Lifts, also built by Rotary Lift Company, are included in an ingenious arrangement of elevating equipment.*

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Sterling Hardware, Cat. No. 19, Sterling Hardware Mfg. Co., 2345 W. Nelson St., Chicago 18, Ill. 24 pp.

### HEATING AND AIR CONDITIONING

Air Conditioning-Heating for Homes, Business, Industry. Airtemp Div., Chrysler Corp., Dayton 1, Ohio. 22 pp.

American Blower Tonrac Single-Stage Her-

metic Centrifugal Refrigerating Machine. Bul. 1426. American Blower Corp., Detroit 32, Mich. 8 pp.

Clay Pipe Warm Air Heating Duct Installation Manual. Clay Sewer Pipe Assn., 311 High-Long Bldg., 5 E. Long St., Columbus 15, Ohio. 12 pp.

Sign Up for Iron Fireman Selectemp. Iron Fireman Mfg. Co., 3170 W. 106th St., Cleveland 11, Ohio. 8 pp.

The New Alumalung Roof Exhauster. Iron Lung Ventilator Co., 5403 Prospect Ave., Cleveland 3, Ohio. 2 pp.

Thermo-Base . . . for Gentle Warmth and Cooling. Gerwin Industries, Inc., Michigan City, Ind. 12 pp.

### LIGHTING

Architectural Troffers. Smithcraft Lighting Div., Chelsea 50, Mass. 12 pp.

Fluorescent Lighting Equipment. Smithcraft Lighting Div., Chelsea 50, Mass. 32 pp.

Holophane Catalogue. Holophane Co., 342 Madison Ave., New York 17, N.Y. 64 pp.

Lamp Catalogue. Cat. P20-1, Lightolier, Jersey City, N.J. 16 pp.

### MODELS

Architectural Models. Hunting Aerosurveys Ltd. US representative: American British Electric Corp., 57 Park Ave., New York 16, N.Y. 4 pp.

### PARTITIONS

Hollow Partitions with Channel Studs. Metal Lath Mfrs. Assn., Engineers Building, Cleveland 14, Ohio. 4 pp.

Mills Movable Metal Walls Provide Space Control. Cat. 56. Mills Co., 968 Wayside Rd., Cleveland 10, Ohio. 68 pp.

### PIPES

National Plastic Pipe. National Tube Div., US Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa. 30 pp.

Transite Sewer Pipe with Ring-Tite Coupling. Johns-Manville, 22 E. 40th St., New York 16, N.Y. 8 pp.

### PORCELAIN ENAMEL

Architectural Porcelain Enamel. Dept. APE, Bettlinger Corp., Waltham, Mass. A kit.

Architectural Porcelain—the modern building material. Davidson Enamel Products, Inc., 1104 E. Kibby St., Lima, Ohio. 16 pp.

Design Data on Porcelpanels for School Construction. Ingram Richardson Mfg. Co., Beaver Falls, Pa. A kit.

V-Corr Industrial Roofing and Siding. Toledo Porcelain Enamel Products Co., 2275 Smead Ave., Toledo, Ohio. 6 pp.

### PUMPS

Heavy Duty Wet Pit Pump. Cat. No. 3007. Yeomans Brothers Co., 2006-1 N. Ruby St., Melrose Park, Ill. 16 pp.

*continued on p. 278*



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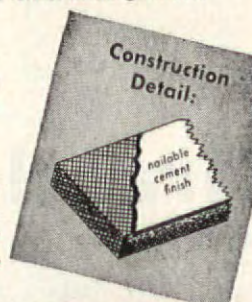
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\*Fulton National Bank Building, Atlanta, Georgia. Wyatt C. Hedrick, architect and mechanical engineer, Dallas, Texas;  
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Rapidayton Pumps, Water Systems, Water Softeners, Drainers. No. 561. The Dayton Pump and Mfg. Co., Dayton 1, Ohio

### STRUCTURE

Pressure Treated Timber Foundation Piles. American Wood Preservers Institute, 111 W. Washington St., Chicago 2, Ill. 66 pp. \$1

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Three-Dimensional Wall Tile. Vikon Tile Corp., Washington, N.J. 4 pp.

Tile for Swimming Pools. Manual No. 800. American-Olean Tile Co., 1000 Cannon Ave., Lansdale, Pa. 12 pp.

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Direct Operated Water Pressure Reducing Valves. Spence Engineering Co., Inc., Walden, N.Y. 4 pp.

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The Modern Hospital . . . and its elevator needs. Otis Elevator Co., 260 11th Ave., New York, N.Y. 24 pp.

### VIBRATION CONTROL

Finnflex Rubber-in-Shear Vibration Mountings. No. RS-55. T. R. Finn & Co., Inc., 200 Central Ave., Hawthorne, N. J. 4 pp.

### WALL COVERING

Plastic-Finished Wall and Ceiling Paneling. Marsh Wall Products, Inc., Dover, Ohio.

### WINDOWS AND DOORS

How to Select and Specify A Cold Storage Door. Jamison Cold Storage Door Co., Hagerstown, Md. 20 pp.

Miller Sliding Glass Doors—Aluminum or Steel. Frank B. Miller Mfg. Co., Inc., 3216 Valhalla Dr., Burbank, Calif. 8 pp.

New Window Ideas with Fabrow Fashion Window-Walls. Fabrow Windows, 7208 Douglas Rd., Toledo, Ohio. 4 pp.

Weathersealed, Patented Steel Frames for Sliding Glass Doorwalls. Steelbilt, Inc., 18001 S. Figueroa, Gardena, Calif. 4 pp.

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Buy Gum and Other Southern Hardwood Plywoods. Hardwood Plywood Institute, 600 S. Michigan Ave., Chicago 5, Ill. 16 pp.

