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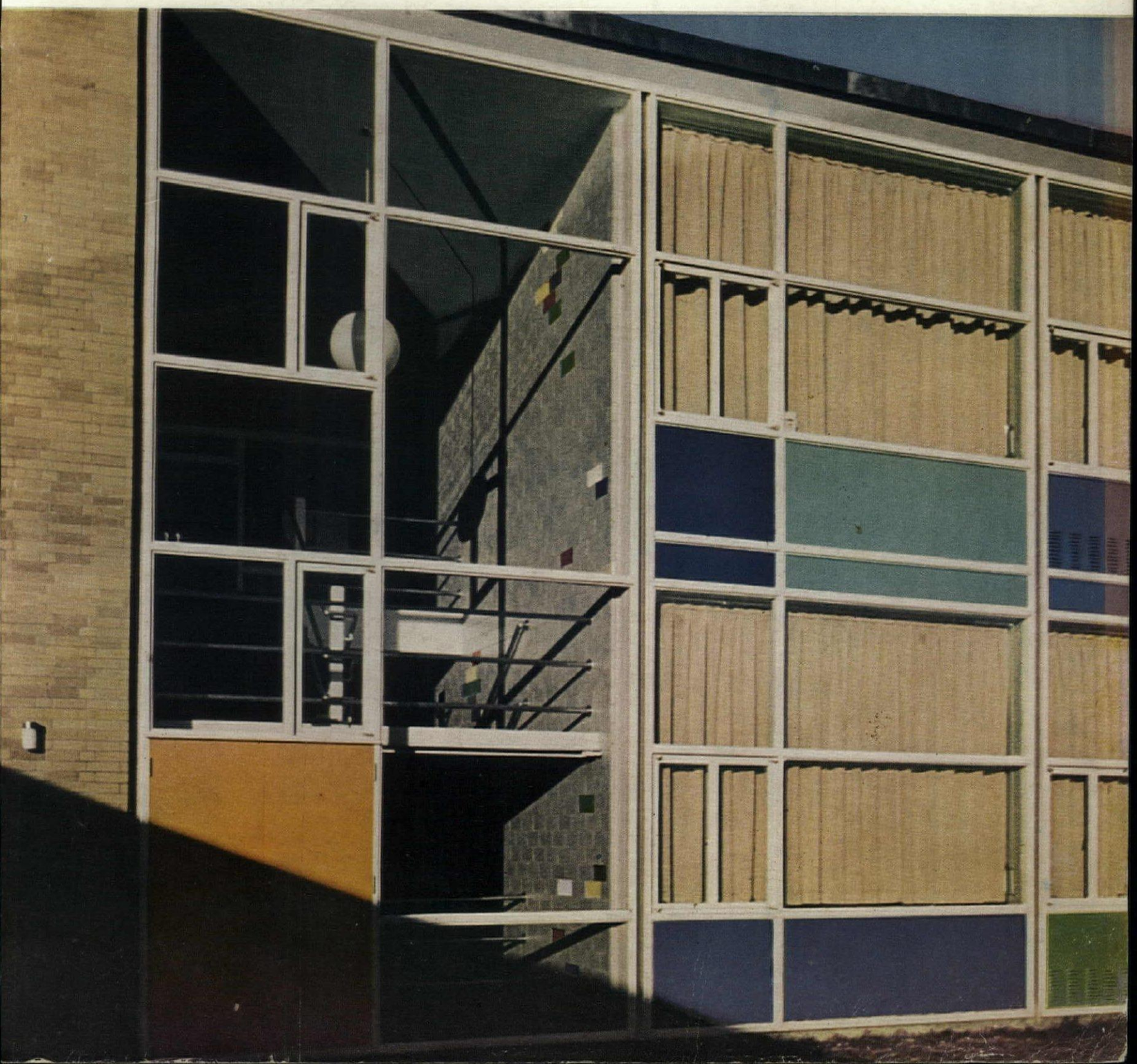
MARCH 1955

Detroit hooks its downtown redevelopment to the auto (p. 116) . . . Modest modern for the college campus (p. 126)

Porcelain enamel adds the delight of color to the strength of steel (p. 166)



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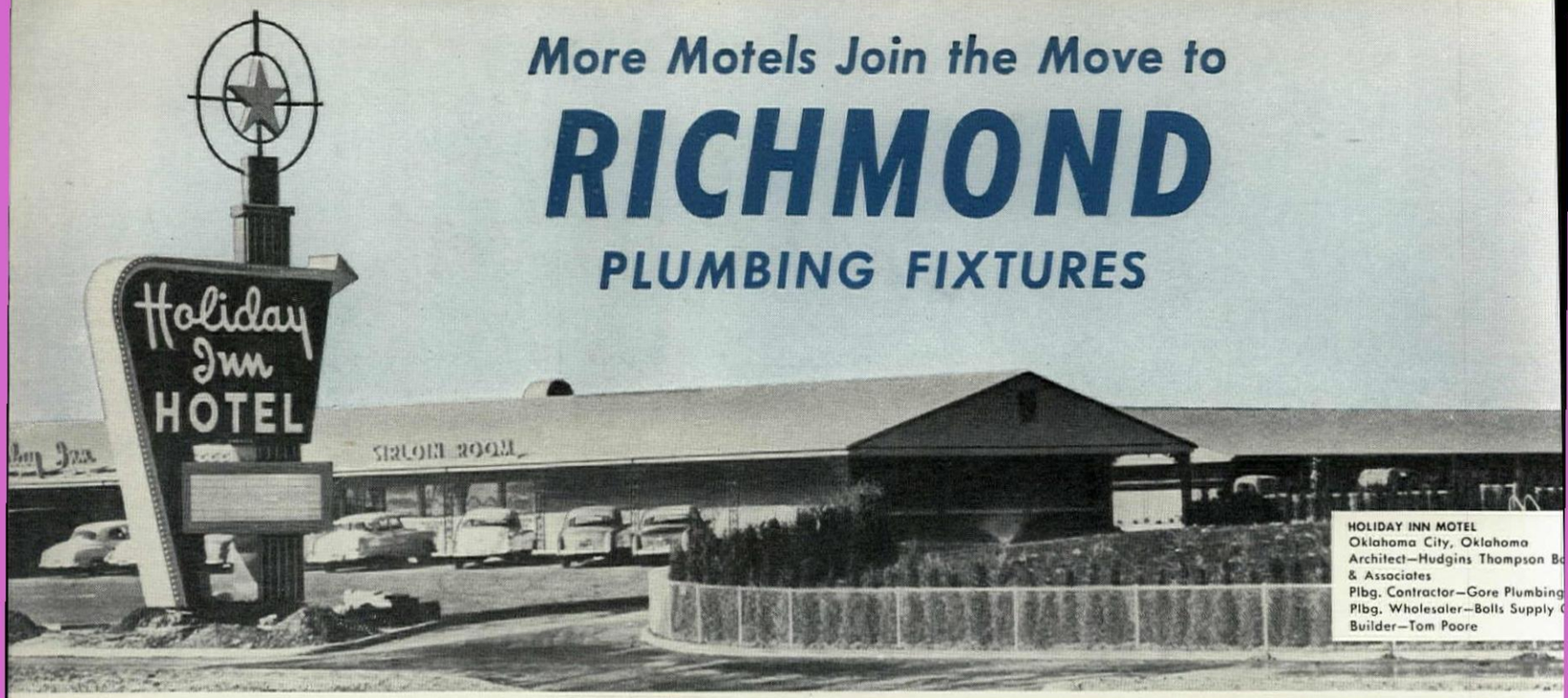
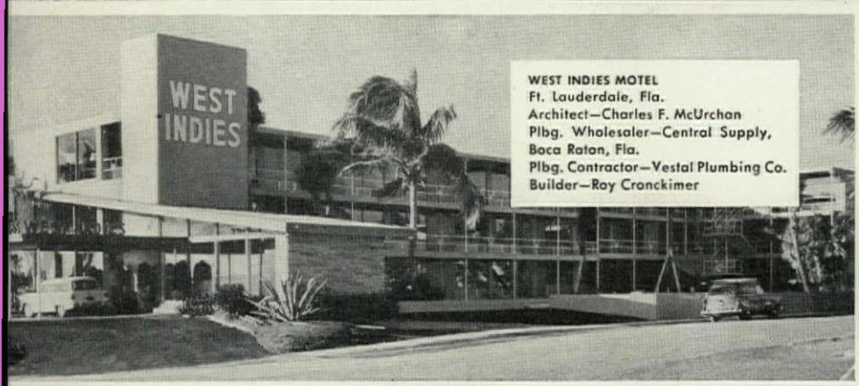


HOLIDAY INN MOTEL
Oklahoma City, Oklahoma
Architect—Hudgins Thompson Ba
& Associates
Plbg. Contractor—Gore Plumbing
Plbg. Wholesaler—Bolls Supply C
Builder—Tom Poore



WEST INDIES MOTEL
Ft. Lauderdale, Fla.
Architect—Charles F. McUrchan
Plbg. Wholesaler—Central Supply,
Boca Raton, Fla.
Plbg. Contractor—Vestal Plumbing Co.
Builder—Roy Cronckimer



SAXON MANOR, Miami Beach, Fla.
Architect—J. Alden Fusco
Builder—N. Atlantic Construction



ATLANTA MOTEL. Atlanta, Ga.
Architect & Builder—W. V. Merri
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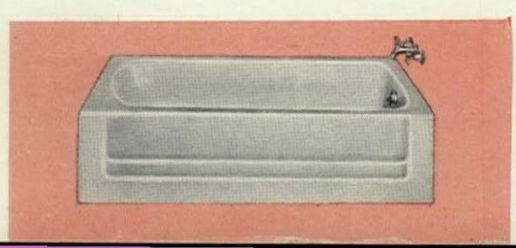

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the magazine of building

MARCH 1955

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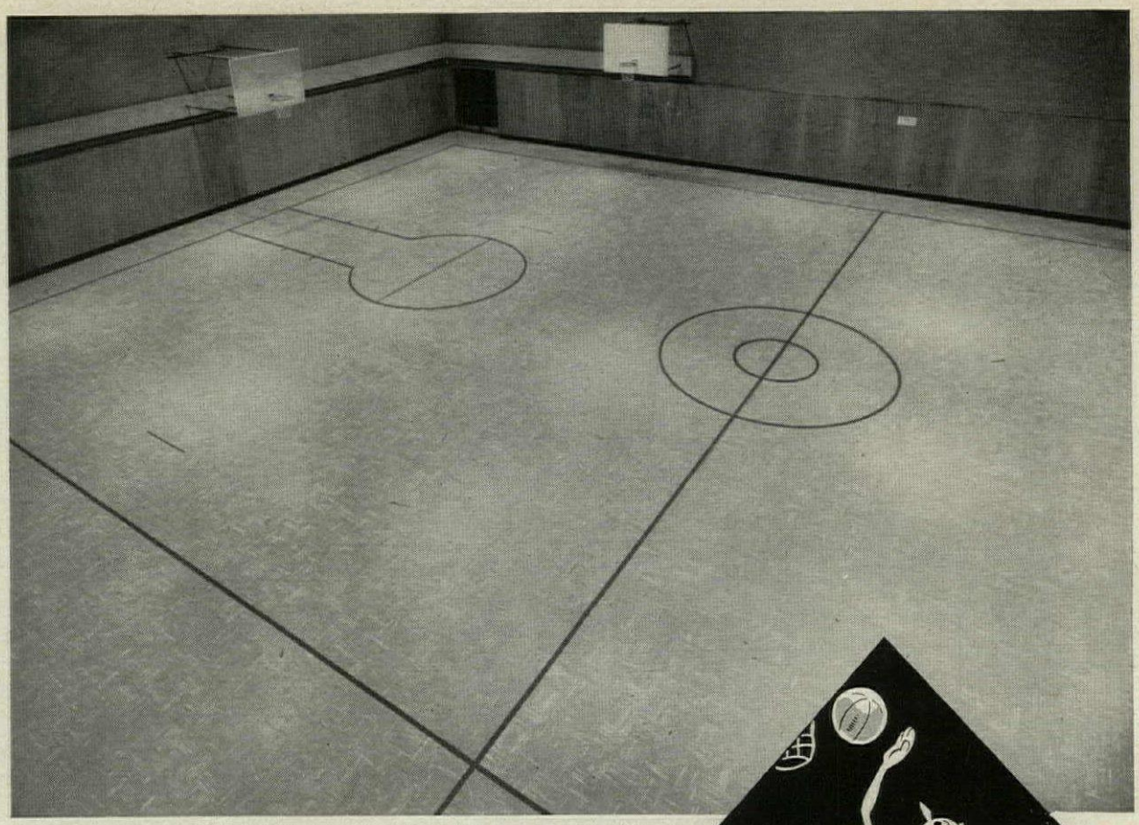
Photo by Fred Stone

VOLUME 102, NUMBER 3

Published monthly by TIME Inc.,
9 Rockefeller Plaza, New York 20, N.Y.
Re-entered as second-class matter
at New York, N.Y.
Subscription price $5.50 a year.
Additional subscription data, etc., p. 106



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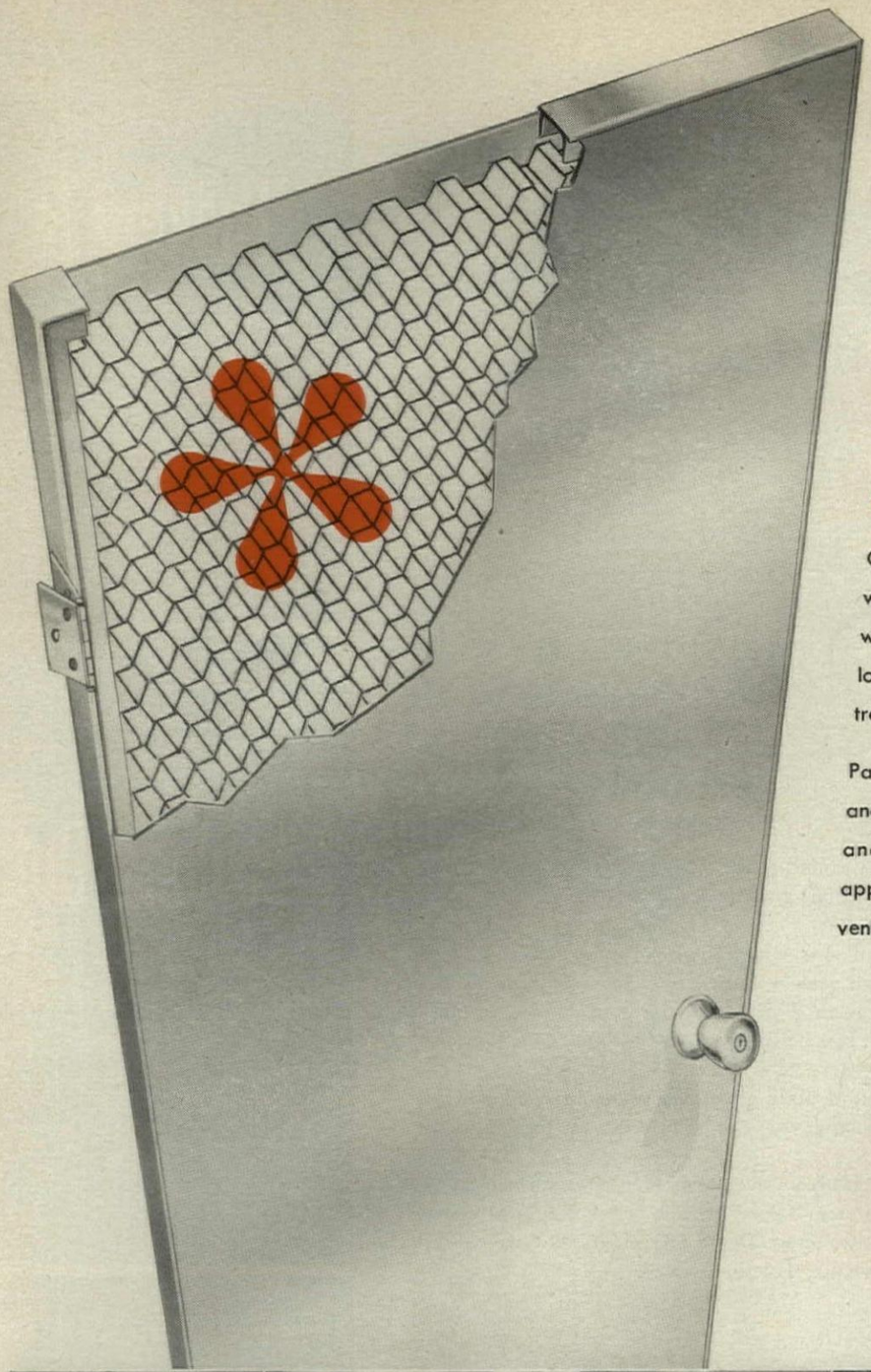

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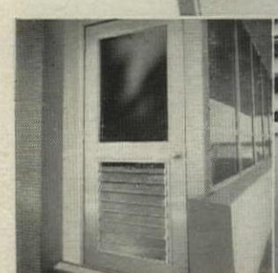
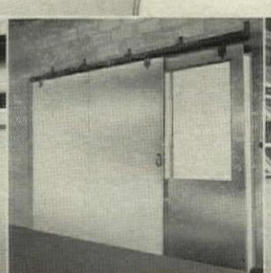


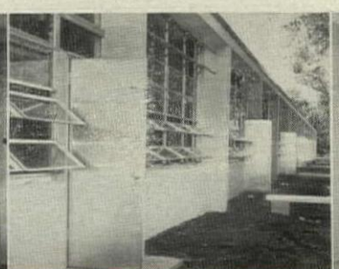
Exterior Jalousie Doors for Fontainebleau Hotel, Miami Beach, Fla. Architect: Morris Lapidus



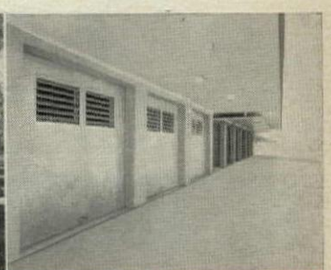
Exterior Panel Doors for Edison Jr. High School, Miami, Fla. Architect: Edwin T. Reeder & Associates



Sliding Doors for Grables Bakeries, Miami, Fla. Architect: Petersen & Shuflin



Flush Exterior Doors for Elementary School, North Miami, Fla. Architect: Wahl Snyder



Tilt Doors for Golden Gate Hotel Miami Beach, Fla. Architect: Polevitsky, Johnson & Associates.

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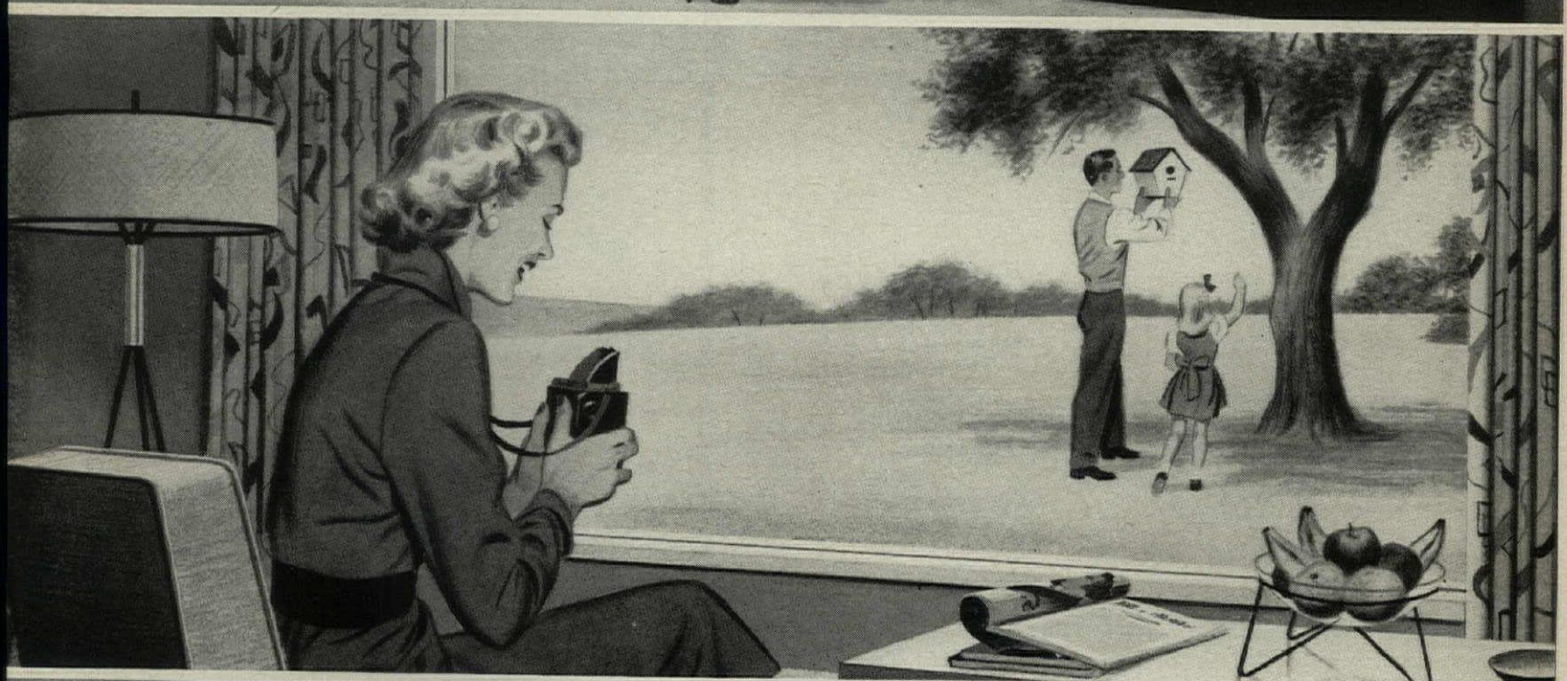

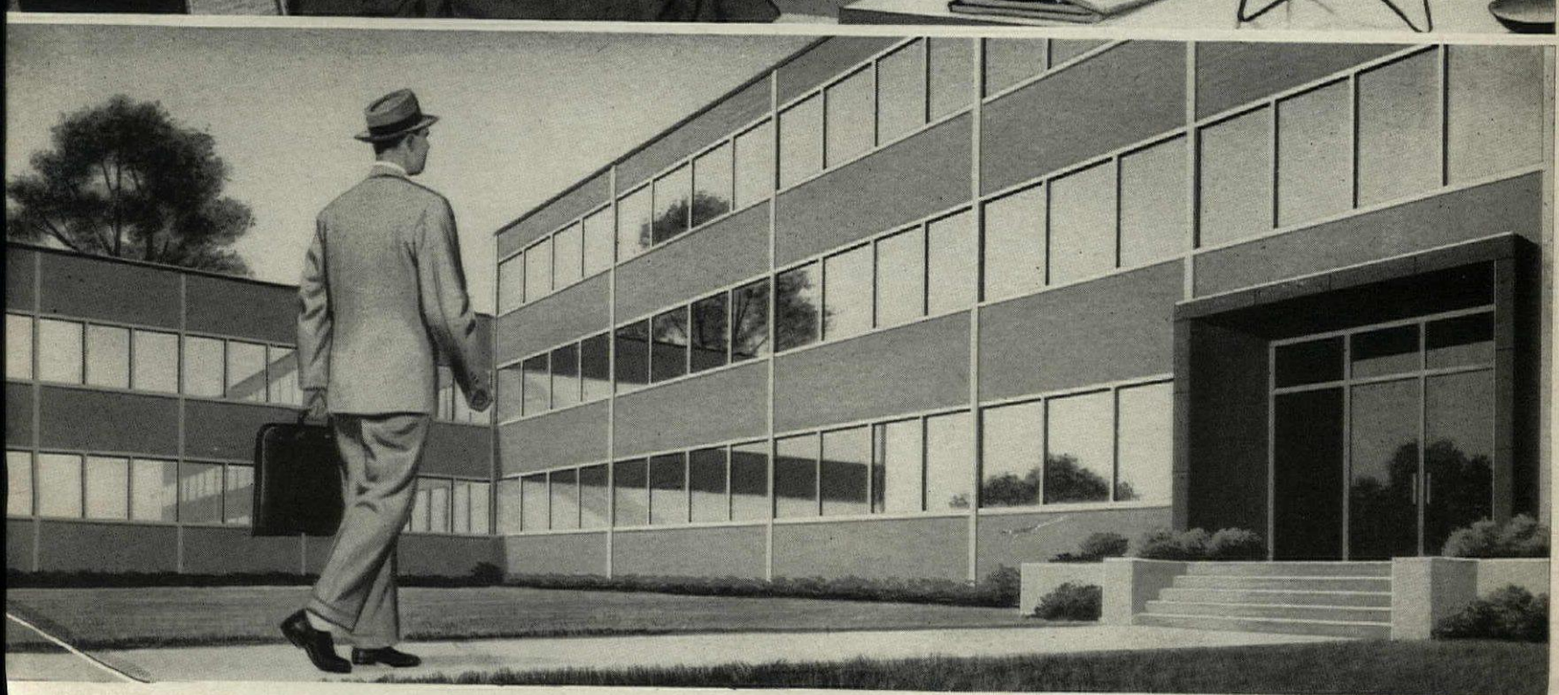

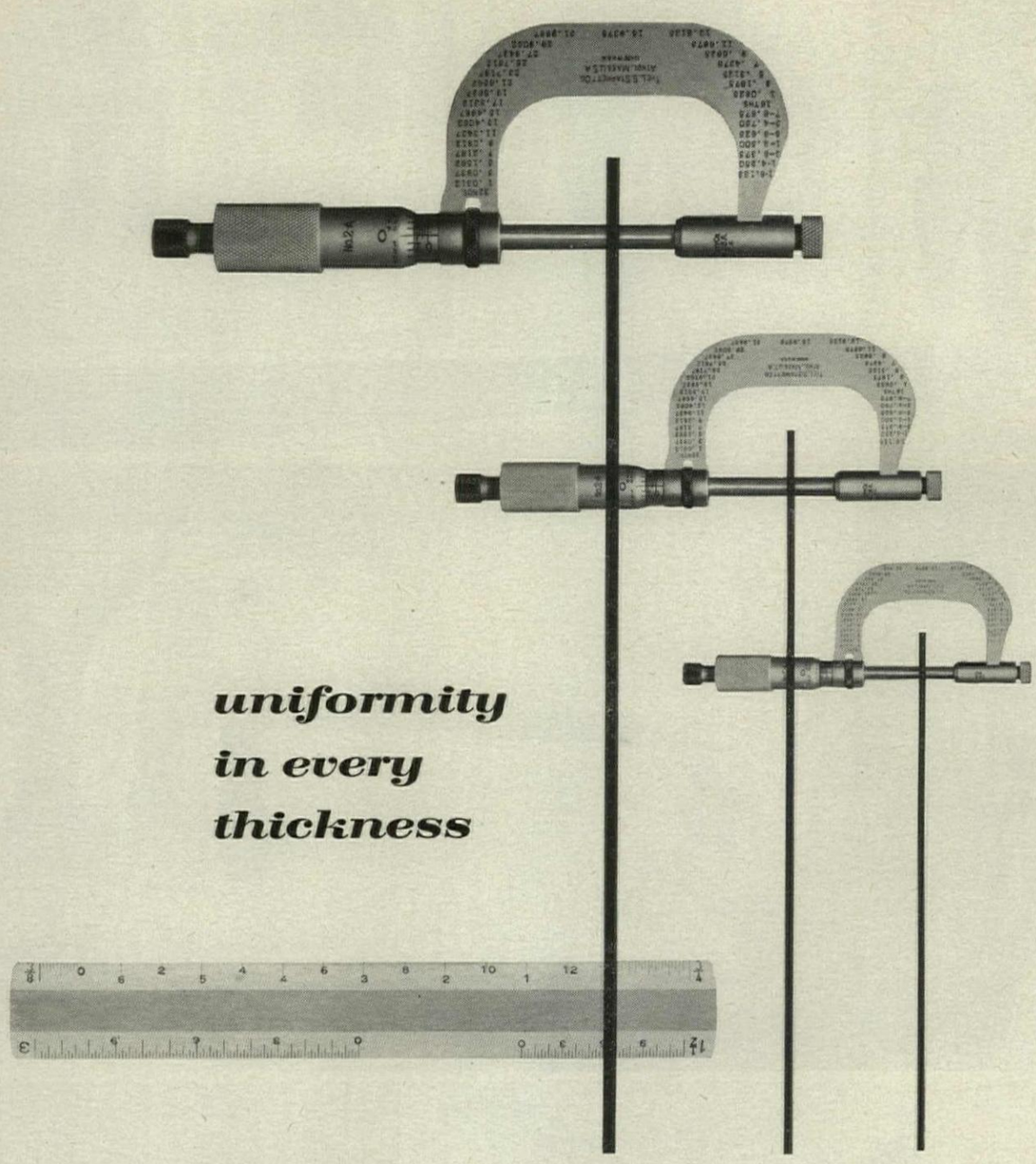

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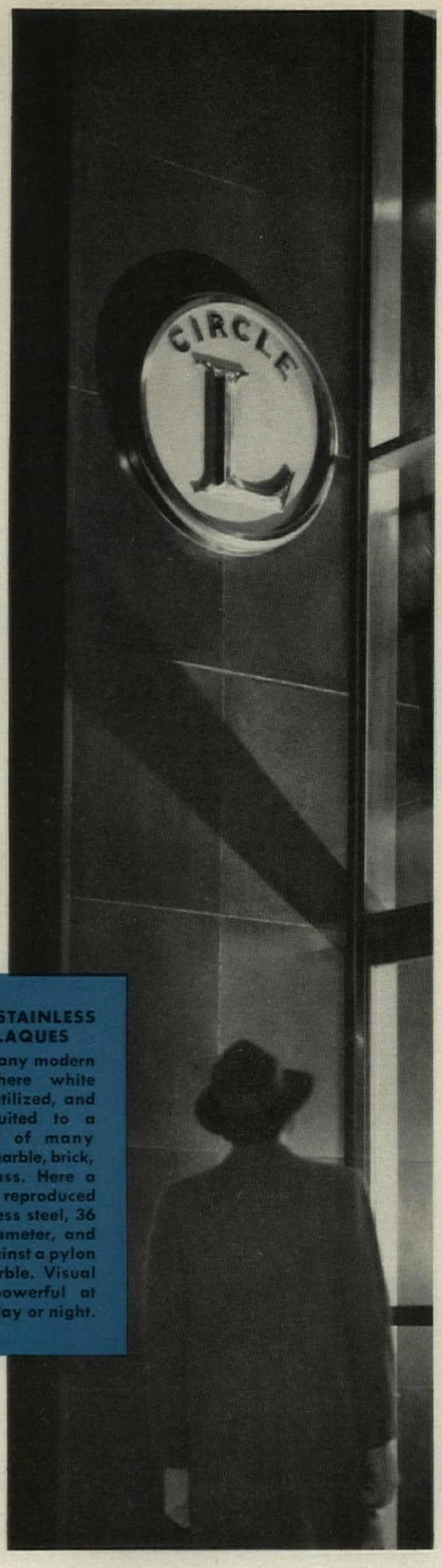

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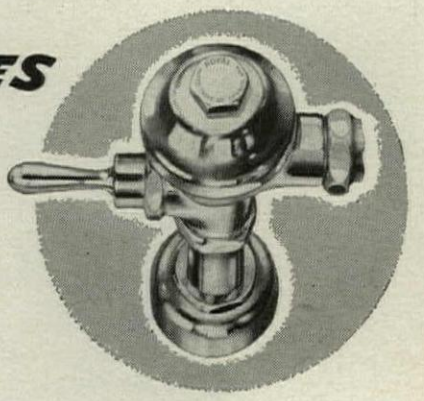


Compromise to boost grants likely on school-aid program

After the President sent Congress his special message for federal help for school construction last month, typical headlines summarized it along the same lines as the *New York Times:* "Eisenhower Asks $7 Billion Program to Build Schools."

But closer examination showed real federal spending or contributions in his recommendations would total only $220 million over three years, or $73.3 million per year. By contrast, the administration's current recommendation for federal hospital construction help was $125 million per year. The President also urged federal mortgage insurance "to stimulate construction of additional health facilities" and hospitals—but no such program for schools.

The President's school help message also proposed US support for school building by loans or bond purchases estimated to total $300 million a year for three years, making gross federal grants and loans of $1.1 billion over this period. The other $5.9 billion encompassed in the President's observation that his program "envisages a total of $7 billion to be put to work building badly needed new schools" would not entail any federal funds at all—either loans or grants. This would simply represent an estimate of the building that the administration hoped would materialize if the President's recommendation that states establish special agencies or "authorities" to develop lease-purchase construction programs backed by state credit, or state school bonds, worked out favorably.

AIA objections. Critics lost no time in attacking the measure, with Democratic congressional leaders labeling it "paltry," "makeshift," a program offering "interminable delay on one hand or a meager dole on the other." (The program's matching grants would only be available to impoverished school districts on state certification of emergency need for new facilities and the district's "inability to finance the total construction cost through borrowing or a rental arrangement"—with a state agency.)

Testifying before the Senate labor and public welfare committee, AIA objections to encouraging the creation of any more state agencies was registered by Lee Cochran (of Perkins & Will, noted Chicago school architects) speaking for AIA's national committee on school buildings. Cochran said architects foresaw a "considerable waiting period" before many schools could be started under this system. Experience with the several existing state "authorities," he said, has demonstrated that their reviews and approvals can cause "excessive" delays, and an additional layer of negotiation between such agencies and a federal office would slow up their processing even more.

Open-end compromise? At the hearings before the committee, headed by Sen. Lister Hill (D, Ala.), author of another bill signed by 29 other senators that would give states $1 billion in direct aid over a two-year period, Sen. Irving M. Ives (R, N.Y.) made a suggestion that seemed to point to a possible compromise by removing the Eisenhower program's three-year $200 million ceiling on building grants. (The other $20 million direct help was for administrative expenses.)

Ives asked Health, Education and Welfare Secretary Oveta Culp Hobby how she would regard the bill embodying the President's program if the committee removed the $200 million limit and substituted an "open-end" provision — so Congress could provide any sum it thought best when it got around to actual appropriations. Secretary Hobby tactfully replied that her department would do its best with whatever bill Congress passed.

The Republican senator's questioning, however, looked like a feeler to find some way to steer around the controversy and perhaps allow for greater direct federal help in an administration bill. If the administration's measure was amended in this fashion, the way would still be clear to enact its other proposals too, leaving it an academic matter whether much use was made of them in addition to the direct help provisions.

The alternative prospect was a serious possibility of complete rejection of the President's program in Congress, and in its place a New Dealish Democratic bill providing liberal US grants, and then the President's dilemma whether to sign or veto it.

Israel Shenker



WORLD'S TALLEST BUILDING has been projected for the 1958 Brussels World's Fair. It would be a 2,034′ chimney-type prestressed concrete tower, 340′ higher than the Empire State building, and would house TV studios, exposition halls and a skyperch cafe. It was designed by Ghent University Professor Gustave Magnel. Last month the Belgian Cabinet announced "agreement in principle" for construction, although it has not yet determined how to finance its $20 million cost. It is hoped, however, that admission charges would cover its entire expense. Vociferous critics have lambasted its "suppository style" and claim it would be dangerously near the Meisbroek national airport.

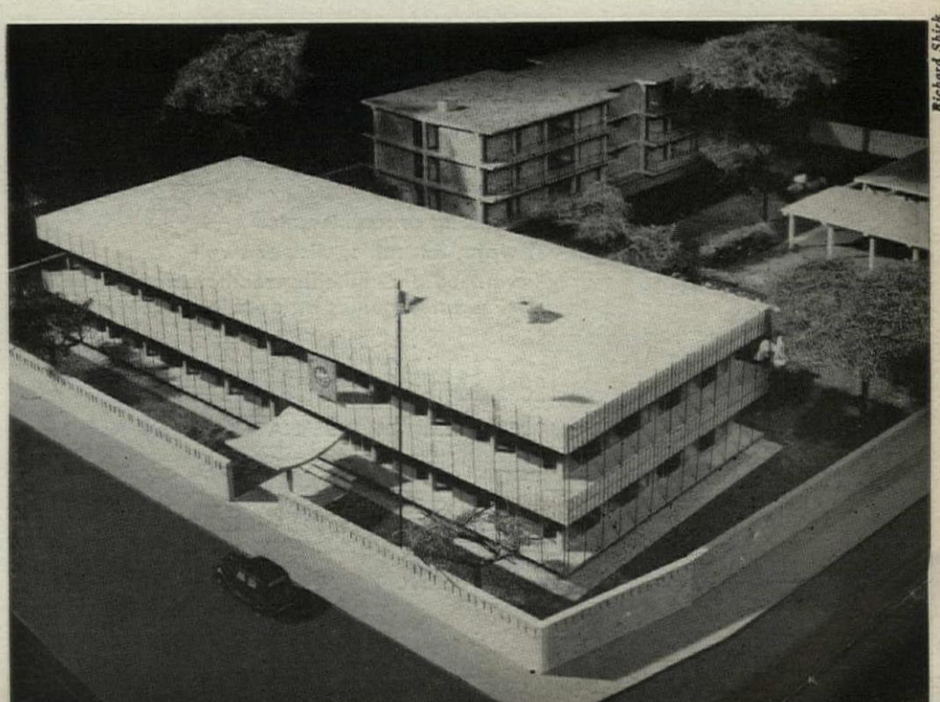
House committee studies bill for 20 overseas buildings for State Department

The Bureau of the Budget was kindly disposed toward the State Dept.'s foreign building operations, and approved a request sent to the House appropriations committee for $9.2 million for this work in the fiscal year to start July 1, compared with only $3 million in the current year. The bureau also approved a request for an appropriation of $250,000 for preparation of preliminary architectural plans for additional overseas structures, compared with current $150,000.

Based on budget approval, State Dept. officials allowed architects to release details about preliminary plans for proposed projects covered by the measure now before the House committee. They stressed, however, that all such plans would be subject to

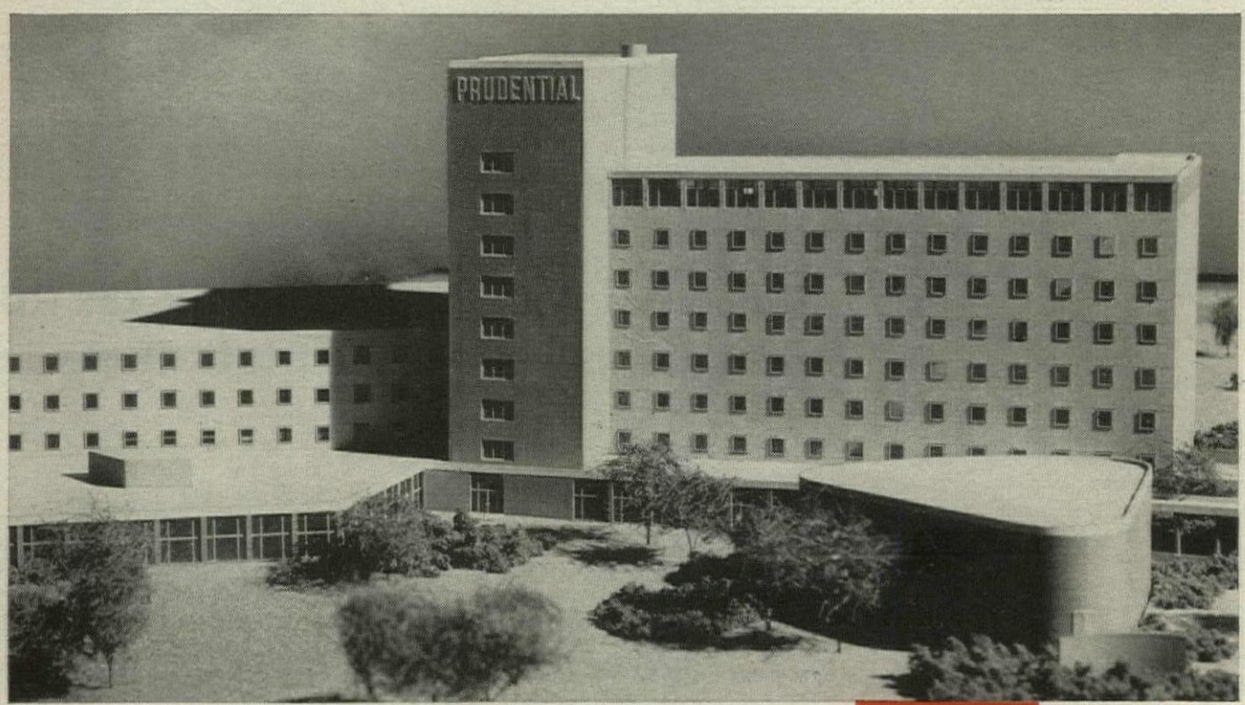
continued on p. 13

PRELIMINARY MODEL FOR KOBE CONSULATE BY LEINWEBER, YAMASAKI & HELLMUTH



Richard Shirk

Another **Adlake** aluminum window installation



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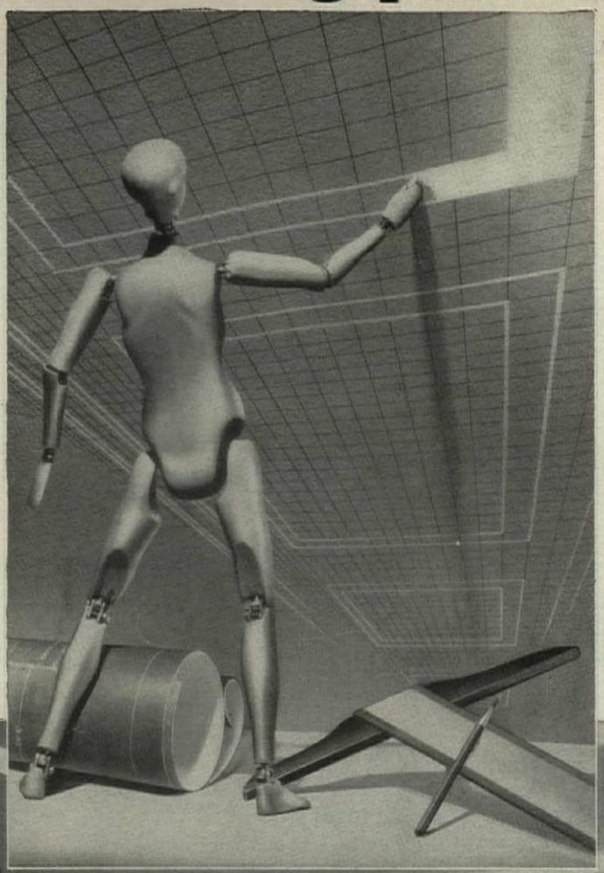

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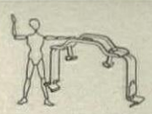

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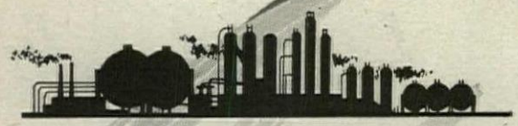

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Industries whose water requirements are exceptionally large will find vital information in a new series of water studies now in preparation by the Frisco Railway. The studies cover industrial sites 50 to 3,000 acres in size, and water capacities from *10 million gallons daily* to as high as *37 billion gallons daily*. Industrial manufacturers planning a new plant or seeking to relocate near abundant water sources will find these studies invaluable.



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revision as they advanced to final planning (assuming they would clear all the customary hazards that beset every appropriation bill). Under these conditions it was impossible to judge the merits of any as if they were sure to be final plans.

Some 20 proposed buildings to provide office or housing for bustling diplomats abroad were on the list that cleared the budget bureau. They ranged far and wide in such scattered locations as Dublin, the Hague, Milan, Oslo, Bombay, Sao Paulo, Caracas.

If and when requested construction funds are approved by Congress, State Dept. under its new policy of negotiated contracts with qualified private architects will order complete designs for each building. When it is actually voted more preliminary planning money it will sign more contracts for initial designing service for further buildings.

FHA probes: US costs pass $1 million; government loses 'windfall' tax suit

In Washington last month FHA received six bids for a foreclosed 608 apartment project in Patchogue, L.I. They ranged from $528,000 ($3,000 over upset price) to $552,600. The 84-unit project, approved in 1949, for a $723,900 insured mortgage (based on estimated cost of $804,444) was taken in by FHA in 1952. If the high bid was accepted, FHA loss would be in the neighborhood of $170,000.

As the FHA 608 probes neared the year-old mark next month, two developments added to a picture of mounting investigation costs, but little tangible pay-off.

▸ The Senate banking and currency committee was requesting $100,000 for further FHA digging, supplementing $225,000 it received last year. Late in January HHFA and FHA were voted $125,000 for their own additional probing, on top of $800,000 last year ($500,000 of it allocated to the FBI). Total probe funds appropriated: $1,150,000, and $100,000 more being sought. "Recoveries" to date, or in early prospect: zero.

▸ In the US Tax Court in Washington the Bureau of Internal Revenue's main test case to assess 608 "windfall" distributions at regular income tax rates, instead of capital gain rates, was turned down unanimously by the 16-man court. BIR planned to appeal. Its chances of success appeared slim. Senator Harry Byrd (D, Va.) said "no one can quarrel very much" with the tax court's decision, but added some caustic remarks on the lack of any scalps or trophies brought home by any probers. Prosecutions were "slow and disappointing," he observed, and HHFAdministrator Cole, he said, has acted "in what seems to be extremely few cases."

On another front, FHA was gaining ground. Its new industry advisory committee on management and disposal of its distress properties held its first meetings last month and gave the agency some practical recommendations for revising sales policies. For large apartment projects it suggested that more attention be given to setting both prices and terms to assure that a property would "stay sold" without reverting to FHA a second time. Members pointed out that under present procedures sealed bids tend to limit the market, and to a large extent a maximum mortgage (in dollars) automatically controls price. With adequate safeguards, they noted, better sales might be made through negotiated deals.

At Columbia—consultants; Princeton, thermoheliodon

Columbia University School of Architecture announced a teaching innovation. Beginning next September, graduate students will be able to develop their design projects with the personal "advice, assistance and criticism" of a board of consultants consisting of 22 outstanding architects for all types of buildings. On approval from Dean Leopold Arnaud's office, graduate students will have

continued on p. 17



Woodallen Industrial Photos





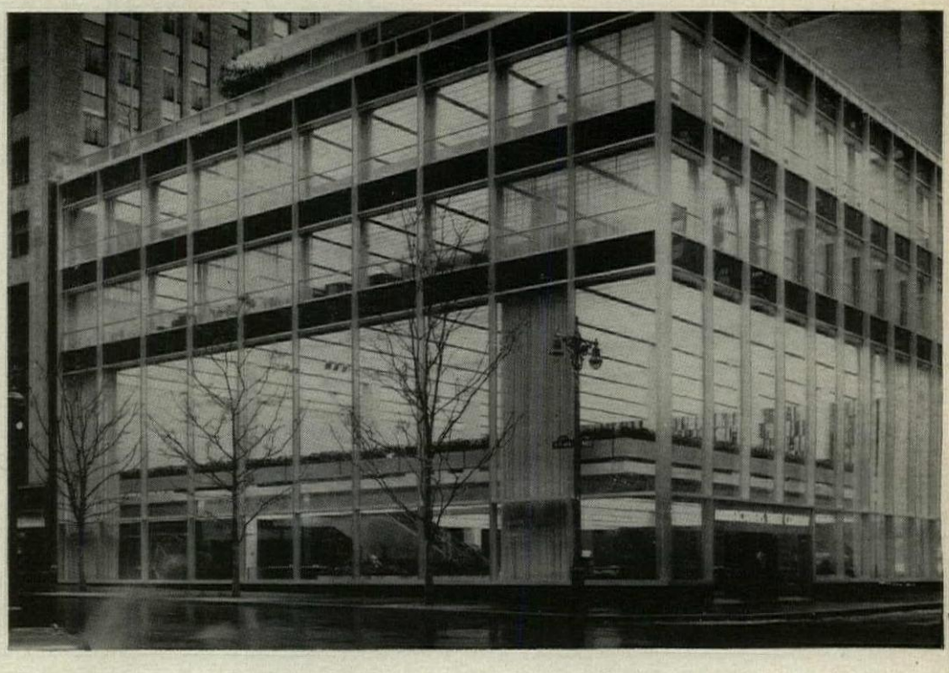
Arcades, windowless base, dual occupancy, distinguish newest metropolitan buildings

To design a 36-story, $40 million office tower for a 60,000 sq. ft. Fifth Ave. blockfront one block north of Rockefeller Center, New York's Tishman Realty & Construction Co. engaged Carson & Lundin, the Center's resident architects. Plans released last month provided for a stone-skin structure harmonizing with the Center (in place of the aluminum coats on the Tishman's two previous buildings). Windows, however, will be 6′ wide, will allow floors to be divided with some efficient offices of only that width. To obtain greater store frontage and pass-through pedestrian traffic, there will be three completely open arcades, each 30′ wide, leading to the main lobby, 100′ back from the avenue.

Maroon concrete will cover the four-story base of the 24-story aluminum-covered Second National Bank building being erected in Houston. To save on building, air-conditioning costs this 250′ x 252′ full-block base will be windowless. The bank's main quarters will occupy the second and third floors, and in Texan tradition the second-floor space (including 37 tellers) is being advertised as "the largest banking lobby in America . . . over 1½ acres in area." The $16 million structure, designed by Kenneth Franzheim, will also have drive-in banking facilities on the ground floor, and underground connections with the neighboring Commerce Building and a modern garage to be built nearby.

Alternate floors of eight office-showrooms and eight studio apartments, which will be rented only as joint business-living duplexes, will comprise 12 of the 15 stories of this $2 million, X-shaped, glass-and-concrete Chicago building to be erected this summer for Frank Katzin by Realtor-Developer Arthur Rubloff. The ground floor will house stores and office service establishments; the second floor will provide garage space for 65 cars; the 15th will be an extra floor of office space only. Rent for a 595 sq. ft. office and an equal size apartment, with private stairway connection, will be $225 a month. Architect: Bertrand Goldberg, with Pace & Associates as consultants.

"Two-Way Stretch"



THE MANUFACTURERS TRUST COMPANY
New Fifth Avenue Office

Architect: Skidmore, Owings & Merrill.

Consulting Engineers:
Weiskopf & Pickworth.

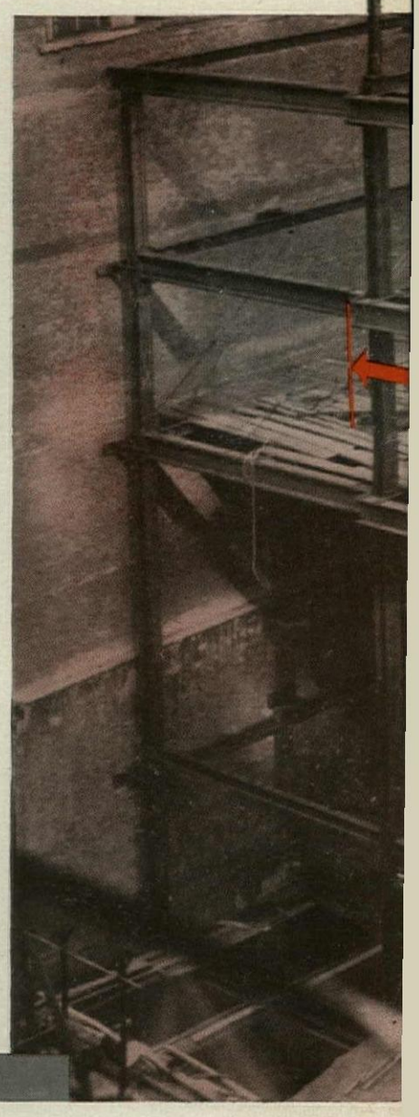
General Contractor:
George A. Fuller Company

Structurals fabricated
by Ingalls Iron Works Company.

AN ENGINEERING COMPLICATION in the construction of the new Manufacturers Trust Company Office in New York dictated the need for an unusual cantilever application. Girders, 70 feet long and weighing seven tons each, stretch in two directions from the supporting columns, which are set back from the building line. The 43rd Street cantilever extends 20 feet 5 inches from the column line. Only eight exposed columns are on the main banking floor —an area of 11,000 square feet.

Exterior glass walls, offering no support to the structure, hang curtain-like from the cantilevers. With the second floor set back 10 feet from the exterior wall, the effect is a 32-foot high expanse of glass running from the ground level to the third floor.

Exciting architectural ideas like this unique cantilever application are always possible with USS Structural Steel. It is picked to do the job because it is strong—will withstand more abuse than other structural materials. It resists tension, torsion, compression, and shear. Enclosed in buildings, Structural Steel will last indefinitely — requiring no maintenance. Equally adaptable to riveting, welding or bolting, it can be erected in any weather in which men can work. And, since steel members are fabricated indoors, weather can have no effect on the quality of workmanship. Last, but by no means least, Structural Steel is the *most economical of load carrying materials.*



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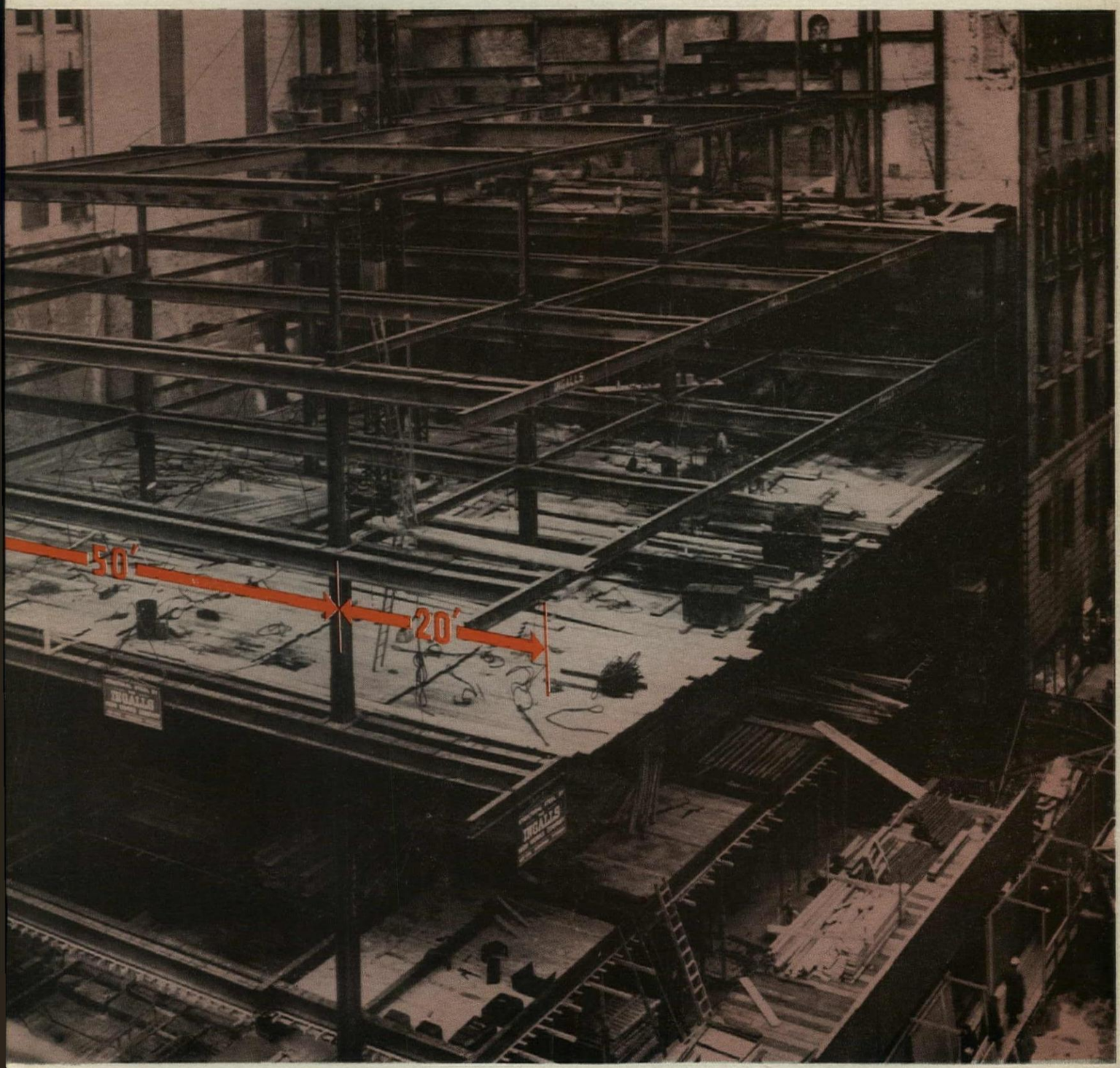
cantilever construction featured in new Manufacturers Trust Building

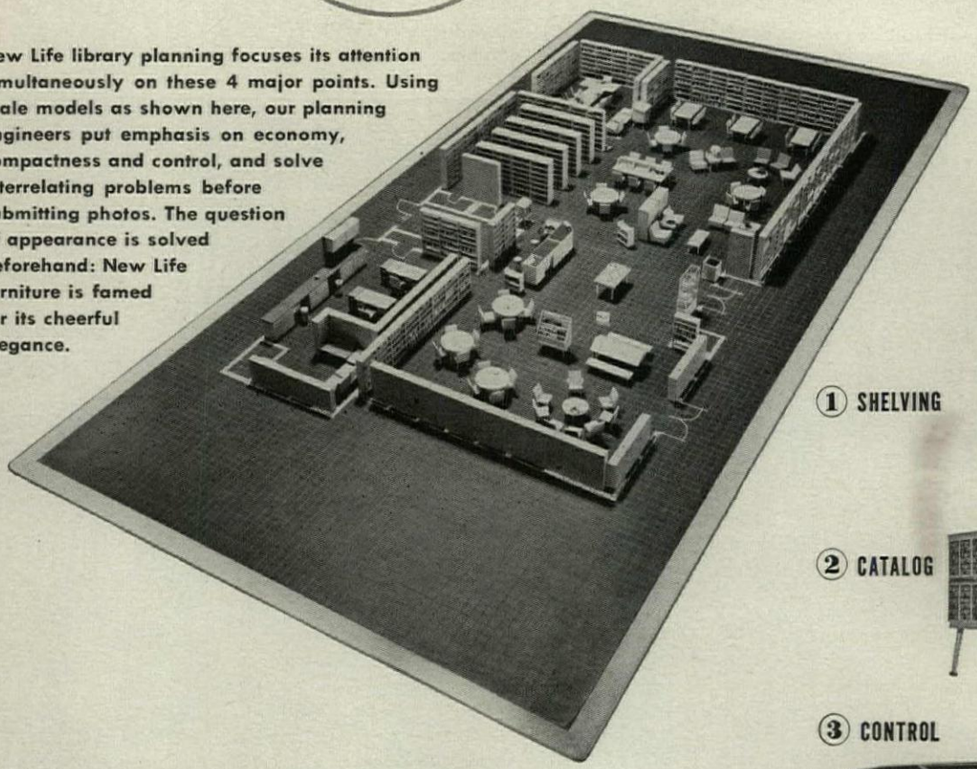
FOR THE LONG GIRDERS the rolling mill furnished 70-foot cambered beams. Ingalls Iron Works Company then fabricated the reversed camber required in the 20-foot cantilever portions.



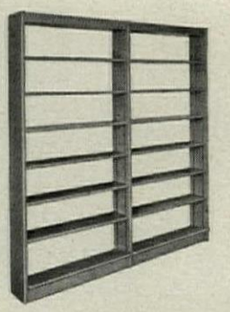
4 POINTS: IN LIBRARY PLANNING

SHELVING
CATALOG
CONTROL
READING

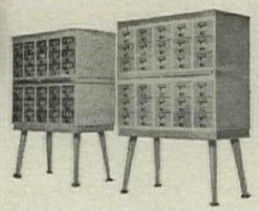
New Life library planning focuses its attention simultaneously on these 4 major points. Using scale models as shown here, our planning engineers put emphasis on economy, compactness and control, and solve interrelating problems before submitting photos. The question of appearance is solved beforehand: New Life furniture is famed for its cheerful elegance.



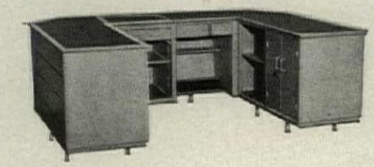
① SHELVING



② CATALOG



③ CONTROL



④ READING



① **Shelving** must be planned with consideration for book capacity, wall space, traffic pattern, natural lighting, etc. Slanted bottom shelves and pleasant, light finish are among New Life shelving's many advantages. ② **Catalog** files, the key to the books on the shelves, should be placed strategically for readers' convenience. New Life's index drawers have exclusive features such as one-hand-operated snap lock rods and edge-grain wear surfaces. ③ **Control** is maintained at the charging desk, from where no line of vision should be blocked. Placed close to administrative core, it controls entrance and exit. New Life charging desks are noted for their elegance and operational efficiency. ④ **Reading** area should provide ample, comfortable seating facilities, should utilize best means of lighting, and have an inspiring, flexible table pattern. The Freeline table is gracefully designed to give the reader unhampered freedom of movement.

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Princeton University School of Architecture announced it is going to build a thermoheliodon, thanks to a $19,100 grant from the National Science Foundation for research on the architectural shaping of buildings to fit different climates. "A thermoheliodon," explained the university, "is a 'machine' to test building models on an accelerated time schedule, under various climatic conditions." The Princeton University one will have a clear plastic dome 6′ in diameter, beneath which heat, cold and wind effects will be created. Another heat-light source, simulating the sun, will operate outside of the dome. Preparations for the thermoheliodon have been under way for two years under direction of Research Associates Aladar and Victor Olgyay, whose architectural-climatic studies have been news before (see p. 234 and AF, March and Aug. '54).

City realty value seen sliding, despite price rise

Decentralization has been sending the trend of central city real estate values down, according to Dr. Herbert B. Dorau, chairman of the Real Estate Dept. at New York University. Of course, dollar prices have usually risen in recent years, he hastens to point out, but whenever increased prices have not been greater than the inflationary decline in the value of the dollar, owners have suffered a net loss, despite seeming bookkeeping gains. Addressing a management division meeting of the New York Real Estate Board last month, Dorau suggested that on a rule-of-thumb basis any property that had not doubled the price that it could command in 1940 had slipped in value.

Speaking on the impact of decentralization on urban property, Dorau explained that high values for central city real estate stemmed from the intensity of use to which it could be put. Previously cities usually expanded only because of pressure from within, so central city values were not affected when growth that could not be accommodated in the central city took place on its outskirts, said Dorau. But today, he noted, there are external pressures drawing residents, business and industry out of the cities—mainly bridges, tunnels and highly flexible highway transport for materials, workers and shoppers alike. Except in special locations, there is no longer the need, nor the demand, to use central city land as intensely as before—and the effect of this on its value is inescapable.

To check New York deterioration and reestablish it as the "first and most desirable place" to live, work and trade, Dorau suggested immense redevelopment projects by agencies with power and resources enough to "rearrange" most of the city, remake six or eight blocks, or entire neighborhoods, at a time. Commenting on the role of trade and industry in sustaining the city he declared: "Commercial redevelopment is more important for New York than all this piddling around with housing."

Idlewild Airport plan: eight separate terminals—parking for 6,000 automobiles

The master plan for a five-year, $60 million development of New York's huge Idlewild Airport was unveiled last month by the Port of New York Authority. Ten major buildings will cost about $45 million; landscaping, parking fields, taxiways, service roads and utilities about $15 million.

The largest building will be a $15 million, three-story international travel terminal that will handle all incoming passengers on its ground floor, all outbound passengers from the second floor. This is scheduled to be started this fall and in operation by 1957.

The airport's principal innovation will be the dispersal of domestic airlines into seven other separate terminal buildings around a big 655-acre oval development on the 5,070-acre field. These smaller buildings will each be about 400′ wide, will be built in stages between now and 1960, and will cost a total of about $30 million.

As described by Port Authority Executive Director Austin J. Tobin, no one will need to walk more than 400′ from any part of three huge parking fields to reach one of the terminal buildings, from which frequent inter-airport "jitney" service to all other buildings will be available. Taking special note of the 6,000-car capacity of the 50 acres covered by the three parking fields at the terminal, the *New York Times* commented editorially: "The accomplished marriage of the automobile and the airplane in the travel pattern is thus accommodated."

Design objectives. By separating the international terminal and the various domestic airlines, said Port Authority Aviation Director Fred M. Glass, Idlewild will be able to accommodate 140 giant air liners loading or unloading simultaneously, compared with a maximum of only 29 at present, and only 15 at once at New York's LaGuardia Field. A single building to handle 140 planes at once, he observed, would have had to be 2 mi. long. The projected Idlewild layout, he added, was designed to provide "flexibility, versatility, expansability and adaptability" without any "conflict between the flow of passengers, and the flow of baggage, freight, mail and apron service."

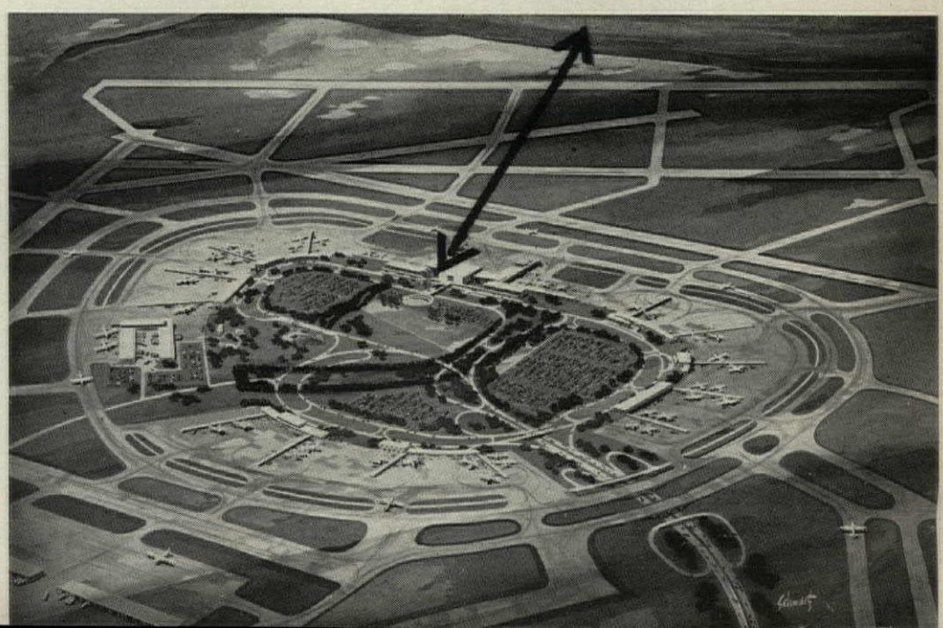
Most important of all for the Port Authority, Tobin predicted that the new facilities would turn Idlewild's present haunting operating deficit into a profit.

Design credits. Wallace K. Harrison has been engaged by the Port Authority as design consultant and coordinator of exterior

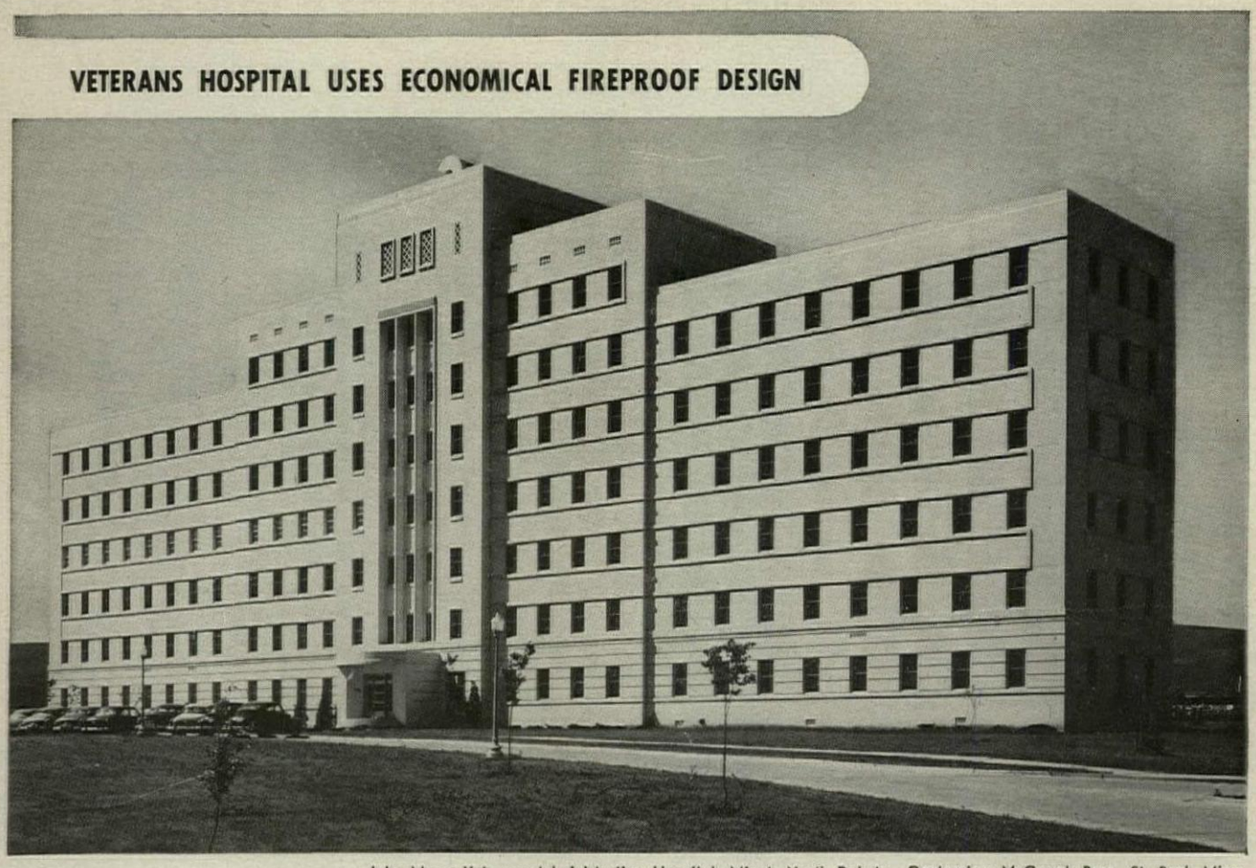
continued on p. 21



OVAL LAYOUT for Idlewild Airport will be dominated by International Arrivals building (center background), which will be 2,200′ long, including two wings for foreign airlines' offices and lobbies. Three-story central section will include Customs, Immigration, Public Health quarantine and Weather Bureau space; stores, a luxury restaurant and cocktail lounge, and a private lobby for VIP receptions. The master control tower (at right) will stand a short distance in front of the main entrance to the international terminal complex, at the point indicated on the over-all plan. Around the oval will be seven separate domestic airline terminal buildings, each about 400′ wide, and a larger operations building (left foreground).



VETERANS HOSPITAL USES ECONOMICAL FIREPROOF DESIGN



John Moses Veterans Administration Hospital, Minot, North Dakota Contractor: McGough Bros., St. Paul, Minn.

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SERVING as structural material *and* facing, architectural concrete held down construction costs on this new government hospital. Naturally architectural concrete requires something extra in surface appearance. And that's one reason why contractor E. V. McGough used Duraplastic air-entraining portland cement. Well satisfied, he reports, "It gave us a very good finish... required less water and vibration."

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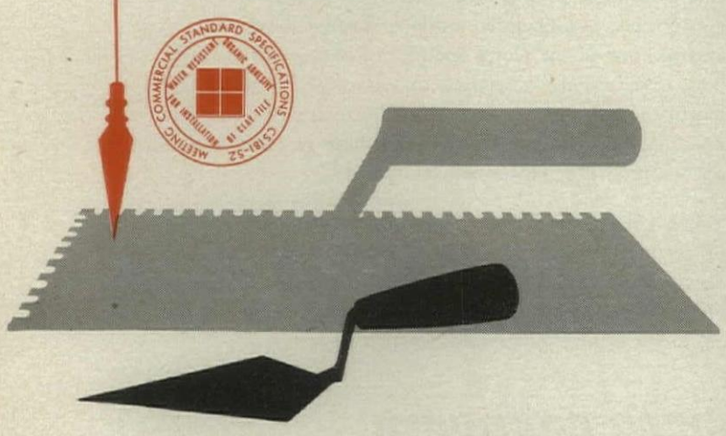



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architecture for the entire project, and has already helped design the roadway layout and building locations for the central area, and laid out the landscaping of the plaza and a large reflecting lagoon inside the oval.

Buildings are being designed by Skidmore, Owings & Merrill in collaboration with the Port Authority staff, and the authority's aviation planning division, headed by Thomas M. Sullivan, is carrying on functional and physical studies of the terminal area. Funds already allotted for final design plans for the project total $2 million, said authority officials.

GSA lease-purchase rules circumvent promoters

Under its new lease-purchase program, the General Services Administration will retain tight control over the design and construction of all buildings it acquires in this manner. In effect, it will practically erect its own buildings and then sell them to investor-owners under what might better be termed lease-*re*purchase contracts, with the nominal owners supplying virtually nothing but financing.

The procedures GSA disclosed last month apparently will freeze out any deals speculative realtors and builders had hoped to promote. But private architects and engineers should fare much better: GSA will seek their services on a negotiated contract basis to design each project and will give preference to local organizations.

After GSA obtains Congressional approval for each project it will follow these steps: 1) have Washington headquarters of Public Buildings Service (its subagency) contract for a local architect to design the entire project from scratch; 2) call for construction bids and determine the contract winner; and then 3) invite bids from investors for the financing—through a lease-purchase contract. In actual practice, GSA itself will let the building contract, supervise construction and take over the building in its entirety as soon as it is completed.

Because the nominal "owner" will be little more than the holder of a "riskfree," amortizing mortgage loan, with no supervisory or maintenance responsibilities, PBS expects to obtain this financing below ordinary mortgage loan rates. Said PBS Commissioner Peter A. Strobel: "If we don't get the money at less than 3½ or 4%, we will reject the bids." Another tough hurdle that every project will have to clear: approval from the Bureau of the Budget.

The first four projects on the verge of clearance: an $8.4 million home office for AEC in the Washington area, and three Court House–Post Offices in Kansas City, Kan. ($4.5 million), Rock Island, Ill. ($2 million) and Green Bay, Wis. ($1.6 million).

Navy shows atom-resistant building for 5% extra cost

Maximum protection from ABC (atom-biological-chemical) attack at an additional cost not exceeding 5% of total construction cost was one requirement for a Navy chemistry building at its research laboratory in Washington, D.C. This extra cost limitation ruled out underground construction.

Last month, announcing completion of the building, the Navy thought it had the answer to this ABC safety requirement: a fireproof, windowless structure of monolithic reinforced concrete. The $335,000 lab, in which chemical research will be done under simulated shipboard conditions, has bacteriological and chemical filters in its air-conditioning system and revolving doors with airlocks on its second floor to keep pressure (needed for experiments) up and contamination down. Washrooms can become decontamination shelters in emergencies.

The 5% extra cost limit was Navy recognition of the futility, long known to civil engineers, of designing buildings to resist even a fraction of the blast near the heart of a nuclear explosion.

NAREB votes $25,000 for Build America Better work

At their winter Washington meeting the board of directors of the National Assn. of Real Estate Boards voted $25,000 to support their Build America Better program this year, compared with about $10,000 in 1954. Plans to allocate about $100,000 for this urban rehabilitation program were deferred when continuing efforts to increase each realtor's national dues $5 a year were sidetracked again until May.

New President Henry G. Waltemade appointed Long Island Realtor Walter S. Dayton chairman of the Build America Better Council, succeeding Los Angeles Realtor-Builder Fritz Burns. He has appointed Arthur P. Wilcox of Boston chairman of the Realtors Washington Committee (headed by Waltemade last year), and New Yorker Durand Taylor as chairman for the committee arranging the national convention there next November.

Main unfinished business at the directors' meeting: selection of a successor to Executive Vice President Herbert U. Nelson, slated to retire June 30. Most interesting corridor talk: growing sentiment for consolidating all NAREB headquarters' activity in Washington (rather than transferring more of it to Chicago). Reason: to be "closer to the government," which seems bound to exercise a larger and larger control over real estate as time goes by.

Soviet program pushes prefabbed concrete parts

Russia is going to have a building boom. It will not be the voluntary business-and-consumer-kind that the US has known for the past decade; Russia's construction surge will occur by government and Party fiat.

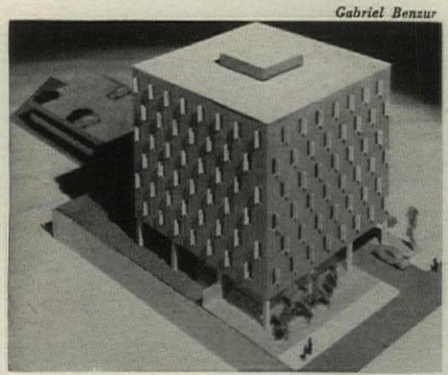
Two months ago, Party Secretary Nikita S. Khrushchev, who has become the country's strong man, ordered an end to the skyscraper era of Russian architecture and decreed simplification and standardization of building methods. Soviet architects and builders wondered what shape their future works would take.

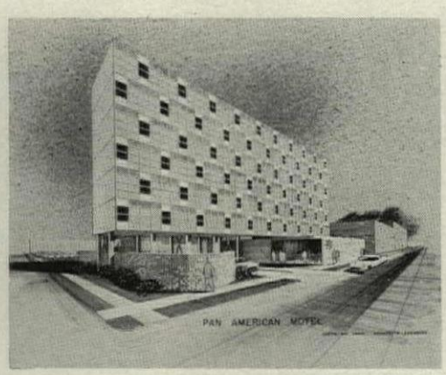
Last month they knew, as they moved among new display buildings of prefabricated, reinforced-concrete parts at Moscow's Permanent All-Union Building Exhibition. There were wall panels, pillars, beams, floors and window frames, all made of concrete and all interchangeable, using steel only where pillars and beams must be welded together, and using wood not at all. There was ornamentation, the Russian architects discovered: prefab exterior slabs of ceramic tile and mass-produced decorative columns, plaques and door frames. Plumbing, and even radiators, special interests of former pipe-fitter Khrushchev, were integrated into slabs.

The Soviet plan will sprinkle all of Russia with standardized factories, apartments,

continued on p. 25

Gabriel Benzur



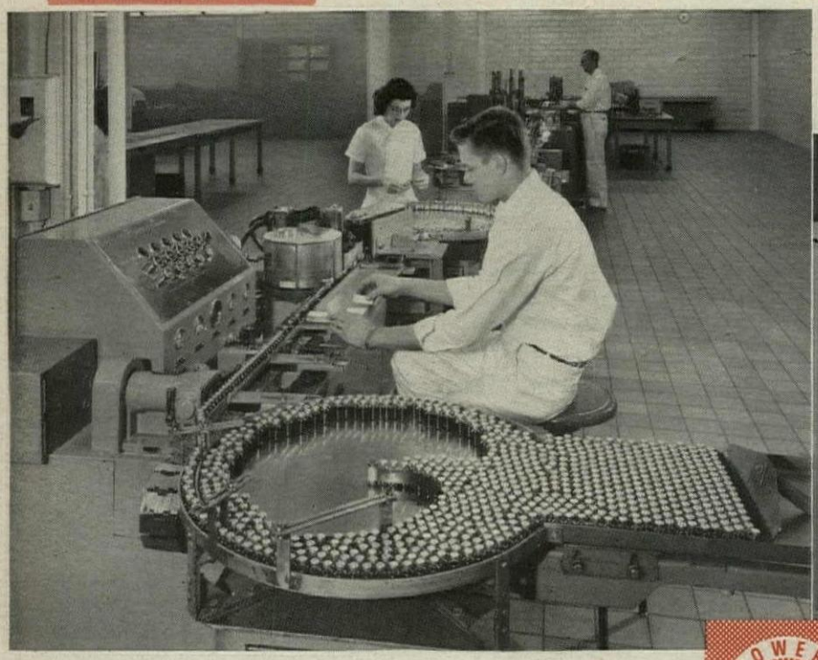


Southern motel and medical building will be on stilts

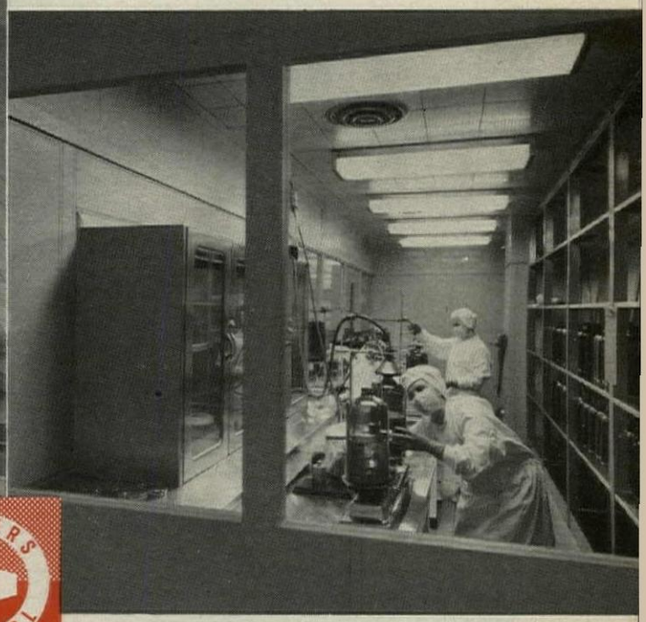
A $1 million medical building in Atlanta, seven stories high, cooperatively owned by the doctors who will use it, was designed by Atlanta Architect John Portman without front or back, with common facilities in a central core, to give all occupants equally desirable space. Patients' and doctors' cars will be driven under the building. Three levels of parking space are beyond the structure. Wall surface will be of red brick and the comparatively small (2' x 6') windows of the air-conditioned building will have vertical sunshades of Georgia marble.

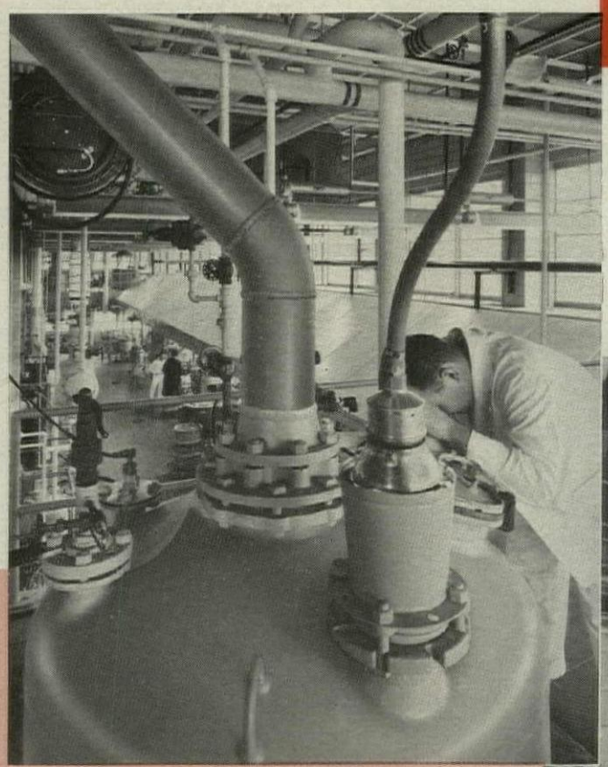
A seven-story motel (an appellation in the realm of the multifamily cottage, or four-room mansion) was begun last month in New Orleans. Access to patrons' rooms will be by means of open balconies on each floor, serviced by a pair of elevators and stairs in twin towers connected by bridges to the balconies. The street wall of the $700,000 building, designed by Curtis & Davis, New Orleans architects, will be of porcelain enamel (70%) and glass (30%). End walls will be reinforced concrete, textured in pouring by rough-sawn, unsanded form boards.

ARMOUR'S NEW LABORATORIES *producing*



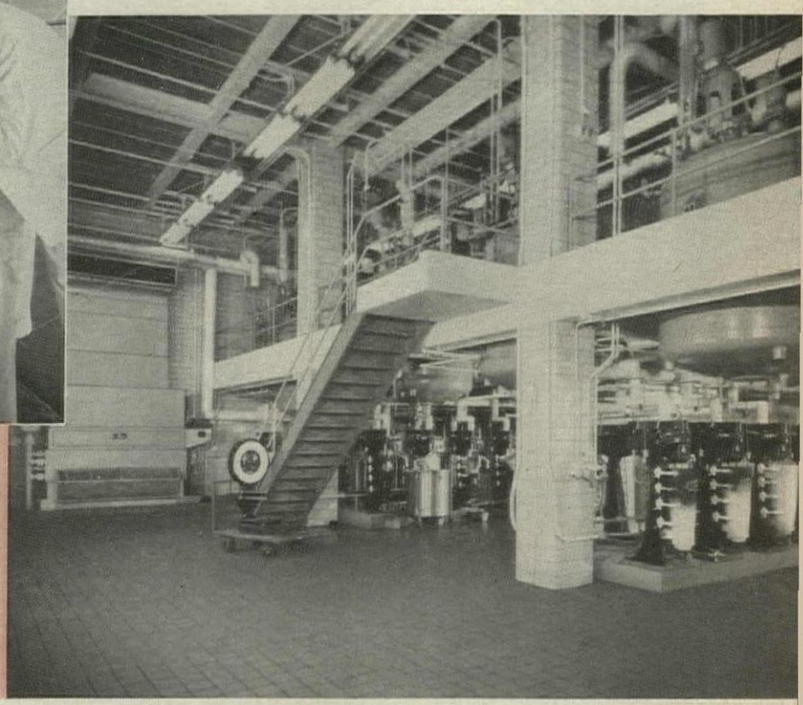
Left: **Parenteral Packaging Department.** One of the areas completely air conditioned.





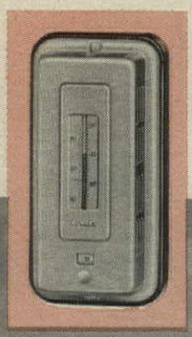
Above: **Hospital Gowned and Masked Technicians in Bulk Sterile Filling Area.** Here the air conditioning is treated in such a manner that aseptic operations could be undertaken with least possibility of bacterial contamination.

Below: **Low Temperature Human Blood Fractionation Plant** — *the largest in the U.S.A.* In this area there are processed 18,000 pints of human blood (or the equivalent of human plasma) weekly into Normal Serum Albumin and Poliomyelitis Immune Globulin. Processes are controlled by Powers V-Port FLOWRITE Valves. This entire room is accurately held at 23° F.

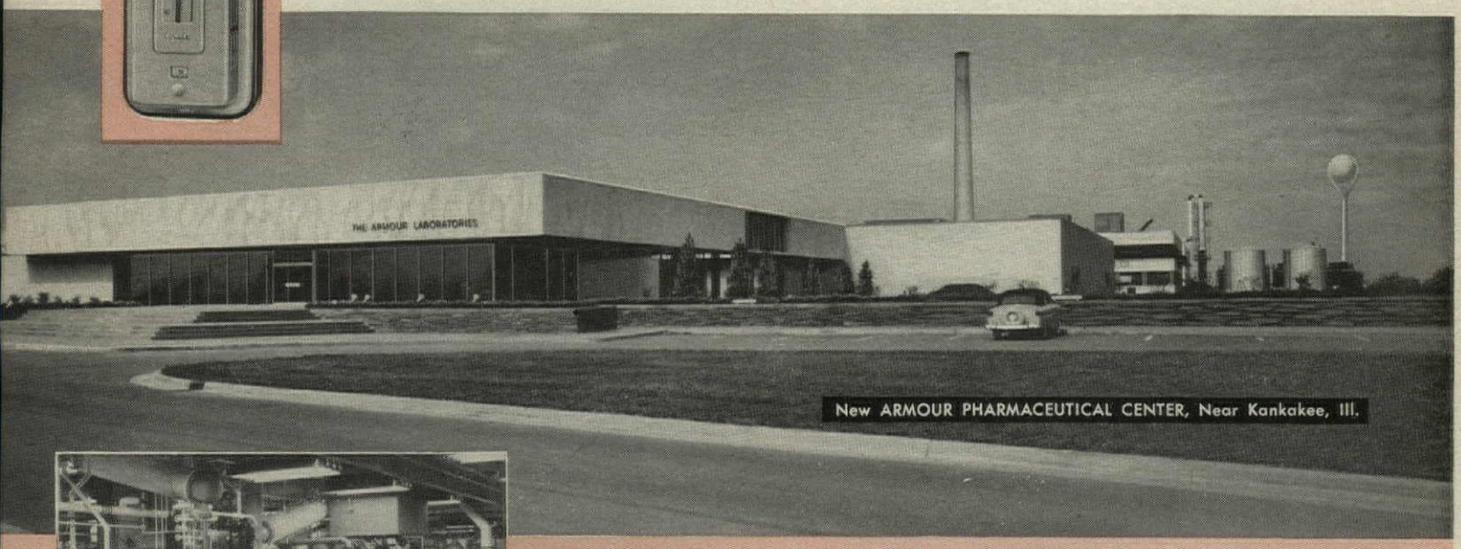


Above: **View in Parenteral Manufacturing Building No. 4** where ACTHAR, Insulin, and Intrinsic Factor (BIO-PAR) are processed. Processes here are also controlled by Powers V-Port FLOWRITE Valves.

Gamma Globulin and other pharmaceuticals...

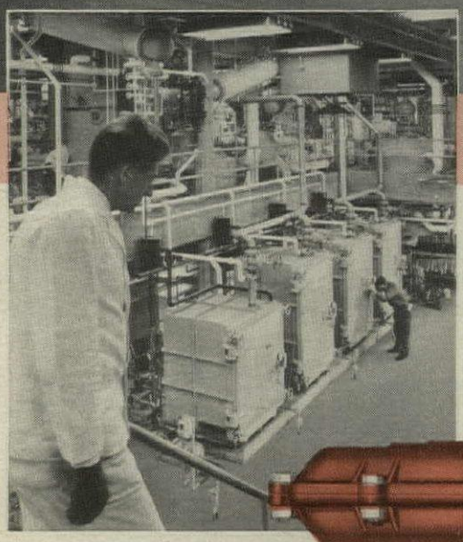


Use POWERS AIR CONDITIONING CONTROL AND FLOWRITE DIAPHRAGM VALVES



New ARMOUR PHARMACEUTICAL CENTER, Near Kankakee, Ill.

Architects & Engineers: HOLABIRD & ROOT & BURGEE
Piping Contractor: M. J. CORBOY CORP.



Above: **View in Solvent Extraction Building No. 5** where Insulin, Intrinsic Factor and Injectable Liver are produced. Processes are controlled by Powers V-Port FLOWRITE Valves.

Gamma Globulin for Combating Polio, Serum Albumin used by the Armed Forces for transfusion in shock and burn cases, Thyroid powder and tablets, Intrinsic Factor (BIOPAR), Insulin and ACTHAR for treatment of arthritis — production of these and many other Armour products requires accurate temperature control.

To insure the precision control of air conditioned areas in their modern $12 million plant Armour installed a Powers pneumatic control system.

To accurately control the flow of heating and cooling mediums and vacuum used for various processes, they installed Powers V-PORT FLOWRITE Valves.

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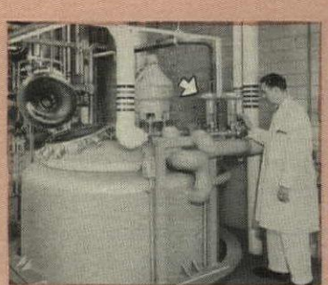
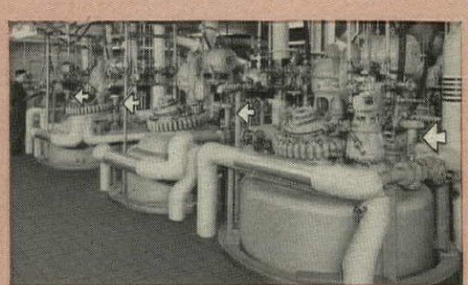
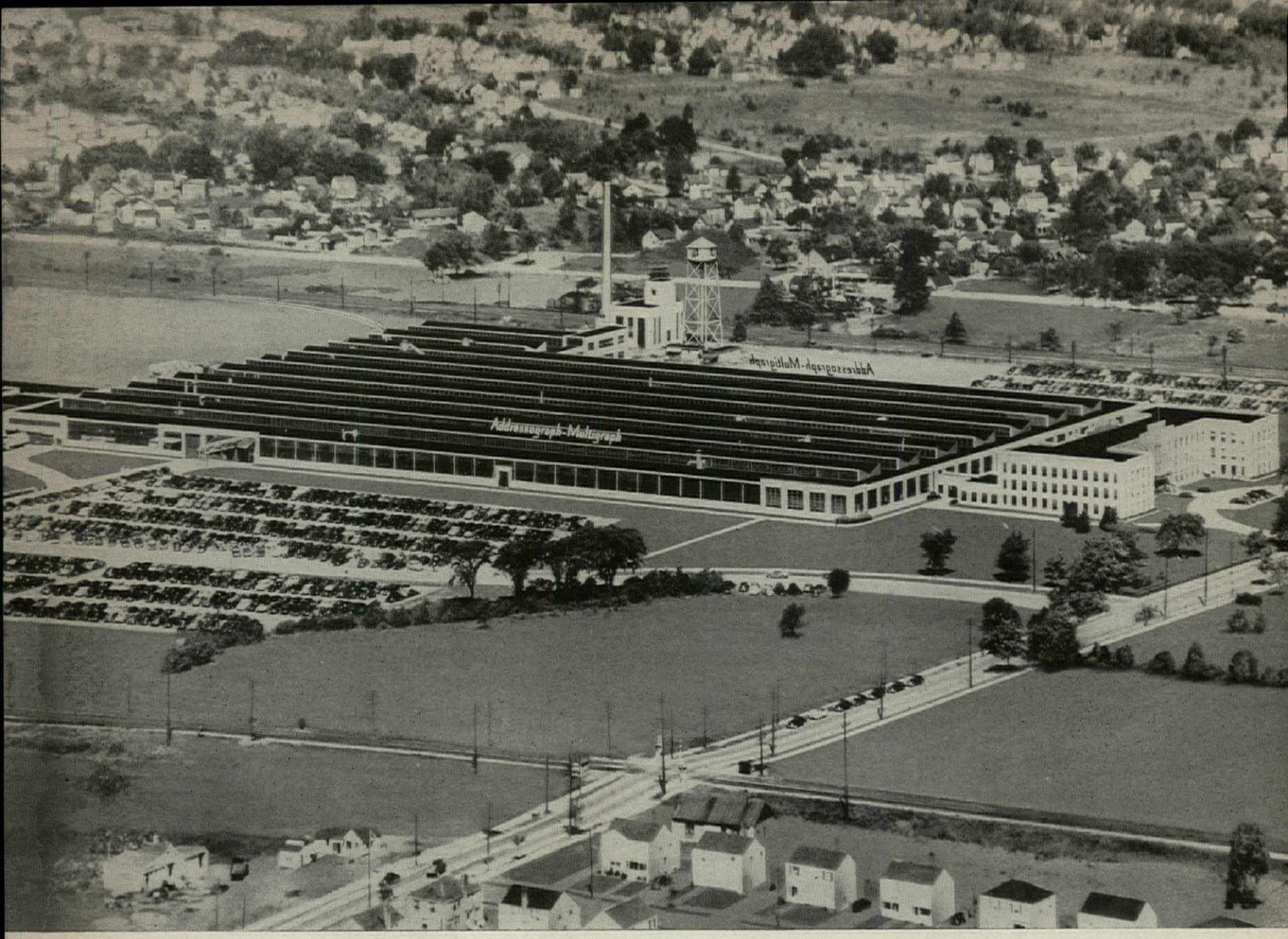
Gives BETTER Control with Less Maintenance

Over 100 are Used in Armour Laboratories.





ACCURATELY CONTROLS STEAM, WATER, VACUUM AND PROPYLENE GLYCOL AT ARMOUR LABORATORIES



Addressograph-Multigraph saves 29% in fuel costs burning coal the modern way

The Addressograph-Multigraph Corporation has a modern plant in suburban Cleveland. For economy and efficiency, the firm's boiler plant is coal-fired and boasts the latest in coal and ash handling equipment.

Coal offers many advantages to the Addressograph-Multigraph Corporation. It is easy to handle. Only one man per shift is required to run the boiler plant on a 24-hour basis. There is no air pollution problem. And best of all is the low cost of operation! Coal costs 29.6% less than the next cheapest fuel and 35% less than the third one! With these benefits, no wonder Addressograph-Multigraph is a satisfied user of coal!

Investigate Your Fuel Costs

If you're planning to modernize your plant or build a new one—or if you are just interested in cutting fuel costs—find out how coal, burned the modern way, compares to other fuels. You will find that, in most industrial areas, coal will give you the lowest heating costs. Discuss *your* situation with a consulting engineer or your nearest coal distributor. Their advice may save you thousands of dollars every year.

facts you should know about coal

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Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar.

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Coal is the safest fuel to store and use. No dust or smoke problems when coal is burned with modern equipment.

Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION
Southern Building, Washington 5, D.C.

buildings and public structures for the next five years, at least. It calls for a 500% increase in production of prefab concrete building parts, a 150% boost in cement output and recruitment of vast construction brigades. Some 100,000 Russian youths already were being recruited to operate factories making prefab concrete parts.

Philadelphians scrap over building facing new mall

Revised plans for a $6 million, 12-story sheer-walled glass and aluminum office building facing the new Independence Mall were brewing a combination design and zoning tempest in Philadelphia at month's end.

On the offensive, hoping to bring into effect a set-back ordinance signed five days after issuance of an initial building permit for a nine-story version of the building: the Philadelphia AIA chapter, city art commission members led by President Roy F. Larson, the Philadelphia *Inquirer* editorial page and influential and energetic Advertising Executive H.A. Batten, board chairman of N.W. Ayer & Son.

On the defensive: prominent Philadelphia Realtor Frank G. Binswanger, sponsor of the project, and the Shelby Construction Co. of New Orleans, which would be the owner-builder of the structure (see cut) designed by New Orleans Architect Charles R. Colbert, hitherto known for his forward-looking schools.

Main complaint of the objectors: if built without a setback, particularly if approved for an increase to 12 floors, the new structure would violate the spirit of the building height ordinance intended to control redevelopment around the new National Park mall being created as an appropriate setting for Independence Hall, the old Customs House, Carpenters Hall and Benjamin Franklin's old red brick printing shop (which would be right beside the new building).

On less firm ground, some critics also complained of the prospect of a mixture of colonial and modern architectural styles around the mall, although on this point Larson made it clear that the art commission was not "insisting on another Williamsburg," as has been charged. The commissioners, he said, "are not opposed to good contemporary design and believe it would be a questionable use of the commission's power to insist that all buildings be in the strict tradition of the 18th and early 19th centuries. The new and old can very well be side by side, the new enhancing the charm and distinct quality of our historic buildings." Nevertheless, he also expressed his hope that no new buildings would "do violence to the historic area."

Officially, the AIA chapter sent the mayor and the art commission an adroitly phrased resolution as follows: "In order to have the first building adjacent to the national park conform with the intent of the ordinance . . . it is urgently recommended that every effort be made to influence the developers . . . to adhere to the provisions of the zoning ordinance which established a 45′ cornice line, a 25′ setback above that line." In addition, it named a committee of three AIA Fellows to formulate a policy to promote architectural harmony around the mall: G. Holmes Perkins, dean of the University of Pennsylvania School of Fine Arts; Fiske Kimball, retired director of the Philadelphia Art Museum, and George Howe.

AIA chapter President John F. Harbeson in discussing the ruckus said the city's architects feel "that the design as proposed is of a commercial, commonplace nature, not suited to the location and not produced with a knowledge of architectural refinement." Harbeson, who also denied the architects are insisting on a new "Williamsburg," is a member with art commission President Larson in the firm of Harbeson, Hough, Livingston & Larson.

Next developments? After disclosure that the owner-builders contemplated asking for an adjusted or substitute permit for a 12-story rather than a nine-story structure, the big unanswered question was whether this would make the entire building subject to the new ordinance. Larson went so far as to say that regardless of the permit situation "it now appears that the art commission may have jurisdiction. . . . The intent and purpose of the ordinance giving the commission jurisdiction [and setting height limits] was generally known prior to issuance of the permit."

But shrewd Binswanger countered any suggestion that the permit was sought hurriedly to beat the ordinance. He said it was his understanding that it was the city that rushed through its ordinance in an attempt to block the building.

Adolph Studly



INDEPENDENCE MALL BUILDING—REVISED

Mutual Benefit plan to build in Newark touches off a 'rebirth' for city center

Mutual Benefit Life Insurance Co. (the nation's 12th largest) announced a home office redevelopment project in Newark, N.J. last month that promised to become noteworthy on several scores:

▸ Its decision to stay in the heart of the city, after an intensive study of all factors connected with relocating in a suburban area, was touching off a "rebirth" of Newark and a strong "inrush" of companies seeking new in-city quarters, according to Financial Vice President Milford A. Vieser, in charge of Mutual Benefit's project.

▸ Close on the heels of its initial announcement, for instance, the company was about ready at month's end to announce plans for additional twin rental buildings at the adjacent intersection of Broad and Bridge Sts. These would each have about 100,000 sq. ft. of floor area, and it was understood one was almost entirely rented already.

▸ The 20-story, 350,000 sq. ft. floor area, $10 million building for Mutual Benefit's own occupancy was being designed to provide 1) floor flexibility, and 2) both horizontal and vertical interoffice communications that would save dollars and cents by drastically cutting the time required for the vast volume of paper-shuffling inherent in the business.

Eggers & Higgins of New York were architects for both the rental buildings and Mutual Benefit's home office, which will have a tower of blue-green glass framed in white limestone, and will overlook Washington Park, now surrounded almost entirely by institutional buildings. Behind the home office building Mutual Benefit has acquired a plot of more than two acres, which will be available for parking or for a multilevel garage to serve all three of its new structures. It has entrances from three different streets.

Mutual Benefit officials admitted they were "exploring" possibilities of participating in a Title I redevelopment project two blocks farther north on Broad St., just beyond the adjacent Lackawanna R.R. station. They declined to comment, however, on the ultimate scope of redevelopment they might undertake in this over-all area, on the northern side of the city close to a proposed East-West Freeway.

Meanwhile Newark's new reform government named a civic committee (including AFL and CIO members) to draft an extensive city improvements program. Last year this administration reduced taxes for the first time in many years, which was one of the several reasons that led Mutual Benefit Life to decide to remain in Newark rather than relocate elsewhere.



NEW HEADQUARTERS FOR MUTUAL BENEFIT LIFE

for news about PEOPLE—*p. 29*

MITCHELL Lighting chosen

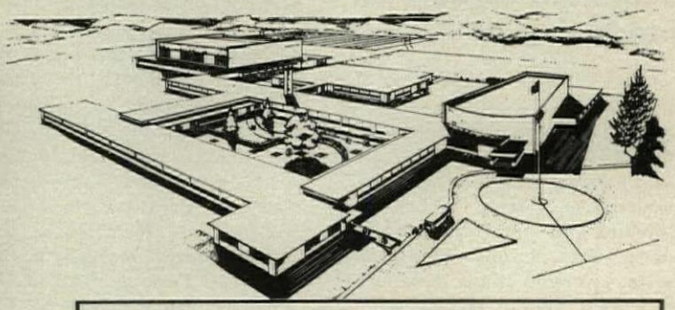
for the Monroeville Junior High School



WALTER E. SCHARDT, Registered Architect

With many years experience in the highly specialized field of school architecture, Mr. Schardt has numerous problems confronting him relative to the overall well-being of students, faculty and the community in general.

"While there are many requirements to be considered in school design," Mr. Schardt states, "I place the utmost emphasis on classroom lighting. In specifying Mitchell lighting I am mindful that for many years, this brand has stood for practical design, high efficiency and simplicity of maintenance at reasonable cost."

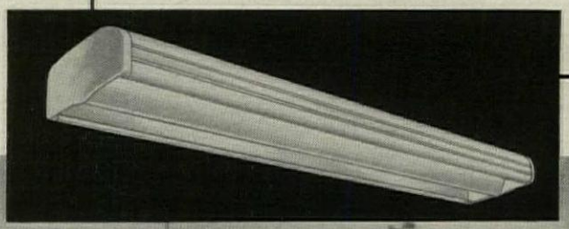


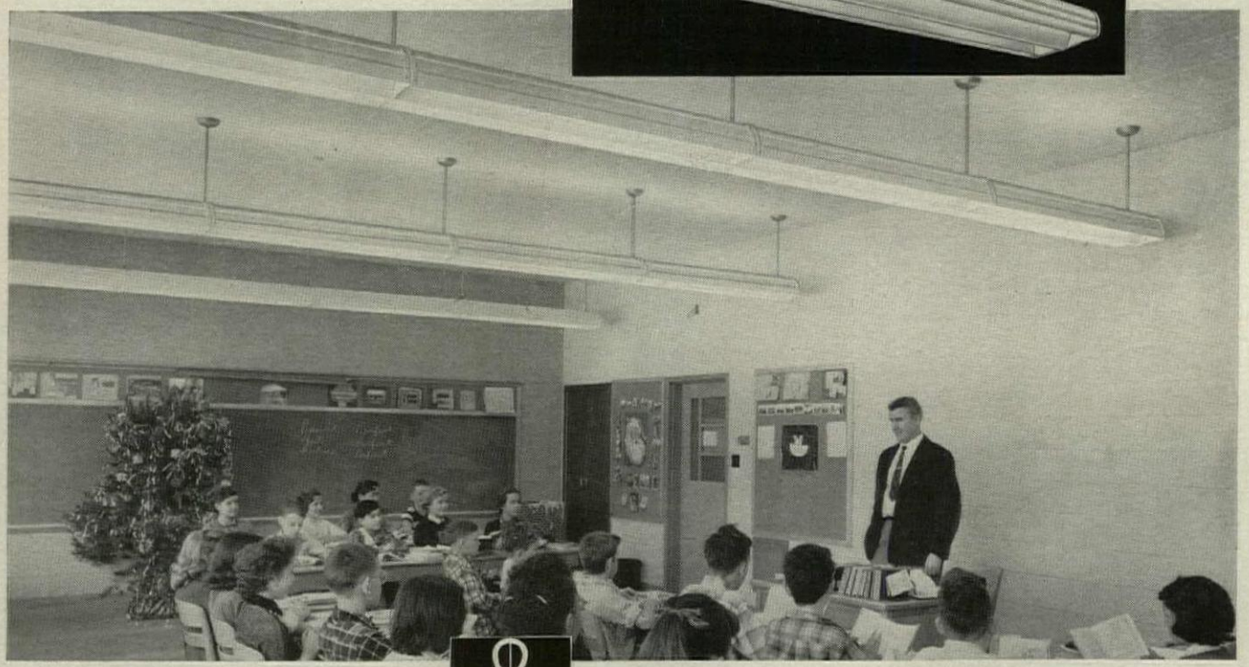
MITCHELL LIGHTS ANOTHER SCHOOL

Monroeville Jr. High School
Monroeville, Pennsylvania

Architect: Walter E. Schardt, R. A., Pittsburgh
Electrical Contractor: Reno Electric Co., Ambridge, Pa.
Distributor: Westinghouse Electric Supply Co., Pittsburgh

INSTALLATION: Over 500 MITCHELL "Low Brightness" Luminaires, suspension-mounted throughout, both louvered and unlouvered, delivering an average of 38 footcandles maintained.





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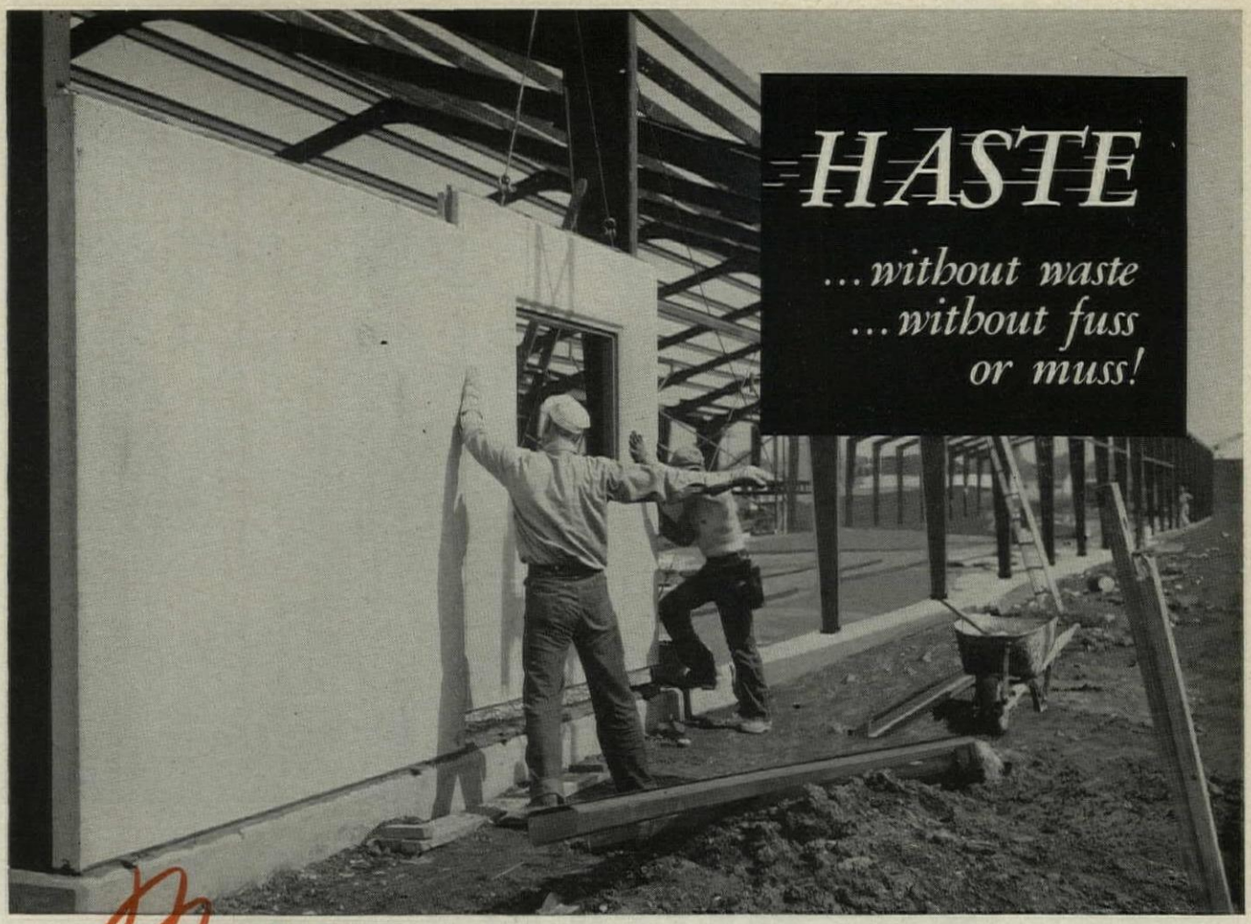

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Our Engineering Department will help you plan your next building . . . show you how the use of Marietta Precast Insulated Concrete Wall Panels will save on construction time and costs. Complete details and literature will be sent at your request.

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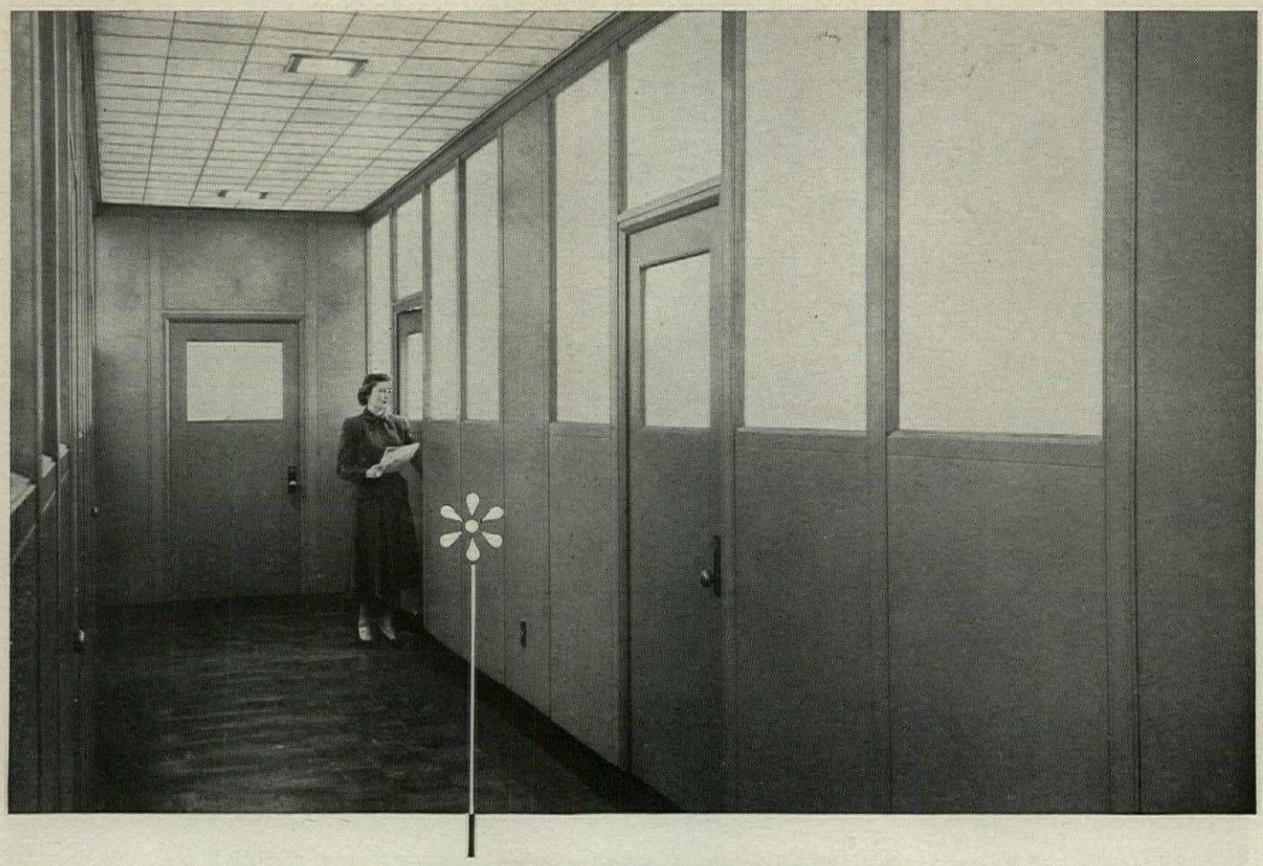

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TO THE SEIBERLING RUBBER COMPANY

When the administrative office building of The Seiberling Rubber Company was built near Akron, Ohio, in 1945, Hauserman *Movable* Walls were installed throughout. Already, reallocations of office space have been required to accommodate additional employees and changing work routines. Result: Savings of $2,273 over comparable tile and plaster wall remodeling costs.

Even more important, however, are the $12,285 maintenance savings since 1945. These substantial savings were made possible through the elimination of repainting expense. Just routine washing preserves the beauty of the exclusive Hauserman lifetime wall finish.

There will be more floor plan changes at The Seiberling Rubber Company as time goes by, and Hauserman walls will be moved quickly and economically to meet changing needs. Of course, maintenance dividends will continue, too. Isn't there an idea here for you?

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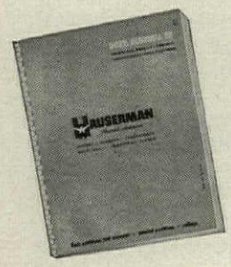

Free Data Manual 55

New 100-page guide for architects contains complete technical details, stock sizes and specifications on *all* types of Hauserman *Movable* Interiors. If you do not already have this new data manual, send for your copy today!

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PEOPLE

Col. Albert E. Stoltz will oversee Air Force academy construction; Wright stays in Wisconsin, son loses round in license dispute

Col. Albert E. Stoltz, 44-year-old airbase construction veteran, has been named director of the Air Force Academy Construction Agency, replacing **Col. Leo J. Erler,** retiring next month, as top man directing design and construction of the nation's new air academy at Colorado Springs, Col. Stoltz has worked on construction of some of the major airbases in this country (Barksdale Field, La. and Randolph Field, Tex., and others in Germany and France). More recently he has been assistant chief of staff for installations for the Air Force in Europe and deputy director of the Joint Construction Agency, assigned to the agency's Paris office.

USAF



STOLTZ

NAMED: **Leffert Holz,** realty lawyer, vice president of the New York Real Estate Board and chairman of its municipal affairs committee, as New York State superintendent of insurance, a post in which he will supervise some of the nation's biggest insurance companies, replacing **Alfred J. Bohlinger,** who last year had a major role in effecting the resignation of Thomas I. Parkinson as president of the Equitable Life Assurance Society; **William O'Dwyer,** former mayor of New York and former ambassador to Mexico, as president (for his important Mexican contacts) and **William H. Bauer** as board chairman (to continue directing operations) of Cia Mexicana de Construcciones Maritimas, subsidiary of a US firm, Bauer, Smith Dredging Co.; **B. T. Fitzpatrick,** until last December general counsel of HHFA, as a special housing consultant to New York City; **Henry A. Jandl,** associate professor of architecture at Princeton University, as consultant to US Steel Homes, Inc.

A.P.



HOLZ

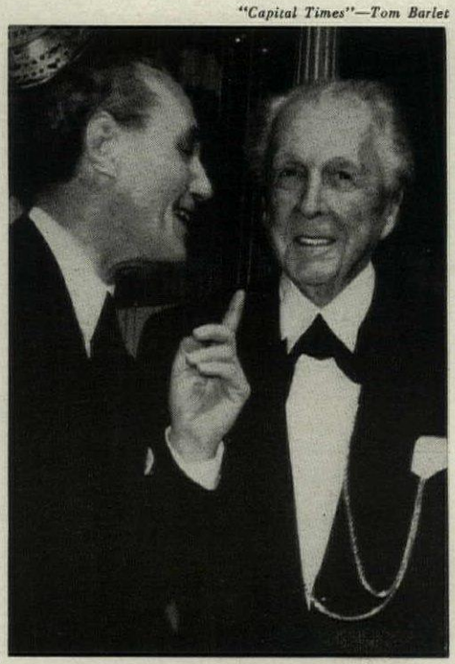
Frank Lloyd Wright decided his home state, Wisconsin, likes him after all. Last fall he announced he would unroof famed Taliesin and leave Wisconsin for good, after the state supreme court ruled that his Taliesin Fellowship was not an educational institution and therefore was taxable (AF, Dec. '54, *News*). Last month Wright listened to harp music and two hours of tributes at a $25-a-plate testimonial dinner at the University of Wisconsin at Madison. He also accepted a $10,000 check to help pay Taliesin's back taxes of $18,000, and announced he would stay in Wisconsin, where he was born nearly 86 years ago. Wright and his wife were guests of **Gov. Walter Kohler** the night of the dinner.

In California, Architect **John Lloyd Wright** won a minor battle against the California board of engineers, but must continue his legal war with the state's board of architectural examiners. The appellate department of the San Diego County Superior Court affirmed last month the dismissal of complaints against Wright under the civil engineers act. But it ruled that the architects' practice act, under attack by Wright and a good many unlicensed designers in California, was constitutional, and sent back two of several counts against Wright under this act for trial in Oceanside Municipal Court. Charges against Wright were that he displayed a sign that "might indicate" to the public that he was an architect licensed in California, and that he failed to tell a client in writing that he was unlicensed (AF, Aug. '54).

ELECTED: **John E. Haines,** vice president of Minneapolis-Honeywell Regulator Co., as president of the American Society of Heating and Air-Conditioning Engineers (formerly heating and ventilating engineers); **Wayne F. Strong,** vice president for manufacturing, as president and board chairman of Iron Fireman Manufacturing Co.; **Douglas L. Elliman** and **John F. Hamlin** as board chairman and president of Douglas L. Elliman & Co., one of New York's leading realty firms; Executive Vice President **T. C. Williams** of Stone & Webster, as president of the National Constructors Assn., and **C. D. Haxby** of Pittsburgh's Rust Engineering Co. as vice president.

MARRIED: **John W. Galbreath,** principal sponsor of the new Socony-Vacuum building in New York and past president of the National Assn. of Real Estate Boards, to **Mrs. Dorothy Bryan Firestone,** widow of Russell A. Firestone, son of rubber company founder Harvey Firestone, Feb. 17 at Miami Beach.

"Capital Times"—Tom Barlet



HAPPY GOVERNOR (L) AND LOYAL WISCONSAN

Dana Young, civil engineering department chairman, has been made dean of Yale University's Engineering School, succeeding **Walter J. Wohlenberg,** who is retiring to devote his time to research and teaching. Young, a specialist on vibration and elasticity of building materials, will begin his new duties July 1. During World War II he worked on guided missiles for the Navy's ordnance bureau and did research at the Johns Hopkins Laboratory of Applied Physics.

Yale News Bureau



YOUNG

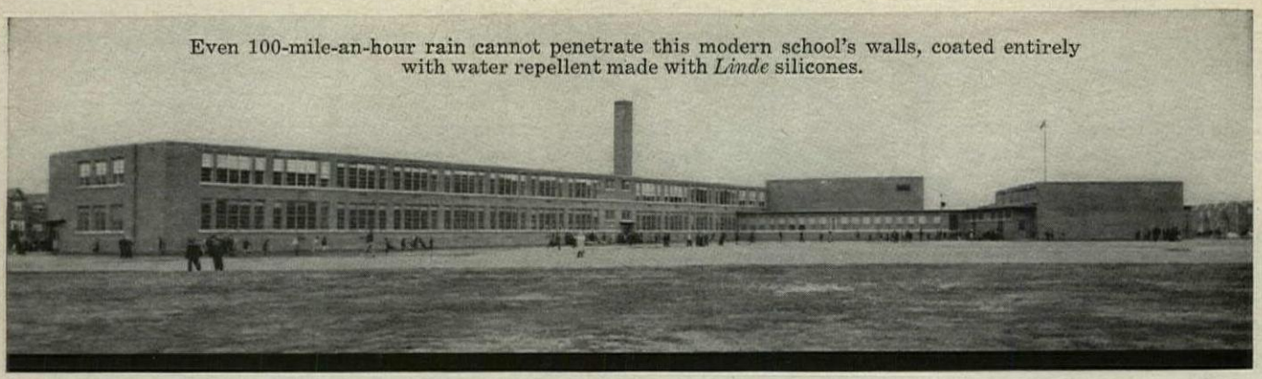
CONGRATULATIONS:—to Madison's **John J. Flad & Assoc.,** and Milwaukee's **Maynard W. Meyer & Assoc.,** and **Grassold, Johnson & Assoc.,** for winning the biennial design awards of the Wisconsin Architects' Assn.; to New York Realtors **Anthony J.** and **Leone J. Peters,** brothers, for winning the 1954 "most ingenious real estate transaction" prize of the Real Estate Board of New York (the transaction: fostering the first new skyscraper in Manhattan's financial district in nearly 25 years).

DIED: noted church designer and speaker **Charles D. Maginnis,** 88, of Maginnis & Walsh & Kennedy, Boston architectural firm, president of AIA in 1937 and 1938, recipient of the AIA Gold Medal, the Laetare Medal from Notre Dame University, and rank of Knight of Malta from Pope Pius XII, Feb. 15 in Boston; **Harry A. Brandt,** 64, designer of B'nai Israel Synagogue in Washington, and federal public housing consultant to the federal government, Jan. 24 in Washington; **Sullivan W. Jones,** 76, state architect of New York State, 1923-28, chairman of the National Construction Planning Board, 1934-35, and consultant on veterans' hospitals, Jan. 26, in New York City; **Julius Miller,** 75, president of Manhattan Borough in New York City, 1921-30, and builder of the borough's West Side elevated highway, Feb. 3, in New York; **Gen. Brehon B. Somervell,** 62, head of Koppers Co. Inc., commander of Army Service Forces during World War II, and New York City WPA director in 1936 (major project: La Guardia Airport), Feb. 13, in Ocala, Fla.



MAGINNIS

for news about TRENDS—*p. 32*



Even 100-mile-an-hour rain cannot penetrate this modern school's walls, coated entirely with water repellent made with *Linde* silicones.

Huge school system approves water repellents made with LINDE silicones for above-grade masonry

"Invisible Raincoat" Protects City's Schools

In one of the nation's largest cities, the above-grade exterior brick and concrete of school buildings is being coated with water repellents made with LINDE Silicones.

More than thirty of the school system's close to 300 older buildings have already been treated. New schools are being treated as erected. To date, 500,000 sq. ft. are done.

Board of Education maintenance engineers say that rain leaks and seepage that once caused costly damage to interior plaster, paint, and woodwork, have been eliminated.

Masonry spalling and cracking caused by water absorption and freezing have been completely stopped. Unsightly efflorescence is a thing of the past. And buildings stay cleaner because rain simply washes dirt down the walls.



Leaks were serious in this older school, so brick was repointed, then coated with silicone repellent. Result: No more problems from moisture.

Why you, too, should specify "Linde" silicones

Above-grade masonry water repellents made with LINDE silicones mean . . . longer life for concrete and brick . . . reduced maintenance inside and out . . . better appearance.

More and more architects are specifying masonry water repellents made with LINDE silicones. They alone provide all these advantages:

- **Clear and Invisible** — Cause no change in color, no shine.
- **One Coat** — For complete water repellency.
- **Penetrating** — Reach correct depth for maximum effectiveness.
- **No Seepage** — Even rain driven 100 miles an hour runs right off, yet . . .
- **Non-Sealing and Pressure Resistant** — Permits masonry to "breathe."
- **Fast-Working** — Dry in 3 hours to complete water repellency.
- **Applicable the Year Round** — Can be applied even at 15 degrees Fahrenheit.
- **Long Lasting** — Tests indicate dependable service for 10 years!
- **Easy to Apply** — Either low-pressure spray or brush.
- **Can Be Painted Over** — With oil-base paints.

• **CALL OR WRITE LINDE**—for the full story on water repellents made with LINDE silicones for above-grade masonry, and a list of representative suppliers. Address Dept. A-3.

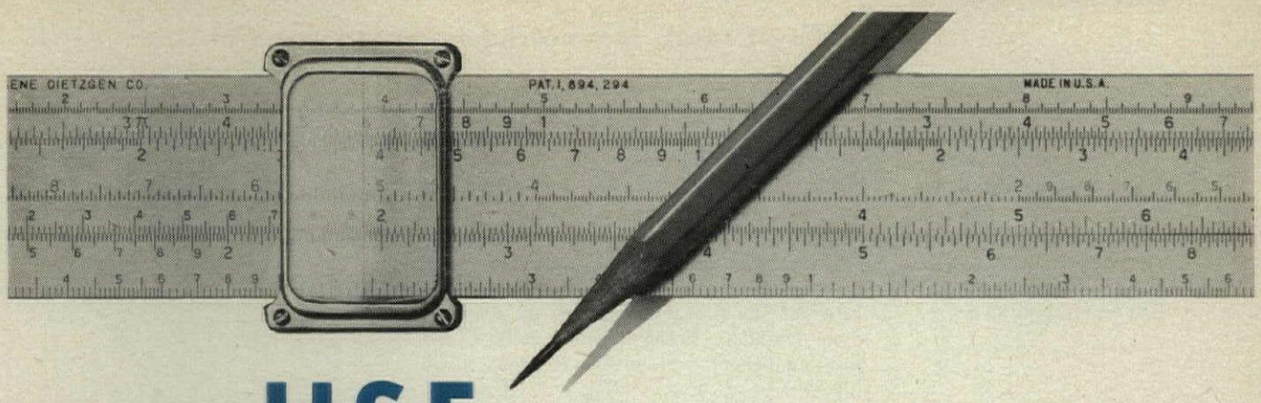
FOR SILICONES LOOK TO

Linde AIR PRODUCTS COMPANY | A DIVISION OF UNION CARBIDE AND CARBON CORPORATION

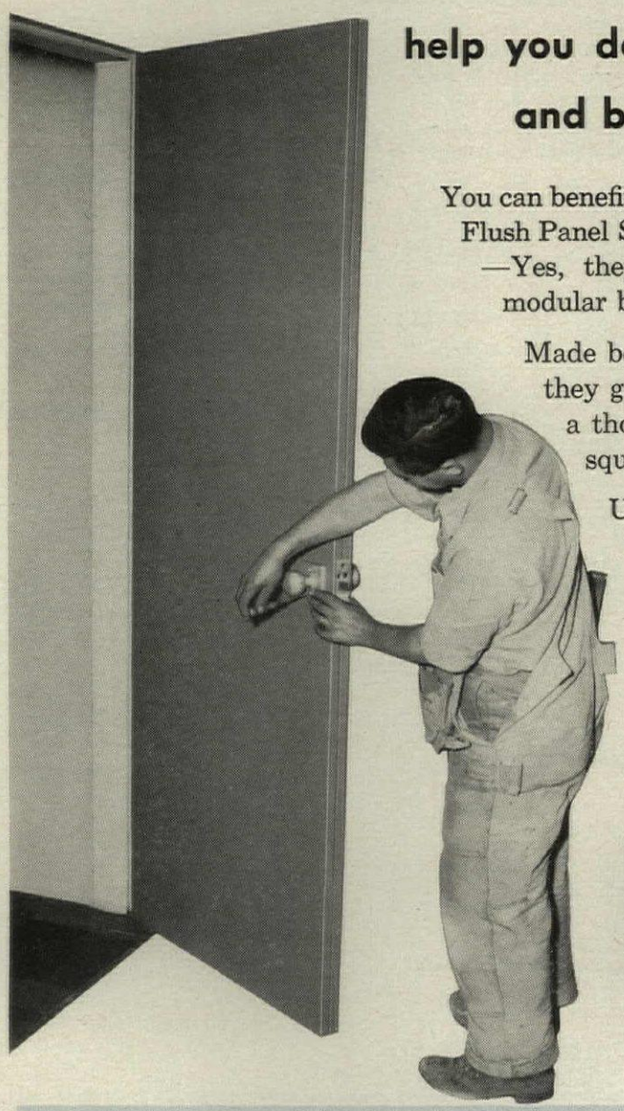
General Offices: 30 East 42nd Street, New York 17, N. Y.

IN CANADA: Dominion Oxygen Company, Division of Union Carbide Canada Limited

The term "Linde" is a registered trade-mark of Union Carbide and Carbon Corporation



USF Modular Steel Doors and Frames help you design to practical standards and benefit from precision quality



You can benefit by designing to USF *standardized* modular Flush Panel Steel Doors and matching frames. They fit! —Yes, they fit each other and fit with all other modular building materials.

Made better!—Manufactured on jigs and fixtures, they give you positive, known quality, in one or a thousand doors, and accuracy of dimensions, square and plumb not possible in 'specials'.

USF is geared to produce precision quality in standardized, modular 1⅜" Wooster Doors or 1¾" Commercial Doors and frames. Make these your standards—help yourself and your client.

United Steel Fabricators,

Incorporated

WOOSTER, OHIO

- Steel Doors and Frames
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$1,000,000 WORTH OF TOOLS, JIGS, FIXTURES GUARANTEE PRECISION

USF has developed approximately $1,000,000 worth of special tools, jigs and fixtures to guarantee the precision manufacture of *standardized* modular steel doors and frames that meet and exceed industry standards for quality and accuracy.

Perfected design, proved manufacturing methods and years of field service records are assurances of the quality and easy installation USF Steel Doors and Frames lend to every project.

TRENDS

New York again leads in building activity; metropolitan areas do 80% of total; commercial is concentrated in cities

Building permit valuations increased last year in 12 of the 23 cities with the largest volume, with Seattle showing the great percentage gain. New York and Los Angeles showed declines, but remained in first and second place in total volume. These reports cover only permits for construction within city limits, rather than "metropolitan areas."

The score in thousands of dollars:

City	1954	1953	% change
New York	546,570	556,935	—1.8
Los Angeles	408,672	430,257	—5.0
Chicago	229,881	226,548	+1.5
Houston	165,338	130,213	+26.9
Dallas	142,690	106,243	+34.3
Philadelphia	137,509	125,537	+9.5
Detroit	126,511	172,925	—26.8
Milwaukee	102,241	80,509	+27.0
Denver	100,569	93,150	+8.0
Baltimore	89,123	98,950	—9.8
Atlanta	87,542	80,951	+8.1
Seattle	77,188	52,190	+47.9
San Diego	72,379	78,621	—7.9
Cleveland	62,255	86,799	—28.3
St. Louis	60,683	49,323	+23.0
Kansas City	58,674	45,388	+29.2
San Antonio	58,308	48,231	+20.9
San Francisco	57,746	61,493	—6.1
Washington, D.C.	55,688	73,471	—24.2
New Orleans	54,948	72,690	—24.4
Cincinnati	53,773	58,165	—7.5
Portland, Ore.	50,526	51,743	—2.4
Memphis	49,178	48,288	+1.8

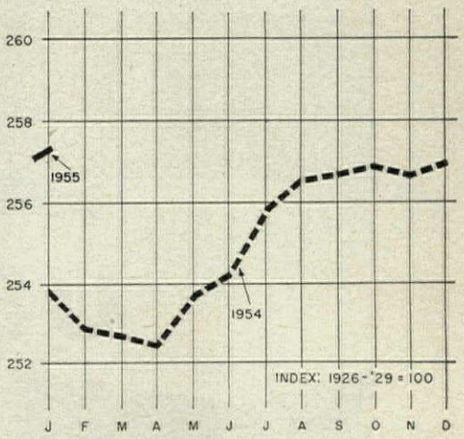
Source: Dun & Bradstreet

Last year the Bureau of Labor Statistics started a new continuous analysis of building permit activity to measure the extent of construction by location — either within central cities or in the outer portions of "metropolitan areas" (the commuter zone suburbs) beyond city limits. Last month its data for the first nine months of 1954 became available. It showed metropolitan area building permits accounting for four fifths (79.6%) of all new building.

In the breakdown by different building types, the data showed that only 30.1% of the dollar volume of new residential construction in metropolitan areas took place within city limits (69.9% in the suburbs). Central cities, however, accounted for 67.8% of the metropolitan area dollar volume of new residential buildings for five or more families, and 93.5% of new public housing.

The BLS' permit data showed that central cities in the first nine months of 1954 received 49.8% of the dollar volume of all new nonresidential building in metropolitan areas. The breakdown:

Commercial buildings	55.8%
Amusement buildings	57.3
Commercial garages	77.8
Gas and service stations	46.1
Office buildings	69.9
Stores and mercantile buildings	46.7
Community buildings	51.8
Educational buildings	46.0
Institutional buildings	70.9
Religious buildings	51.9
Industrial buildings	34.7
Public buildings	52.9



BUILDING COSTS

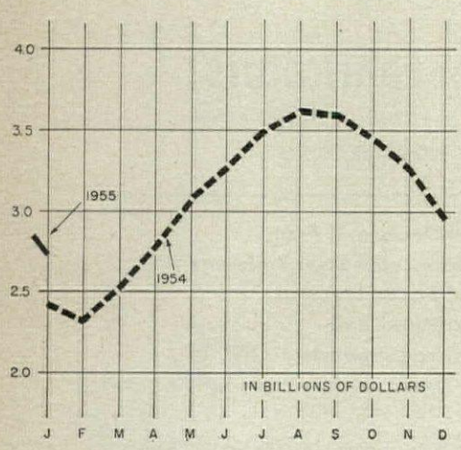
E. H. Boeckh & Associates' building cost indexes, reflecting scattered gains in lumber prices and wage rates, moved up again in January. The consolidated index covering apartments, hotels, office, commercial and factory buildings reached 257.4, up 0.4 points from December and 1.4% above Jan. '54.

NEW CONSTRUCTION EXPENDITURES

(millions of dollars)

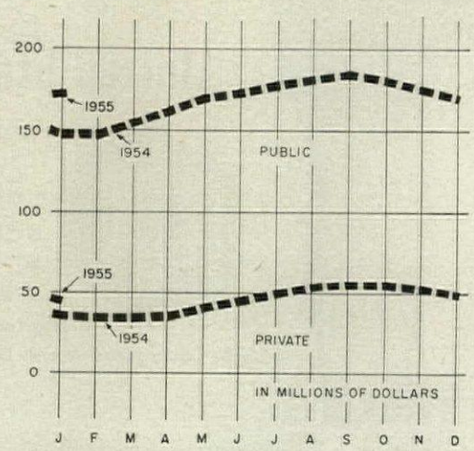
Type of construction	January 1955	January 1954	Per-cent change
PRIVATE			
Residential building (non-farm)	1,091	816	+34
New dwelling units	1,000	730	+37
Additions and alterations	70	63	+11
Nonresidential building	527	486	+8
Industrial	175	179	—2
Commercial	185	164	+13
Other nonresidential building	167	143	+17
Religious	54	42	+29
Educational	48	39	+23
Social and recreational	14	16	—13
Hospital and institutional	27	26	+4
Miscellaneous	24	20	+20
Farm construction	93	102	—9
Public utilities	302	299	+1
All other private	14	7	+100
*PRIVATE TOTAL	2,027	1,710	+19
PUBLIC			
Residential building	23	37	—38
Nonresidential building	337	354	—5
Industrial	95	145	—34
Educational	175	150	+17
Hospital and institutional	24	23	+4
Military facilities	85	73	+16
Highways	145	130	+12
Sewer and water	75	68	+10
Conservation and development	48	50	—4
*PUBLIC TOTAL	734	734	0
*GRAND TOTAL	2,761	2,444	+13

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



TOTAL CONSTRUCTION

January's new building expenditures set a record for the month, totaled $2.8 billion. Commerce-Labor Dept. reports showed the 13% gain over Jan. 1954 was due entirely to increases in private outlays; total public expenditures were the same as a year earlier. Housing starts reached an all-time January peak of 88,000 units. This was 33% greater than Jan. 1954 despite the fact that public housing starts fell to 200, compared with 1,300 a year earlier.



SCHOOL CONSTRUCTION

Expenditures for new school building were at considerably higher levels for the first month of 1955 than at the start of 1954. Commerce-Labor Dept. reports put private school outlays in January at $48 million, 23% over Jan. 1954, and public outlays at $175 million, a 17% increase from a year earlier. Construction outlays would not reflect any increased spending as a result of proposed federal aid for schools (p. 9) until some time after a definite program was enacted.



ANNOUNCING

The Classroom Furniture of Tomorrow . . . **TODAY**

Samsonite





a new concept in color...

a new dimension in design

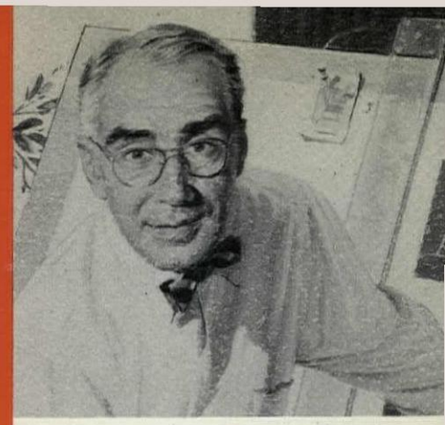


The Mobile Samsonite Open Front Desk gives maximum storage space! Forms related unit with matching Pivot-Back chair.

The bright magic of

Russel Wright

...only with Samsonite Classroom Furniture



New sun-bright colors make drab Classrooms Cheerful

This new classroom furniture makes attention less tiring, learning more fun!

Samsonite combines creative imagination with scientific analysis and survey testing in 30 states...creates the most modern classroom furniture in the world!



290 square inches of writing surface! New Samsonite *Tablet Desk Chair* plays multiple roles in classroom, meeting rooms, lunchroom.

IN COMFORT...

all dimensions and contours embody gently flowing lines in back and seats, to promote proper posture, and insure maximum classroom attention. Desk and chair combinations come in *nine* posture-perfect sizes for every grade and for every school.

IN MOBILITY...

Samsonite's modern design allows the instructor to create exciting, informal layouts or conventional rectilinear arrangements . . . move units from room to room without conflict in color or contour.

IN DURABILITY...

new features like aluminum spats on legs, evidence Samsonite's insistence on furniture that's "strongest ...lasts longest"...maximum economy for burdened school budgets.

A new note in schoolroom furniture, Samsonite's *Circular Table* lends an informal, non-institutional look to the classroom.



Samsonite's four colors were carefully selected to blend or contrast effectively with classroom colors nationally in use... to mix-match harmoniously among themselves, in pairs, or in other combinations. Look at the bright possibilities the new selection gives you.



GREY

A new, sparkling Grey tone blends with every color scheme.

BROWN

A new "freshened" Brown avoids usual drabness of that color.

TURQUOISE

A friendly Green-Blue introduces exciting classroom color interest.

TERRA COTTA

A lively yet subdued Red, refreshing in any room.

New comfort-curved contours keep young bodies healthy



For all group activities, Samsonite's colorful *Activity Table* with three book boxes. (Also available with six boxes.)



Newness of line, brilliance of color, keynote Samsonite's new *Teacher's Desk*. Maximum work and storage space!



Samsonite *Lift-Lid Desk*. Fingers cannot be caught between lid and book box because of special "recessing". Friction hinge prevents slamming!



New Samsonite *Trapezoid Table* adapts in groups to endless combinations for varied school activities.



New rolling contours in Samsonite's *Unit Chair!* Available with Samsonite's new *swivel back*.

Back swivels to cradle every body movement!



Samsonite *Student Desk* can also serve as table. Several can be pushed together for group projects.

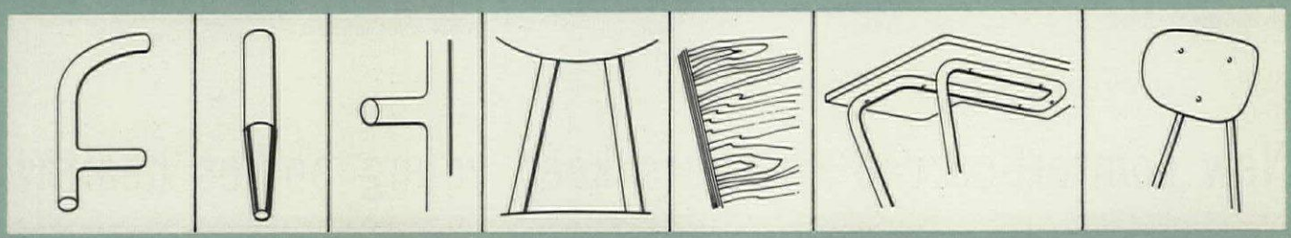


Plenty of leg room and storage space! The Samsonite *Shelf Desk* brings modern color, graceful lines to the classroom.

Why Samsonite is your smartest school buy

New construction advances for a bright new age in classrooms

MONEY SAVING DURABILITY



Tubular steel frame construction to combine lightweight mobility with extreme strength.

Roller-swaged leg taper. Thicker tubing at bottom gives extra durability and support. Tapers encased in aluminum spats.

Resistance welded joints. Metal joints made in specially designed machines. Welds are as strong as frame itself.

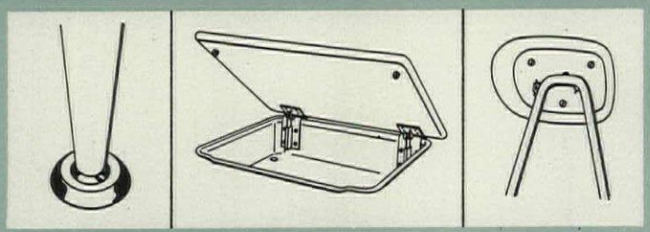
Electrostatically-deposited enamel on bonderized metal. Absolutely uniform enamel coverage. Non-chalking, highly resistant to abrasion and chipping.

Best quality adhesives. Wooden joints are bonded with water resistant urea resin adhesives, cured under heat and pressure.

Perfectly balanced supports. Tablet arms and tablet desk supports are made of continuous lengths of steel. Cantilever distributes all stresses evenly.

Plastic back support. Never needs refinishing. Steel reinforcement plate insures perfect distribution of stresses.

FULL CLASSROOM SILENCE

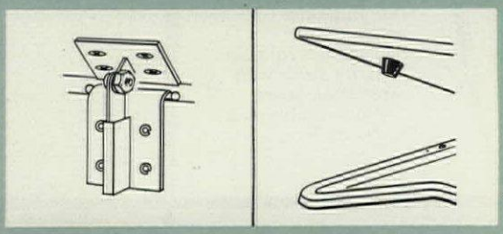


Silent glides. Polished steel glides cushioned in rubber eliminate distracting noise from moving furniture.

No-slam lids. Rugged friction hinges prevent slamming. Countersunk rubber grommets eliminate all possibility of noise.

Rubber stop on pivoting back guarantees completely silent pivot operation.

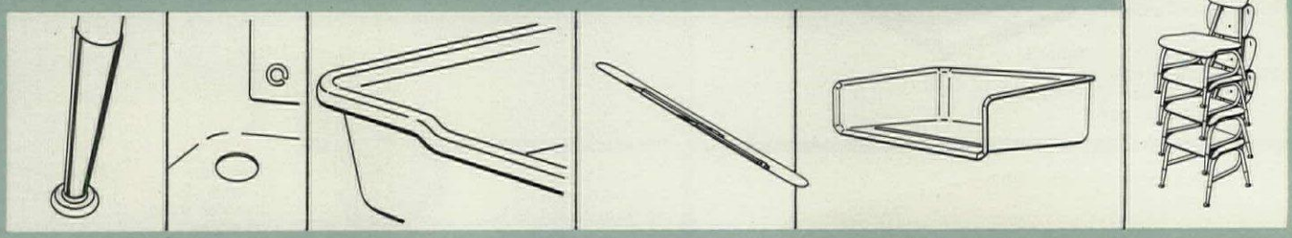
MISCHIEF PROOF



Self-locking fasteners can't be loosened with coins, knives or even screwdrivers.

Roller bumpers on desk lid are countersunk, cannot be pried loose.

EASY, TIME-SAVING MAINTENANCE



Tapered aluminum spats camouflage scuffs and mop-marks.

Clean out holes in desks and book boxes prevent dust accumulation, save time in cleaning.

Flanged, beaded and beveled corners and edges simplify cleaning, eliminate dust accumulation.

Curved edges and grooves on pencil trays for thorough cleaning in a jiffy.

Single stamping book boxes, racks and shelves. No seams, joints or rough edges to collect dust or hamper cleaning.

Easy stacking. Shape of chair legs compatible with shape and size of seats. Chairs may be stacked securely four high.

Makers of the famous Samsonite folding tables and chairs for every institutional use

New Samsonite Classroom Furniture Catalogue

Complete specifications on new Samsonite Classroom Furniture, fully illustrated in color. Write to Shwayder Bros., Classroom Furniture Division, Detroit 29, Mich. for a copy and for the name of your nearest distributor.

Samsonite ...the Classroom Furniture that's

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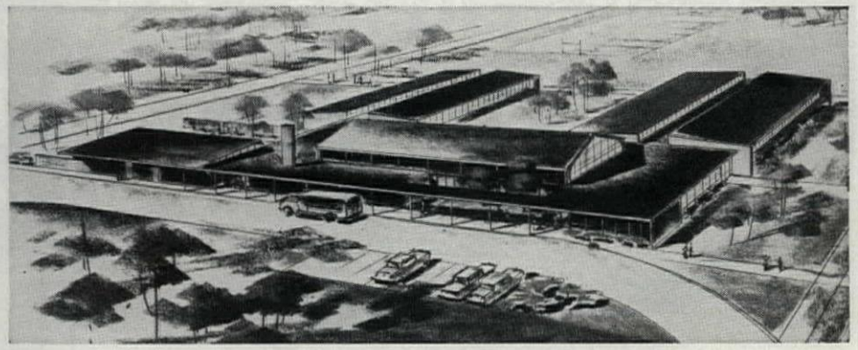
Because **V-LOK** Reduces Erection Costs

A school designed with a V-LOK Steel Frame can be erected and under roof in a very few days—using a minimum of skilled labor and equipment to expense against the job. Interlocking structural members require no bolting, riveting or welding — except anchor bolts.



Because **V-LOK** Gets a School Under Roof Faster

A school under roof in a few days permits craftsmen to move in and start finishing operations for much earlier occupancy. This speed combined with actual economies—per sq. ft.—puts a School Board definitely over on your side for future expansions.



Because **V-LOK** Designs Readily Into School Layouts

With V-LOK—you're the Architect, unhampered in the most modern layouts you want to design. You have adequate spans and loading capacity plus a practical joining of accessory materials and component structural units. Contact us for design standards.



Illustrated here are three of the many V-LOK Schools designed by Walter Anicka of Ann Arbor, Michigan. At the top is the Saline Elementary School, Commermercial Const. Corp., General Contractor.

Second is the Willow Run High School, Birchard & Roberts, Dearborn, Gen. Contractor. Third is the South Lyon High School, A. N. Hickson, Inc., General Contractor, Detroit, Michigan.

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the Hospital Staff is always in *SILENT CONTROL* of equipped patient room doors

no free opening or closing action . . . no unexpected slamming . . . no rattle or latching click. Equipped with these GJ devices the door functions silently with the staff in complete control.

A FRICTION DOOR HOLDER

enables the nurse to place the door at any degree of opening . . . it will stay until moved to another position. Patient can look out without being in full view of passing visitors. Concealed or surface mounted. Operates silently.

ARM PULLS

enable the staff to open doors with arm while carrying tray or to keep hands sterile.

A SILENT DOOR LATCH

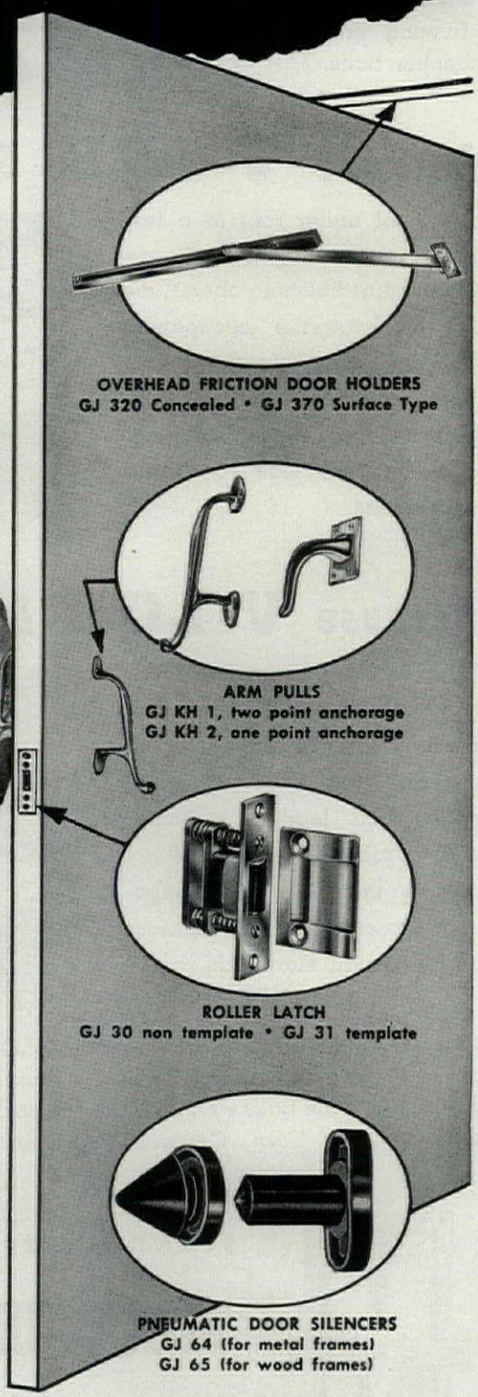
with rubber roller, silently engages strike, without annoying click. Closed door will not rattle.

DOOR AND FRAME SILENCERS

absorbs the sound and impact of door closing. Eliminates door rattle. Pneumatic cushions — permanently installed in door stops.

Also GJ door holders and stops for hospital entrance doors, vestibule doors and utility room doors . . . overhead installed as well as floor and wall types.





OVERHEAD FRICTION DOOR HOLDERS
GJ 320 Concealed • GJ 370 Surface Type

ARM PULLS
GJ KH 1, two point anchorage
GJ KH 2, one point anchorage

ROLLER LATCH
GJ 30 non template • GJ 31 template

PNEUMATIC DOOR SILENCERS
GJ 64 (for metal frames)
GJ 65 (for wood frames)

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America's first building* with COLORED ALUMINUM spandrels

*ALCOA Office Building, Cincinnati, Ohio
Architect: Paul Schell
Contractor: Frank Messer & Sons, Inc.

Pioneering in aluminum curtain wall construction for almost eight years, General Bronze is today recognized as the outstanding leader in this field.

Now, General Bronze adds to its reputation for leadership by fabricating the first *colored* aluminum wall facing panels in an aluminum curtain wall – panels for the new ALCOA office building in Cincinnati, Ohio.

This modern new building with its attractive aluminum spandrels of soft gold color on one facade and blue on the other, is but an indication of what is possible in new building design. Now, architects are able to assure their clients all the advantages of maintenance-free, non-rusting, light-weight aluminum wall panels, while employing color in building design to an extent never before thought possible.

General Bronze is proud that it was selected to fabricate the colored aluminum wall facing panels and the vertically pivoted, reversible windows for this striking new building. It is indeed another tribute to our reputation for quality products, for sound engineering and design and for precision workmanship.

Whether you are planning schools, hospitals, apartments, commercial or monumental buildings – and whether your problems pertain to windows, spandrels, curtain walls or architectural metalwork, our background of 45 years of practical experience can be of real value to you – especially when your requirements are complex or unusual. We will be glad to discuss your problems with you any time. Our catalogs are filed in Sweet's.

QUALITY APPROVED (TYPE)
A.W.M.A. Quality Specifications—Materials, Construction, Strength of sections and Air infiltration requirements—confirmed by Pittsburgh Testing Laboratory
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GENERAL BRONZE CORPORATION • GARDEN CITY, N. Y.

PERMATITE DIVISION—Custom-built Windows, Architectural Metal Work and Revolving Doors. **ALWINTITE DIVISION**—Stock-size Aluminum Windows
BRACH MFG. CO. DIVISION—Multel, T. V., Radio and Electronic Equipment. **STEEL WELDMENTS, INC. DIVISION**—Custom fabrication in steel and iron.

BETTER *Light* FOR BORDEN LAB

New Research Building Features Window Walls of Coolite Wire Glass

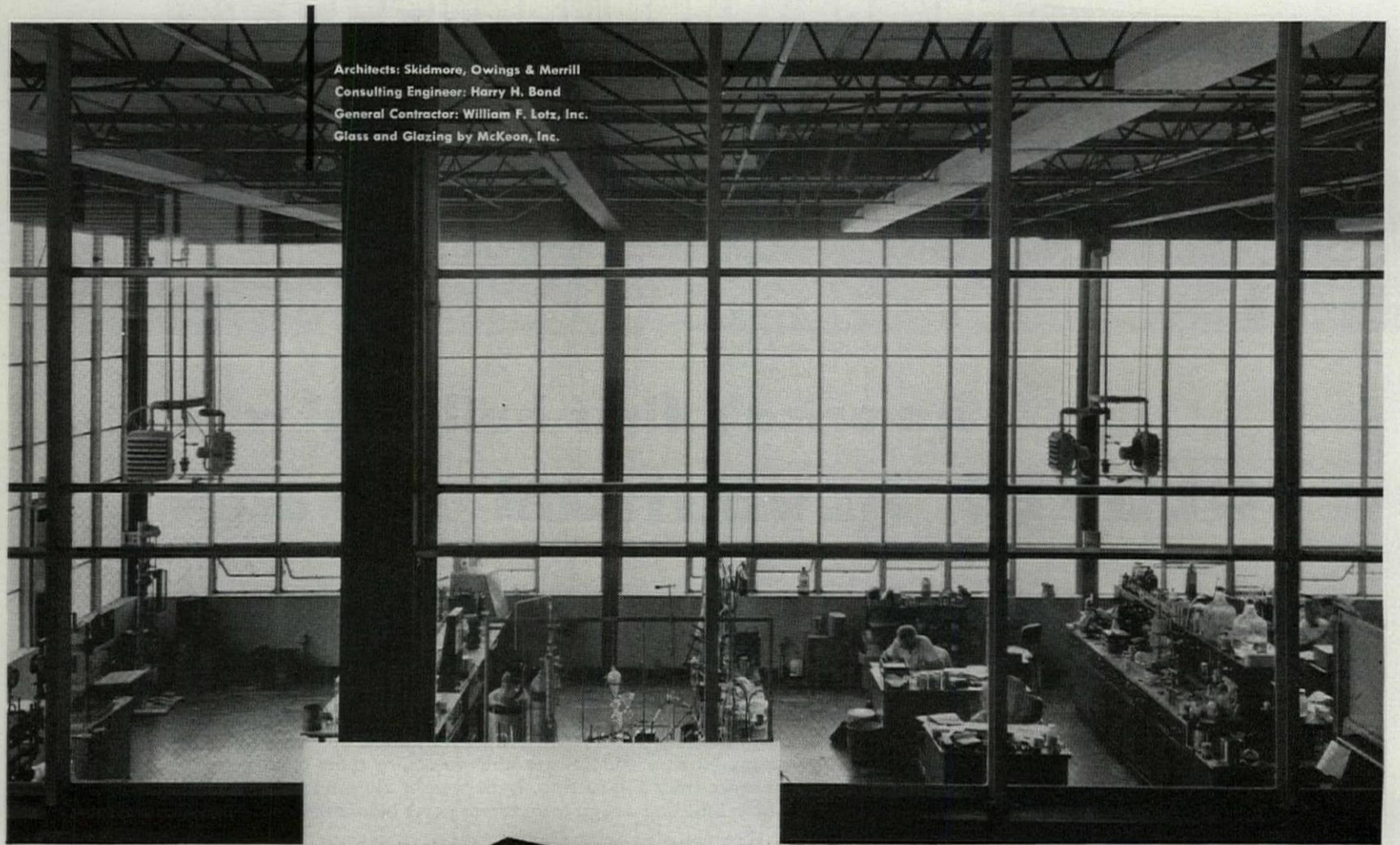
The importance of good illumination to industrial research is reflected in these bright walls of Coolite, Heat Absorbing and Glare Reducing Glass. Interiors are flooded with natural illumination, free of the harmful effects of "raw" sunlight that cause optic and physical discomfort.

4800 sq. ft. of Coolite makes these new laboratories appear larger, brighter, more comfortable . . . with plenty of conditioned light for the most exacting scientific work.

Yet, the proven ability of Coolite to absorb unwanted solar heat helps keep interiors cooler. Occupants see better, feel better, work better and more accurately in areas glazed with Coolite.

Coolite Wire Glass protects against shatter damage, resulting from fires. This Approved Fire Retardant No. 32 tends to bottle up and thus prevent the spread of flames. And the Coolite wire glass adds beauty to the exterior—the clean, blue hue harmonizes with the crisp, modern design . . . its benefits minimize need for unsightly painted screens or blinds.

For maximum comfort and protection specify Mississippi Coolite Heat Absorbing and Glare Reduced Wire Glass. Available through leading distributors of quality glass. Mississippi offers a wide variety of translucent, light diffusing glass patterns for every glazing requirement.



Architects: Skidmore, Owings & Merrill
Consulting Engineer: Harry H. Bond
General Contractor: William F. Lotz, Inc.
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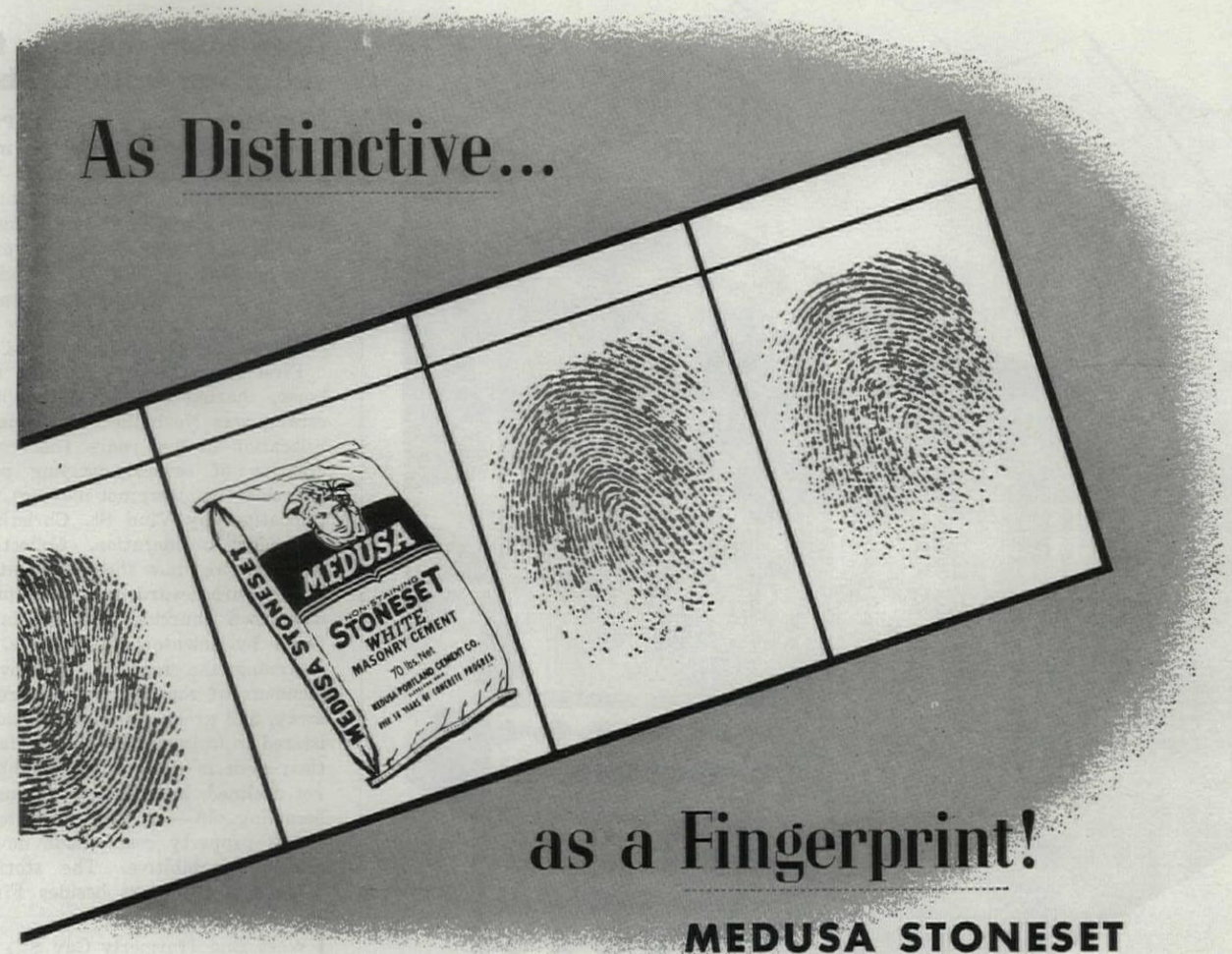
see our catalog in S or write for copy

As Distinctive...



as a Fingerprint!

MEDUSA STONESET
White Masonry Cement

Experts say every fingerprint is different—and we say Medusa StoneseT Mortar Cement is as distinctive as fingerprints! It's the only white masonry cement made from world-famed Medusa White Portland Cement. As a result of this difference . . . this whiteness . . . wonderful things happen to masonry when you specify Medusa StoneseT White Masonry Cement. The unstained, uniformly white mortar joints give your masonry units a far more beautiful appearance. And Medusa StoneseT properly tinted makes mortar that harmonizes perfectly with the exact color of the face brick, stone, marble or glass block units you are using.

But the best part is, you can absolutely depend upon Medusa StoneseT . . . Thousands of buildings—some twenty to twenty-five years old—stand as living testimony of its dependability. For mortar work that is different, insist upon StoneseT.



North Oshawa Public School, Oshawa, Canada

MEDUSA Portland Cement Company

1000 Midland Building • Cleveland 15, Ohio

SALES OFFICES
Cleveland, Ohio
Chicago, Illinois — Toledo, Ohio
Pittsburgh, Pa. — New York, N. Y.
Milwaukee, Wisc. — York, Pennsylvania

WHITE • WATERPROOFED WHITE • GRAY
WATERPROOFED GRAY • AIR ENTRAINING • STONESET
HIGH EARLY STRENGTH • BRIKSET
WHITE TILE GROUT CEMENT

MAKERS OF AMERICA'S FINEST PORTLAND CEMENTS FOR OVER SIXTY YEARS



HONEYLITE suspended ceiling in Macy's Hillsdale, California, store. Inset shows close-up of expanded aluminum honeycomb construction.

Macy's HILLSDALE

CHOOSES HONEYLITE



Why? Because of HONEYLITE'S all-metal, expanded aluminum honeycomb construction. HONEYLITE provides soft, shadow-free lighting...has 95% or better light transmission efficiency. It is fireproof, and designed to conceal overhead pipes, sprinkler heads and air plenums. HONEYLITE is efficient, safe...strikingly beautiful when used in full ceiling or fixture unit lighting. Additional information on request.

HONEYLITE LIGHT-DIFFUSING, ALL-METAL ALUMINUM HONEYCOMB CEILINGS ARE A DEVELOPMENT OF

HEXCEL PRODUCTS CO.

DEPT. H, 255-61st STREET
OAKLAND 8, CALIFORNIA

NEWS

Continued from p. 32

Downtown churches face suburban trend problems

Nashville's historic First Presbyterian Church voted in November to move to the suburbs from its 110-year-old "Egyptian" landmark edifice, the oldest church structure in the city. Story has it that the early congregation rejected two sets of plans for this building by William Strickland, who also designed the Tennessee Capitol, so for the third set he purposely drew an eyesore —and it was promptly accepted.

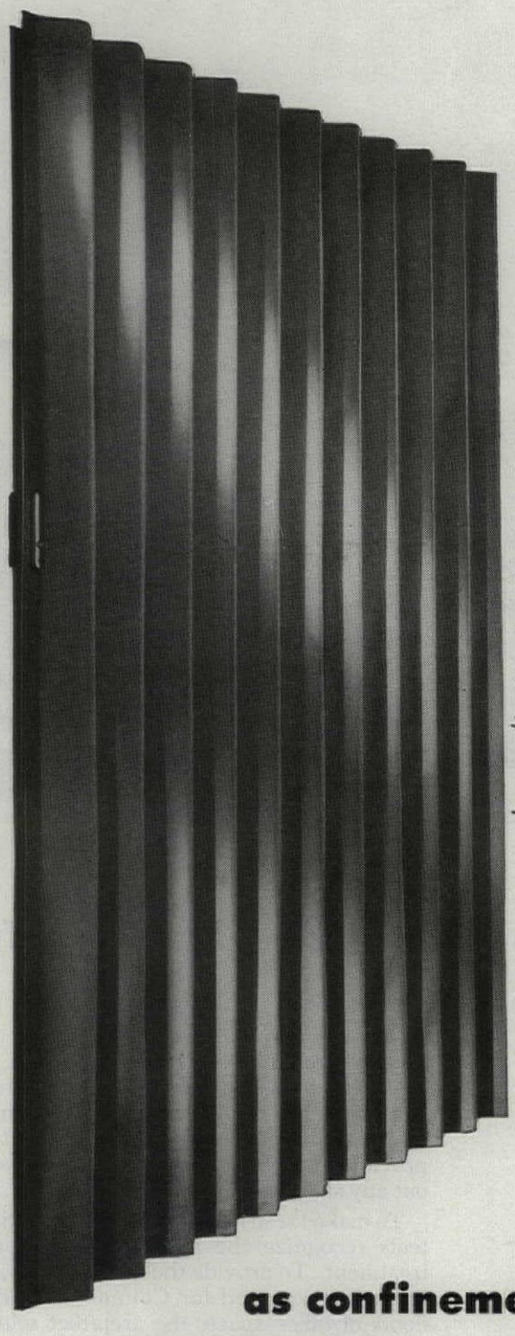
First Presbyterian's move to a suburban home, sharing a 5-acre site with a youth center, was Nashville's sixth major church relocation in five years (not counting the creation of several outlying parishes by churches that were not moving). A seventh relocation, by Vine St. Christian Church, is under consideration. Collectively these shifts showed how the movement of population suburbanward has posed problems for downtown churches very similar to many faced by downtown merchants.

Among the reasons for moving: many members of some churches were migrating away, and greater numbers could be administered to in large new residential communities; even in cases where membership had not declined, but increased, structures were becoming old—one was about to fall down —and property costs made downtown expansion prohibitive. The stories on the other major movers besides First Presbyterian were revealing:

- West End (formerly Gay St.) Synagogue moved in 1949 to a new modern suburban structure by Architect Percival Goodman. In 1940 it served 275 families, today 550. Its old quarters were sold to the state for an office building.
- First Lutheran relocated on the fringe of the business district in 1951 in a new building of traditional Gothic design by Marr & Holman of Nashville. The old church was razed and is now a parking lot.
- First Church of Christ, Scientist, began losing members about five years ago, so in 1953 merged with the suburban Second Church. The consolidated congregation is now called the First Church and plans to enlarge the former Second Church building.
- Immanuel Baptist was completing last month its transfer into a new Colonial-style suburban structure by Architects Hart, Freeland & Robert. Before moving it had about 1,100 members, the same as in 1940, although it also helped establish a new parish in the suburbs in the interim. Its old building will be sold.
- Vine St. Temple is now building a modern structure in the suburbs from plans by Architect Sigmund Braverman. Its downtown property has been sold and will become an office building.

Two major confirmed downtown churches in Nashville are the Central Church of Christ and McKendree Methodist. Central feels there are services a downtown church can provide that could not be ministered from the suburbs. It has boys' and girls'

continued on p. 42





There's no such thing as confinement... with Modernfold doors

In hospitals, clinics and medical office buildings, space requirements change from minute to minute, but the need for privacy is constant.

How to have both privacy and flexible space in any building can be solved with versatile, long-wearing MODERNFOLD doors and walls which enclose areas with finger-tip ease or expand space instantly when more room is called for.

With its graceful lines and host of eye-catching colors, MODERNFOLD enhances the beauty of any decorating scheme. And, of course, MODERNFOLD is built for hard wear. Because of its tough vinyl covering and balanced, double-strength steel framework (all concealed), it delivers an almost unlimited life of efficient, trouble-free service. Models have been operated more than a million times without giving any indication of trolley or track wear or frame weakness.

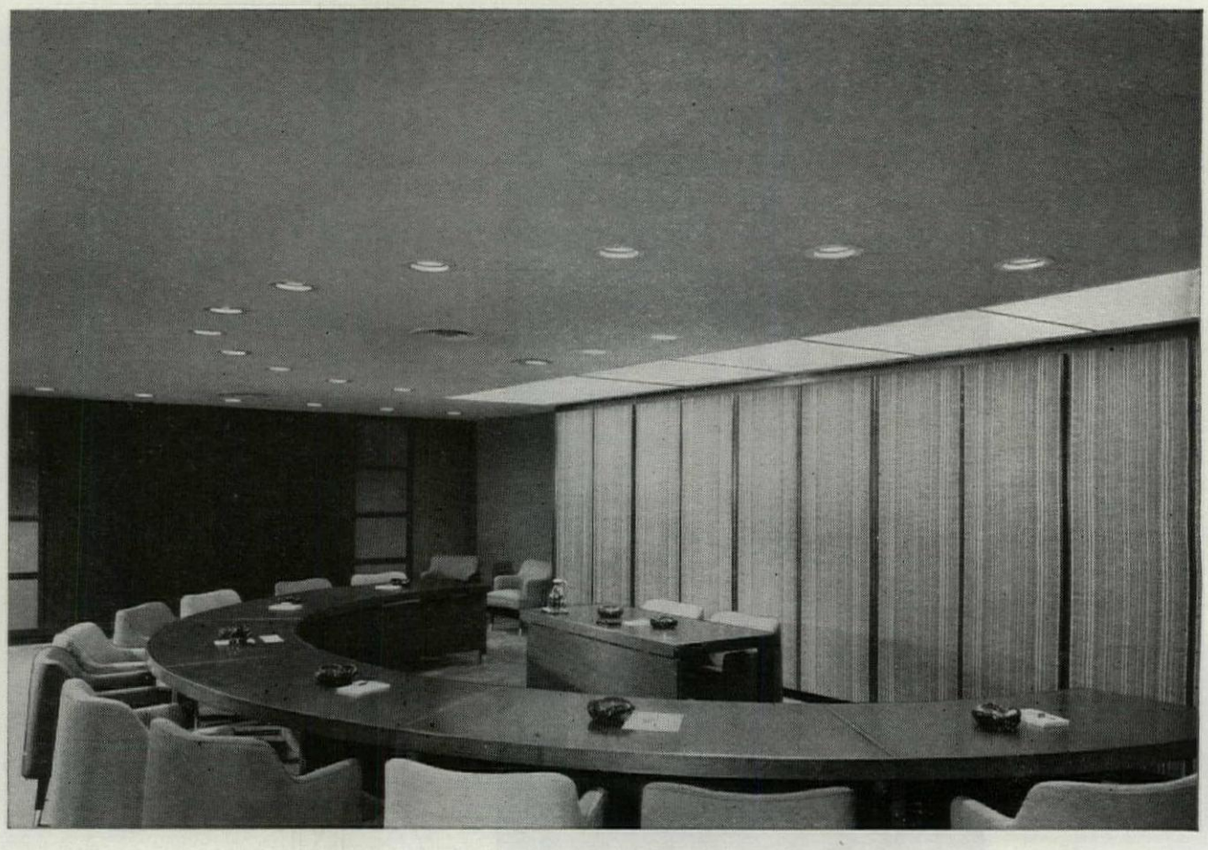
Space in any building need never be confined again, for MODERNFOLD gives both flexibility and privacy.

The MODERNFOLD Custom line—which comes in a wide variety of colors and is for openings of any size—is available through installing distributors, listed under "Doors" in city classified directories. The Spacemaster line—which can be painted or slip-covered and is for standard openings—is available at your building supply dealer. Or write New Castle Products, Inc., Dept. C32, New Castle, Indiana. In Canada: New Castle Products, Ltd., Montreal 6.

Full details in Sweet's file

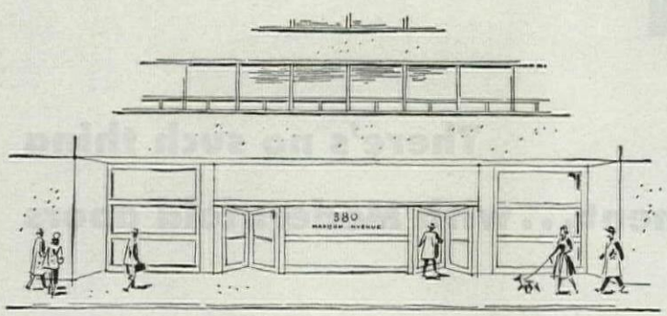
modernfold®
DOORS

© 1955, NEW CASTLE PRODUCTS, INC.



A semi-circular conference table contributes an unusual note to the modern décor of the board room. The fissured, white-painted ceiling of Armstrong Travertone adds beauty besides promoting quiet.

Sound conditioning basic in open planned offices



Columbian Carbon Company,

New York, N. Y.

Architect: *J. Gordon Carr*
General Contractor: *Cauldwell-Wingate Co.*
Acoustical Contractor:
William J. Scully Acoustics Corp.

Today's modern office is a far cry from most of its pre-war counterparts. Open planning, an extensive use of room dividers, and other features of contemporary design as exemplified in the Columbian Carbon Company's new executive offices provide spaciousness, comfort, and beauty without any sacrifice of functionalism.

To make these modern interiors practical, architects recognize the need for proper acoustical treatment. To provide the quiet, beauty, and extra fire safety required for Columbian Carbon's two floors of office space, the architect selected ceilings of Armstrong Travertone* and Arrestone®.

Travertone's high acoustical efficiency soaks up as much as 80% of distracting noise and helps maintain a pleasantly quiet atmosphere despite the hustle and bustle of a busy working day. Travertone's handsomely fissured, white-painted surface also adds beauty to the décor, and its mineral wool composition contributes to fire safety.

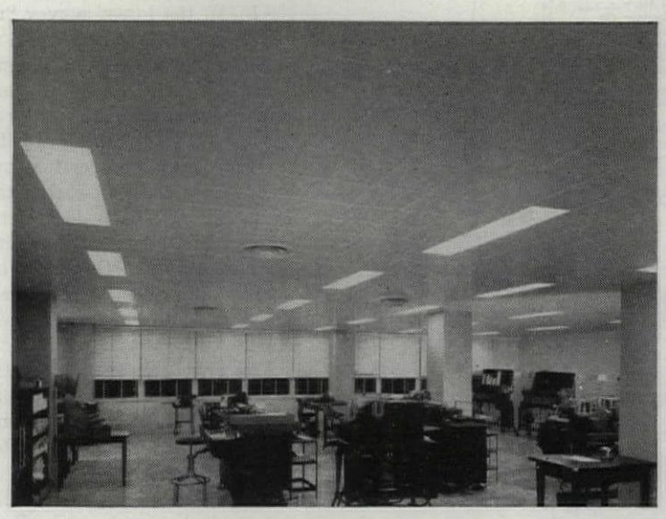
In the machine accounting areas, where noise absorption is especially important, Armstrong Arrestone has been installed. This perforated metal-pan material is unusually efficient, has a noise-reduction coefficient of 0.85. Get full details on Travertone, Arrestone, and other Armstrong sound-conditioning materials from your local Armstrong Acoustical Contractor.

For the free 24-page booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4203 Rooney Street, Lancaster, Pa.

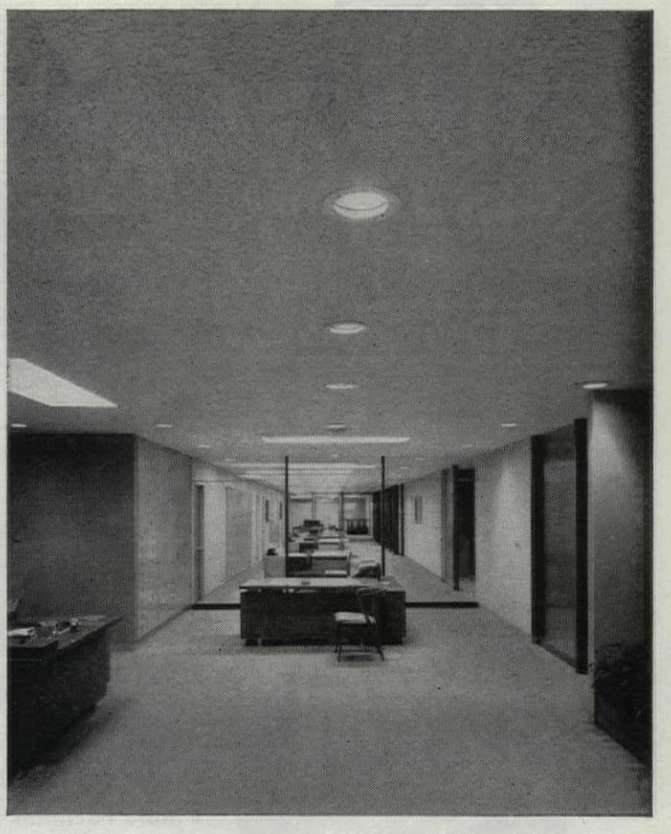
* Trade-Mark



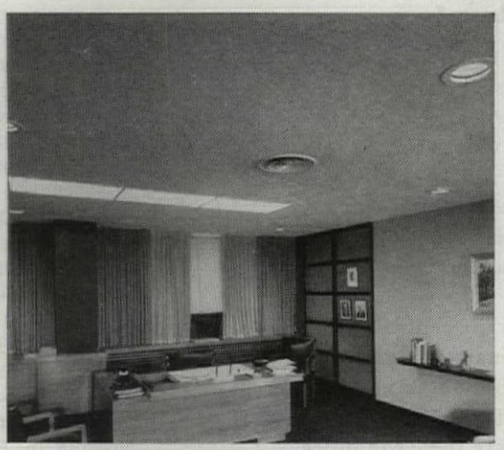
Visitors are welcomed to the Columbian Carbon Company by beautiful, restful surroundings. The noise-absorbing ceiling of Travertone contributes to this atmosphere, blends well with the up-to-date décor.



Sound conditioning this punchboard accounting machine room required an efficient acoustical material. Armstrong Arrestone was chosen for its high noise-absorbing qualities as well as its easy maintenance.

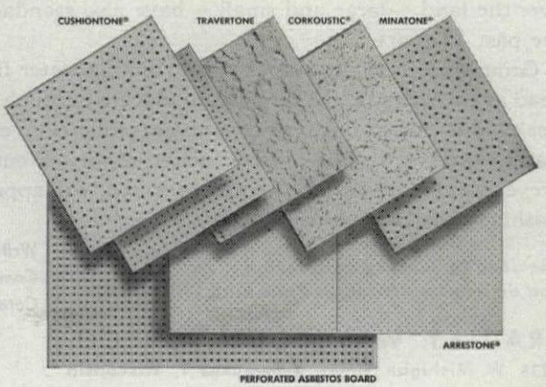


Glass partitions in the executive's secretarial area help promote a feeling of spaciousness. This "open" feeling is further carried out by the monolithic appearance of the square-edged Armstrong Travertone ceiling.



Dignity, beauty, and quiet are provided the president's office by the Travertone ceiling. This material will stay smart looking and clean for years with an occasional washing or repainting.

Armstrong ACOUSTICAL MATERIALS



NOW

100

OUT OF THE

100

LARGEST COMPANIES HAVE

The 100 Largest Industrial Companies

Total Assets, 100 Largest Manufacturing Corporations, as Reported at End of 1953 (In Millions)

Allied Chem. & Dye Cp.	$703	Kennecott Copper Corp.	$746
Allis-Chalmers Mfg. Co.	402	Liggett & Myers Tob. Co.	497
Aluminum Co. of Amer.	906	Lockheed Aircraft Corp.	260
Amer. Can Co.	432	Mathieson Chem. Cp.‡	260
Amer. Cyanamid Co.	443	Monsanto Chemical Co.	362
Amer. Smelt. & Ref. Co.	864	Philip Morris & Co.	256
Amer. Tobacco Co.	801	Nash-Kelvinator Corp.*	233
Amer. Viscose Corp.	268	Natl. Dairy Prod. Corp.	425
Anaconda Cop. Min. Co.	836	Natl. Distillers Prod. Cp.	432
Armco Steel Corp.	465	Natl. Lead Co.	295
Armour & Co.	474	Natl. Steel Corp.	528
Atlantic Refining Co.	571	Ohio Oil Co.	318
Avco Mfg. Corp.	223	Owens-Illinois Glass Co.	222
Bendix Aviation Corp.	329	Phelps Dodge Corp.	345
Bethlehem Steel Corp.	1,783	Phillips Petroleum Co.	1,039
Boeing Airplane Co.	232	Pitts. Plate Glass Co.	442
Borden Co.	296	Procter & Gamble Co.	444
Borg-Warner Corp.	260	Pullman Inc.	229
Burlington Mills Corp.	301	Pure Oil Co.	383
Caterpillar Tractor Co.	261	Radio Corp. of Amer.	494
Celanese Corp. of Amer.	322	Republic Steel Corp.	741
Chrysler Corp.	898	R. J. Reynolds Tob. Co.	599
Cities Service Co.	1,103	Reynolds Metals Co.	482
Coca-Cola Co.	236	Richfield Oil Corp.	262
Colo. Fuel & Iron Corp.	215	Schenley Industries	414
Continental Can Co.	321	Shell Oil Co.	985
Continental Oil Co.	409	Sinclair Oil Corp.	1,141
Crown Zellerbach Corp.	243	Singer Mfg. Co.	405
Deere & Co.	431	Skelly Oil Co.	275
Distillers Cp.—Seagrams	458	Socony-Vacuum Oil Co.	2,154
Douglas Aircraft Co.	274	Sperry Corporation	259
Dow Chemical Co.	769	Stand. Oil Co. of Calif.	1,535
E. I. duPont de N. & Co.	1,846	Stand. Oil Co. (Ind.)	2,036
Eastman Kodak Co.	524	Stand. Oil Co. (N. J.)	5,372
Firestone Tire&Rub. Co.	567	Stand. Oil Co. (Ohio)	296
Food Mach. & Chem. Cp.	223	J. P. Stevens & Co.	257
Gen. Amer. Trans. Cp.	226	Sun Oil Co.	469
Gen. Electric Co.	1,697	Swift & Co.	533
Gen. Foods Corp.	353	Texas Company	1,805
Gen. Motors Corp.	4,405	Tide Water Assoc. Oil Co.	362
B. F. Goodrich Co.	437	Union Carbide & Car. Cp.	1,191
Goodyear Tire&Rub. Co.	666	Union Oil Co. of Calif.	476
Gulf Oil Corp.	1,766	United Aircraft Corp.	298
Inland Steel Co.	433	U. S. Rubber Co.	489
Inter. Bus. Mach. Corp.	520	U. S. Steel Corp.	3,248
Inter. Harvester Co.	973	Western Electric Co.	877
Inter. Paper Co.	507	Westinghouse Elec. Cp.	1,265
Jones & Laughlin Stl. Cp.	579	Weyerhaeuser Timber Co.	323
Kaiser Alum. & Chem. Cp.	320	Wheeling Steel Corp.	234
Kaiser Steel Corp.	267	Youngstown Sh. & Tube Co.	514

Total assets are shown after deducting reserves for depreciation. Table does not include Ford Motor Company, with total assets of $1,758 million on Dec. 31, 1952, or United Fruit Company, with total assets of $396 million on Dec. 31, 1953, which companies do not publish detailed income accounts. ‡ To merge with Olin Industries, Inc., as Chemical Corp.
* Merged with Hudson Motor C

NATIONAL CITY BANK MONTHLY LETTER OF JULY, 1954

BRADLEY *washfountains*

Because they provide these Important Group-Washing Features:





- **The Maximum in Sanitation**
- **Lower Installation Costs**
- **More Facilities in Less Space**

In the list previous to the one shown above, Bradley Washfountains were used by 99 out of the 100. Now in this latest list, we find the vote is unanimous, —100 out of 100.

While the preference for these sanitary wash fixtures by the biggest "100" is significant,—thousands of plants all over the land,—large and small,—have also standardized on them during the past 30 years.

Groups up to 10 are served clean running water from the central spray-head at each Bradley. There are no faucets to touch or maintain; the large sleek bowl is self-flushing to prevent collection of contaminating used water,—and with foot-control, water supply is cut off automatically to prevent water waste. Your employees, too, will appreciate the clean quick washing that Bradley Washfountains provide.

Specified by leading architects and distributed through Plumbing Wholesalers

Write for Complete Catalog 5204



BRADLEY WASHFOUNTAIN CO.
2235 W. Michigan Street, Milwaukee 1, Wisconsin

NEWS

Continued from p. 38

dormitories, a day nursery for children of working mothers, family-counseling service, 24-hour prayer facilities and a 24-hour pantry and clothing depot for the needy. McKendree Methodist decided to stay downtown three years ago when it started to increase its community services program.

Office renting rate steady; NLRB narrows jurisdiction

Office building owners had two good causes for rejoicing.

First, the latest 167-city semiannual survey by the National Association of Building Owners and Managers showed an occupancy rate of 97.11%, or only 0.01% below the previous survey. This was the smallest decline ever recorded in the 30-year history of this index. In the gradual moderate decline since the end of the war, said NABOM, the latest survey "reflects a leveling out of the vacancy trend at a point still considerably above . . . 'normal.'"

Second, the National Labor Relations Board was paring drastically the office building operations it considers within its purvue.

Over vigorous opposition by two minority holdovers appointed during the Truman administration, NLRB decided to exempt office building management from its scrutiny unless an employer owning or leasing a building is "substantially" engaged in interstate commerce and also uses the building primarily to house its own offices.

The key decision, issued Oct. 28, involved a petition by an AFL stationary engineers local for NLRB intervention in a dispute with the McKinney Ave. Realty Co., operator of the City National Bank building in Houston. In dismissing the petition on a 3-2 party-line vote, NLRB satisfied itself that the operating company, having spent $94,000 in 1953 for maintenance supplies and services—all but $802 of it locally—was not engaged in interstate commerce.

Current criteria for defining NLRB jurisdiction: a direct inflow of goods through interstate commerce of $500,000 or more a year, or an indirect inflow of $1 million or more. Outflow standards, with the exception of manufacturers and suppliers, are: $50,000 direct flow of goods in interstate trade or $100,000 indirect outpouring of goods.

Minority Member Abe Murdock had a word for the Houston decision: "Myopic!" He cited a 1951 NLRB decision that an office building came within its jurisdiction if tenants are in interstate commerce. More than half in the Houston building do, he said.

But in December the board reaffirmed its stand, threw out another appeal from the same union involving the Petroleum building in Houston. Although the owner, American Republic Corp., was acknowledged to be in interstate commerce, NLRB insisted that operation of the building was strictly a local enterprise. And besides, the board said, the owning company did not use the bigger share of space for its own activities.

continued on p. 47

Corrosive  *fan installations can be permanent*

DURCO EXHAUST FANS ARE ALL-METAL

All parts in contact with corrosive fumes are solid metal—Duriron, Durichlor, Durimet 20 or other special DURCO alloys. Corrosion resistance is *throughout* the entire thickness of the metal section. Sizes, capacities, drives and alloys to fit requirements.

B-series fans (shown) are of an entirely new design. They're 30% lighter than previous comparative models, thereby increasing range of installation.

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Duriron Casing.
All-metal sections insure full resistance to corrosion.

Belt drive.
Easily adapted to varied applications.