Fine Hardwoods Selectorama. Fine Hardwoods Assn., 666 Lake Shore Dr., Chicago 11, Ill. 60 pp.

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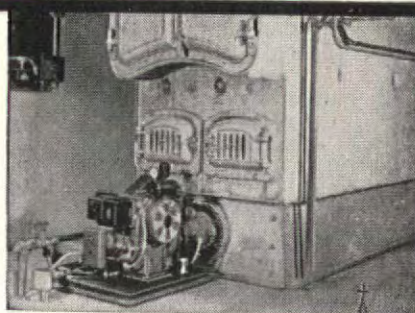
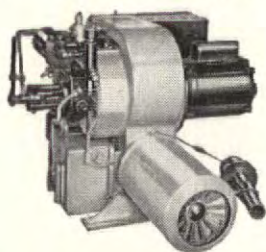
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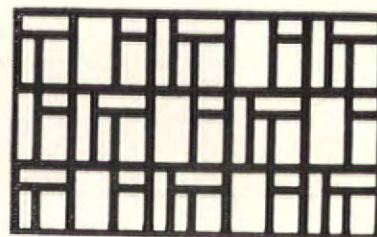
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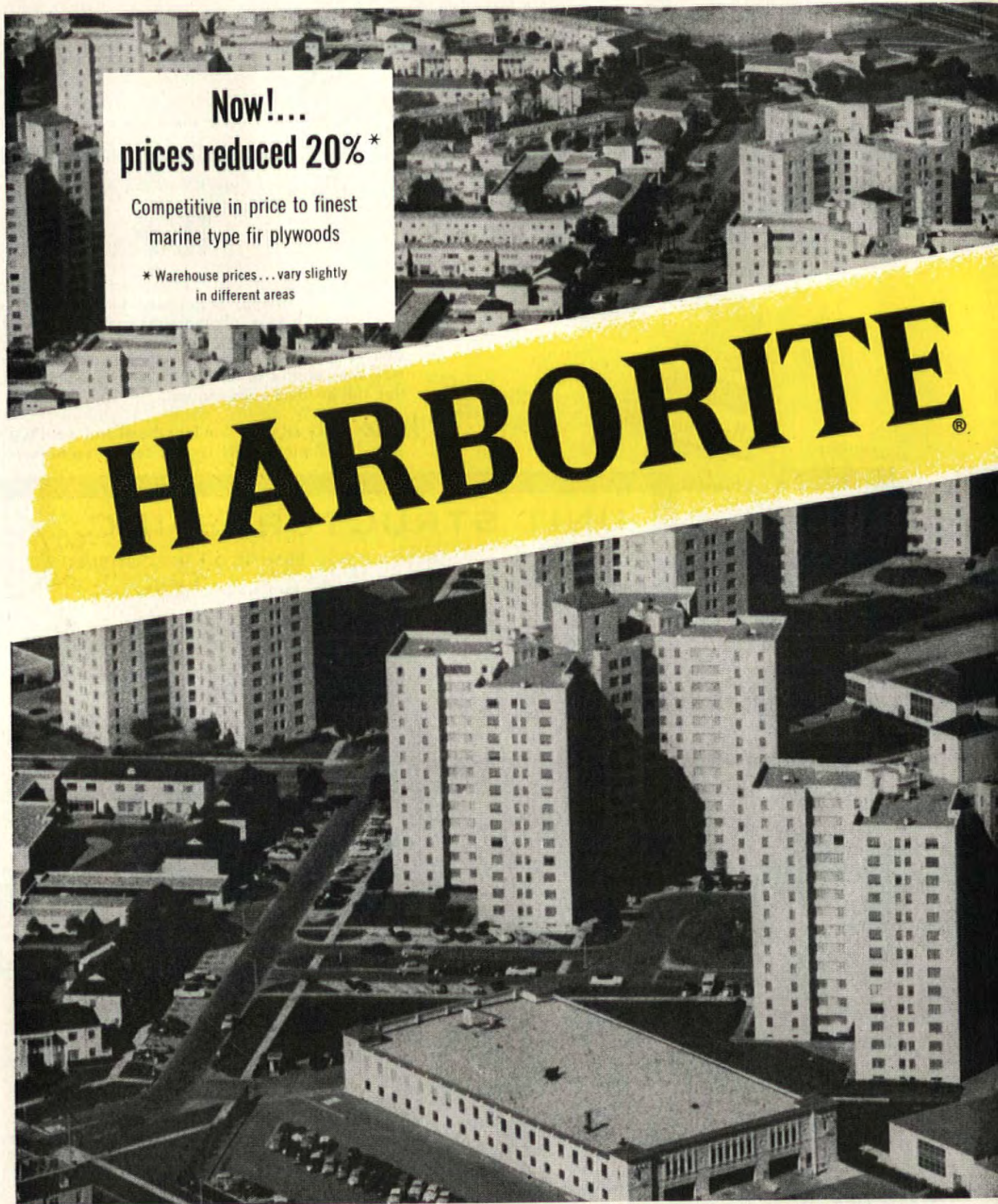
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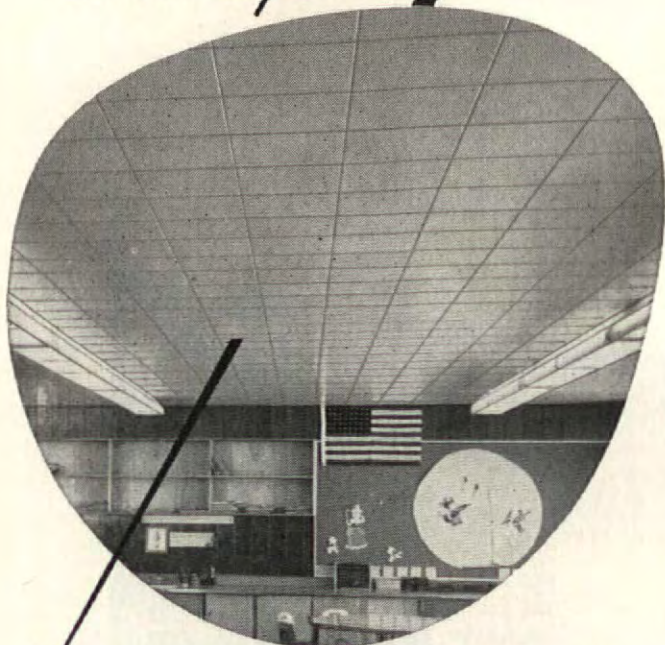
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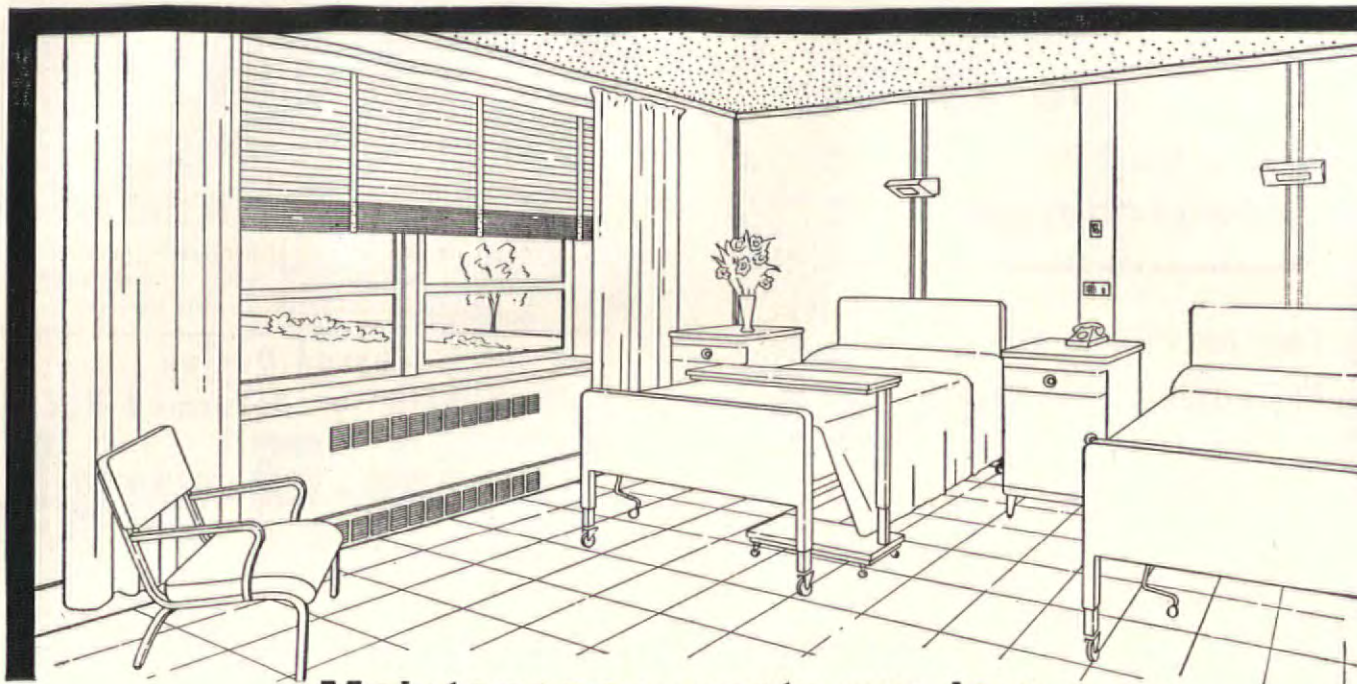
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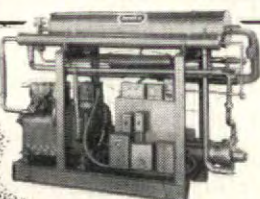
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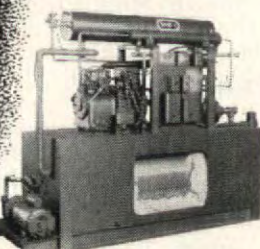
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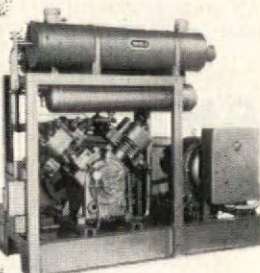
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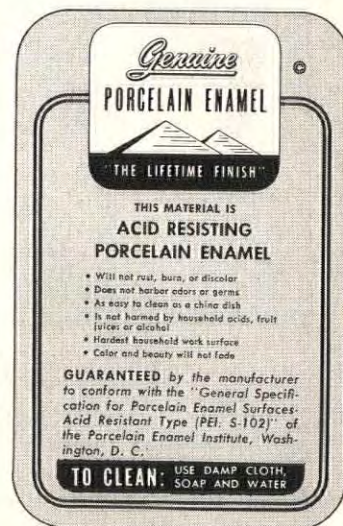
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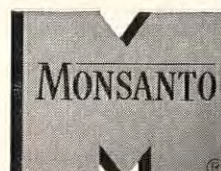
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**New developments** in materials and processing techniques are rapidly broadening the uses of plastics. Many of these developments are already appearing in homes and buildings across the country. Others—still in the exploratory stage—are a forecast of the future... a hint of the versatility of all plastics.