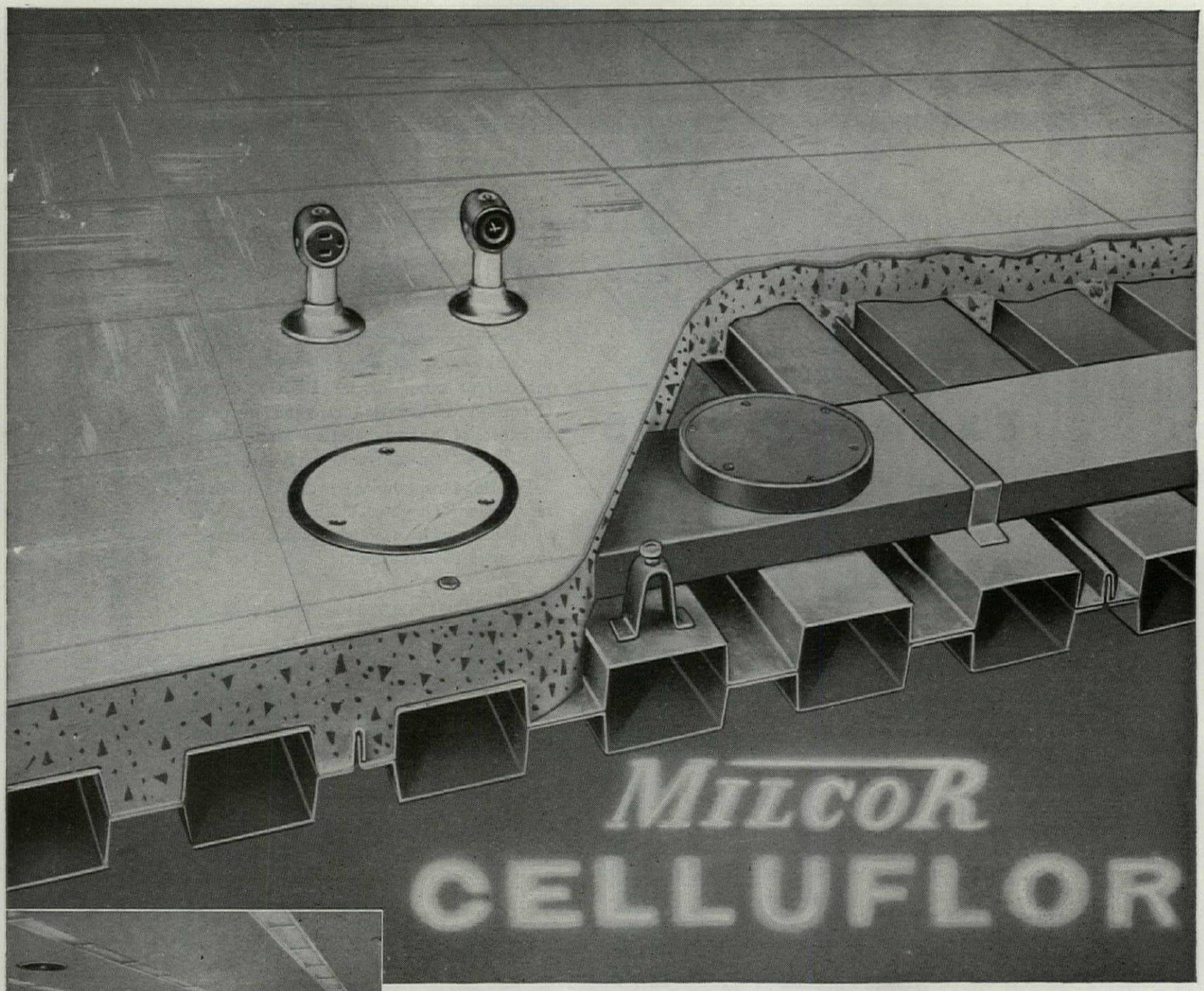
Durimet 20, Multi-blade rotor.
Offers high resistance to corrosion. Rotor design increases capacity by more than 50% over previous design.

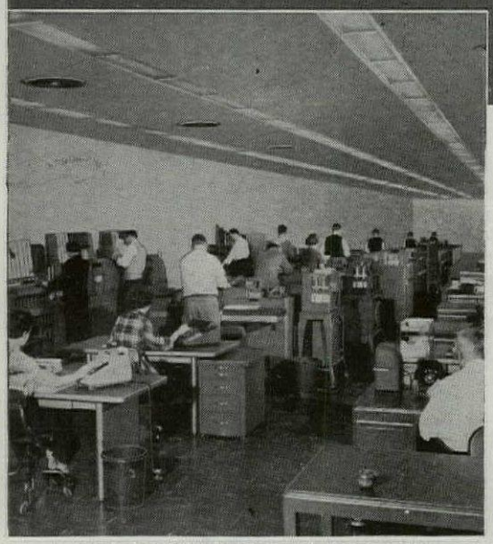
Fabricated steel base.
Sturdy, lightweight base reduces fan weight and widens application.

Standard Discharge arrangements.
Include clockwise, counter-clockwise and angular arrangements. Arrangements should be specified when ordering.

DURCO
CORROSION RESISTING ALLOYS & EQUIPMENT

THE DURIRON COMPANY, INC. / DAYTON, OHIO





In today's fast-moving business world, the use of electrified equipment is rapidly increasing. Milcor Celluflor is built-in insurance that your building will meet the greater electrical requirements of tomorrow.

MILCOR® walker of Conshohocken

FLOOR WITH A FUTURE LETS YOU PLAN TODAY FOR TOMORROW'S CIRCUIT REQUIREMENTS

... Milcor Celluflor with Walker Electrification — the electrified floor that has extra strength and durability

HERE'S a steel sub-floor that helps you meet today's increasing need for unlimited flexibility in electrification for both power and telephone service. No matter how complex the system, Milcor Celluflor has ample capacity to handle it. Its cells, spaced on 6-inch centers, permit placement of service outlets at virtually any point on the floor. Besides, these outlets can be moved at any time during the life of the building to meet changing or increasing requirements.

But you get much more than a "floor with a future." You get these outstanding extra features:

1. You get the structural advantage of close cell spacing. In Celluflor, there are eight webs of steel every 24 inches — this provides greater structural strength for special design problems.

2. You get the unexcelled protection of Ti-Co—Inland's continuously galvanized steel with the coating that doesn't flake. It resists the wear of traffic during construction.

Milcor Celluflor steel panels are quickly placed on structural steel members to provide a safe working floor and storage space for all trades during construction. The floor is light in weight and reduces the cost of foundations and structural steel. Wood forms, steel staging, or temporary shoring are unnecessary.

Latest bulletins and planning help are available upon request.

INLAND STEEL PRODUCTS COMPANY
4031 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN
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*Reg. U. S. Pat. Off.

M-151



EASY SOLUTION TO FIVE DIFFICULT DESIGN PROBLEMS

. . . Milcor Metal Lath and Plaster

GIMBEL BROTHERS	SOUTHGATE SHOPPING CENTER MILWAUKEE, WISCONSIN
ARCHITECT	GRASSOLD-JOHNSON & ASSOCIATES, MILWAUKEE
GENERAL CONTRACTOR	HUNZINGER CONSTRUCTION COMPANY, MILWAUKEE
PLASTERING CONTRACTORS	PAUL C. BAUMANN, MILWAUKEE JOHN E. GREGORY & SONS, INC., MILWAUKEE ALFRED SCHMITT, INC., MILWAUKEE

The architects of Gimbel's new Milwaukee store had several problems to solve: (1) They wanted an open, spacious interior appearance. Yet, (2) they wanted individual departments to be easily distinguished — with clean partitions that could do double-duty as panels for signs and decorations, and as storage-area enclosures. (3) They wanted to screen off the massive, overhead air-conditioning and heating systems. (4) They wanted the store to be well-lighted, without conspicuous light sources. And, finally, (5) they wanted it to be firesafe.

They found the answer to all these design problems in the exceptional versatility of Milcor Metal Lath and accessories.

Milcor Catalog No. 202 illustrates and describes the complete line of Milcor Metal Lath and accessories. Copies are available upon request.

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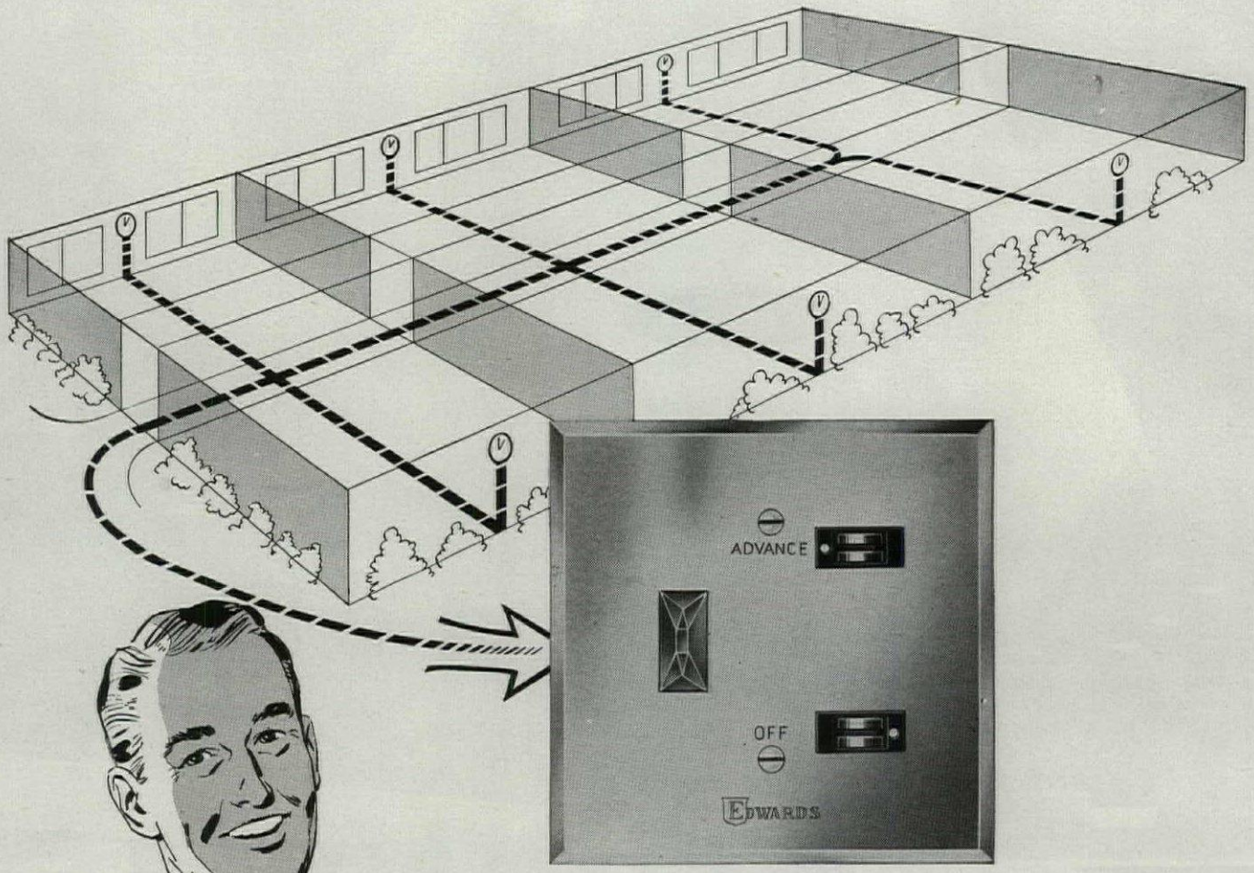


it's so simple . . .

The Edwards Synchromatic Clock System is the simplest centrally controlled clock system on the market. And thanks to that simplicity is priced well below what you'd probably expect it to cost.

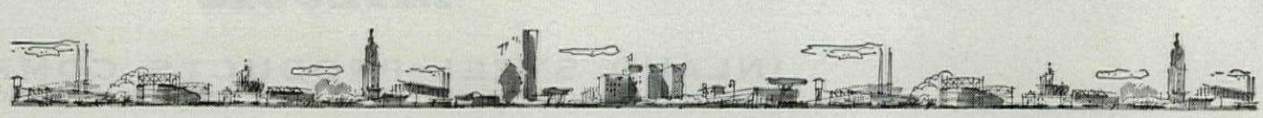
Here's how it works. A light on the panel shown above glows when power resumes after a failure. One switch sets clocks ahead . . . the other sets them back. No master clock needed, no mercury pendulums, rectifiers, condensers or radio tubes. Virtually error free, the Edwards Clock control system runs for years without attention. Write for Bulletin "CL".

Edwards Co. Inc., Dept. AF-3, Norwalk, Conn.

In Canada: Owen Sound, Ontario.

EDWARDS *Synchromatic Clock Systems*

for SCHOOLS • HOSPITALS • OFFICES • INDUSTRY!

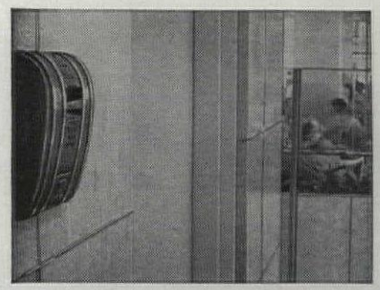


Specify Edwards and Be Sure

America's schools run more smoothly . . . America's school children are better protected thanks to Edwards.



Edwards clock and program systems provide an accurate, simple and flexible means of programming activities of large groups in schools, institutions, offices and industrial plants. A program instrument is used having as many circuits as there are different programs. Standard sizes contain 1, 2, 4, or 6 circuits. Signals may be sounded any minute, 24 hours a day, 7 days a week. With a signal control panel it is possible to change program or signal schedule in any room or location to another program without disturbing the overall program setting or wiring. The Edwards program instrument is powered by the same heavy duty Telechron motored movement used in the clock systems.



TRIM, MODERN, EFFICIENT:

Edwards Fire Alarm Systems are chosen by leading architects to protect America's schools, hospitals and important buildings. Write for Bulletin on Fire Alarm Systems.

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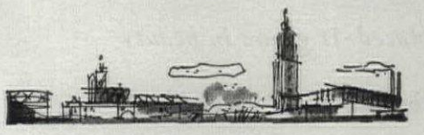
protects . . everywhere!



NEWS

Continued from p. 42

More room for senators

After seven years of preparation, construction has been started in Washington on an additional $21 million Senate office building half a block from the present overcrowded offices. The new nine-story building will have about 391,000 sq. ft. of usable floor space, will emulate the classic, marble architecture of Capitol Hill, but have underground parking for 200 cars and subterranean connections with both the Capitol and the present building. Completion is expected in about three years. It was designed by the Architect of the Capitol (now J. George Stewart), with Eggers & Higgins of New York as consultants.

Standardized building forms

Publication of a complete set of uniform construction forms for use on municipal engineering construction projects was announced by the Associated General Contractors and the American Public Works Assn. The most important achievement of the Joint Cooperative Committee of the two groups since its formation in 1952, the forms include: 1) an invitation for bids, 2) instructions to bidders, 3) bidders' proposal, 4) contract or agreement, and 5) general conditions of contract.

High-rise country apartments

Usually tall buildings are erected to make the most of limited or expensive land. But this month an exception to the rule will be started just west of Great Falls, Mont. (1950 pop. only 39,214) overlooking the Meadow Lark Country Club. This will be an 11-story, 21-family cooperative luxury apartment building (more than half sold last month) with an attached garage for 25 cars. The apartment tower will occupy only about 3,500 sq. ft. of a 150,000 sq. ft. plot. When the decision to build was announced, it was the main topic of Great Falls conversation for days. Architects are George H. and Frank B. Shanley. George Shanley also is president of the building corporation; rich Oilman Julius Peters is vice president. Since 1912 the eight-story First National Bank building has been Great Falls's tallest—also designed by George Shanley.

Ike's friends in big project

Two of President Eisenhower's fishing friends, former MBA President Aksel Nielsen, head of Denver's Title Guaranty Co., and Bal F. Swan, president of Empire Savings & Loan Assn., are officers in the new Turnpike Land Co., Inc., slated to start the Denver area's biggest 1955 building project in May. This will be a $100 million community adjoining the Denver-Boulder turnpike, including shopping centers, office buildings, 6,000 brick homes, and sites for churches and schools. Denver builder K. C. Ensor is head of the project.

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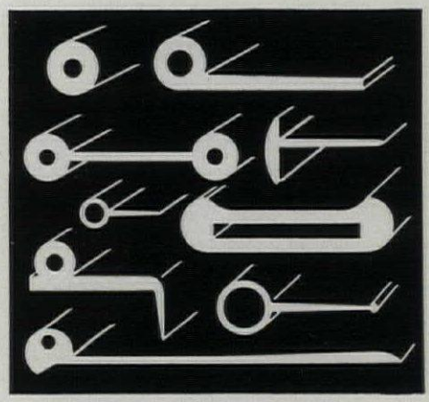

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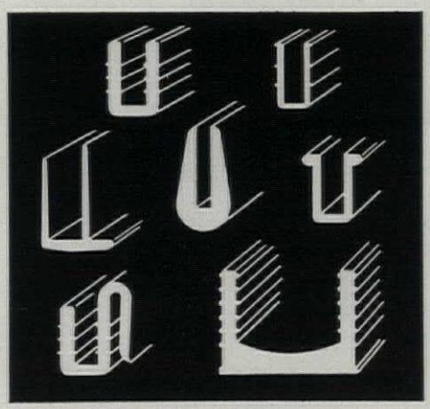

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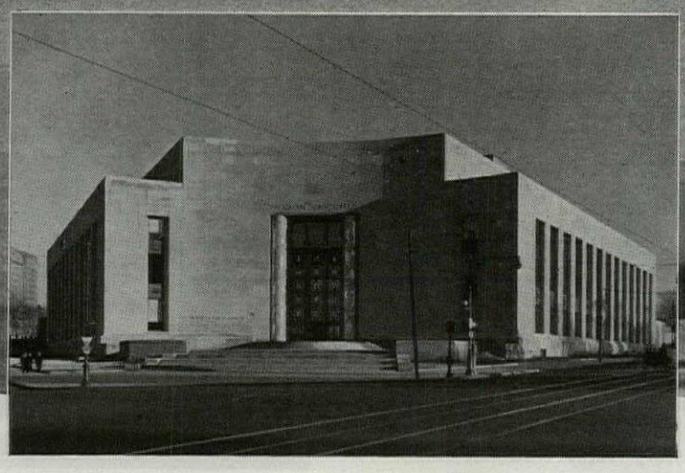

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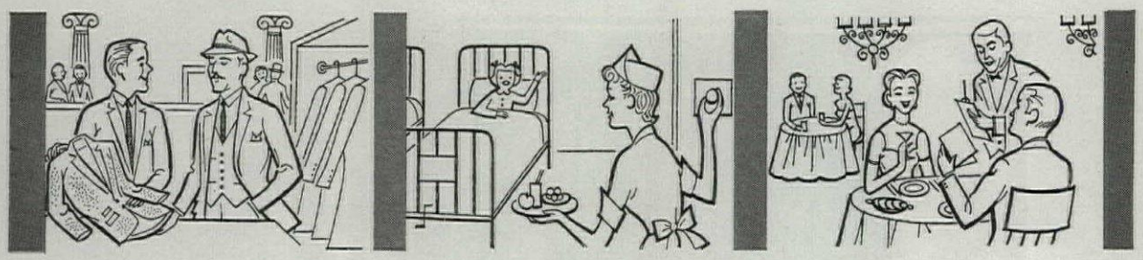

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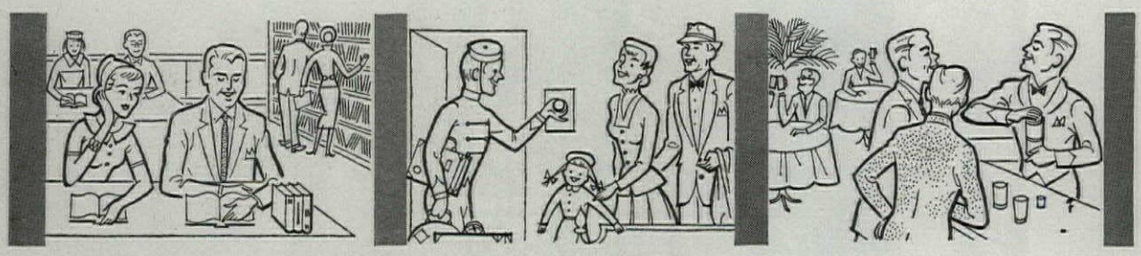

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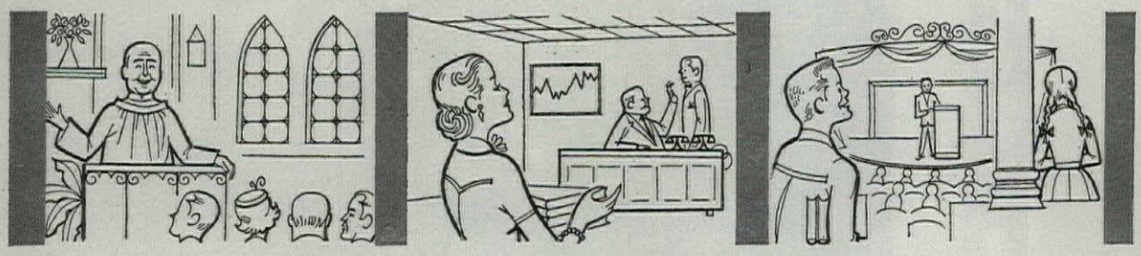

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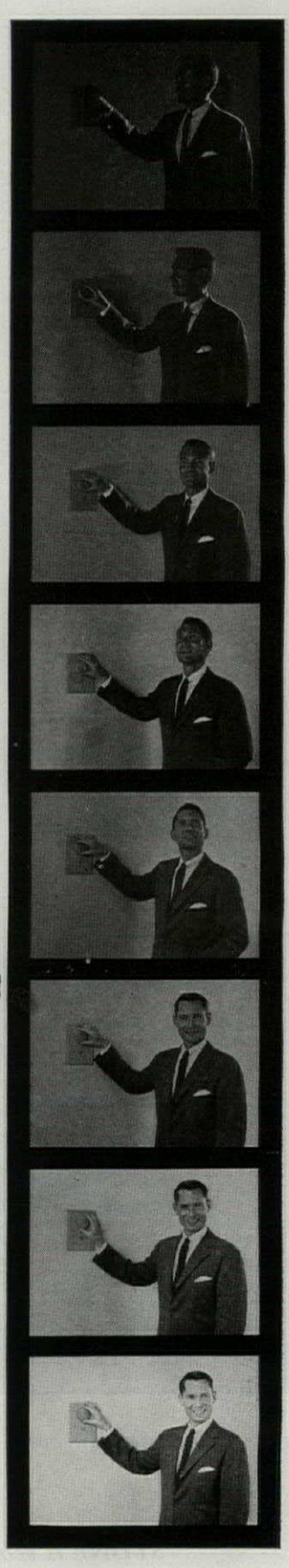

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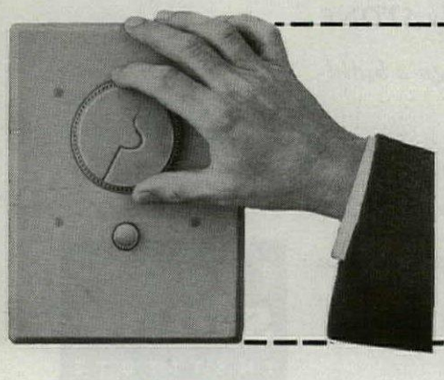

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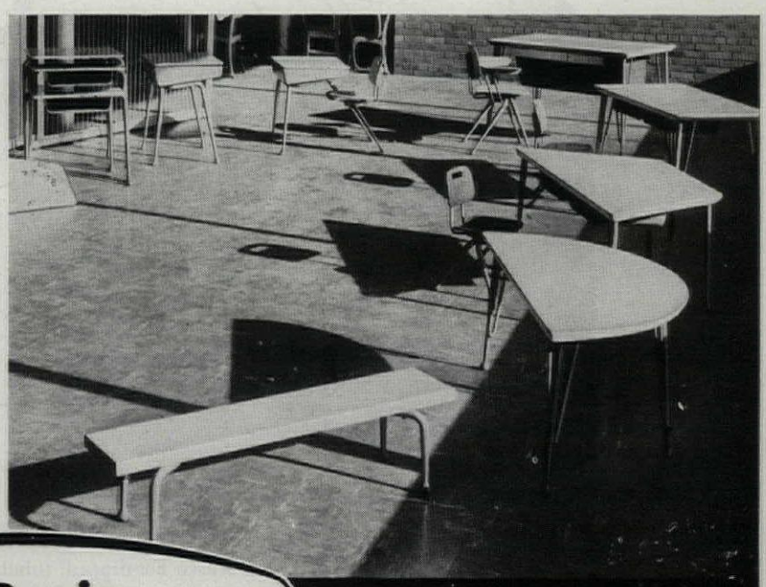

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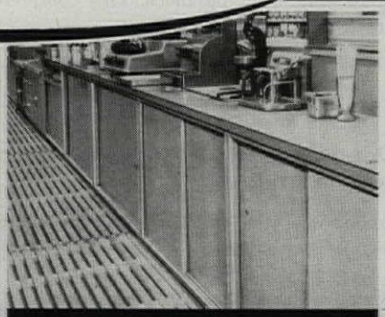

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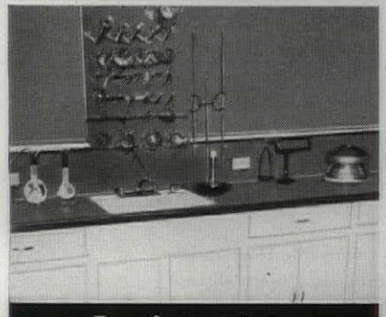

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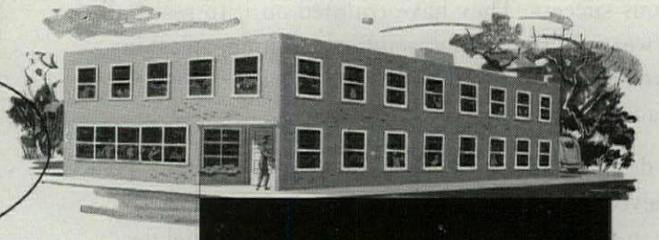

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16 manufacturers who are making major contributions to new and effective uses of porcelain enamel in building, describe their products and services on the following pages.

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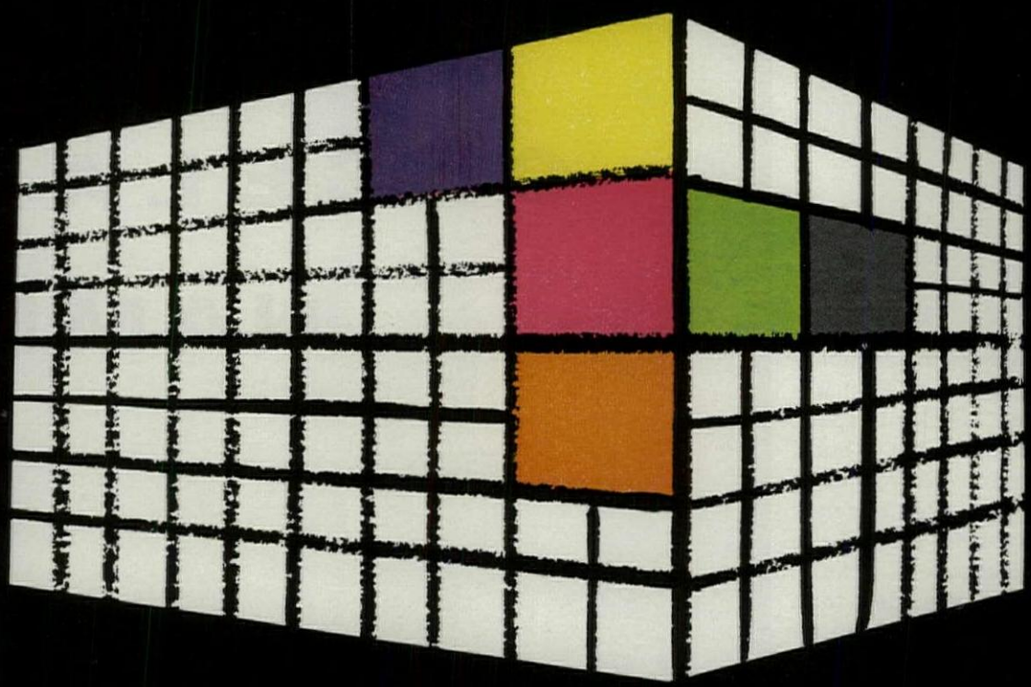

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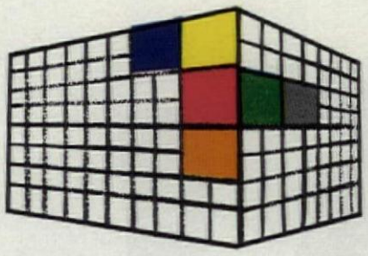

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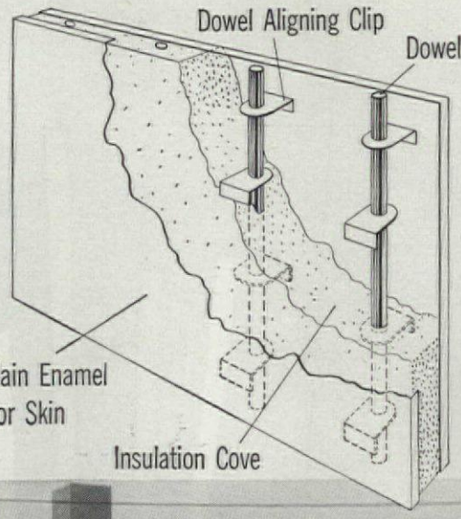
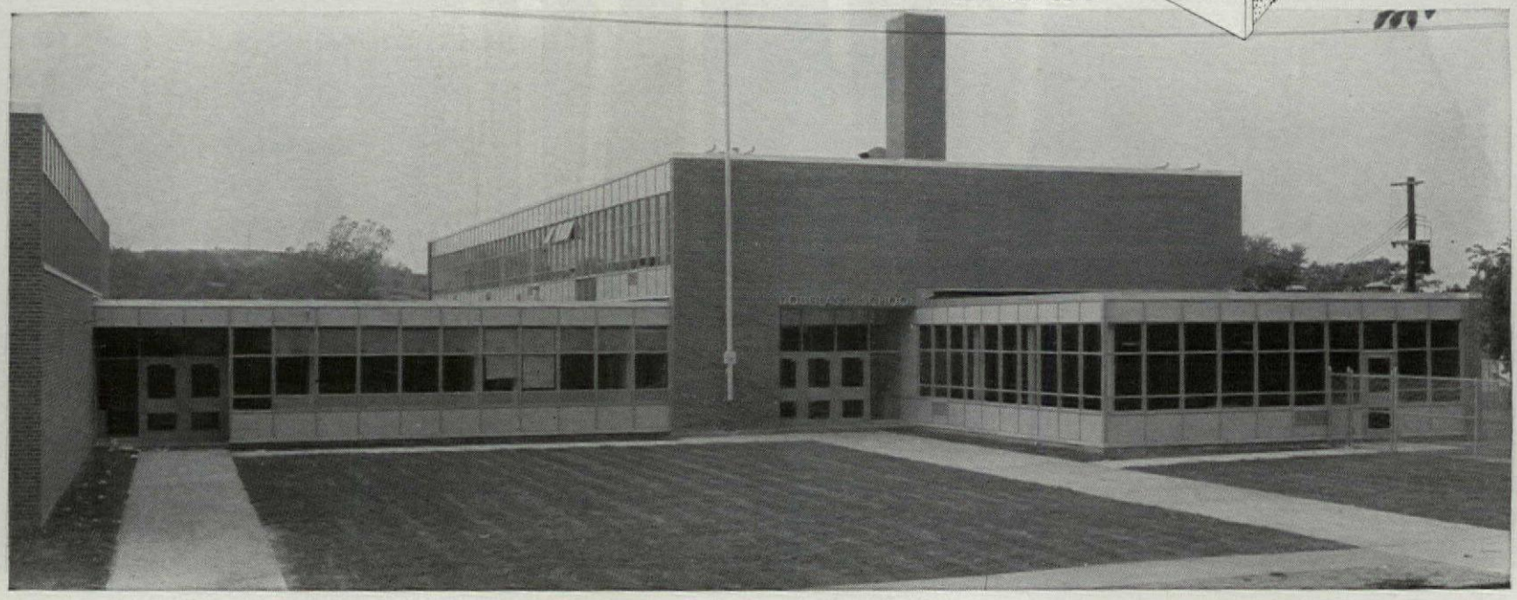
Porcelain Enameled Curtain Walls on New School



Cross-section showing how panel faces are joined and insulation supported.

ARCHITECTS: **Kivett and Myers; Angus McCallum, Associate, Kansas City, Mo.**





Here's the way curtain wall panels were installed on this school building. Note the inorganic insulation between face and inside sheet. Edges of panels are carefully grouted to make wall water-tight.

Curtain walls on this elementary school are faced with porcelain enamel on Armco Enameling Iron. The lightweight "sandwich" panels were easily handled and installed, helped produce a better building at lower cost.

Durable Exterior

These panels are not only decorative but permanent. The porcelain enamel finish is weatherproof, doesn't fade and is so smooth that rain keeps the panels clean.

High Insulation Factor

The 2-inch thick panels have a core of Foamglas, an inert, inorganic accumulation of tiny glass pockets. This highly insulative material is anchored without the use of adhesives. Panels are made to assure a minimum of heat conductivity from front to back face.

No Backing Needed

No brick or concrete backing was used for this curtain wall. The inside face of the panel is Armco ZINCGRIP PAINTGRIP, a special paint-holding zinc-coated steel sheet. It forms the inside wall of the building. All it needs is normal cleaning before painting.

Installation No Problem

Producers of curtain wall panels porcelain enameled on Armco Enameling Iron supply finished panels tailor-made and easily installed by local contractors. Besides this, these architectural porcelain enamel specialists are of invaluable assistance to the architect, who can draw on their experience in design problems.

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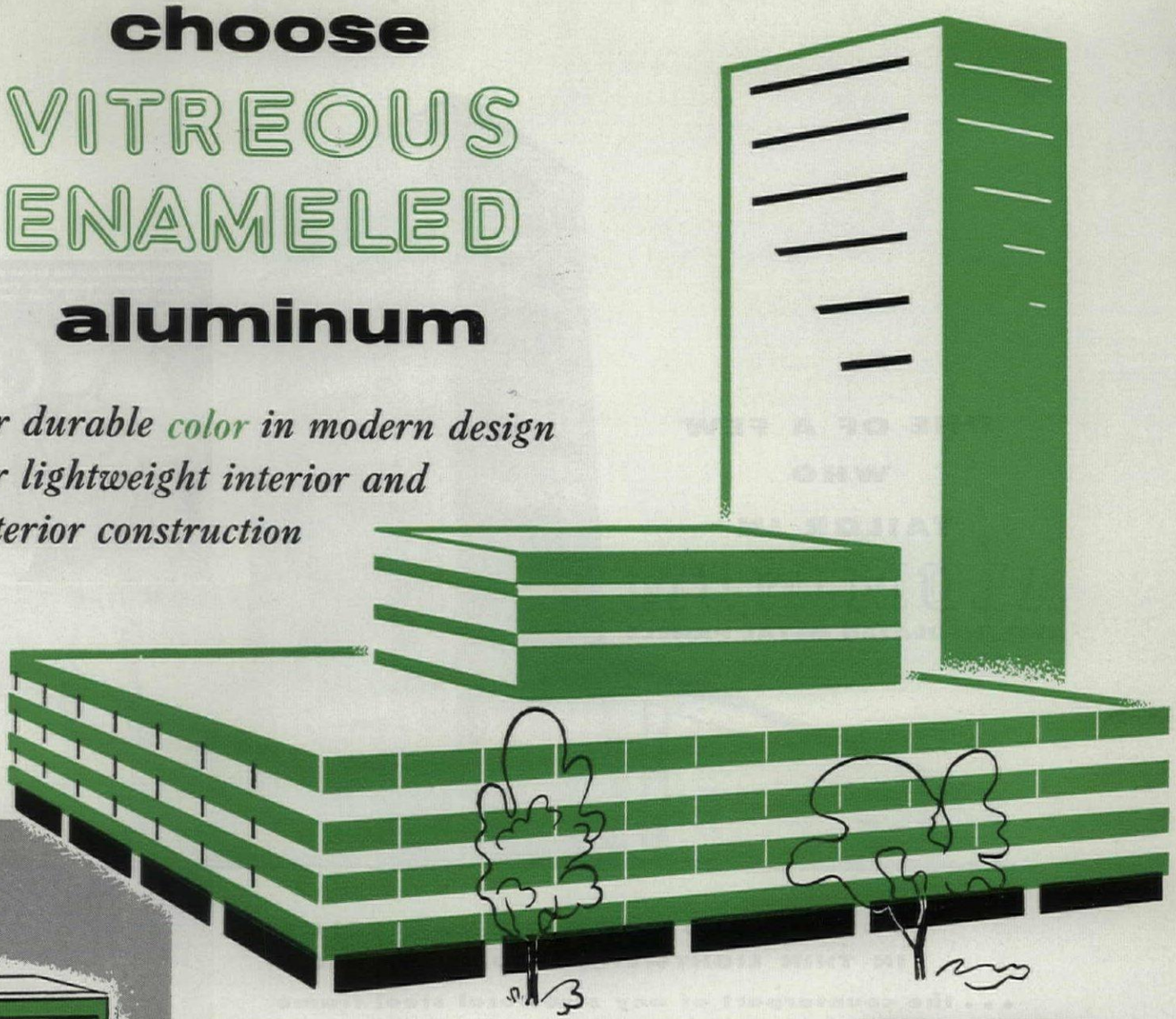
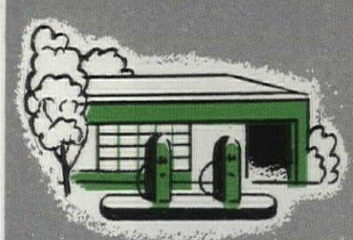


CURTAIN WALLS



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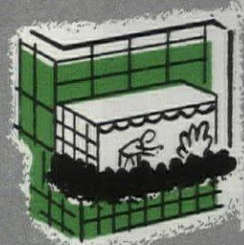

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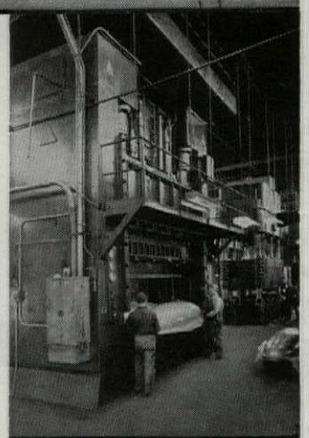

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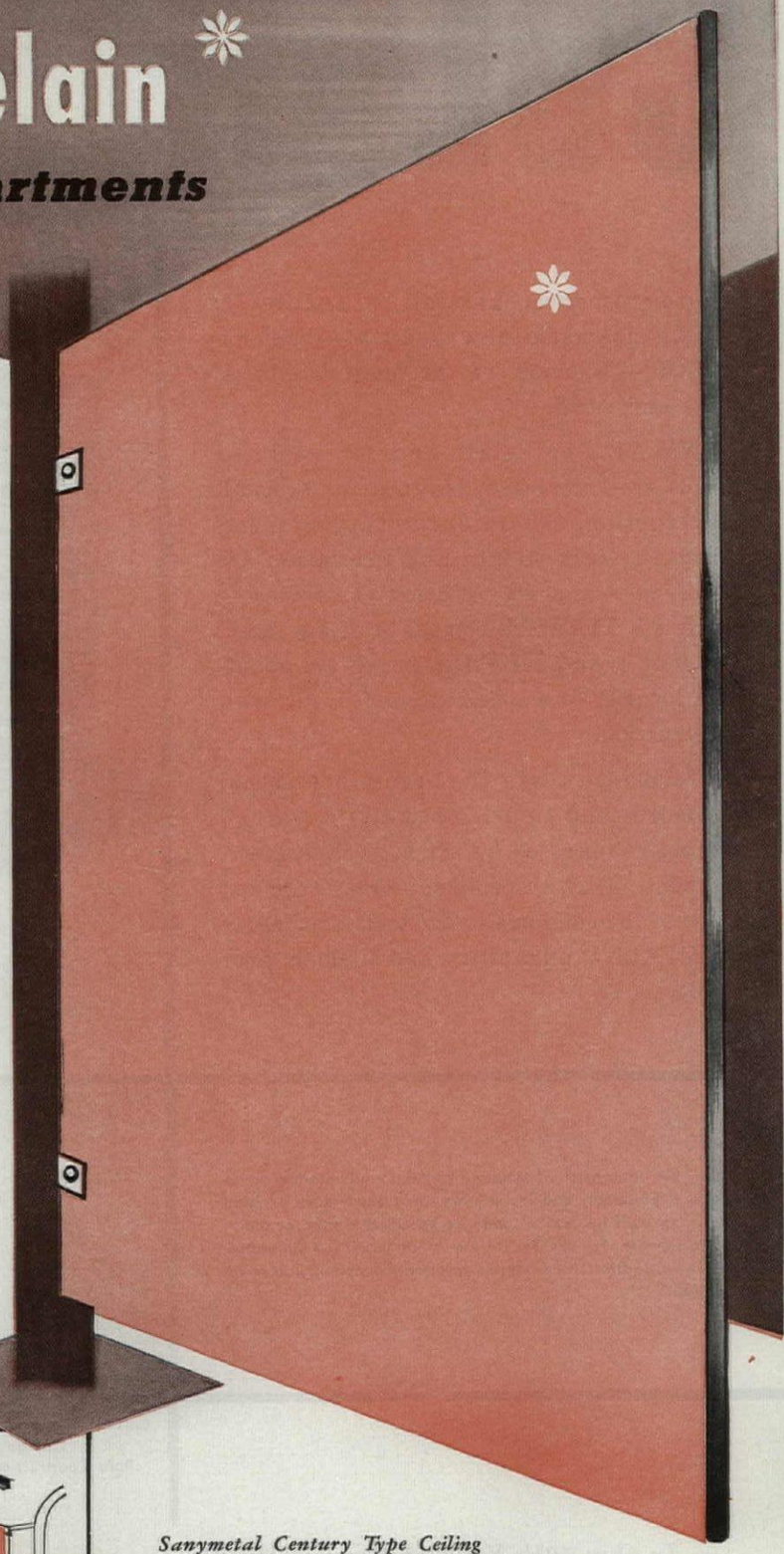

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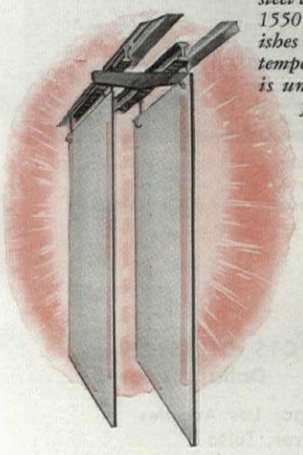

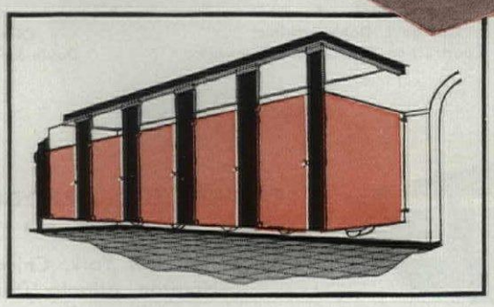

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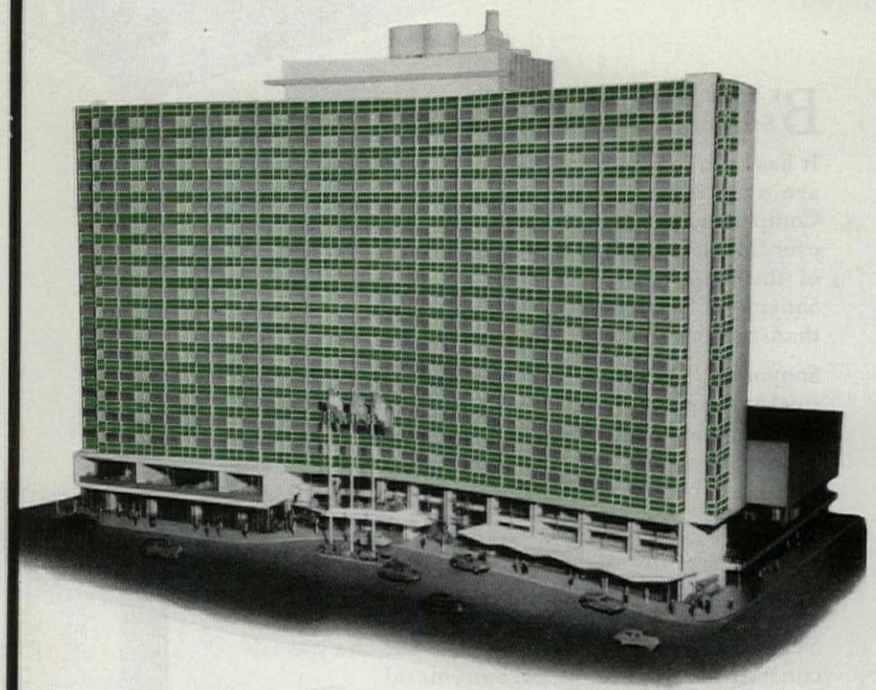
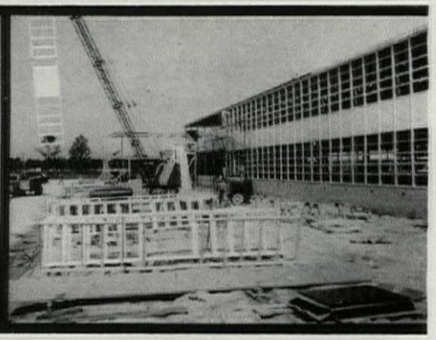


Statler-Hilton Hotel • Dallas
William B. Tabler, Architect
Robert E. McKee, General Contractor

Texlite, Inc. maintains a complete professionally-staffed architectural department, and in addition, provides trained erection crews. "Texwall by Texlite" may be specified erected or delivered to job-site. See the Texlite section in Sweet's Architectural File, or write direct for complete information and literature on TEXWALL.



Citizens National Bank • Abilene, Texas
George L. Dahl, Architect
Rose Construction Co., General Contractor



Princess Anne County High School • Norfolk, Va.
Oliver & Smith, Architects
Doyle & Russell, General Contractors

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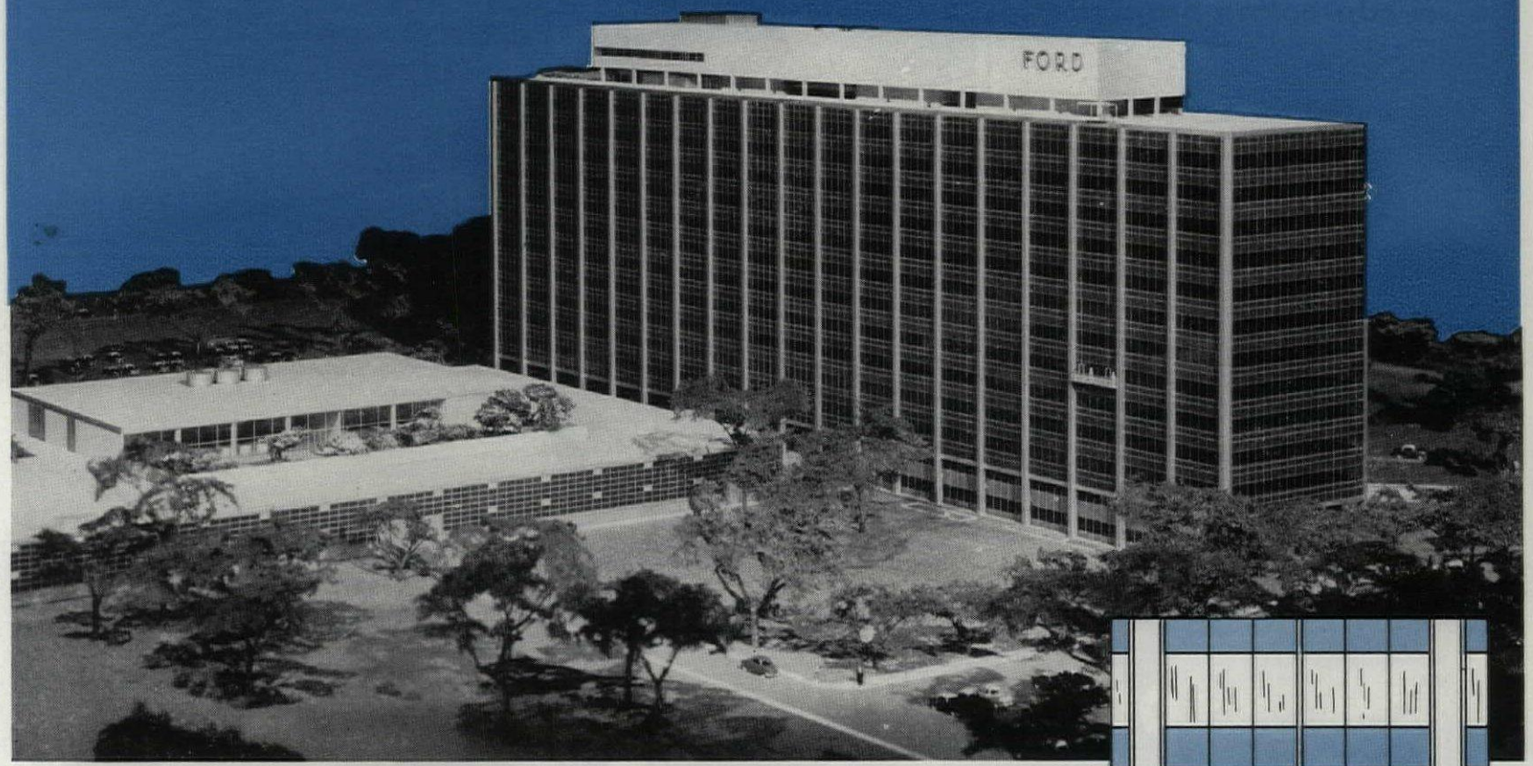
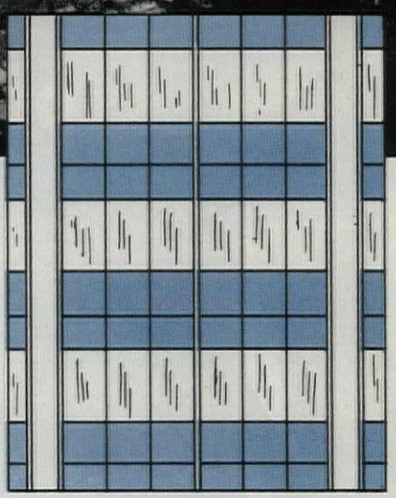




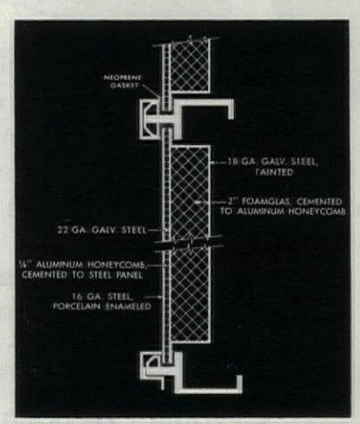
Architect: Skidmore, Owings & Merrill, New York
General Builders: Bryant & Detwiler Co., Detroit

90,000 square feet of

ING-RICH PORCELPANELS®

Believed to be the largest use of porcelain enamel in a single building . . . this installation employs green-blue insulated porcelain enamel as spandrel panels below and above glass windows.

Here again in curtain wall construction porcelain enamel on steel offered the architect exceptional characteristics – including lightness in weight, space-saving properties, economy and adaptability to outstanding design effects. For details on how PORCELPANELS can be adapted to your next new or remodeled building, write our Architectural Division.



INGRAM-RICHARDSON MANUFACTURING COMPANY
BEAVER FALLS, PENNSYLVANIA

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Member, Architectural Division, Porcelain Enamel Institute, Inc.

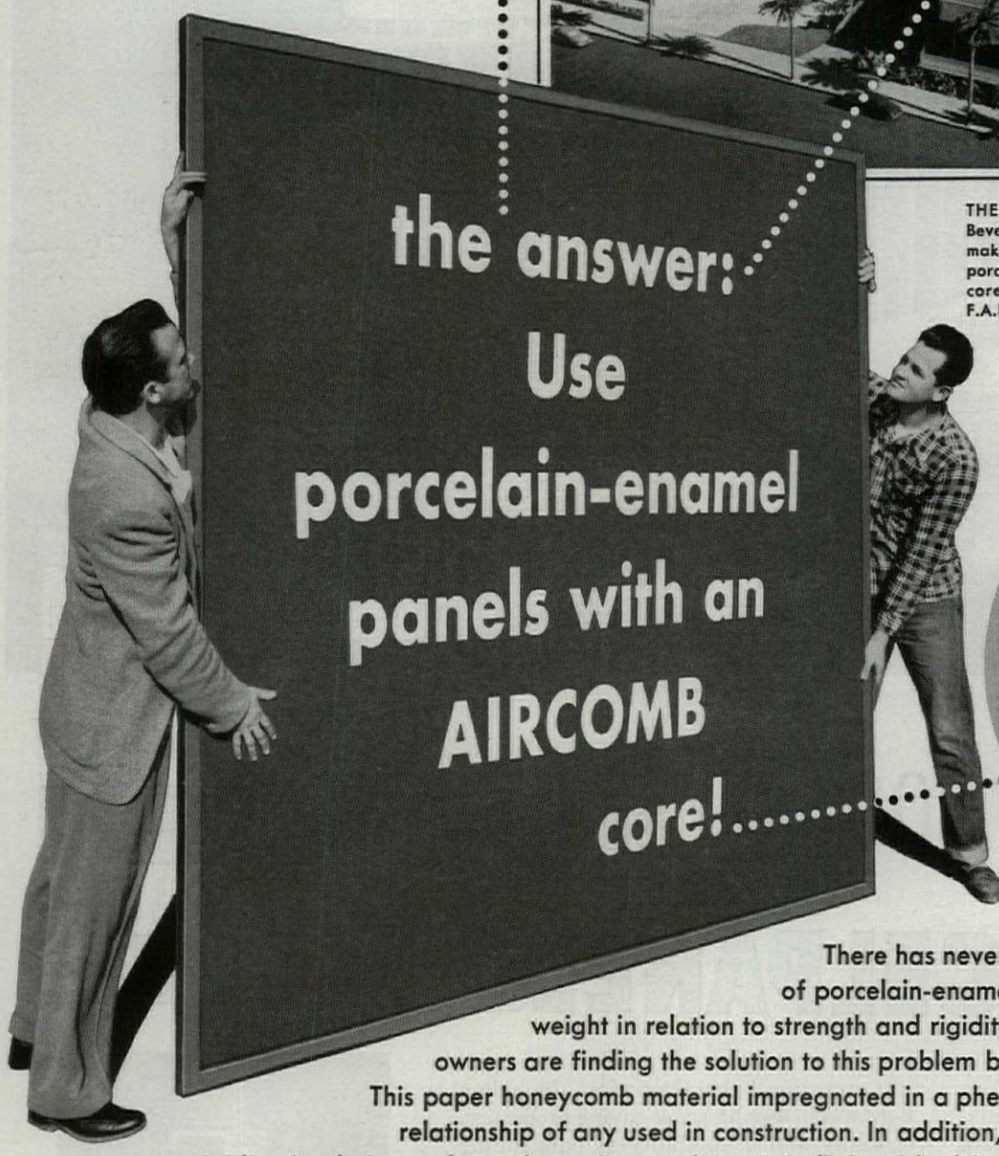
PE

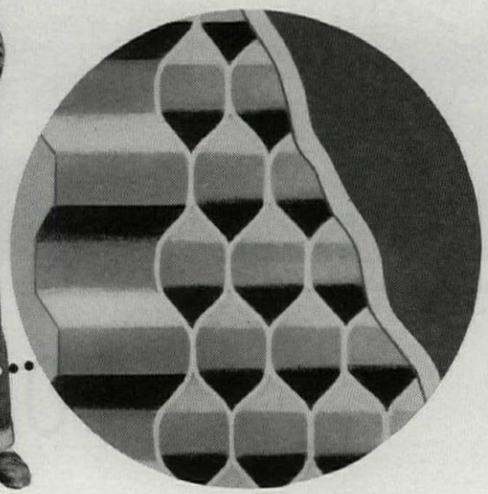
the problem:

How to get lightweight structural panels with beauty, strength, rigidity, durability, insulation and soundproofing properties.



THE BEVERLY HILTON HOTEL now nearing completion in Beverly Hills, California, is one of several fine new structures making wide use of California Metal Enameling Company's porcelain-enamel panels. These handsome, durable panels are cored with AIRCOMB. Hotel architects are Welton Becket, F.A.I.A., and Associates.





There has never been any question about the beauty of porcelain-enamel panels. But a drawback was their high weight in relation to strength and rigidity. Now, architects, contractors and owners are finding the solution to this problem by using DOUGLAS AIRCOMB as the core. This paper honeycomb material impregnated in a phenolic resin has the highest strength-weight relationship of any used in construction. In addition, it provides exceptional durability, rigidity, insulation and sound-proofing qualities. It is distinguished from other paper honeycomb products by being manufactured with special patented machinery under rigid quality control.

Douglas engineers are available for consultation and assistance in putting strong, lightweight AIRCOMB to work for you.

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Beverly Hills School, Concord, N. C. Architect: A. G. Odell, Jr. & Assoc., Charlotte, N. C.

colorful

durable

flexible

practical

Every architect can pick his *own* way of using Davidson Architectural Porcelain Panels, without restriction on size, shape, color or intended use. Davidson Panels (16 gauge steel), with porcelain fused to all exposed surfaces are made the way *you* want to specify.

Nor is there any restriction on the *way* you use Davidson Panels, as you'll see in the new Davidson 12-page file folder. Architects' details and photographs included in the folder show this adaptability.

Ask your local Davidson Franchised Distributor for a copy . . . he's listed under "Porcelain Enamel Construction" in the 'phone book . . . or write direct.

FOR WINDOW WALL OR CURTAIN WALL



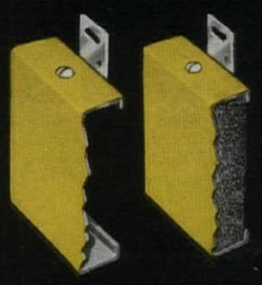
ABOVE LEFT, Davidson Type A Double Wall Panel with fiber glass insulation.

ABOVE RIGHT, Davidson Type C Double Wall Panel with fiber glass insulation and Vitrock backing.

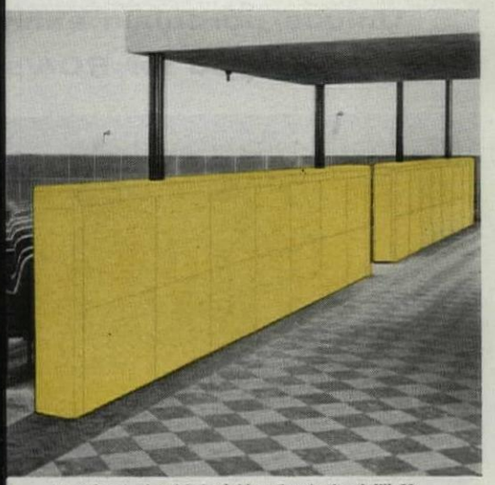
★

BELOW LEFT, Davidson Type 1 Facia Panel, with stainless steel clips and screws.

BELOW RIGHT, Davidson Type 2 Facia Panel, with stainless steel clips, screws and Vitrock backing.



for interior . . . for exterior



New Cumberland School, New Cumberland, W. Va. Architect: Ray W. Shaw, Weirton, W. Va.

FOR CURTAIN WALL, FACIA OR MODERNIZING



Mississippi School, St. Paul, Minn. Architect: Walter Butler Co., Inc., St. Paul, Minn.

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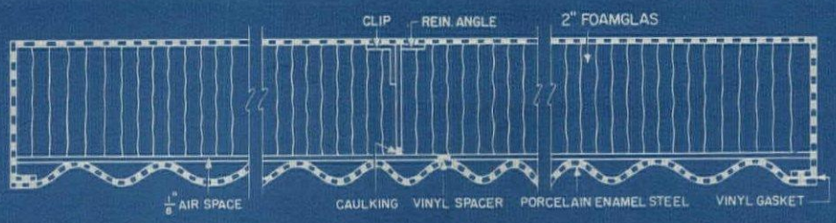
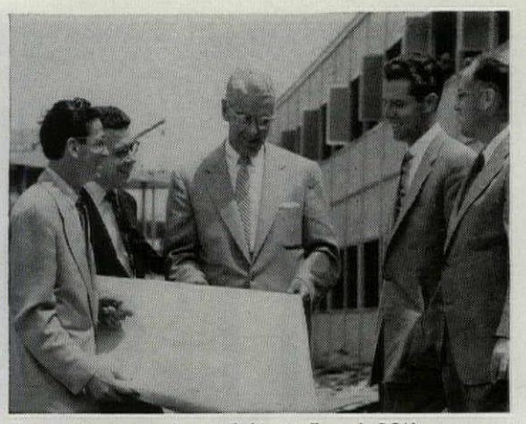
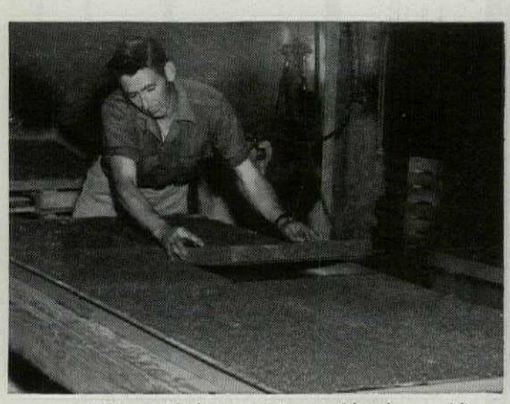


Architect: Vincent G. Kling, A. I. A., Philadelphia, Pa. • *Consultant:* I. M. Pei, New York, N. Y. *General Contractor:* Turner Construction Co., New York, N. Y. • *Panel Manufacturer:* Ingram-Richardson Mfg. Co., Beaver Falls, Pa. • *Roofer:* Wm. C. Kulzer Co., Philadelphia, Pa.

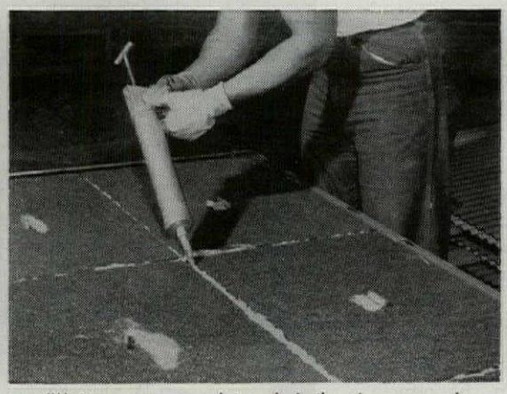


The architect, members of his staff and RCA's representative check progress at the job site during erection of the five Cherry Hill buildings. The owner and the architect report: "We overcame design problems plaguing grid-panel pioneers by insulating the porcelain enamel panels with 2" FOAMGLAS.

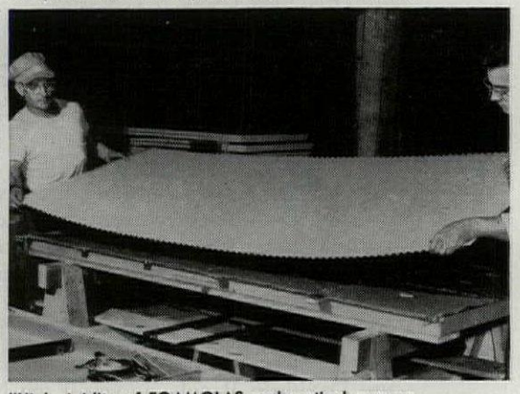
Unique porcelain enamel-cellular glass sandwich developed for RCA's Cherry Hill curtain walls



"We avoided any moisture problem by providing a ⅛" air space between the insulation and the outer porcelain enamel skin (detail above).



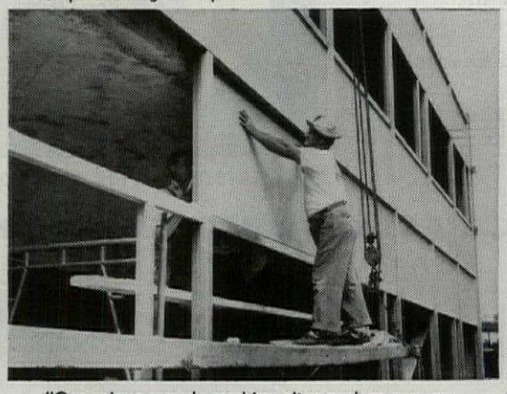
"Moisture can accumulate only in the air space and runs down moisture-proof FOAMGLAS to a weep strip. Caulking seals joints.



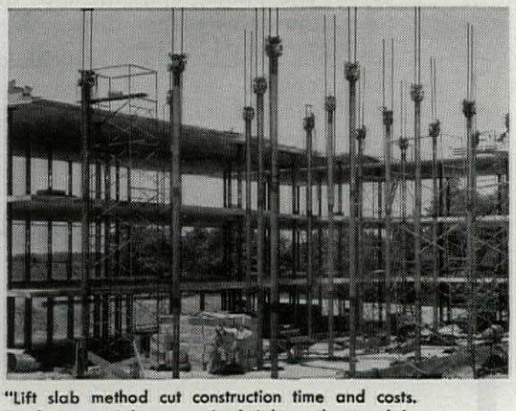
"High rigidity of FOAMGLAS and vertical corrugations of outer skin prevent 'oil-canning' or dimpling.



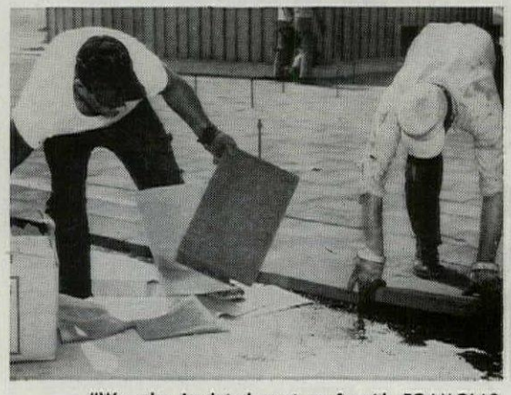
"Completed 94" x 34" PORCELPANELS* weighing just 6½ lbs. per sq. ft. were easily lifted into place.
* ® Ingram-Richardson Mfg. Co.



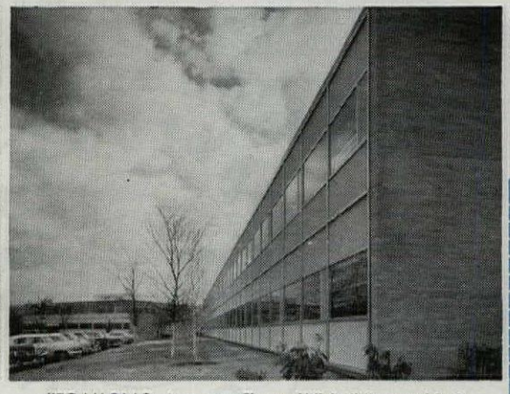
"Our unique panels combine ultra-modern appearance and high insulating efficiency (U factor 0.15)... cost just $4.50 per sq. ft. *erected* in place.



"Lift slab method cut construction time and costs. Roofing materials were raised right on the top slab.



"We also insulated most roofs with FOAMGLAS. Its high strength permits heavy foot traffic, minimizing need for catwalks.



"FOAMGLAS gives our Cherry Hill buildings added protection, too, because it's fireproof."

Use coupon today for a copy of our brand new booklet on latest curtain wall designs which utilize . . .

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the cellular, stay-dry insulation

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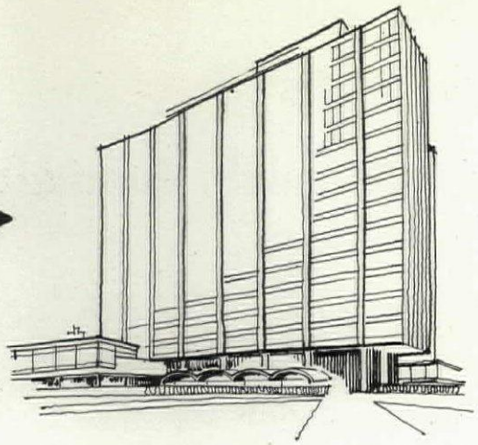
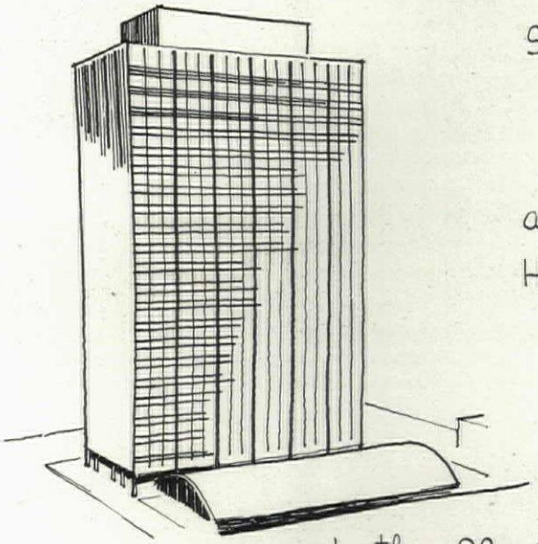
On the Hartford Statler...

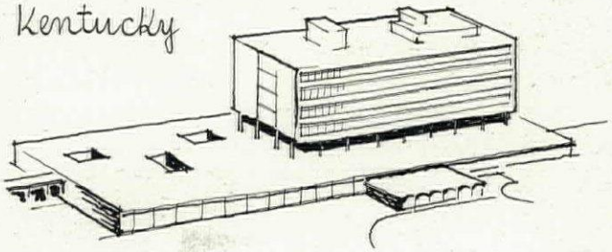


and the Hotel Statler in Dallas...





and the Memorial Hospital Association Hospitals, Kentucky



and the 23-story Mile High Center in Denver...

to increase floor area, to improve comfort and help reduce cost of heating and air conditioning, to speed year-around construction and to reduce curtain wall weight.... porcelain enamel-faced curtain and spandrel walls insulated with Fiberglas* were specified. Fiberglas insulation is light weight, exceptionally efficient thermally, permanent (no rotting), dimensionally stable and noncorrosive.

OWENS-CORNING
FIBERGLAS

*T.M.Reg. Owens-Corning Fiberglas Corporation

Owens-Corning Fiberglas Corporation, Dept. 171-C, Toledo 1, Ohio

Colorful Curtain Walls of Architectural Porcelain Enameled Steel

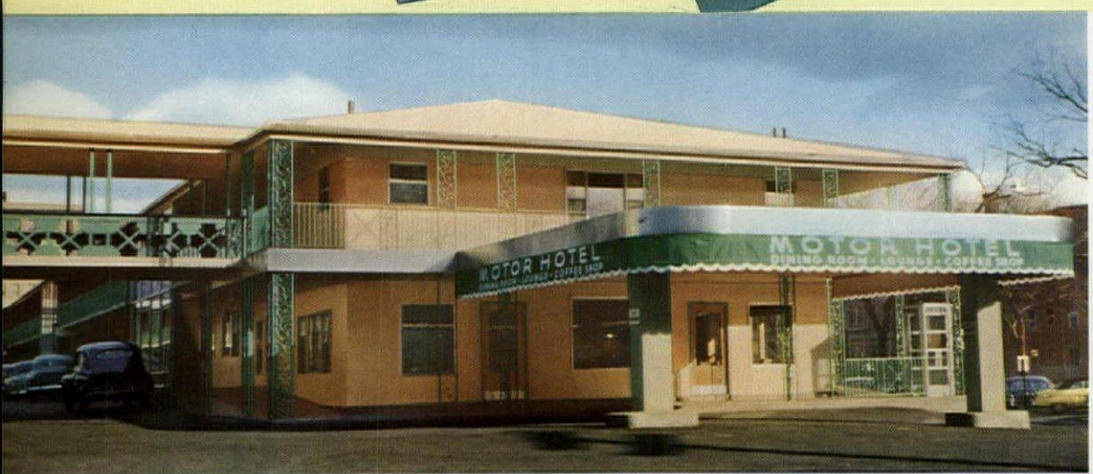
for America's newest, finest buildings!



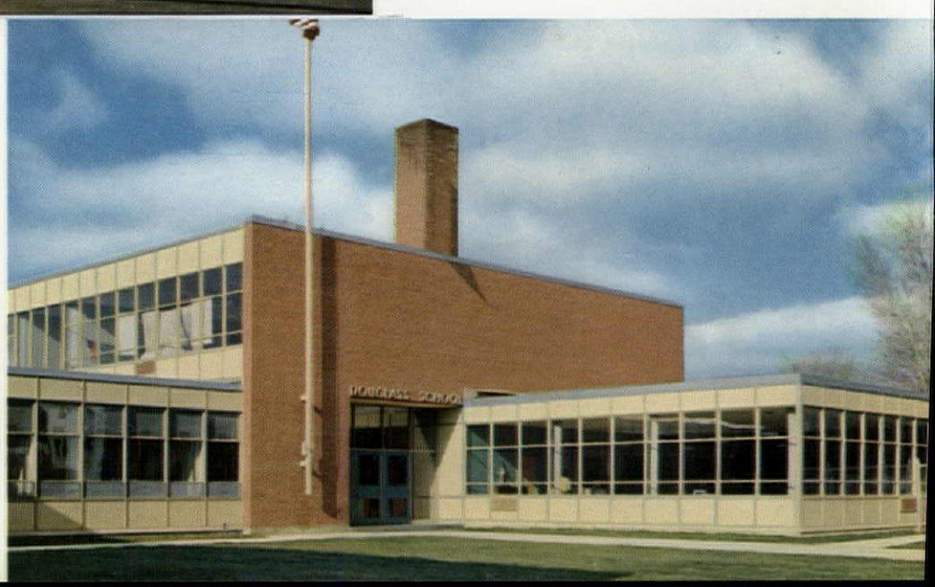
THE MODERN TREND to greater and more varied use of color for exterior architectural treatments is well expressed by the unique and attractive buildings shown here. More and more architects are advocating the beauty of color for office buildings, stores, hotels, schools, hospitals and churches.

In addition to supplying the architect with an almost unlimited variety of colors, these architectural porcelain enameled "metal skins" have many other very valuable features. They are strong and sturdy, yet light in weight for fast, easy and economical installation. The beautiful finish is durable—more acid resisting, won't fade or change color—and is easy to keep clean and sparkling. And porcelain enameled curtain walls are reflective—have a high degree of heat resistance.

One of the finest base metals available for porcelain enameling is USS VITRENAMEL. This high quality enameling base sheet has a specially prepared surface with all the chemical and metallurgical properties needed to form a tight, permanent bond with the architectural enameling frit. When colorful porcelain enamel is fused to USS VITRENAMEL it won't chip, crack, peel or deteriorate with the years, even under severe conditions of atmospheric contamination. It will retain its lovely color and lustrous finish indefinitely. And because USS VITRENAMEL is strong, quality steel, it has the necessary sturdiness and rigidity required for thin curtain wall construction.



In this attractive Motor Hotel, Brookline, Mass., porcelain enamel panels make an unusually eye-catching exterior finish . . . especially when accented by the wide strip of sparkling Stainless Steel which extends around the marquee. The growing use of porcelain enamel is contributing in large measure to the widespread use of color for all kinds of building exteriors. Designer: Charles A. Newhall of Brookline; Architect: Sturgis Associates, Inc., Boston, Mass.; Contractor: Rich Bros., Boston, Mass.; Panels fabricated by Bettinger Corp., Waltham, Mass.

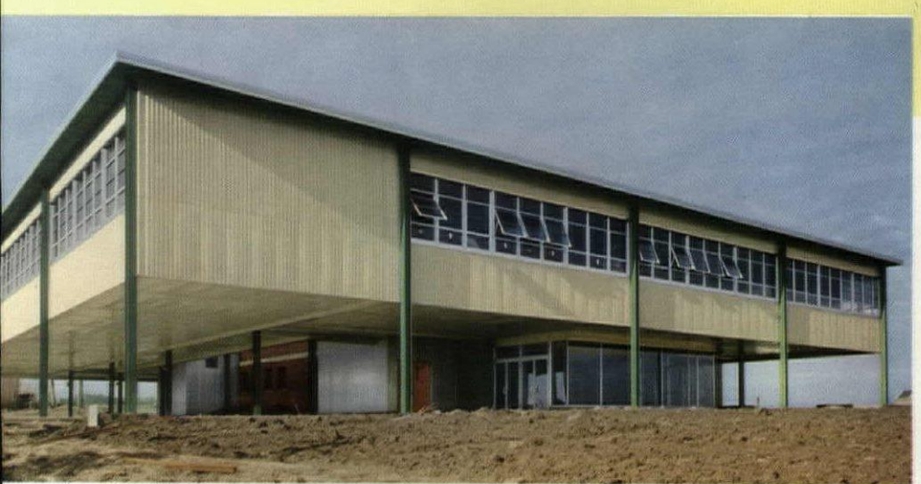


The handsome walls of Douglass Elementary School in Kansas City, Mo., are only 2" thick and weigh only 7 lb. psf. They are made of prefabricated curtain wall panels in sizes up to 3' 8" x 7' 4½". The sand-colored porcelain enameled panels add beauty and durability to this modern school. Kivett and Myers, Kansas City, Mo., with Angus McCallum, designed the school. Panels were fabricated and designed by Barrows Porcelain Enamel Co., Cincinnati, Ohio



The Cherry Hill Project of RCA, located at Camden, N. J., contains the headquarters and laboratory of the RCA Victor Television Div., the RCA Victor Radio and "Victrola" Div., and the RCA Service Co. All five interconnected buildings, with a total floor space of 320,000 square feet, have exterior walls of gleaming, beautiful porcelain enamel, accented by mullions of Stainless Steel. The porcelain enamel panels used for this project measure 94" x 39" by 2⅝" and are the largest panels fabricated to date. Their slightly corrugated surface eliminates any tendency to waviness. Architect: Vincent Kling, Philadelphia; General Contractors: Turner Construction Co., New York; Stainless Mullions from General Bronze Corp., Garden City, N. Y.; and Porcelain Enamel from Ingram-Richardson, Beaver Falls, Pa.





In the modernization of St. Gabriel's School, Whitehall, Pa., colorful, corrugated porcelain enameled panels were used for the exterior surface on the sandwich panel walls. The porcelain enamel is backed with a three-inch glass insulation and an attractive interior finish. Designer for this school was John Schurko, Pittsburgh, Pa., and porcelain enamel panels were fabricated by Steelcraft Mfg. Co., Cincinnati, Ohio.

PE

PORCELAIN ENAMEL ON *USS Vitrenamel* BASE

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

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Cameo PORCELAIN ENAMEL Curtain Walls

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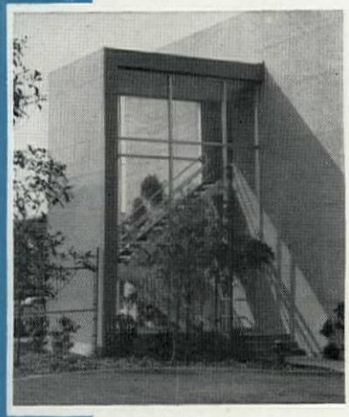
WHEN selecting the surfacing for the Consolidated Western Steel Division Office Building in Los Angeles, the men of U. S. Steel, of course, chose Porcelain Enamel Curtain Wall Construction... as supplied by the West's leading manufacturer of this material.

Durable and unfading Porcelain Enamel spandrels and mullions of this building are made more efficient through the use of Douglas Aircomb lamination filler... insuring excellent insulation in addition to the lifetime service and beauty of Porcelain Enamel.

CALIFORNIA METAL ENAMELING COMPANY has facilities to manufacture Porcelain Enamel Panels in every shape to which steel can be formed*... continuous furnaces guarantee color and texture control and volume production... a research laboratory provides for product development and testing.

See our catalog No. 5D/CA in Sweet's.

A limited edition of 24 pages of Porcelain Enamel panel detail is available to credited architects of the Western states upon request.



ARCHITECT:
Albert C. Martin & Associates

GENERAL CONTRACTOR:
Louis C. Dunn, Inc.

*The attractive blue, laminated Porcelain Enamel panels were pre-fabricated and assembled in steel frames and positioned on the structure in unit sequence.



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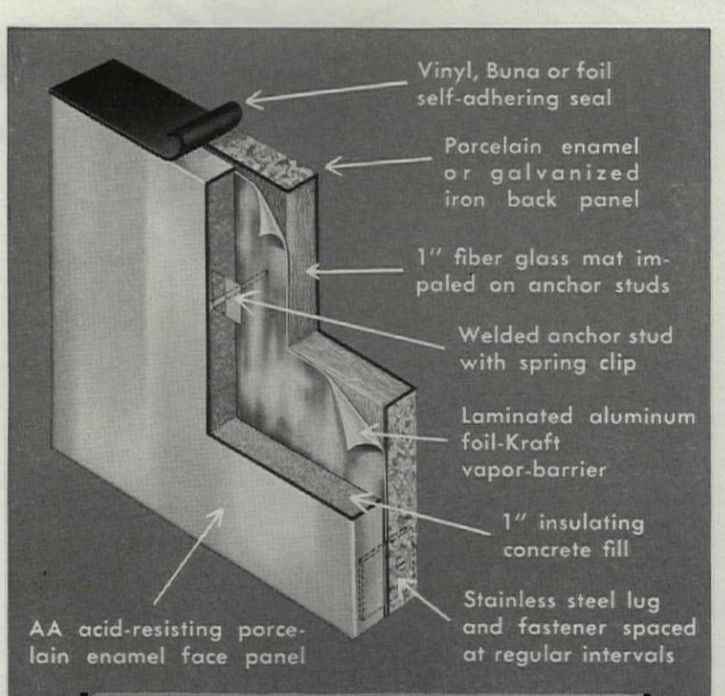
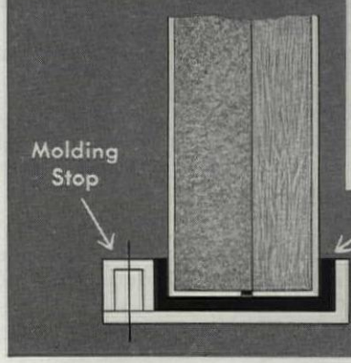




Actual photograph of U-16 cross section





Write for your copy of "Lifetime Color" showing 50 actual colors obtainable in Erie Porcelain Enamel.

only 2" thick
9 lbs. per sq. ft.
.16 U-factor
broad size range

Now you can specify a standardized curtain wall panel that offers the advantages of porcelain enamel . . . gives an excellent U-factor even in 2" thickness . . . offers flatness and rigidity . . . positive mechanical fastening . . . incombustibility . . . plus an effective vapor-barrier and other features you have been looking for.

And, you can utilize the lifetime durability of porcelain enamel in 50 standard colors . . . any special color . . . or a host of multi-color stipple variations.

The Erie U-16 panel is mechanically sound, tightly sealed on all sides, and erects with all edges shielded from the weather. It will adapt to any mullion bar suspension system and is available in sizes up to 32 square feet. Worth investigating. Why not today?

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NEW KIND OF WALL

...goes up in days instead of



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Please send me complete information on Knapp Unit Wall System.

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Knapp brings to the building industry the first *completely flexible* modular grid wall system . . . a new and practical approach to panel wall construction. These factory assembled units go up quickly and at substantial savings over conventional wall construction.

Included in this revolutionary system are ventilators for fenestration if required, insulated panels and all other accessories that make up a finished wall system. It can be adapted to all types of single and multi-story buildings, and is available in *steel* or *extruded aluminum.*

Knapp engineers are on call to study your requirements and suggest how the Knapp Modular Grid Wall System will fit into your building.

SYSTEM

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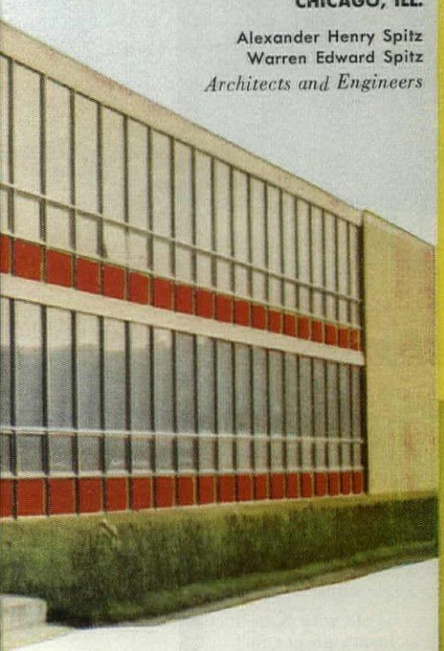
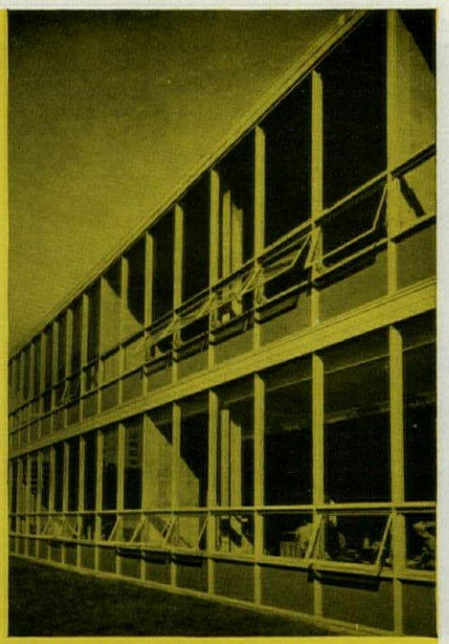
SAVES LABOR
SAVES MONEY

CHICAGO COLLEGE OF OPTOMETRY, CHICAGO, ILL.

Alexander Henry Spitz
Warren Edward Spitz
Architects and Engineers







FLEXIBILITY OF DESIGN. Knapp Unit Wall Panels are assembled at the factory with the exception of glass. Each unit is complete with insulated metal panels and ventilator completely caulked. They provide full flexibility of design. Ventilators, fixed glass and insulated panels can be varied to meet the individual requirements of the job.

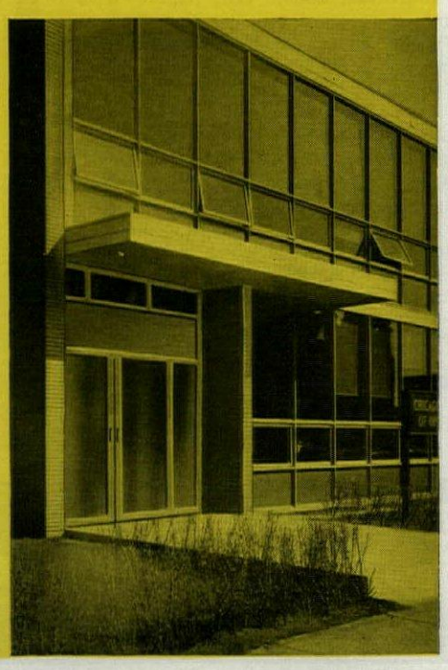
LIGHTWEIGHT. Knapp Metal Wall Panels are lightweight compared with masonry construction. This feature effects substantial savings in structural framing and footings. Reduced wall thickness adds substantial amount of floor space in multi-story buildings.

ATTRACTIVE APPEARANCE. The insulated panels are available in a variety of materials including aluminum, stainless steel and porcelain enamel in a wide range of *non-fading colors.* The neat, trim, streamlined appearance of the Knapp Wall System enhances the functional beauty of modern institutional, commercial and industrial buildings.

COMPLETE FACADE CONSTRUCTION. Because it is difficult to segregate door framing from exterior facade, the Knapp Wall System is designed to include framing to fit all door openings specified by the architect. *Here is the system you can specify to include the complete facade to be furnished by a single manufacturer.*

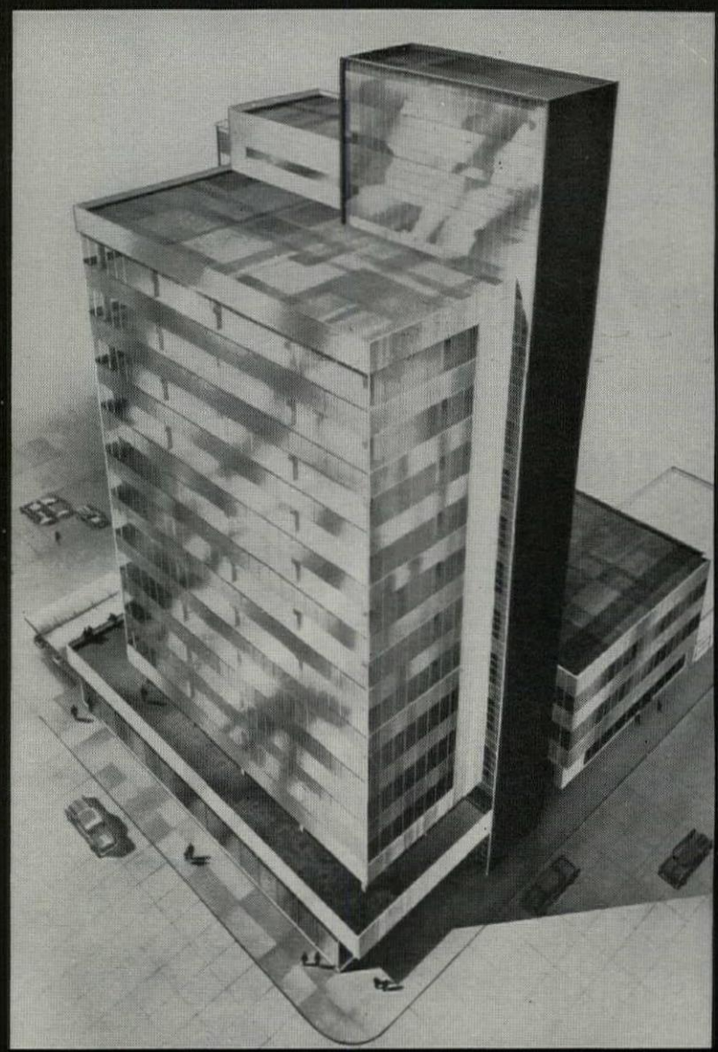
KNAPP BROS. MFG. COMPANY, 16 E. 72nd St., Cincinnati 16, Ohio





SPEEDS ERECTION. Knapp Unit Wall System is engineered and designed for simple, fast installation. Adjacent units are connected by specially designed sections and hook bolts. Panels are firmly secured to the structural framing with a minimum of time and effort. No construction delays . . . erection can proceed in all kinds of weather. Knapp Wall Panels go up in days instead of months, assuring earlier occupancy of the building.

FIRST TIME! True curtain wall of colorful porcelain in multi-story office building



First Security Bank Building
Salt Lake City, Utah

Everything you see is *Seaporcel* porcelain, excepting the windows! Yes, for permanent material, distinctive color combinations, ease of erection, lower labor costs, savings in structural steel and foundation costs and negligible maintenance... *Seaporcel Porcelain* is your answer to modern designing!

The main building consists of 44,000 sq. ft. of ribbed porcelain framing and wall surfaces in textured warm rust and tasteful off-white as the color theme outlining the structure. This includes the eyebrow and sunshade on the southerly elevation. The spandrels (12,500 sq. ft.) comprise 510 individual smooth gray panels—4'x4'—and are recessed with 8"x8" squares in "waffle" effect. The 4500 sq. ft. of ribbed spandrels facing the Annex Building are in textured off-white.

Another interesting treatment designed by the architects is the use of almost 3300 sq. ft. of *Seaporcel* porcelain exterior soffit for a continuous marquee around the main portion of the building and under the promenade which occurs at the second story level.

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Ribbed Seaporcel porcelain panels are bolted into a steel grid framework forming a completely assembled unit 4 ft. x 12 ft., placed in position and fastened to main structural steel by angle clips.

A wire mesh, fastened to the insides of the grids, is sprayed with lightweight cementitious plaster in thickness sufficient to insure proper insulation and fireproofing factors. Because of the simplicity of the grid installation and the fact that the coldest weather will not affect the progress of the erection of the Seaporcel material, a great deal of time is saved on overall construction.

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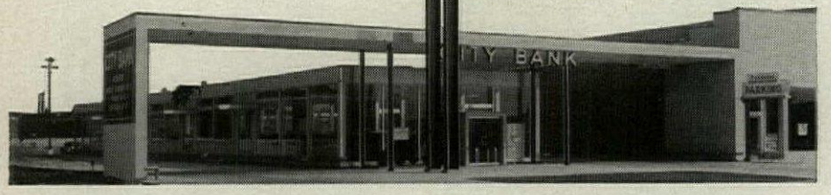

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DATES

American Institute of School Administrators, regional conventions: **March 12-16,** Denver; **April 2-6,** Cleveland. The meetings will feature architectural exhibits.

Associated General Contractors, 36th annual convention, **March 14-17,** Hotel Roosevelt, New Orleans.

Conference on the Utilization of Aluminum, sponsored by the American Institute of Electrical Engineers, **March 15-17,** William Penn Hotel, Pittsburgh.

National Motel Show, midseason exhibit of merchandise and services employed by motel operators, **March 22-24,** Atlanta.

American Institute of Architects, board of directors meeting, **March 29–April 1,** AIA headquarters, Washington.

American Institute of Planners, annual meeting, **March 30–April 2,** Muehlebach Hotel, Kansas City, Mo.

World Plastics Fair and Trade Exposition, including exhibit of building materials, **April 6-10,** National Guard Armory, Los Angeles.

American Institute of Steel Construction, annual conference, **April 18-19,** Muehlebach Hotel, Kansas City, Mo.

Building Research Institute, annual meeting, **April 18-19,** Woodrow Wilson Hall, Princeton University, Princeton.

Building Officials Conference of America, annual meeting, **April 18-21,** Milwaukee.

Western Mountain District, American Institute of Architects, regional meeting, **April 28-30,** Camelback Inn, Phoenix.

South Atlantic District, American Institute of Architects, regional meeting, **May 5-7,** Fort Sumter Hotel, Charleston, S.C.

National Restaurant Assn., annual convention, including an architectural and remodeling exhibit, **May 9-13,** Navy Pier, Chicago.

National Housing Conference, annual meeting, **May 16-17,** Statler Hotel, Washington, D.C.

National Materials Handling Exposition, May 16-20, Chicago.

Air Pollution Control Assn., annual meeting, **May 22-25,** Sheraton-Cadillac Hotel, Detroit.

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

American Institute of Architects, annual convention, **June 21-24,** Hotel Radisson, Minneapolis.