**Present and future uses** of plastics in building and construction are under constant study by Monsanto's Structural Plastics Engineering Group. Check with them for expert technical advice on *Plastics in Building*.

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 219, Springfield 2, Mass.







High tensile strength of 1-inch Super-Fine blankets permits them to be pulled between duct and wall without tearing. Application: Combination heating and cooling ducts at Northwood Shopping Center, Royal Oak, Mich. Architect: Louis A. Redstone; associate architect: Allan G. Agree.

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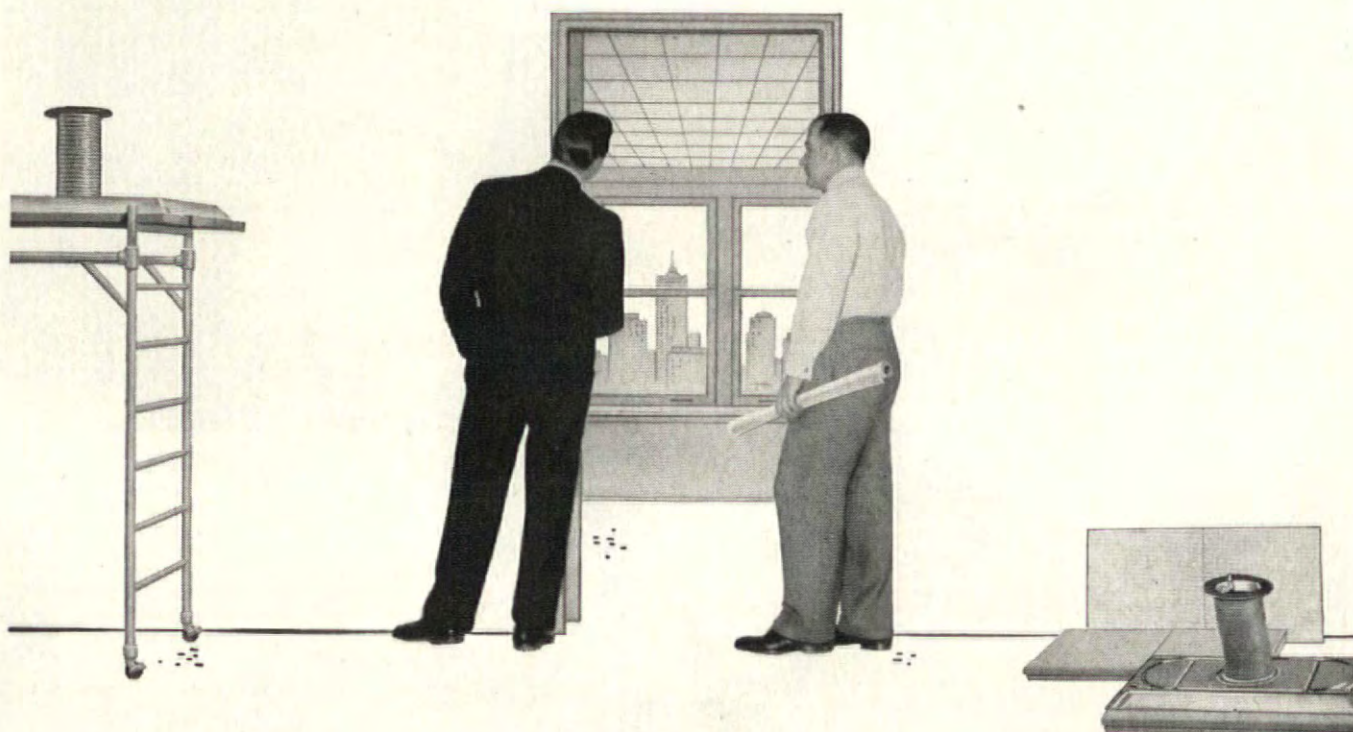
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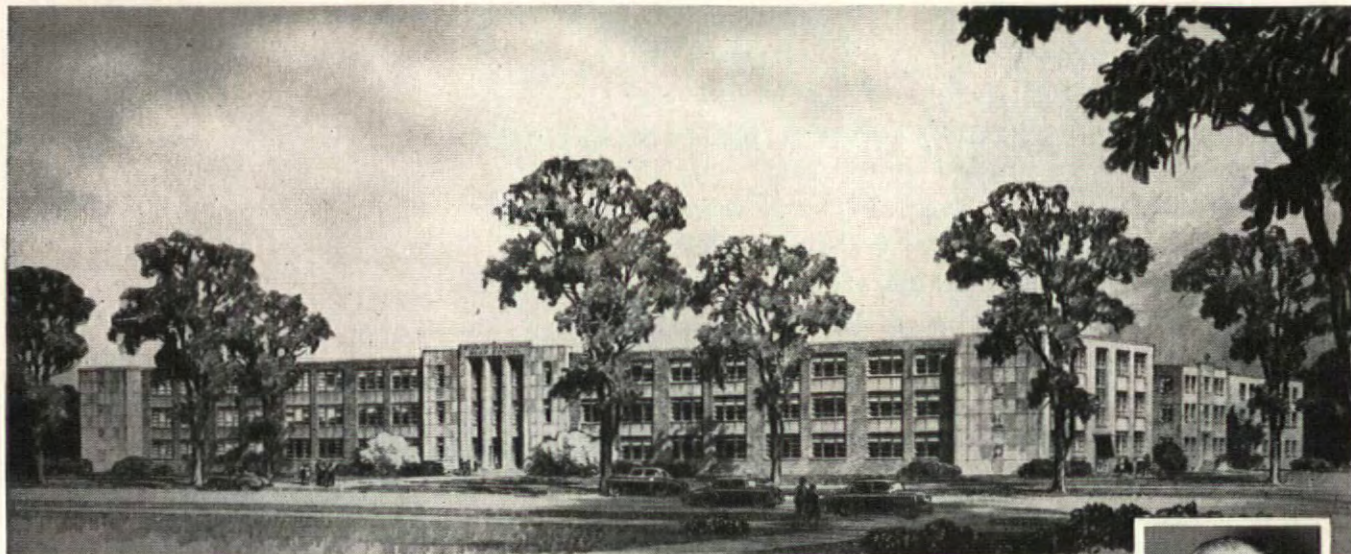
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**Firestop board specified to speed  
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Architect's drawing of new Bishop Neumann High School, Philadelphia, Pa. Architects: Stickie & Associates, Cleveland and Philadelphia. General Contractor: James J. Clearkin, Philadelphia.