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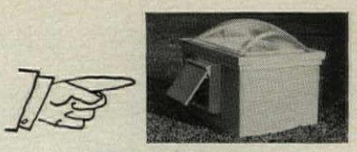
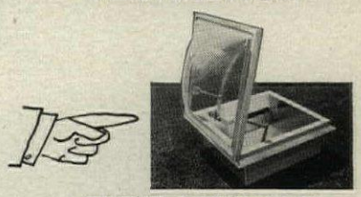


VENTILATION



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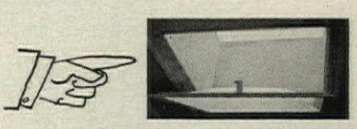

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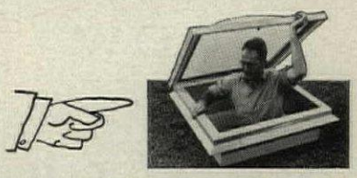

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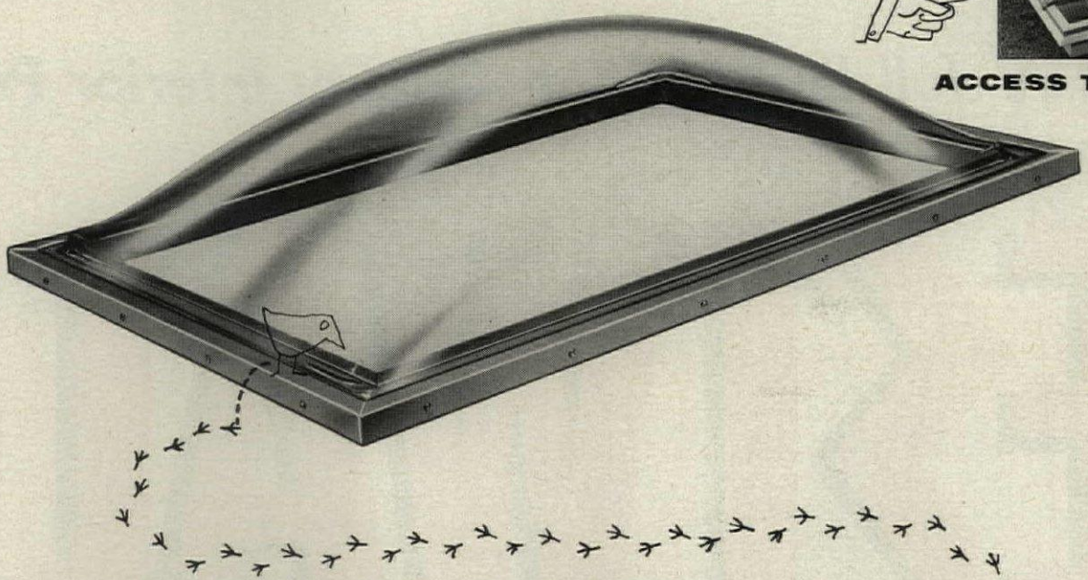

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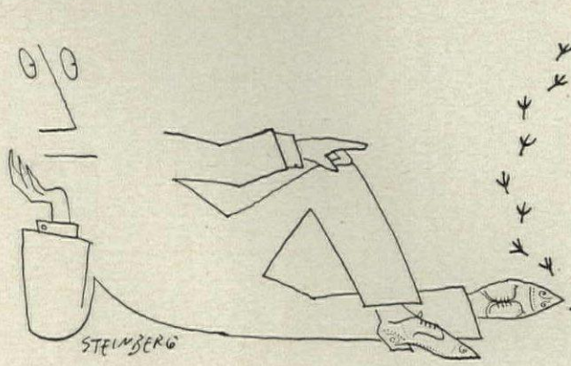

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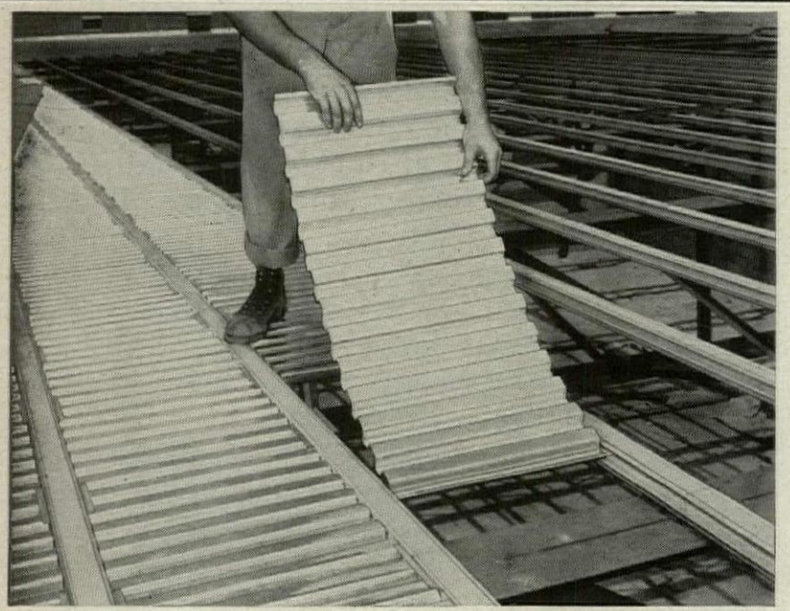

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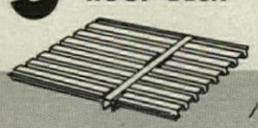



ALFOL INSULATION KOOLSHADE SUNSCREEN

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LETTERS

THE TEAM ASPECT

Forum:

The presentation of the Center for Advanced Study in the Behavorial Sciences (AF, Jan. '55) is wonderful. I particularly like linking it up with the CBS article. Am only sad that there was not more stress on the team aspect—a generous and decisive client, a fine and cooperative contractor, a gifted landscape architect and superb coordination in furnishing.

WILLIAM W. WURSTER, *architect*
San Francisco, Calif.

THE CLIENT'S COMMENT

Forum:

Naturally, I read the January FORUM with more than usual interest because of the stories about CBS and the Behavioral Science Center.

I have been a reader of FORUM for many years, even before it became a part of the TIME Inc. family. It has been of real help to me in providing me with information, particularly in the industrial building field.

FRANK STANTON, *president*
Columbia Broadcasting System, Inc.
New York, N.Y.

ANOTHER CLIENT

Forum:

I commend you upon the very excellent story relating to the Socony-Vacuum building (AF, Jan. '55). Our many friends who read it have been most complimentary from the standpoint of the way you set up the article. . . . This is the type of story that the people in the construction industry like to read.

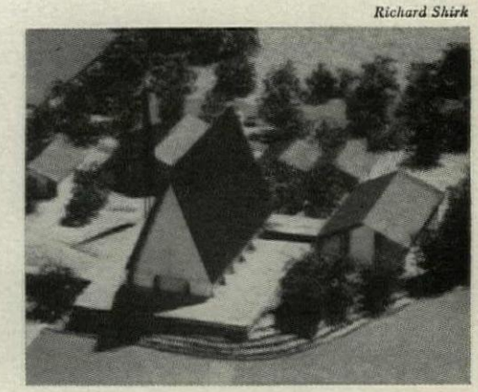
PETER B. RUFFIN, *executive vice president*
John W. Galbreath & Co., Inc.
New York, N.Y.

SAARINEN'S OUTDOOR MOVIE

Forum:

The concept of Saarinen's Lutheran College (AF, Dec. '54) is very interesting, but I confess that I am conservative and prefer the traditional type of architecture conventionally used by our colleges. The view of the buildings from the approaching road gives me a monotonous impression which is

Richard Shirk



relieved neither by the high roof of the chapel nor the nearby spire. As I visualize the view I would get when looking at the village in the direction at right angles to the approach road, the domination of the surroundings by the chapel roof seems to add as much beauty to the location as is added to a neighborhood by the screen of an outdoor moving-picture concern.

PERLEY D. BAKER, *dean*
Norwich University
Northfield, Vt.

MODERN ST. JOHN

Forum:

Congratulations for the healthy tone of your article on the cathedral of St. John the Divine (AF, Dec. '54).

This article helps architects because it has let a breath of fresh air into the subject of ecclesiastical architecture and blending of the traditional with contemporary forms.

To solve the problem of heating and providing good vision, sound and comfort in such a building, I propose that following completion of the entire structure, it be thrown open to the public as an ecclesiastical museum, and that a contemporary sanctuary or auditorium be added nearby with space and facilities to properly provide comfort for people participating in the service.

HERBERT T. JOHNSON, *architect*
Oakland, Calif.

Forum:

The solution of the problem of what to do with the crossing of St. John's Cathedral (AF, Dec. '54) depends in the long run upon what the cathedral authorities decide to do liturgically. My personal opinion is that they should place the altar at the crossing. I believe this is absolutely necessary if they decide to continue with transepts. If the altar is placed at the crossing, there might be some justification for a monumental structure over it—though a high tower seems to me a waste of money and effort, unless it can be made really satisfying esthetically. In any case, if the altar is placed at the crossing, the chief problem will be to give the proper lighting to this area, so as to focus all attention upon this pivotal point of liturgical celebration.

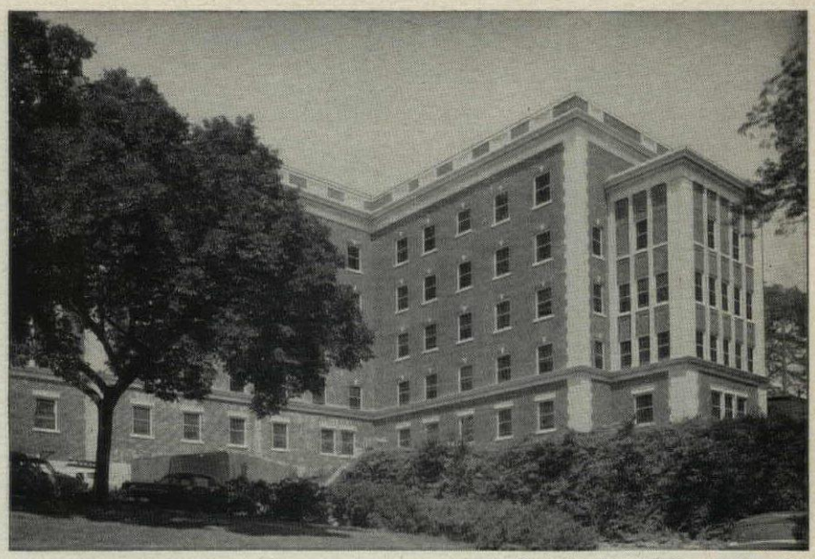
Cram's Gothic nave is a masterpiece. His design for a Gothic choir is less impressive. Why not finish the choir in Romanesque, as La Farge started it, and then find a modern reconciliation of the two for the crossing? If the transepts are built, they can be in different styles, without damage to the whole effect. The crossing, only if it is the liturgical center of the building, can pull together all the varied approaches to it of nave, choir and transepts. Here, certainly, is the great opportunity for contemporary architectural genius.

REV. MASSEY H. SHEPHERD JR.
Berkeley, Calif.

Forum:

Mr. Fitch's fine article on St. John the

continued on p. 82



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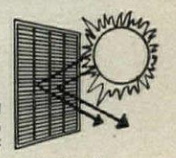
Only KoolShade Sunscreen could give this hospital the sun-relief it needed

Problem: The administration of St. Lukes Hospital, Kansas City, Mo., knew their drapes and furnishings were being damaged by the sun's heat and glare and that the staff's work was being increased. They were sure that patients' convalescence was being lengthened.

Approach: A study was made of every shading device that seemed feasible.

Solution: KoolShade Sunscreen was chosen because it offered the *combination* of advantages—all necessary—which *no* other device offered: it kept the sun's heat and glare *outside* with unsurpassed efficiency, admitted more beneficial light and allowed better visibility than any other efficient device, presented no fire hazard, no noise nuisance (in wind), and looked attractive and appropriate on the building. And of major importance was its sturdy, corrosion-resistant construction and long life.

Only KoolShade Sunscreen offers



- **unsurpassed shading efficiency** — keeps up to 87% of the sun's rays off windows during the hottest part of the day
- **80% clear visibility,** maximum glareless light
- **harmony with all architecture**
- **virtually no maintenance**—constructed of strong preoxidized bronze strips, wired and framed together, lasts for years, withstands hard blows
- **effective insect protection**—no other screens needed

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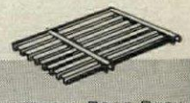

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Walseal is a registered trade-mark which identifies valves, flanges and fittings manufactured by the Walworth Company. Walseal products have *factory-inserted* rings of silver brazing alloy in threadless ports. Joints made with Walseal products are silver brazed and actually make the system a "one-piece pipeline."

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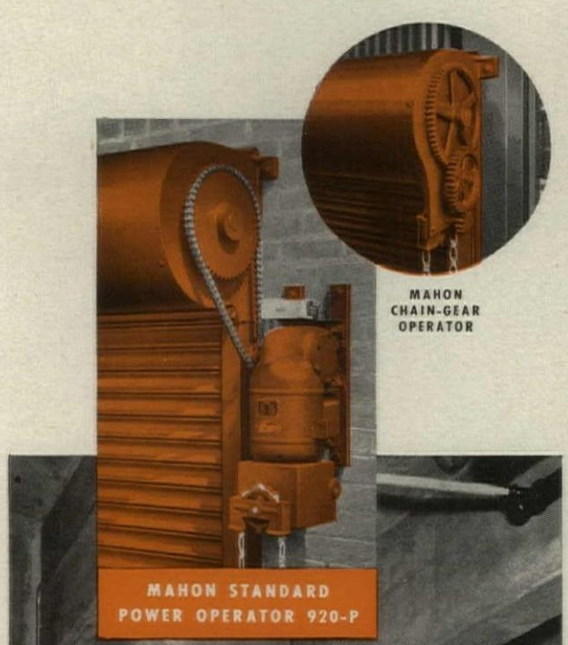

Here is another shipping dock application in which no other type of door could meet the operating space requirements. In three openings, 38′-0″ x 14′-0″, at the entrance to an enclosed subterranean shipping dock located off a vehicular tunnel under "Northland"—Hudson's fabulous new shopping center in Detroit's northwest section—three Mahon Power Operated Rolling Steel Doors provide the quick, timesaving operation, the permanence, the firesafety, the security, and the space conservation demanded in this unusual motor freight handling facility. The quick, vertical roll-up action of rolling steel doors occupies no usable space either inside or outside the opening—floor space is usable to within a few inches of the door curtain on either side . . . and, there are no overhead tracks or other obstructions to interfere with crane handling adjacent to the door opening. The permanent all-metal construction of rolling steel doors means less maintenance, provides greater protection against intrusion and fire, and assures you a lifetime of trouble-free service with convenient local or remote electrical control stations. When you select a rolling steel door, check specifications carefully . . . you will find in Mahon Rolling Steel Doors some exclusive and very desirable features in operating mechanisms, bearings, and other parts and materials which add up to a greater over-all value. See Sweet's Files for complete information, or write for Mahon Catalog No. G-55.

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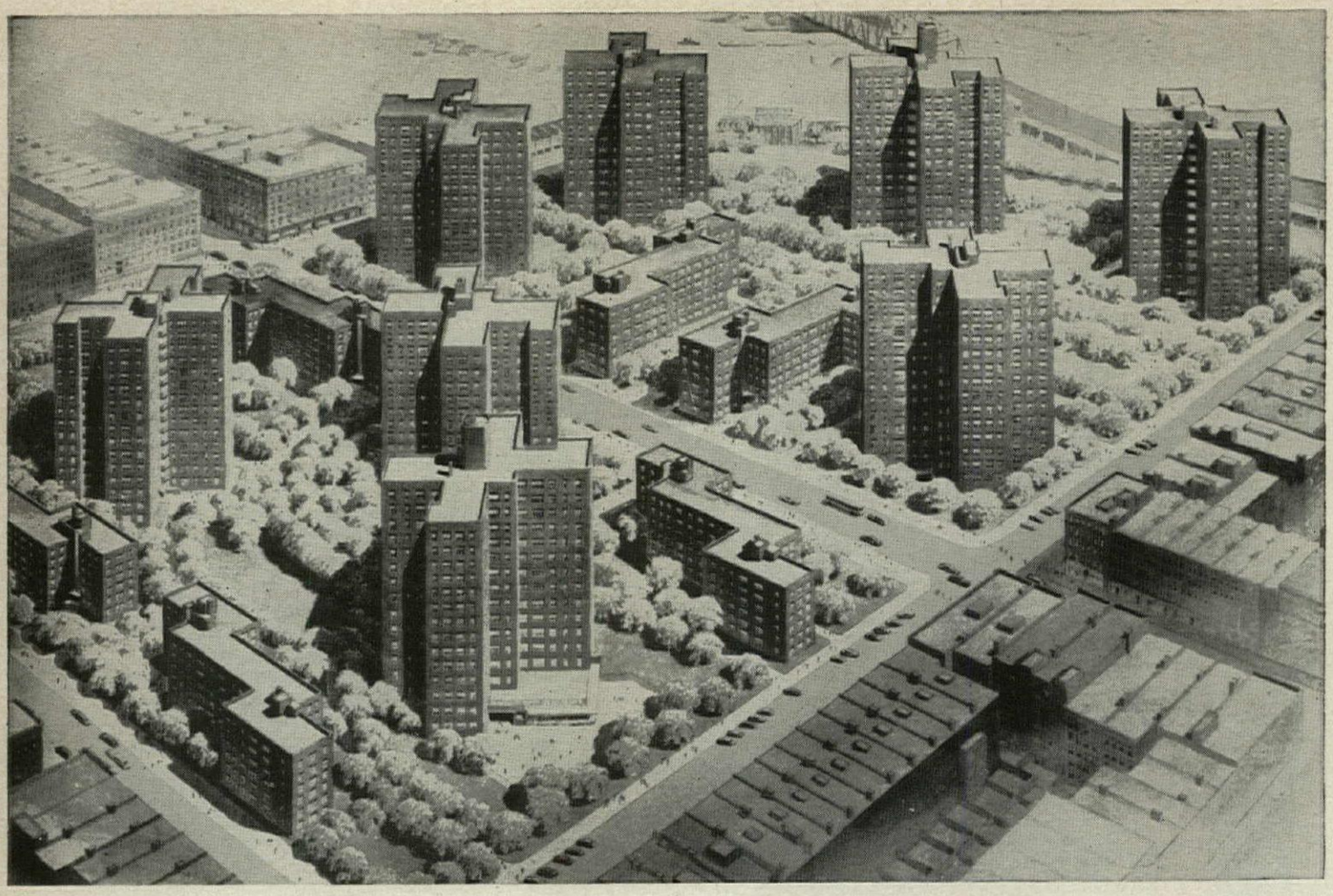
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Three Mahon Power Operated Rolling Steel Doors, 38′-0″ x 14′-0″, at the entrance to an enclosed subterranean shipping dock off a vehicular tunnel under "Northland"—The J. L. Hudson Company's new shopping center, Detroit. Victor Gruen & Associates, Architects. Bryant & Detwiler, General Contractors.

MAHON



1. Abraham Lincoln Houses

2. 100 Park Avenue



Six Good Reasons Why Pittsburgh Were Used In These Recent

First, Steeltex, the combination welded steel mesh with its own built-in pliable form attached, requires no additional forms or reinforcement for giving shape and strength to concrete floors and roofs (see note below right).

Second, Steeltex can be installed much faster than other types of forms and reinforcement for concrete floors.

Third, Steeltex saves concrete.

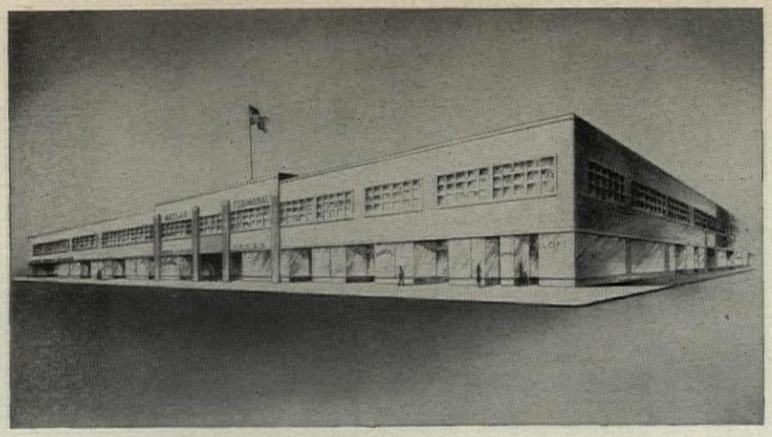
Fourth, Steeltex minimizes leakage,



3. Franklin Simon Store



4. Immaculate Conception Convent



5. Nassau Terminal Building



6. Wantagh High School

Steeltex® And Welded Wire Fabric Buildings In New York City

saves clean-up expense.

Fifth, Steeltex assures a strong floor.

Sixth, Steeltex costs less than other reinforcing materials and systems.

On these two pages are pictured $34.2-million worth of recent buildings in New York City and suburbs in which Steeltex or Pittsburgh welded wire fabric or both were used to reinforce concrete slabs.

For details . . . **read story at right.**

1. Abraham Lincoln Houses, New York City. *Architect:* Skidmore, Owings and Merrill—Tandy and Forbes; *Structural Consultant:* William Hoffberg; *Contractor:* H. R. H. Construction Corp. This is one of 75 housing projects built by the New York City Housing Authority, whose reputation for sound and economical construction has attracted nationwide attention. It was built at a cost of $14.2 million and consists of 14 buildings housing 1,286 families (total population over 5,000—larger than many towns). In all buildings Steeltex or Pittsburgh welded wire fabric was used for floor reinforcing.

2. 100 Park Avenue, New York City. *Architect:* Kahn & Jacobs, New York, N. Y.; *Consulting Engineer:* Jaros, Baum, and Bolles, New York, N. Y.; *Contractor:* George A. Fuller Company, New York, N. Y. Built at a cost of $15 million, the building incorporates Pittsburgh Steel Products Company's welded wire fabric reinforcing throughout the floors.

3. Franklin Simon Store, Garden City, Long Island. *Architect:* Herbert Beidler, Chicago, Ill.; *Contractor:* Andrew Weston, Inc., Woodmere, Long Island, N. Y. This is a typical example of the Franklin Simon chain of shopping stores incorporating Steeltex floor lath in floors and roof. Steeltex is used widely for construction of suburban stores of this type.

4. Convent of the Immaculate Conception, Jamaica Estates, Long Island. *Architect:* Charles M. Spindler, Brooklyn, N. Y.; *Contractor:* Caristo Construction Co., Brooklyn, N. Y. This $600,000 convent has just been completed. Its construction incorporates Steeltex floor lath over steel joists in floors and roof.

5. Nassau Terminal Building, Hempstead, New York. *Architect:* Harold Carlson, Garden City, N. Y.; *Contractor:* Marvin Construction Corp., New York City; *Contractor Supervision:* Fred T. Ley & Co., New York City. This bus terminal, containing 33 stores, over sixty thousand square feet of office space, twenty-four bowling alleys, and accommodating twenty-three buses at one time, was built at a cost of $1,500,000. Steeltex floor lath was used over steel joists in the floors and roof.

6. Wantagh High School, Wantagh, Long Island. *Architect:* Frederic P. Wiedersum, Valley Stream, N. Y.; *Contractor:* Jonwal Construction Company, Inc., Mineola, N. Y. This Long Island high school, built at a cost of $2.5 million, was completed last fall. Steeltex floor lath was used over steel joists in the floors and roof.



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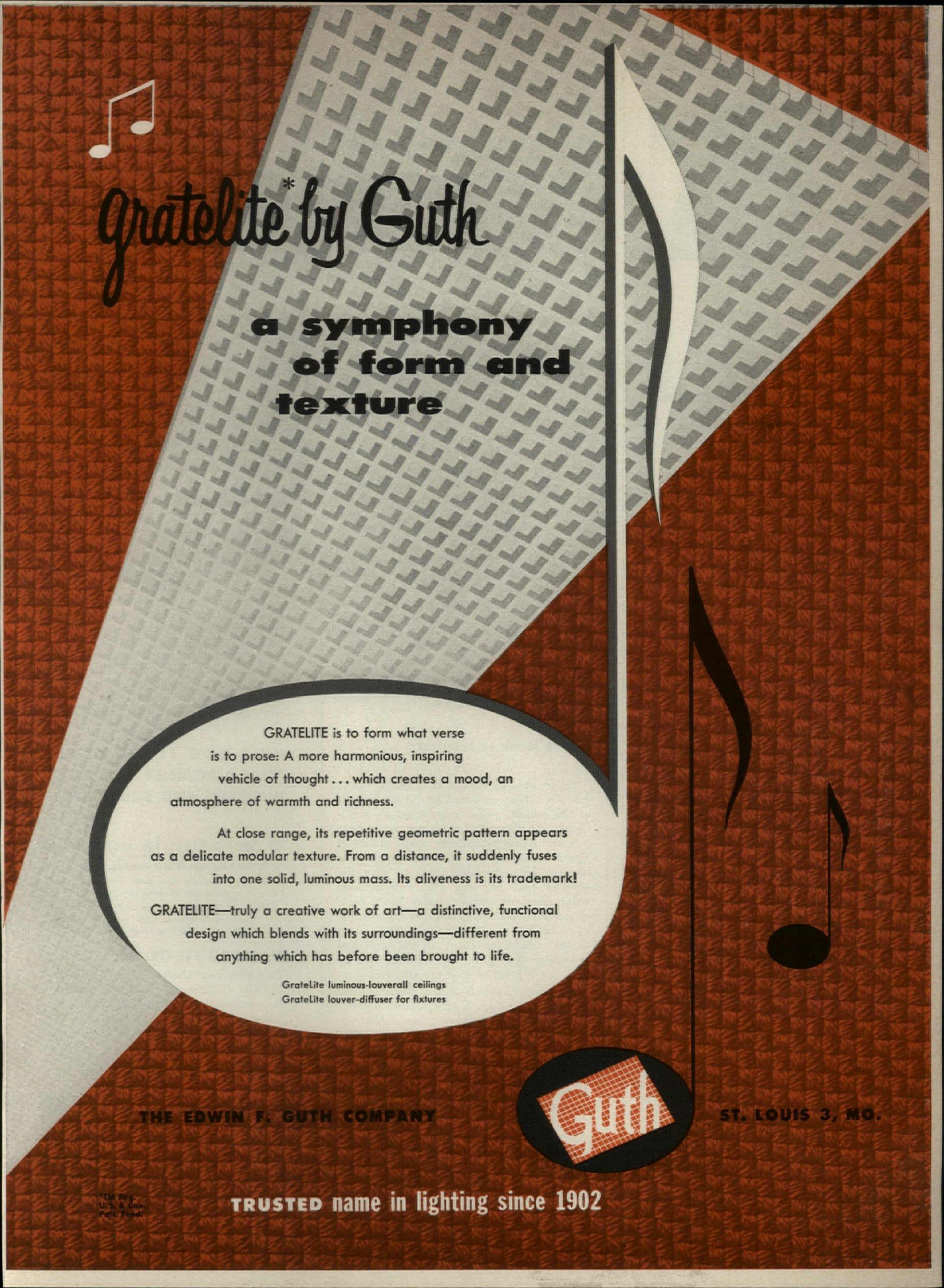
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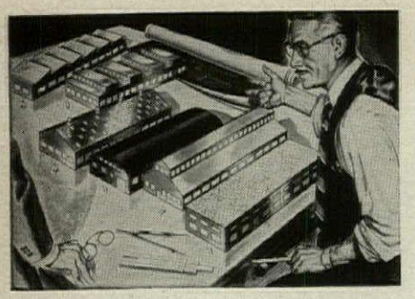

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LETTERS

Continued from p. 75

Divine in New York represents a problem faced by many architects.

In defense of finishing the cathedral in modern architecture we proudly point to Notre Dame and Chartres where over a period of a life span a change in style quite naturally evolved. But is this a fair comparison? The change in these cathedrals was a normal one, not one distinct style forced onto another. The transition in style in Notre Dame from west to east is a logical expression of the contemporary craftsmen who keep abreast of the times.

But what about St. John? Here we have a building that is already 800 years old in style and half built to a pattern that is fixed. The problem at the crossing can be resolved with modern engineering, but the Gothic hulk still remains. To produce a central section quickly, economically and appropriately with the new work consistent, congruent with the old is not even within the realm of possibility.

St. John has been tortured and the Gothic style insulted long enough. Select another site and build a new and inspiring St. John that is consistent with the times, at no more cost than it would take to redo the central section.

St. John should be retired to its rightful place in history as an expensive example of how not to build cathedrals using the Gothic idiom and other histrionic embellishments as a backdrop for worship. It is evident that St. John itself is quietly revolting at the idea and would prefer to rest in peace rather than be welded to a steel tower whose only function is to apologize for past mistakes.

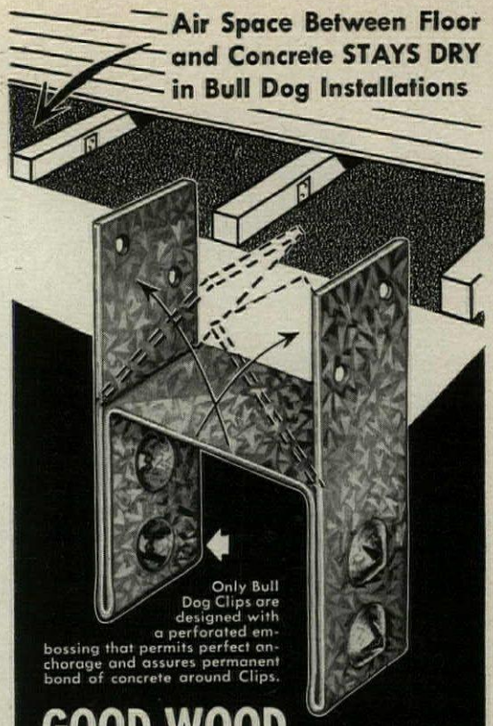
MAJOR E. J. PETERSON, *architect*
Alexandria, Va.

HOW TO DESIGN AN ARCHITECT

Forum:

Before one can "design an architect" (AF, Jan. '55), one must understand the nature of the subject. What constituted an architect as recently as 25 years ago would bear just a small resemblance to today's architect. Technological sprints and changes in the economy have forced limitations upon the services that any one man can perform within his professional capacity. In the fields of medicine, dentistry, law and engineering, specialization has become necessary to bring to the patient or client all the skill and knowledge that have been accumulated by man. So it must be with the architect.

With the exception of the "style" of the subject matter being taught, schools of architecture have not changed, completely neglecting the essentiality of specialization. They imbue the student with the "godliness" of design and those whose abilities lie in other phases of building are needlessly submerged. A smattering of engineering so he can lead the engineers, a touch of rendering for presentation's sake, a little calculus for rigorousness, some history to give him culture, a pinch of this and that to season and the "cocktail" is complete. These "general practitioners" continue to be generated at an alarming rate every year only to find upon



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LETTERS

graduation that they are of little use to the practicing architect. They are capable of rendering service á la pre-World War I architect, who usually supplied the contractor with two pages of "instructions to the builder," a couple of sheets of drawings, and that was that. Today the builder is given a scholarly tome whose lifting necessitates the strength of two men and a boy, and which bids fair to make the *Decline and Fall of the Roman Empire* look like an abstract out of a copy of *Reader's Digest*. This "encyclopedia" is usually accompanied by a set of drawings resembling a small keg of beer.

Of what use then is our "general practitioner"? The teamwork necessary for the execution of a modern building necessitates the services of design architects, working drawing architects, specification architects, supervision architects, cost architects, business administration architects, etc., each man with an understanding of "this business of architecture" but with the complete mastery of his own special phase of it. Should it not be obvious that there is as much prestige in knowing more than anyone else about specifications as there is in being a "hot" designer? A design is only as good as the men who turn this "paper architecture" into reality. Whither Harmon without his Evashewski?

The postwar years have seen startling changes in this "business of architecture" and the future promises more of the same. Some of the profession are adjusting, but the schools of architecture, the fountainhead, remain completely unaware of this metamorphosis.

IRVING D. SHAPIRO
New York, N.Y.

Forum:

It would have been difficult to select a more representative panel of practitioners and teachers than those who appeared in the round-table discussion published in the January FORUM. Of the excellent observations and suggestions expressed, I was particularly impressed by a remark of Mr. Abramovitz: "You should emphasize in schools whatever is hardest to get in practice."

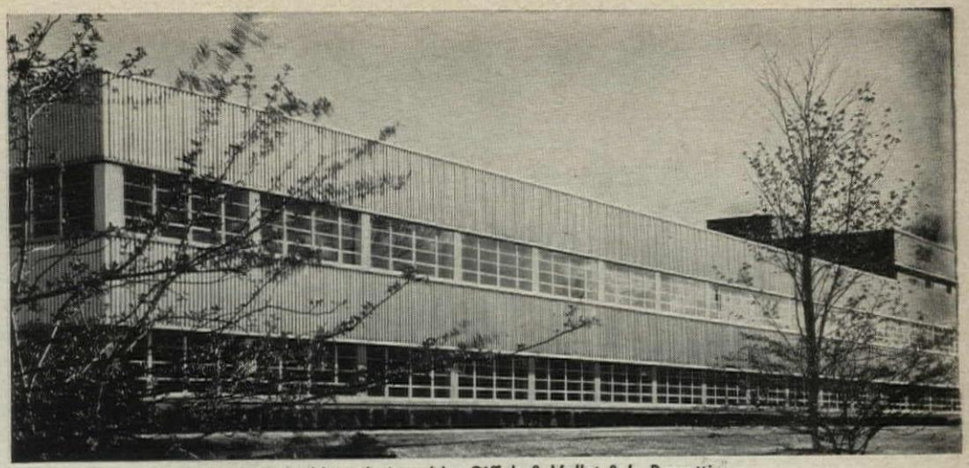
JOSEPH WILLARD WELLS, *architect*
King & Wells
Norfolk, Va.

Forum:

Thanks are due FORUM for publicizing architectural education by means of the report on the Princeton Round Table. I would like to comment on the recruitment and selection of promising students. How can architecture attract those potentially most competent and divert the less promising?

Anything which develops an understanding of the profession by the public—leaders in all fields, the rank and file of teachers and the press—should lead to gradual progress toward this objective. Courses for the general student inform future clients and other leaders, but these courses are not

continued on p. 90



An office building designed by Giffels & Vallet & L. Rossetti, Associated Engineers and Architects, Detroit.

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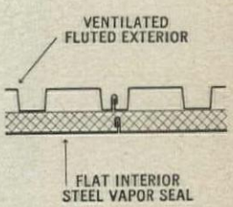
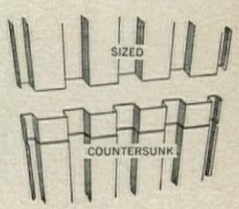


2 **Flush Lap Joint** Special conditions often make end-joints unavoidable. All standard Robertson Q-Panels are die-set and countersunk at the end lap, producing neat, almost invisible joints, with full insulation at that point. This feature eliminates the inefficient butt-joint with its unattractive through-wall flashing and consequent insulation loss.



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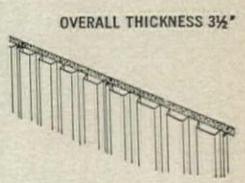

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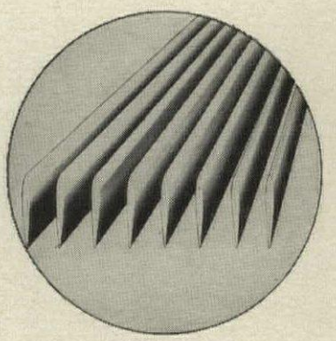

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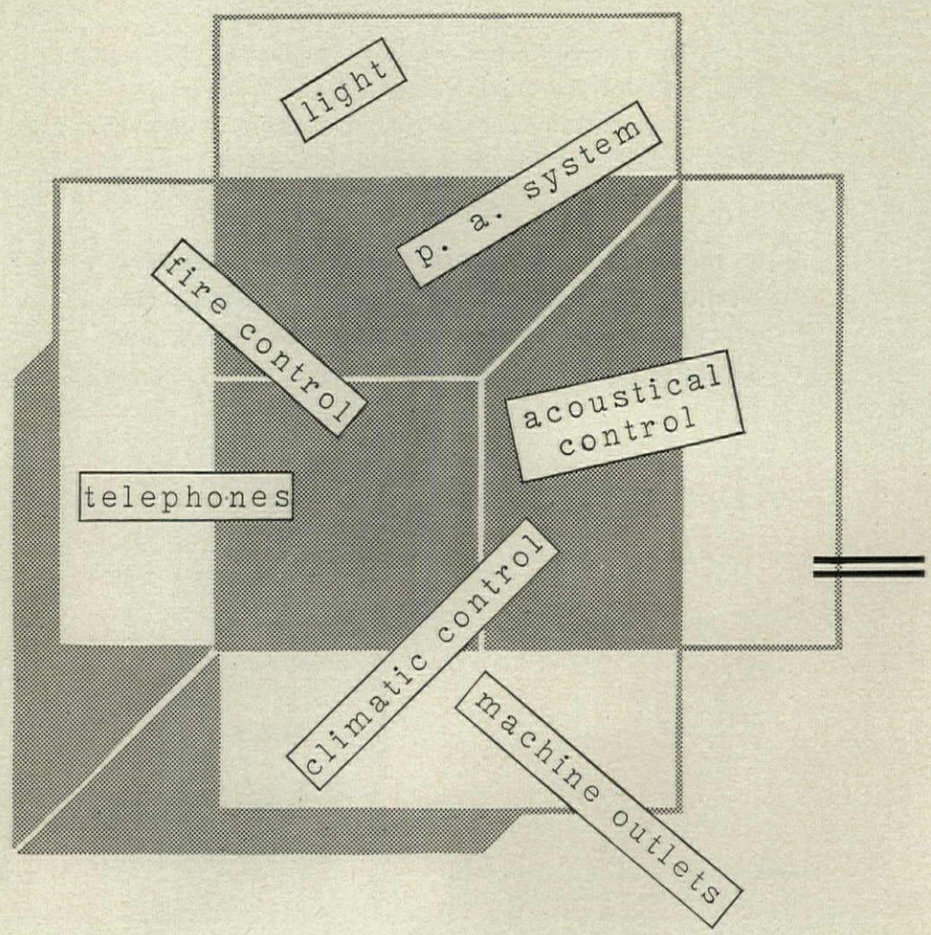

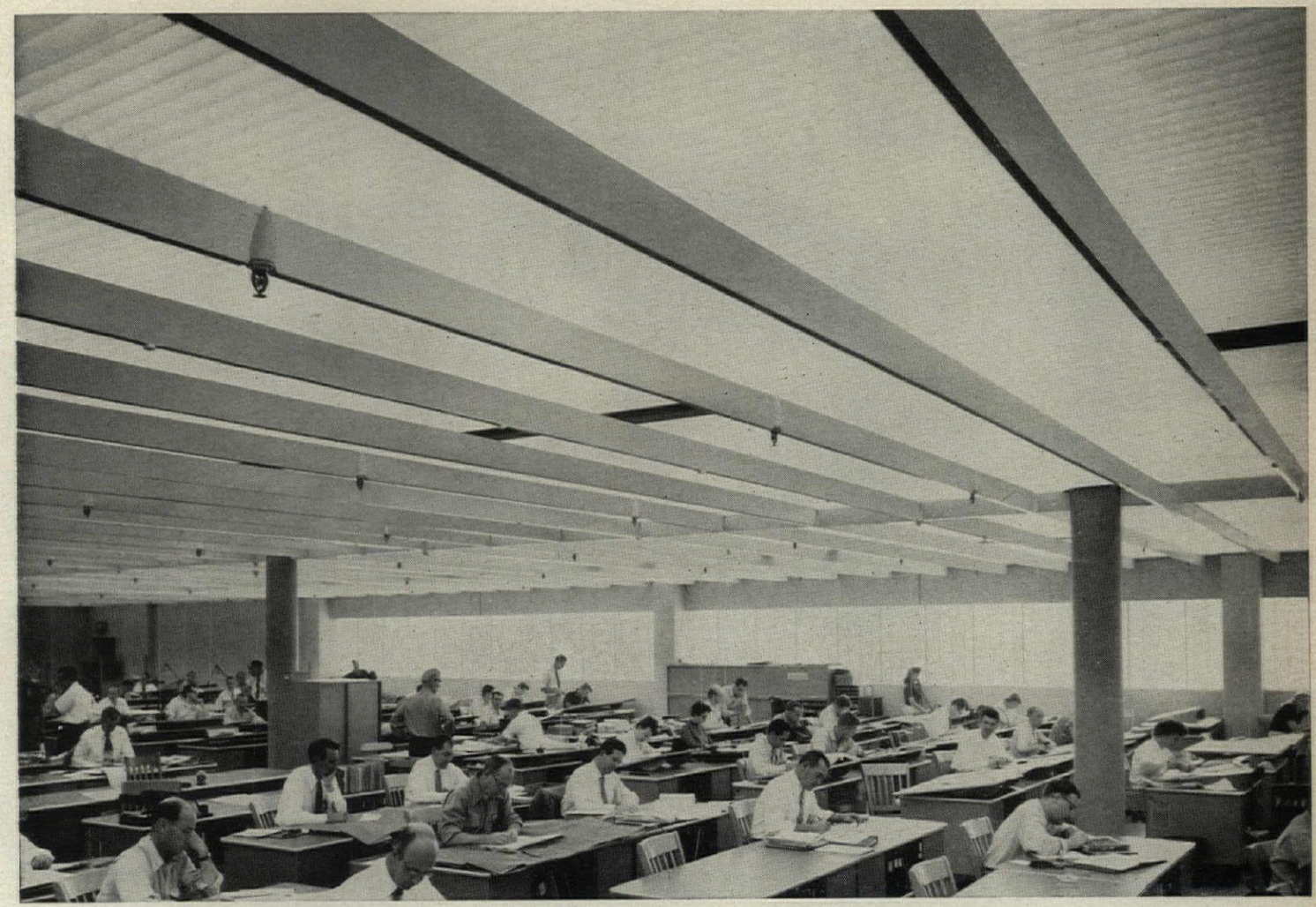

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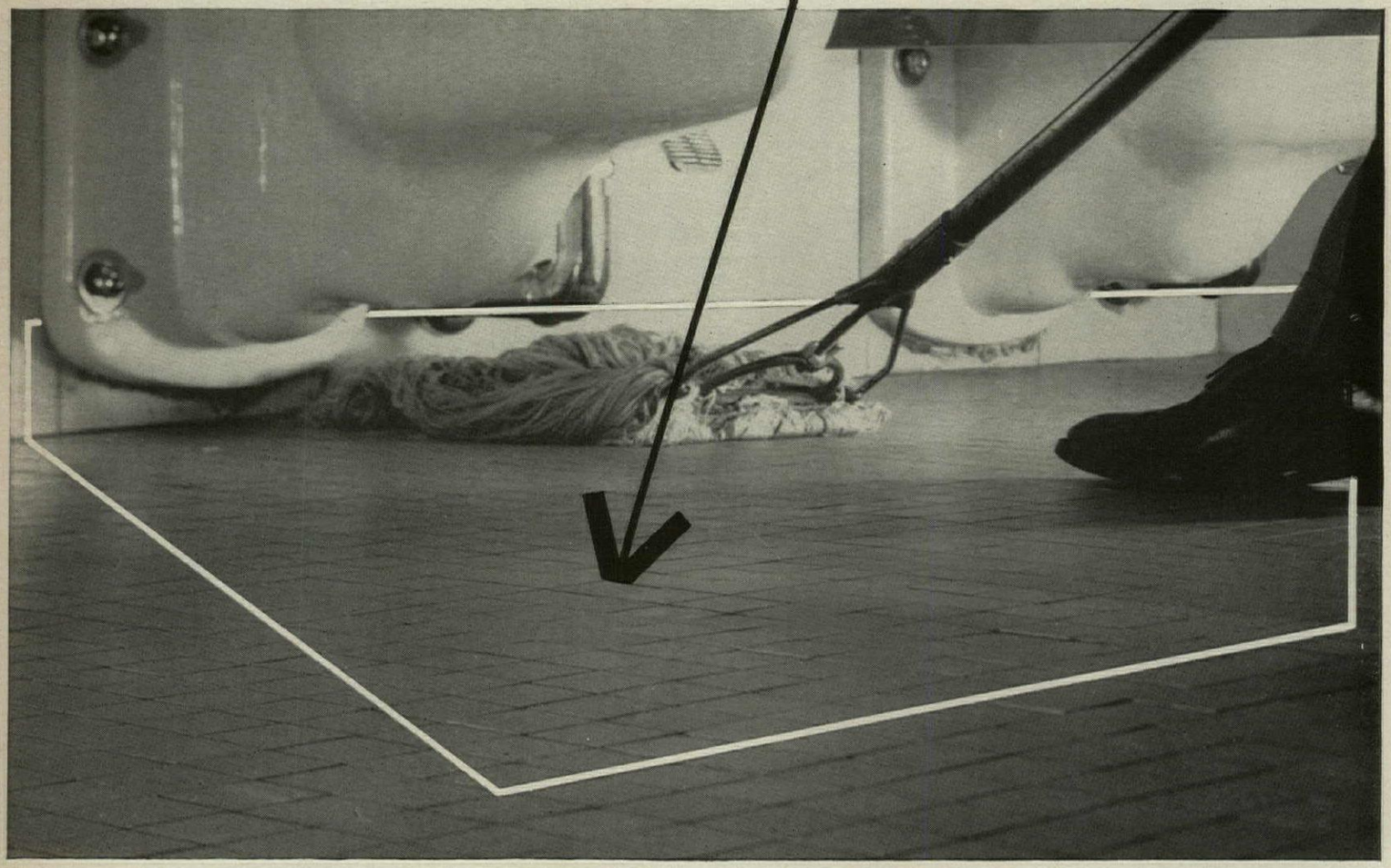

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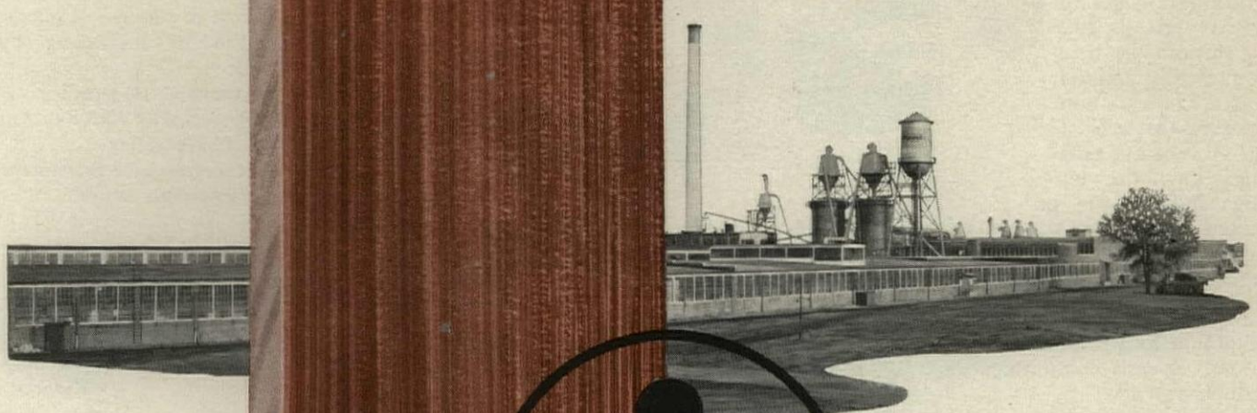

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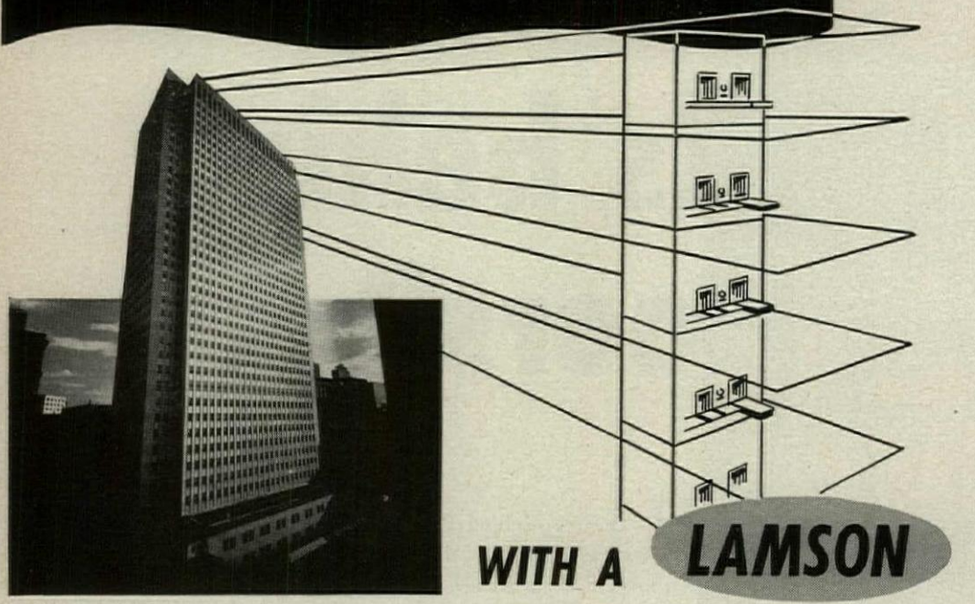

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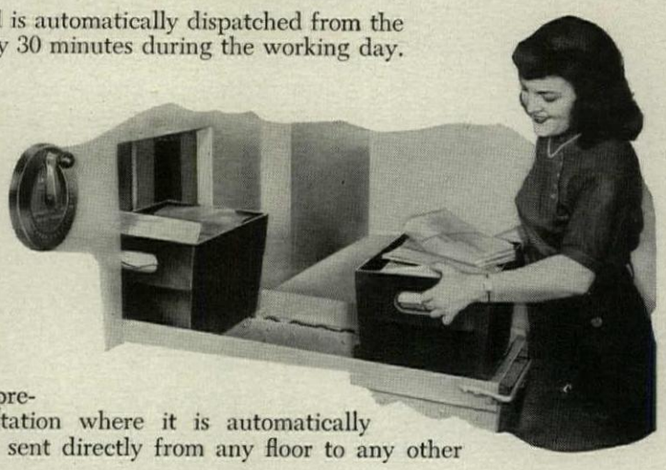

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LETTERS

Continued from p. 83

always easy to make popular and meaningful simultaneously.

By wise guidance of individual students in preparatory schools the problem may be attacked more directly. This involves getting knowledgeable advisers in the schools or educating those now in such positions. For more immediate results, guidance may be applied more effectively when students apply for admission to architectural schools. Even with the cumbersome methods now employed, it is possible by counseling and refusal to reduce the number of unqualified persons in the architectural schools. The positive side of this activity—encouragement of the qualified—would involve a great increase in the number and size of scholarships and other forms of student aid.

For the guidance of students in preparatory schools and the selection of students for the architectural schools, as well as for the selection of those admitted to practice through the certification process, more effective selection methods are needed. Again, financial assistance is required, but this should be obtainable, if the profession and the schools demonstrate sufficient interest in this method of insuring a high quality in the architectural profession of the future.

C. H. COWGILL, *head*
Department of Architecture
Virginia Polytechnic Institute
Blacksburg, Va.

PLASTICS IN BUILDING

Forum:

I congratulate you on the fine job which you did on plastics in the January issue of FORUM. Your article has excellent coverage and the general treatment is of a high order.

Interest in the use of plastics in building seems to be increasing by leaps and bounds.

ALBERT G. H. DIETZ
Professor of Building Engineering and Construction
Massachusetts Institute of Technology
Cambridge, Mass.

Forum:
The article was a dandy.

DONALD M. PLUMMER
Public Relations Dept.
The Dow Chemical Co.
Midland, Mich.

NEW KIND OF PRISON

Forum:

We had talked to our architect about your article on the new Angola prison (AF, Nov. '54), which contains some very interesting architectural and construction features that may be used in a new medium security correctional institution being planned for Michigan.

The lift-slab construction and the concrete arches of the dining hall are especially interesting. We like the "telephone-pole" de-

continued on p. 94



Room for the Future
–with Lighting by LITECONTROL

This light and cheerful Sun Oil office in Cincinnati has plenty of room to grow . . . and its comfortable, attractive LITECONTROL installation can grow right along with it. Notice the spacing of the recessed fixtures: new fixtures can be added to each row, making them continuous. Or new lines of fixtures can be added between the present rows.

This versatile installation with the built-in growth potential uses LITECONTROL 5524, a 2-lamp recessed troffer. Curved Holophane lenses direct the light to minimize brightness, so seeing is comfortable all day long. Notice, too, how the fixtures harmonize with the tiled ceiling.

Light colors on the walls and ceiling and a light-toned, attractive floor pattern complete this picture of an outstandingly pleasant place to work. Installation was economical, of course, and cleaning and maintenance are easy: just lift out the fixture lenses from below.

Whatever the lighting requirements, LITECONTROL service and fixture efficiency will give you *custom lighting* at *standard prices.* Get in touch with your local LITECONTROL representative.

INSTALLATION: Sun Oil Company, District Sales Office, Cincinnati, Ohio

PROJECT ENGINEER: Alex M. Engart

GENERAL CONTRACTOR: Dowson-Evans Construction Company, Cincinnati, Ohio

AREA: 1250 square feet

FIXTURES: Litecontrol #5524 recessed troffers, with Holophane #9033 and #9034 Low Brightness Lenses

CEILING HEIGHT: 9′–0″

SPACING: 8′–0″ on centers

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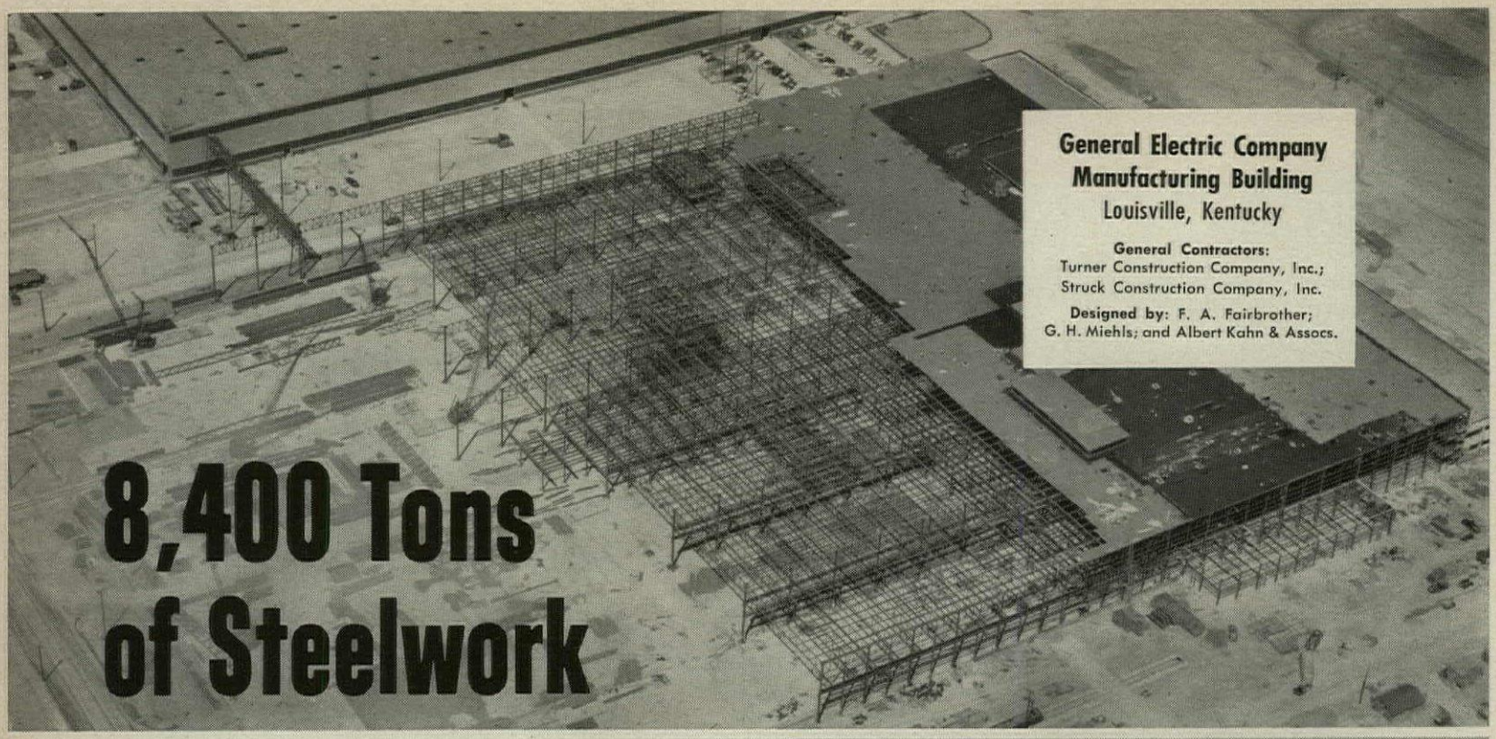
DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS



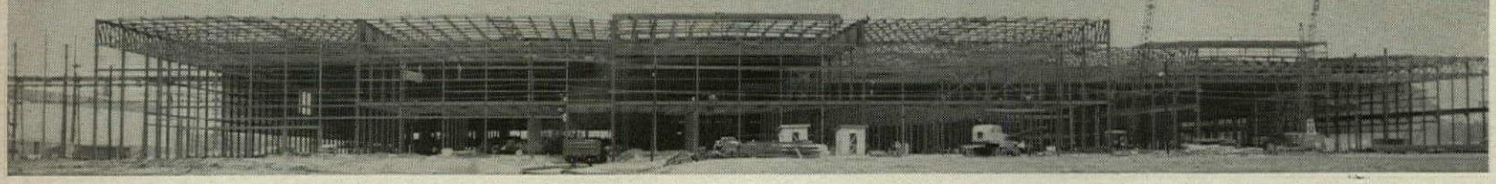
General Electric Company
Manufacturing Building
Louisville, Kentucky

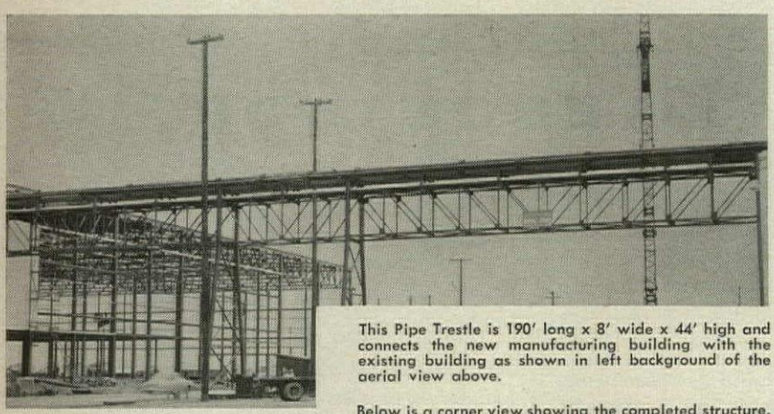
General Contractors:
Turner Construction Company, Inc.;
Struck Construction Company, Inc.

Designed by: F. A. Fairbrother;
G. H. Miehls; and Albert Kahn & Assocs.

8,400 Tons of Steelwork

erected in 3½ months by AMERICAN BRIDGE





This Pipe Trestle is 190′ long x 8′ wide x 44′ high and connects the new manufacturing building with the existing building as shown in left background of the aerial view above.

Below is a corner view showing the completed structure.



● If you need a new mill, factory, warehouse, or office building in a hurry, American Bridge can fabricate and erect your structural steel requirements with dispatch.

As you see from the aerial view above, this new General Electric Company Plant at Louisville, was no small project! This view shows Manufacturing Building No. 5 which is the largest of five huge buildings being constructed at this project for the manufacture of General Electric Company's Major Household Appliances. Big as this building is, AMERICAN BRIDGE erected the steel framework, all 8,400 tons of it, in only three months and sixteen days!

This new manufacturing building is a special high level industrial structure, 700′ wide x 1,000′ long and with a 43′ clear height to the bottom chord of the main trusses. In addition, the building contains two intermediate mezzanine floors over a major portion of the area. Attached alongside the manufacturing building is a paint and oil storage building 36′ wide by 180′ long. AMERICAN BRIDGE also erected a pipe trestle 8′ wide x 190′ long and 44′ high connecting the new manufacturing building with a building previously constructed.

This new General Electric building and the pipe trestle are good examples of American Bridge fabricating and erecting "know-how." You can depend on AMERICAN BRIDGE to handle any type of steel-frame construction with thoroughness and speed . . . any time . . . anywhere. If you would like to know more about the advantages of having AMERICAN BRIDGE fabricate and erect the steelwork for your next building, just contact our nearest office.

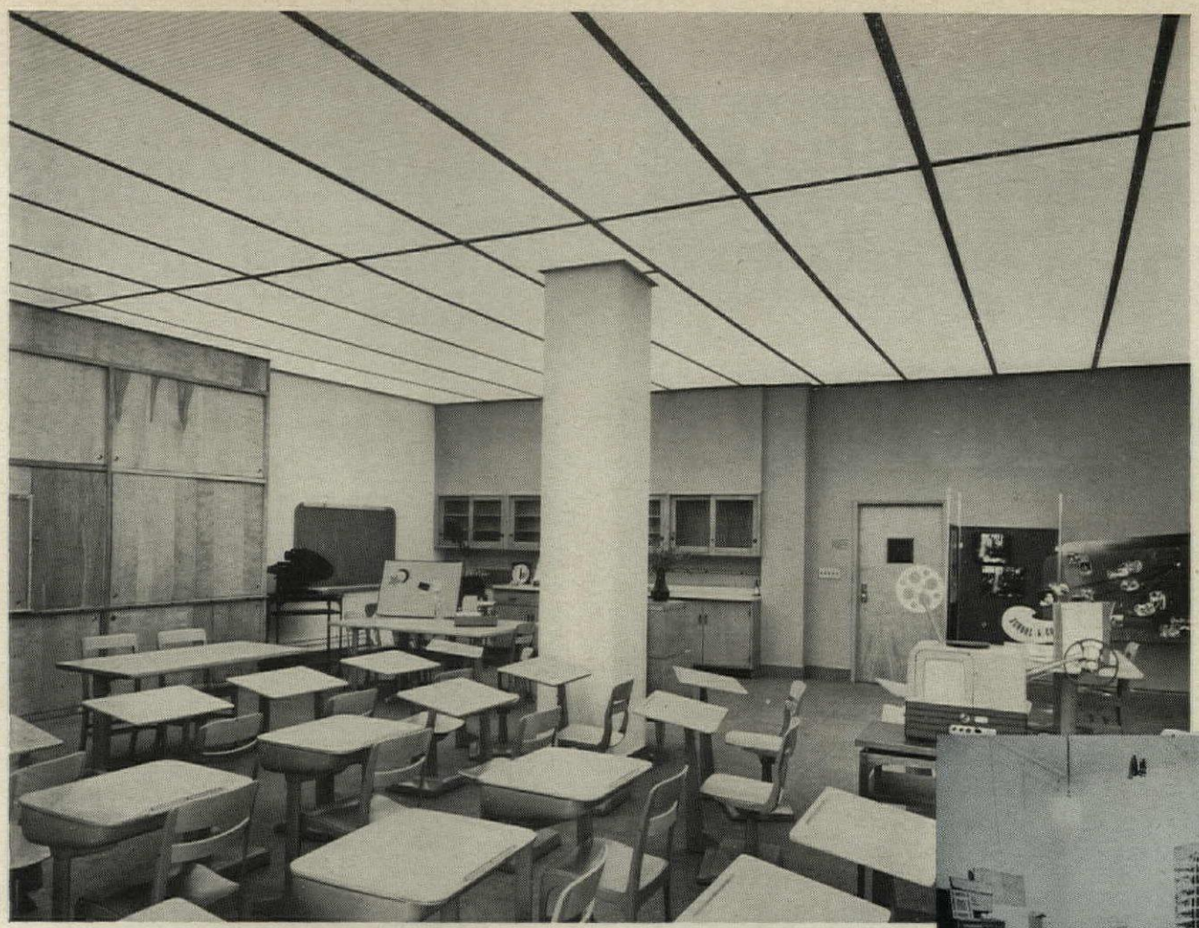
AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.

Contracting Offices in: AMBRIDGE · ATLANTA · BALTIMORE · BIRMINGHAM · BOSTON · CHICAGO · CINCINNATI · CLEVELAND · DALLAS · DENVER · DETROIT · ELMIRA · GARY
MEMPHIS · MINNEAPOLIS · NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ROANOKE · ST. LOUIS · SAN FRANCISCO · TRENTON UNITED STATES STEEL EXPORT COMPANY, NEW YORK

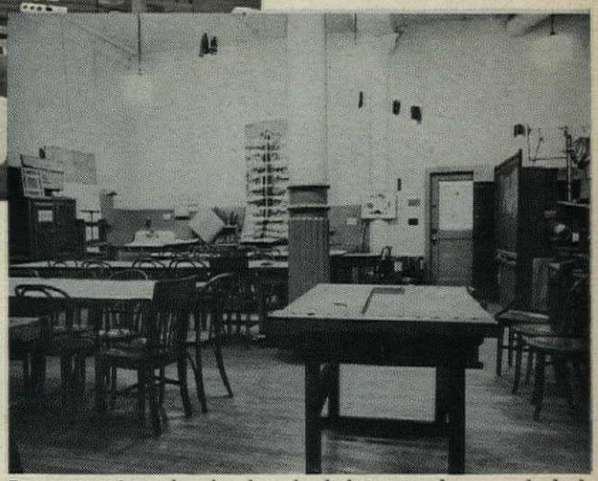
AMERICAN BRIDGE

USS

UNITED STATES STEEL



3 R's go modern in this up to date classroom. Light diffused through ceiling panels made of BAKELITE Rigid Vinyl Sheets provides the bright uniform light so essential for schoolwork. Ceiling by **Luminous Ceilings Inc.,** Chicago 47, Illinois.



For comparison, here's what the lighting in classroom looked like before renovation. Notice high, broken, ceiling area—sharp shadows and dusty pipes. New plastic ceiling is much lower, conceals all light fixtures and ceiling projections.

SHADOWLESS LIGHTING FOR READING AND WRITING

...from an illuminated ceiling made of BAKELITE Rigid Vinyl Sheets

No eyestrain here! This model classroom* features the very latest in school lighting—continuous fluorescent strip units behind a ceiling of corrugated, milk-white plastic sheets. This diffused, high-level illumination kills shadows completely... bathes the entire room in soft uniform brilliance.

The ceiling panels are made of BAKELITE Brand Rigid Vinyl Sheets about as thick as heavy paper. They rest on an aluminum frame hung from the true ceiling. They're quickly installed and easy to remove for cleaning or maintenance. In place, they conceal pipes, ducts and other ceiling projections. But they don't interfere with sprinkler systems because they soften and fall at about 150 deg. F. Sound absorbent pads fastened to the support frame will provide excellent acoustical conditioning.

These panels keep their good looks for years. They can be wiped clean or even scrubbed in soap and water, if necessary. And BAKELITE Rigid Vinyl Sheets resist yellowing, warping or cracking with aging. They resist moisture, oil and combustion and are dimensionally stable.

Include practical, beautiful plastic ceilings in your future designs. And remember BAKELITE Rigid Vinyl Sheets for screens, lampshades, signs and scores of other useful applications. For more data write to: Dept. AR-14.

**Model classroom designed by New York University School of Education in conjunction with officials of the National Education Association and Eggers and Higgins, New York architects.*

BAKELITE
BRAND
Rigid Vinyl Sheets

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

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



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

No wonder masonry water repellents containing silicones have become the standard in the industry!* They offer *lasting* protection against the Water Menace because they're *erosion resistant!* They provide "defense in depth"—penetrate masonry pores deeply to keep water out—yet permit masonry to "breathe"!

Masonry water repellents made with General Electric DRI-FILM silicones prolong the life and preserve the beauty of structures, old and new. Easily applied, they retard spalling and cracking, control efflorescence and keep surfaces cleaner.

Ask your water repellent supplier about a treatment based on G-E DRI-FILM silicones! For the names of suppliers using DRI-FILM in their products, just write to General Electric Company, Section 55-2A, Waterford, New York. (IN CANADA, write to Canadian General Electric Company, Ltd., Toronto.)

**Sales by suppliers have jumped almost one million dollars each year since 1950!*

Paint and Chemical Manufacturers!

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

G-E silicones fit in your future

GENERAL ELECTRIC

LETTERS

Continued from p. 90

sign for maximum-security prisoners, but favor an open campus arrangement for medium and minimum. We would make three other modifications: 1) We would have separate service facilities (dining room, auditorium, etc.) for the three security types. 2) We would place the powerhouse, warehouse and administration building outside the fence. 3) We would have a visiting room for each classification, so designed that unauthorized inmates or visitors could not get into or out of the room.

These are just casual observations and by no means should be construed as taking exception to the plan.

GUS HARRISON, *director*
Department of Corrections
State of Michigan

COMPLAINT DEPARTMENT

Forum:

I find the FORUM a treasure of interest every month and a great aid in helping us develop and construct the hospital that is being built in this community.

I have but one unfavorable comment. There are so many ads and new ideas in your pages that it requires an hour or more of my secretary's time to write for the material.

LAWRENCE KALOM, *M.D.*
Zion, Ill.

US BUILDING ABROAD

Forum:

Your January issue I found very stimulating—especially the articles on "US Building Abroad" and "How to Design a Good Architect."

However, the school at the navy base at Pt. Lyautey, French Morocco, was erroneously credited to James C. Mackenzie as architect. The facts are that the contract for the design of the base was given to the firm of Mackenzie, Bogert & White, and certainly not to Mr. Mackenzie alone.

JOHN J. WHITE JR., *architect*
Fisher-White & Associates
Washington, D.C.

SOM'S GLASS BANK

Forum:

We find the beautiful bank by Skidmore, Owings & Merrill (AF, Dec. '54) so exciting that we would like extra tearsheets for our files.

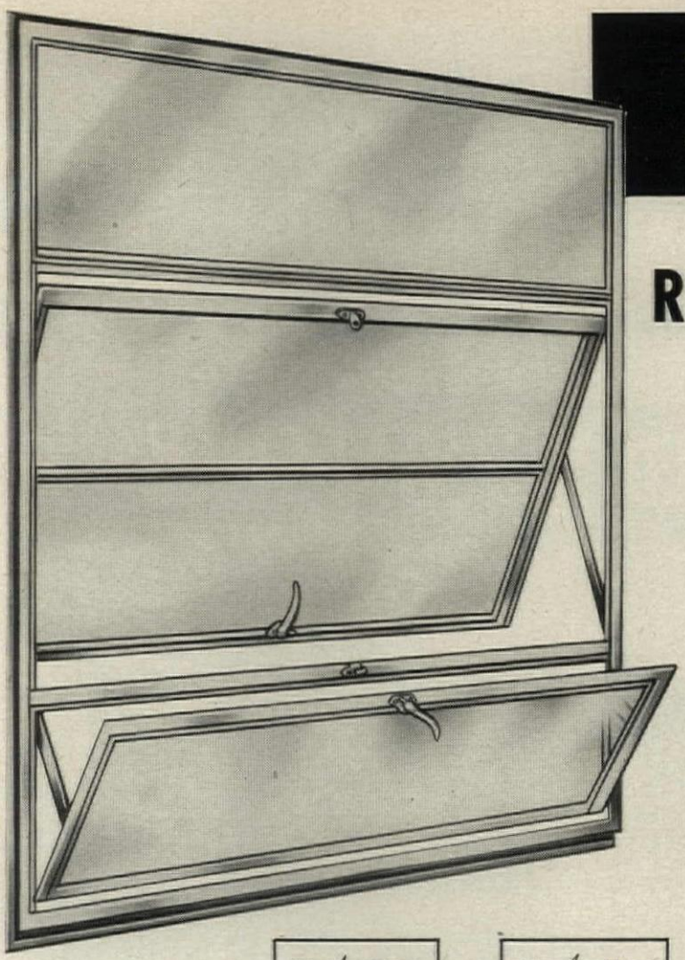
HOWARD BARNSTONE
Bolton & Barnstone, architects
Houston, Tex.

CHICAGO'S BIG PLANS

Forum:

The most impressive aspect of the Carson Pirie Scott competition plans in the November FORUM is their scope and drama. Pedes-

continued on p. 98



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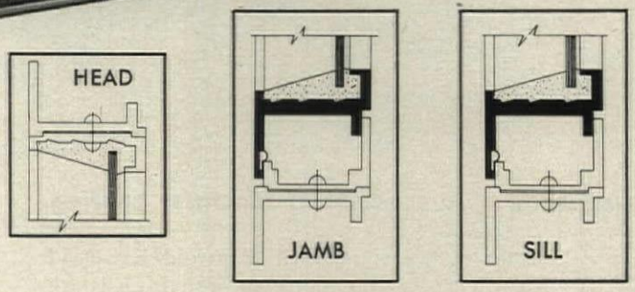
ALUMINUM WINDOWS

Ideal for institutional, industrial, commercial and apartment use, the Intermediate Projected type combines structural strength with functional operation and modern appearance.

Reynolds Intermediate Projected Window is distinguished in both design and construction. Flush-inside-and-out frames electrically flash-welded. Adjustable friction shoe and nylon slide. Available with or without complete perimeter neoprene weatherstripping. Write for catalog.

Reynolds Metals Company, Window Division, 2020 South 9th Street, Louisville 1, Kentucky.





NEW PROVIDENCE HOSPITAL, WASHINGTON, D. C., FEATURES REYNOLDS ALUMINUM INTERMEDIATE PROJECTED WINDOWS.

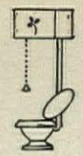
Architects: Faulkner, Kingsbury and Stenhouse, Washington, D. C. ***Gen'l Contractors:*** Charles H. Tompkins Co., Washington, D. C. ***Window Erection Contractors:*** F. H. Sparks Co. of MD., Inc., Baltimore. ***Architectural Aluminum Fabricators:*** A. F. Jorss Iron Works, Arlington, Va.

SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.

REYNOLDS ALUMINUM

BUILDING PRODUCTS

You wouldn't specify plumbing like this

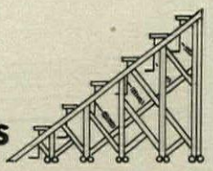


or furniture like this.

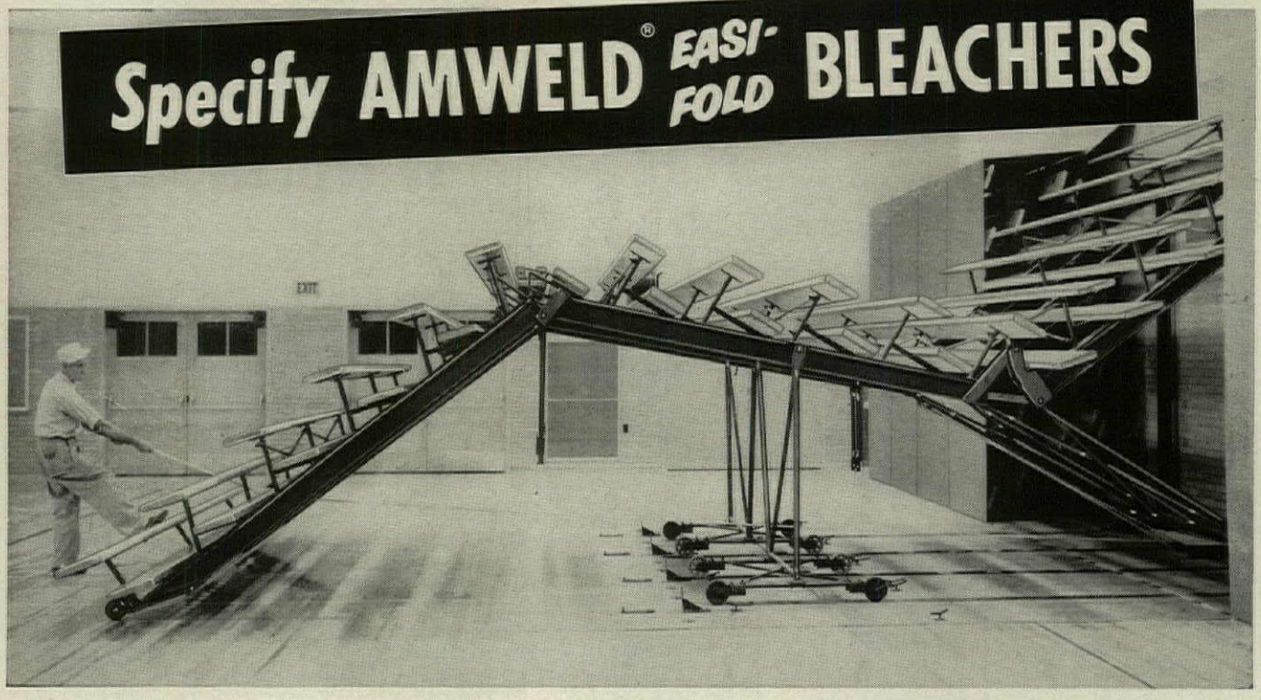


On your next school job...

...instead of old-fashioned bleachers like this



Specify AMWELD® EASI-FOLD BLEACHERS



The modern Space-saving — Work-saving answer to economical spectator seating

• REQUIRES MINIMUM SPACE
When not in use, Amweld Easi-Fold Bleachers fold flat against the wall. Occupy less floor space than any other bleacher.

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In use, live load is transferred to floor. Special braces lock supports in place — eliminate any possibility of accidental collapse.

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Amweld Easi-Fold Bleachers roll out smoothly — are perfectly balanced for easy opening and closing.

• EASIER SWEEPING
No complicated maze of supporting members. Open space underneath seats provides place to hang coats and hats during game and make "after game" cleaning easy.

• ONLY 25 MOVING PARTS
With only 25 moving parts, there are fewer things to wear out with Amweld Easi-Fold Bleachers — maintenance and repair costs are greatly reduced.

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Amweld Easi-Fold Bleachers are ideal for all indoor spectator sports seating. Write for complete details today — or look for our catalog in Sweets Architectural File No. 22.



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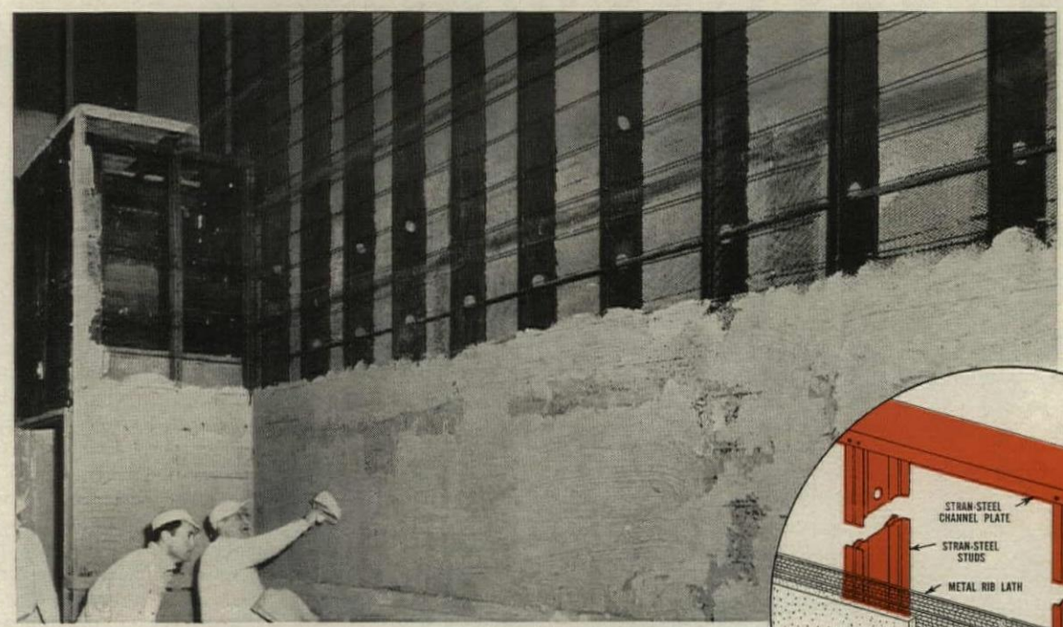
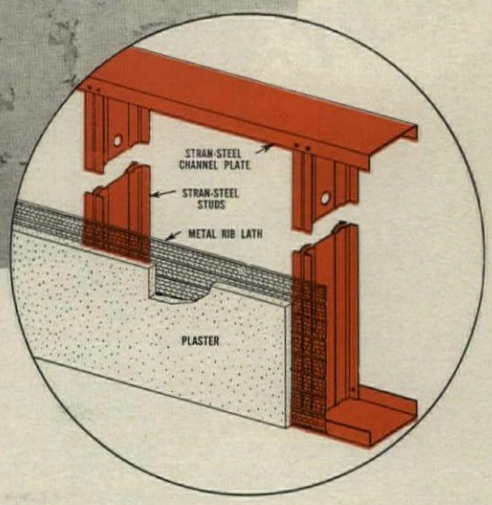
TALL partitions are easy...

with Nailable Stran-Steel® Framing





The problem of relatively high partitions was a major one for Station WMAL-TV (Washington, D.C.) in converting an ice-skating rink into a TV studio. Partitions had to be lightweight but able to carry a high fire rating. And, as usual, speed and economy were important. Nailable Stran-Steel Framing was the ideal solution. As shown above, metal lath was nailed directly to Stran-Steel verticals which, in some cases, tower up to 30 feet. W. P. Lipscomb, Inc., General Contractors.

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AVAILABLE: On-the-spot distributors and dealers in all major building centers to give you fast, sure, economical service.

LIGHTWEIGHT: Easy to move and place. No special equipment is necessary to handle Stran-Steel members.

NAILABLE: Special nailing groove deforms and clinches nails in a grip of steel. Saves field costs of clips and attachments.

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VERSATILE: Stran-Steel framing comes in standard depths, gauges and lengths. Use with all types of collaterals for complete freedom of design and flexibility.

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Great Lakes Steel Corp.
Ecorse, Detroit 29, Mich.

Please have your representative give me your new catalog and other information, without obligation. I am a: Builder ☐ Architect ☐ Engineer ☐ Owner ☐ planning the design or construction of: School ☐ Church ☐ Hospital ☐ Dwelling ☐ Commercial or Industrial Building ☐ Interior Steel Partitions ☐ Other_____

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PRODUCER OF HY-Z HIGH-TENSILE STEEL

There's one way to be sure when you specify plywood for form work...

LOOK FOR THE DFPA* TRADEMARK!

DFPA TESTED QUALITY

When you specify grade-trademarked fir plywood, you're sure of material manufactured under the rigid industry quality control program and independently quality-tested by DFPA* to protect the buyer. Here are grades expressly made for form work:

PLYFORM CONCRETE FORM DFPA TESTED QUALITY

1. INTERIOR PLYFORM—made with highly moisture resistant glue for multiple concrete form re-use.

EXT-DFPA PLYFORM CONCRETE FORM DFPA TESTED QUALITY

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***DFPA**—Douglas Fir Plywood Association, Tacoma, Wash. is a non-profit industry organization devoted to product research, promotion and quality maintenance.



LETTERS

Continued from p. 94

trian and cautious redevelopment is not the kind of redevelopment that solves major city problems. Removal of the obsolete, clearance of the slums is not enough. With it must be coupled a really dramatic and bold redevelopment plan. These are the redevelopment projects that will demonstrate the value of redevelopment, and, we hope, "stir men's souls." So, the award winners impress me a great deal with their bold and imaginative approach to the problem.

At the same time, I have two general criticisms that go to all such plans rather than to any specific plan. The first has to do with the human scale, a phrase I notice FORUM uses quite often. In the competition-winning designs there is not much evidence of human scale. The arrangement of structures seems to be based upon pleasing the model-maker or the aerial viewer. Only one sketch presents these plans from the view of the citizen on the ground. There seems to be a tendency to arrange the buildings in terms of the buildings rather than the humans that inhabit them. Redeveloped Chicago should be desirable from the standpoint of the shoppers and those who do business in the Loop. These plans may well be desirable from this standpoint, but the presentation makes little reference to it. Instead, FORUM's presentation is in terms of the masses, the structures and their relationship to each other. As attractive as this may be, my interest is in its attractiveness to the guy on the street who is to live with it.

My second criticism is relatively minor and perhaps somewhat idiosyncratic. In looking at old planning pictures, drawn in the twenties, I have been struck with the artists' emphasis on uniformity—buildings all the same shape, height and style. We have moved from this stylized presentation but I fear we are backing into it in another way. In nearly every presentation of any major development plan, one finds structures of identical size and shape lined up like so many tenpins. This seems to me again to be based upon the pleasing geometric design rather than any study of the desirability of repetition. For myself, I prefer a bit of change. I find variation rather than repetition stimulating and so, I should think, would the Loop citizen who spends much of his day in the area.

WILLIAM L. SLAYTON, *assistant director*
National Association of Housing & Redevelopment Officials
Washington, D.C.

HOSPITAL RESEARCH

Forum:

Regarding your article entitled "A Study in Hospital Function and Design" (AF, Dec. '54), much of the work done by the British research team is "old hat" to those of us who have had close association with the problems of hospital planning.

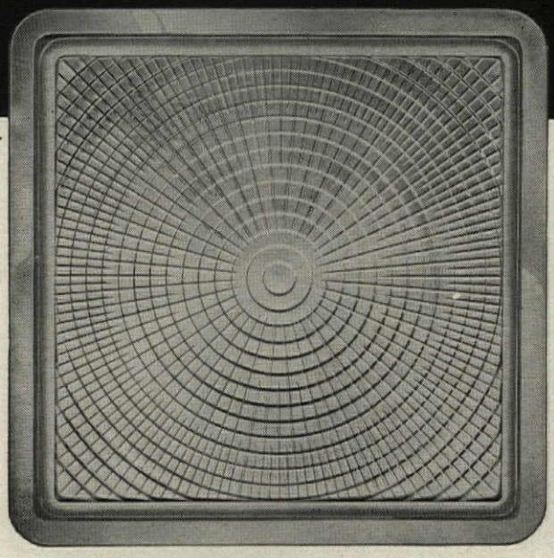
I am curious as to why a travel study was made of what appears to be a 24-bed ward with remote ancillary services (an obviously obsolete type of nursing unit) rather than of a ward floor similar to that of the experimental hospital. Incidentally, the latter

continued on p. 102

Offer clients these benefits by specifying

ART METAL advanced ELIPTISQUARE





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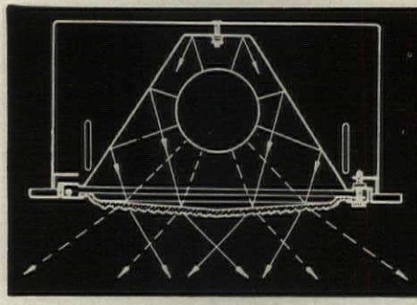
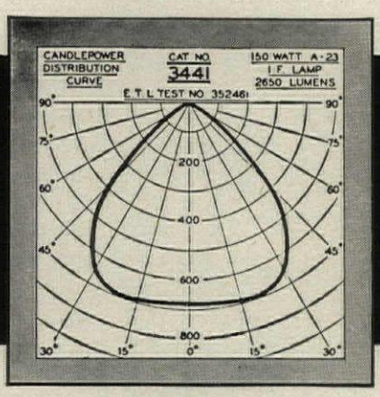


Eliptisquare reflector redirects *all* box-enclosed light downward through AMCOLENS to multiply lamp light utilization.



Please notice that the candlepower distribution curve is by Electrical Testing Laboratories, Inc., not The ART METAL Company.

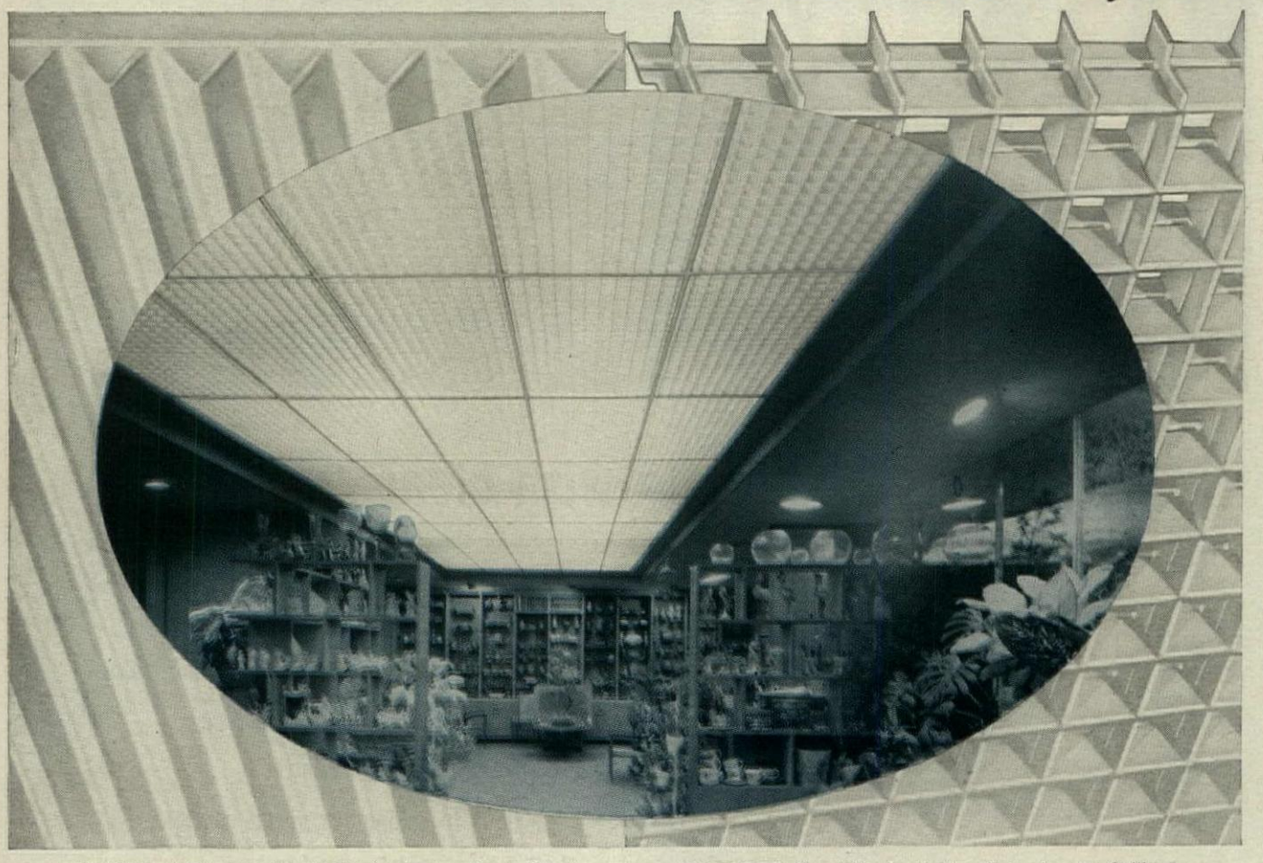
May we send Bulletin 254 which gives complete details? Please write:

THE **ART METAL** COMPANY
CLEVELAND 3, OHIO

Manufacturers of Engineered Incandescent Lighting

the most inexpensive single thing you can do...

to create a MODERN ATMOSPHERE in any store!



"PANEL-GLO", lowest-cost Benjamin Luminous-Panel Ceiling, is made of translucent, white molded vinylite. Odorless; distortion and shrink-proof. Has invisible ducts to facilitate air circulation.

"SKY-GLO", finest Benjamin Luminous-Louver Ceiling, is made of translucent vinylite "egg-crate" type louver panels, chemically welded at joints. Provides 45° shielding against lamp glare.

SIMPLIFICATION LIKE THIS makes Benjamin Luminous Ceilings LOW in OVERALL COST!

STANDARDIZED CONSTRUCTION of louvers and panels eliminates need for special sizes or shapes. One easy-to-handle size, 3' x 3'.

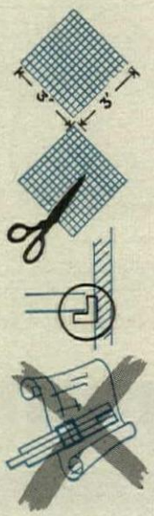
EASIER, FASTER INSTALLATION because panels and louvers can be trimmed right on the job to fit any size or shape ceiling.

NO EXTRAS TO BUY to finish off the job, because everything is included except lamps... even finishing strips to provide a neat, white trim.

SIMPLER TO ORDER AND SPECIFY! BUY IT BY THE SQUARE FOOT! All you have to know are the room dimensions and type of ceiling! You get all the materials for the job: louvers or panels; channels and channel fittings; finishing strips; support rods and suspension fittings; fluorescent strip lighting units (w/o lamps).

Approved by U.L.

B876



For new stores or modernizing existing sales areas, Benjamin "Sky-Glo" and "Panel-Glo" translucent ceilings offer a low-cost way to create the modern look that makes people want to buy. Get high levels of illumination that show up merchandise to best advantage... 100, 130 or more foot-candles, without awareness of the fact. Change a ceiling laced with fixtures, ducts and pipes into a magnificent "ceiling of light", without additional renovation! Drastic simplification without sacrificing effect or efficiency, enables Benjamin to bring you these luminous ceilings at an installed price so low, that in most cases it is actually the most inexpensive way to modernize the ceiling! For further details, write for Bulletin AD 6222. Benjamin Electric Mfg. Co., Des Plaines, Illinois.

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PLASTIC COUNTER AND WALL SURFACING

OFFERS A NEW AND W-I-D-E-R VARIETY OF PATTERNS AND COLORS FOR 1955

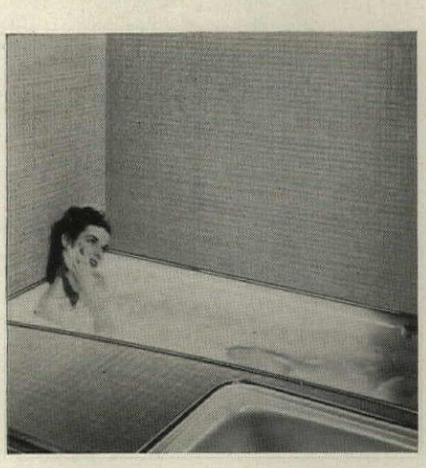




Now, G-E Textolite plastic surfacing offers the most brilliant array of patterns and colors ever available in a plastic surfacing! Designed to please the most discriminating people, you'll find exclusive Textolite patterns are perfect for kitchen sink and counter tops, bathroom vanities and vertical surfacing.

Practical, as well as beautiful, Textolite resists heat, stain and scratches . . . it gives years of wear with just minutes of care!

To tie in with G.E.'s new color-choice appliances, Textolite has a complete new selection of beautiful patterns that match exactly, or contrast smartly with each of the colors in the General Electric kitchen line. See them soon!



Textolite offers you more:

- A wider range of exciting colors and patterns that help you sell.
- General Electric brand name acceptance for easier client approval.
- A powerful program of national advertising in leading consumer and trade magazines.
- Complete G-E color-choice kitchens. All appliances and counter tops match for color harmony.

For more information . . . look for Textolite in Sweet's Architectural File or send in coupon below.

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Please send me the new 1955 full-color booklet with a complete selection of G-E Textolite colors and patterns.

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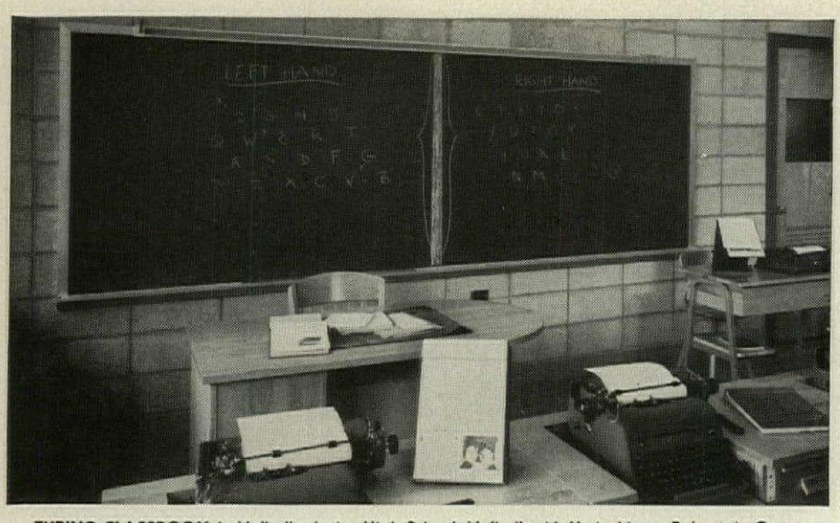

TYPING CLASSROOM in Valhalla Junior High School, Valhalla, N. Y. Architect: Robert A. Green.

Eye-saving Armorply Chalkboard is the best background for chalk ever devised

And it's easy to install . . . readily used for visual aids . . . is guaranteed for the life of the building

See Armorply Chalkboard just once and you'll agree—the old gray slate ain't what she used to be! Here is a really modern chalkboard—scientifically designed for maximum readability and with a surface that's perfect for presenting magnetic visual aid material.

Tests show Armorply Chalkboard's soft, pleasing green color is best for young eyes. And its reflectance factor of 18.5% is ideal (see diagram).

Save on installation because Armorply needs no costly fixed grounds or surface preparation: it mounts directly to wall. Use Armorply without trim and this saving can be as much as 30%!

Never needs refinishing. Tough porcelain-on-steel face† won't shatter, buckle, warp or break under impact, stress, temperature changes or concussion.

Lifetime guarantee. Armorply Chalkboard is guaranteed *for the life of the building* in which it is installed.

Armorply Chalkboard has industrial applications, too. Specify it for shipping rooms, training departments, airline and bus terminals, conference and board rooms, engineering departments —wherever the finest Chalkboard is wanted. †PORCELAIN FACES BY THE BETTINGER CORP.

NEW! Weldwood Aluminum Chalkboard Trim now available costs less than any similar product on the market.

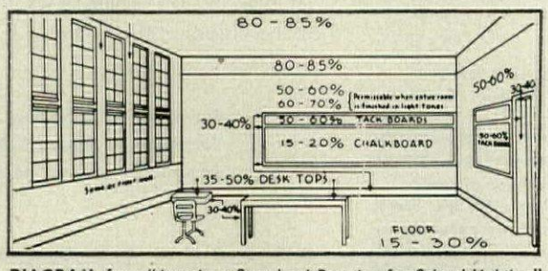

DIAGRAM from "American Standard Practice for School Lighting" recommends reflectance factor of between 15-20% for chalkboard.

*TRADE MARK

MAIL COUPON for brochure and free sample or visit any of the 73 U.S. Plywood or U.S.-Mengel Plywoods showrooms in principal cities.

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LETTERS

Continued from p. 98

plan would not find acceptance in the US on many counts.

The work done by the US Public Health Service and by many independent architectural organizations has, I believe, achieved results which have brought the American hospital up to extremely high standards. Needless to say, there is still room for further study. I fail to see how Mr. Davies has made any major contribution.

LOUIS ALLEN ABRAMSON, *architect*
New York, N. Y.

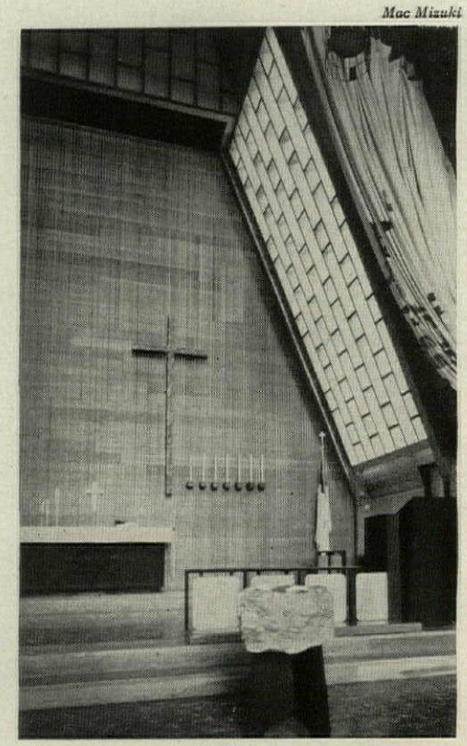
• The primary purpose of the nurse-travel study was not to determine absolute walking distances, but to determine the *proportion* of trips made from bed to bed, from bed to ancillary room. For this purpose, *location* of ancillary rooms mattered little, so long as the nursing practice approximated standard (English) practice. In fact, lack of compactness was an advantage to making the study clear graphically.

As Davies emphasizes, it is no purpose of his research project to set up standards or plans for copying, and for those tempted to look at his results in this way, he points out, particularly, that a plan tailored for one country's practice is unsuitable for copying in another country. Davies' work was reported in FORUM because his method of breaking down design problems into many factors susceptible to objective research appears promising and stimulating; the ward plan was shown as an example of synthesizing many such factors. This contrasts with the usual studies of hospital planning, in which the planners take more or less for granted all factors except one or two—say nurse-distance, square feet per bed or supply services—and the redesign of the unit is then determined by the one or two factors under consideration. Few architects in private practice could afford Davies' method; it is likely that none has his opportunities for experimentation. Apparently this type of research must be frankly financed as research.—ED.

ERRATUM

The praise which Reader Walter C. Kidney heaped upon Architect Donald Smith in this department last month was misdirected. The detailing of cross, candles and sail-like curtain (see cut) which drew Reader Kidney's praise is the work of Architect Harris Armstrong in the Lutheran Church of the Atonement in Florrisant, Mo. (AF, Dec. '54).—ED.

Mac Mizuki



Cross, candles and curtain

marble

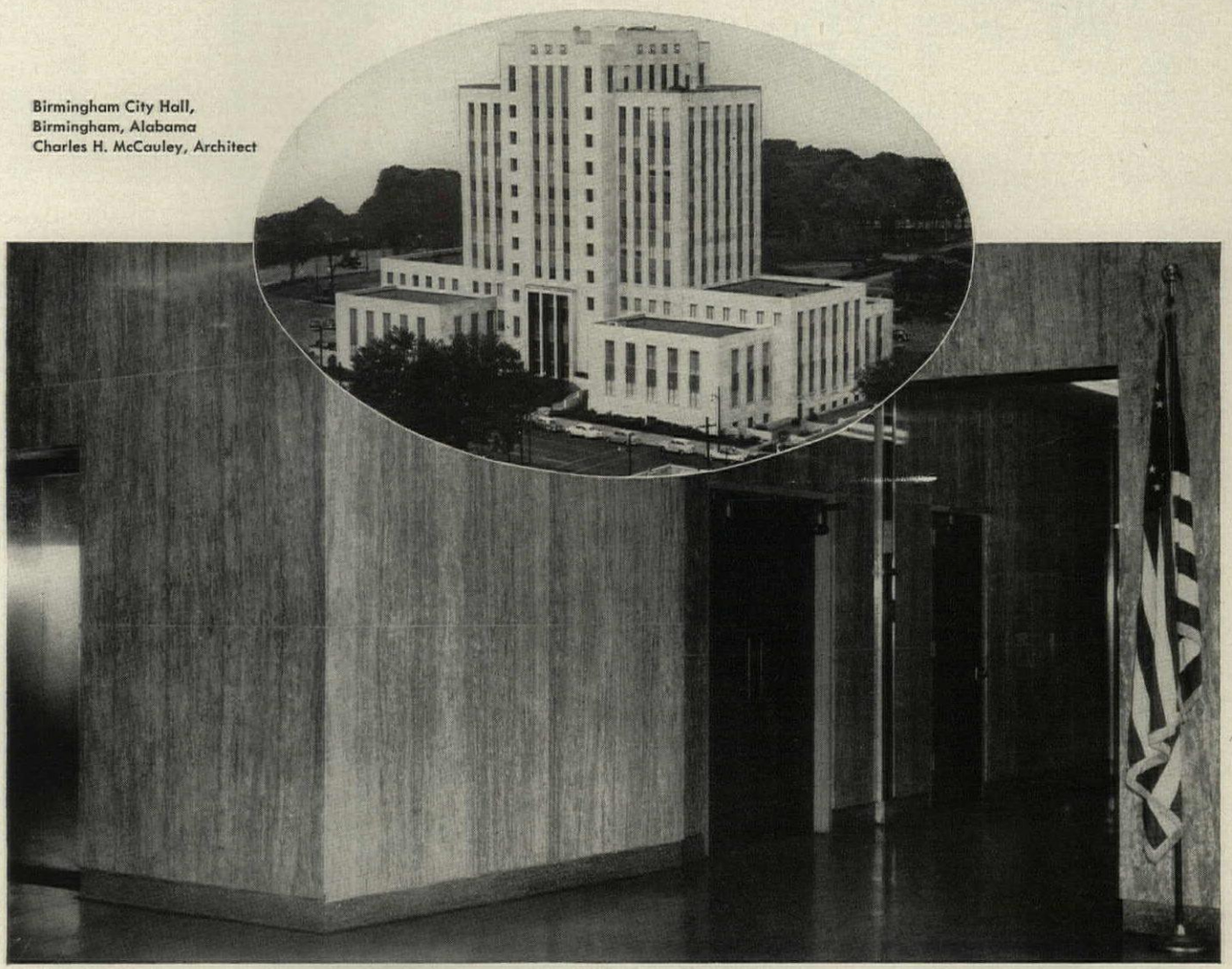
is best for wainscot or walls in public spaces . . .

Writes Architect Charles H. McCauley: "We have used marble extensively in the design of our buildings. In public spaces it gives everything that is needed – beauty, lasting qualities, and low maintenance, and we find it can be used for a very small percentage of the total building cost.

"In the Birmingham City Hall marble was used in the areas frequented by the general public. These include such as main lobby, corridors, and elevator lobbies on each floor, court rooms, public spaces within departments and stairways, all for a cost less than **4%** of the total cost of the building.

"We believe it would be difficult to secure a substitute equal to marble wainscot or walls in public spaces."

For more complete data on the basic economy of marble write Marble Institute.



Birmingham City Hall,
Birmingham, Alabama
Charles H. McCauley, Architect

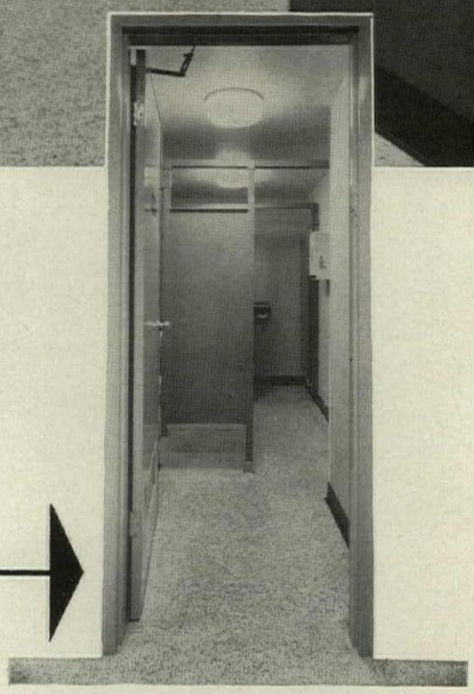
MARBLE MIA INSTITUTE OF AMERICA, INC.

108 FORSTER AVENUE. MOUNT VERNON. NEW YORK



SURCO PROVIDES QUALITY, LOW-COST CONSTRUCTION

FOR FLOORS A new eight-story doctor's building has SURCO terrazzo-type corridor and restroom floors. These floors are not only decorative, durable, and easy to maintain but they saved the contractor and owner time and money in two important ways. First, SURCO terrazzo-type material was finished ¼ to ⅜ inch thick. Compared to conventional terrazzo this means a saving of a vertical inch or more for each floor of the building. This, with the reduction of at least 15 pounds of dead weight per square foot constitutes a tremendous saving.



FOR WALLS SURCO plaster is far stronger than ordinary plaster and can be brought to any degree of water-resistance. Here used on restroom wall, SURCO plaster is completely washable. Application in this case was ⅛ inch over scratchcoat.

Architect:
Toombs & Co., Atlanta
Flooring Contractor:
Atlanta Tile & Marble Co., Inc., Atlanta

SURCO

See Sweets Architectural File for further information on SURCO products.

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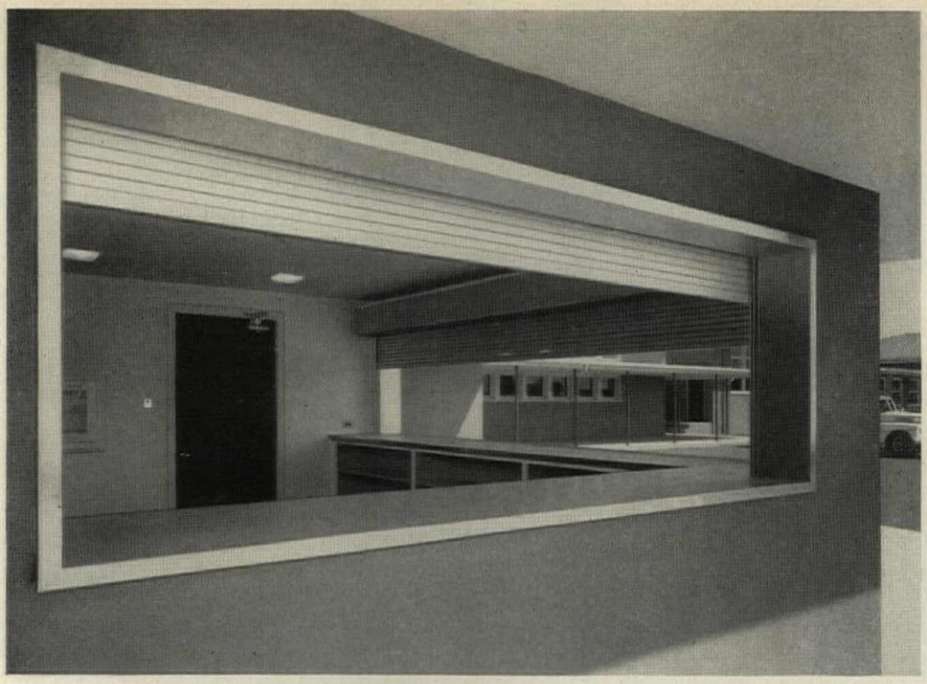

"Alumilited" finish and snugly joined extruded aluminum slats provide corrosion-free weather protection. Cookson Counter Doors are architecturally "at home" in both exterior and interior design.



Trim closure plus full use of opening make Cookson doors ideal for cafeteria and all counter applications.



Ease of cleaning is of prime importance in cafeteria installations. Hood, guides and fasteners are also protectively "Alumilited."

COOKSON "Alumilited" counter doors set new trend in schools, cafeterias, offices



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Offices are attractively and completely set apart from service areas with Cookson Counter Doors.



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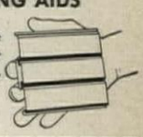

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MEMO

TO: SPEC. Writers

SUBJECT: Interior Fire-Protection

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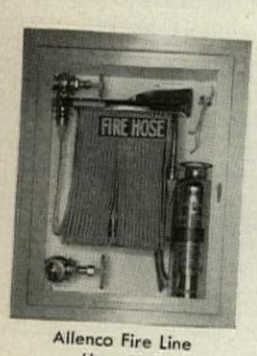
Job supervisors report Allenco reliable delivery and faster-installation speed work. Also, clients are becoming more familiar with this field.

Suggest you check with local Allenco office or send for current ads.



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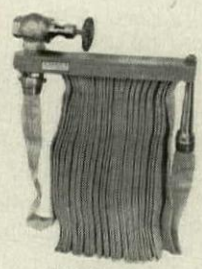
Allenco Siamese Fire Department Connection



Allenco Fire Line Fog Nozzle



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

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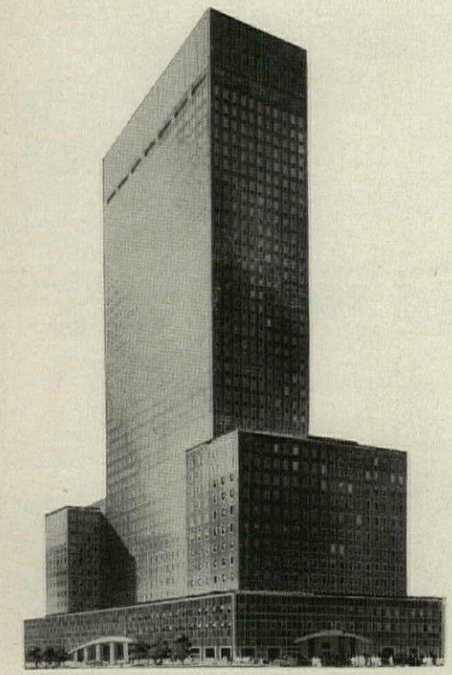

First installation of Truscon's stainless steel reversible window will be in the monumental 150 E. 42nd St. Building, known as the "Socony-Vacuum" Building. This world's largest fully air-conditioned commercial office building is 42 stories high. It will be equipped with more than 3100 of the new windows. Harrison and Abramovitz, architects; John B. Peterkin, associate. Turner Construction Company, general contractor. Edwards and Hjorth, structural engineers. Jaros Baum and Bolles, mechanical engineers. Edward A. Ashley, electrical engineer.

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At last, all the architectural advantages of stainless steel are applied in a practical way in a pivoted reversible window.

Stainless steel offers almost complete immunity to weathering effects. It resists rust and corrosion. It is easy to clean and to keep clean. It offers tremendous strength in thin sections that trim bulk and save weight. And, you can't wear it out. It keeps its good looks for life.

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Any tiny amount of rain that does work its way past the first vinyl plastic weatherstripping will collect in the groove at the bottom of the frame and be carried off.

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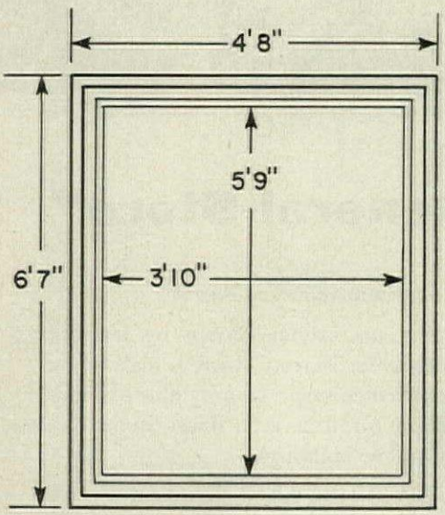
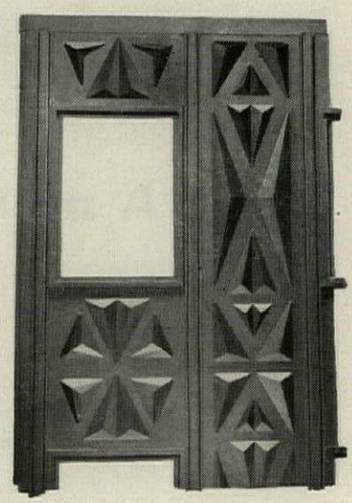
Truscon engineers will be happy to help you apply the window to monumental jobs now on your boards. The coupon below will bring you advance information.



Truscon's stainless steel reversible window as designed for 150 E. 42nd St. Building will be assembled in a panel unit with stainless spandrels. Truscon engineers will help you design size modifications of this window to meet your individual requirements.

All of the exterior surface of 150 E. 42nd St. Building above the 3rd floor will be stainless steel. Illustrated are vertical piers and spandrels. Only four inches of masonry behind the stainless steel sheathing will be needed to meet New York City building codes. This reduced wall thickness allows an extra 3% or rentable space. Wall weight will be cut by about 70%. Stainless—selected for resistance to corrosion and fire, low maintenance costs and appearance—is being supplied by Republic and other leading producers.



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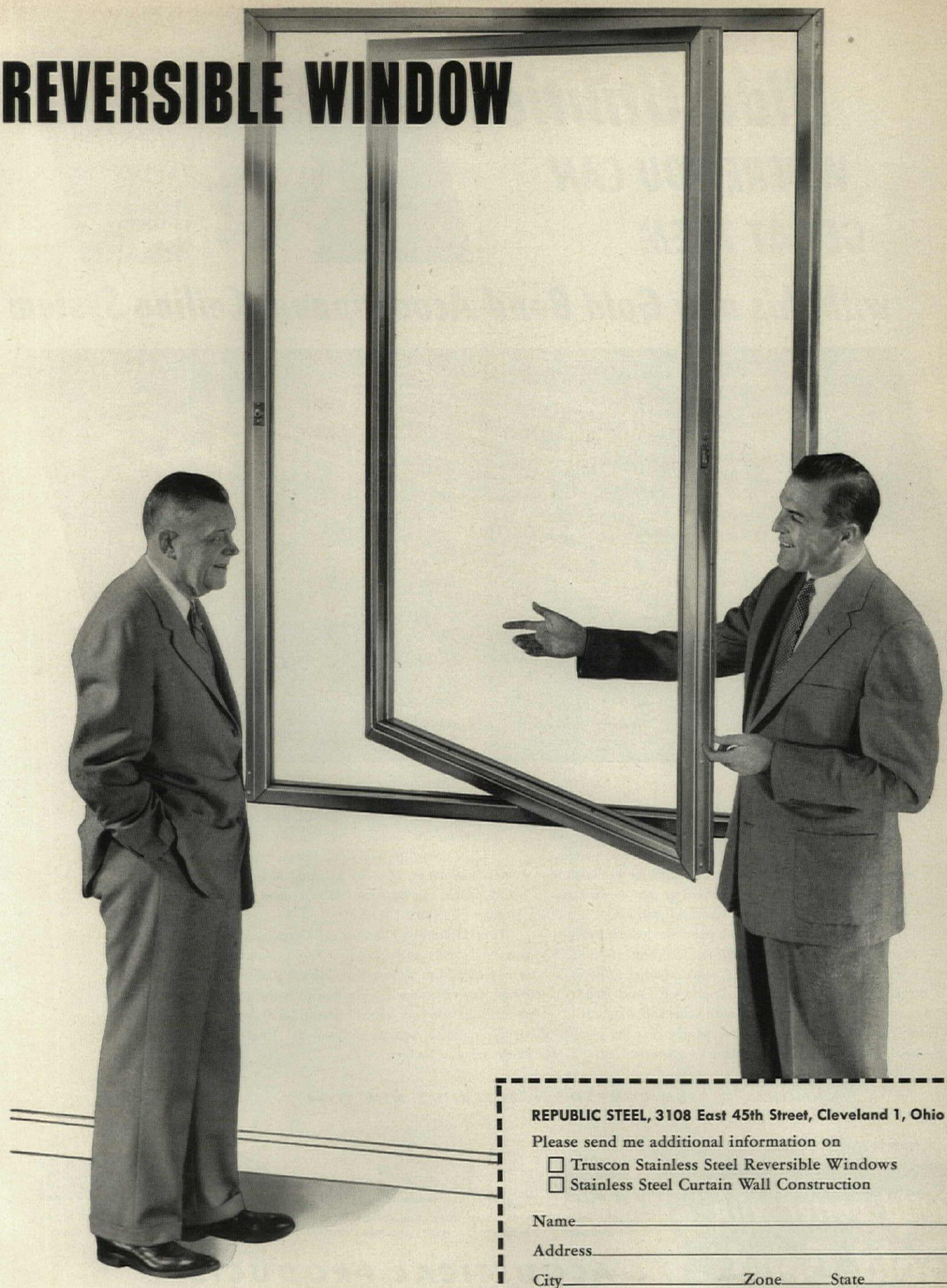

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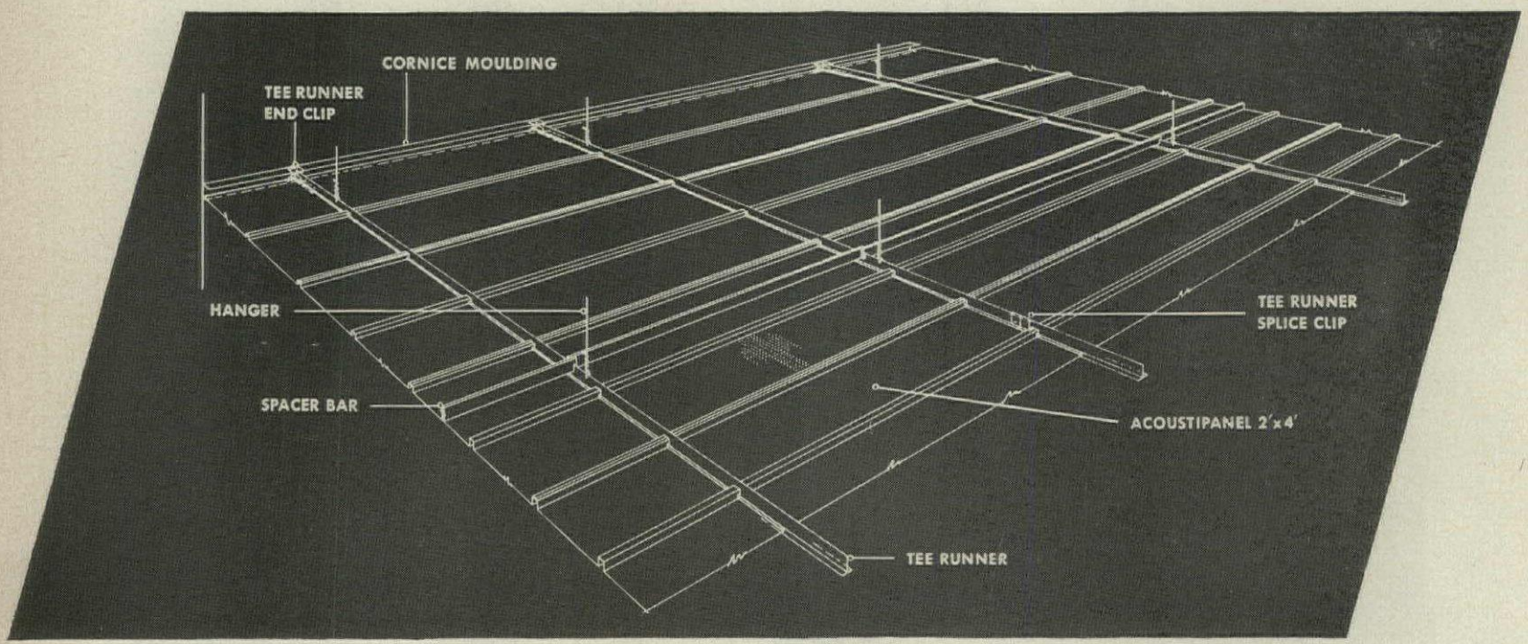

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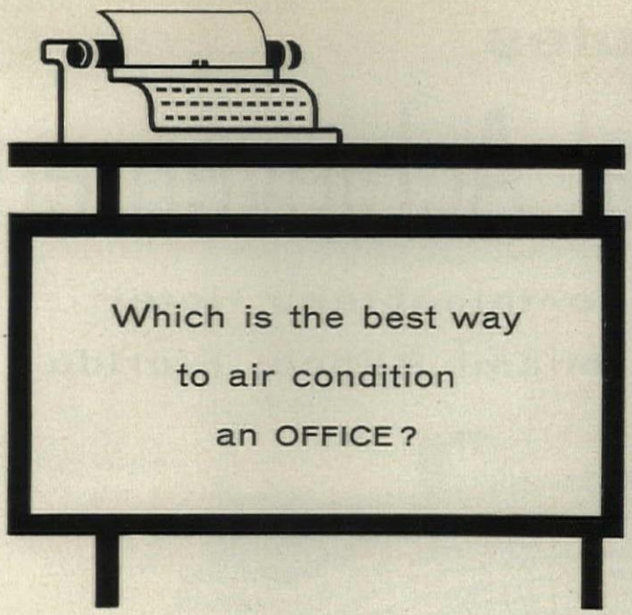
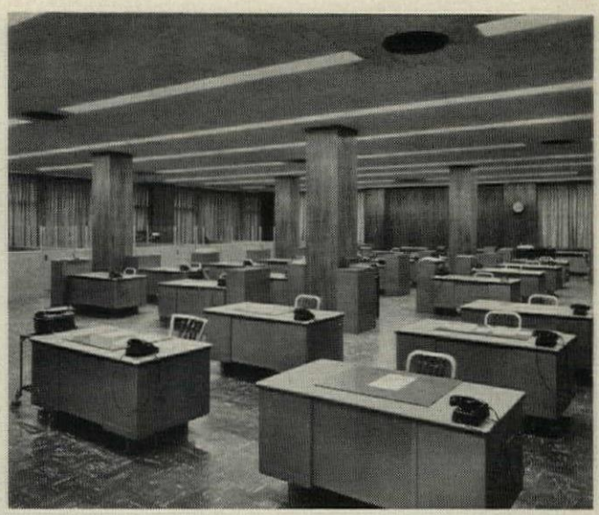
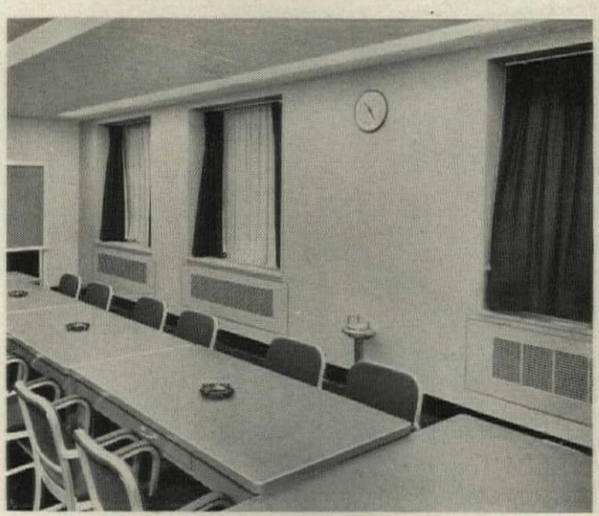




Carrier Zoning Weathermakers* heat and cool the new Patriot-News Building in Harrisburg, Pa. The Zoning Weathermakers blend heated and chilled air, provide individual control in as many as fourteen different zones.



Carrier Weathermaster* Units heat and cool the 4-story Farm Bureau Insurance Building. Each under-the-window unit is individually controlled, is fed hot water for heating or conditioned air for cooling, both from a central source.



Carrier Self-contained Weathermakers serve the offices of American Bosch Arma Corporation, Springfield, Mass. They are installed with little interference to business—and are now available in air-cooled models that need no water.

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Westinghouse Salutes

An Architectural Achievement

The Fabulous Fontainebleau Hotel
Miami Beach, Florida



Congratulations to architect *Morris Lapidus*

It's been a long time since any new building caused so much public and industry acclaim. The Fontainebleau is truly a monument to gracious living. The 14 million dollar beauty comprises 565 rooms including luxurious suites, a large ballroom, 4 bars and 3 restaurants. It includes 265 cabanas stretched out on 1,000 feet of ocean front and a 50 x 150 foot swimming pool, plus a large variety of sports' facilities. It was designed to combine modern functional beauty with continental warmth and an atmosphere of intimate luxury. Naturally, the Fontainebleau is equipped with famous Westinghouse water coolers.



Architect MORRIS LAPIDUS, A.I.A. made sure with

Westinghouse Water Coolers – The choice of leading architects and construction engineers from coast to coast. Westinghouse prizes this ever-rising vote of confidence. Their appreciation is built in to every new 1955 water cooler in the form of even greater efficiency and dependability.

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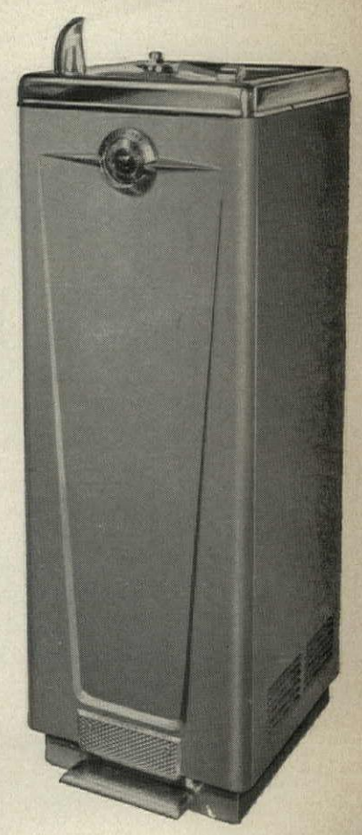

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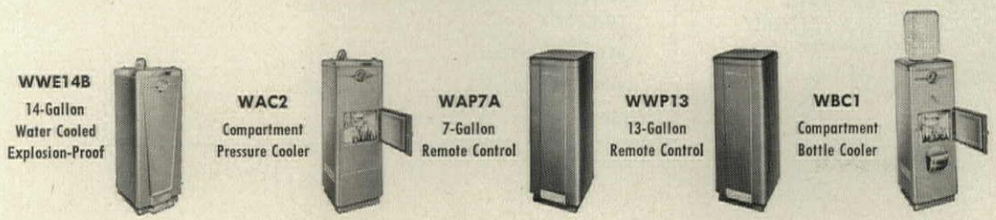

"Interstate always gives us excellent photographs and reports" says W. H. Polk

Director of Advertising and Sales Promotion
Pittsburgh Corning Corporation



In the building materials field, Pittsburgh Corning has an enviable reputation for effective "user-benefit" advertising. Via BBDO, their glass block advertising shows actual on-the-job photographs and testimonials from happy customers . . . often in four colors.

PC found it is often a tough job to obtain architecturally appealing exterior photographs—and interiors showing their product off to best advantage were even harder to get. After futilely trying to explain their problem to dozens of photographers, Pittsburgh Corning now uses *one source* to cover installations anywhere in the country: Interstate Photographers.

Mr. Polk sent a memo to all Pittsburgh Corning field personnel and here's what he said, "The results given us by INTERSTATE have been the best we have ever received. They have consistently given us excellent photographs and case-history reports. Because of the speed, efficiency and quality results offered by this agency, it is to our advantage to use their services wherever job coverage is required."

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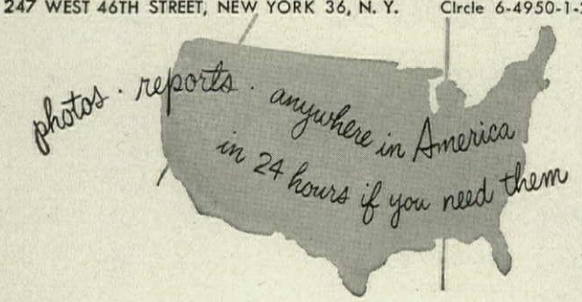

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architectural **FORUM**
the magazine of building

Men behind the blueprints in this month's FORUM



1.



2.



3.

Photos: Continental Photo Service; Roy Stevens

1. **ARCHITECT:** O'Neil Ford took no architecture while in college, got his training in building on the job as carpenter and painter, got his drawing out of an ICS correspondence course, finally learned architecture on the job, too, much of it with that pioneer architect and creator of architects, Dave Williams. Although Ford has sometimes said: "I never like anything we do after it is done," his eyes light up when he talks about the next job—and about progress to date on Trinity campus in his home town of San Antonio (p. 130).

2. **BUILDER:** John L. Baskett, partner in the San Antonio firm of Christy & Baskett, is one of many builders who helped produce the Trinity buildings. No up-from-the-ranks success, Baskett trained for his job at Texas A&M, where he earned a BS degree in civil engineering. Although the Trinity job was his first experience with the lift-slab technique, he says: "It worked nicely; we just followed the advice of people who had done that sort of work before" (including Architect Ford). However, his construction superintendent, an old-time carpenter, was skeptical. "He couldn't understand why any building would be satisfactory without any more carpentry than we used at Trinity."

3. **CLIENT:** Howard Johnson's personal influence on the design of his long chain of restaurant buildings is considerable. It was his idea to put the grill out front in full view, to give the cashier a candy case and to back up the bar with a huge mirror menu. More recently, it was his idea to open up the front of the restaurant with glass walls. The job of implementing this tradition-shattering decision fell to Florida Architect Rufus Nims, who has since developed an entirely new look for the familiar orange-topped restaurants and has also taught restaurateurs a thing or two about kitchen planning (p. 162).



REDEVELOPMENT f.o.b. DETROIT

LIFE—*John Zimmerman*



Can traffic be reversed
on the motor city's new superhighways
to bring people and money back into midtown?
Detroit will try by replacing a slum
with a midtown suburb

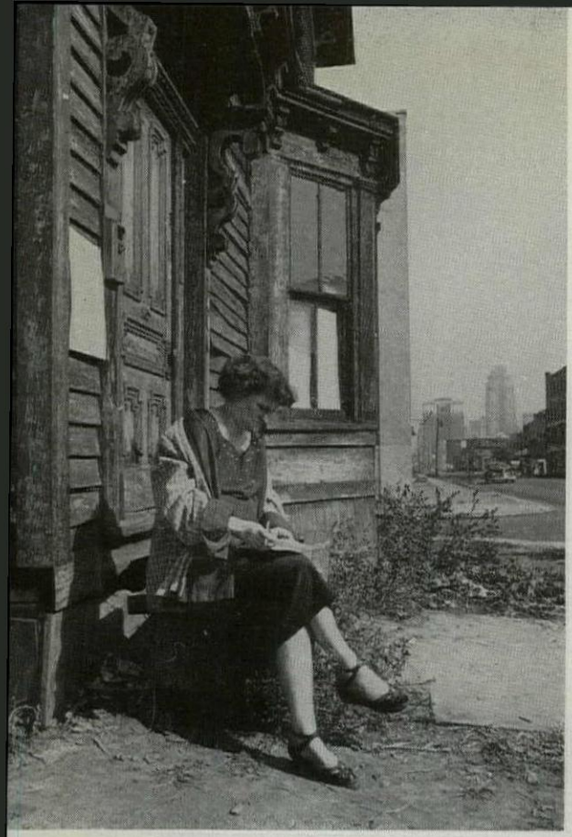


THE SITE of Detroit's planned redevelopment area, adjoining major roads

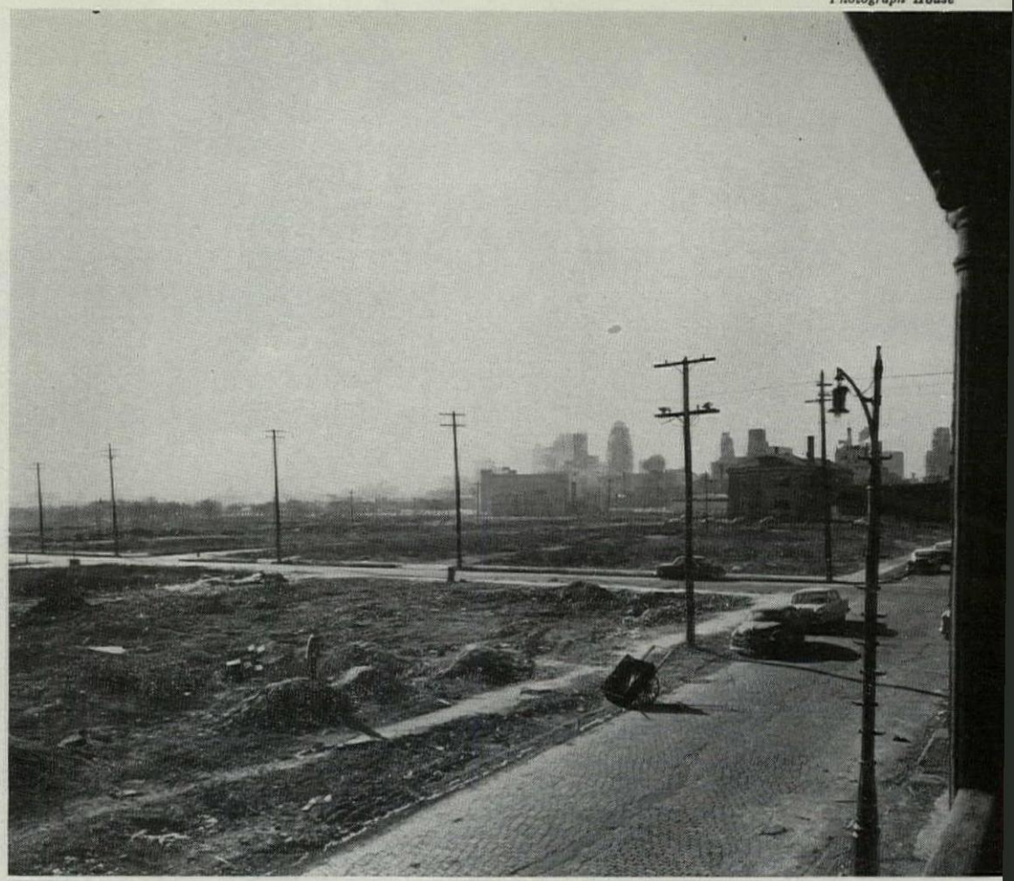
In the past 50 years the 115 million automobiles produced in and near Detroit have driven the middle-income population of hundreds of US cities outward beyond the city limits to the suburbs. It has been wonderful for the children, but very tough for the mayors, because into the old midtown neighborhoods have moved the underprivileged. Once there they have frequently been confined there by racial prejudices. Around their slums the taxpaying stores have waned. All of midtown has begun to corrode—or move out.

Many cities are searching for solutions to the same problem. Some try to cover their municipal corrosion with a layer of the old political snake oil. Some blast, then rebuild new slums. In Detroit, where the problem was born, a group of prominent citizens think they have a significant new solution: under Title One Redevelopment, they say, build mixed suburbs inside the city, mixed both in building types—high-rise and low—and in populations, a mingling of races. In Detroit everyone drives to work anyway on the great new superhighways. Why not entice some to drive *out* of midtown in the morning to work, then at the end of the day back in, to live? By building the highest quality housing for the price available in either Detroit's midtown or suburbs, the group who are promoting this plan are sure they can change the direction of traffic.

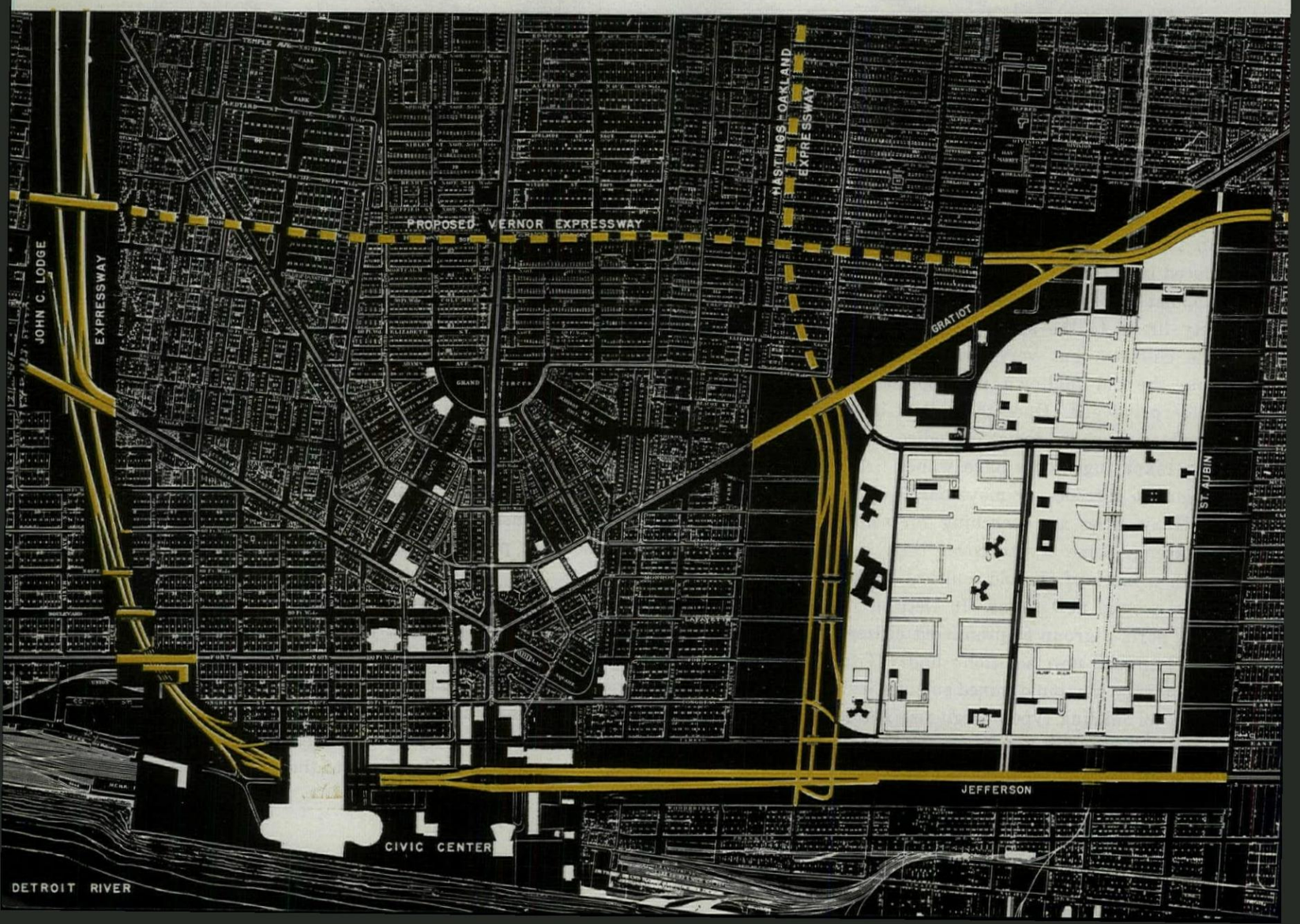
The promoters are themselves significant. Their leaders are an unusual group of bankers, merchants, and chiefs of industry to be found behind redevelopment in any city. Moreover, a famous petrel of organized labor is the most insistent member of the group. When Walter Reuther, the president of the United Automobile Workers, sits at a table—not *across* the table—with Foster Winter of the J. L. Hudson Co., Banker Walter Gehrke, Broker Walter J. Gessell, and executives from all the great auto producers, it is news in Detroit's class-conscious, combative atmosphere. Says Reuther: "The UAW–CIO is vitally concerned with the elimination of slums and the redevelopment of blighted areas.... Detroit must demonstrate to itself and to the world that we have



Photograph House



WOOD-FRAME HOUSES like those above were swept off the Gratiot site (right) months ago, creating a remarkable redevelopment situation for a US metropolis: cleared land awaiting action, with the most tortuous job, relocation of residents, already accomplished.



the will and good sense to apply our productive know-how to this problem."

The first target of the Citizen's Redevelopment Committee is the 50-acre slum cavity shown in the Detroit air photo (plus adjoining acres which have not yet been drilled out). On this entire site the committee proposes to build or promote a town, population 4,500 families, into which will be integrated most of the economic strata and all the racial strata of Detroit. Varied in housing types, both high-rise and low, for incomes from public housing level to house-owning level, it will have two physical characteristics: easy access to superhighways, and facilities for car storage for every family. This plot will be turned into a green suburb of houses and apartment buildings inside the city, urbanity after an old model—the gracious squares like Rittenhouse in Philadelphia and Gramercy in New York.

The committee's first 50 acres

The 50 acres which make up the Gratiot-Orleans neighborhood in Detroit and its surroundings have a ghetto history which the redevelopers are determined to break. This never was a really fine residential neighborhood, even when new; its forest of small frame houses was put up fast to receive a wave of German immigrants in the 1850's, while a similar area was being thrown up on the west side of town for Irish immigrants. The two jealous concentrations made up almost a third of the city's population for a time, then later, as the immigrants dissolved into the community, the east side fortress was taken over almost entirely by Negroes flocking up to the factories from the South. Today, architecture is the only real way to break a habitual decline which has almost become historical. Unless the Citizen's Committee creates housing which is irresistible to many different Detroiters, the neighborhood's phlegmatic social past may prevail. Private redevelopers have been anything but enthusiastic about this area. The land has been waiting.

Detroit is a tough town to convince about racial harmony; any factory town whose population exists primarily on seasonal employment is suspicious and competitive, and Detroit's jealous racial calm frequently has shattered into violence postwar. But the monolithic character of neighborhoods like Gratiot, which define lines to step over, and then counterfeit a heroic lore of retaliation, may have a lot to do with that.

Detroit has a 6,000-unit public housing reservation, and more than half of it, 3,874 dwelling units, was scheduled for an adjoining area (in chart, the St. Aubin extension). If public housing did fill this area, in all probability it would be almost entirely Negro. (The proportion of Detroit families eligible for public housing recently was quoted at about 200 white and 9,000 Negro.) With this towering mass installed in the area adjoining

Photos: McNutt
Free Press
Chase News
O'Connor Studio
Life—Herbert Gehr
Garlser Sturges



Mayor
ALBERT E. COBO



Common Council president
LOUIS G. MIRIANI



Chairman
WALTER J. GESSEL
real estate broker

THE COMMITTEE LEADERS



Planning and design:
WALTER P. REUTHER
labor leader



Finance:
WALTER GEHRKE
mortgage banker



Legal matters:
FOSTER K. WINTER
merchant

"Our committee is convinced that a successful program is completely dependent upon obtaining an integrated residential community of the most advanced design. . . . A community that on a completely competitive basis can attract back to the heart of the city people who are finding their housing in the outlying sections. . . . The plan provides for amenities that do not exist in the Detroit area."

The Citizen's Committee for Redevelopment began in the spring of 1954, soon after a private redeveloper from out of town who had held an option of the Gratiot-Orleans site quietly folded his contract and faded away. Detroit's Common Council set the committee up officially; Walter Gessell and James W. Bell, now the committee's coordinator, were prime movers. Support came forth rapidly and tangibly in a $55,000 operating fund (including $20,000 from downtown banks and $10,000 from the UAW) and the committee soon jumped the first administrative hurdle: Washington's reluctance to sell land under Title I to a supervisory body rather than a real redeveloper.

THE ARCHITECTS



STONOROV



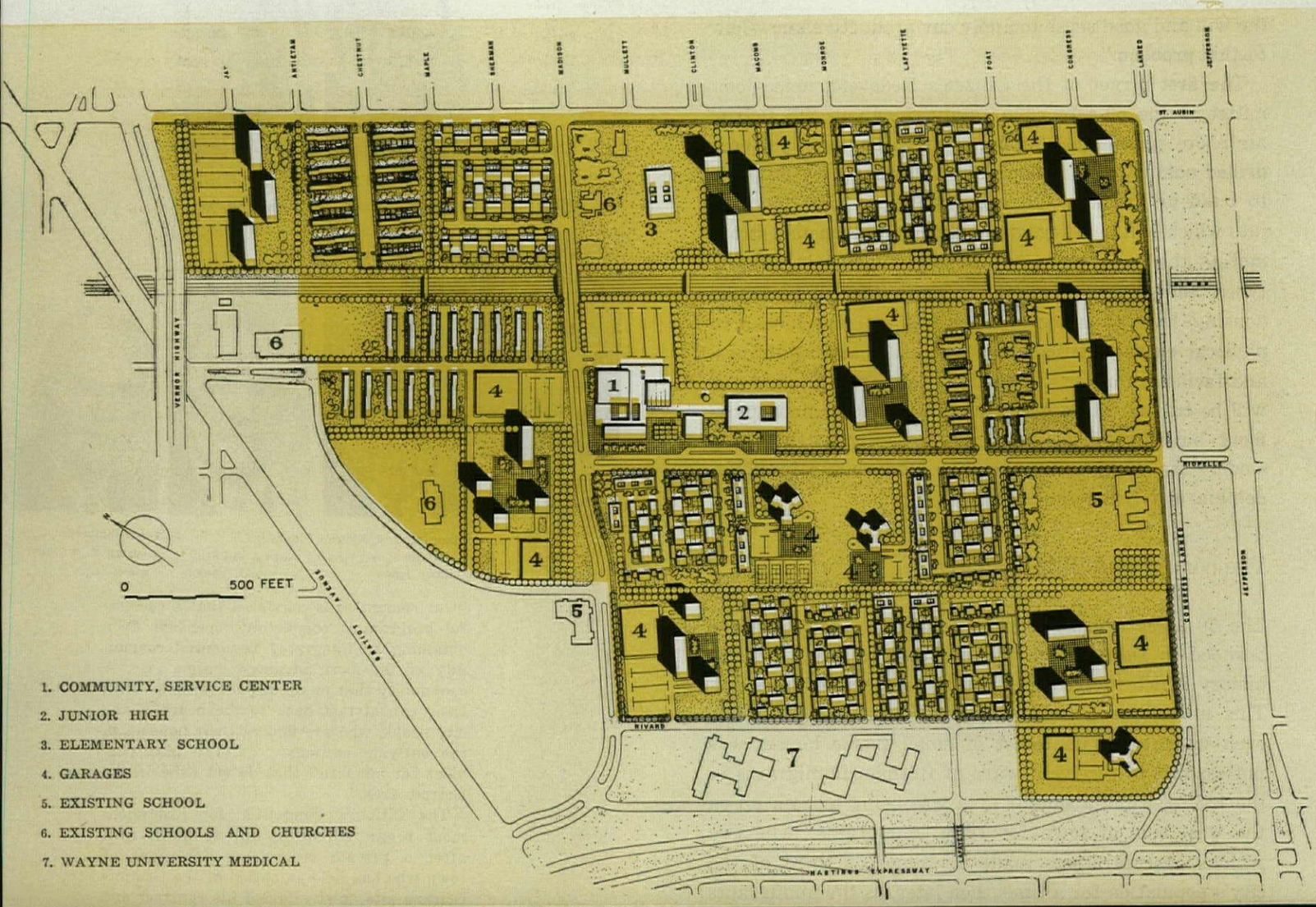
YAMASAKI

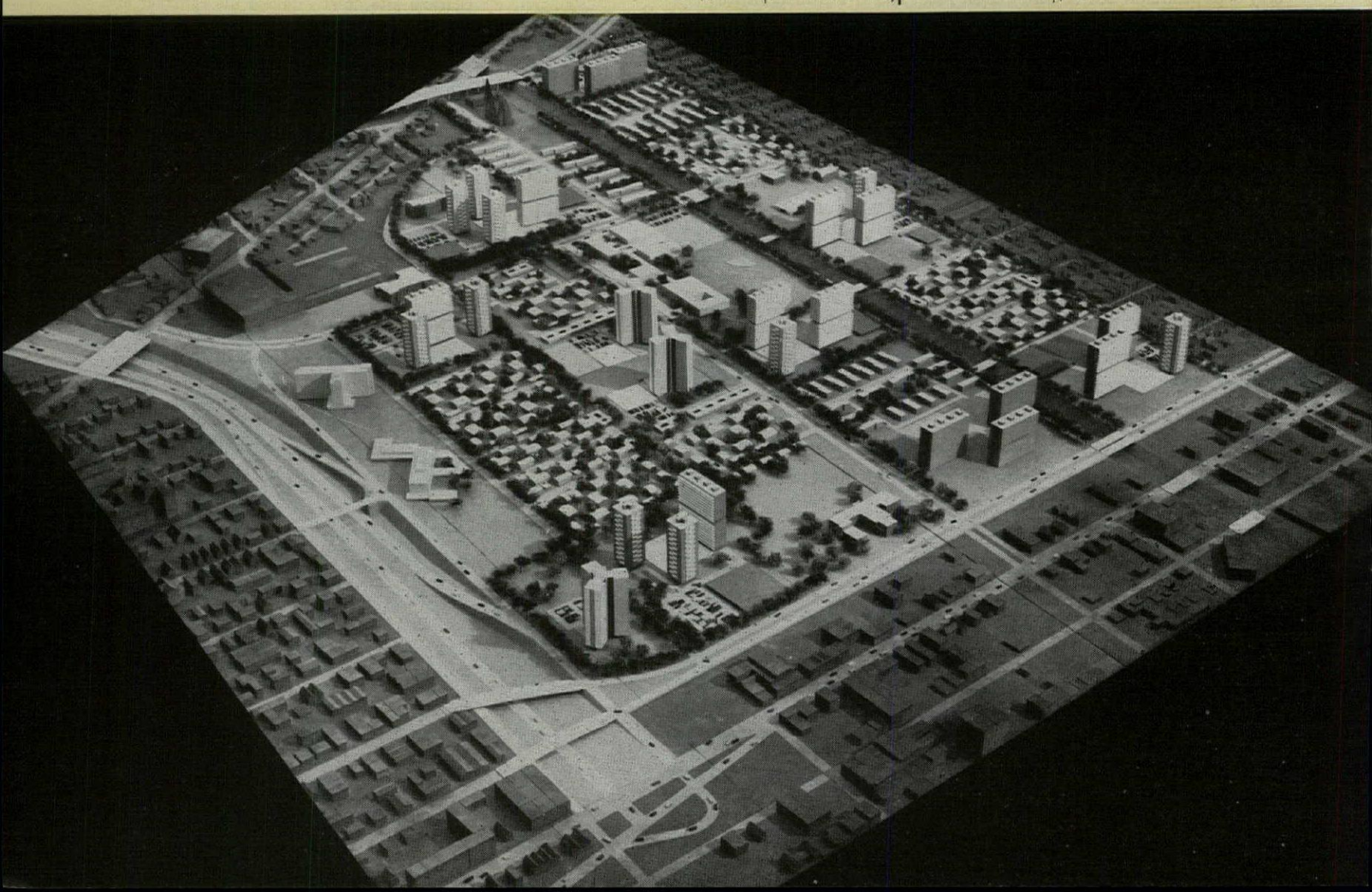


VAN LEUVEN
(of Gruen Associates)

The committee's architects are from two well-known local offices, Minoru Yamasaki of Leinweber, Yamasaki & Hellmuth, Victor Gruen and Karl Van Leuven of Victor Gruen Associates, and—from Philadelphia—Oskar Stonorov.

DETROIT REDEVELOPMENT





Gratiot, the Citizen's Committee saw ruin for their ideal of an integrated neighborhood. They would not build in its shadow.

Last month Detroit's Common Council ruled that they would not have to; they passed an ordinance guaranteeing the extension of their Gratiot-type layout over both the Lafayette and St. Aubin areas. In St. Aubin and Lafayette, only two small public housing units will be included, totalling 1,098 units; the rest will be saved to help reseed the other 24 slum districts in Detroit. Because Gratiot is the closest to midtown of these blighted areas, it demands the most immediate attention; it might also be a model for others to follow. If it is a successful model, and the Citizen's Committee can take on a new neighborhood for their kind of redevelopment every two years, the next half century may see a reconstituted Detroit. In 50 years, Detroit might even be one of the few midtowns still tenable for commerce at the present volume—100,000 families would be a mighty buying bulwark for midtown business.

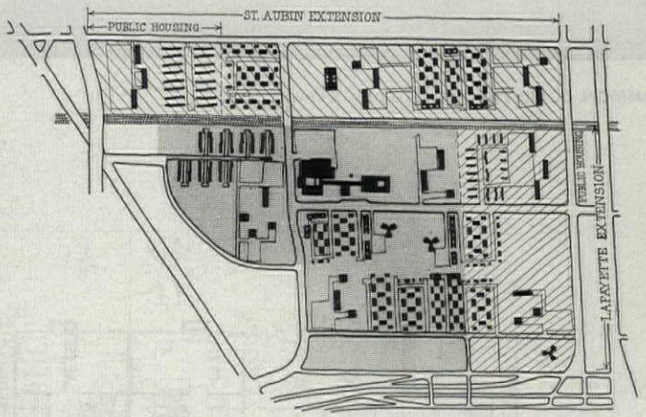
Mayor Cobo is impatient to get this redevelopment under construction this summer; last month he gave the Citizen's Committee 30 days to get their corporation moving on the $50 million building project.

The first million

Future steps of the Citizen's Redevelopment Committee depend largely upon financing at this point. The plan is to complete the setting up of an operating corporation with $1 million in capital, half contributed, half raised by short-term debentures. The 50 acres of the Gratiot plot will cost a total of nearly $950,000 after markdown—almost $20,000 per acre. (Federal Aid brought the price of the entire 128 acre plot down from nearly $60,000 per acre, clearing expenses included.) The Citizens do not plan to invest all their cash in land to start with; instead they plan to buy an option and set up an installment-buying agreement with the city. They actually will take full title at first only to the land for two pilot projects in Gratiot—probably three apartment towers, the service center and a low-rise project of about 150 units, opposite the Wayne medical group. Then they will set up subsidiary corporations with private redevelopers to complete other Gratiot sections; when these are complete, but not before, the developers will buy the Citizens out of the subsidiary corporations. In this way the Citizen's Committee can retain control, enforcing their over-all plan in detail, and yet can dig this seed money out fairly fast and replant it in other parcels of the project or in other Detroit slums.

In their plans Gratiot's architects have avoided the over-all monotony, anonymity and economic nudity of most housing projects, public or private. They have placed groups of high-rise apartments in green fields through the project, but have given most of the ground area to ingeniously planned complexes of single free-standing houses, three-bedroom rental row houses, semi-detached houses with enclosed yards and commons, and four-bedroom ownership-type houses. In general the economic distribution will locate the highest priced housing in the center, the next highest on the periphery, and the low cost in between. Arranged on the superblock system, most of the low buildings will face inward on sets of common play yards for children, a cellular type of neighborhood. In street plan the idea was not to strain for intimate curves or cul de sacs, but to create exceedingly simple access to adjoining superhighways in the family car. Because Detroit is so dominantly an auto city, its public transportation system has been neglected. People have to drive. The new plan for Gratiot uses the highways as the founders of Detroit used the river, emphasizing wharf space; there is 175% off-street parking —a hint of what may be necessary for other cities too, when the full pressure of Detroit's relentless assembly lines reaches them.

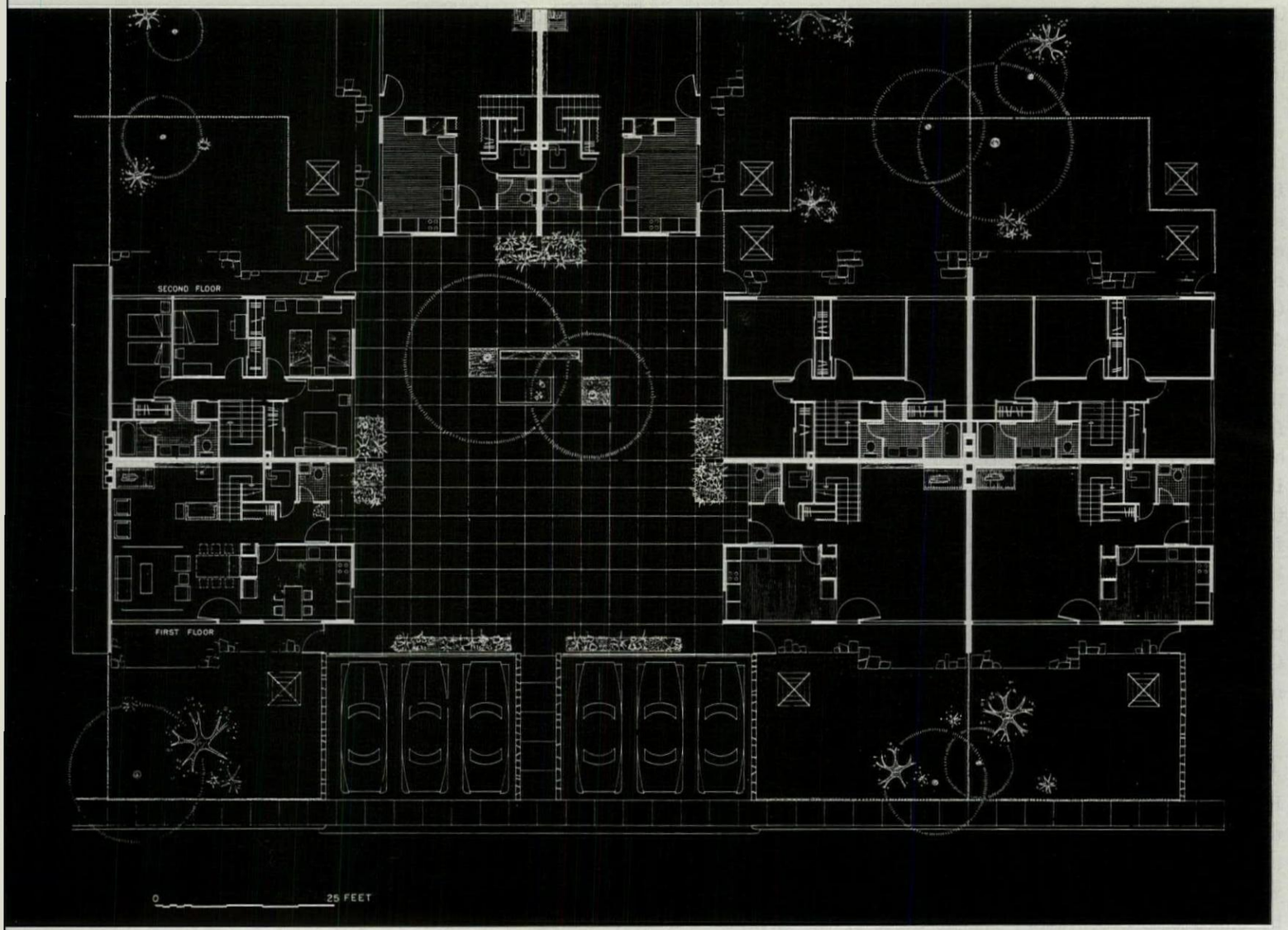
Municipal redevelopment under the banner of a private nonprofit corporation may be a hybrid, but the Detroit Citizens hope to prove it to be as efficient as other quasi-public bodies in the US, like port and highway authorities. Their basis for success: nonpolitical continuity, and an opportunity for private citizens to put a shrewd brand of idealism into play.



DWELLING UNIT DISTRIBUTION

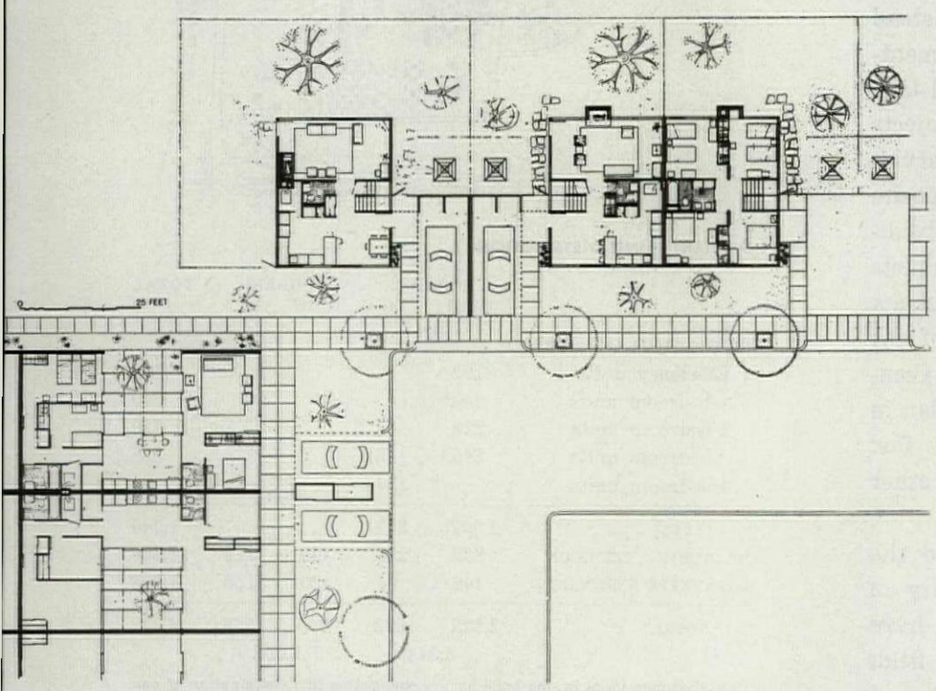
	PRIVATE HIGH	PRIVATE LOW	PUBLIC HIGH	PUBLIC LOW	TOTAL
GRATIOT-ORLEANS AREA					
Efficiency units	192				192
1-bedroom units	240*				240
2-bedroom units	720				720
3-bedroom units	240*	155			395
4-bedroom units		197			197
Total	1,392	352			1,744
ST. AUBIN EXTENSION	832	226	420	128	1,606
LAFAYETTE EXTENSION	448	94	420	130	1,092
TOTAL	2,672	672	840	258	4,442
	3,344		1,098		

*Two-bedroom units in one building are changeable into combination of one- and three-bedroom units.



COMMON COURTYARD is core of six-house group

In the fields of houses, a reorganization of yards



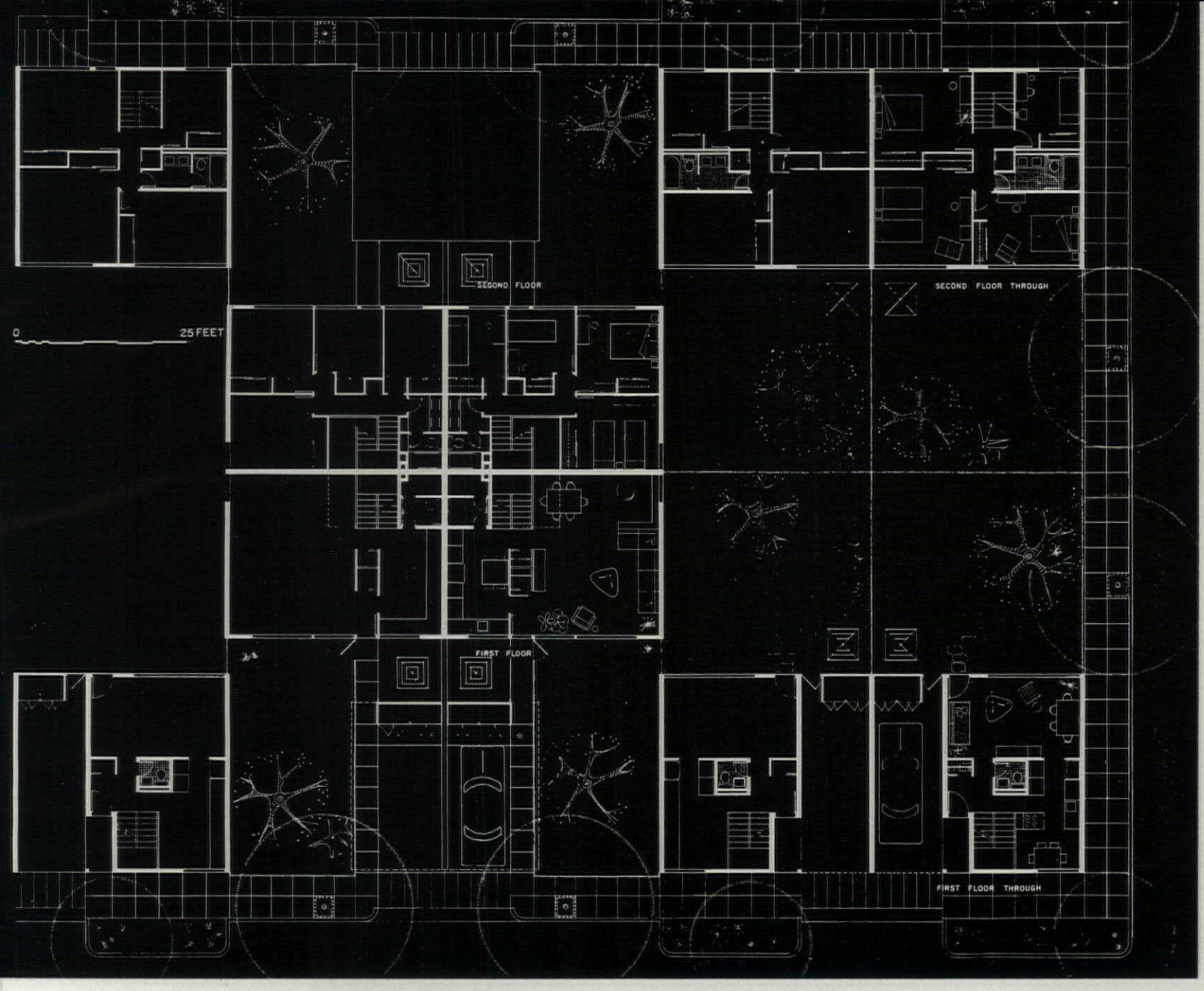
DETACHED CORNER HOUSE will be highest echelon in neighborhood

In the layouts for the low housing to be rented or sold in the Gratiot area, most of the traditional front and back yards have undergone re-evaluation and rearrangement. The old, semiprivate front yards have largely disappeared, usually to be merged into a common playcourt around which a number of dwellings are grouped. From their kitchens mothers can watch their children at play, with the satisfaction of knowing they are playing in an off-street area. The cars in their shelters actually form a barrier to sudden street dashes.

The private yards are more private than ever. Fenced higher than the eye, they allow people to do such things as eating outdoors, and setting up infants' playpens.

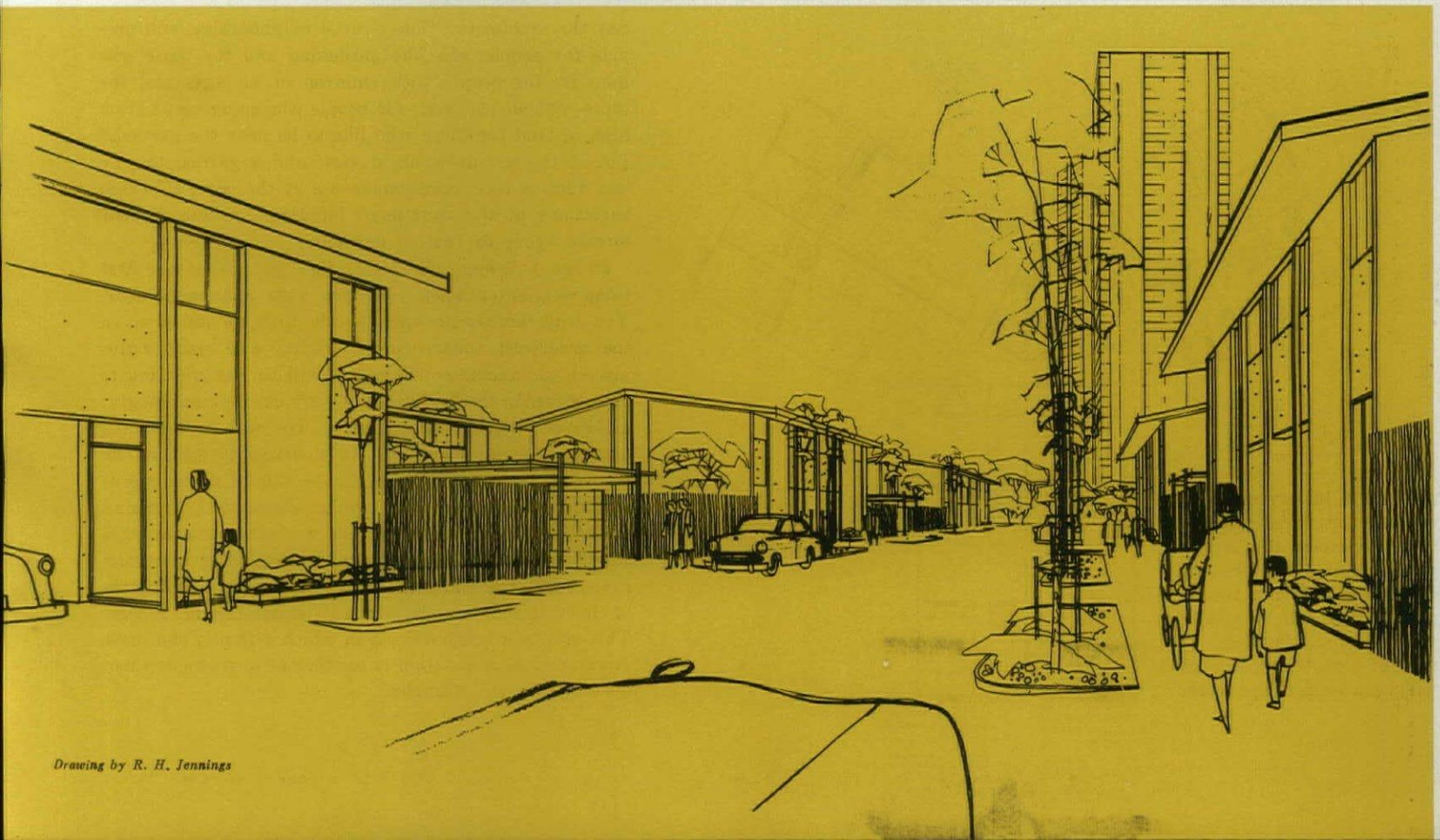
The duplex houses (plan, left) have what amounts to two living rooms, one above the other, to allow an amicable family separation of children's and adults' entertaining.

Diversity of houses is deliberately pushed to reflect the diversity hoped for in the economic structure of the project, but architects expect the house prices not to exceed $17,000. The land use still approximates the habit of the 40′ x 60′ lot (except for corner houses) although it redistributes the ground thriftily. This neighborhood will be strongly cellular; the unit of neighborliness probably will be the shared playcourt.

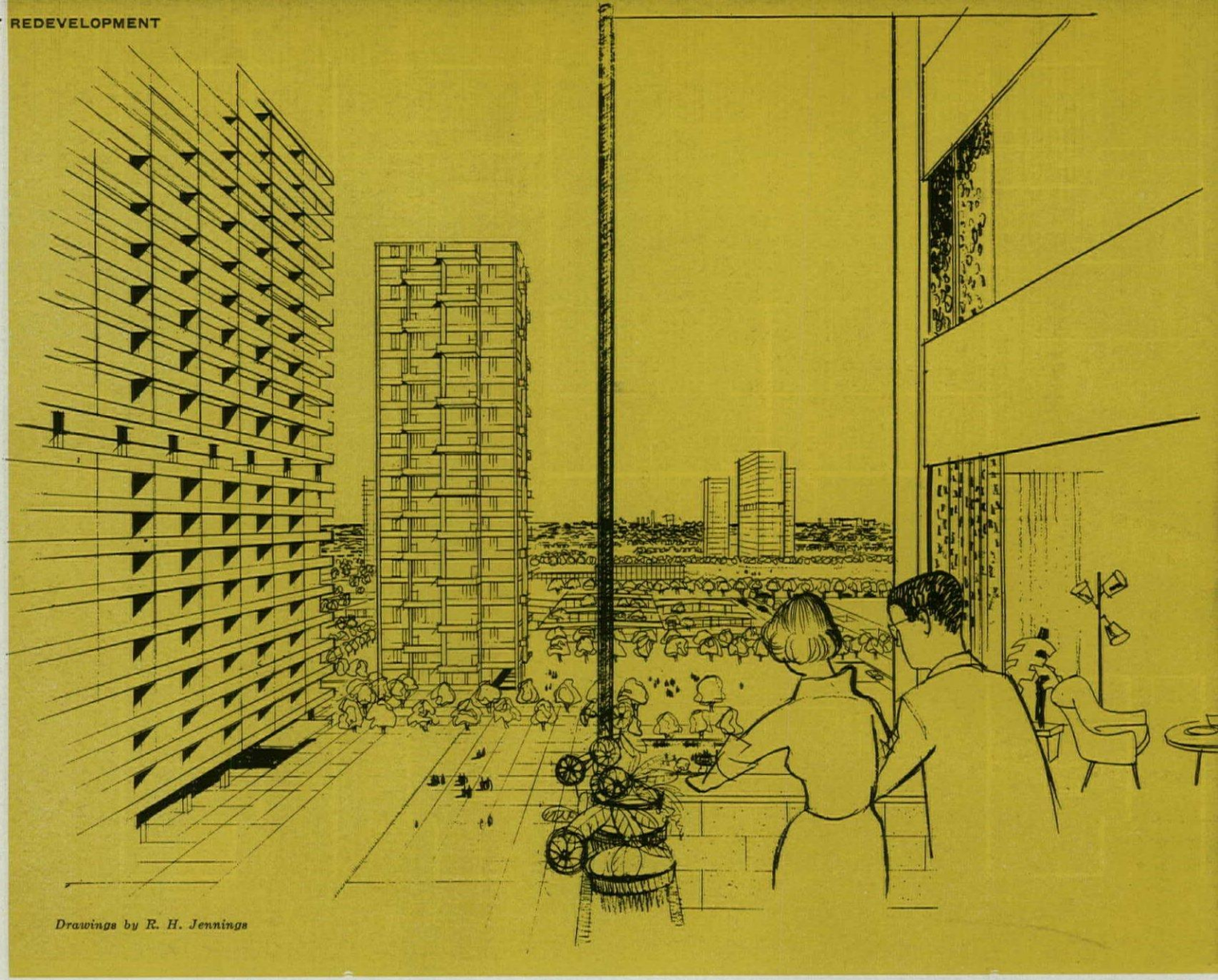


PRIVATE YARDS and more private garages characterize a different neighborhood

PERSPECTIVE from sidewalk viewpoint shows group of houses in plan above

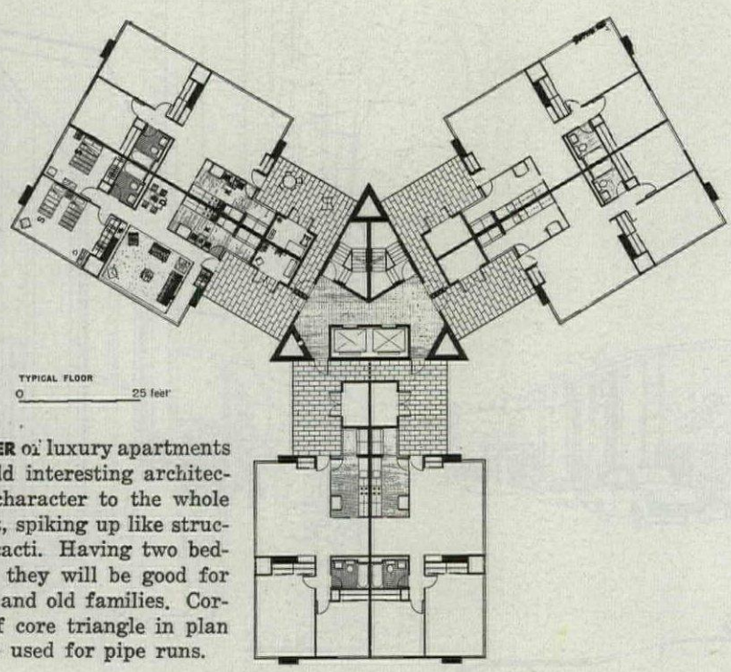


Drawing by R. H. Jennings



Drawings by R. H. Jennings

Three ingenious new types of high-rise apartments

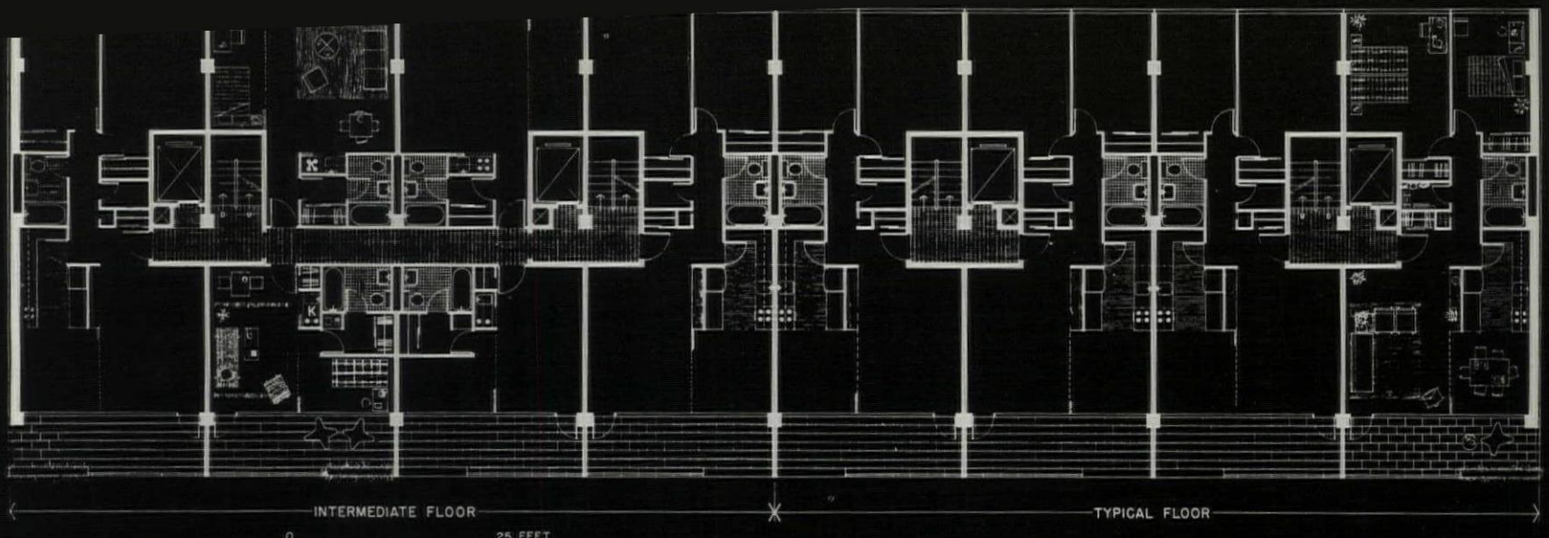


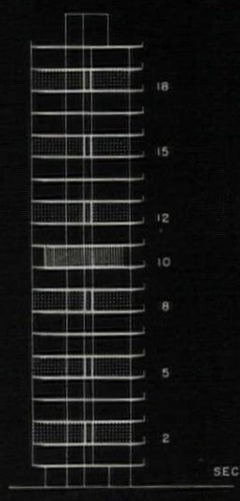
Y-TOWER of luxury apartments will add interesting architectural character to the whole project, spiking up like structural cacti. Having two bedrooms, they will be good for young and old families. Corners of core triangle in plan will be used for pipe runs.

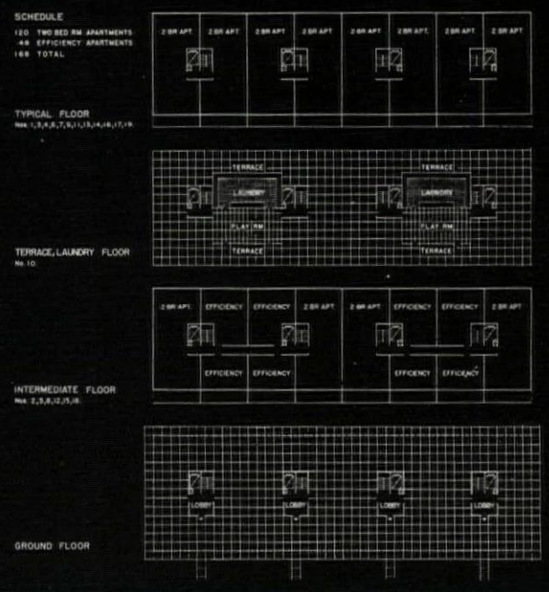
Say the architects: "The Gratiot neighborhood will provide for people who like gardening and for those who hate it; for people with children of all ages and for those without children; for people who enjoy views from high up and for those who like to be near the ground." But if the tenant wants a view and a garden too, he can rent a nice compromise up in the air; all three variations of the apartment buildings include outdoor terrace space for potted gardens.

In the Y tower (plan, left) the "garden" is the first thing you enter when you open your apartment door. You walk across an open porch, then go indoors. In the lower-cost square tower (right) and slab (right, above) the apartment balconies will be less startling to the visitor. In the first case they are cantilevered singly; in the second, in divided rows. The slab will have a unique floor midway up. No apartments will be on the tenth floor; instead, the space will be a continuous building-long terrace with two laundries and playrooms.

The high-rise apartments are so distributed throughout the master plan of the project that their wide surrounding lawns will serve also to space out the clusters of low attached and detached single-family houses. This will be a neighborhood in which a family can move from one accommodation to another as it grows, without heading for the suburbs.

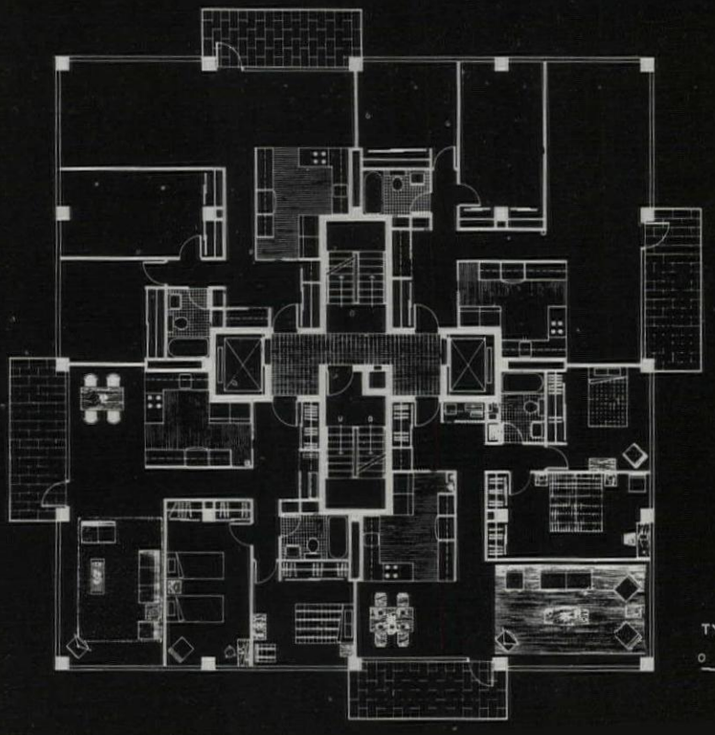




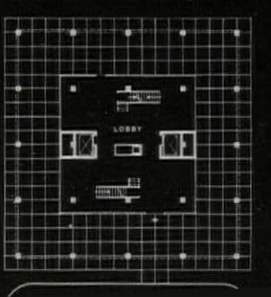


SKIPSTOP SLAB (above), by keeping the halls entirely interior, crams a preponderance of through apartments into the slender shape. The hallways become vertical, as stairways. Only the efficiency apartments lack through ventilation, but half include balconies.

SQUARE TOWER is divided into four two-bedroom apartments on each floor, except for the open lobby, yet the plans are varied so that the balconies will not climb up the sides of the building like a ladder, in tiers. Instead they are offset (see alternate floor plan).



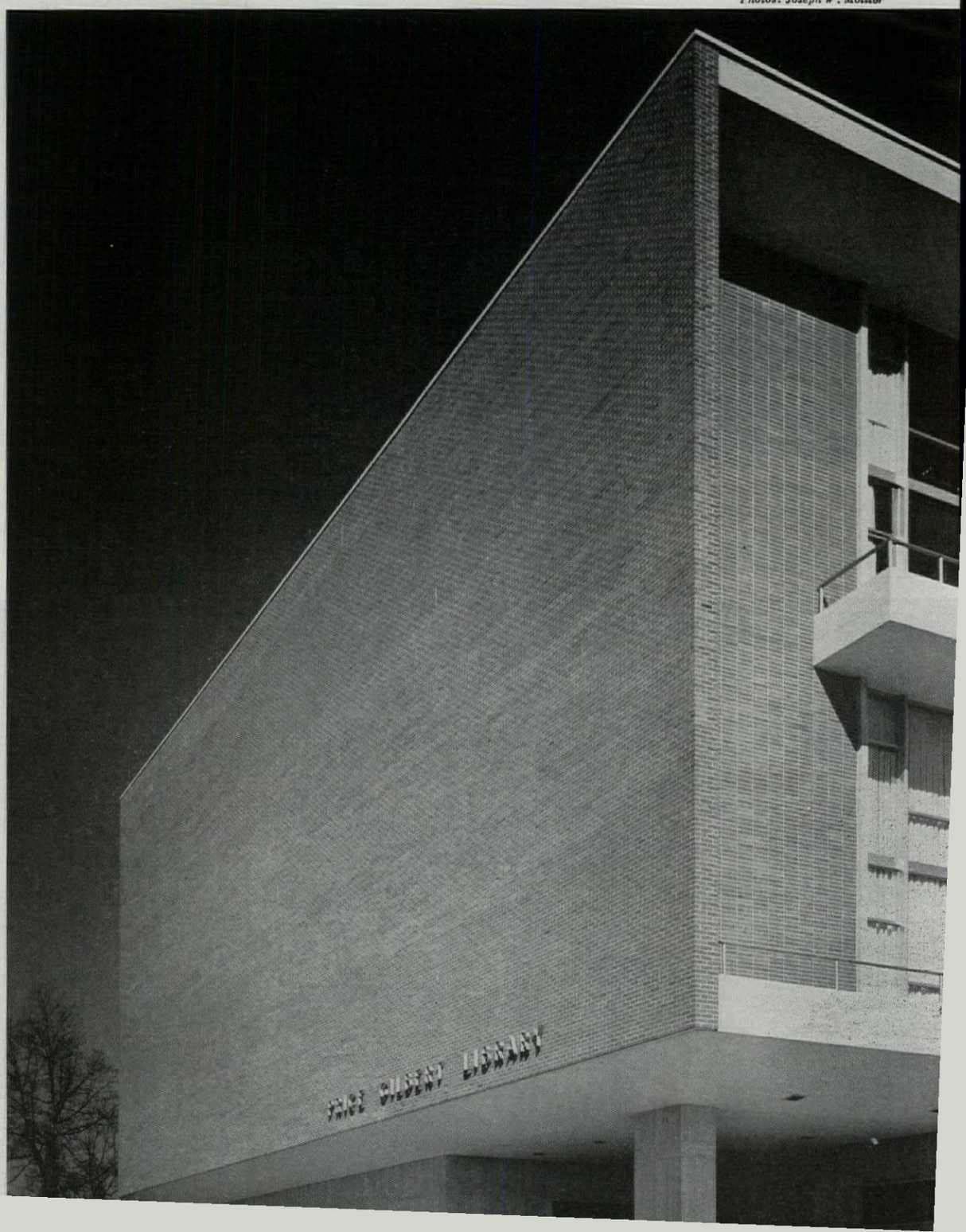




NEW COLLEGE BUILDINGS

Here are three examples—better than most but not unrepresentative—showing how well the academic world is beginning to build itself into the world outside, instead of retiring into ostentatious isolation. One example is a state institution in the Southeast, adding a library to its series of modern buildings (below); another is a privately endowed institution in the Southwest, creating a campus wholly new (p. 130); the third is a junior college in the Northeast, adjusting its new buildings to existing collegiate crockery (p. 138). All are designed sensibly, on the basis of careful study, and with understatement.