Architect George W. Stickie, who designed the new Bishop Neumann High School.



Previous experience with Firestop Bestwall in other areas was back of the architects' specifying this gypsum wallboard for the Bishop Neumann High School now under construction in Philadelphia. The Firestop board is being used in all classroom ceilings to furnish fire resistance. It will be finished with acoustical tile.

Architect Stickie tells why he used Firestop Bestwall Wallboard in the Bishop Neumann High School:

1. It gives the 1-hour fire rating which is required by the City of Philadelphia and most building codes for buildings of this nature.

2. You get a much more uniform base for the acoustical tile and a more uniform material for fireproofing, as it must come  $\frac{5}{8}$ " thick in all places.

3. Acoustical tile can be glued most successfully to Firestop Bestwall Wallboard.

4. It makes for a clean job.

5. It goes up fast and is economical to apply.

*Mr. Stickie concludes: "I believe that this material will be used in greater quantities as time goes on."*

Firestop Bestwall was the first gypsum wallboard formulated to make 1-hour fire-resistive construction in single

layer possible with no further treatment, over both wood and metal framing. Firestop is the first gypsum wallboard to be approved under the Philadelphia Building Code for 1-hour fire-resistive requirements over wood and in Type II buildings up to three stories. Firestop Wallboard meets F.H.A. and V.A. requirements and has been accepted under most municipal, State and county codes, and under the national model codes.

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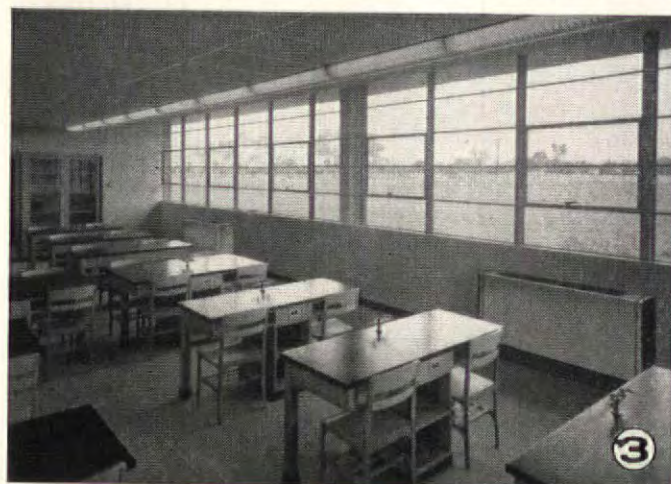
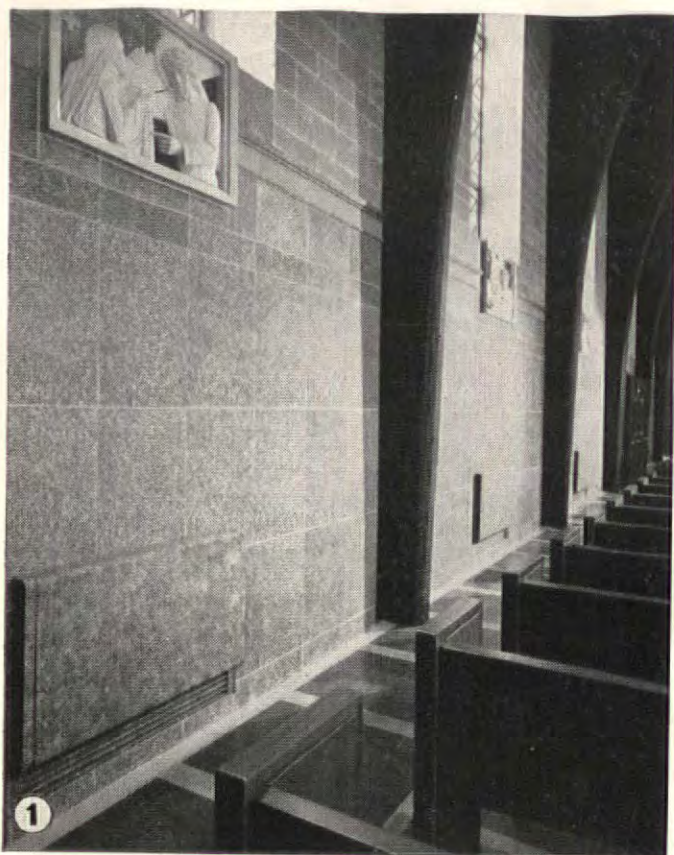
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### **ABOUT THE PHOTOS**

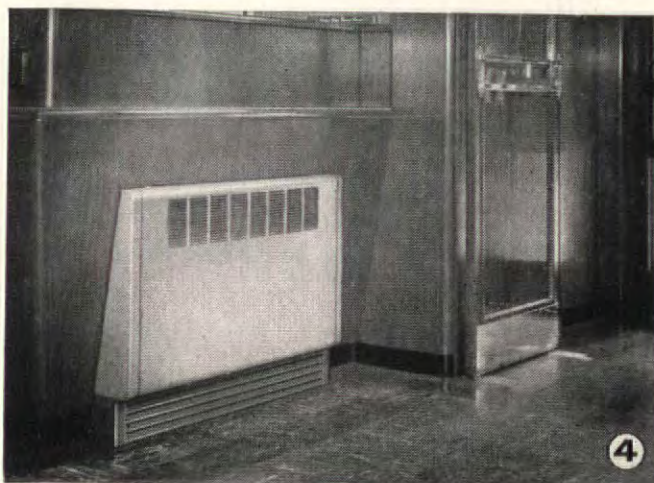
**1** Inverted recessed unit is connected to supply and return ducts. Cold air is drawn through window sill grille, heated and discharged across floor.