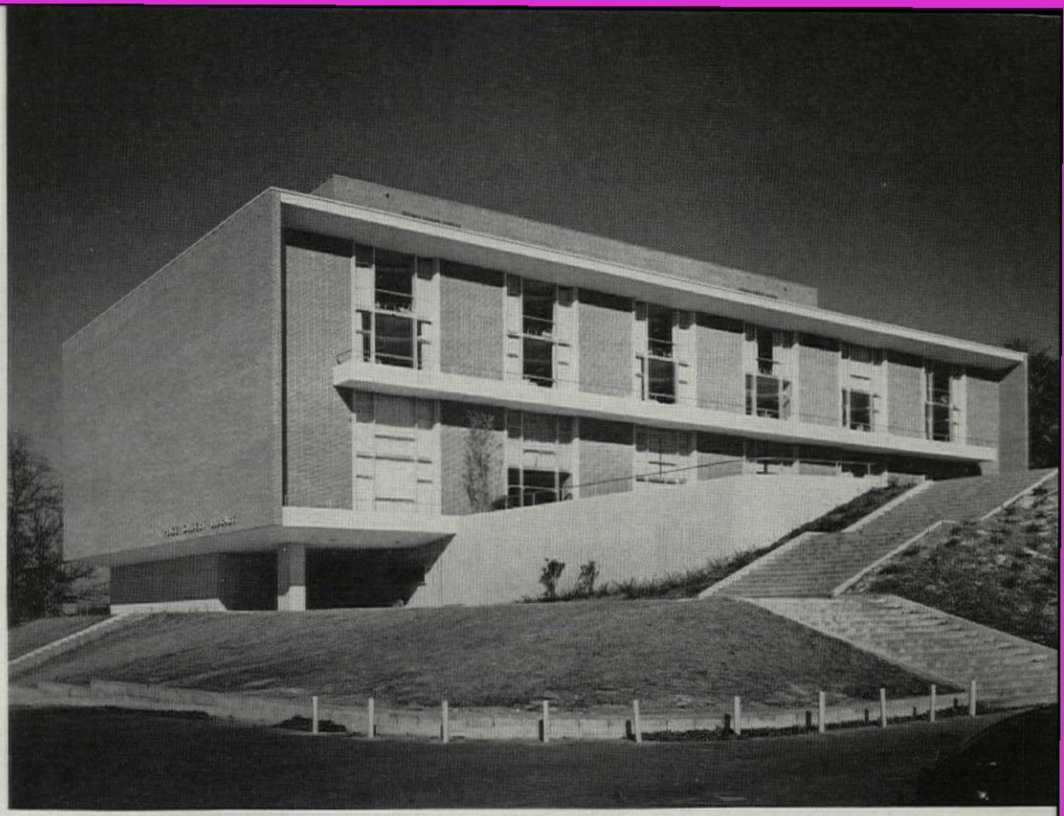
Photos: Joseph W. Molitor



WEST APPROACH was to be main façade until planners recommended turning building 90° to give reading rooms north light, shut out hot afternoon sun. Brick veneer curtain is cantilevered 9′ out over ground-floor entrance, which is faced with travertine.



KEY POSITION at high, central point of new campus is enjoyed by library, research building, future classroom-administration building (foreground).



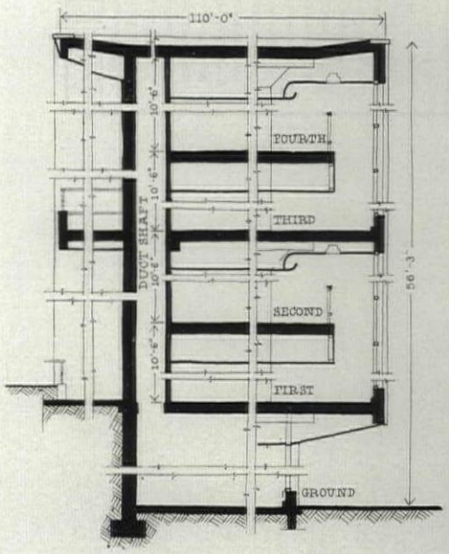
SOUTH FACADE shows good building composition, sun control. Main entrance is at left

1. AT GEORGIA TECH, ATLANTA,

NEW STANDARDS IN LIBRARY DESIGN

John Burchard, MIT's library expert and planning consultant on Georgia Tech's new 450,000-volume library, describes it as the "clearest statement yet made" of new principles of library design, clearer even than the new libraries he helped plan at Rice Institute and at his own MIT. The principles aim at making the library the real heart of university life by: 1) centralization of most departmental collections in one building easily accessible to all; 2) subdivision into specialized reading rooms for different departments; 3) openness and circulation between floors by means of mezzanines, stacks merged with reading areas instead of isolated on whole floors; 4) gradation of floor use from services and stacks on the south to reading rooms on the north-light side.

To these principles might be added another which few colleges besides Tech actually follow in planning new buildings: show pride and confidence in your own department of architecture by having it develop the building program, calling in any outside help that may be necessary. The library is the third, and best, building on Tech's new campus designed by its teacher-architects.



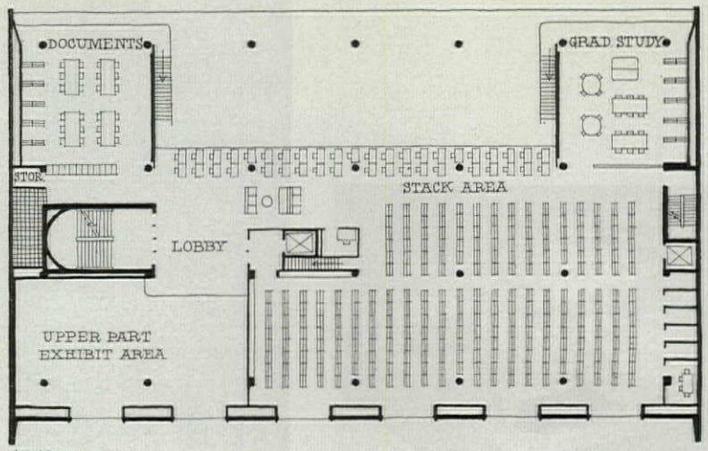
SECTION: ducts between south-side windows supply cool or warm air through furred ceilings over stacks. Glassy north wall is insulated by blanket of air rising from hot-water convectors.

NORTH FACADE opens both two-story reading rooms to best light and extended view

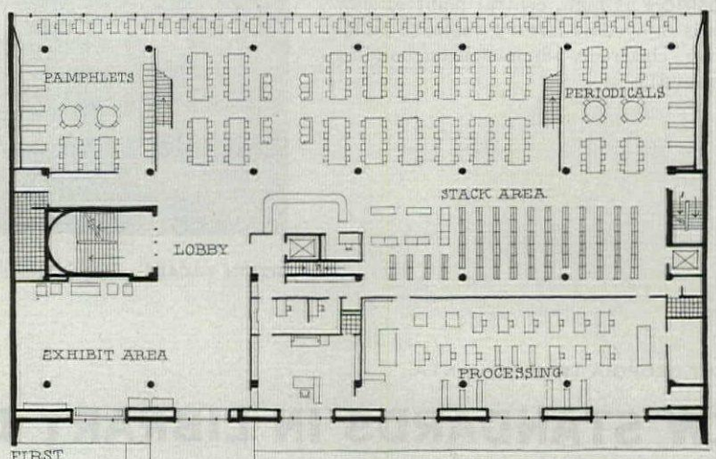


GEORGIA TECH LIBRARY

PRICE GILBERT LIBRARY: Georgia Institute of Technology
ARCHITECTS: Bush-Brown, Gailey & Heffernan
CONSULTANT: John E. Burchard, dean of humanities and social studies, Massachusetts Institute of Technology
STRUCTURAL ENGINEER: J. J. Pollard
HEATING-VENTILATION ENGINEERS: E. R. Gritschke & Associates
GENERAL CONTRACTOR: J. A. Jones Construction Co.
LIBRARIAN: Mrs. J. H. Crosland



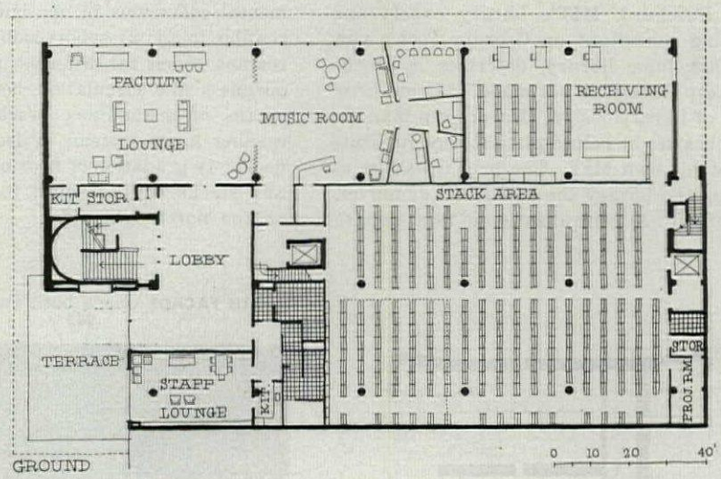
SECOND



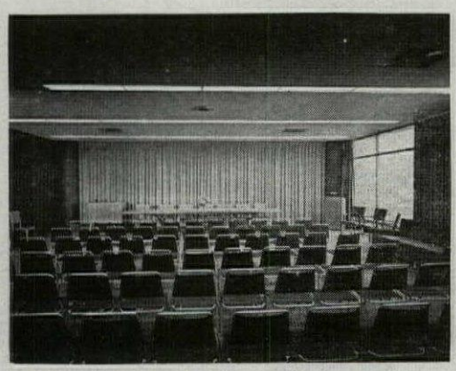
FIRST

Instead of monumental halls and dark, buried stacks, Tech's library has an open, cheerful design that removes many obstacles between books and their potential readers. Self-service from open stacks in reading areas keeps staff work down, encourages readers to become acquainted with four or five books instead of ordering one from a desk. Air conditioning invites readers, permits smoking in most areas, protects books from dust and temperature-humidity extremes. These, plus acoustical treatment, high light levels and a diversity of comfortable seating have made the library so popular a general study hall that evening hours have had to be extended.

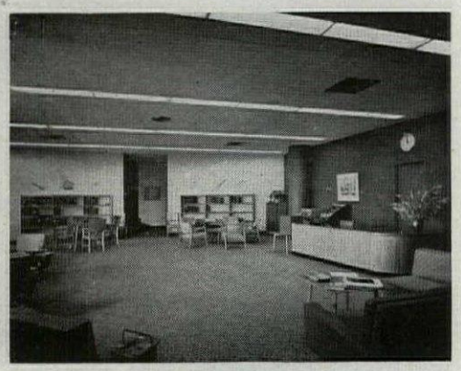
The new library is actually two libraries in one: the humanities take precedence on first and second floors (plans, right); science and technology have almost identical facilities on the third and fourth; music is on the ground floor and art exhibits are in the main lobby. The whole building is on a wide-bay system (27′ x 27′, increased to 31′-5″ for the two-story reading rooms) with freestanding stacks that can be added to or changed around as the collection grows from the present 150,000 volumes and 100,000 documents to capacity of 450,000. Floor area: 96,508 sq. ft.; seating capacity: 800, with 17 locked carrels, 170 individual study tables; construction cost: $16.57 per sq. ft.; total cost, including equipment, furniture, fees: about $2 million.



GROUND



FACULTY LOUNGE on ground floor can be converted to auditorium by folding back partition, setting up 150 stacking chairs.



MUSIC ROOM at opposite end of faculty lounge has record-lending desk near entrance at right, listening booths in far background.



SPECIAL READING ROOMS on north side have same economical 7′-8″ ceiling height as stacks and offices on the south, afford spatial contrast with 19′ general reading rooms (photo below). Light levels are maintained at a high 60 foot-candles in special reading rooms, 45 foot-candles in two-story reading areas, 28 foot-candles in stacks. Natural birch furniture, light gray stacks aid diffusion, reduce eyestraining contrasts. Acoustical-tile ceilings and cork-tile floors cut noise by 55% in reading areas. (Ceilings in processing rooms, machinery rooms, lobbies, stairwells and kitchen cut noise 65 to 70%.)

Photos: (below) L. C. Prowse; (others) J. W. Molitor



GENERAL READING ROOMS have glass curtain wall to north, mezzanine stacks to south. Colors are many and rather sweet.



Photos: Ulric Meisel—Dallas

NEW COLLEGE BUILDINGS

2. IN SAN ANTONIO, TEX. ANOTHER LOOK AT TRINITY,

TRINITY UNIVERSITY, SAN ANTONIO
ARCHITECTS: Bartlett Cocke, Harvey P. Smith, O'Neil Ford
GENERAL CONTRACTORS:
James Stewart Co., G. W. Mitchell, Christy & Baskett
STRUCTURAL AND MECHANICAL ENGINEERS:
Frank Drought, Karbach & Engel
LANDSCAPE ARCHITECT: Arthur and Marie Berger
CONSULTING ARCHITECT: William W. Wurster

The totally new campus of Trinity University, perched on a splintered, rocky rise of ground on the outskirts of San Antonio, has been an object of fascination to the building industry since its beginning in 1951, when the Trinity trustees decided to move the school out from several antique midtown buildings, bag, baggage and small budget. (See AF, June '50 and Sept. '51.) Almost all of Trinity's techniques, both design and construction, were brash. Would they work? A recent look at the site, now shaping into a real campus, is no disappointment.

The first fascination was the brand-new structural technique Architects O'Neil Ford and Bartlett Cocke



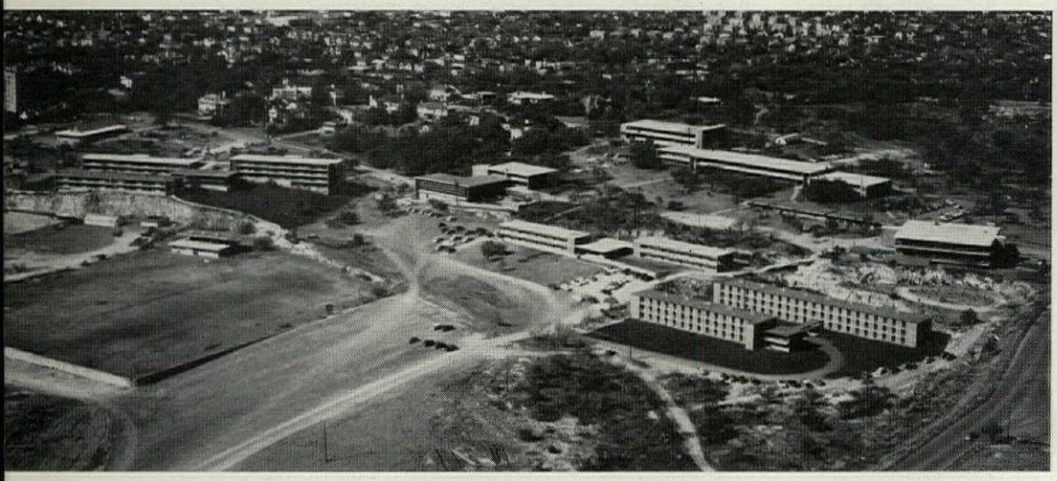
DORMITORY GROUP. Students' rooms all have pleasant balconies, doubling as sun shades.

THE LIFT-SLAB UNIVERSITY

seized upon: the Youtz-Slick lift-slab method. Although this has become fairly common practice now, four years later, it was pioneering then. For multistory buildings, Ford and Cocke poured their concrete floor and roof slabs on the ground, one atop another, like layers in layer cake, held apart only by a waxy coating; then one by one the concrete slabs were jacked up their steel columns to the proper heights. There was no scaffolding or formwork at all. "Why build a building of wood up in the air just to pour a concrete building into?" Ford expostulated, as if all the decades of concrete construction up till then had been rather ludicrous. Four years have passed and a dozen completed campus buildings have proved that the economy and speed of the lift-slab method in routine operation is sizable; in those buildings which had an unbroken rhythm of construction, thousands of dollars and weeks of time were shaved from the bid estimates. But it has become clear that you must definitely schedule the succeeding building operations faster to take full advantage of lift-slab's potential economy (see p. 137).

The next enthusiasm of the Texans was for the unlovely, broken site. They refused to operate on it with bulldozers or dynamite to make it normally habitable for buildings; instead they kept it rough, unregenerate,





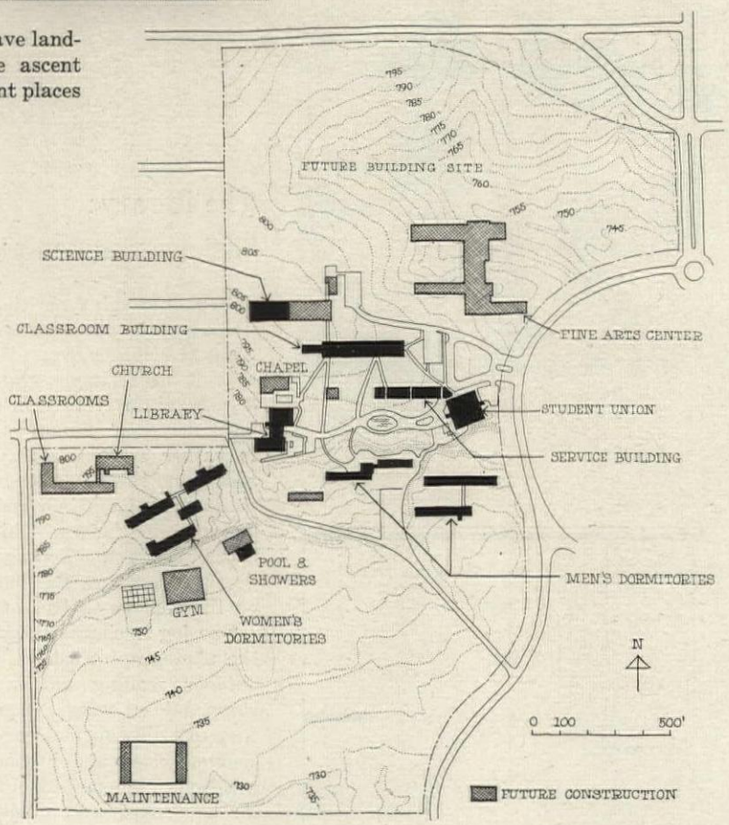
STUDENT UNION BUILDING is a good demonstration of how horizontal spirit of the lift-slab technique influenced the design of all the Trinity structures. Architect Ford adds: "We feel that the low retaining walls and area defining walls have done wonders to make good relations between the buildings." Cactus garden on shelf below union was planted and planned by an enthusiastic local men's garden club. Air view from San Antonio side (left).

unsubdued. Their site plan was neither a theatrical tour de force, nor a piece of perfect paper discipline; on the irregular terrain each building form and position was shifted until it seemed to fall in place naturally. There is no cliff-hanging. "We have built a fairly tight campus which can expand outward in every category," say Ford and William Wurster, the consultant.

In a part of the US where an ornate Spanish tradition lingers fondly, the Trinity buildings themselves are architecturally modest. But their effect is not, for the architects' preservation of the lacerating site adds interesting romantic sauce. The simple structures are inherently involved in the rich natural variations of the campus land; they cannot stay aloof. And to the vertical crags and gullies of the land the sweeping dominant horizontals of the neat stacks of lifted slabs add their visual order—to arrange, balance and bind the architectural composition. The architects have succeeded also in pulling off an economic paradox in marrying these two seemingly incompatible conditions—the inexpensive buildings and the rough land. In combination, low-cost buildings and low-cost land multiply one another's value.



CONCRETE STAIRS have landings to break the ascent and provide pleasant places in which to sit.

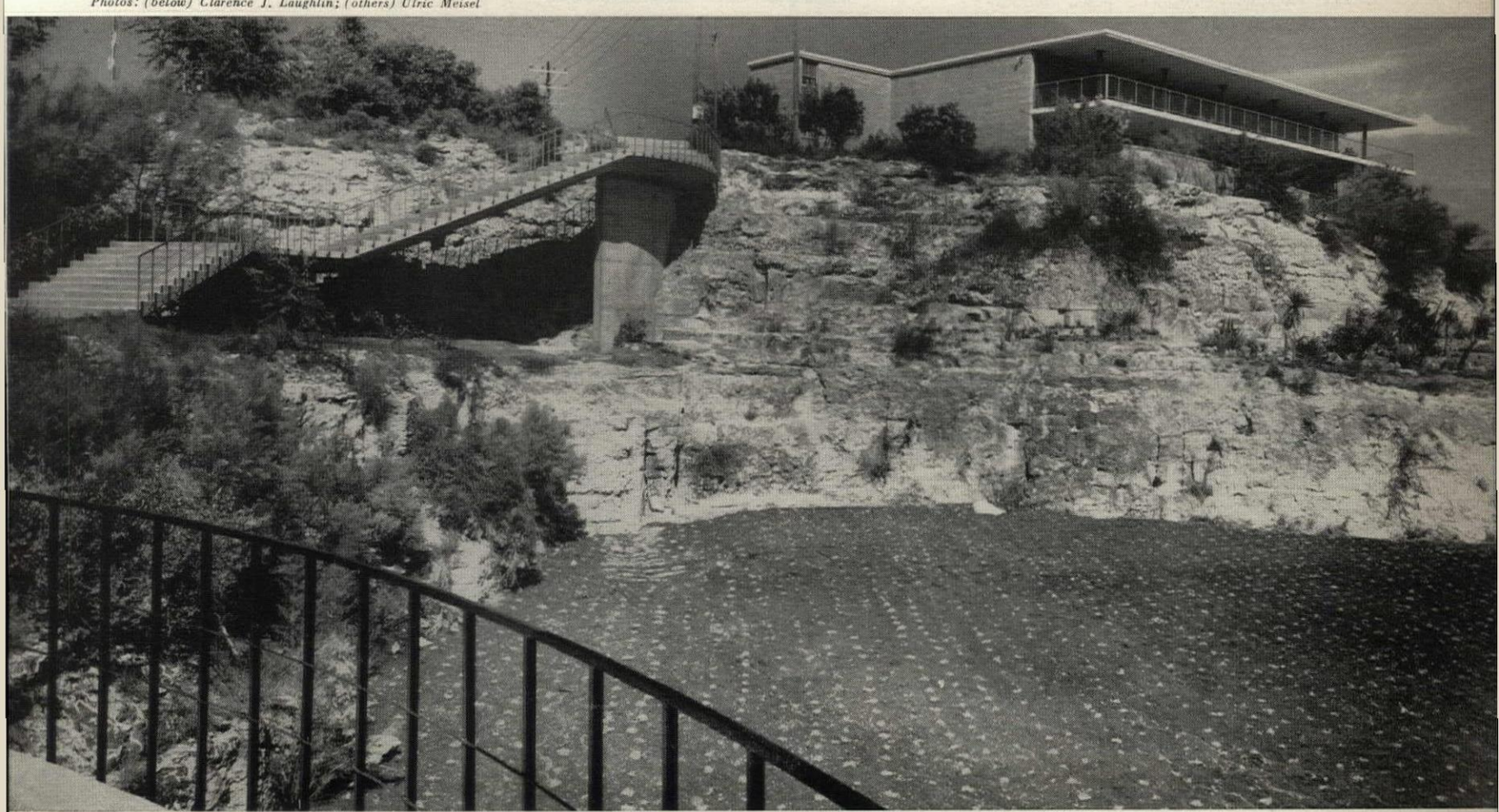


Campus plan: a complete core to grow outward

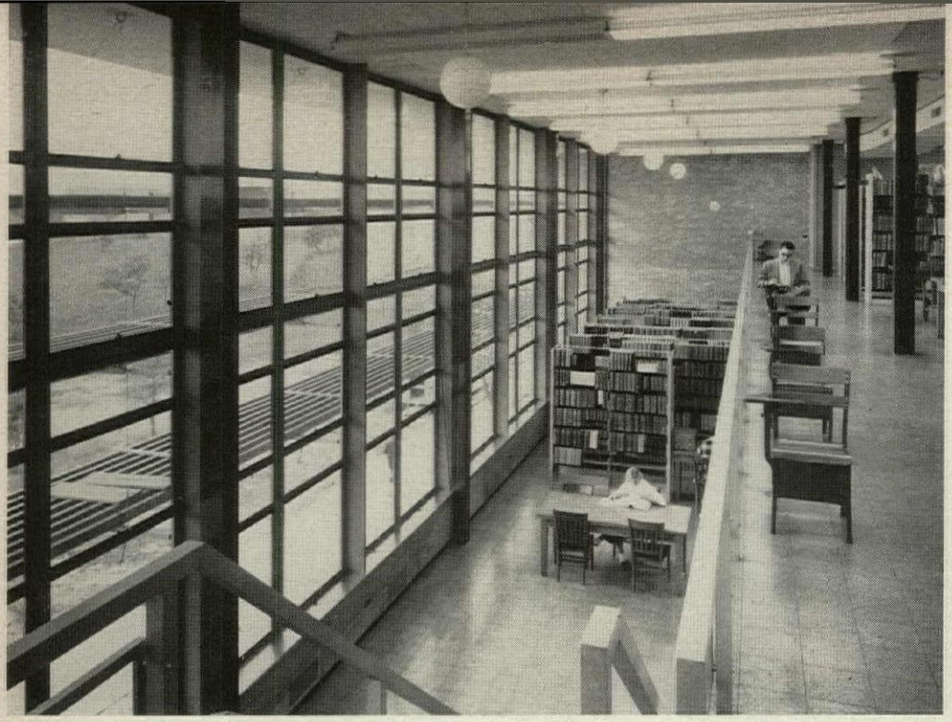
"After all, we really have a three-dimensional problem on the site and I suppose the great view to the city to the south is a fourth, and for all I know, particular orientation, breeze, and sun problems are a fifth." With this careful and tentative approach Ford and his cohorts began fitting the buildings to the site—and not the site to the buildings.

For a campus expected to expand rapidly, the first buildings are placed rather close together, and even the central green is not an entirely open space. The reason: to block any future college administration that might be tempted to erect a great central monument. "Specifically, the green or common in the center of the campus would be a sore temptation to some donor or less wise future administration, and yet we could not fill it with something important of our own doing to forestall something worse. So we ran the thin, transparent finger of the student union building (a one-story glass wing housing store, student offices and post office—see p. 135) back into this green, decreasing it in height as it went up the slope, so that the view of the city from the classrooms is not obstructed. Those walking behind it can see through it."

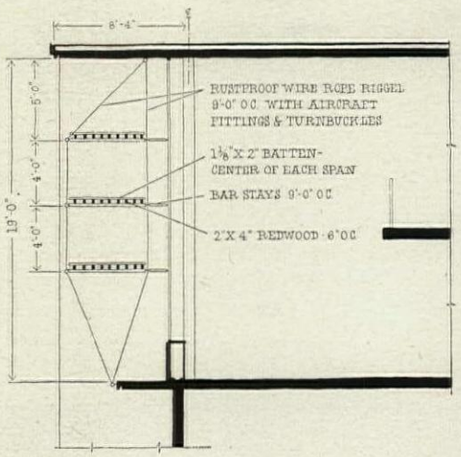
Photos: (below) Clarence J. Laughlin; (others) Ulric Meisel



BRIDGES across nature's gouges in the site, walkways and stairs are visible framework of University's integration.



SOUTH WALL of library wears three levels of sun shields, braced in place by cables as shown in diagram (below, right).



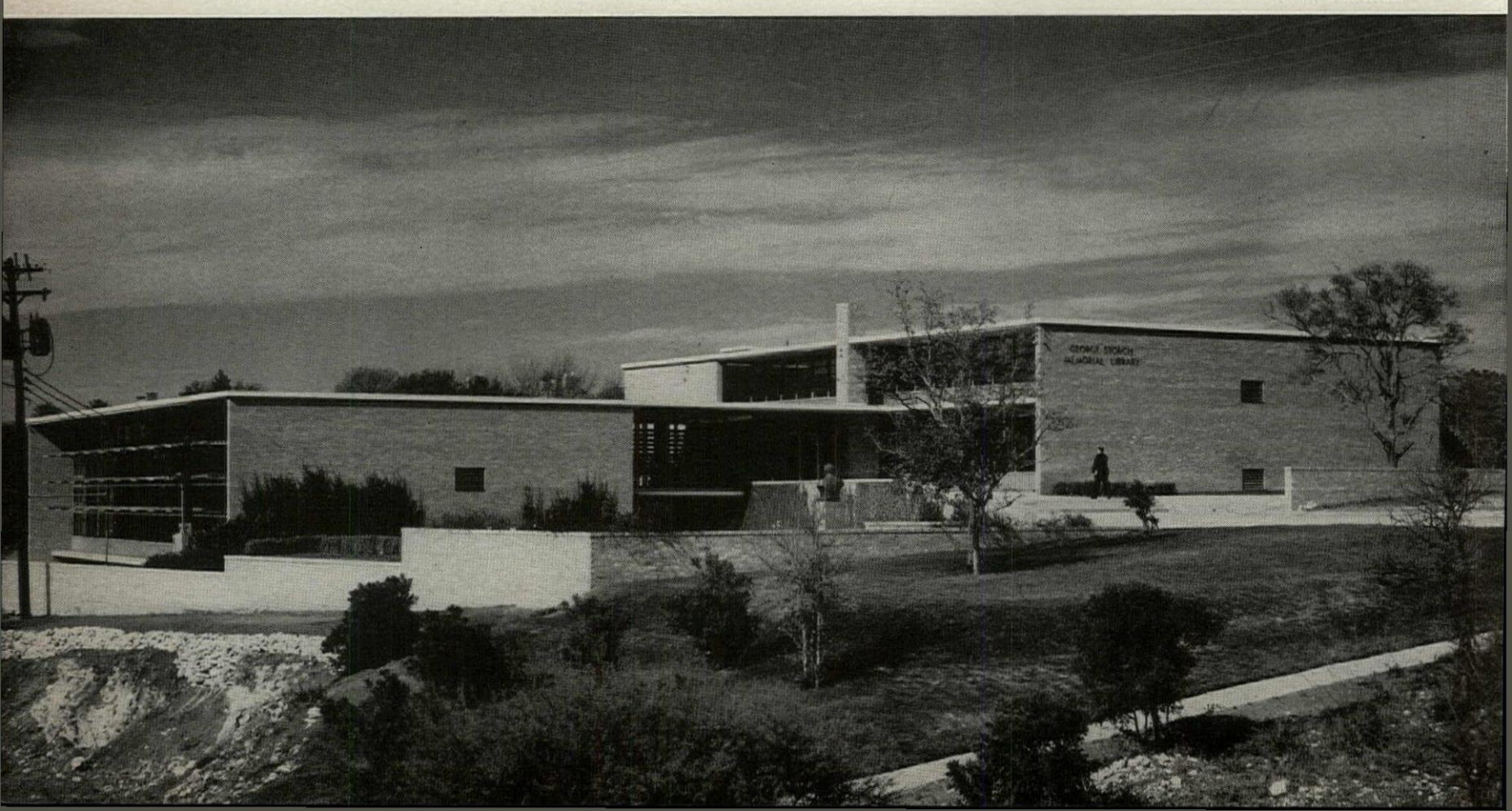
LIBRARY FACADE. Telephone poles deliberately were left as ugly and apparent as possible, instead of being minimized or hidden, in hope they would annoy some one enough so he would donate the $50,000 needed to put wires underground.

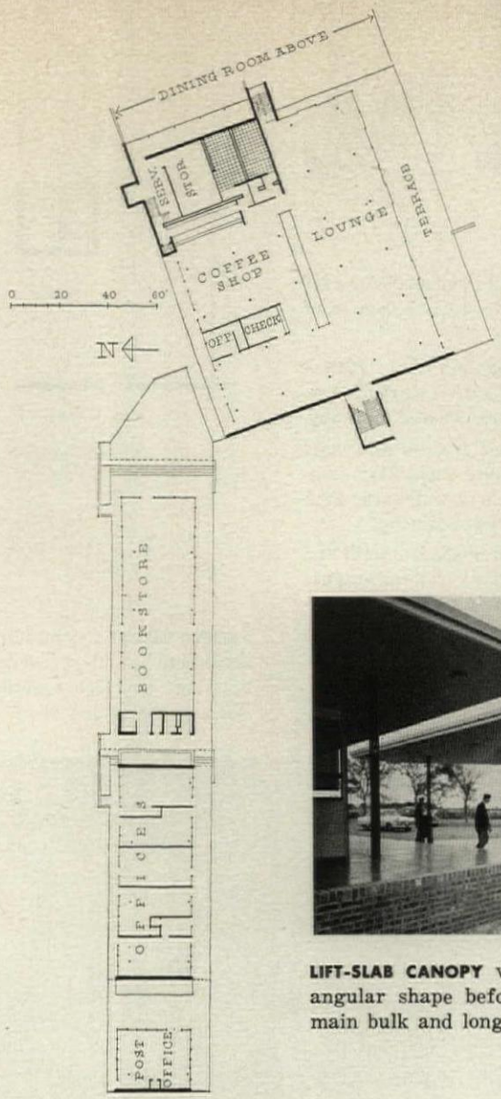
The library: basic spaces, complex levels

The photograph from the mezzanine of the library (left) is characteristic of the architectural solution over all the University in that it uses simple gestures (and always structural ones) to gain its effect, yet with an underlying sympathy for the land which is rather sophisticated. For example the mezzanine sits shelflike inside the big glass wall, which itself is bounded top and bottom by concrete shelves. This arrangement indoors recalls the arrangement seen out of doors, too, where the buildings sit in tiers on the various shelves of the land.

One jog in characterization is apparent in the photograph (below), which includes an outdoor reading garden in front of the stepped-down wing. Inquiry has developed that this silly formal garden, complete with concrete floor and bronze bust, replaced a handsome scheme by Landscapist Berger for a relaxed, tree-shaded outdoor reading area. The reason was human but disappointing: preference of the donors.

Photos: Ulric Meisel







LIFT-SLAB CANOPY was cast in roughly triangular shape before jacking up. It links main bulk and long wing of union.

Student Union: "each idea became simpler"

In commenting on the design of this structure (see also color photo, p. 132), Ford makes a point which will remind other architects of how different the design processes for two neighboring buildings may be: "We must have made a half-dozen sketches, floor plans in particular, of the Student Union. It was not a matter of having a general idea which was repeatedly refined and improved, but a matter of diverse notions and the realization that such a building could be put into innumerable physical forms. Significantly, each idea became simpler, stood less in the flat middle of the campus and closer to the bluff. In contrast we developed the men's dormitory (p. 137) in an almost businesslike progression of steps that regarded economy, efficiency, and refinement of detail. There were no really big changes from the very first sketch to the last line of working drawings."

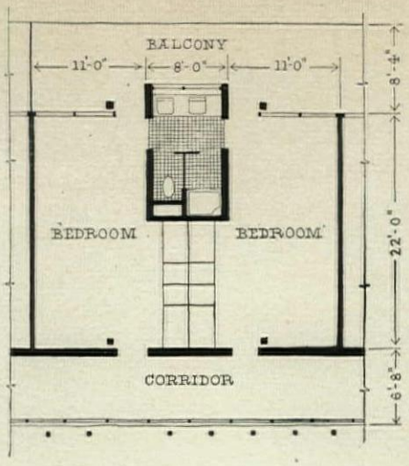
Contractor's comment

The general contractor for one of the campus buildings points out the need to schedule other work up to the swiftness of lift-slab construction: "The subcontractor who furnished the millwork went by the job twice a day and saw the slabs that had been poured but not lifted, and he decided that we were too optimistic about when we would need the material. So without consulting anyone, he scheduled a delivery date much later than that we had agreed upon. This error on his part caused him to work overtime, and then we were delayed about six weeks in receiving the materials. . . . As soon as the slabs were in place, the masonry contractor started to work. He was pushing the lifting company and in turn was being pushed by the sash men, who were being pushed by other contractors. After we started the masonry work there was no slowing down until the job was 99% finished in June, against an anticipated Aug. 10 completion date."

SERVICE WING of union stretches into central green of campus, but is not obtrusive because it is low and glass-sided.







Women's dormitory units: swift construction

As important as any other single fact about the women's dormitories at Trinity is a typical building calendar—the lift-slab system sets a hot pace. The most recent unit, totaling 74,409 sq. ft. (at $8.91 per sq. ft.), was finished a month ahead of schedule. The calendar:

Week of March 15th—set columns and start steel for first-floor east section; 22nd—pour first-floor slab east wing and start steel to basement wall first-floor slab; 29th—complete basement to first floor.

April 5th—complete first-floor pour and steel for east-wing second floor; set collars; 12th—pour east-wing second floor and set steel for west-wing second floor; 19th—pour west wing second floor and set steel for roof east section; 26th—pour east-section roof and set steel for west.

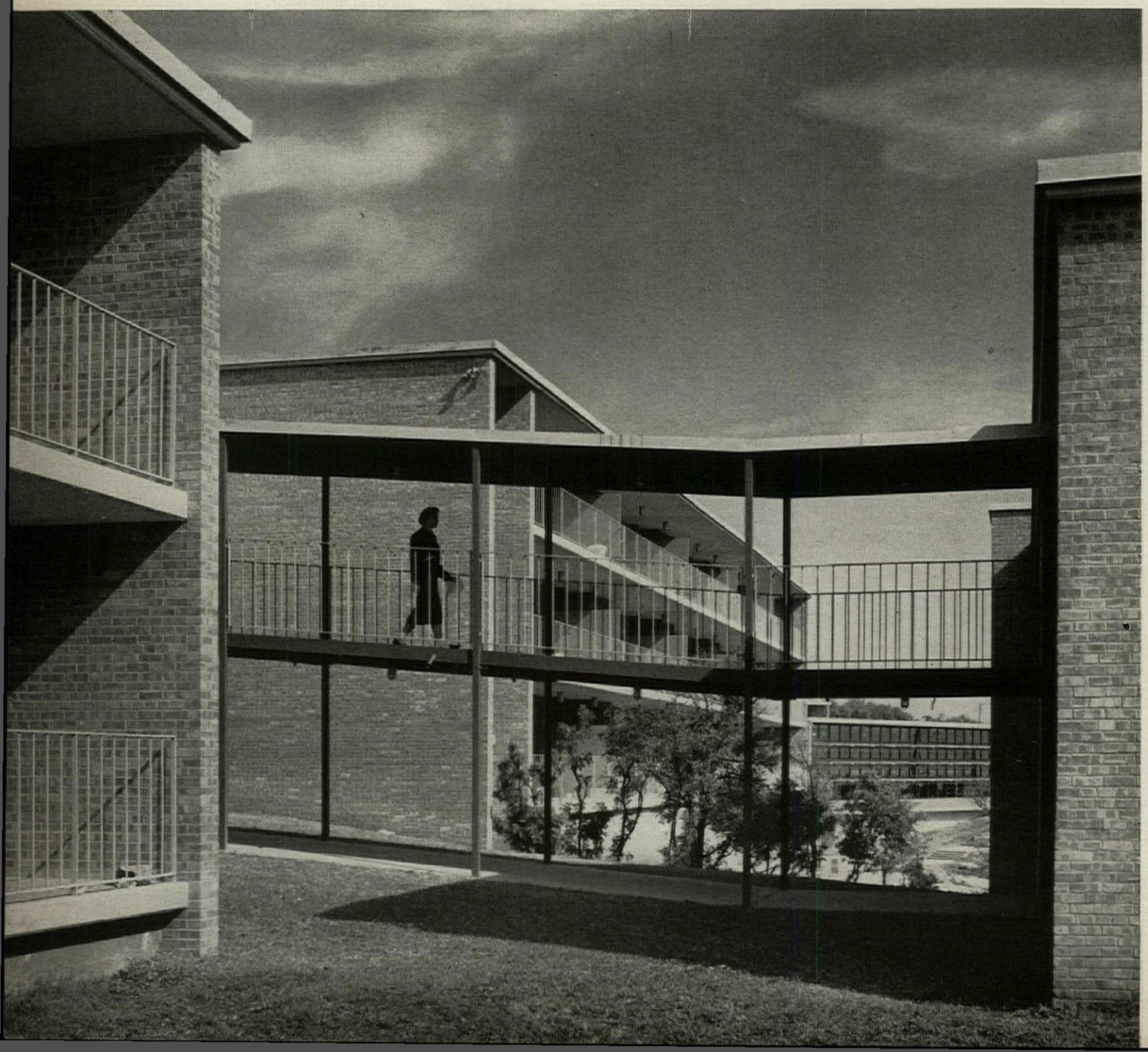
May 3rd—pour west-section roof; 10th—cure, plus odds and ends; 17th—start lift-up; 24th—lift-up and start frames and masonry.

June 7th—masonry and frames and steel sash; 14th—masonry-frames-sash; 21st—masonry-frames-sash-misc., iron millwork; 28th—masonry-frames-mill-sash-painting.

July 5th—masonry-sash-misc., iron-mill and paint; 12th—masonry-misc., iron-mill-paint; 19th—start floor covering; 26th—floor covering and finish-painting, etc.

Aug. 2nd, 9th—finishing and clean-up.

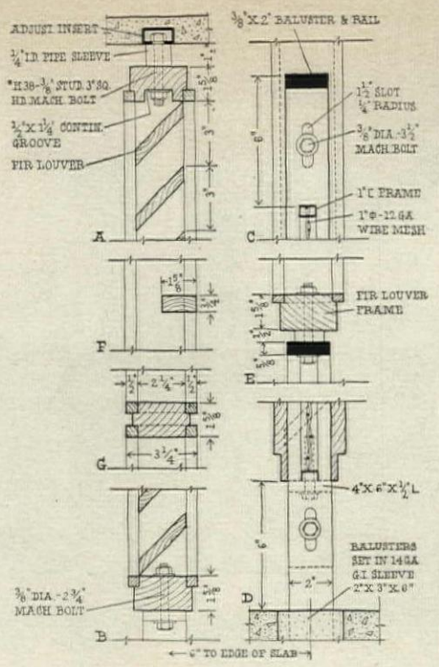
RAMPED BRIDGE ties buildings together. Texas architects at first were reluctant to set buildings so close together, but Consultant Wurster reminded them of Harvard Yard.



Men's dormitory units: comfortable financing

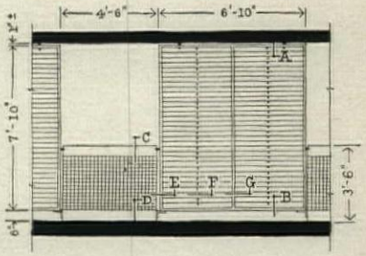
The most recent men's dormitory at Trinity is an HHFA project. When the budget was submitted for approval, with an estimated construction cost of $435,000 (for almost 50,000 sq. ft.), the lending officials recommended that it be upped $20,000, tentatively agreeing that the requested loan would be approved if Trinity would dig up this extra financing. So plans went out for bids.

Of nine bids, only one was higher than $428,000, and the lowest was $401,800—for quality work. Say the architects: "We are most grateful for the excellent workmanship." About the backers the architects say: "Working with HHFA was a surprisingly rewarding experience. The preparation of the original documents submitted to them was a terrible chore but the later experiences made us forget it."





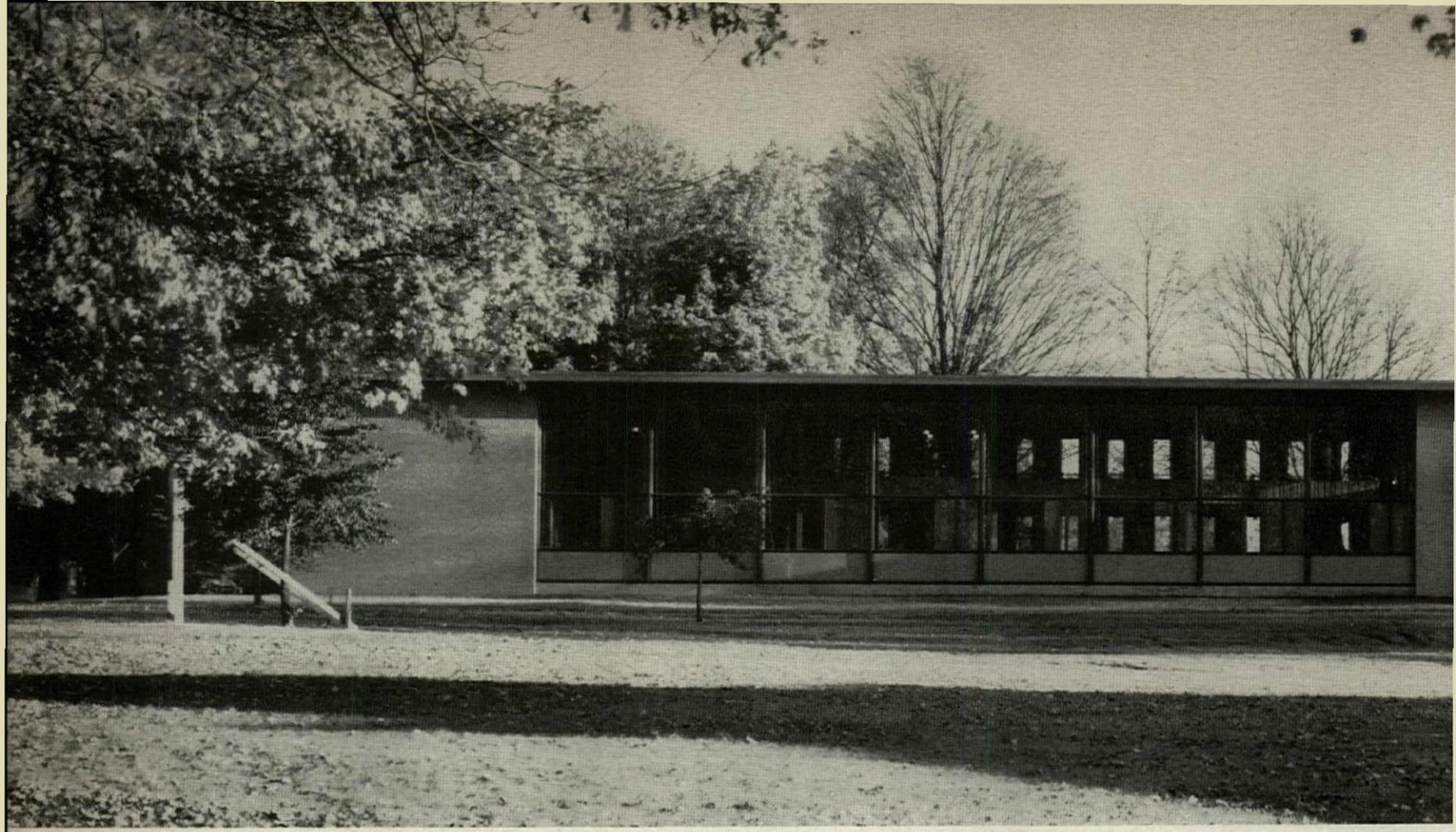
STUDENT ROOM is simplified by built-in storage



LOUVERS not only protect balconies from glare and sun, but are necessary to ensure night privacy since dormitory faces on road.

Photos: (below) C. J. Laughlin; (others) Ulric Meisel

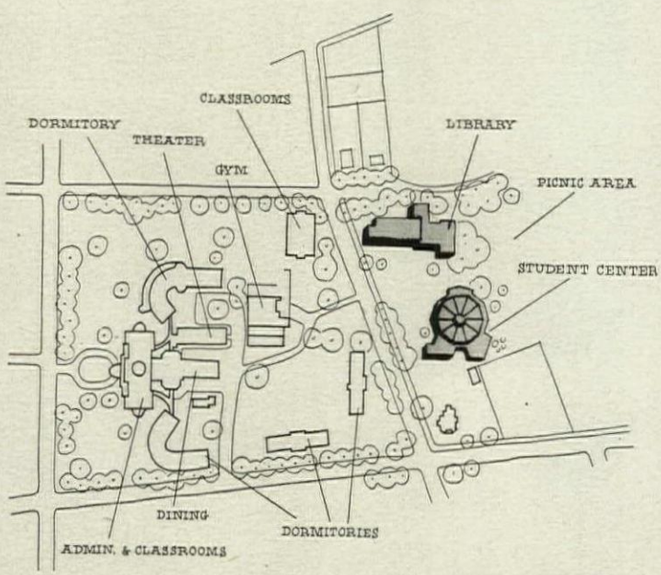




CENTENARY JUNIOR COLLEGE
TAYLOR MEMORIAL LIBRARY,
REEVES STUDENT UNION BUILDING
ARCHITECT: Jan Hird Pokorny
SCULPTOR: Elizabeth Hird Pokorny
STRUCTURAL ENGINEERS: Hoffberg & Ateshoglou
MECHANICAL ENGINEERS: Sears & Kopf
GENERAL CONTRACTOR: Fred J. Brotherton, Inc.

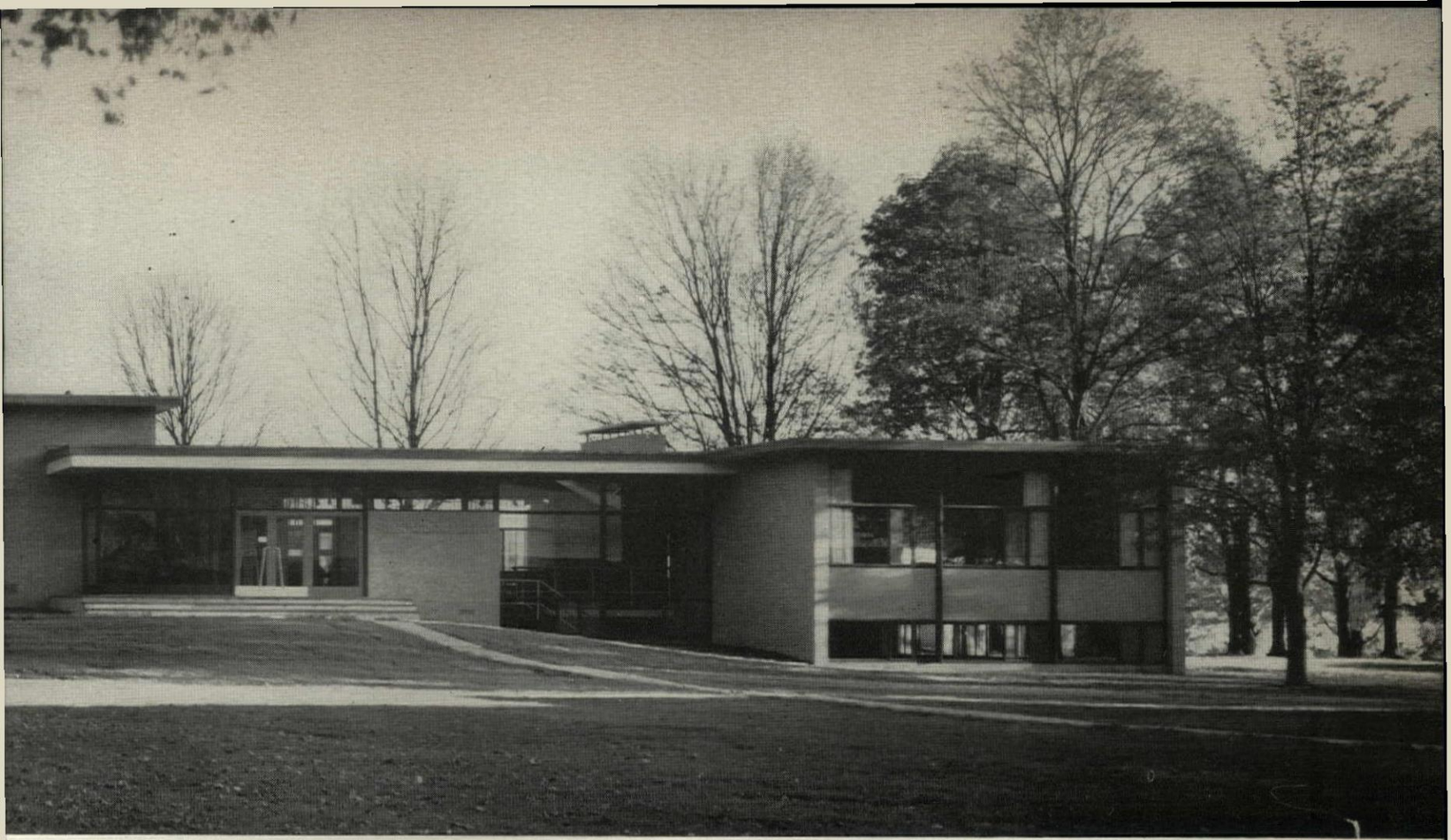
3. IN HACKETTSTOWN, N.J.

AN INVITING SMALL LIBRARY, A SOCIABLE STUDENT CENTER

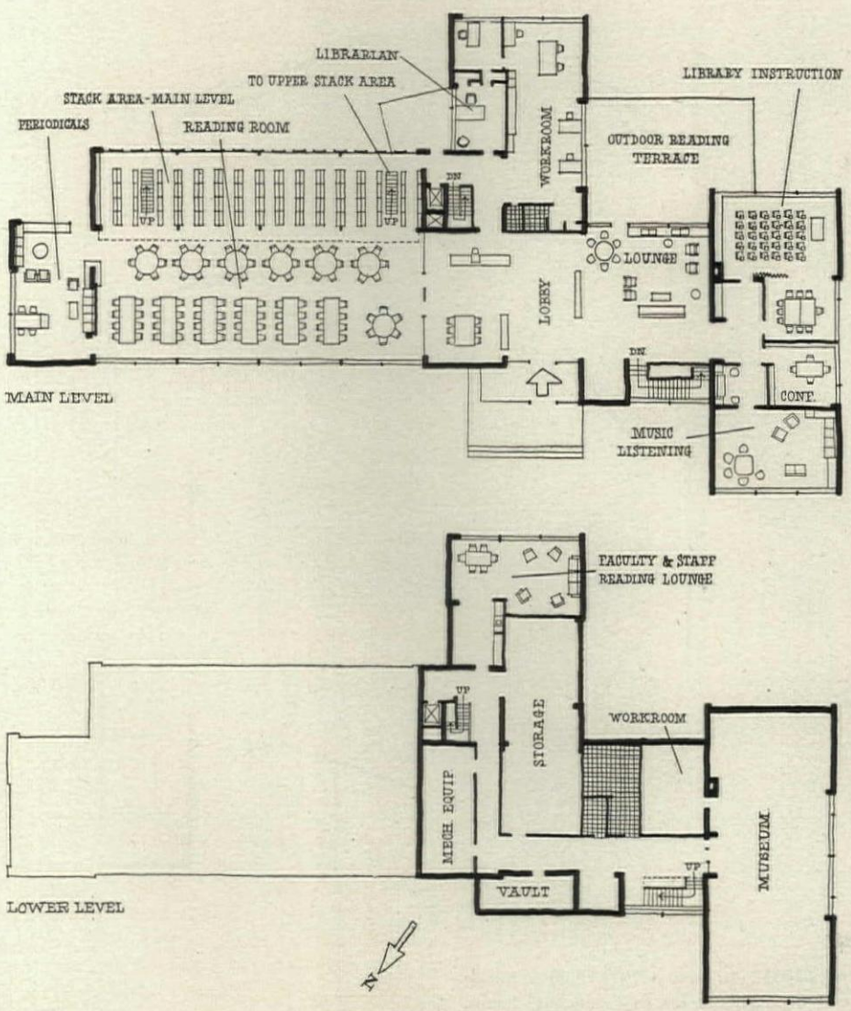


The fresh, friendly design of the two new buildings at Centenary Junior College (enrollment: 450 girls) stands in sharp contrast to an old, conservative campus built in styles of the last century. Yet Architect Pokorny has nicely knitted new and old together by keeping the new in modest scale, by using much the same warm, gray-tan brick, unobtrusive brown and terra-cotta trim. He also persuaded the college to give up a proposed site crowded next to the old buildings, move the new ones across a short road where they round out the campus with a spacious new quadrangle (the road will be closed to through traffic and used for parking—see site plan, left).

The library (shown above) was placed on the south side, where its long glass wall faces invitingly in toward the new quadrangle, and to the north for good reading light. (The unusual student center that crowns the group is shown on p. 140.)



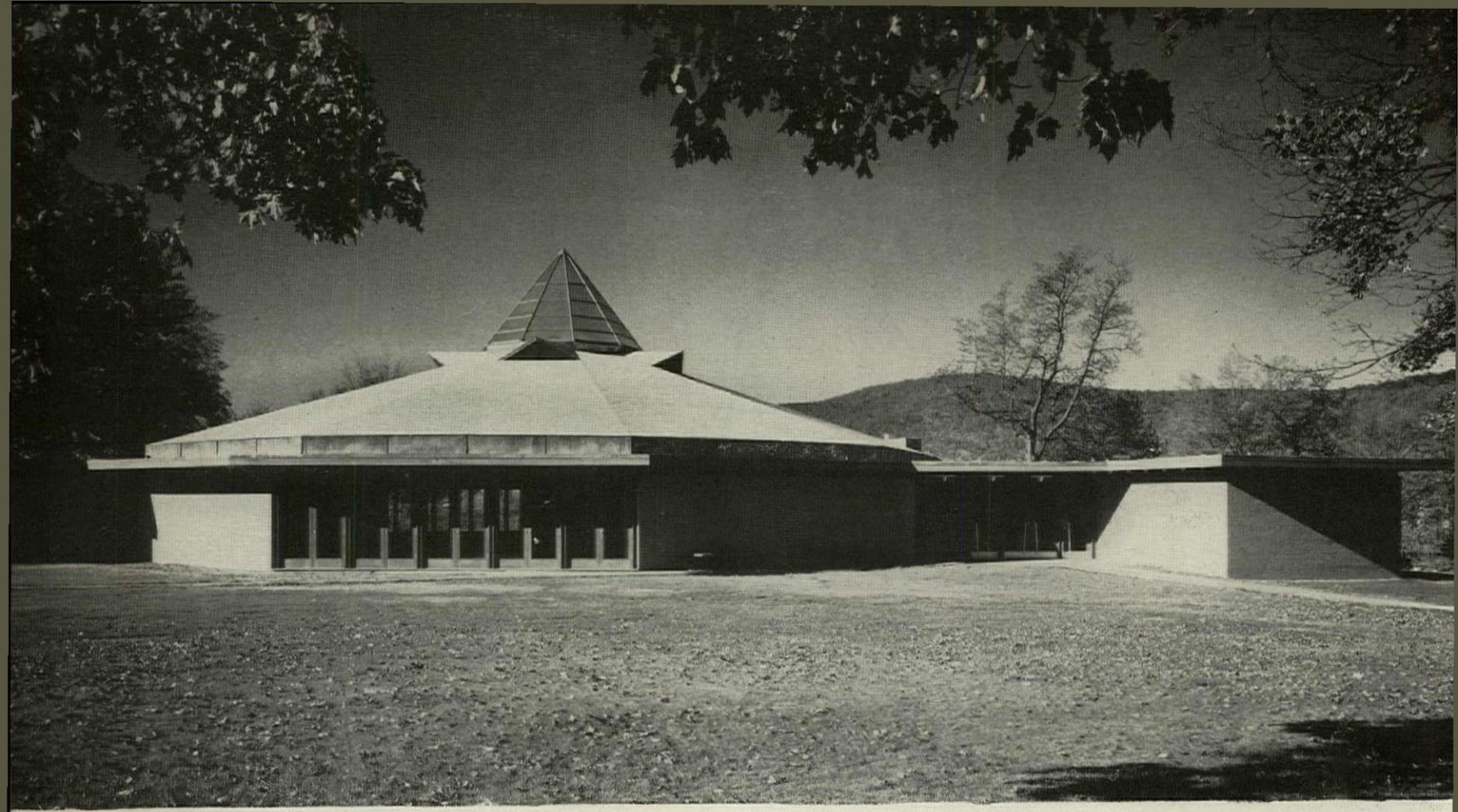
Photos: Ben Schnall



DOMESTIC-SCALED LIBRARY is sized for 30,400 books and 24 pamphlet files in open stacks on main and mezzanine floors, 11,000 books in basement storage room. Smoking lounge overlooking south terrace (below) brings total reading-room seating to 146. Bottom photo shows central control desk, glass partition between lobby and reading room.

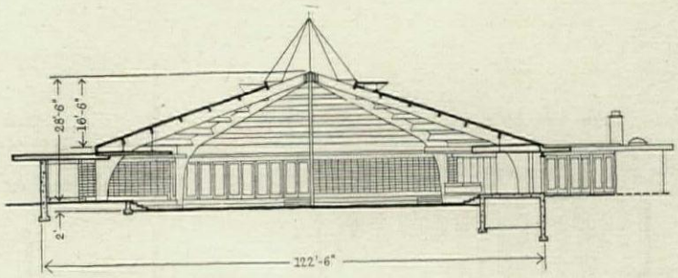


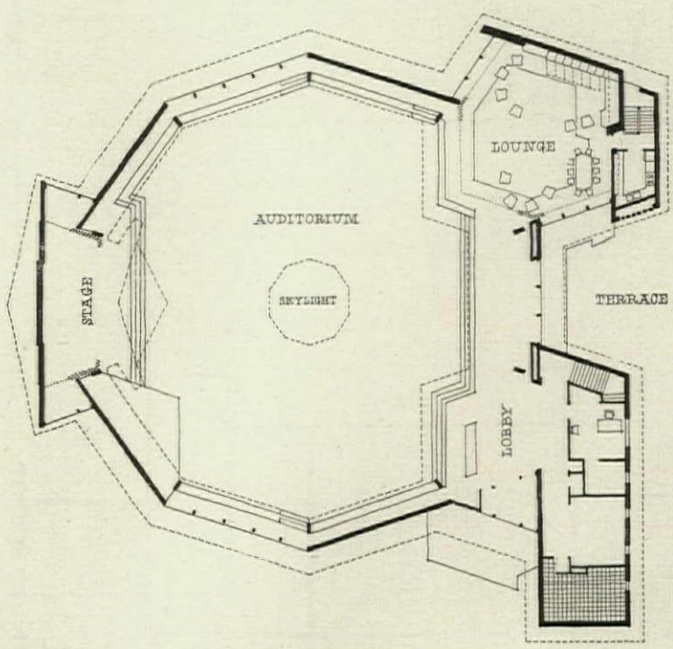




A festive tent for dancing

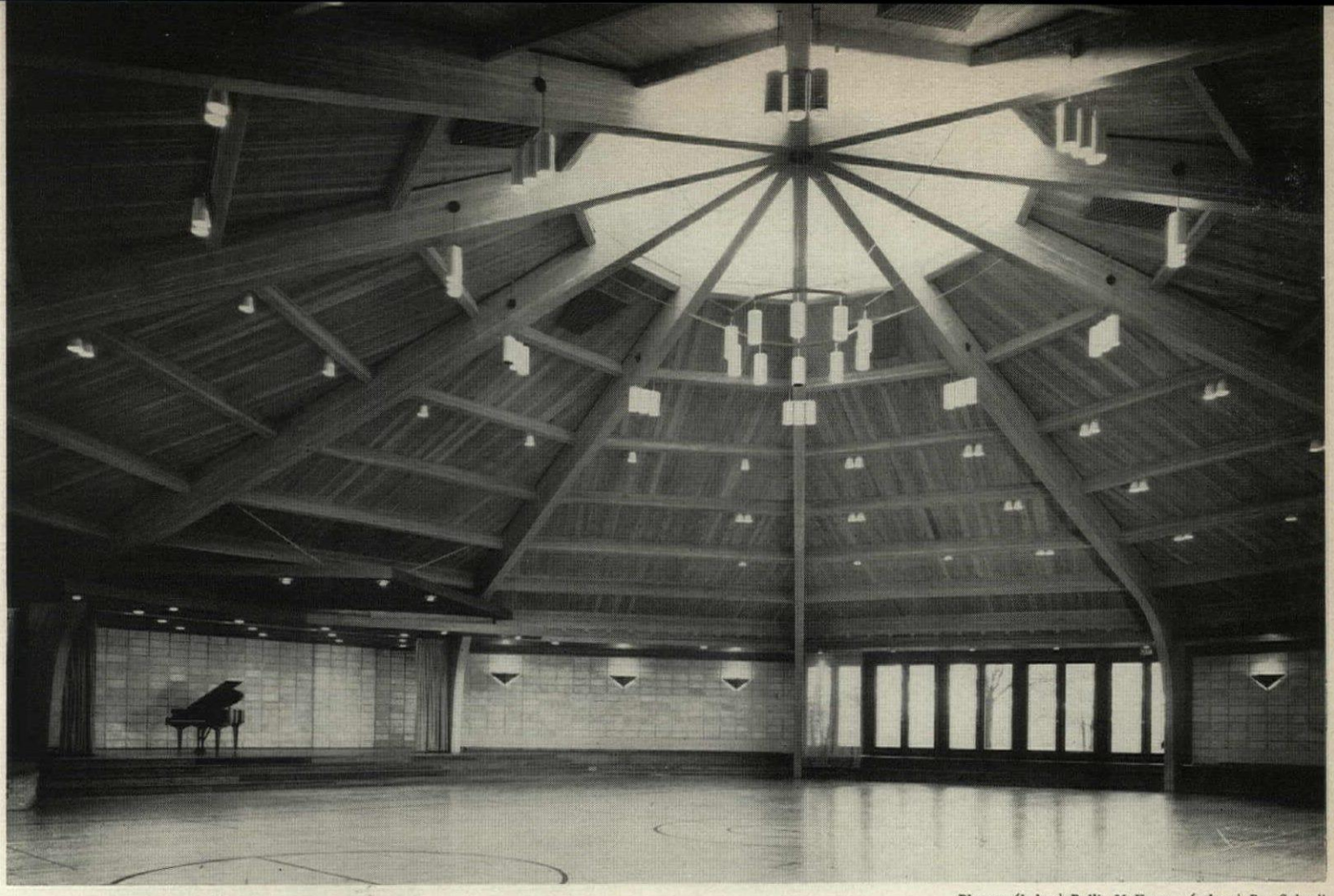
So many new campus groups are using circular or polygonal buildings for accent and climax that this kind of feature is almost a 1955 trademark. At Centenary this focal building shape is unusually appropriate: its tentlike profile, its gay roof, its sparkling facets and many entrances mark it as a good-time place. Inside, the ten-sided plan and open structure repeat the light mood, encourage the sweeping, circular movement of the dance.







STUDENT CENTER as seen across the new quadrangle from within library reading room.



Photos: (below) Rollie McKenna; (others) Ben Schnall

EXUBERANT SPACE, framed by laminated bents and warm redwood decking, faintly suggests the form of a circus tent, the motion of a merry-go-round. With no dead corners, the shape helps lend a feeling of unity and participation to lectures, recitals, sorority meetings, even to rained-out commencement exercises. (Repetitive framing is economical.) The maple floor, marked with overlapping courts, is in daily use as an auxiliary gym for volleyball, basketball, paddle tennis, shuffleboard, ping-pong (table set up on stage at left). Grilles around conical skylight contain 18″-diameter exhaust fans for large gatherings; doors in background give out on picnic area behind building.



INTIMATE SPACES of lobby and lounge (right) are raised above main floor, sheltered by low canopies, linked with stage by a stepped platform for circulation and sitting. Lounge can be curtained off for small gatherings, has its own wood dance-floor area set in brick lobby floor. In background are skylight and fireplace, doors to picnic grounds (at left), kitchen and stairs to basement (at right). (Below are three small sorority rooms, men's coat and washrooms, mechanical spaces.) Ventilating ducts rise through brick wall at right, discharge over canopy; return air enters plenum under lounge, lobby and stage through pierced brick screens. Separate hot-water heating system runs around auditorium through baseboard convectors (visible above step-bench at left).

EXCERPTS

Outside opinion
and comment
on the building industry
from the rostrum
and the press



Inside view on public housing

Excerpts from a recent address by Commissioner Charles E. Slusser of the Public Housing Administration

If there is one man in this country who has been forced to look upon the worst of his country, it is I. When a distinguished citizen comes to town, he is usually shown the best business section, the finest residential areas, the gayest amusement centers. The public housing commissioner goes on a tour of the slum areas. He may see the best, but he always sees the worst.

There are more than 8 million substandard homes in this country. I would like to see them all replaced by private enterprise, but . . . the private builder's ability to clear a slum site, construct and derive a profit from the very low-income class served by public housing is slim indeed. He does not have the power of condemnation, the financial resources nor, most important, the moral duty that is the government's.

There are those who think the problem can be solved in terms of easy credit and guarantees against risk. All the perils of inflation and socialism that we have been warned against for 100 years lie down that road. The Federal Housing Administration is a businessman's venture. The more we get the government into the act, the more we invite government to take over, the more abuses we contract for and the more trouble we make for ourselves.

I do not like the idea of the government renting houses. But I like less the fact that too many of the people of our great cities are living in slums and under conditions that call for municipal services out of all proportion to their numbers.

As for grouping public housing units, I would rather build individual units cut to individual needs, but you cannot construct honeysuckle cottages on the isle of Manhattan. Neither can you produce them for Chicago's teeming millions, nor can you produce them in any other rapidly expanding metropolis.

Working closely with private enterprise, I have hopes that this program can, in the not-too-distant future, be turned more closely to the path of individual initiative and progress and at less cost to the government. To that end, I have approved work on a couple of experimental projects, both of which may, in the not-too-distant future, prove of value.

I do not know what action the new Congress will take with respect to low-rent public housing. But we do know that President Eisenhower in his January 6th state-of-the-union message to the 84th Congress once again recognized the need for more low-rent housing. I feel certain that he will continue to recognize that need as long as we have slums.

I think his intention is to give private enterprise every opportunity to move against the blight and despair that stalk our cities like a tiger. But I think there is more to the picture than that.

President Eisenhower is a man who lives close to the heart of America. No one in government is more burdened with doing what must be done. It is his lot to cast up his accounts, the good with the bad, and make the tough decisions. Like the Public Housing commissioner, the President cannot close his eyes to the bad side of our housing picture, our slums. So I cannot see him neglecting the public housing weapon as the best eradicator yet produced.

Sale-lease-back finance

Excerpts from an address by Realtor Louis J. Glickman before the Real Estate Board of New York

The sale and lease-back arrangement has enabled many successful corporations to profit—as they express it—by "getting out of the real estate business." It provides usable—sometimes badly needed—capital for their own businesses by converting investments frozen in land, steel, bricks and mortar to liquid cash, provides the means for an indefinitely healthy ratio of quick assets to current liabilities—yet assures continued occupancy of their premises. The method is applicable to any industrial or commercial enterprise. Many department stores, for example, have become long-term leaseholders of properties in which they were former title owners, thereby achieving fresh capital plus an improved tax situation, as the entire rental is deductible.

An industrialist might argue that his company would have no trouble in placing a multimillion-dollar mortgage on the real estate it owns and occupies and that, since this method would readily provide any additional working capital that might be needed, why look for any other? He forgets that when such a concern obtains funds through the mortgage route it incurs an obligation which must be shown on its financial statement, whereas sale and lease-back would not. True, the rent paid under a sale and lease-back arrangement would appear as an expense item on the profit-and-loss statement, but, on the other hand, so would in-

continued on p. 196





Photos: (below) Pach Bros; (left) TIME—W. BENNETT; (bot. opp. p.) Bachrach

Executive trappings

Who rates the rugs—and when. Excerpts from TIME *magazine (Jan. 24, '55)*

In the hierarchy of US business, a big problem is the question of executive prerogatives. Who eats in the executive dining room? Who gets the best offices? And when does a man rise high enough to rate a rug on his floor? Says John D. Wright, president of Cleveland's Thompson Products, Inc.: "This involves a problem of morale, and often the little privileges that go with an office are more important to an executive than a raise. You'd expect executives to be more mature, but they frequently are not."

In one Cleveland corporation a vice president was lucky enough to wangle a choice corner office. His equal down the hall would not be appeased until he had a private washroom installed in his office. Rigid rules are often laid down to try to avoid such problems. Standard Oil of California, for example, classifies every employee from Type One (draperies, wall-to-wall carpeting, walnut desk, etc.) down to Type Four (no private office, oak desk). A big Manhattan company has set up a chart for every contingency in preparation for moving into a new building now under construction. A top-echelon man gets 280 sq. ft., "furnished to taste," with or without private washroom, depending on whether he is a director. Lesser lights will get 210 sq. ft., again furnished to taste, but now "within limits." Engineers and others who need privacy get 100 sq. ft., standard metal desks 60" x 30", two wooden chairs and a coat rack; everyone else gets 70 sq. ft.

Pacific Gas & Electric Co., like many others, sensibly gives a man what he needs to operate, whether it is one phone or three. Other companies do better by an executive who is out where the public sees him. Swift & Co., however, cares little about putting on a show front or catering to executive whims. It has its executive vice presidents sitting out in the center of a huge bull pen where they can look right across the desks at their assistants. At Philadelphia's Smith, Kline & French Laboratories, the chairman of the board, department heads and general employees all look at the same green-painted walls, rugless floors and utilitarian furniture.

But generally, the trend is to more instead of less luxury. An increasing number of companies are coming around to the idea that the trappings of power and rank are normal incentives in US business life. If redecorating an office results in higher morale for a top executive, the company counts the extra few dollars as well spent.

Lighting in the fabulous future

Excerpts from an article in FORTUNE *(Jan. '55) by David Sarnoff, chairman of Radio Corporation of America*

We are now engaged in the development of a new form of light—*electronic light*—which is the keystone of the light amplifier under development in RCA laboratories. Already I have seen this light amplification, experimentally, in ratios of more than 20 times the original; and further progress is certain to be made. When that number 20 reaches 100, we shall have a practical amplifier of light, produced directly within a thin layer of electronically active material.

The potentials for practical use of this development will surely be greater than we can now foresee. Electronic light will eventually provide startling substitutes for present types of illumination and thus will change the very appearance of our homes, stores, factories, streets and cities. Electric light will have been freed from the prison of a vacuum bulb. Light amplification is expected to lead to devices that will make not only photography but vision possible in the darkness, and to enlarge immensely our visual penetration of outer astronomic space. It may well reduce and in time cancel out one of the perils of night driving by taking the glare out of light.

Toward an artistic revival

Excerpts from remarks by Architect Hugh Ferriss at Columbia University's recent conference on the role of the university in creative arts

The time has come for a widespread artistic revival in the field of contemporary architecture.

This conviction raises three pertinent questions: 1) Why is an artistic revival in architecture in order at this time more than at any other time? 2) What would be its likely characteristics, its particular objectives? 3) Have we the designers needed for it, and, if not, how can their ranks be augmented?

WHY NOW? It is generally admitted that changes in social and economic conditions, plus a phenomenal advance in building technologies, introduced what is popularly called "modern architecture." It has not been so widely understood that designers who took this movement seriously were at first necessarily preoccupied with its strictly technical side. By now, however, designers have been working under the new dispensation long enough to take its novel requirements and opportunities for granted. Like all good mechanics, they understand the mechanism of the "car" and they can start it. Now where



are they going in it? Has the time arrived for the Grand Tour? An artistic revival is now feasible, assuming sufficient desire for it and ability to substantiate the desire.

The desire, at least, exists, and is becoming increasingly vocal. At innumerable recent convocations and conventions, a change of climate has been apparent. As though a winter of cold calculation were passing and a warmer season approaching; as though a pendulum were swinging away from the "measurable quantities" which are the concern of science and technology and toward those esthetic and spiritual values which, if not immeasurable, have at least not as yet been measured by scientists. I quote, almost at random, from some recent addresses:

▸ Architect William Wurster, referring to current needs in architecture: "Most important of all, the spiritual and creative aspects in the design of buildings."

▸ Architect Richard Neutra: "The need to bridge the gap between beauty and utility."

▸ Author Sigfried Giedion: "Our thinking should be reorganized so that we realize the social, moral and emotional demands of our work."

▸ Educator John Burchard: "This is no time to disclaim beauty. Architects must not trim their ideals; but rather must seek incessantly, in their works, the moving and the human, so that the days man spends in life may be uplifted by our constructions.

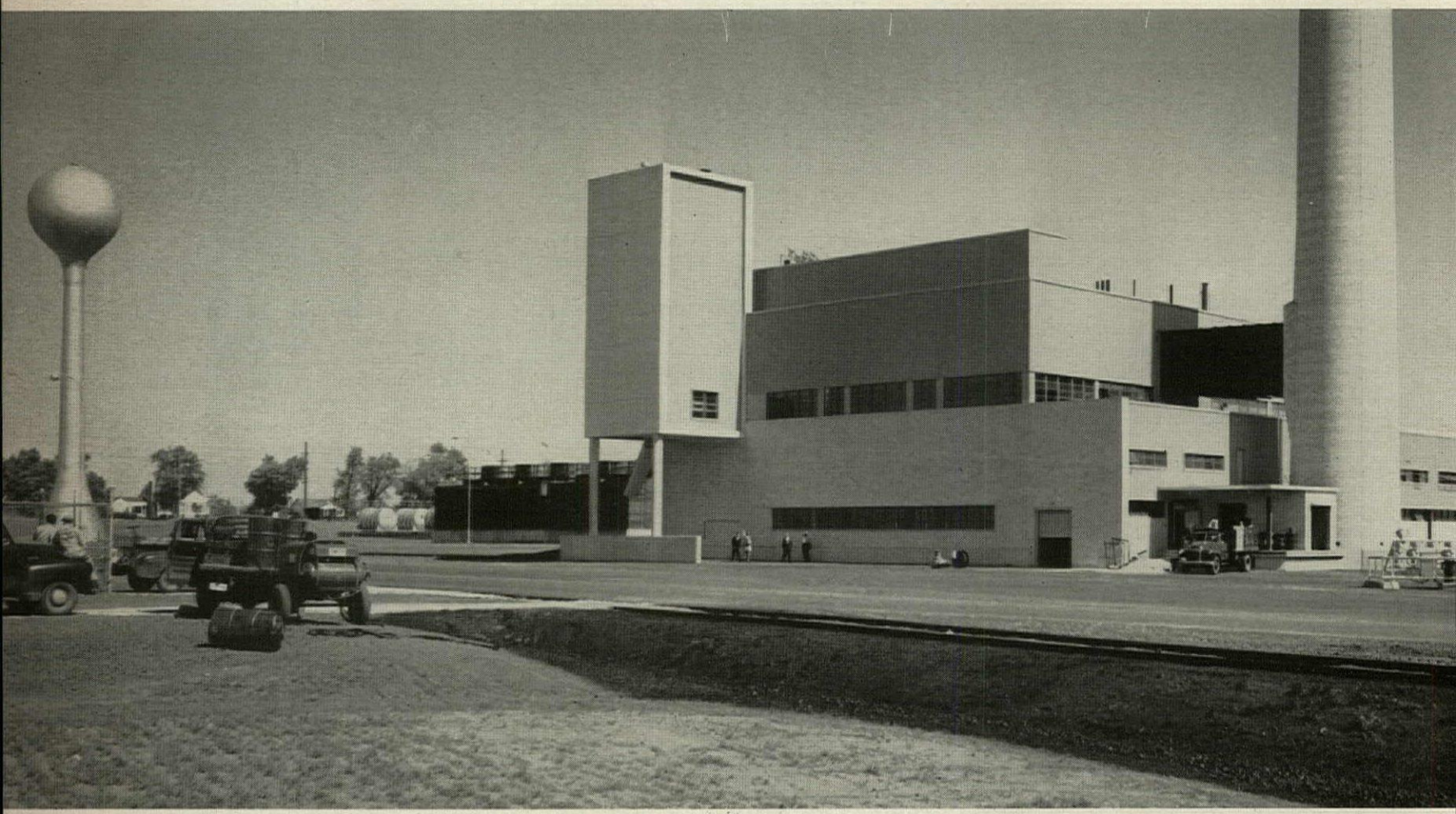
▸ Architect Henry Churchill: "Architecture is not just a synthesis of synthetic materials and synthetic feelings based on synthetic logic; architecture is a creative act, a whole greater than its parts, a vision."

▸ At the most recent AIA convention Dean Jose Sert of Harvard spoke for "an architecture of good proportions, serene and dignified, where no house tries to outdo its neighbors, where the whole street, square, neighborhood or town is balanced, harmonious and beautiful"; and Architect Paul Rudolph, remarking that "the architect's prime responsibility is to give visual delight," added, "an architect is not merely a beautifier,

continued on p. 188

BUILDINGS IN REVIEW

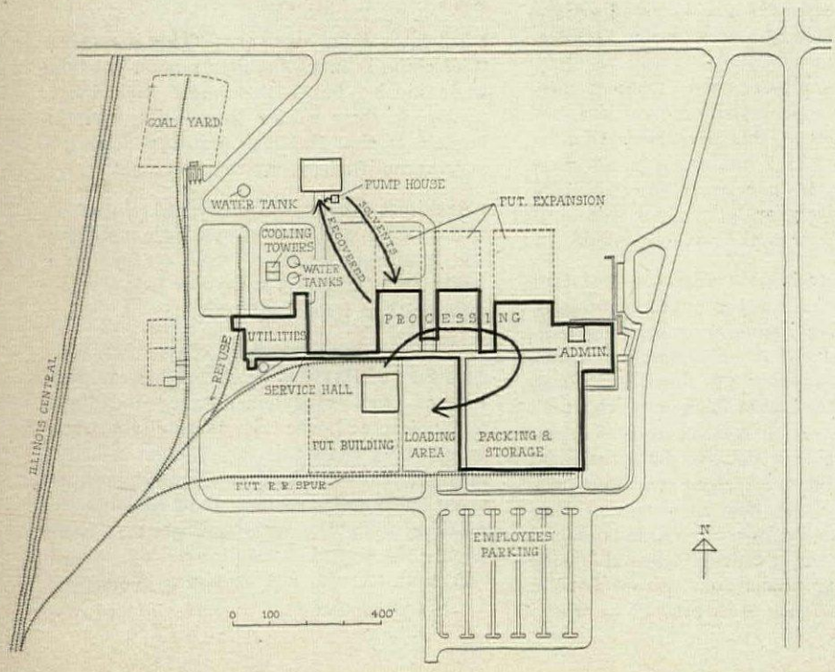
A factory with an emphasis on cleanliness. . . . A blood bank with an inviting countenance. . . . An office tower with a new kind of economy. . . . A junior college with a new set of design problems



BOILERHOUSE has handsome ash silo over railroad track. Light metal siding sharply defines upper floors from block walls below.

WONDER-DRUG FACTORY

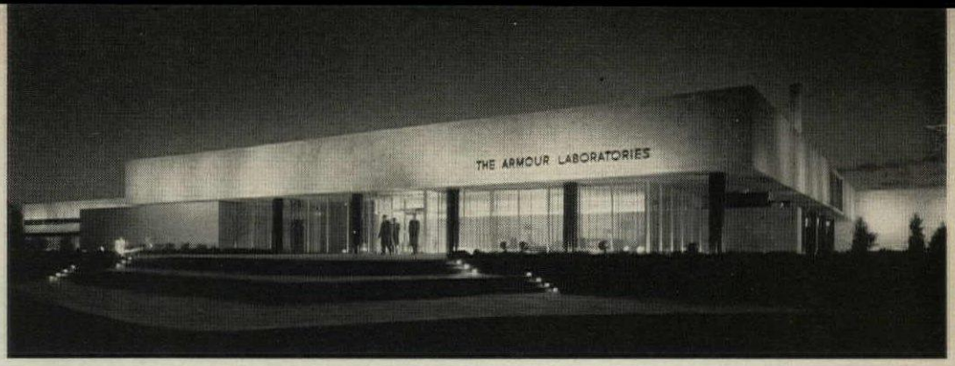
New building type raises lab up to mass-production size, solves big maintenance and sterility problems



In today's big biological drug business, yesterday's test tubes have suddenly grown to 1,000-gal. vats in which tons of animal glands must be dissolved to yield tiny vials of powerful ACTH, trypsin, insulin, intrinsic factor thyroid and liver products. From the moment a load of frozen beef livers or pituitaries from Chicago slaughterhouses arrives at Armour's new $12 million pharmaceutical plant at Kankakee, Ill., to the time it emerges in drugs for human medication, there must be the closest controls over temperature and humidity, dust and germs, highly inflammable solvents piped in and out of 70-odd processing tanks.

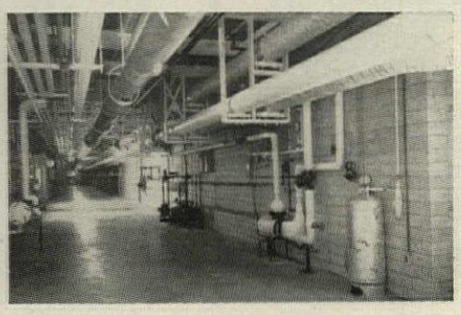
Discoveries are made and markets change fast in the drug business, so the whole plant has built-in flexibility: a 20′ x 20′ bay system throughout (plan, right) and room for expansion on either side of a long spinal service corridor (plan, left).

Architects and engineers: Holabird & Root & Burgee; contractor: George A. Fuller Co.





Photos: (above) Hedrich-Blessing; (others) Schuke-Soucek

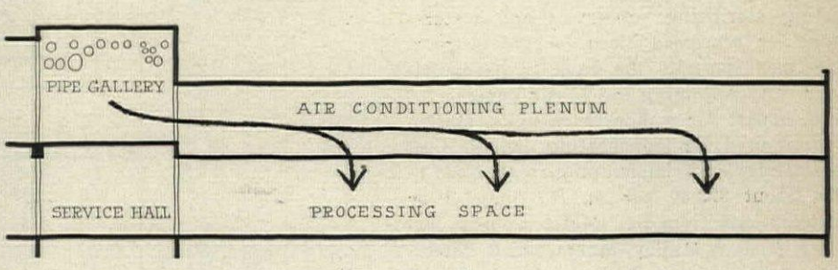


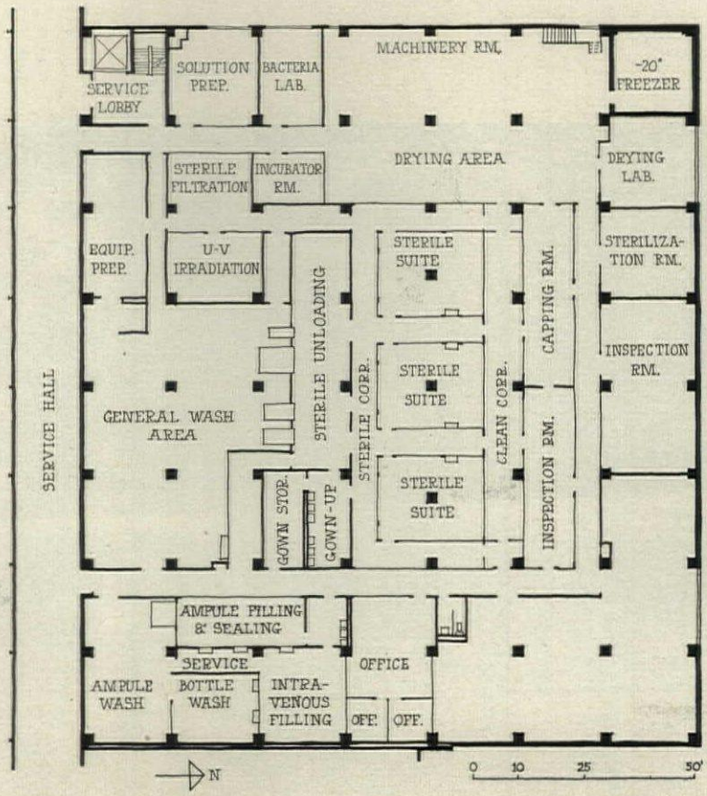
ADMINISTRATION END is a highway showpiece, with roof plenum accented as deep white marble fascia, floating on columns cased in contrasting black granite. Behind glassy reception hall are cafeteria and inner court, offices, shower-locker rooms for 500.

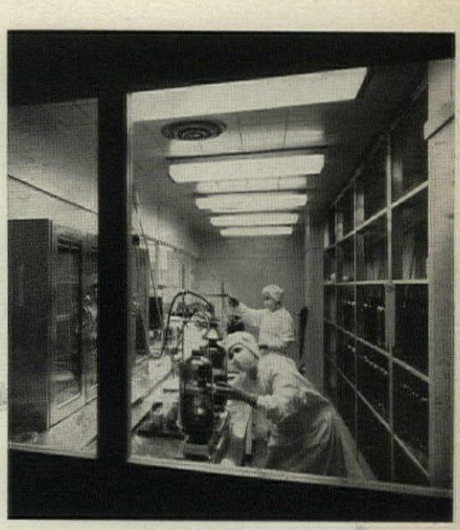
PIPE GALLERY provides full access to steam supply and returns, gas, hot, cold and chilled water, compressed air and vacuum lines running length of plant. Ammonia lines are on roof above as safety measure.



SPINAL CORRIDOR below pipe gallery is ¼ mi. long, has tile surfaces for sanitation. Section (below) shows 7'-6" high air-conditioning plenum, tile-lined and tall enough for maintenance men to sterilize regularly (conventional ducts might collect and spread germs to sterile areas).







STERILE ROOMS, where parenteral products go into vials for market, are supplied with micronite-filtered air from sanitary plenum above, achieving higher degree of sterility than many hospital operating rooms.

COOPERATIVE BLOOD BANK

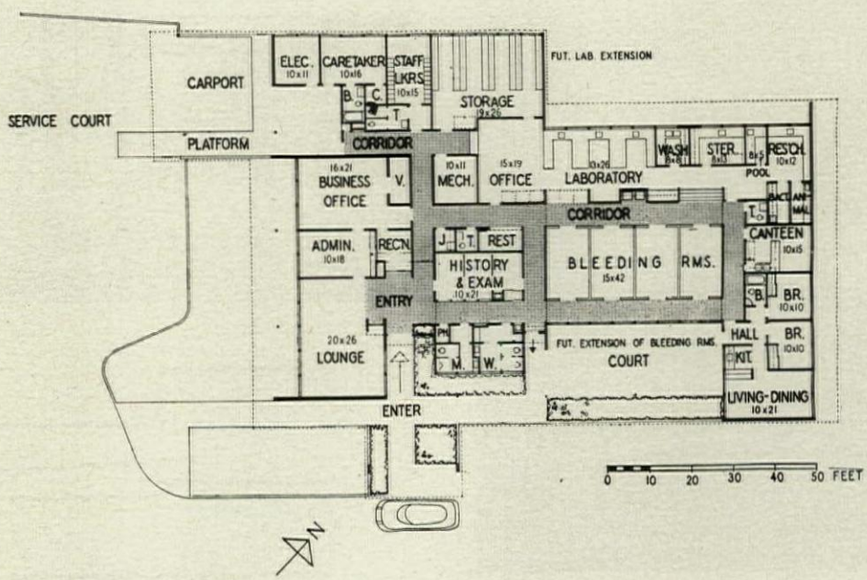
Disarming residential design attracts regular volunteer donors to maintain community supply

This little suburban building, which looks more like an inviting modern house than a processing warehouse for human blood, is a new building type that may well multiply across the country. It is also a winner of a national AIA award of merit.

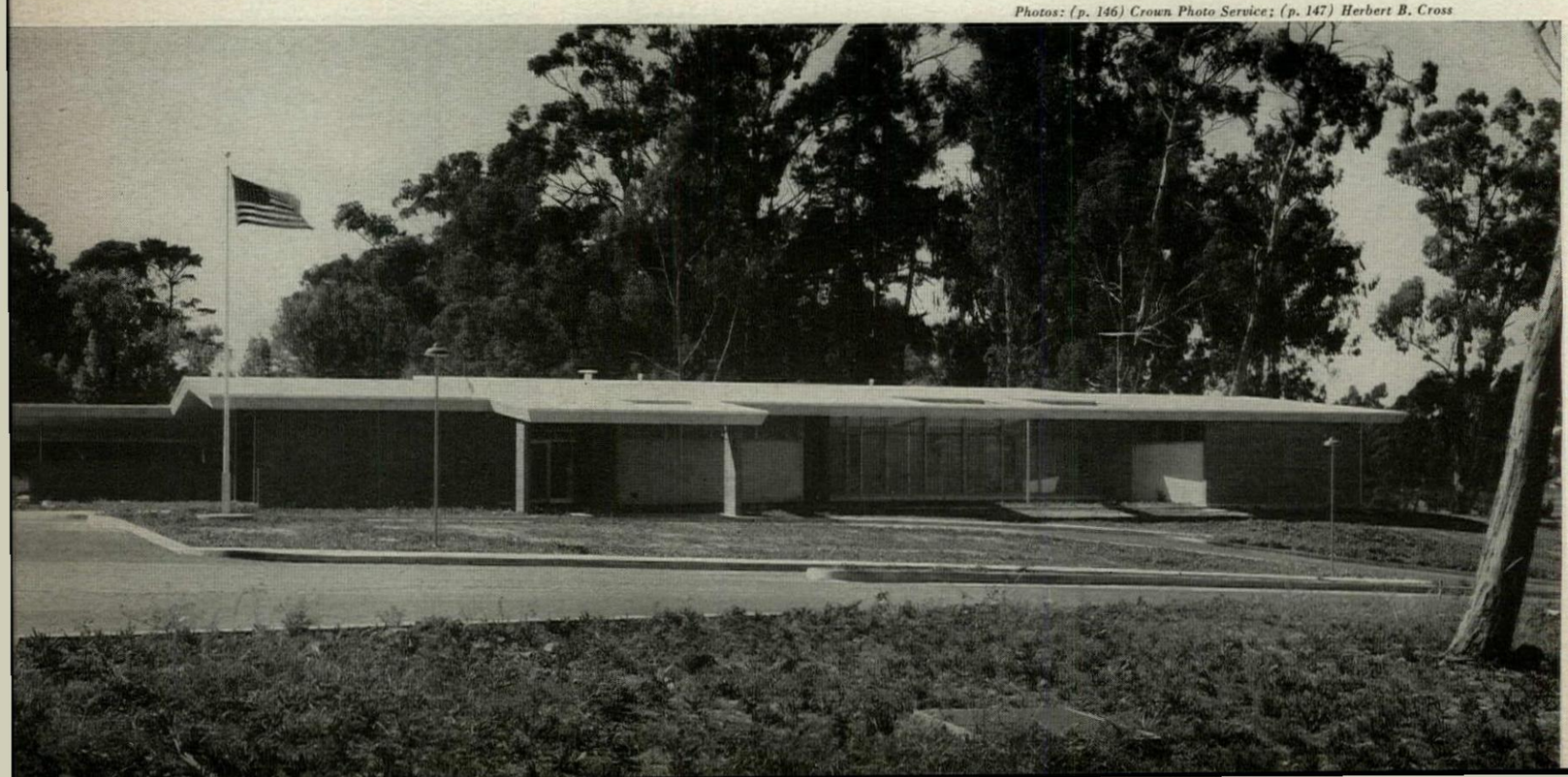
All hospitals need a steady source of whole blood for everyday emergencies, and they need the right type for each patient without delay and high cost. This means a central reservoir filled by regular donations, since whole blood becomes unsuitable for transfusion after ten days and must then be pooled and preserved as dried or frozen plasma. Donors and volunteer workers who might shy away from a big-hospital atmosphere come regularly to the new Peninsula Memorial Blood Bank at Burlingame, Calif., which maintains all classifications of blood for the Red Cross and nine hospitals.

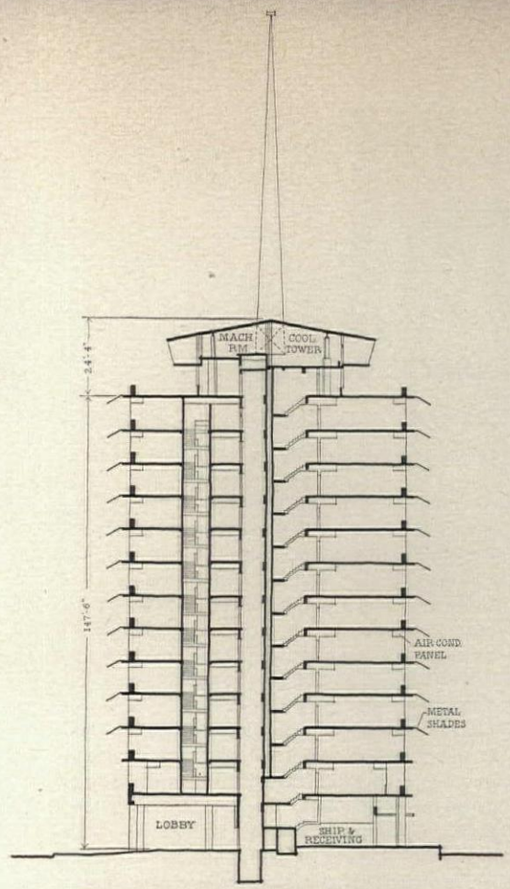
From a reception room and lounge, individuals or donor groups move to examination desks, bleeding rooms (photo right) and canteen, are out in less than half an hour (with a lifetime credit for one pint at this or correspondent blood banks). Along the rear of the compact plan is a laboratory for testing, sterilizing, preserving and a storeroom for processed blood. A two-bedroom apartment permits the bank to be on 24-hour call. Adjoining the 75-car parking lot is a carport for mobile truck units, station wagons used for transporting donors. Cost (excluding land, landscaping, fees): $173,-869, about $23.80 per sq. ft., financed by contributions from San Mateo County citizens. Stone & Mulloy, Marraccini & Patterson, architects; Art B. Smith Jr., structural engineer; Garthorne, Buonaccorsi & Murray, mechanical engineers. Williams & Burrows and Carl N. Swenson, contractors.





Photos: (p. 146) Crown Photo Service; (p. 147) Herbert B. Cross





OFFICES IN THE ROUND

First of its kind, this building tries out new economies, acts as trademark for its owner

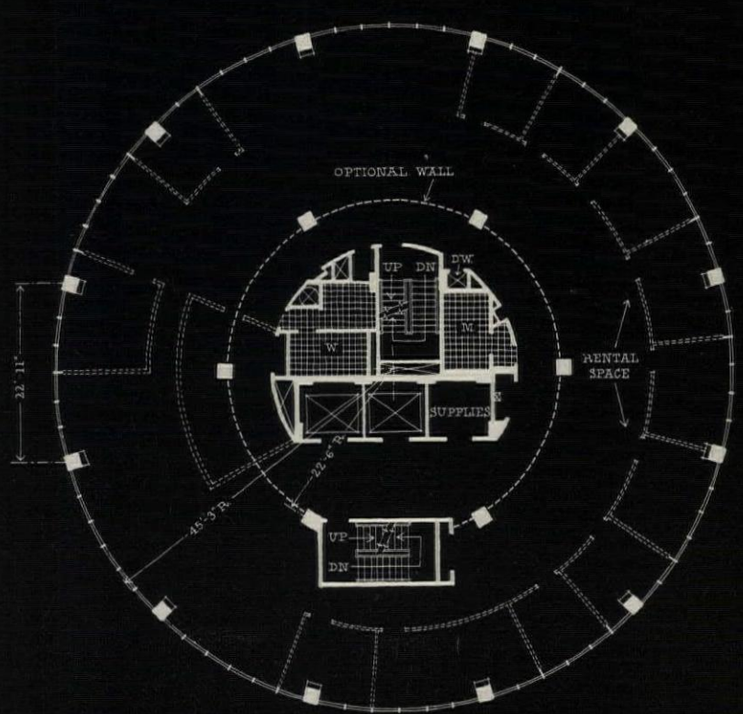
As a stack of records on a tall spindle, Capitol Records' new Hollywood headquarters is a tour de force symbolizing the company's product. But, as the circular office building that architects have long wanted to see designed and built, it is a more important experiment.

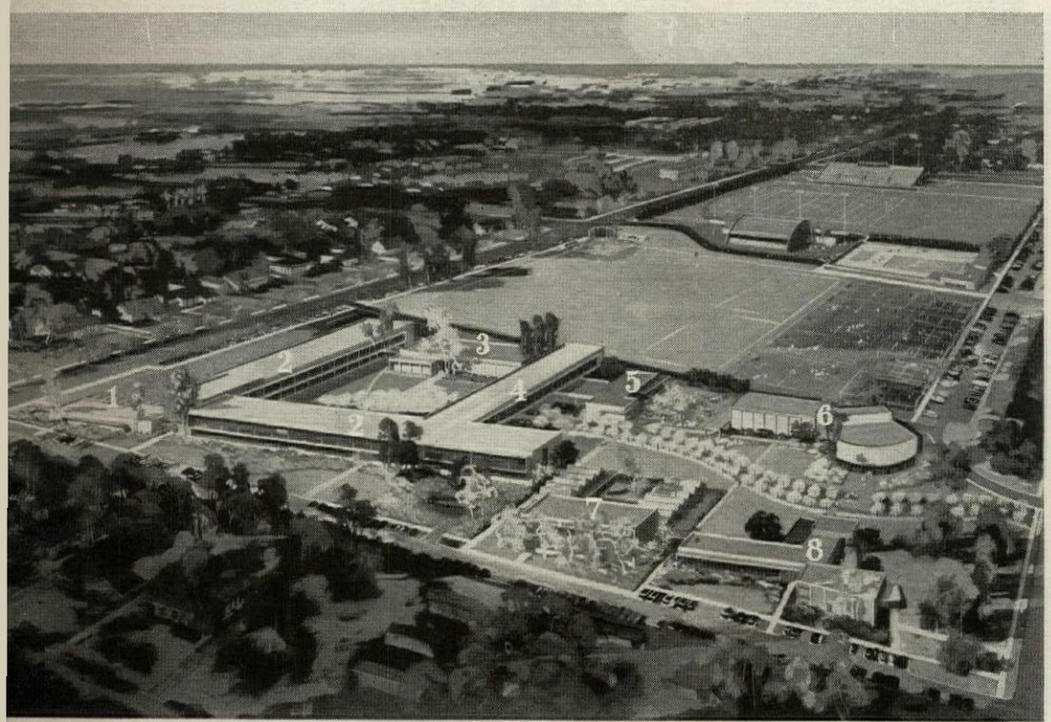
Before Capitol's Glenn Wallichs came to him, Architect Welton Becket and some of his staff had figured 90′ as the optimum diameter for a round office building: 6,300 sq. ft. per floor with a 900 sq. ft. service core, leaving 5,400 sq. ft. net (which turned out just right for Capitol's requirements of 5,000 to 6,000 sq. ft. per department). Services in the compact core take up 14% of total floor area compared with 20% in most rectangular office buildings, and the circular plan means up to 20% less exterior wall to build and protect against heat transfer. The 90′ circle encloses 6,300 sq. ft. with a perimeter of 282′, compared with 320′ for an 80′ square, 352′ for a 50′ x 126′ rectangle. Less wall area and shorter duct runs are expected to cut air-conditioning installation by 60¢ per sq. ft. and reduce operating costs through lower line and wall loss, aided by porcelain-enameled steel sunshades.

The 12th-floor plan (at right) shows the amount of light and view available to all offices, suggests the variety of floor arrangements possible with flexible partitions. A second stairwell outside the core was required by the local code.

Tower floors will be built for about $15 per gross sq. ft.; the whole building, with ground-floor studios, for $16.35 per sq. ft. Total including land: $2 million. Welton Becket & Associates, architects and engineers; C. L. Peck Co., general contractors.







1. ADMINISTRATION
2. CLASS ROOMS
3. LIBRARY
4. FUTURE CLASSROOMS
5. STUDENT CENTER
6. THEATER ARTS
7. ART
8. MUSIC

JUNIOR COLLEGE

Many different buildings on small site pose problem of design integration

As larger waves of children reach college age, the junior college is becoming an increasingly important building type. It has a much greater diversity of elements than an elementary or high school, and for architects presents much greater problems of architectural integration among elements.

Here, for example, is a junior college that a national AIA jury chose to give an honor award. Santa Monica City College in California planned for 2,000 to 2,500 students, has an especially broad program: college preparatory classes, vocational trades and crafts, adult night classes, athletic facilities to be used by both students and townspeople. In addition to two-story classroom blocks arranged in an "F" to protect inner courts from city streets (see 2 and 4 in perspective left), there are little adjunct buildings such as an administration building (1), a library (3), student center (5), a theater-arts building with a 300-seat auditorium built and another planned (6), an art building with saw-





LIBRARY, with reading room at left, faces in toward main classroom quadrangle.

tooth-skylighted studios around a court (7), a music school with auditorium (8). Each building form is tailored to its function, resulting in irregular shapes. These in turn are varied in fenestration, surface treatment, color and trim, accentuating their differences, instead of being unified by some single concept or principle that would quiet down the restlessness one is bound to feel in such a group.

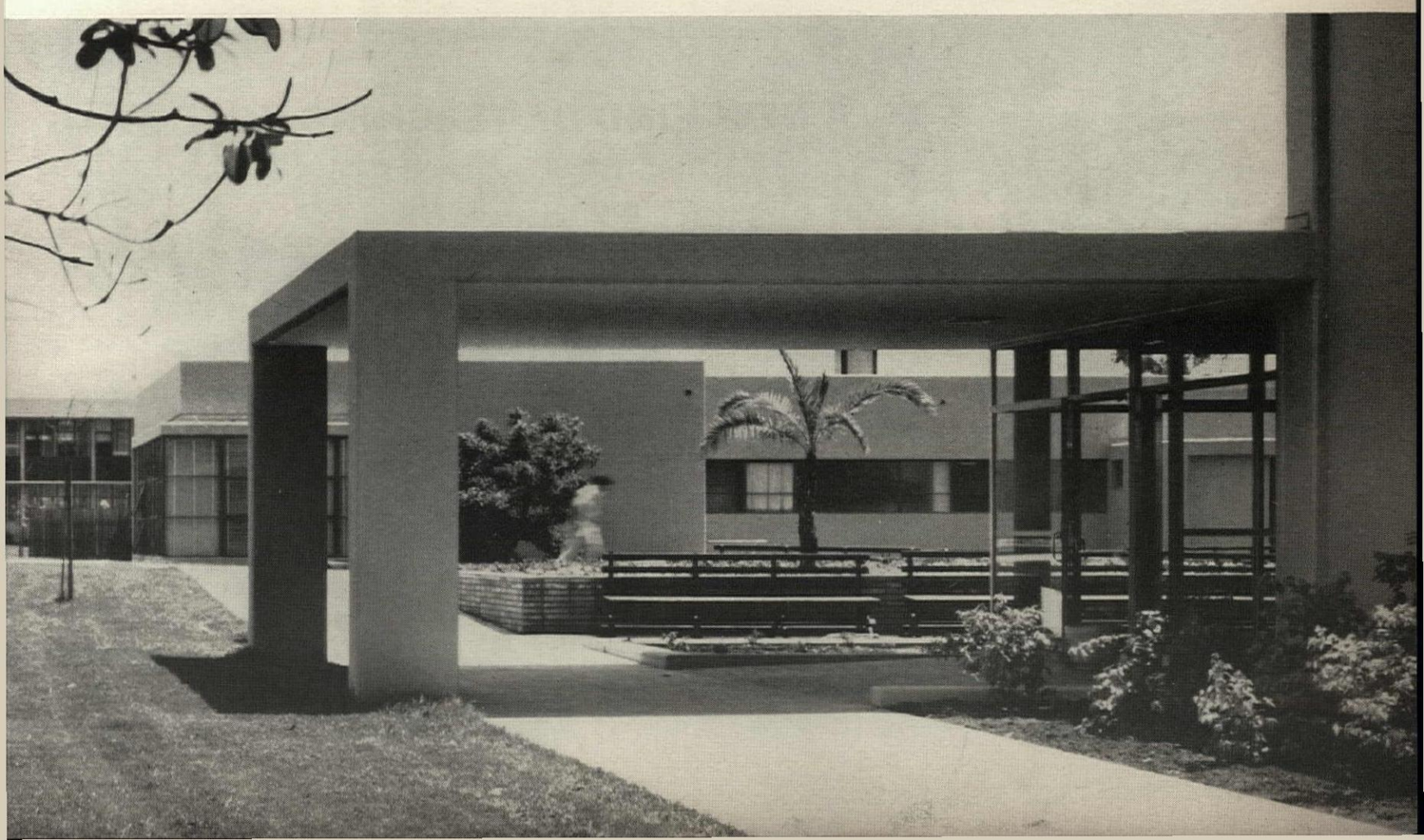
The project is based on study and recommendations by the school district's director of planning, the State Department of Education, the Los Angeles County superintendent of schools, the University of California, local business and professional people, faculty members and the students themselves. Marsh, Smith & Powell, architects; Hillman & Nowell, structural engineers; Hillburg, Byler & Hengstler, mechanical engineers; Alliance Construction Co., contractors.

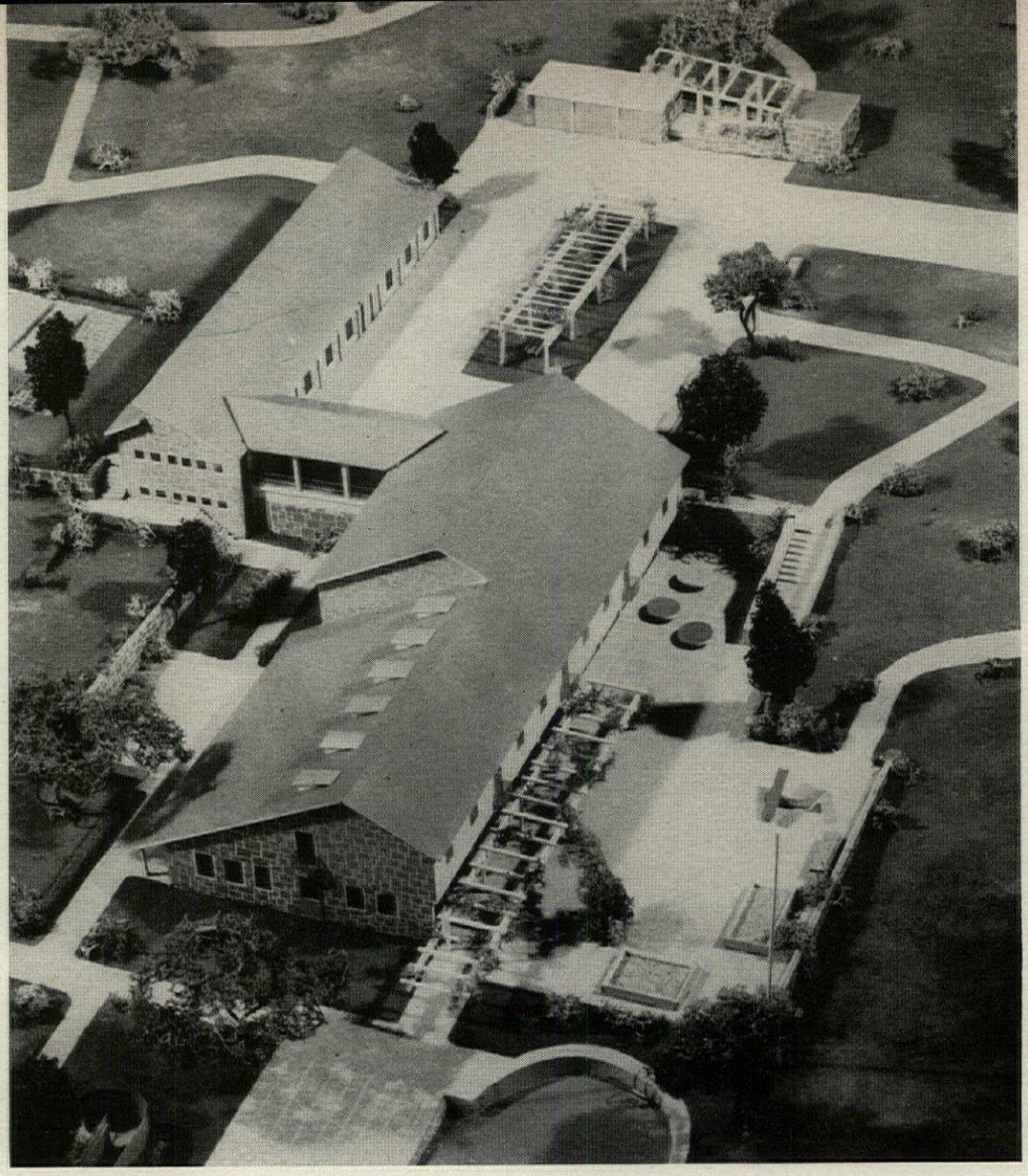
Photos: Julius Shulman



SIDE ENTRANCE at corner of classroom buildings shows variety of concrete treatment.

WELL-COMPOSED VISTA, showing the L-shaped classroom building with main entrance underneath, student union building in right background, canopy of theater-arts school in right foreground. Future classroom building will extend across middle of main court to student union, completing F shape shown in sketch.





This little park and building group represents a big evolutionary leap:

A NEW KIND OF TEACHING HOSPITAL;

Photos (below): F. Csastnik



THE NEED for both medical teaching facilities and community center buildings in Israel is dramatized by these scenes from the country's rugged life.

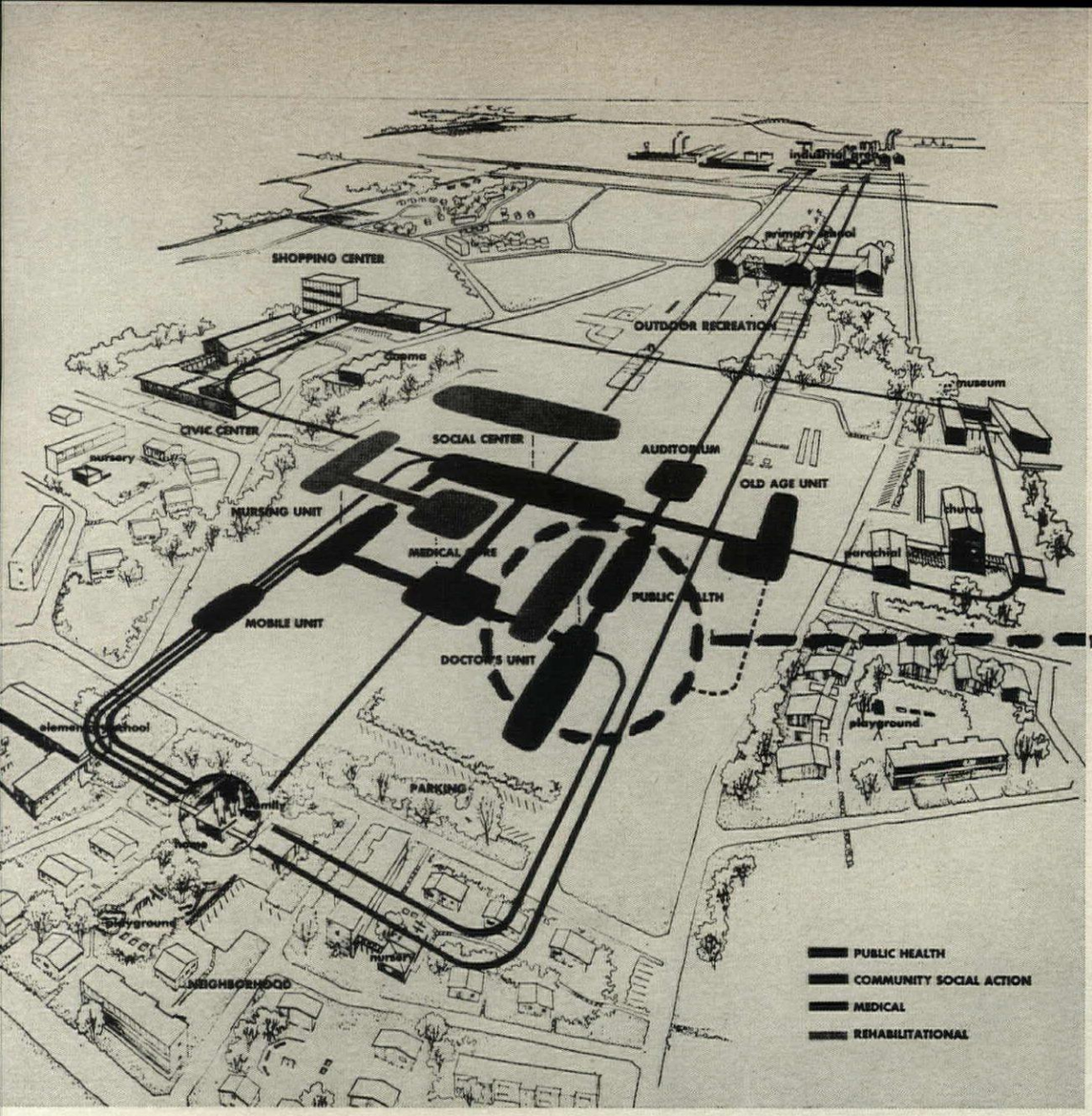


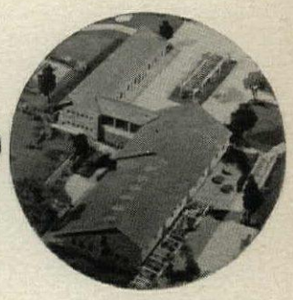
This relaxed and deliberately unpretentious building, about to go into construction in Israel, is unclassifiable as a conventional building type.

In physical plan it is, among other things, part hospital (with nursing beds to come later), part professional offices, part town recreation and social center, part rehabilitation unit.

Not obviously, it is a medical-school teaching facility, a biostatistical research unit and a town planning device. In short it is unclassifiable because it is a totally untraditional planning solution to newly recognized needs.

Although Beth Mazmiel center is geographically distant from the US, there is nothing exotic about the reasoning behind it. It actually is in tune with emerging US medical trends. Its community, teaching and research functions, for instance, are similar to those of the most advanced





MASTER PLAN for all-out community health plant (left) was proposed by Architect Neufeld two years ago (AF, May '53, p. 131). His project for Israel (above) corresponds to small central portion of master plan—a nucleus which may be added to as community grows.

A NEW KIND OF COMMUNITY CENTER

community health center in this country—much studied Hunterdon Medical Center in rural New Jersey (AF, Dec. '53). It also happens to be designed by an American and an Israeli architect and financed, sponsored and administered by an American women's organization. But the reason it is applicable to both countries is that the needs it tackles are common to both.

To see what the plant offers as a community health center, study the plan and its description on p. 152. Paradoxically, all the other roles of this building depend on the fact that it is not overtly anything *but* a community health center. During the planning, the temptation was to make it primarily a teaching unit, for instance, or to weight it in favor of research, or to proclaim visually that this was an exciting pilot project of national interest. Again and again the planners had to remind themselves and each other that the center would be valuable for these purposes only because it was specifically and primarily—not incidentally—built for the community itself.

Note another important policy point: the way attractions for well people are designed into the center. This gives double use to rehabilitation, playground and hobby facilities. But it also has a more subtle purpose. It puts the emphasis, for both staff and townspeople, on preventive medicine and on fostering good health, instead of emphasizing the clinical objective of curing ill health. This emphasis on keeping the customers well is an economic necessity today for prepaid or insured medical schemes (and for most community voluntary hospitals, although they do not all realize it yet). But in most cases—even at advanced Hunterdon—the new emphasis has to buck the architecture; here the design expresses and serves it.

The client is a pioneering planner

To bring about Beth Mazmiel center, it took a client with a pioneering tradition, a great deal of prestige and a highly competent technical organization, plus an architect who is also a pioneering social planner.

The client is a remarkable organization of American women, the Hadassah,* which for almost 40 years has been the driving force for all kinds of health work in what is now Israel. It has founded dozens of local hospitals, systems of milk stations and maternity centers, and the public health nursing organization; it is financing and will administer the new Hebrew University teaching hospital and medical school. When the State of Israel was formed, Hadassah handed over most of its establishments to the new government. No tradition-follower, Hadassah has become a tradition-maker.

Beth Mazmiel, although it was designed only last summer, really goes back to 1951, when Architect Joseph Neufeld outlined his planning and social theory for an integrated preventive-clinical-public-health-rehabilitational-recreation-teaching center (plan, p. 151) at an Israel meeting called by the UN World Health Organization and the Unitarian Service Committee. His ideas paralleled those of Dr. Jacob K. Mann, director of Hadassah's medical services. Dr. Mann and Hadassah thoroughly went into the organizational financing and medical aspects of the planning, for instance invited from South Africa one of the world's foremost experts on family health to consult on the family care program.*

Even before it went out for bids, Beth Mazmiel was already serving as a prototype. Hadassah is planning two more similar centers; the Israeli government, guided by a survey it had had Architect Neufeld make in Galilee, is planning an additional four.

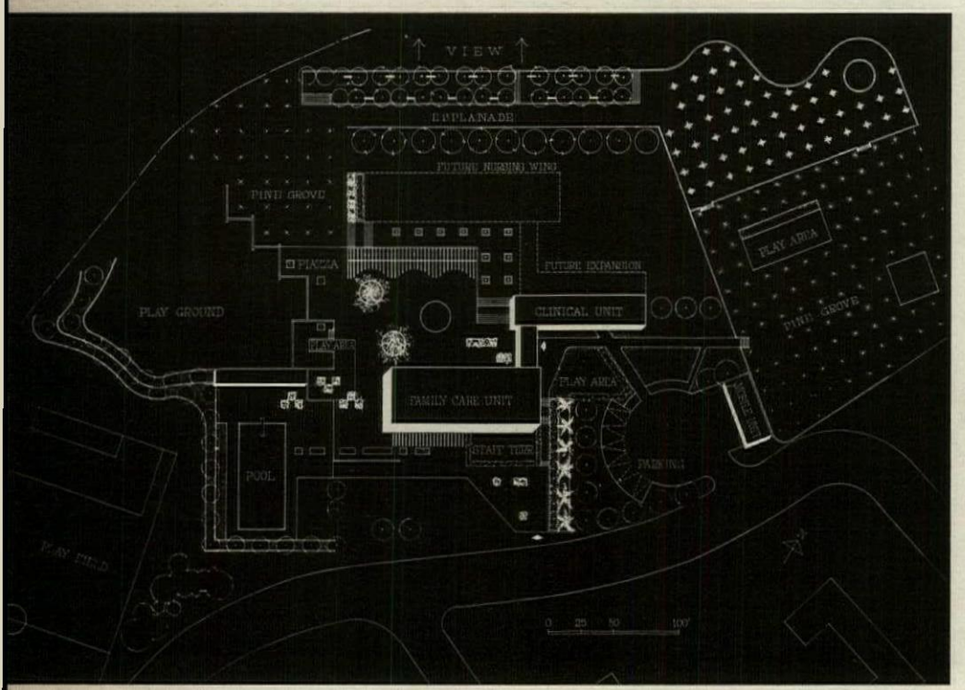
* Hebrew form of the first name of its founder, Henrietta Szold.

* Dr. S. L. Kark. Other consultants: Dr. Louis Miller, head of the Community Health Division of the Hadassah Medical Organization; Dr. J. Medalie, acting head of Hadassah's Family Health Dept.; Mr. M. Grobsmith, building program administrator; Mr. E. Rinkov, resident engineer.



Design is domestic and relaxed

Since economy and local building practice dictated that framing be reinforced concrete, the architects first considered flat roofs and cantilevered construction. This was rejected because "tension, even in this technical sense, was out of key and seemed too tight and highstrung for a building that is supposed to produce relaxation." They chose pitched roofs over flat because of the ventilation advantages—and because they noticed that the people of Beth Mazmiel were already replacing the flat roofs of their housing with pitched roofs for the same reason. Roofs will be wood covered with local cement tiles; exterior walls will be local stone and brick cavity.



Landscape plan encourages center's use

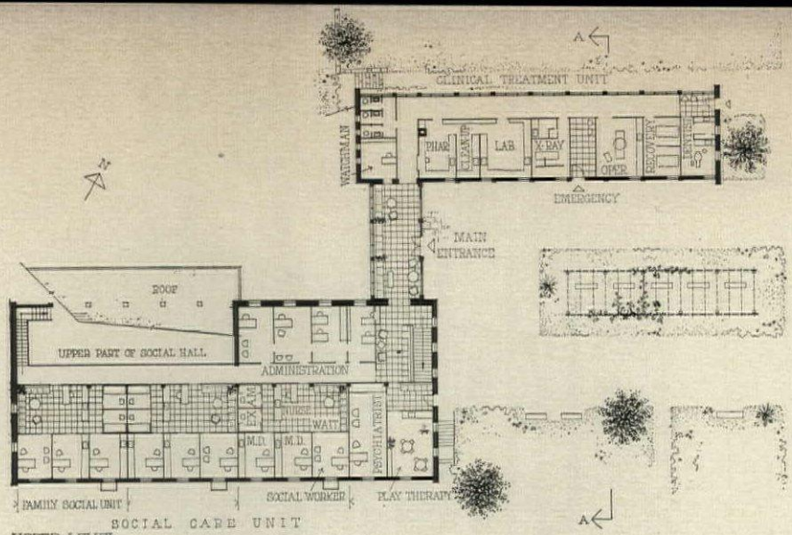
The landscape plan by Beatrice Zion divides the site into active sports, rehabilitation and informal gathering areas on the lower, social-hall level, and quieter community park on the upper, medical level. Note especially the realistic inclusion of play areas for small children wherever adults congregate; the provision for pedestrian access (few townspeople have cars); the great variety in treatment to give users a sense of wealth of choices. Paved piazza poses a heat and glare problem, alleviated by planting, trellises and pools. Park groves will provide a continuous canopy of shade over the continuous, no-maintenance pebble surface. Most retaining walls will be indigenous stone terracing, less brutal than cement. The economy of cementing the pool into an existing free-form crevasse (see architects' earlier scheme in model photos) is sacrificed to place the pool farther from the social hall. Most striking feature about the center's four acres is that they are meant to be used intensively; this is no novelty for schools, but it is for hospitals.

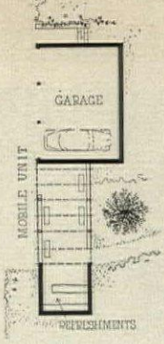
Plan provides for family care

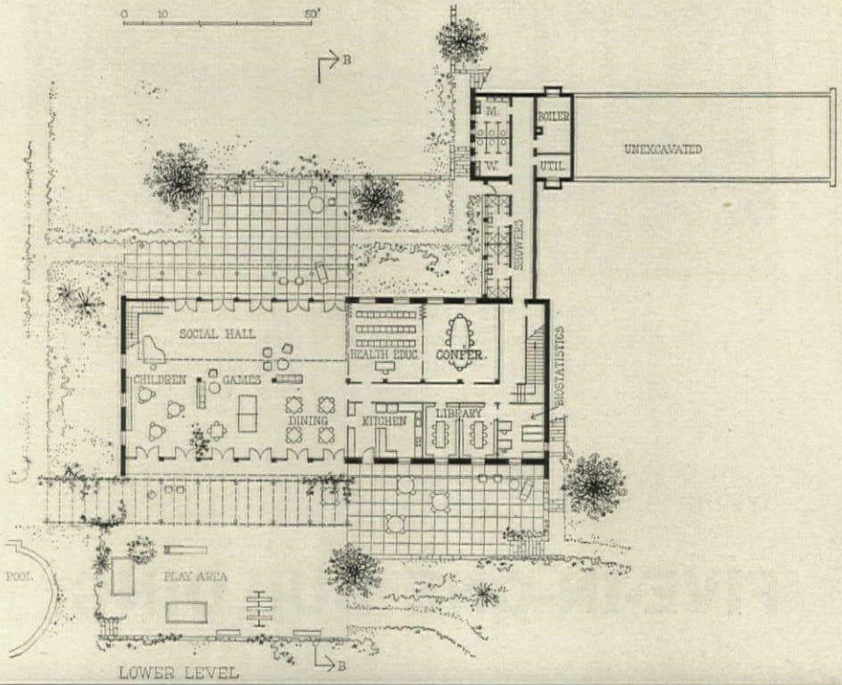
The plan puts the complete small-hospital diagnostic and treatment core to one side of the main entrance link, administrative and family-care (ambulatory patient) offices to the other side. Eventually a nursing unit of about 30 beds will adjoin the medical core; the core can be doubled by expansion across the corridor. The family-care units are arranged for professional teams: two physicians, a social worker and a nurse to each team, a psychiatrist and an anthropologist serving three teams. The team system is a device for bringing back the family doctor, in effect, while keeping some specialization. The mobile unit provides for home care by team members, as well as for the usual ambulance service.

The professional offices open onto a balcony overlooking the social hall. Community

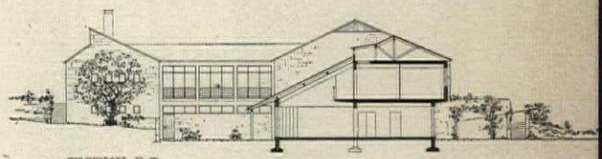
continued on p. 182



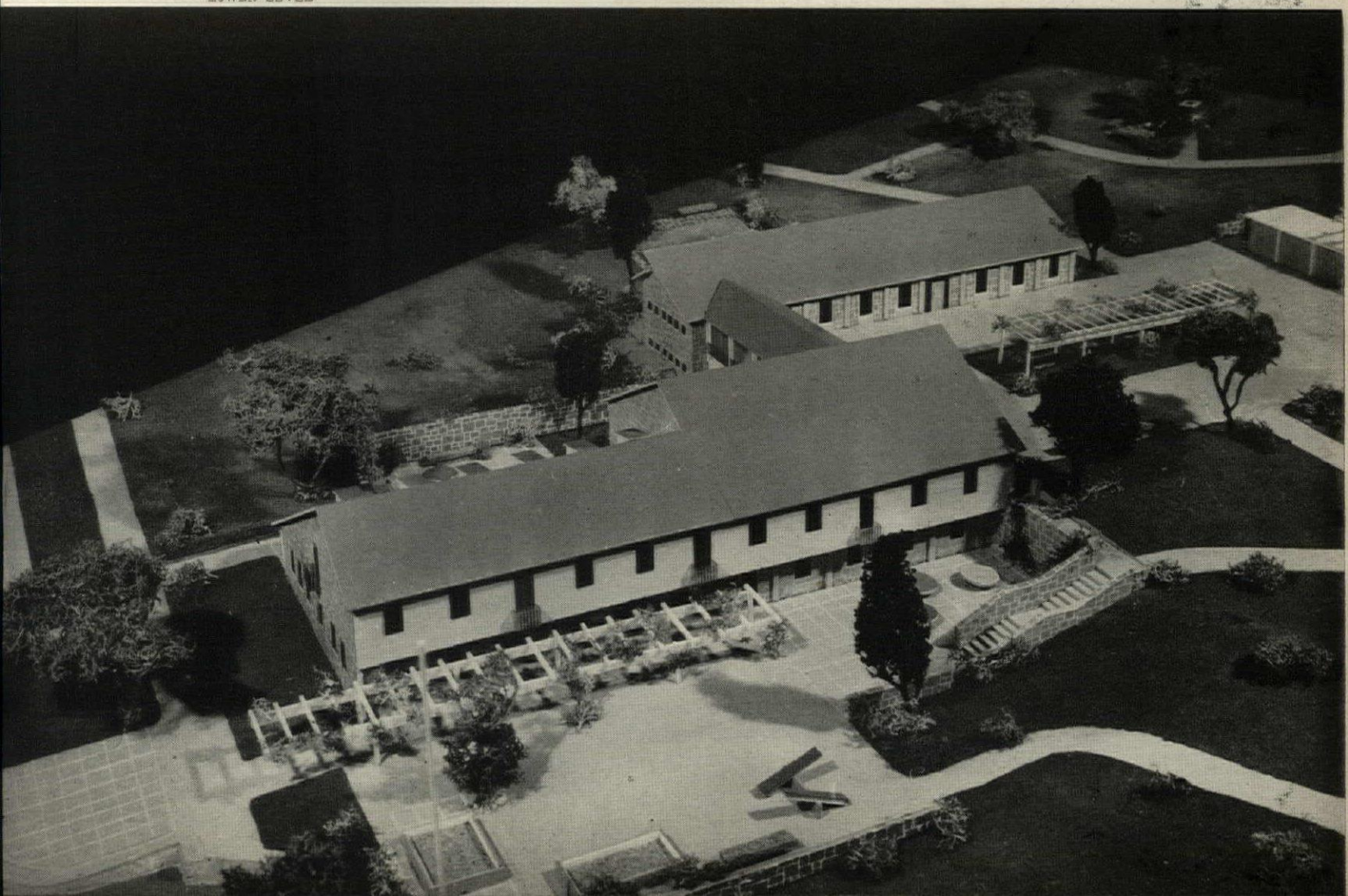





SECTION A-A


SECTION B-B

BETH MAZMIEL COMMUNITY CARE CENTER
OWNER: Hadassah Medical Organization
ARCHITECTS: Joseph Neufeld and David Anatol Brutzkus
LANDSCAPE ARCHITECT: Beatrice Zion
CHIEF MEDICAL CONSULTANT: Dr. Kalman J. Mann, director general of Hadassah Medical Organization



FOURTH—meeting rooms



THIRD—offices



SECOND—bank



GROUND—entry and hiring hall



BASEMENT—auditorium





BLACK AND GRAY PATTERN of granite veneer and asymmetrical division of windows disguise fact that remodeled building has three different ceiling heights. Vertical motif is refreshing change from New York City's postwar emphasis on the horizontal.

OFFICE OF MERIT

FIVE-IN-ONE BUILDING

Union puts its five different functions on five floors —including offices of merit on the third

This five-story building for the Dining Room Employees Union is really five buildings in one, unified by a handsome façade and inexpensive but effective interior design.

- The basement is an auditorium for large meetings and parties.
- The ground floor is a hiring hall (right).
- The second floor is a "bank" where dues, insurance and pension business is transacted.
- The third floor is office space for executives and business agents—and the main subject of this presentation (see p. 156).
- The fourth floor can be divided by folding partitions into four conference rooms of various sizes.

Each floor reflects the "open house" policy of the union and its president, David Siegal. Any office, any meeting is always open to any of the 13,000-odd members who might wish to participate in discussions or learn about the conduct of union affairs. This policy accounts for the building's many open waiting spaces with direct access to offices.

Because the building was erected around an existing steel frame, air-conditioning ducts had to be hung below the floor beams, reducing the ceiling height to 7'-4" in some places. To limit the inconvenience and unsightliness of these low areas, the architect, wherever possible, ran the ducts over rooms of small size, thus proportioning ceiling levels to room sizes and making the lower ceilings unnoticeable.

Photos: Lionel Freedman

HIRING HALL on ground floor consists of labor chiefs' offices and unemployed waiting room. Asphalt tile is gray; walls are painted gray; partitions are natural finish birch; trim is black. Benches of simple design are of birch plywood.

STREET ENTRANCE features glass mosaic sign panel and ceiling, aluminum sash, black and white terrazzo floor and indirect fluorescent lighting trough over doors.



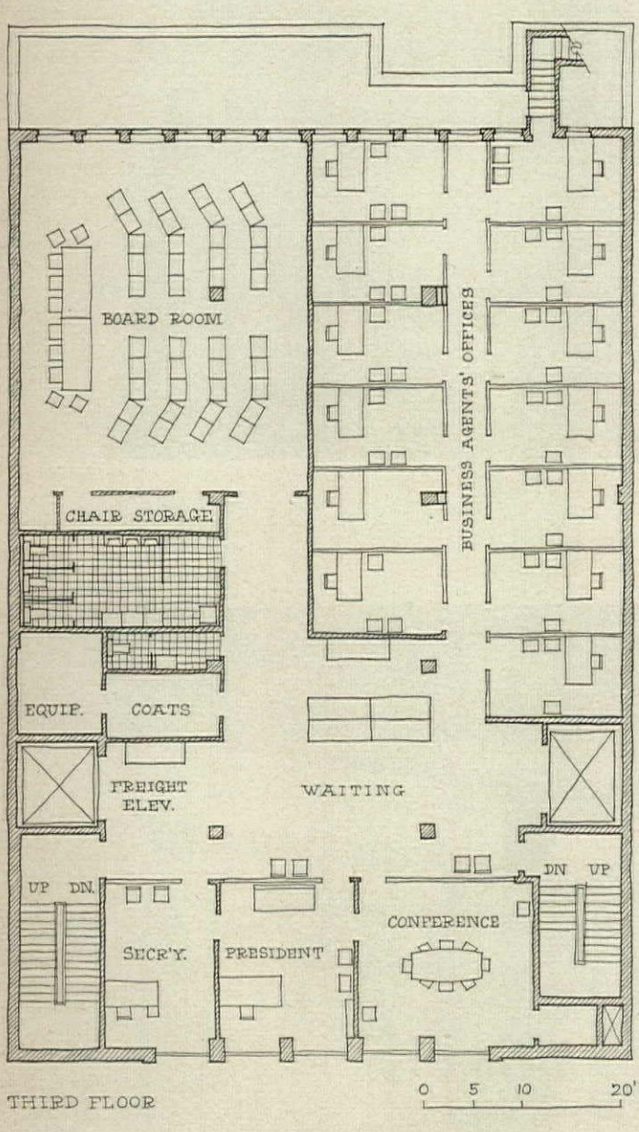
OWNER: Dining Room Employees Union, Local 1
ARCHITECT: Giorgio Cavaglieri
MECHANICAL ENGINEER: Ginzburg & Smith
CONTRACTOR: Herbert Construction Co.



CONFERENCE ROOM on third floor is entered from waiting room and president's office. Birch table top with white metal legs and black upholstered birch armchairs echo natural birch finish of office partitions.



PRESIDENT'S OFFICE is modestly furnished with gray steel desk and chair, small birch armchair and sofa upholstered in black fabric. Because entire building is air conditioned, only small vertical section of window opens—to aid washing.



THIRD FLOOR

SPECIFICATIONS

FIXTURES: Lighting fixtures—Gotham Lighting Co. Locks and latches—Schlage Lock Co. Air diffusers—Barber-Colman. Convectors—John J. Nesbitt, Inc. Folding partitions, oak—Rolscreen Co. Doors—US Plywood. Prefabricated partitions, birch-faced plywood—White Manufacturing Co.

FINISHES: Wall paints—Benjamin Moore & Co. and E. I. du Pont de Nemours & Co. Acoustic ceiling, acousti-Celotex random hole pattern—Celotex Corp. Flooring, asphalt tile—Mastic Tile Corp.; terrazzo—V. Foscato, Inc.

FURNISHINGS: Executive chairs—All-Steel Equipment Inc. Armchairs—Herman Miller Co. Other chairs—Brunswick-Balke-Collender Co. Desks—Invincible Metal Furniture Co. Conference tables—Herman Miller Co.

COSTS: Air conditioning, $68,000; elevators, $20,800; wiring, $16,000; office partitions, $20,800; lighting fixtures (installed), $21,600; folding partitions, $4,300; total, excluding fees, $355,500, or about $15 per sq. ft.



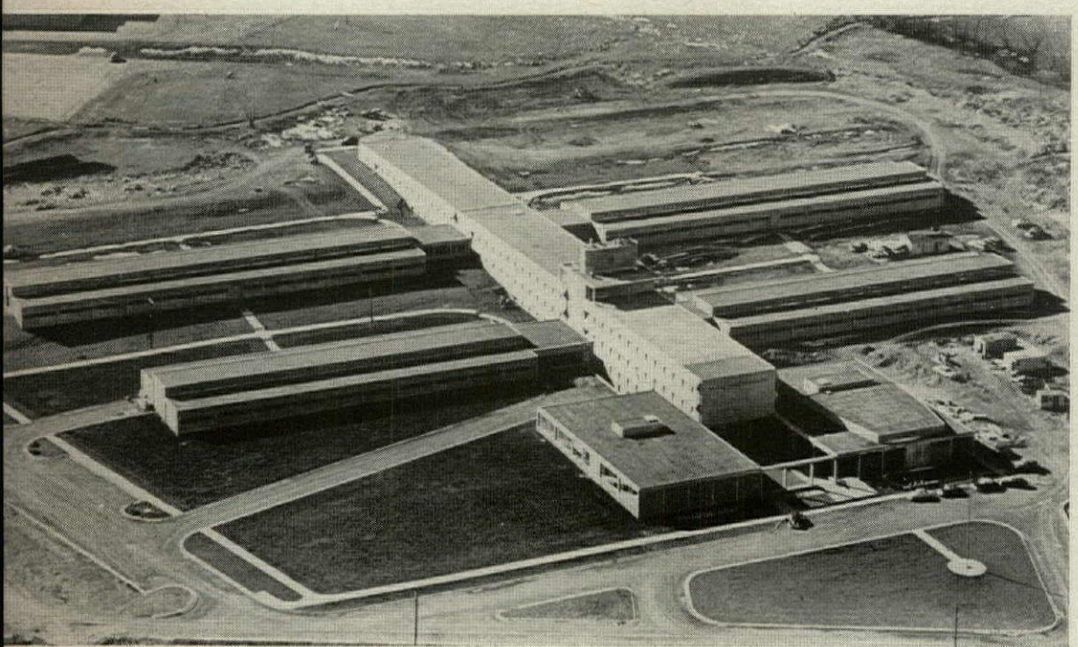
THIRD-FLOOR HALL between rows of business agents' offices is formed by prefabricated birch partitions. Partitions have glazed tops and doors to transmit daylight to windowless offices on left. Floors are gray; door trim is black.

FOUR-IN-ONE MEETING ROOM on fourth floor is subdivided by folding partitions finished in natural oak (note tracks on ceiling). By unfolding different combinations of partitions, meeting rooms of various sizes may be created. Walls are gray; asphalt floor tile is gray and red.



INDUSTRIAL LABORATORY

Its character is as rugged as the mountains behind it



ROOF is flat and straight, but base level goes downhill. Right, photo from entrance end.



LOBBY, glazed blandly behind protective post-and-beam bounded court, is only extroverted part of building.



The National Bureau of Standards' big new Laboratory in Boulder, Col. looks both tough and aloof—and so it is. Its raw strength comes from the bold, unpolished concrete façades it shows the world—porous form-scarred concrete like Le Corbusier's Marseilles skyscraper (but of much better finish because the efficient US builders used oiled plywood panels for forms, not planks). The direct shapes of the building are strong, too, in the clear mountain air, and even the windows appear to have been cut reluctantly into the walls, something unusual in contemporary architecture. Some of the windows also wear concrete awnings against the sun like the vizor on a medieval helmet. Within the armor, in the building's nervous system, is an electrical distribution network which is anything but medieval. To feed an undisclosed appetite for electricity, to provide power flexibility, and to ensure no mechanical interruptions from power failure, the building is wired almost doubly.

In operational fact the new lab is secret; do not look for many interior photographs in this report. The structure houses a broad program of research in radio physics and associated geophysical phenomena of the upper atmosphere and trophosphere. Even the architects do not know what the precise purpose of much of the space is, so the planning has been simple and general. The over-all plan actually is simple and neat—the giant has a mild, efficient personality. The main element of the plan is a long central building, stepping downhill under a constant, straight roof level. A pair of one-story wings join this stem at right angle in plan. For expansion the stem will simply grow and add wings.

Photos (except air view): Erwin G. Lang



Feeding electricity to a hungry giant

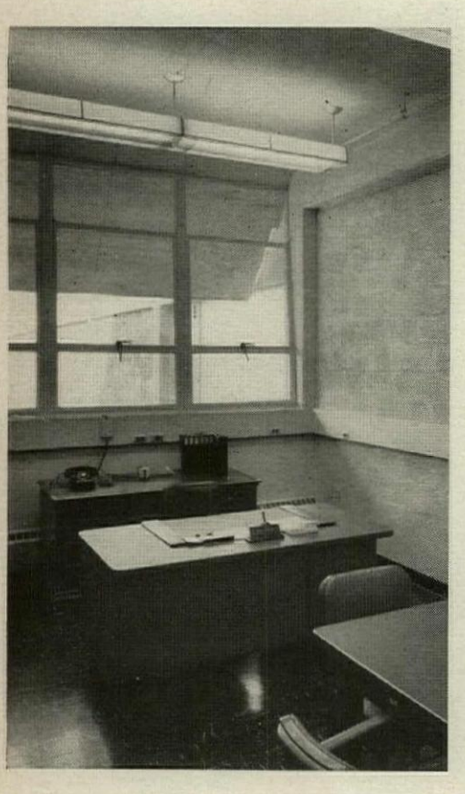
At any point in any of the laboratory spaces, the bus-duct distribution lines make A.C. and D.C. and high-frequency voltages available (as well as telephone, intercom and signal facilities). The distribution is a double one to assure continuity of electrical service; each segment of load is actually supplied via two feeders and two transformers in parallel. Any fault in the functioning of one feeder, including the transformer, automatically drops the distressed equipment out of service leaving the remaining feeder to carry the entire load without interruption. Either line, of course, can also be dropped out of service for revision, servicing or expansion, without interrupting the scientists at work on experiments.

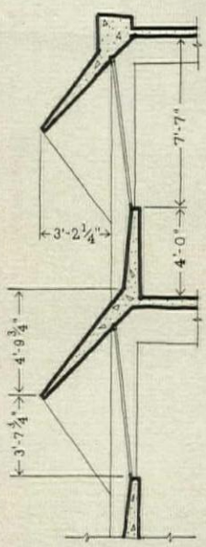
Control is exercised over all aspects of the distribution system from a central supervisory station in the engineer's office, which maintains constant automatic watch over the transformers' main breakers, feeders and other equipment. Both audible and visible signals indicate any trouble with the position of any of the network protectors, the main primary air circuit breakers or the primary feeder air circuit breakers. They also warn the engineers of any undue drop in battery voltages, or any hazardous rise in transformer temperatures or pressures.

ELECTRIC AND RADIO PROPAGATION RESEARCH LABORATORIES: Boulder, Col.
GENERAL SERVICES ADMINISTRATION, NATIONAL BUREAU OF STANDARDS
ARCHITECTS: Pereira & Luckman and J. E. Stanton
ASSOCIATE: Robert W. Ditzen
GENERAL CONTRACTOR: Olson Construction Co.

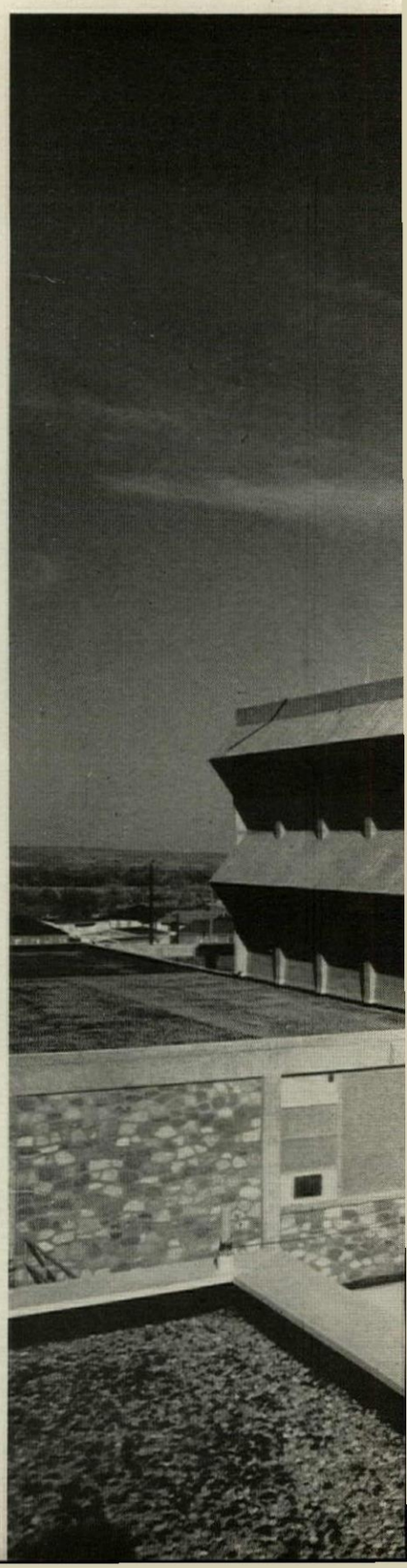


SECRECY is well spoken by building in this view from street approach.





PRETESTED CONCRETE EYEBROWS. High standards of exactness were set by the Bureau of Standards for the permanent concrete awnings on the sun walls of this structure. To be sure the hot mountain sun would be under control, the architects built a helidon and tested a model of the building under the proper setting for Boulder's latitude and longitude. Even this was not enough for Washington, however; the bureau erected a full-scale model and tested it on the spot. Photographs made by the bureau at various times of the day over a period of several days coincided with photos of the model on the helidon.





INDUSTRIAL INTERIOR. Factory-type construction is innovation for Bureau of Standards' laboratories. Trucks can drive in if necessary, and lighting is unobstructed by lab equipment.

MASSIVENESS OF CONCRETE in structure and awnings finds contrast in sparkle of some walls (lower left in photo, below) inlaid with local stones which glint in mountain sunlight.



R. B. Fordyce

FAMOUS ORIGINAL by Howard Johnson's own design department features orange roof of porcelain-enameled steel "shingles," lantern-like cupola, small windows and other pseudocolonial trimmings. When busy, building is partially obscured from street by cars parked in front of it. This building seats 100, costs $100,000.

HOWARD JOHNSON REDESIGNS

Architect and restaurateur pool talents to improve the building without destroying the trademark and to make the kitchen bigger without adding space

When Howard Johnson first came to Florida Architect Rufus Nims, he thought he had a limited local problem. Although his pseudocolonial restaurant design was doing well up North, it hid what was going on inside; Florida people were accustomed to spotting successful stores—and restaurants—by looking through glass fronts, seeing lights and people. Johnson had been compelled to put up signs on his Florida colonials saying "Open."

This was the problem given Nims—along with the warning that Johnson wanted no architects "messing around" in his kitchen. Had it not been engineered by the best restaurant man in the business?

By the time Nims got through, Johnson had not only a good building for Florida, but a prototype useful nationwide—and a new kitchen.

▸ People in any climate are drawn in by a glimpse of a bright, warm (or cool) interior, busy with people.

▸ Identification of Johnson's by its familiar orange roof and New England cupola was retained, though more playfully than before.

▸ Food preparation costs were cut about 15%. The architect had gone into the kitchen after all, "through the front door."

▸ The new restaurant had a vastly improved traffic pattern, whether for cooks, bus boys, waitresses, counter people or customers—particularly at the crucial spots where employee and customer traffic interlaces.

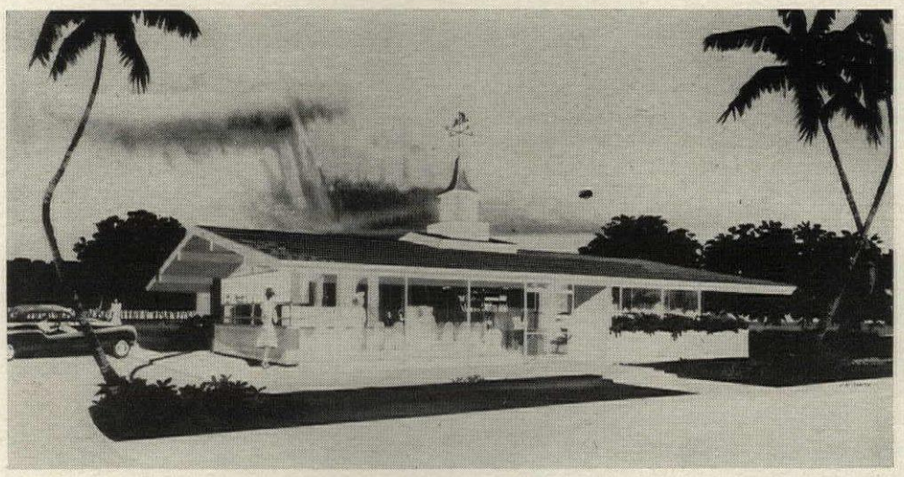
▸ The new plan was economically expandable.

The story of Rufus Nims's work for Howard Johnson in Florida is consequently the story of the new Howard Johnson you now see going up all over the US. The outside story is shown on these two pages; the inside story of kitchen planning on the next two pages.

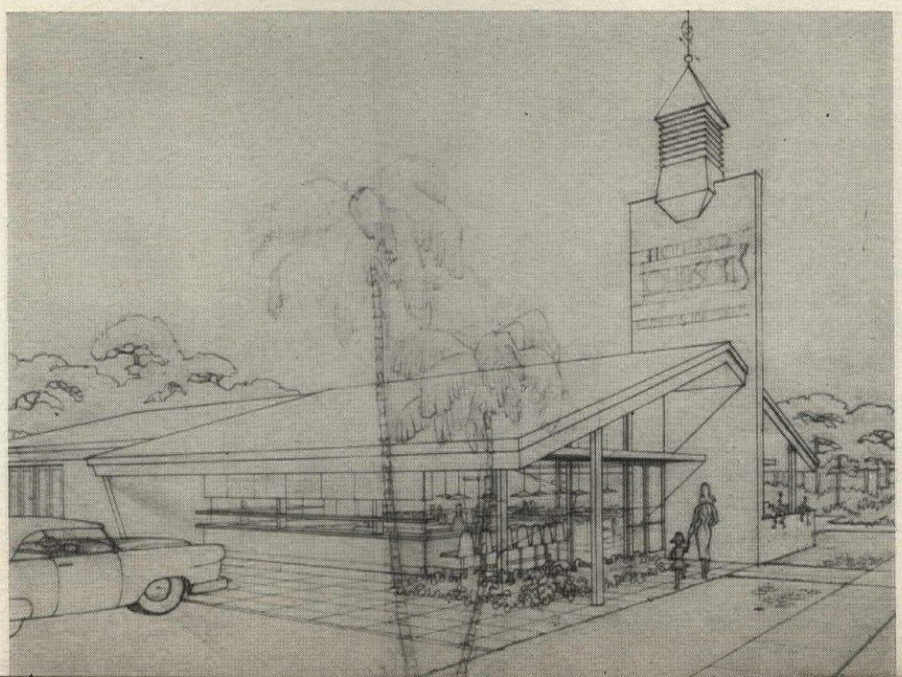


© Ezra Stoller

REDESIGNED RESTAURANT with large roof overhang has glass walls, no blinds, exposing inside color and activity of restaurant to public, obviously indicating that building is open for business. Parking is now limited to sides. Roof is still shingled in orange steel but cupola is now exhaust vent. Capacity, 160; cost, $130,000.

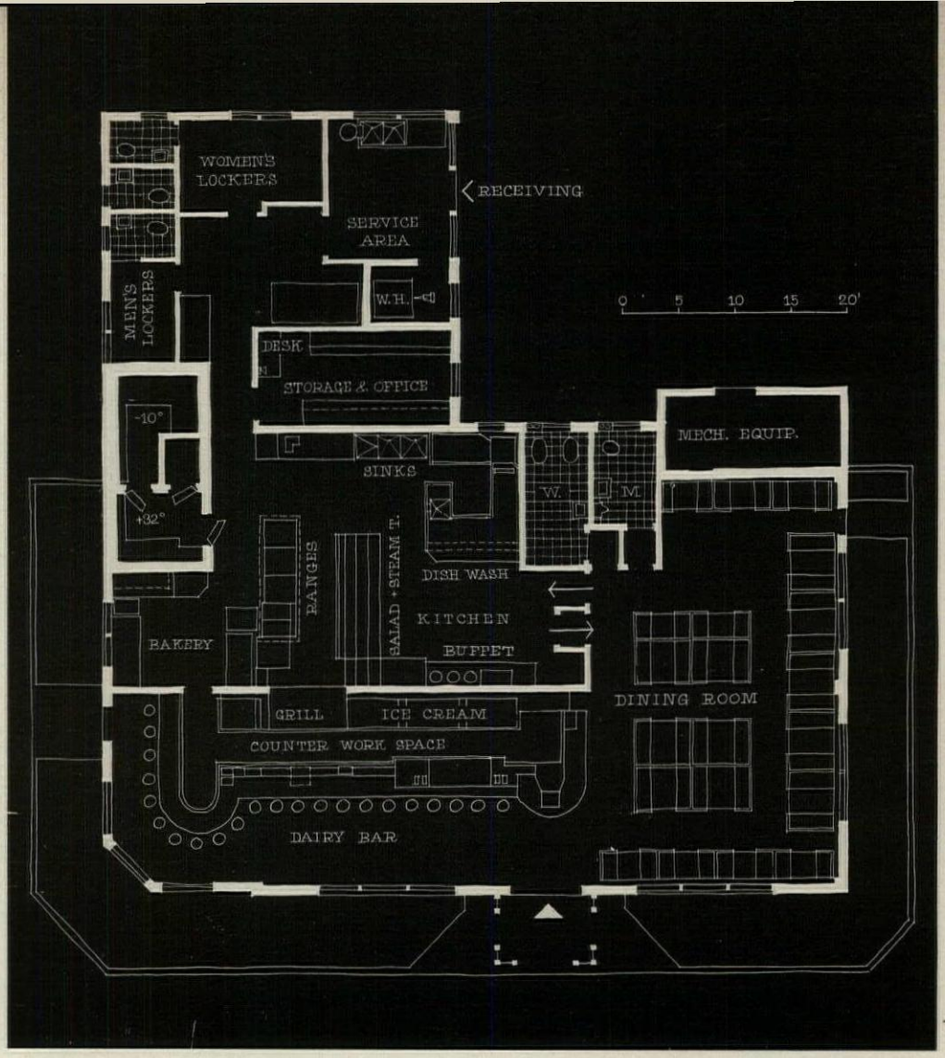


NEWEST BUILDING in Johnson chain is this minimum unit. Open-front theory that view of "customers happily lapping up ice cream" would increase sales has paid off handsomely. Planting around dining room gives patrons feeling of privacy. Note addition of curb service. Gable roof is further step in design improvement program. Capacity, 50; cost, $45,000. (Not shown, standard 77-seat restaurant which costs $65,000 but can be expanded to 108 for $10,000 more.)

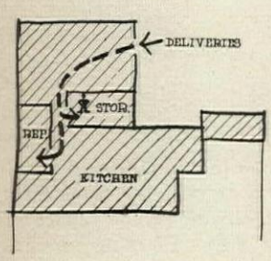


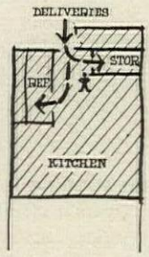
ULTIMATE DESIGN, proposed by Nims but not yet accepted by Johnson, makes more radical changes in traditional appearance: gable is turned endwise to the street, cupola is removed from roof and raised like a shield on a spear. Biggest asset: while restaurant can operate profitably with 50 seats, it can be expanded to 100, 120 or 150 without additional kitchen equipment. Design permits optimal curb service. Costs: $50,000 for original 50 seats; $20,000 for each additional 50. (All costs are approximate and exclude removable equipment, grading, paving and landscaping.)

Redesigned Howard Johnson kitchen cuts operating costs and confusion

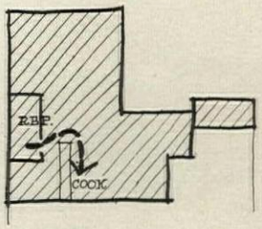


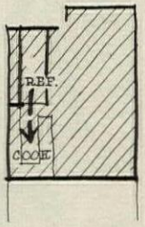
ORIGINAL PLAN functioned to satisfaction of owner but contained some faults which were obvious from Architect Nims's fresh point of view: 1) storage area and refrigerator were far from receiving door and not readily accessible to kitchen; 2) congestion of guest and waitress traffic was caused by close proximity of kitchen and restroom doors; 3) unnecessary presence of service buffet (silver, coffee, water, etc.) in kitchen increased waitress traffic in this already busy area and delayed service. (Architect Nims's suggested improvements are shown individually below and are incorporated in the two redesigned plans, opposite.)



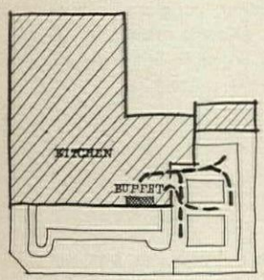


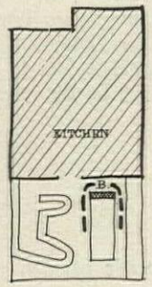
DELIVERIES AND SUPERVISION. Storage and refrigerator are moved closer to entrance to save labor. Manager's desk is relocated near rear entrance to simplify checking and reduce opportunities for petty thievery.



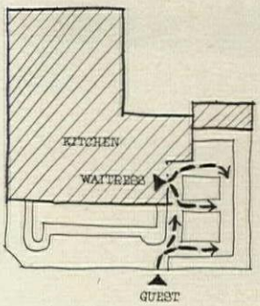


COOK AND COOLER. Cooler relocated next to cooking area and addition of pass-through saves many steps and reduces kitchen traffic in main aisle.





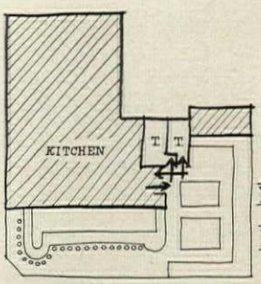
BUFFET. Fixture for minor service (silver, glasses, cups, napkins, ice water, etc.) moved from kitchen to dining room saves steps for waitresses and reduces traffic through kitchen-dining room doors.

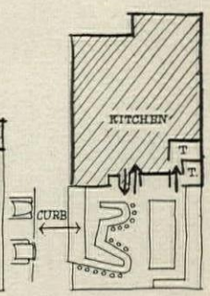




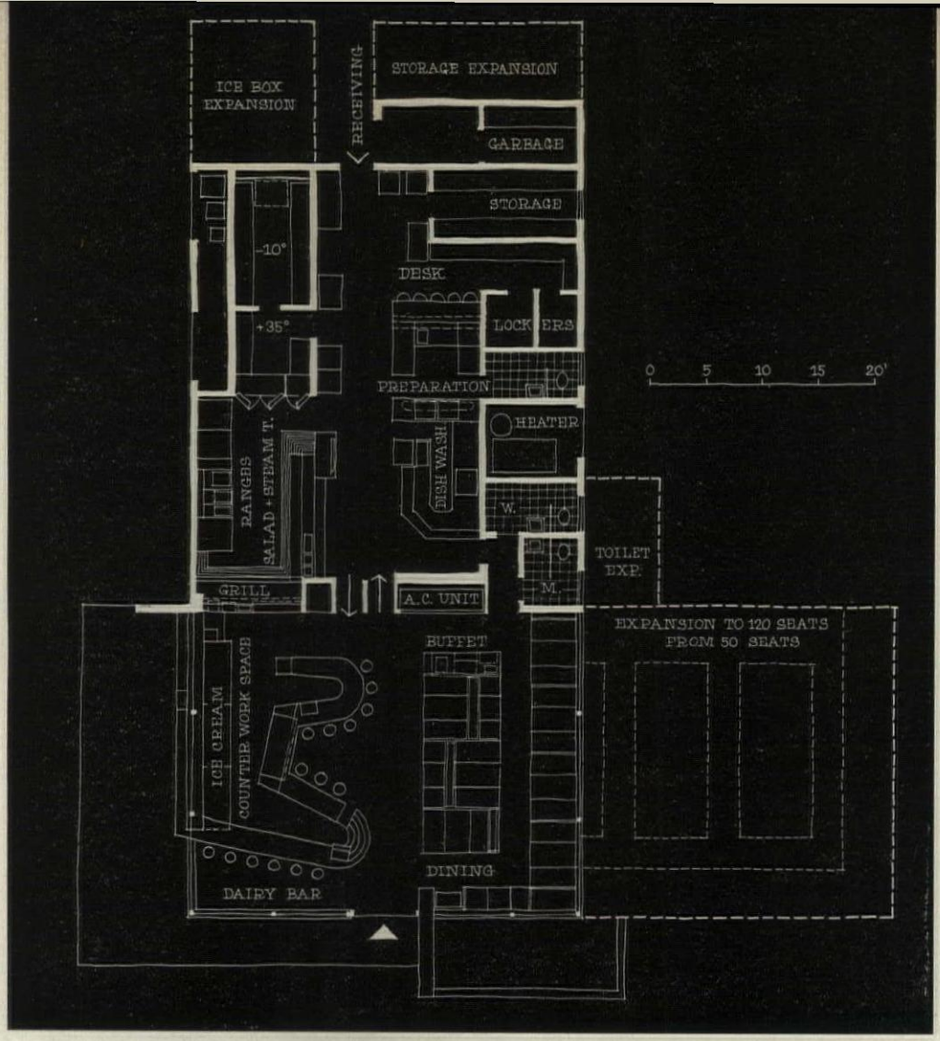
TRAFFIC SEPARATION. Guest entrance moved to opposite side of dining room from kitchen doors reduces interference between guest and waitress traffic, which results when traffic streams meet at right angles.

TOILET LOCATION. Entrance to toilets relocated to keep guest traffic away from kitchen-dining room doors.

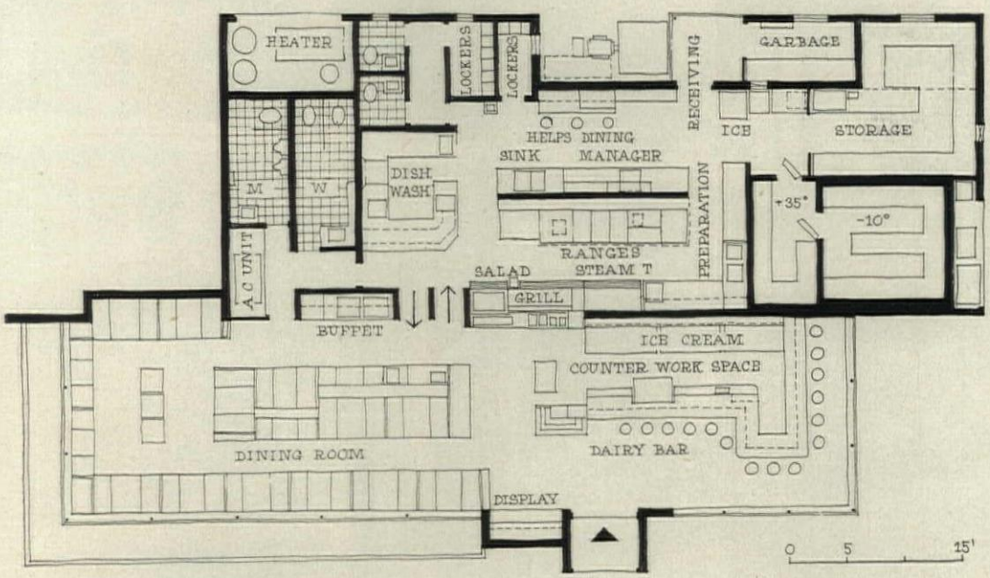




"M"-SHAPED COUNTER. Compared with usual straight-line dairy counter, new M-shape requires less walking by attendants, reduces interference between two attendants. This design also seats twice as many customers in same area.



ULTIMATE PLAN proposed by Nims combines all kitchen improvements he developed for various types of Howard Johnson restaurants. Expandable, without additional kitchen equipment, from 50 to 100, 120 or 150 seats, it would replace present 50-, 77- and 150-seat models. Core of kitchen is straight traffic aisle, replacing the zigzag aisle in the original plan (left). Straight, open core not only reduces steps but gives manager easier supervision of entire kitchen operation. This improvement alone is credited with reducing kitchen staff by one. (Manager's desk was formerly in storage room without view of kitchen.) Other improvements are detailed below (left). Turning dairy bar around (to accommodate curb service) and doing away with mirrored ice-cream wall menu (a Howard Johnson trademark) have not met with clients' approval.



PRESENT PLAN for 77-seat restaurant shows how far Howard Johnson has gone to date in kitchen redesign. Note that many improvements (shown at left and above) are incorporated in this plan. In addition, pickup over grill is available to dining-room waitresses as well as to dairy-bar attendants, thus reducing kitchen traffic. This building is expandable to 108 seats without additional kitchen equipment.

Architect Nims comments on the contributions of his clients

"Howard Johnson's personal influence in the restaurant buildings which bear his name is considerable and is felt in many ways. . . . Do not, however, overlook the influence of Howard P. Cummings, president of Howard Johnson Inc. of Florida. It is through him that most of the physical progress in the restaurants has been made. His unfailing judgment, his balancing of quality and costs are of considerable value to us and to the restaurants themselves. It was under his direction that the empirical development from a 14-stool store to the present series '77' restaurant came about. It will be under his direction that the 'ultimate' building comes about. His judgment as to what works and how well it works will be essential to this office and to the buildings themselves."

Library of the Minneapolis School of Art

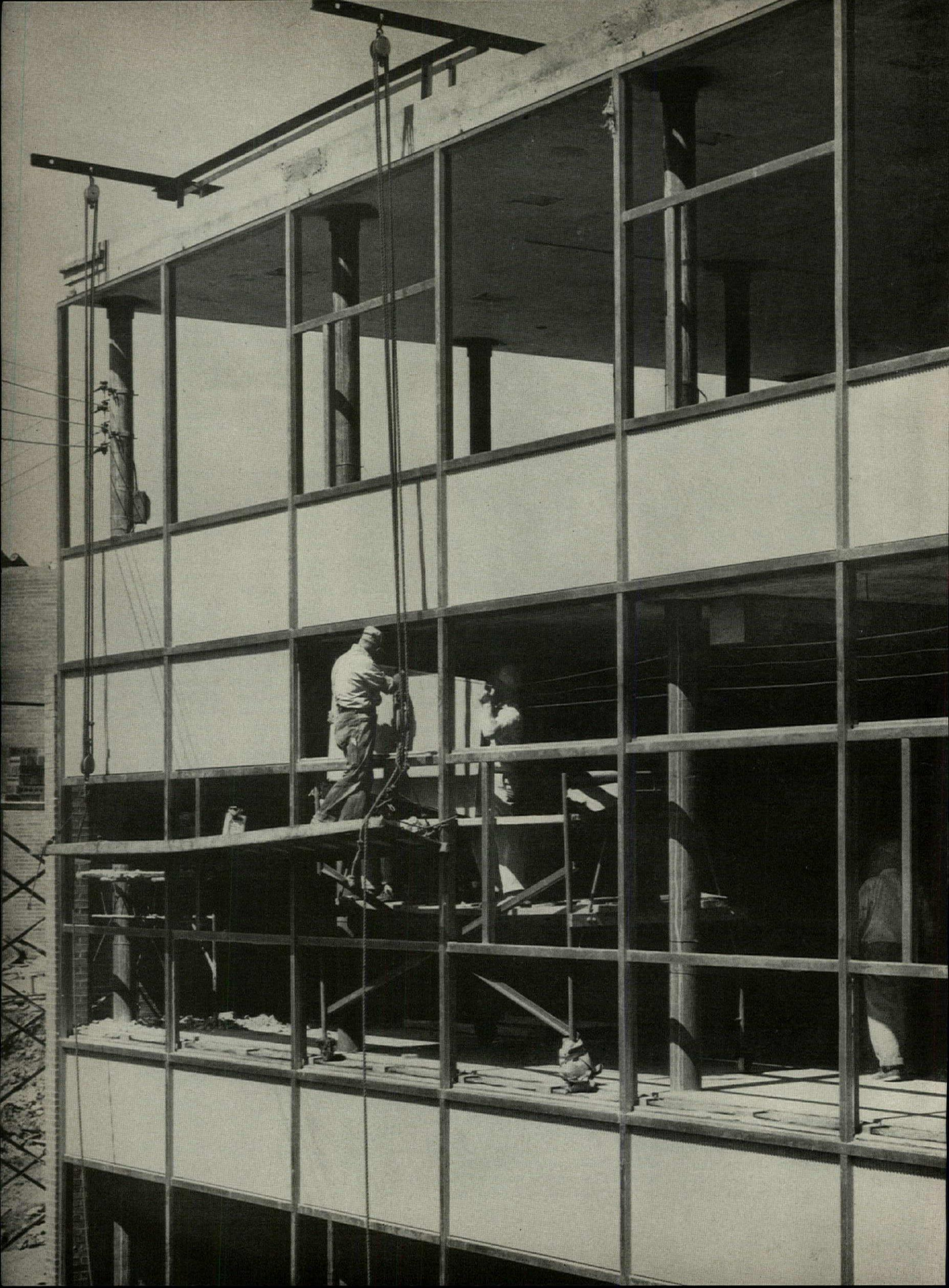


Photo (opp. p.): L. S. Williams

In the last few years porcelain enamel steel has been developed from a gas-station wall finish into an all-purpose wall panel—a thin, lightweight, colorful new construction material which is changing the appearance, structure and economy of all kinds of buildings

PORCELAIN ENAMEL CURTAIN WALLS

Since the early days of enameled pots and pans and hotdog stands the porcelain enamel industry has boomed—in annual dollar volume from $130 million to $382 million between 1940 and 1953, and in enameling capacity, a 3½-fold increase. But the biggest expansion has taken place in the building field where the dollar volume rose from $1 million in 1940 to $25 million in 1953. "In ten years," claims one responsible steel company executive, "there will be more porcelain enamel in buildings than goes into all household appliances today."

This expansion started with façade applications, notably for filling stations, stores and old office buildings, but during the past two years it has also embraced most of the mushrooming curtain wall market. A spot check of the major porcelain enamel fabricators and the Porcelain Enamel Institute reveals that in the last few years more than 80 major new buildings have been wrapped in brightly colored porcelainized metal walls prefabricated complete with insulating backup and supporting framework.



1932 GAS STATION shows one of earliest applications of porcelain enamel to building construction.

Buildings of all types are clad in this increasingly popular building material. Examples: the Ford office building in Detroit and the RCA offices in Camden, N.J.; the Statler hotels in Hartford and Dallas; ten United Mineworker hospitals in Kentucky and West Virginia; a school in Taunton, Mass. (see cover); and the industrial labs in GM's Technical Center.

The reason behind this boom is a simple one: porcelain enameled curtain walls are economical in many ways:

▸ They are light—the 1¼"-thick porcelain enamel spandrel wall of the Hartford Statler weighs only 5½ psf compared to 100 to 175 psf for a conventional equivalent, and this considerable reduction in dead load saved about $10,000 in structural framing. Further, the light panels are easier and cheaper to ship and erect.

▸ They are thin—only 1¼" to 3" compared to the usual 12" to 18" wall. Depending on whether the building is built out to the property line or not, this means either a greater floor area and thus a greater rental value for the same ground coverage, or a smaller ground coverage and thus a smaller and more economical building with the same useful floor area.

▸ They provide good insulation—the efficient fibrous glass insulation of the Hartford Statler eliminated 100 tons of air-conditioning load, while the smooth, reflective facings tend to reflect thermal radiation. In contrast, heavy conventional walls have a high heat-absorbing capacity and exert a drag on the building's heating or cooling system. (Masonry's slow rate of heat transfer is mainly due to the heat absorbed in evaporating the entrapped moisture.)

▸ They are erected quickly—the large prefabricated panels permit rapid, dry constuction with comparatively few joints, thus reduce labor costs and earn a considerable return through earlier completion. On Ford's Central Staff building the 4'-3" x 3'-9" insulated porcelain enameled panels are going up at the rate of 100 a day.

▸ They require less maintenance—the smooth, enameled surfaces are washed with every rainfall and therefore require no expensive steam cleaning.

The trend to porcelain enamel for building exteriors is part of the widespread trend to thin, lightweight, metal-faced walls that began with the modification of obsolete building codes after World War II. The almost universal requirement for four-hour masonry walls was dropped and emphasis was shifted from specific materials to the degree of fire resistance required. Such performance-type specifications are now incorporated in the three national building codes (Building Officials Conference of America Basic Building Code of 1952; Southern Standard Building Code of 1954; and Uniform Building Code of 1952), and by many municipal building codes, including those of Boston, Chicago, Los Angeles and New York.

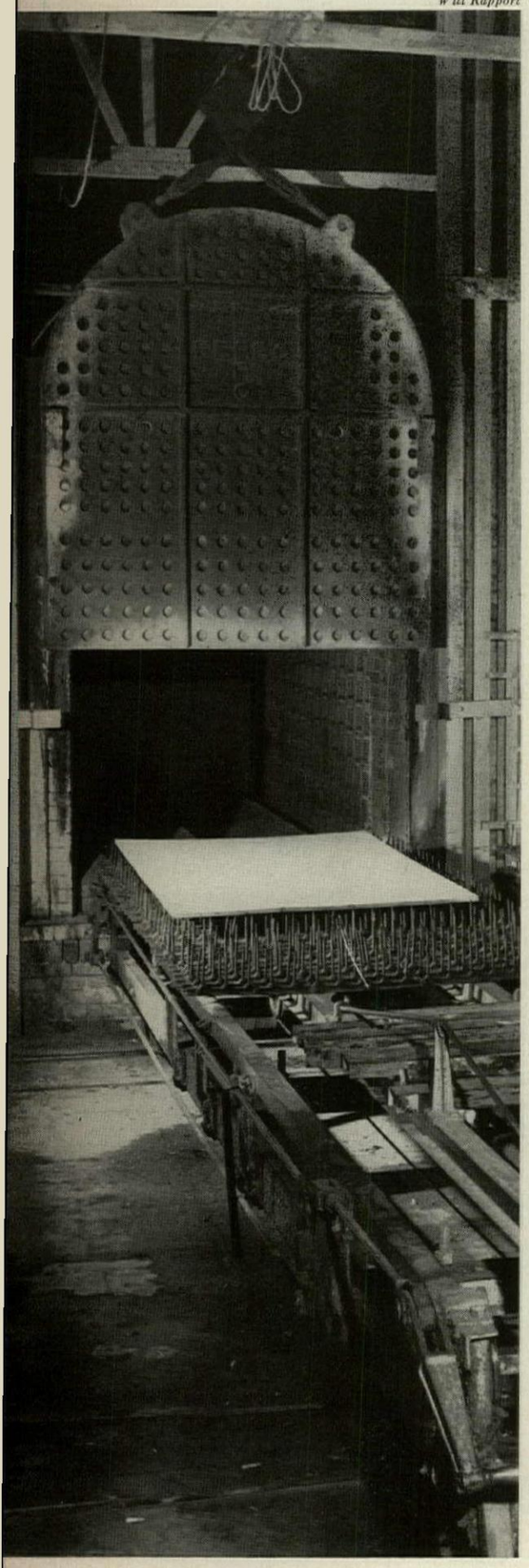
For noncombustible construction in nonstructural curtain walls these codes now specify two-hour fire resistance where the wall openings themselves require fire protection (example: exterior walls close to adjoining buildings). Only one-hour fire resistance is required where plain glass in unprotected wall openings of unlimited size and number is permitted.

←

CORRUGATED ENAMEL PANELS at RCA Victor's new office buildings in Camden, N.J., are installed from inside with help of light scaffold.

The resistance of glass and the strength of steel or the light weight of aluminum are combined in the porcelain enameling furnace

Will Rapport



FIRING FURNACE at fabricating plant bakes porcelain enameled steel panels for about five minutes at around 1,500° F.; enameled aluminum is fired at 970° F.

Porcelain enamel steel is a composite material made of glass fused to sheet metal. Glass in the form of tiny granules or flakes (called frit) is coated on the metal by dipping or spraying and then fuzed in a 1,500° furnace. The resultant finish is permanent, dimensionally stable, hard (highly resistant to abrasion), inorganic (impervious to all but the strongest acids and salts); it does not oxidize or support combustion; it reflects light and thermal radiations, can be permanently colored except for the metallic tints), can be finished with any texture ranging from full gloss to semimatte and adds strength and rigidity to the base metal. The enamel also has excellent resistance to radioactive contamination, and yet can be made radioactive for use in signs that will glow in the dark.

Working characteristics of the composite material depend on the "fit" of the glass to the base metal. Due to differential expansion between glass and the low carbon steel used for enameling, the glass is in tension at the fusing temperature of around 1,500° F. but, after cooling, it is in compression.

Thickness of the enamel coating on steel varies between 5 and 10 mil.; the thinner coatings have better resistance to mechanical shock. The steel itself is generally of 26 to 14 ga., weighing from ½ to 3⅜ psf. The choice depends on the size of the panel (today's biggest panel is 4′ x 10′) and on the degree of warp that can be permitted. Normally, 16 or 18 ga. steel is used, but 20 or 24 ga. steel is practicable where the panel is small and stiffened by corrugations or otherwise shaped to reduce noticeable warping.

Steel wall panels are enameled on both sides to eliminate corrosion on the inner face and to reduce warp during cooling. Controlled cooling is sometimes used for the same purpose. All shaping, cutting or punching is done before firing the panel.

A truly flat panel can only be achieved by laminating it to a stiffening backup—honeycomb paper, honeycomb aluminum, cement asbestos, pressed wood fiberboard, foamed glass or lightweight concrete are among those generally used. Bond between the panel and the stiffener is all-important. Some of the earliest honeycomb-paper cored panels insulated with perlite fill failed in bond due to excessive humidity, resulting in visible oil-canning on the face of the panel. The difficulty was overcome by the use of a more efficient adhesive.

Undesirable oil-canning effects can be overcome by corrugating or embossing the steel before enameling. Examples: the panels of the RCA office building (p. 172) have ½"-deep vertical corrugations; while the 4′ square panels of the First Security Bank building in Salt Lake City have 8" squares stamped ½" deep into the sheets.

ENAMELED ALUMINUM is the industry's newest product. New frits that fuse at little over 950° F. are used to porcelainize aluminum (which itself melts at 935° to 1,215°).

Porcelain enhances aluminum's good features and offsets some of its disadvantages:

- It adds color to the gray metal.
- It increases the metal's resistance against alkalis and thermal shock.
- It increases the strength of the metal. A 3-mil. enamel coating on 0.051" sheet aluminum makes the metal only 6% thicker, less than 10% heavier, yet gives it more than 60% greater flexural strength and resistance to surface denting. The enamel coating need be only ¾ mil. thick (a third of the thickness of enamel on steel) and only the outer face need be coated. For equal strength aluminum must be 1½ times as thick as steel, but it weighs only half.
- It capitalizes on aluminum's workability and resistance to corrosion. An enameled aluminum sheet can be cold-rolled or pressed to even out distortions due to firing. When drilled or cut, the enamel does not spall away from the cut edge and there is little corrosion of the exposed metal.

Porcelain enameled aluminum also has its disadvantages. It costs $2.50 per sq. ft. and up (depending on grade of the metal and the degree of fabrication required), compared with only $1.40 per sq. ft. for regular porcelain enamel upon steel. And, electrolytic corrosion must be prevented by avoiding contact between dissimilar metals. (Unless enameled, points of contact must be coated with insulating spar varnish.) Similarly, direct contact between aluminum and alkaline concrete must be prevented by a coat of bitumen.

Blue enameled aluminum panels are being used to save weight on an 11-story office building at Charleston, W. Va., and the aircraft carrier USS Saratoga has 80,000 sq. ft. of enameled aluminum partitions to remove the fire hazard of paint.

Enameled stainless steel, while not yet commercially available, may some day be a contender for the curtain wall market. It is already the subject of serious research.



INTEGRATED WALL FRAME being installed at Midway Airport, Chicago, is prefabricated complete with sash and insulated porcelain enamel panel, costs $3 per sq. ft. erected.

The search for a good curtain wall is directed toward one that is light, thin, weatherproof, easily framed and not too expensive

Back in 1951 the leaders of the Porcelain Enamel Institute realized that a mere facing panel solved less than half the wall problem; they had still to develop a fully prefabricated curtain wall, one that includes high physical and esthetic qualities. In performance the wall had to be durable, watertight, fully insulating and easy to erect; in appearance it had to have color, texture, shadows and rhythmic pattern.

To this end PEI members put up $50,000 for the design of an efficient porcelain enamel curtain wall system and asked Architect Willian Lescaze to coordinate their research program. After personal examination and analysis of 18 different curtain wall systems, Lescaze listed certain requirements for the porcelain enamel wall—it should pass a two-hour fire test, be self-supporting, be prefabricated in large sizes, be warm in touch and appearance, with a permanent finish inside and out, be able to withstand a 30-psf wind load and be erected by one trade from within the building without the need for calking. With all this the wall should cost under $5 per sq. ft. erected.

The study resulted in the prototype solution shown below and emphasized the main problems of curtain wall construction:

▸ Insulation. The accompanying chart shows the materials currently favored for porcelain enamel wall panels. Some designers prefer the high insulating value of fibrous glass (which lacks rigidity and must be protected against condensation); others prefer one of the rigid materials which, when properly bonded, adds strength and flatness to the porcelain enamel face.

▸ Condensation. There are two ways of overcoming the problem of condensation behind the outer face of the panel, where moisture might freeze and cause delamination of the face from the backup. The wall may be made completely watertight, generally by sealing with gaskets at all joints, or, conversely, it may be ventilated behind the face with weep holes to provide an exit for condensed water vapor. The object of the later device is to equalize pressure differences between the inside and the outside of the wall.

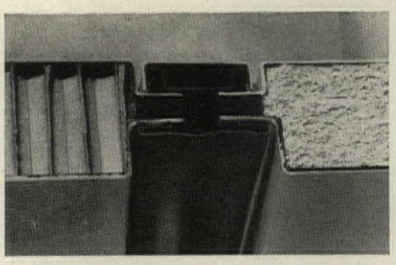
A material that is impervious to moisture reduces the condensation problem and may double as a vapor barrier. If separate, the vapor barrier must be continuous over the warm side of the insulation. (Where considerable air conditioning is provided, a vapor barrier may be required on both sides or in the center of the insulation.)

▸ Calking or gaskets. Where calking compounds are used the panels are designed to allow joints ⅛" to 3/16" wide and at least ½" deep. But the trend is away from calking toward gasket seals because of the relatively short life (three to four years) of most calking compounds. Of 80 calking compounds examined by Architect Lescaze only two appeared satisfactory and they were expensive. Many porcelain enamel panels today are sealed with extruded neoprene rubber or polyvinyl chloride weatherproofing strips (polyvinyl chloride gaskets are highly satisfactory, despite their comparatively low melting point, 350° F.).

Gaskets are easier to install than calking and ensure a proper joint without meticulous supervision. With gasket seals 7 sq. ft. of panels can be placed per man-hour, as against 5 sq. ft. with calking.

▸ Secondary framing. Porcelain enamel spandrel panels may be cantilevered from the floor slabs (useful for ribbon window buildings), be placed between floor-to-floor mullions (useful for buildings with comparatively few and small windows) or carried between horizontal girts laid between columns at the level of window sills and heads.

Many of the supporting systems used today are expensive because of the intricate shapes and joints of the secondary framing members. There is promise, however, in the very recent trend toward unit frames prefabricated complete with spandrel panel, window sash and horizontal and vertical secondary framing. These may be positioned directly between connections on each floor slab, thus eliminating the need for separate mullions.

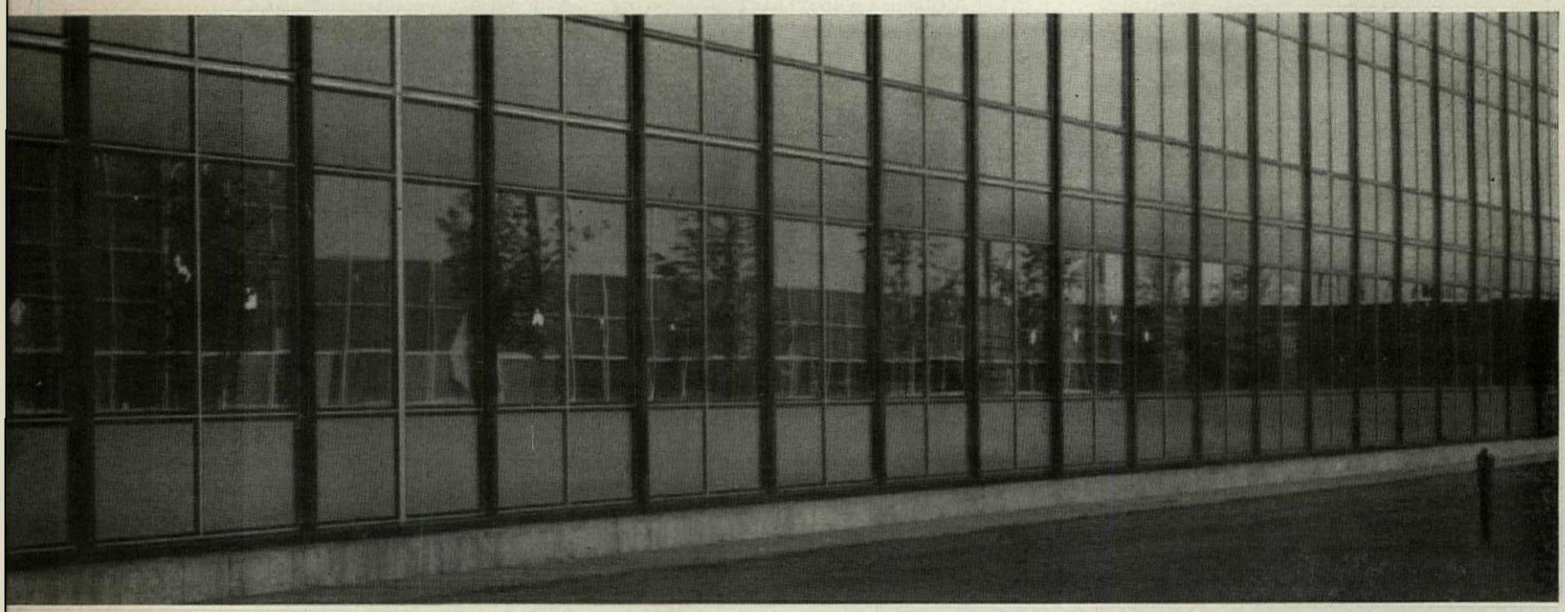


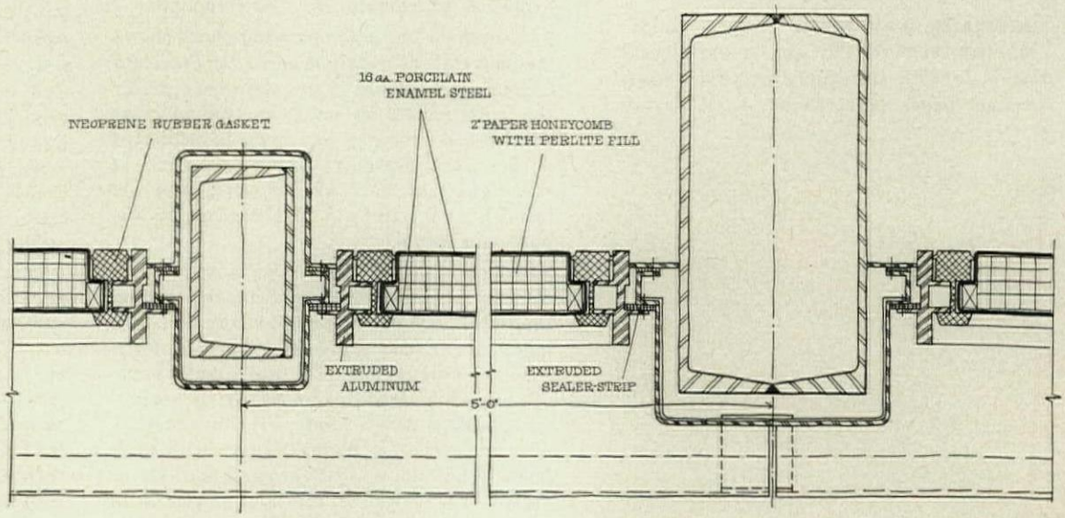
PROTOTYPE CURTAIN WALL prepared in PEI research study includes insulation at mullions, shows cores of pressed fiberboard and honeycomb paper. Panels are 2½" thick.