**2** Free-standing unit in real estate office lobby.

**3** Modern classroom has free-standing units located below windows.

**4** Bank lobby features attractive partially-recessed unit.

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*Factors to help you decide . . .*

## WHICH FLOOR GOES WHERE?

With the large variety of resilient flooring materials now available, architects may find difficulty in selecting the right resilient floor for installation over a particular type of subfloor. There are relatively few cases in which only one material will do a specific job. However, consideration of such factors as moisture and service conditions can help guide the selection of a resilient floor—no matter what subfloor is involved.

### MOISTURE CONDITIONS

There are three main types of moisture conditions which should be taken into account in choosing a resilient floor.

**Concrete subfloors.** The moisture content of concrete above, on, or below grade may seriously affect resilient flooring materials. However, any Armstrong resilient floor may be installed on suspended concrete which is known to be completely dry. The diagram below shows the suitability of Armstrong Floors for installation over grade-level or below-grade concrete.

**Wood subfloors.** Wherever a wood subfloor is constructed over a crawl space, there is danger of moisture damage and consequent warpage to the subfloor, resulting in harm to the resilient floor itself. Crawl spaces should therefore be at least 18" high and cross ventilated. Any of the various Armstrong resilient floors may be installed over wooden subfloors in good condition and adequately suspended and ventilated.

**Surface moisture.** Around drinking fountains, soda fountains, and in other areas where excessive water is likely to be spilled on the floor, moisture may find its way through the seams in the floor and attack the adhesive. In the case of Cork Tile, excessive surface moisture may damage the floor itself. In areas where such conditions of surface moisture are encountered, the floors recommended for on-grade installation over concrete subfloors—Excelon Tile, Asphalt Tile, Rubber Tile, and Custom Corlon Tile—will generally be found to give more satisfactory service. Under these conditions, the floors should be installed with waterproof adhesives as specified.

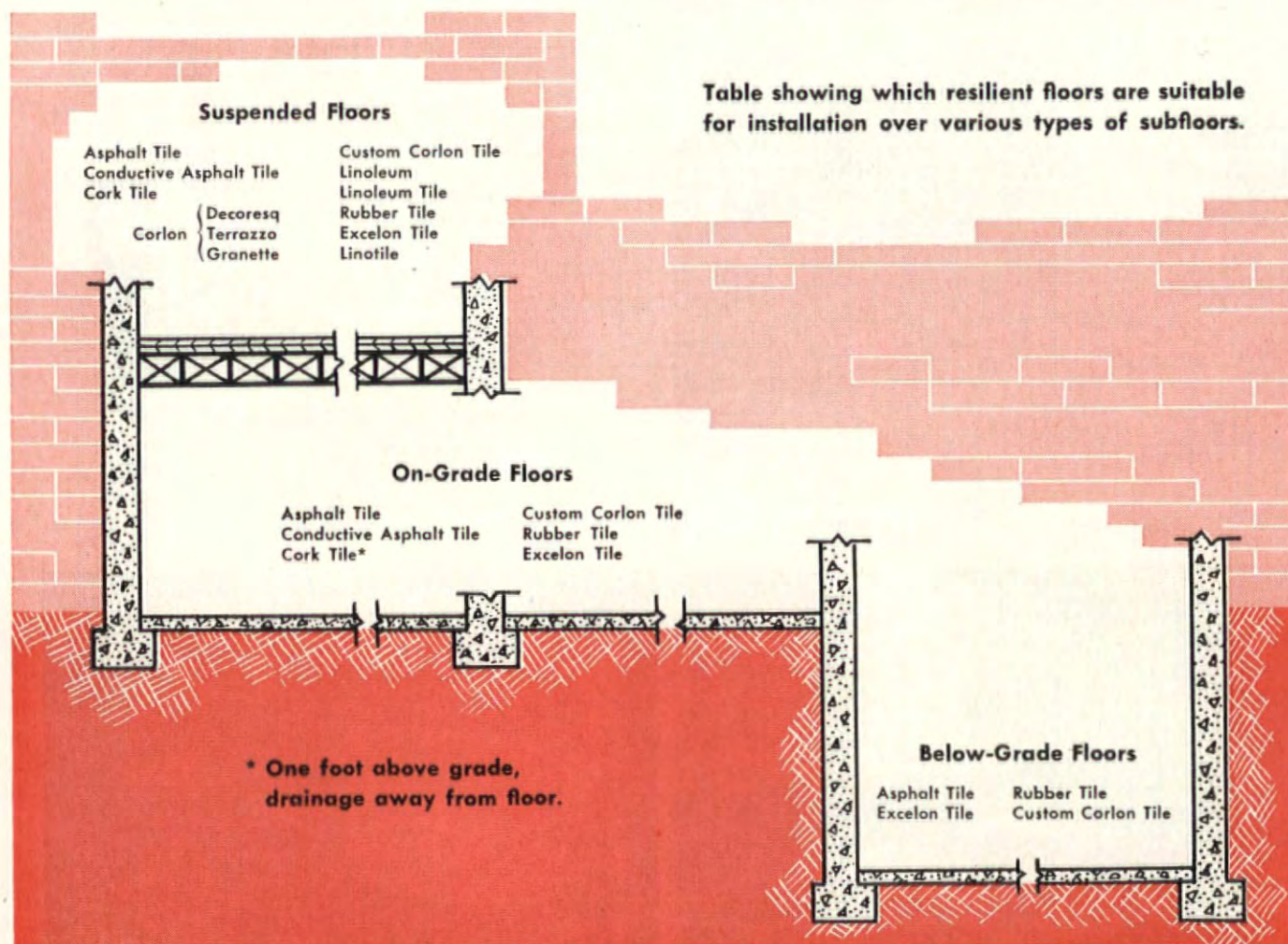


Table showing which resilient floors are suitable for installation over various types of subfloors.

# Armstrong FLOORS

<b>LINOLEUM</b>	PLAIN	DECORAY®	TOWN HOUSE® INLAID
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	SPATTER®	ROYELLE®	EMBOSSED INLAID
	TEXTELLE®	MARBELLE®	STRAIGHT LINE INLAID



## SERVICE CONDITIONS

Resilient flooring materials should always be selected with service conditions in mind, since the wear a floor receives has great bearing on how long it will retain its utility and beauty. Just as service conditions may range from light wear to constant foot traffic and frequent cleaning—so do resilient flooring products vary in their abilities to withstand harsh treatment.

**Light or heavy traffic.** In residential installations, wear is not usually an important factor in the choice of a resilient flooring material. In most cases, these floors will be replaced for decorative reasons long before they wear out. Here, most resilient flooring products are satisfactory from the standpoint of wear, and the final choice is often based on price, preference for a design or pattern, or other considerations such as grease resistance. In commercial installations, on the other hand, excessively heavy traffic sometimes makes wear a limiting factor in the selection of a flooring material. Where this situation exists, the use of heavier gauge products is indicated. Materials that provide the necessary superior wearing characteristics include Armstrong Linotile, Heavy Gauge Linoleum, the  $\frac{1}{8}$ " gauge of Rubber Tile, Custom Corlon Tile, Asphalt Tile, and Excelon Tile, and the  $\frac{3}{16}$ " and  $\frac{5}{16}$ " gauges of Armstrong Cork Tile.

**Exposure to strong sunlight.** The increasing use of glass curtain walls in commercial structures and the enlargement of window areas in homes represent a severe test of any resilient flooring material. Exposure to strong sunlight—by causing fading, shrinking, brittleness, or chalking—may eventually affect the performance and appearance of many types of resilient floors, but resilient flooring in sheet form and Linotile are considered especially resistant to this type of potential damage. Pigments are, of course, the limiting factor in the fade-resistant properties of resilient flooring materials, but great improvement in color stability has been made in recent years, especially where reds and blues are concerned. Predominantly dark patterns, however, still show best light resistance. Pastel tones give poorest performance in retaining their colors under prolonged exposure to sunlight.

**Maintenance.** While ease of maintenance is a characteristic of resilient floors in general, some require less care than others. Naturally it is to the architect's advantage to specify those which are easiest to clean for heavy traffic areas. The list which follows may be used as an approximate guide to the amount of maintenance normally required by the various Armstrong Floors, although it must be remembered that ease of maintenance is somewhat affected by the color and pattern of the floor selected, as well as by its physical properties. Starting with the easiest to maintain—Linotile, Custom Corlon Tile, and Excelon Tile—the other floors rank in this order—Corlon sheet flooring, Linoleum, Rubber Tile, Asphalt Tile, and Cork Tile.

## OTHER FACTORS IN THE CHOICE OF RESILIENT FLOORS

Apart from decorative effects, patterns, and colors, which are largely a matter of individual choice—there are a number of other factors to be considered in selecting a resilient flooring material. Some of the more important are underfoot comfort, recovery from indentation, noise on impact, electrical conductivity of the floor, ease of repairing damage, and the effect of seams.

**Resilience.** The resilience of any particular floor affects three things: its underfoot comfort, its ability to recover from the indentation caused by foot traffic and other short-term loads, and the amount of noise generated by foot traffic. Of these, underfoot comfort is probably the most important consideration—especially in retail stores, hospitals, restaurants, or similar establishments where prolonged periods of standing or walking tend to cause fatigue and impair the efficiency of personnel. Here is a list of Armstrong Floors, rated in order of resilience, most to least: Cork Tile, Rubber Tile, Custom Corlon Tile, Linoleum, Sheet Corlon, Linotile, Excelon Tile, and Asphalt Tile.

**Electrical conductivity.** In buildings where explosives or combustible materials are handled, it is desirable to have a floor capable of conducting away accumulated static charges. At the same time, such a floor should be non-sparking on impact. A special Conductive Asphalt Tile has been developed by Armstrong for this type of installation. This floor has a heavy asphalt base, and its resins and fillers are specially formulated to produce a non-sparking material with exceptionally high electrical conductivity. However, this type of resilient floor is not recommended for use in hospital operating rooms or paint spray rooms.

**Repairing damage.** Occasionally, an accident may damage a portion of floor so seriously that replacement becomes necessary. All resilient floors are more easily repaired than marble, terrazzo, or concrete. If the damaged area is small, replacement is easier and less expensive with a tile floor than with sheet goods. Cuts and tears in Corlon can be readily heat-sealed with a soldering iron. Linoleum can be patched with lacquer and linoleum binder.

**Seams.** The small number of seams and joints in sheet flooring allows few places for accumulations of dirt or corrosive materials. Precision factory cutting of Armstrong Resilient Tiles assures tight joints and close-fitting edges, making them easy to maintain.

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 sales representatives throughout the country have wide experience and training in resilient flooring. They will be glad to consult with architects and make specific recommendations for individual jobs. Outright specifications for Armstrong materials will result in competitive bidding from a number of flooring contractors and at the same time assure the client of top-quality materials.

For helpful information on any flooring question, just call your nearest Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, 163 Rooney Street, Lancaster, Penna.

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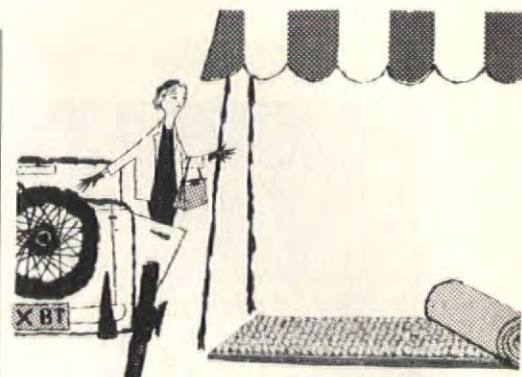
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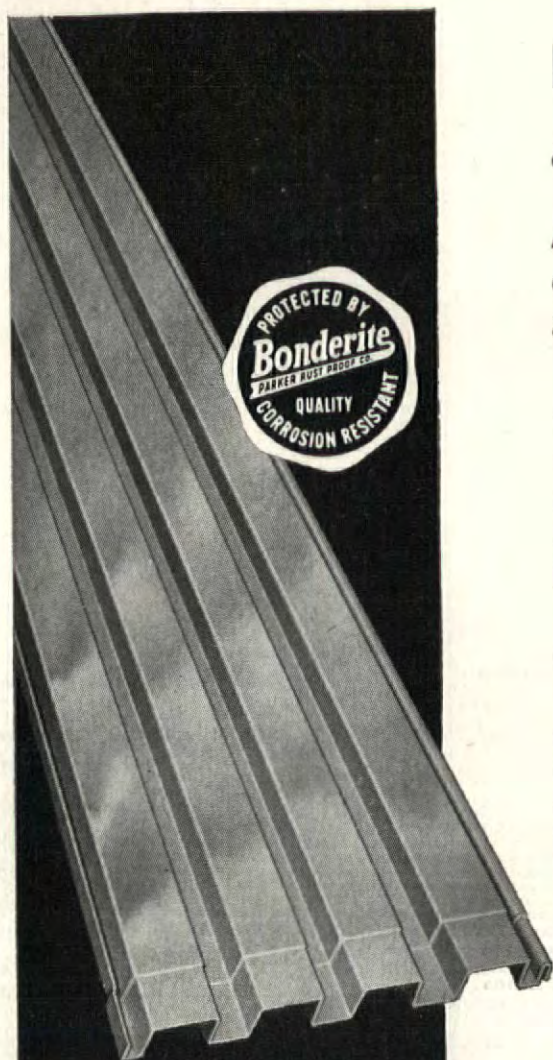
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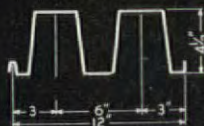
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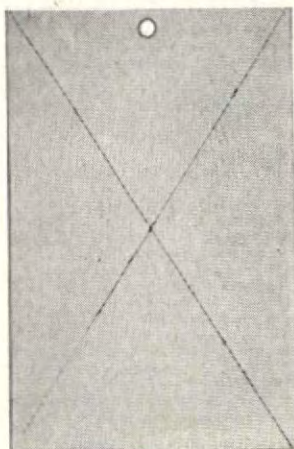
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The steel panel at left was treated with Bonderite; the one at the right was not. Both panels were given a coat of Inland Epoxy Resin finish. After an "X" was intentionally scratched on them, the panels were subjected to the A.S.T.M. standard salt spray test for the same length of time. Note that in the finish over Bonderite, rust stopped at the scratch mark while it spread extensively over the plain steel panel.



M-184

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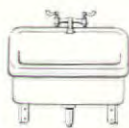
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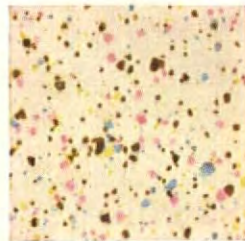
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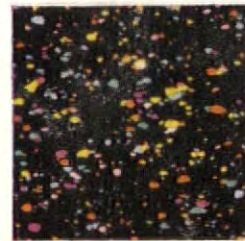
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## *New* **MATICO** **Margaret Lowe Colors** in vinyl-asbestos tile

Now choose from two **ARISTOFLEX-CONFETTI** patterns\*

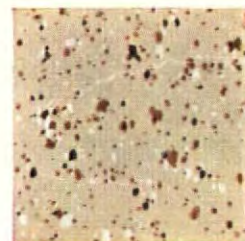
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\*Margaret Lowe Colors and regular Aristoflex-Confetti

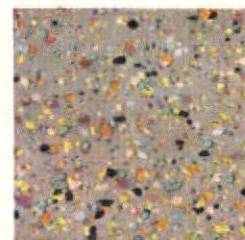


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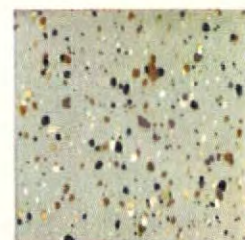
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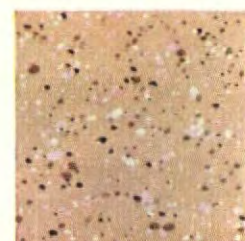
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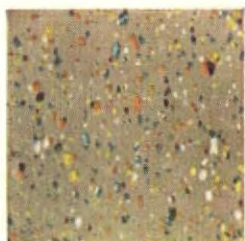
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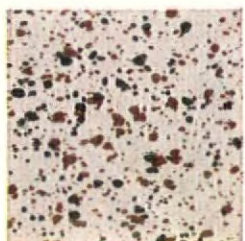
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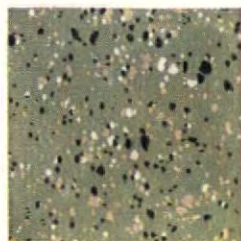
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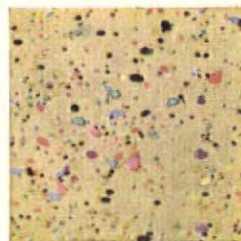
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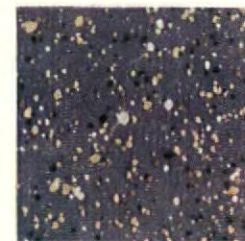
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