COMPARISON OF INSULATING CORE MATERIALS (all 1" thick)

	WEIGHT PER SQ. FT.	"K" FACTOR	COMPRESSIVE STRENGTH	MOISTURE RESISTANCE	MATERIAL COST (PER BD. FT.)
FIBROUS GLASS	0.5 lbs.	0.23	—	Fair	6½¢
FOAMED GLASS	0.9	0.38	100 psi	Good	13
PAPER HONEYCOMB	0.3	0.58	150	Fair	12
PAPER HONEYCOMB with perlite fill	0.7	0.39	150	Fair	16
ALUMINUM HONEYCOMB	0.4	—	370	Good	80
PRESSED FIBERBOARD	2.0	0.51	60	Poor	18
CEMENTED WOOD CHIPS	2.6	0.43	250	Fair	23
VERMICULITE CONCRETE	4.1	1.30	225	Fair	6½
PERLITE CONCRETE	3.0	1.40	100	Fair	10

NINE CURTAIN WALLS. When the FORUM last reported on the modern curtain wall (AF, March '50), it could find only one example in porcelain enamel steel. Today, there are dozens of varieties—each representing the fabricator's own idea of the ideal curtain wall. Nine of these, selected for the architectural merits of the buildings they curtain as well as the structural quality of the panels themselves, are detailed on the following pages





1. GENERAL MOTORS TECHNICAL CENTER, DETROIT

Photos: Lionel Freedman

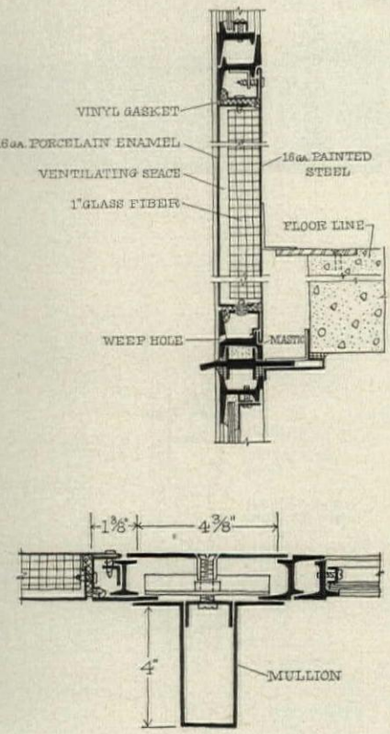


GM has used porcelain enameled panels since 1951, when it put one of the first enameled curtain walls on its administration building (AF, Nov. '51). The latest panels average 3'-6" x 4'-6" (maximum 4' x 9'-6") and are set in 3'-9" wide extruded aluminum frames.

The panels still consist of 16-ga. porcelainized steel faces bonded to a 2" resin impregnated honeycomb paper core filled with perlite insulation, but with certain improvements: 1) the steel skins are now bonded to the core with a stronger epoxy based resin; 2) opposing skins are locked with four concealed metal clips and assembled so the flanges of the panels do not touch; and 3) the panels are sealed into place with neoprene rubber gaskets instead of calking. The gaskets are placed on the aluminum sections, the enameled panel or glass is slid into position, then the joints are "zipped" tight by inserting a neoprene strip into the gasket.

Panels are 2" thick, weigh 6¾ lb. and have a "U"-valve of 0.18. Architects: Eero Saarinen & Asssociates and Smith, Hinchman & Grylls. Fabricator: Wolverine Porcelain Enameling Co.

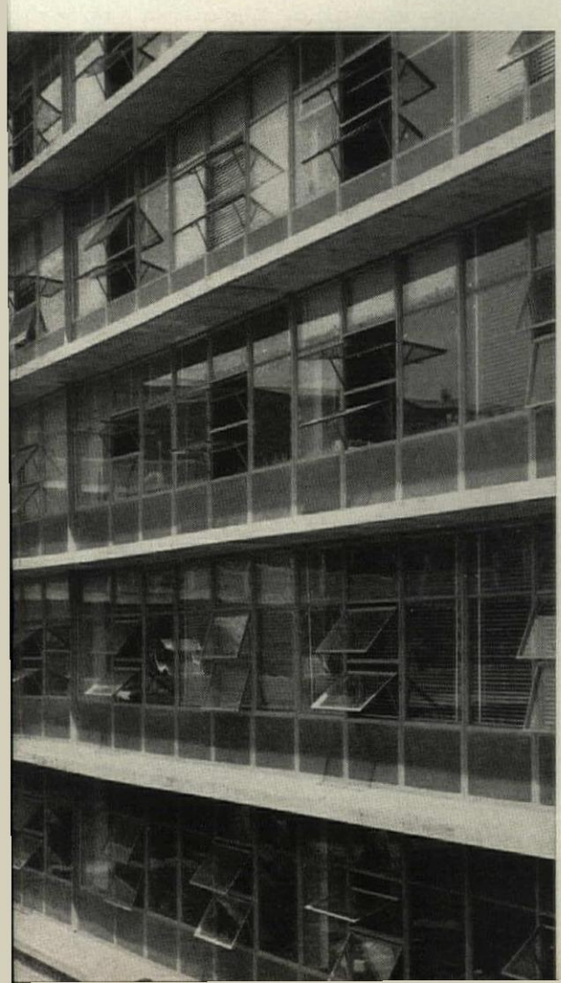


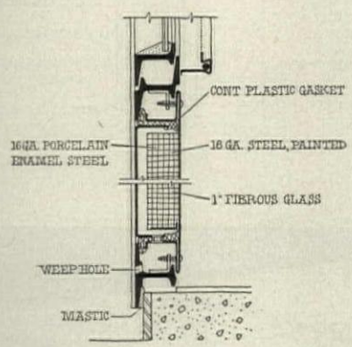


2. FRAM CORP. BUILDING, E. PROVIDENCE

These walls are prefabricated in 3′-8″ wide, 11′-3″ high wall sections complete with fixed and ventilating window sash (excluding glazing, which is put in later). The steel framing, bonderized and painted, is simply clamped in front of floor-to-floor mullions. Edges of adjacent panels are bolted between a cover plate and the mullion behind it. Blue and white porcelainized steel panels, prefabricated in sizes up to 3′-8″ x 2′-6″, are sealed into the wall frames on the ground before erection. The panels are insulated with a 1″ fibrous glass core between two 16-ga. steel skins. The outer face is enameled, the inner one, painted. Edges of the panels are sealed with vinyl plastic gaskets.

Panels are 1½″ thick, weigh 8 psf, have a "U"-value of 0.197 and cost about $3.25 per sq. ft. erected, excluding glazing. Architect: The Architects Collaborative. Fabricators: Truscon Steel Division of Republic Steel Corp. (frame), Bettinger Corp. (panels).

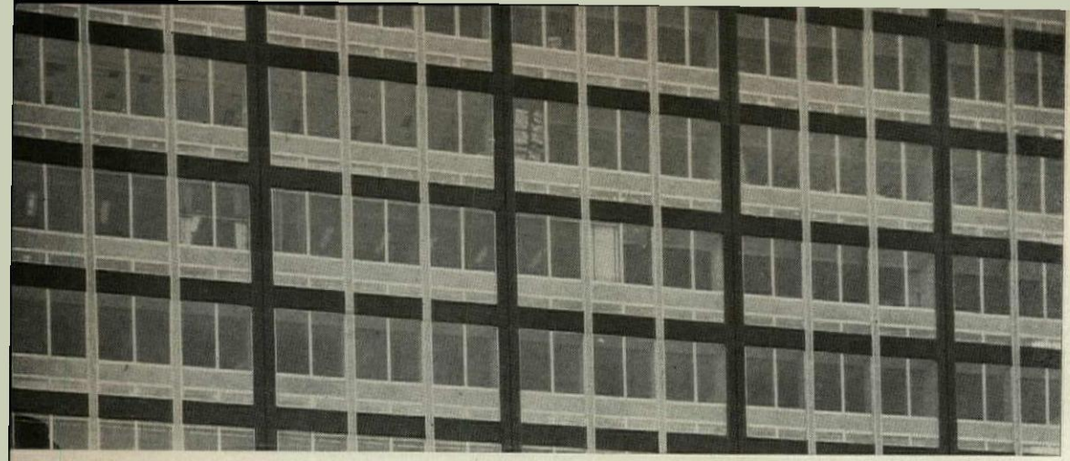




3. CLEMSON COLLEGE BARRACKS, CLEMSON, S.C.

The 26,000 sq. ft. of green porcelain enameled curtain wall on the five-story lift-slab dormitory buildings nearing completion at Clemson College is almost entirely prefabricated, forming one of the simplest wall constructions yet built. The 4′ x 8′-2″ steel wall frames, bonderized and painted, with 2′ high insulated enameled panels already in place, are simply clamped between pairs of 1½″ x ¼″ vertical steel plates positioned 4′ o.c. At the top these verticals are welded to a channel set in the underside of the floor slab above, and fastened to a stud driven into the slab below. The wall frames are sealed with calking at top and bottom. Enameled panels are insulated with a 1″ fibrous glass core bonded between two 16-ga. steel skins, the edges of which are sealed with polyvinyl chloride gaskets. The outer face is enameled while the inner face is painted; the panel is vented with weep holes at the bottom.

Panels are 1½″ thick, weigh 8 psf, have a "U"-value of 0.197 and cost about $2.75 per sq. ft. erected but not glazed. Architects: Lyles, Bissett, Carlisle & Wolff. Fabricators: Truscon Steel Division of Republic Steel Corp. (framing) and Davidson Enamel Products, Inc. (panels).



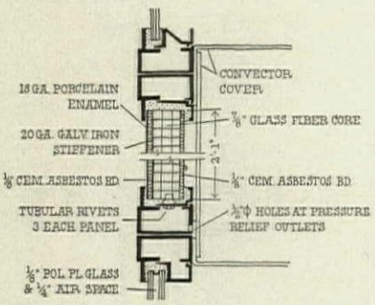
4.

MILE HIGH CENTER, DENVER

Denver permits a panel to replace glass if it has a fire resistance equal to wire glass (¾ hour). Mile High Center takes advantage of this to express the air-conditioning layout on the façade of the building. It uses ¼"-thick dark aluminum to cover spandrel beams and columns and light buff porcelain enamel curtain-wall panels to cover window air-conditioning units and vertical air risers. The 12"-high vision strips below each window unit are double-glazed; the 6′ high fixed windows above are single-glazed.

Set in prefabricated story-high aluminum frames, the 2′ x 8′ porcelain panels consist of 18-ga. steel skin bonded to ⅜" cement asbestos board, backed with 20-ga. galvanized steel as a stiffener, ⅞" of fibrous insulation and ⅛" cement asbestos board interior facing. The panel is 1¼" thick, weighs 6 psf and has a "U"-value of 0.20. Architect: I. M. Pei. Fabricator: Texlite, Inc.





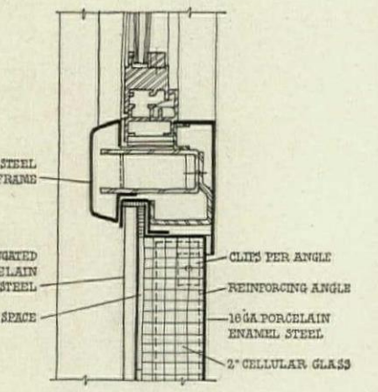
L. S. Williams

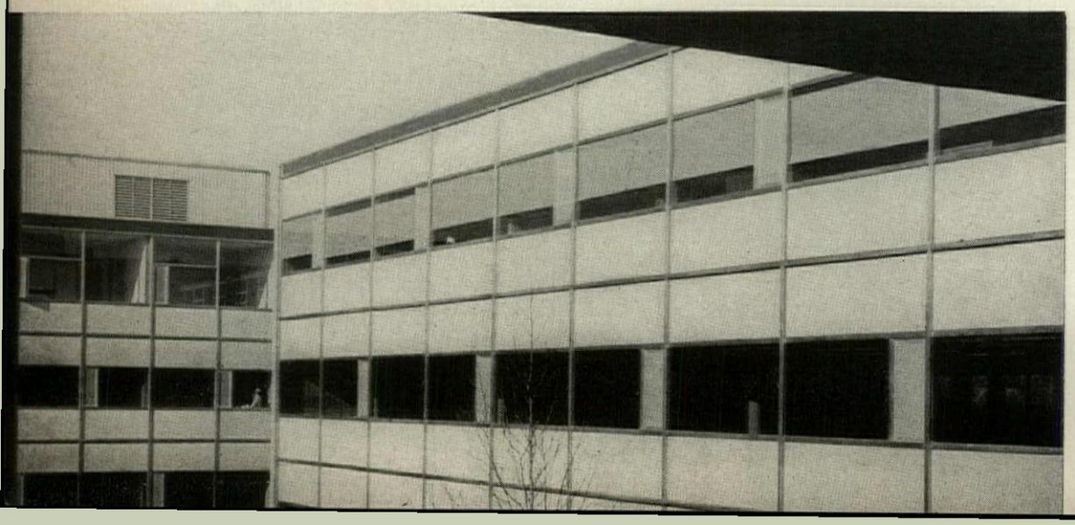


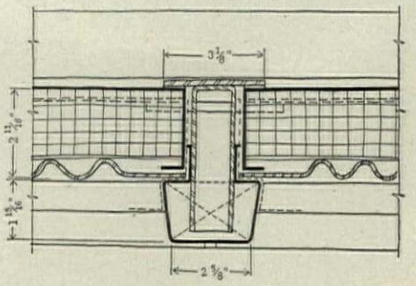
5. RCA VICTOR OFFICES, CAMDEN

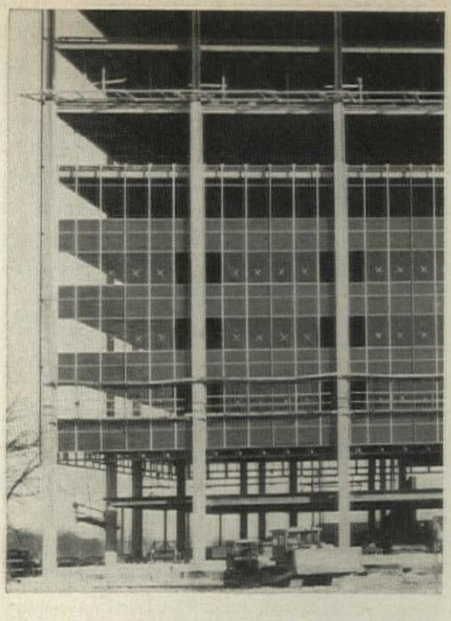
Corrugated enameled steel forms the exterior faces on 30,000 sq. ft. of curtain wall panels at RCA Victor's new lift-slab built office buildings. Set in 7′-10" x 3′-3" panels, the ½"-deep corrugations eliminate oil-canning and, from a distance, appear perfectly flat. Behind the 18-ga. facing is a ⅛" venting space (kept open by vinyl spacers) and 2" rigid, moisture-resistant foamed glass insulation bonded to a 16-ga. enameled steel interior skin. A ¼" horizontal space beneath each face allows condensation to drain off.

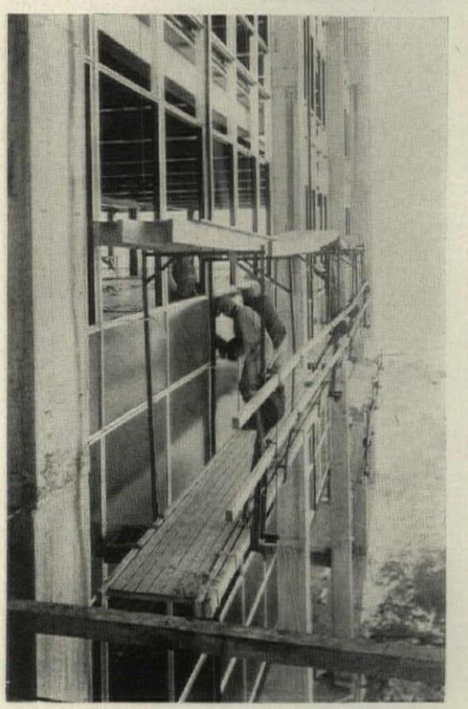
Set with calking in a stainless-steel supporting frame, the panels are 2½" thick, weigh 6½ psf, have a "U"-value of 0.15 and cost about $3 per sq. ft. before erection. Architect: Vincent G. Kling. Fabricator: Ingram-Richardson Manufacturing Co.











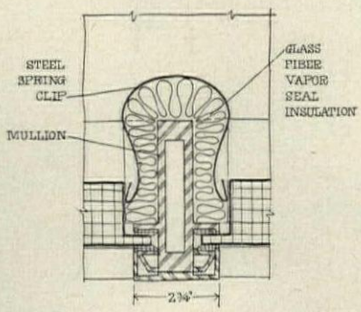
MacGreggor & Co.

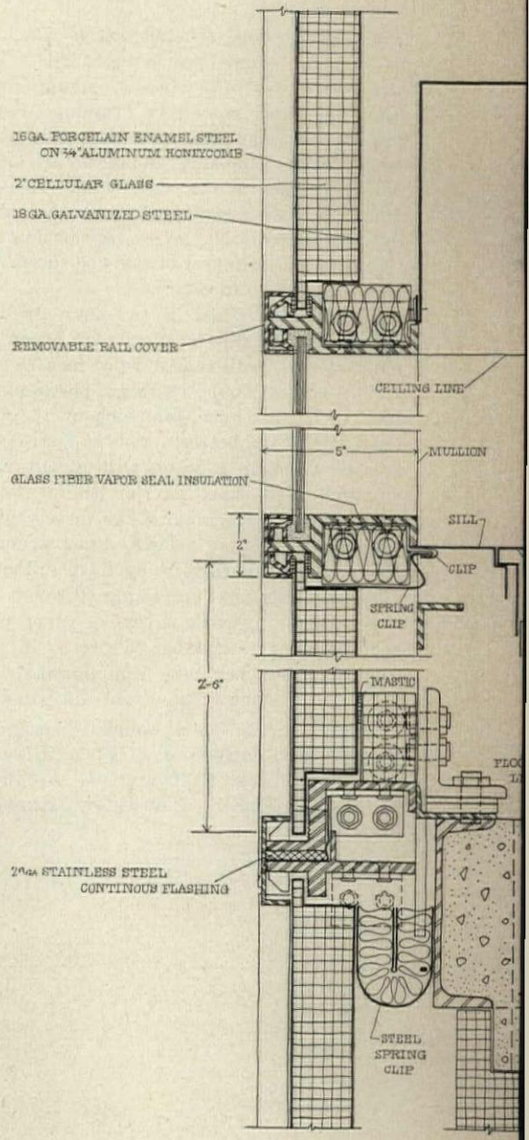
6.

FORD CENTRAL STAFF BUILDING, DEARBORN

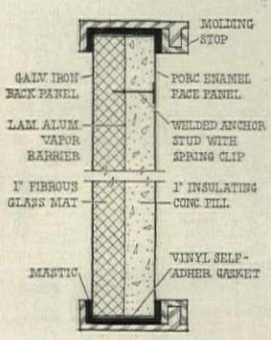
One of the most durable curtain walls ever built is being erected at Ford's new 12-story offices. The 16-ga. blue-green enameled steel face of these 4½′ x 3¾′ panels is bonded to ¼″ aluminum honeycomb for absolute flatness, backed by 24-ga. galvanized steel, 2″ foamed glass insulation and an 18-ga. galvanized steel interior skin, all laminated together to form a composite wall panel. Metal-to-metal contact at the edges of panels is avoided by butyl rubber gaskets.

Set in aluminum window frames with neoprene rubber gaskets, the panels are 2⅝″ thick, weigh 7½ psf, have a "U"-value of 0.15 and cost about $4.25 before erection. Architects: Skidmore, Owings & Merrill. Fabricator: Ingram-Richardson Manufacturing Co.



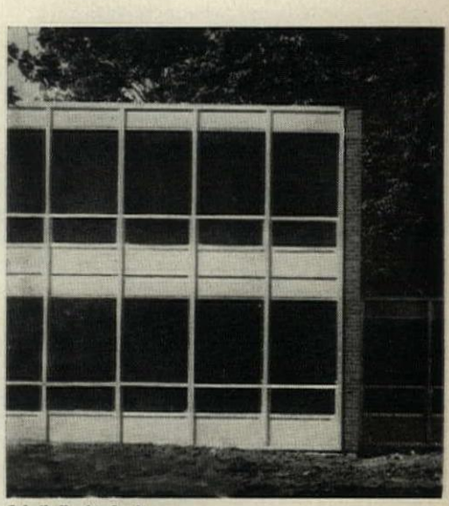


7. COUNTY COURT HOUSE, LAKE CITY, MICH.

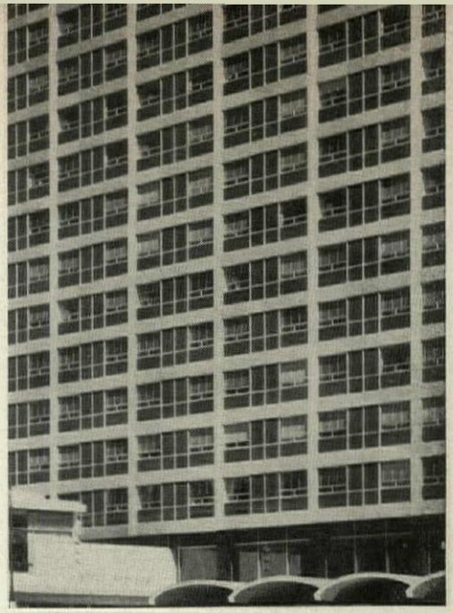


The gray-green wall panels shown in the photo contain 2″ rigid fibrous glass boards held by copper-coated nails and spring clips to a 16-ga. enameled steel face and are erected with vinyl gaskets and calking. No back face is used since the insulation is enclosed by room convectors. The wall weighs 3 psf, claims a "U"-value of 0.12 and costs $3.50 per sq. ft., erected.

A later, more rigid panel shown in the section at left contains 1″ insulating concrete laminated to the enameled steel face, backed with aluminum foil, 1″ fibrous glass and a galvanized steel inner face. This construction weighs 9 psf and has "U"-value of 0.16. Architect: Gordon Cornwall. Fabricator: Erie Enameling Co.



Scheibel's Art Studio



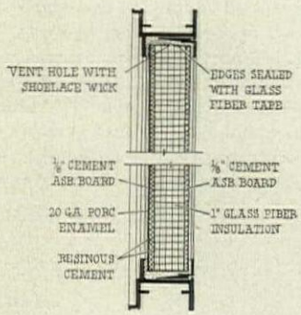
Don Morgan

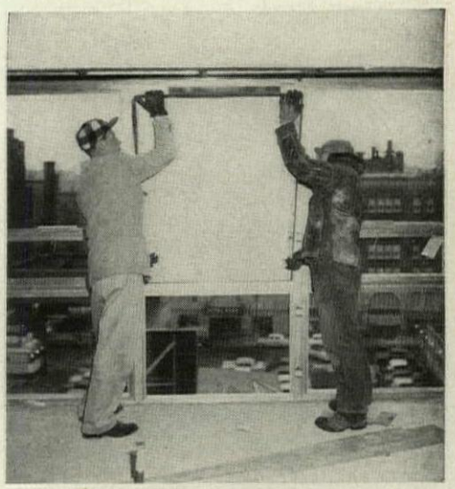
8. HOTEL STATLER, HARTFORD

This curtain wall construction is composed of porcelain enamel panels up to 2½′ x 7′ in size and a 4′-3″ x 7′ window opening set in aluminum sash secondary framing. Panels are clipped to the aluminum frame and sealed with calking compound. Windows are locked but are hinged at the top for easy cleaning from inside the building. A 14″-high venting light is immediately above the window sill. Columns and spandrel beams are faced with striated aluminum covers.

Designed to resist a two-hour fire test (though originally forming part of an all-glass window wall that did not require such rigid specifications), the 18-ga. porcelainized steel is backed by a sandwich of 1″ glass-fiber insulation between two ⅛″ stiffening boards of cement asbestos with a continuous aluminum foil vapor barrier behind the insulating fiber. Each panel has three venting holes at the top to relieve vapor pressure, the vents being formed by 3/16″-diameter "shoelace" strings projecting through the mastic. They prevent excessive vapor pressure build-up (estimated to rise as high as 200 psi in summer sun) that might delaminate the enameled face from the panel.

Panels are 1⅜″ thick, weigh 5½ psf, have a guaranteed flatness of ± ⅛″, a "U"-value of 0.20, and cost $5.10 erected. Architect: William B. Tabler. Fabricator: Seaporcel Metals, Inc.

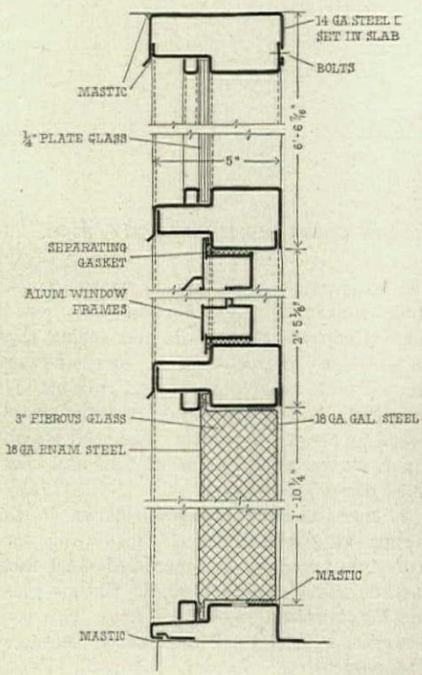


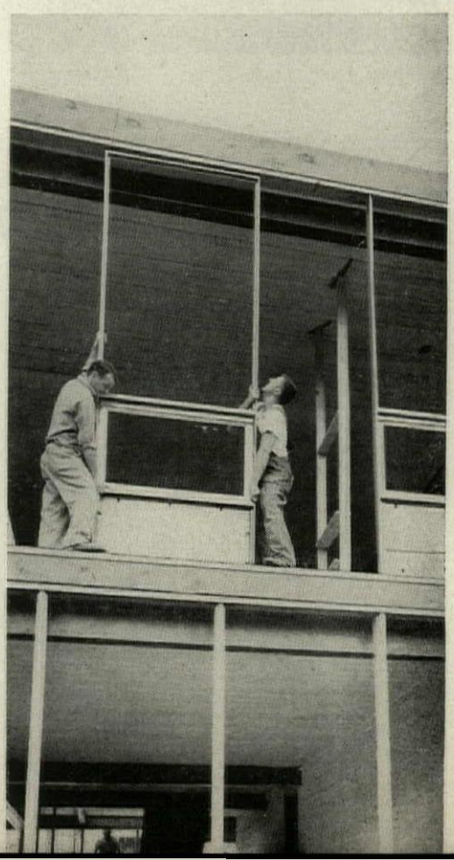


9. CHICAGO COLLEGE OF OPTOMETRY, CHICAGO

This is probably the first porcelain enamel curtain wall to be entirely prefabricated (except for the glazing), complete with integral mullions, insulated panels, ventilating and fixed sash. Each 4′ x 11′ welded steel frame, weighing 160 lb., is bolted to continuous steel strips set in the concrete slabs at top and bottom. The top strip is a 5′-wide, 2″-deep channel; at the bottom the front edge of the base of the frame fits over a steel clip and is bolted to the slab at the rear. Adjacent frames are joined by ingenious hook bolts that tighten front and rear cover strips over the vertical framing members, which thus double as mullions for the wall.

The 1′-10″ x 3′-9″ brick-red enameled panels are insulated with 3″ fibrous glass between two 18-ga. steel faces. They are 3¼″ thick, weigh 6 psf, have a "U"-value of 0.15 and cost about $4 per sq. ft. erected. Architects: Alexander H. and Warren E. Spitz. Fabricator: Knapp Brothers Manufacturing Co.





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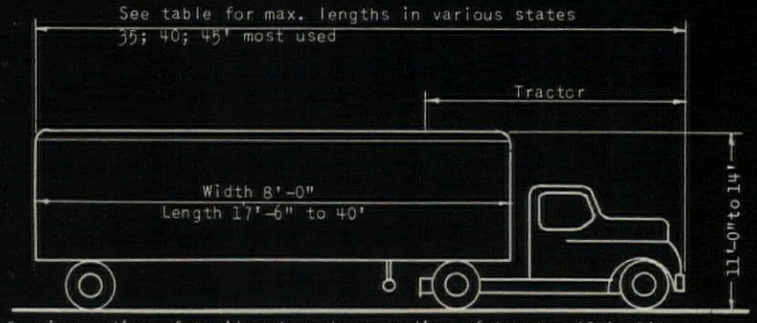
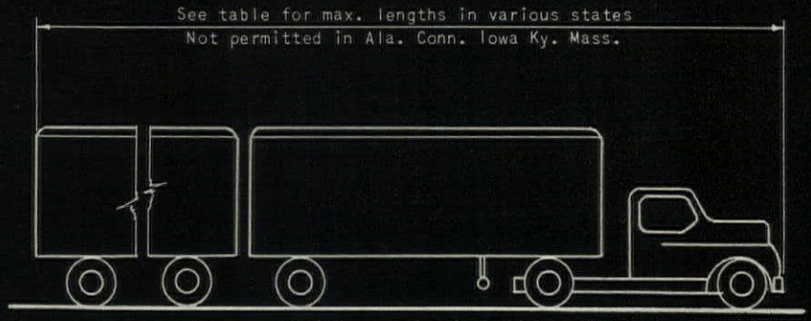
TRUCK LOADING—VEHICLE SIZES



Turning radius of trailer depends on radius of tractor (24'-43')

Max. Length	States
45'	Ala. Conn. Ga. Ill. Iowa. Ky. Me. Mass. Minn. Miss. Mo. N.D. N.H. N.J. Ohio Tenn. Tex. Va. W.Va.
48'	N.C.
50'	Ark.D.C. Del.Fla.Ind.Kans.La.Nebr. N.Y. Okla. Ore. R.I. S.C. S.D. Vt. Wisc.
55'	Md. Mich.
60'	Calif.Colo. Idaho.Mont.Utah.Wash.Wyo.
65'	Ariz. N.M. Nevada (no restriction)

SEMI-TRAILER & TRUCK TRACTOR

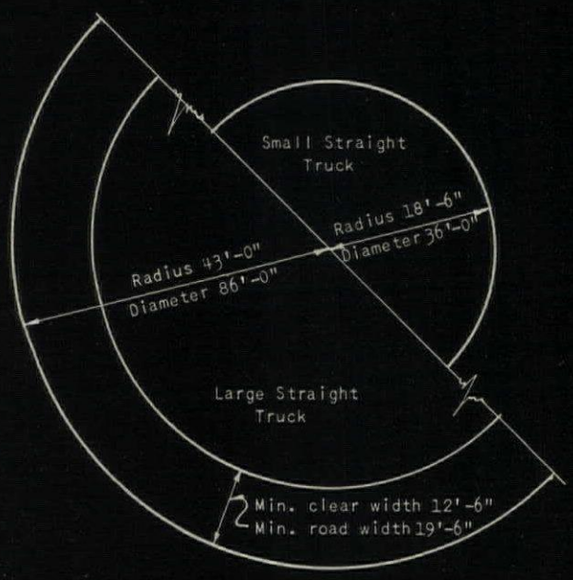


In many western states combinations of truck & full trailer and tractor semi-trailer & full trailer are used to full legal length.

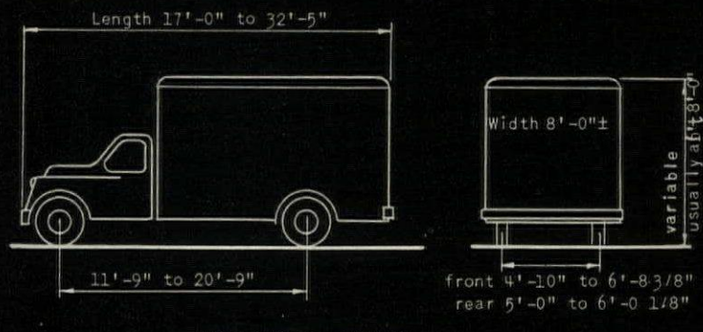
Max. Length	States
45'	Ga.Ill.Me.Minn.Miss.Mo.N.D. N.H. Tenn. Tex. Va. W.Va.
48'	N.C.
50'	Ark.D.C. Fla.Ind.Kans.Nebra.N.J. N.Y. Okla.Pa.R.I. S.C. S.D. Oreg.Vt.Wisc.
55'	Md. Mich.
60'	Calif. Colo. Del. La. Mont. Ohio. Wash. Wyo. Utah.
65'	Ariz.Idaho N.M. Nevada (no restriction)

FULL TRAILER SEMI-TRAILER & TRUCK TRACTOR

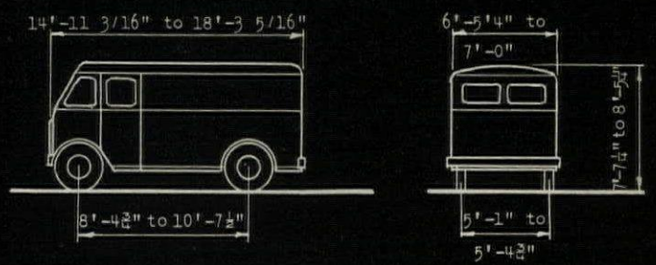
DATA CHECKED BY OPERATIONS COUNCIL, AMERICAN TRUCKING ASSOCIATIONS INC.



MOTOR TRUCK TURNING RADII



VAN TYPE TRUCK



DELIVERY TRUCK

DIMENSIONS OF MOTOR VEHICLES

architectural forum

DESIGN STANDARDS AND DATA

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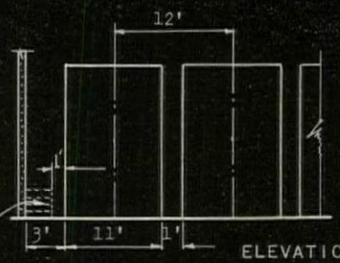
TRUCK LOADING—DOCKS

CLOSED MOTOR CARRIER DOCK

Outside Single Doors:

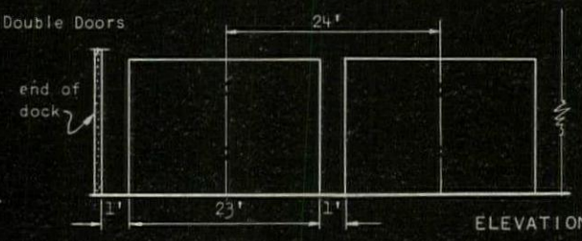
Space between end of building and first door opening where there are stairs inside at dock 3'. No stairs a min. of 1'.



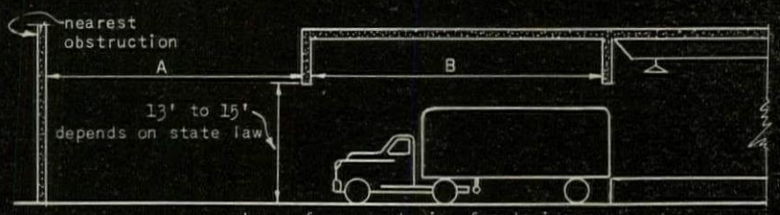
ELEVATION

Size of Vehicle	A clearance outside of bldg. includ. street	B clearance inside bldg.
50'	50'	55'
30'	30'	35'
25'	25'	30'

Double Doors



ELEVATION



slope of pavement min. for drainage

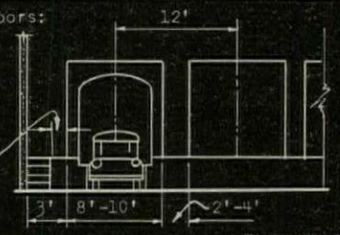
SECTION

NOTE: All doors electrically operated. Width of doors depends on construction material of piers

OPEN MOTOR CARRIER DOCK

Doors at Dock: Single Doors:

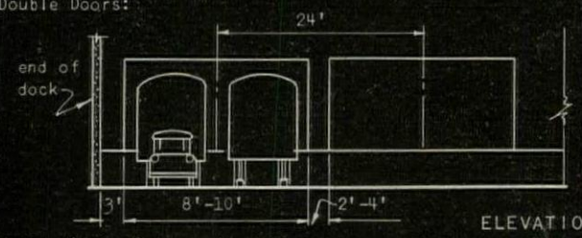
Space between end of bldg. & first door opening where there are no stairs min. 1'.



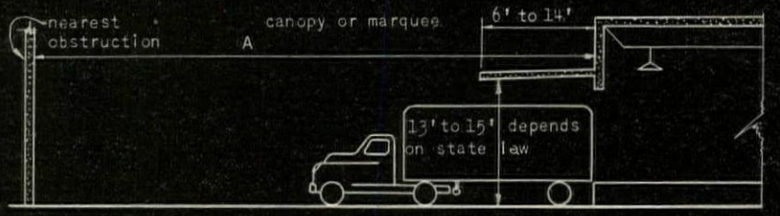
ELEVATION

Size of vehicle	A clearance from dock to nearest obstruction
50'	100'
30'	60'
25'	50'

Double Doors:



ELEVATION

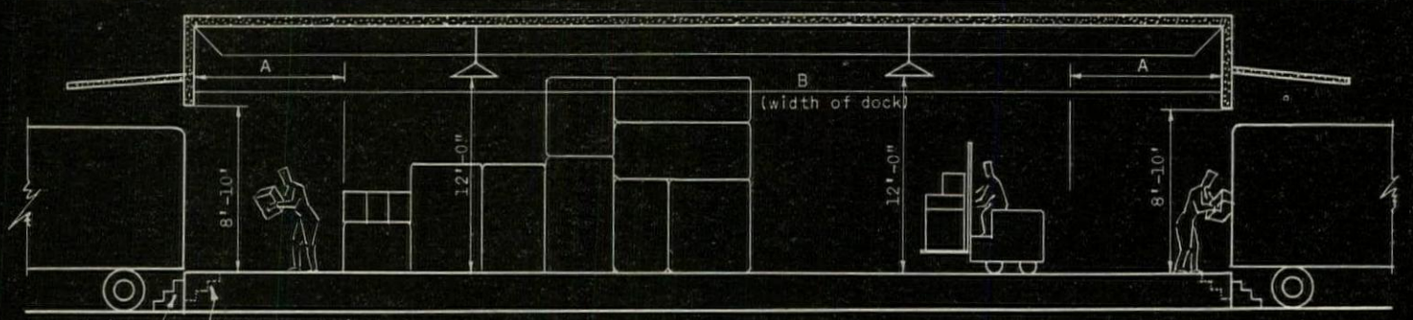


slope of pavement min. for drainage

SECTION

NOTE: Width of doors depends on construction material of dock piers.

MOTOR CARRIER DOCK CLEARANCES



open stairs (preferred) prevents injury to dock workers

Recessed stairs

SECTION

Size of vehicle	Platform height
50'	52"±
30'	48"±
25'	44"±

	2 wheeled hand truck operation	Fork lift truck oper.	4 wheeled hand truck operation	Drag line operation
A	6'	10'	10'	10'
B	50'	60'	70'	80'

NOTE: These dimensions same for all types of Motor Carrier Docks

DATA SUPPLIED BY OPERATIONS COUNCIL, AMERICAN TRUCKING ASSOCIATIONS INC.

architectural **forum**

DESIGN STANDARDS AND DATA

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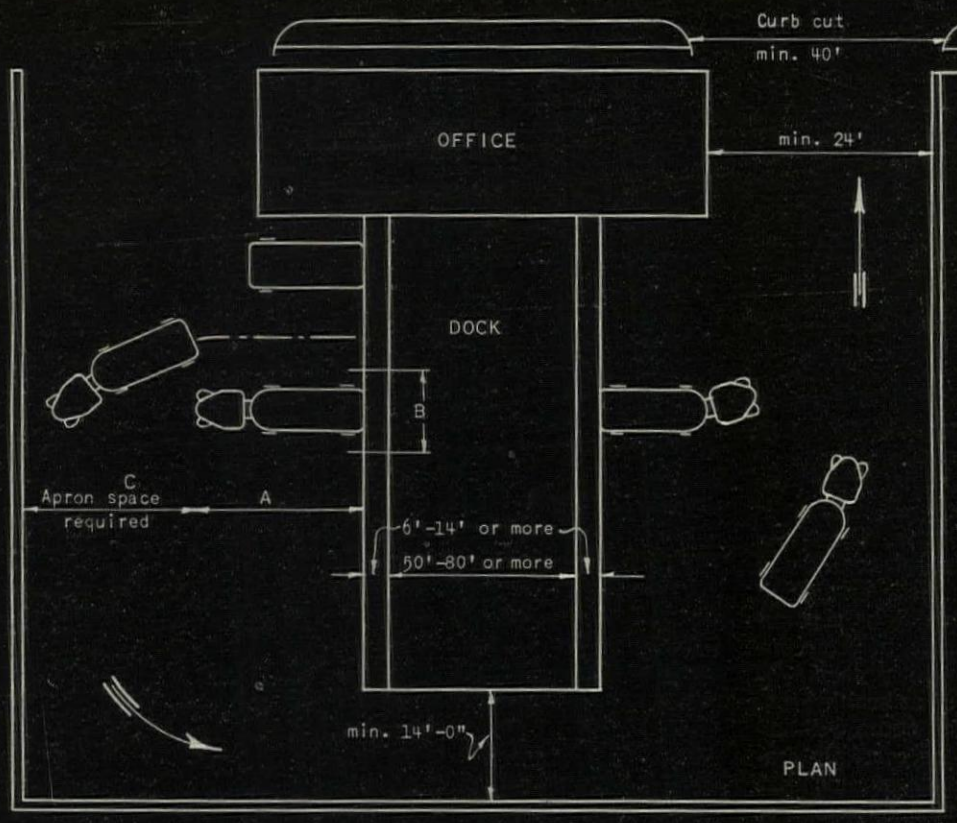
TRUCK LOADING—DETAILS



Curb cut: used to prevent accident on swing into yard or gate.

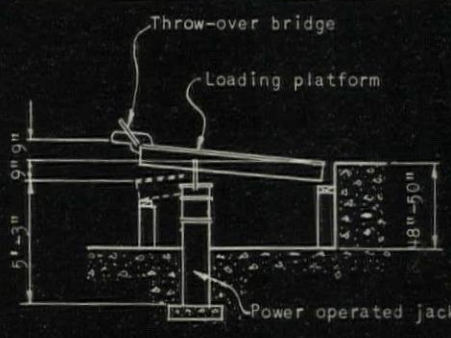
Traffic flow #1
Counter clockwise around dock, preferred since it permits backing from left (driver's side)

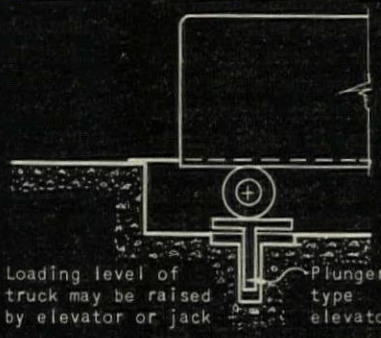
APRON SPACE REQUIRED for maneuver into or out of position for tractor trailer

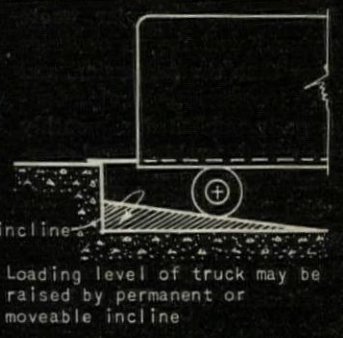
A	B	C
Tractor trailer length	Width of position	Apron space required
35'	10' 12' 14'	46' 43' 39'
40'	10' 12' 14'	48' 44' 42'
45'	10' 12' 14'	57' 49' 48'

LOADING OF MOTOR VEHICLES

DATA SUPPLIED BY OPERATIONS COUNCIL. AMERICAN TRUCKING ASSOCIATIONS INC.







Loading levels of trailer ("L") variable from 44" to 50" (48" to 54" for heavy-duty units). For van-type trucks 42" to 46" (44" to 46" average). For delivery trucks 25" to 31"

LOADING DOCK LEVELING DEVICES

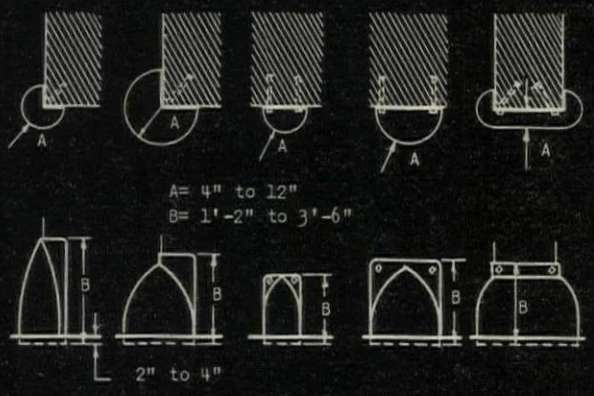
SECTIONS

DATA CHECKED BY OPERATIONS COUNCIL AMERICAN TRUCKING ASSOCIATIONS INC.

Used for protection of door jams, walls, and corners. May be combined with corners & col. guards.

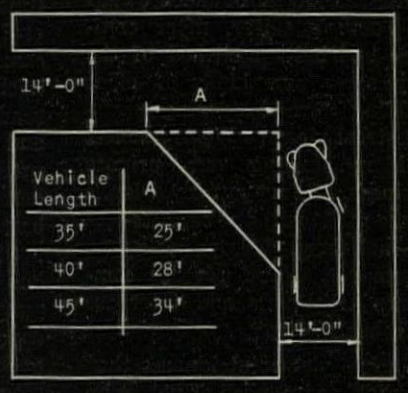
Usually made of cast iron, ¼" min. thickness. For heavy traffic, thicker metal is required.

Other patterns available. Sizes given are made by most manufacturers, though given pattern may vary.



WHEEL GUARDS

DATA FROM "ARCHITECTURAL METAL HANDBOOK" BY PERMISSION OF THE NATIONAL ASSOCIATION ARCHITECTURAL METAL MFRS.



TURNING CLEARANCE FOR INSIDE DRIVEWAY

for all concerned

LET'S HAVE ARCHITECTURAL CRITICISM

It is high time that free architectural criticism spread a little.

Criticism of buildings, as a regular feature like the criticism of books, plays, concerts, movies, records, telecasts, art shows, would double the joy of the public in its buildings and would give architects something they sorely miss—a sense of audience. Currently the only building reviews that appear with any regularity are those of Lewis Mumford in *The New Yorker*. So great is this critic's ability and so exclusive his monopoly won by courage, that many an educated person thinks he has explored the full world of modern architecture in exploring Mr. Mumford.

The reason there is not more criticism is not lack of interest; on the contrary, interest is lessened for lack of more criticism. In the lustier nineties, Critic Montgomery Schuyler wrote freely and well for an audience broader than the profession, and one of the architectural magazines gaily published a monthly page entitled "architectural aberrations." The result: more people had fun with architecture because more understood it.

No need to explain here just how criticism in the US died, but let's do away with the chief alibi for timidity now. The notion has spread that building owners, unlike book publishers, art dealers or theatrical producers, are immune against comment not favorable. Said an offended owner to FORUM's editor, after criticism had been published of the way some new kinds of office building were destroying pleasant street views: "We are honest builders tending our private business. We are out for a legitimate profit and our tenants like us—ask them. We are not out to create art. Your adverse comments belittle us and interfere with our rights."

Such a viewpoint ignores that building, so intended or not, is an act that takes place in public. It is not a wholly private affair. The public is the builder's and architect's captive audience. Escape is possible from a bad play by simply walking out or choosing not to walk in; but an ugly structure across the street from one's home or office is a sight virtually unavoidable.

In legal terms, the US Supreme Court has decided in an important recent redevelopment case (AF, Dec. '54, p. 41) that "the concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, esthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully controlled." No statement could more forcefully imbue architecture, of all arts, with public interest, or give stronger sanction to architectural criticism, free and open, vigorous and detailed, as an instrument of public policy.

The deeper reason for open criticism is, however, more positive than the mere disapproval of aberrations. In order even to appreciate what is good, we must be able also to discern what is not so good or misconceived altogether. A self-imposed caution has led US architectural editors to avoid the painfulness of dispraise: simply omitting bad buildings, ignoring poor features of good ones; damning by faint praise, or else standing aside and "letting the reader judge." There is a tendency to let enthusiasm for architecture in general express itself in specific cases: but, alas, enthusiasm itself is discounted by skeptical readers if they find nothing else, and injustice is thereby done to precisely the best buildings, the best clients, the best architects, best builders, and best engineers.

Once a more explicit course has been decided on, there are many kinds of criticism, many aspects of it. No resounding articles or manifestoes can replace day-by-day analysis of specific jobs in furthering the cause of architecture and of the architect seeking the best.

RUSSIA'S ARCHITECTURAL TURNABOUT

Architectural news is also coming out of Russia these days. TIME reported some weeks ago (Jan. 10, '55) how the heads of the Academy had been put on the griddle. Ever since 1934, a Roman traditionalism had been decreed from the top (neoclassicism had long been strong in western Russia) and its pomp prettied up for the masses. Modernism was forbidden. Western architecture was excoriated for being "arid" and "mechanical," and aggressive criticism of it was exported beyond the USSR to countries such as Japan. Moscow's own crowning glory was a series of new towers which FORUM compared a year ago with our ornate Woolworth building, and might better yet have described as assemblies of Wrigley buildings (AF, March '54). Yet even Moscow had to discover eventually that any architecture must live in its own times, and a world power cannot be simultaneously efficient and wilfully archaic. The graybeards were asked embarrassing questions about unit costs and production schedules, and being unable to answer, were pushed aside.

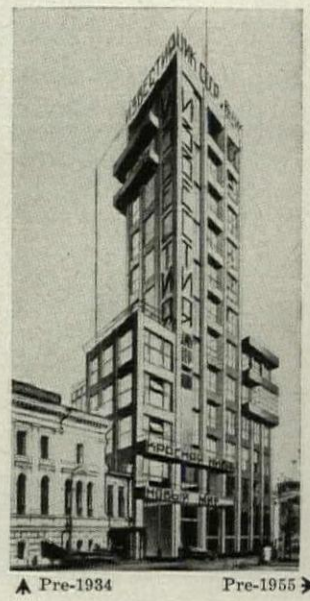
Now it seems that the younger Russians have been secretly learning from their Western enemy. Under new command, modern prefabrication is being pushed full force, not only for houses but for apartments, offices, factories—buildings in general (see *News*). Though techniques may be primitive compared to ours, they are adapted to Russian resources, and Russian production will step up.

Architecturally, it is clear only that the swing will be full circle away from exuberant traditional decoration. Since Russia does nothing by halves, it is likely that standardized uniformity will be pursued with a vengeance, just as functionalism was pre-1934, when the Russian variety was of all varieties the most starkly utilitarian.

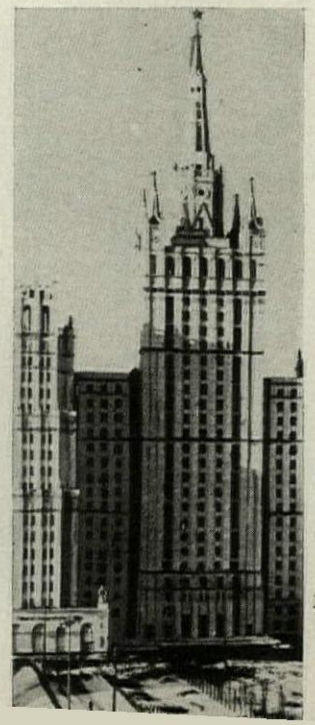
The Russians, following in the tracks of that West which they affect to despise, must now hitch back through that early phase of standardization which US architects have since outgrown, a standardization we now seek to enhance, individualize. Whatever the politics of a country may be, there seem to be certain necessary steps in the process of industrialization.

Meanwhile there is one Russian propaganda boast to which the US building industry should pay serious attention. They say that their collective processes enable them to compose their cities as a whole into a more agreeable and beautiful "city picture." This may be true, though the methods are questionable. We may like our own growth to be more spontaneous, less regimented. Yet the time has come when our cities must deal with large land parcels, not only with individual buildings; so the challenge is doubly before us to achieve order and beauty at larger scale, the scale that was sought in our own historic "city beautiful" movement. And we must do this by our own cooperative methods.

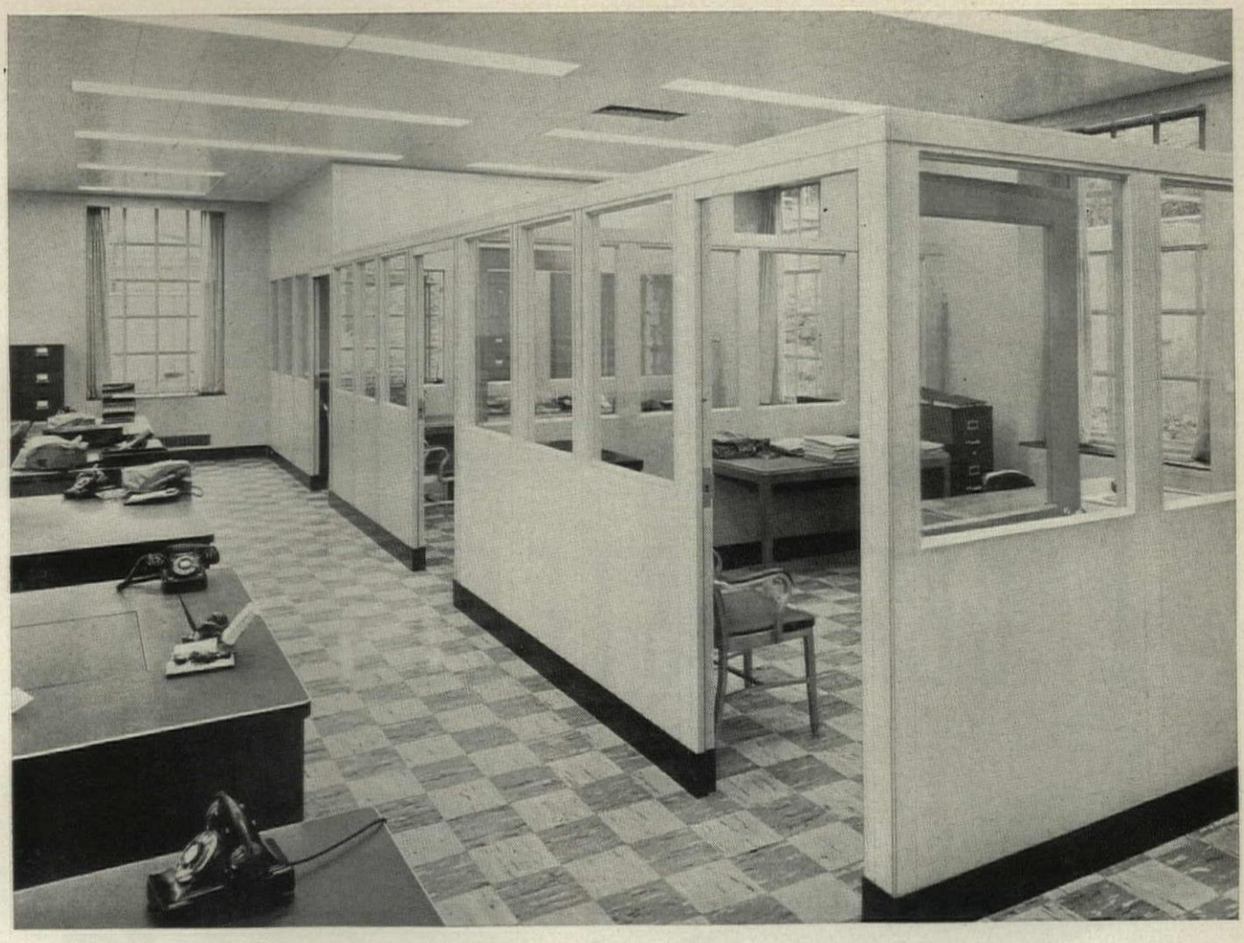
Douglas Haskell



▲ Pre-1934 Pre-1955 ➤



Post-195



Firemen's Mutual Insurance Company, Providence, R. I. Cram & Ferguson, Architects Gilbane Building Co., Inc., Builders

Mills Movable Walls provide space control, insure efficiency at Firemen's Mutual

Firemen's Mutual Insurance Company was founded in 1854. It is only natural that this organization with more than a century of know-how and experience back of it would provide for *constant* efficiency in the lay-out of space in its new headquarters. All of the building's interior walls are Mills Movable Metal Walls.

Mills Walls promote efficiency — both present and future. They enable you to get maximum productivity through the most effective use of space. When changes in space requirements make new layouts advisable, these walls can be taken down, moved and re-erected quickly and easily, with a minimum of labor and at very low cost. Changes can usually be completely made overnight or during a week end.

As modern and attractive as they are efficient, Mills Walls combine this complete flexibility with distinctive architectural design and structural stability. They are thoroughly insulated and sound-proofed and provide easily accessible lay-in raceways for electrical wiring and controls.

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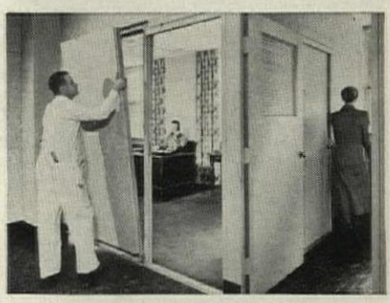
THE MILLS COMPANY
914 Wayside Road, Cleveland 10, Ohio



Mills Walls can often be moved in a matter of hours — without dust, debris, commotion or interruption of normal business routine.

Write for the new 68-page Mills Catalog or see it in Sweet's Architectural File.



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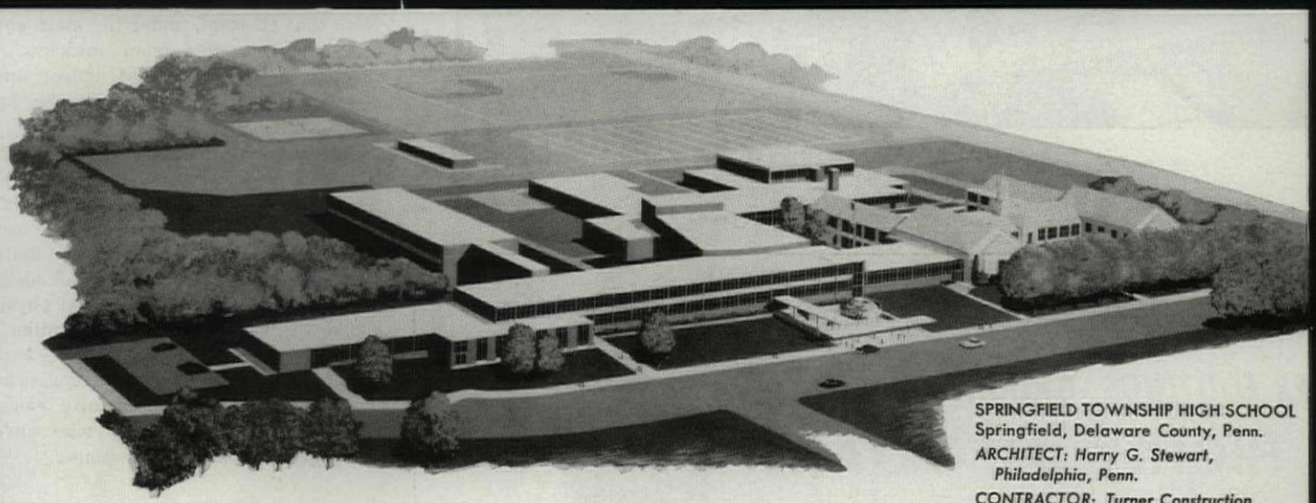
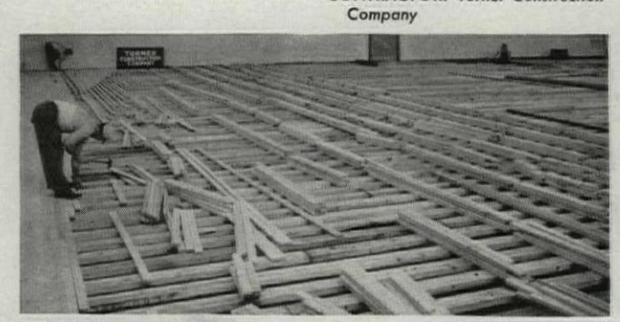
Monsanto Penta Protects Wood, Insures Permanence

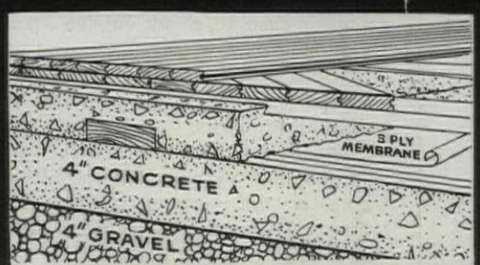


SPRINGFIELD TOWNSHIP HIGH SCHOOL
Springfield, Delaware County, Penn.
ARCHITECT: Harry G. Stewart, Philadelphia, Penn.
CONTRACTOR: *Turner Construction Company*

WOOD SUBFLOORING FOR THE GYMNASIUM in this new school was pressure-treated with Penta, before installation. Result: a clean wood floor protected against decay and insect attack. These natural enemies of wood are at work in every region of the U. S.! Penta protects wood best because it hits *deep*, repels insects and resists decay, stays locked in wood for years. Penta treatment multiplies the service life of exposed wood up to 4 times! That means longer building life, lower maintenance cost, greater client satisfaction with the buildings you design and build. For informative, FREE booklet on Penta and a list of 75 Penta pressure-treating plants in the U. S., mail coupon below.



CLEAN, ODORLESS, EASY TO HANDLE. Penta pressure-treated wood is clean, can't "burn" hands or stain clothing because Penta won't bleed or leach out of wood. Ideal for indoor application, Penta-treated wood can also be painted, if specified.



ARCHITECTS AND BUILDERS have discovered that versatile Penta can solve countless construction problems. For instance: when wood screeds are pressure-treated with Penta, they are protected from decay caused by absorption of moisture from on or below grade concrete. Result: Penta-protected screeds provide extra-long life for the gymnasium floor diagrammed above.

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Walter Daran

HOSPITAL

Continued from p. 153

facilities on the lower level, indoors and out, will be used mainly by children, young people and rehabilitation patients during the day, by adults in the evening. The kitchen doubles as a nutrition demonstration room. Note that showers, under the main entrance link, are accessible from outdoors. When the nursing unit is added, indoor and outdoor community facilities will also be used by convalescents.

Although the center will be only half a mile from Hebrew University's 465-bed teaching hospital, the planners determined on a future nursing wing for all ordinary local hospital cases—especially maternity and pediatrics. This will keep all such cases under the care of their personal physicians, house them close to their families, take local convalescents out of expensive teaching-hospital beds and make the transition between hospital and community easier for veterans or other patients who have had prolonged care away from home.

Beth Mazmiel's other roles:

Medical teaching unit: how do medical students in a big teaching hospital learn to deal with the common cold, measles, bunions?

Answer: teaching hospitals must usually keep on tap a small reservoir of ailments that ordinarily never get near a hospital—an artificiality that has begun to seem absurd in both economic and human terms.

How do medical students learn about community practice? How do they learn about health problems rooted in the community itself?

Answer: they seldom do—an educational omission that has begun to disturb many medical schools.

Like New Jersey's Hunterdon (affiliated with NYU-Bellevue), Beth Mazmiel and its staff will help fill these teaching gaps. It is affiliated with Hebrew University Medical School, whose new $12 million medical center is soon to go up outside Jerusalem. Rotating groups of about 15 students will work and study in the center and will also accompany staff members on home care and public health visits.

Note the lack of special student facilities. The student's place is "at the elbows" of the center staff. Community life, not dormitory or classroom life, is to be his preoccupation.

Town planning device: Beth Mazmiel is an urban workers' suburb of Jerusalem. It is also a mushroom development, made up mostly of recent immigrants from the Balkans and Africa, resettled as fast as housing could go up. Ultimate population will be about 10,000.

Like mushroom developments on the outskirts of US cities (and like many an older dormitory town, too, for that matter), Beth Mazmiel has lacked community focus.

Obviously this center, set in a park near the center of town and combining as it does

continued on p. 186

PROPER DENSITY of SOILS
UNDER FOOTINGS, GROUND FLOORS, etc.
***is* HIGHLY IMPORTANT!**



and leading architects and engineers in constantly increasing numbers are including required densities in their specifications.

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are available to contractors on either a purchase or rental basis from equipment dealers throughout the nation. Specify their use on your next project. It's good assurance that your requirements will be met quickly and thoroughly. Fully descriptive literature gladly sent on request.

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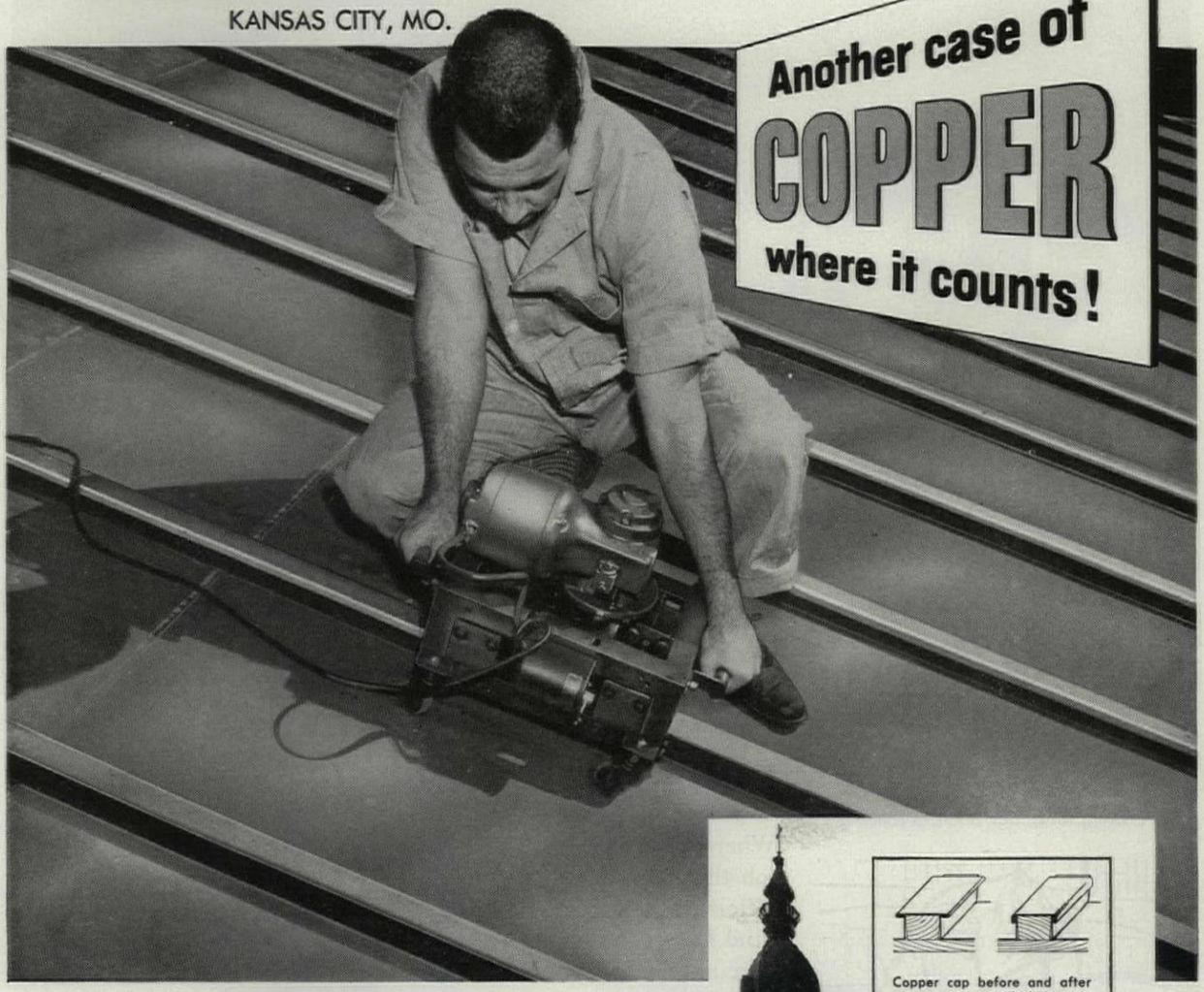
CATHEDRAL OF THE

IMMACULATE CONCEPTION

KANSAS CITY, MO.



In applying copper, the most ancient of metals to this cathedral roof the most modern roofing methods were used by the sheet metal contractor, A. Zahner & Company. The machine you see above was developed by this Company to form the last fold of the copper cap over the battens. Not only does it do the forming more neatly but, according to the contractor, it does this job 10 times faster than would be possible with hand tools!

When it became necessary to replace the deteriorated non-metallic roof on this cathedral there were two important factors to consider: 1—The new material had to be much lighter than the old material which would have been excessive for the 73-year-old cathedral. 2—The new roofing material had to endure for scores of years.

That's why copper was chosen. Copper roofing over the same area weighed only 1/5th of that of the old material and the superior wearing qualities of copper have been proved over the centuries. Also, copper does not rust, rot, chip or deteriorate. Its flexibility in architectural design is unlimited. In addition, a copper roof adds quality and distinction to the overall appearance of edifices such as this. And, because it is so readily worked and soldered, sheet metal men prefer to work with it. In fact, no other metal or alloy has all of the desirable construction characteristics of copper.

Next time you write specs. remember: there is no "OR EQUAL" for copper for flashing, roofs, gutters, downspouts, valleys and coping covers. Write us today about the money-saving advantages of Revere Keystone Thru-Wall Flashings.* And, if you have technical problems, we will put you in touch with Revere's Technical Advisory Service.

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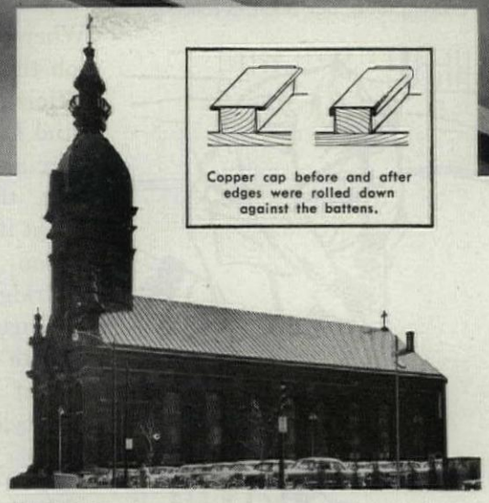

Copper cap before and after edges were rolled down against the battens.

19,200 LBS., of enduring Revere 20 oz. Cold Rolled Sheet Copper replaced a deteriorated, non-metallic roof on this Cathedral. The batten seam type of construction was used. Dome, steeple and gutter system also are of enduring Copper.

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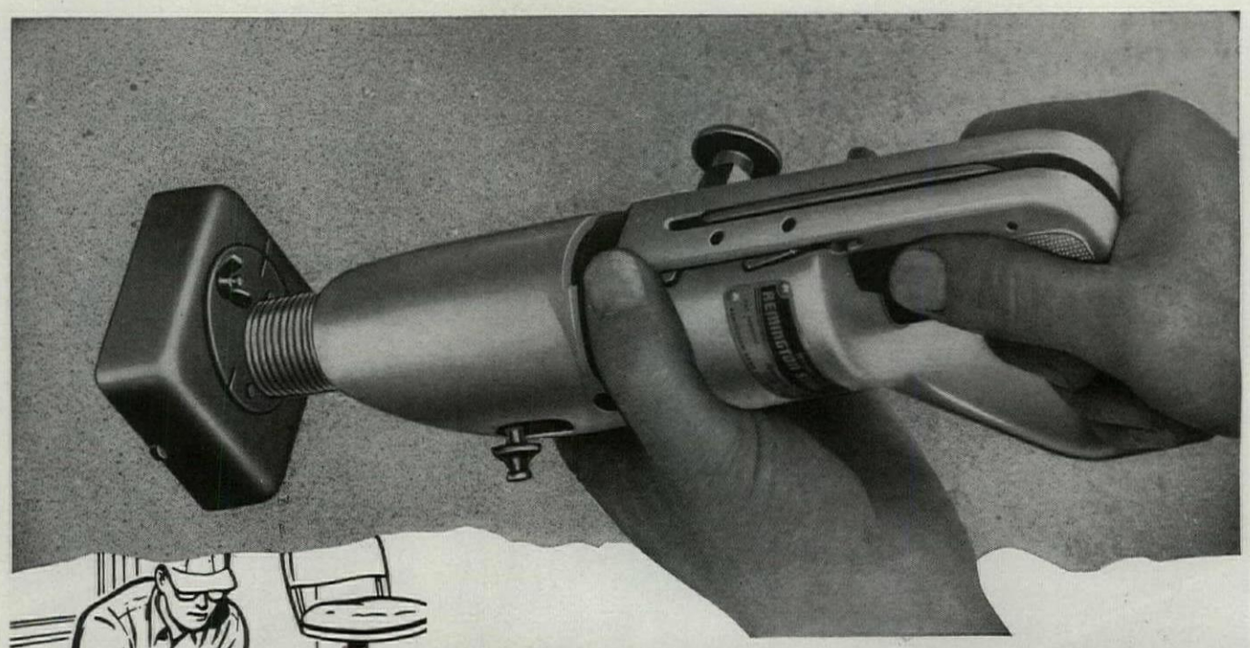



Anchoring seats, bar stools to concrete



2" x 4" plates to concrete floor



Carpet gripper anchored to concrete

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saves up to 80% fastening costs on "special" jobs

When it's an unusual fastening job that has to be done quickly, efficiently—let the Remington Stud Driver take over. There are special guards, interchangeable with the standard guard, that adapt it for practically any application. And the Stud Driver's cartridge-powered action enables one man to set up to 5 studs a minute—a saving in time and labor of approximately 80% over old-style methods.

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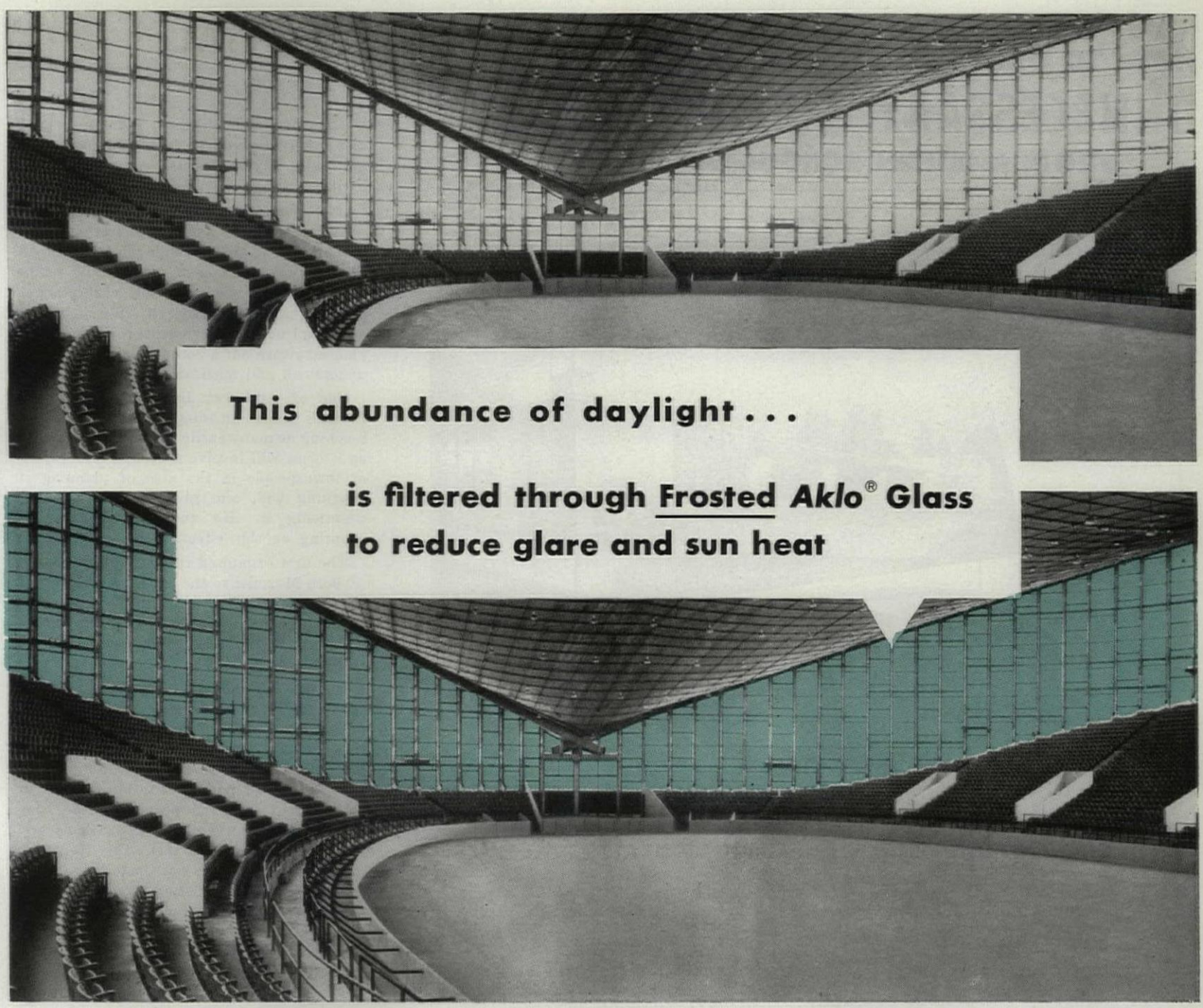

This abundance of daylight . . .

is filtered through Frosted *Aklo*® Glass to reduce glare and sun heat

Wm. Henley Deitrick, architect; Matthew Nowicki, consultant; Severud-Elstad-Krueger, consulting engineer.

This is one of America's outstanding buildings . . . the prize-winning North Carolina State Fair Arena. In it, the architects and engineers employed two design features that produce eye-comfort daylighting:

1. A large expanse of glass that eliminates the glaring effect of contrasting opaque walls and "hole-in-wall" windows.
2. A filter of blue-green Frosted *Aklo* Glass.

Frosted *Aklo* Glass softens and diffuses direct sunlight, sky brightness and dazzling reflections. It cuts down sun heat. Used in ¼" thickness, it shuts out as much as 44% of the sun's radiant energy. And it's a restful color . . . a "cool" color.

Aklo is widely used in factories, offices and many other buildings. Better selling, greater comfort for occupants . . . better workmanship . . . better employe relations are all worth-while benefits.



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

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HOW TO OMIT TALL, UNSIGHTLY, UNNECESSARY CHIMNEYS
FROM MODERN SCHOOL DESIGN



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Architects find that "blending" a tall chimney into a low, modern, functional school design is an unworthy compromise. Actually such compromise is unnecessary, for there is no need today for an unsightly chimney. Wing Motorized Draft Inducers provide positive, uniform adequate draft for boilers or furnaces . . . completely independent of weather conditions. In addition, they save money through higher fuel burning efficiencies. Easily installed in the flue or breeching, Wing Draft Inducers require only enough chimney to vent the exhaust gases. Write for bulletin and special information on school applications.

In confirmation of the above, there are over 500 Wing Draft Inducer installations in schools alone, in all parts of the country, with hundreds more being specified by architects and engineers as the great school building program continues.

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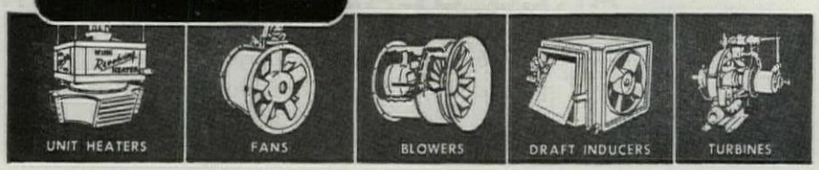


HOSPITAL

Continued from p. 182

the doctor, public library, swimming pool, and other community facilities, makes an admirable physical focus.

But—and this is the reason for the frustration of most town planners—working out physical solutions is the easiest part of planning. The really tough job is to get an effective cross-section of townspeople thinking in terms of town problems, caring about planning and supporting it. Without this, even a miraculously shoved-through physical plan may turn out a hothouse, unstable, misunderstood and misused thing.

One of Architect Joseph Neufeld's pet theories is that an integrated health center, touching as many easily understood interests as it does, will involve a broad cross-section of townspeople in the *idea* of planning if anything will, and give them a start at practicing it. He and his clients were counting on this effect.

The first organized response of the people of Beth Mazmiel to the proposed center was a request, put dramatically: "What is the use of trying to keep us well, if we break our necks in the dark? What we need most is electricity!"

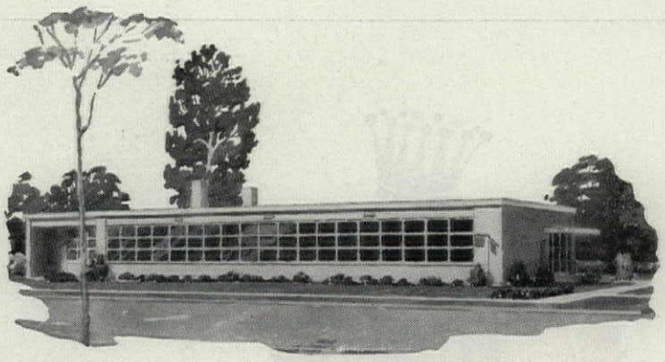
Instead of bridling at this "ingratitude," the women of the sponsoring Hadassah organization were wise enough to see 1) that the townspeople were right, they did need electricity more than a center; and 2) that the center had already started on the job: it had gathered people together and stirred up a sense of town problems and town purpose. Since then, the Hadassah medical organization has installed a pilot operation in an existing house, pending completion of the new building. Just as was hoped, a cross-section of community representatives is gradually becoming responsibly involved with operating and planning policy.

To appreciate this achievement, visualize the same thing happening in a demoralized and run-down US mining town, or a big city slum where people have developed a hopeless and calloused feeling about their environment. Beth Mazmiel is neither a mining town nor slum, but it has no visual amenities, and years of oppression followed by life in refugee camps had given its population much the same psychological attitude toward environment.

Research unit: a center like this, serving entire families continuously over the years, offers a wonderful opportunity for compiling and correlating social statistics. In the US, medical people and social scientists are avid for such family or community material; as a result, in the few places where records with either a community sweep or family continuity can be made, statistical work is often supported by foundations. Beth Mazmiel, with its unusually complete preventive, curative and rehabilitation program, is an even choicer research pie. Under its biostatistical program, the staff will poke into all aspects of living conditions in the town and will gather and correlate data on good health too—a curiously unstudied subject.

Architect's Office proves the "MONEY" values...

"Engineering data shows heat loss is reduced approximately 18% by the use of *Thermopane**, thereby reducing the size of the heating system required and also gas bills."



the "HUMAN" values... of Thermopane insulating glass

"Abundant north light, a draft-free warm area near the north wall and a quiet building on a relatively busy thoroughfare are conditions the firm desired and met with the design used. We find the building almost completely free of outside noise of any sort, including wind."



These are the comments of Sanzenbacher, Morris & Taylor, Toledo architects and engineers, after more than a year in their new offices.

Measure *Thermopane's* value for its dollars-and-cents savings. Assess its intangibles . . . the better working conditions, the good will of employes. Then figure your next job both ways—with single glass and with *Thermopane* standard sizes. *Thermopane* is an investment that pays off during the life of the building. *®

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EXCERPTS

Continued from p. 143

but our profession should and will die unless we produce that which satisfies man's highest aspirations."

Aside from feasibility and desire, what may especially concern us at this time is the fundamental *need* for a spiritual and artistic revival due to conditions arising entirely outside the field of architecture. That we have reached a crisis in human affairs can no longer be questioned. The evolution of science in all fields and of our controls over the material world has been so swift as to seem a revolution. There has been no corresponding and compensating evolution in the psychological world, in understanding of the deeper needs of society; in human relations, personality traits and spiritual aptitudes; in ethics and in esthetics. The discrepancy creates a disturbing and dangerous situation.

Example: the H bomb. Here, man has gained new, vast controls over the very atoms of matter. Since he has gained no vast new controls over himself, he now faces the practical possibility of his annihilation.

To anyone who is aware of the power of modern weapons and who studies the present drift between nations, there must come, sooner or later, the realization that now is the time to revive devout service to a constructive, evolutionary and creative principle, to serve God as creator, not as destroyer. It is a time for great affirmative gestures. God knows in how many ways the service can be performed and the affirmations made; but we may note that nowhere does man's constructive bent show more simply, more clearly and more often than in his buildings. The architectural masterpieces of the ages are the affirmation that is absolutely silent and absolutely convincing. Fine buildings designed today still constitute a language that people in all parts of the world can understand. Sincere works of art are the best of propaganda because they are wordless and because they are true. For all who practice architecture, who are training for practice, or who are guiding those in training, a realization of the world situation might be the impetus for a renaissance as great, in its way, as the Renaissance of five centuries ago.

WHAT CHARACTERISTICS?

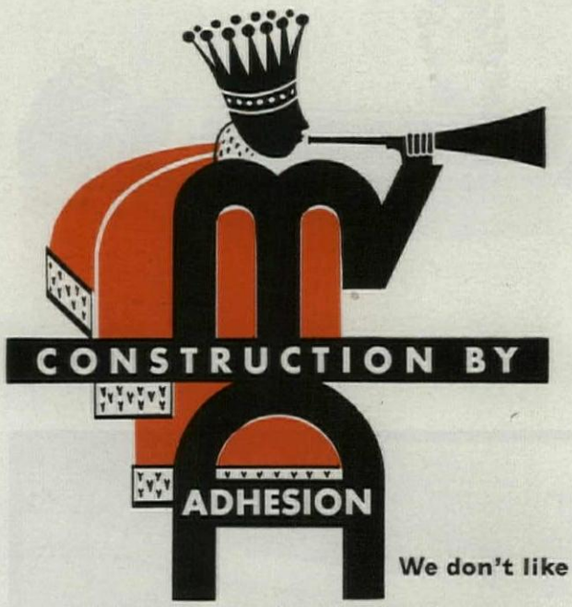
What would be the likely characteristics and particular objectives of an artistic revival at this time? One thing on which we can doubtless agree is a revival of close collaboration between architects and allied artists. Anyone familiar with submissions made to the Art Commission of New York City must know how often architects themselves have pressed for more commissions for painters and sculptors, often to be disappointed by official apathy or small budgets. But here we are speaking of even closer collaborations; the architect, for example, who gains from painters a livelier sense of composition and color in his own architectural efforts; from sculptors, a greater aptitude for handling three-dimensional form and three-dimensional space; from landscape architects, a sense of what may be called the building's four-dimensional environment, since time is the added element on which the landscape architect so wisely counts (and so many modern architects unwisely fail to count).

Brief mention may be made of four additional objectives:

▸ A better use of the word "function." Obviously, a building is not only an assemblage of its structural parts; to limit the concept of function to mechanical and structural functions has been a mistake of a serious order. Buildings are mainly to house and serve human beings who have *not* been recently deprived of their psychological functions. Factories that are overmechanized, city halls and capitols that do not express the integrity of a society, church designs that are not devout, houses that are not homes—these are not functional buildings.

▸ The designer's distinction between items subject to change and those not subject to change. Recall, for example, some building of marble, of the Doric order, erected near

continued on page 194



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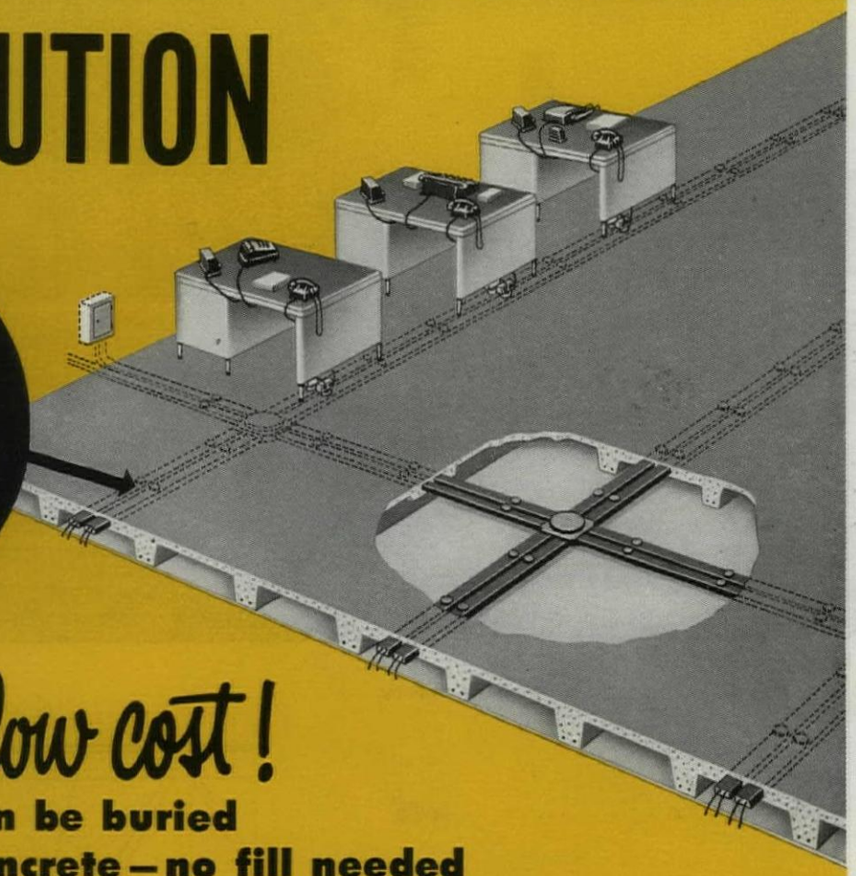

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Gentlemen:

Please send me a copy of your new bulletin on R/C Duct Floors.

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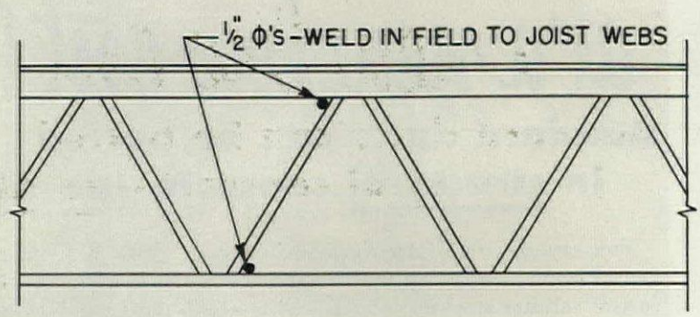
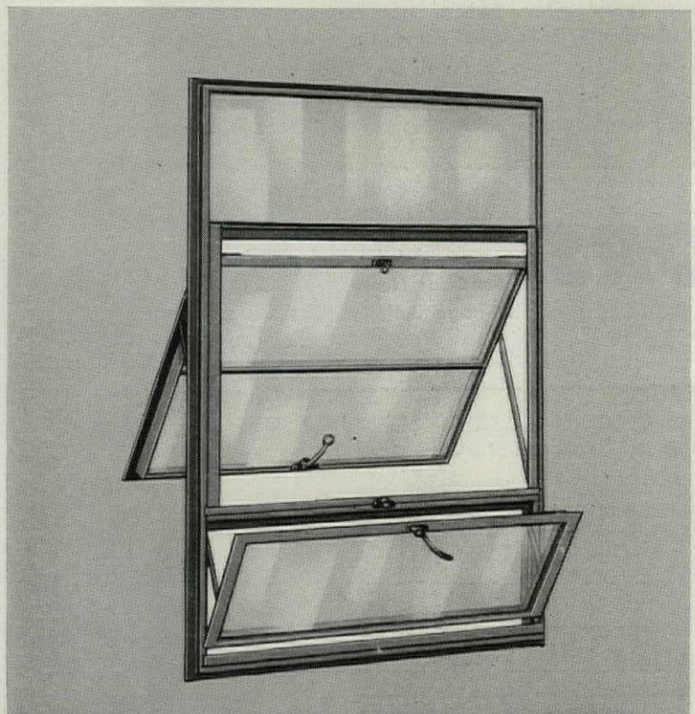
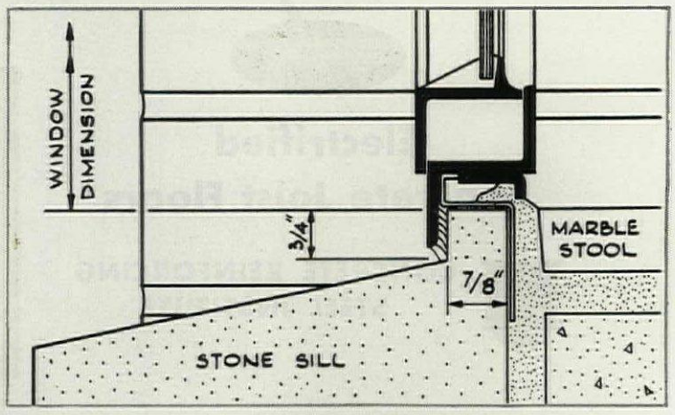
Front view of Normandy Road School, Bay Village, Ohio. Architects: Mellenbrook, Foley & Scott. Contractor: J. L. Hunting Company.



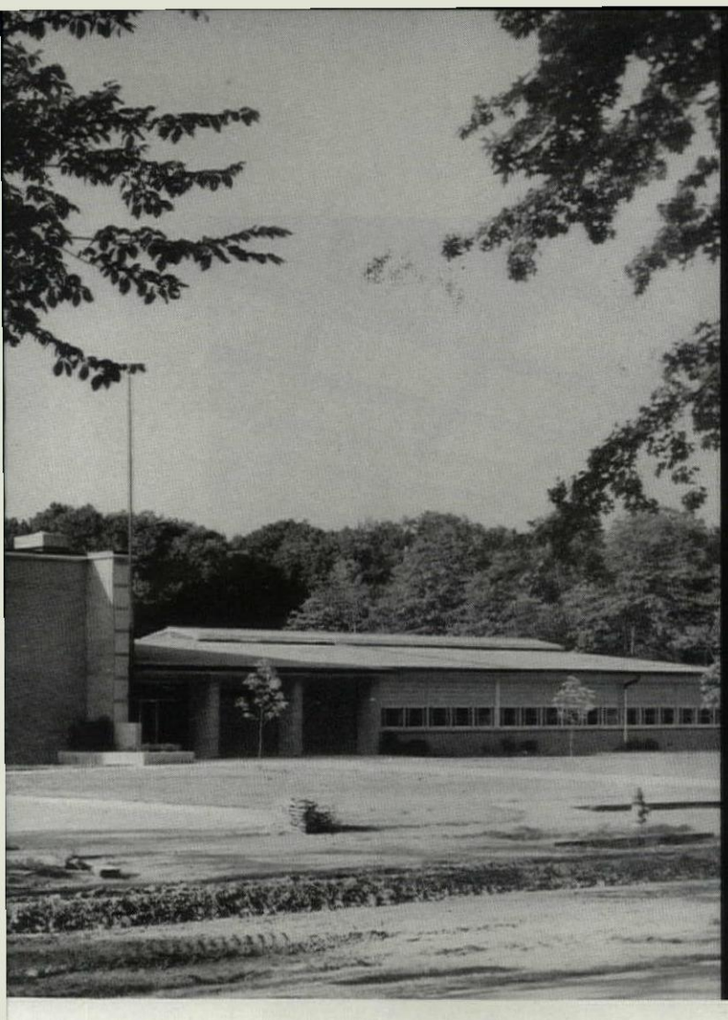
This ½" round horizontal bridging is recommended by the Steel Joist Institute, with ½" round bars bridging both top and bottom chords.

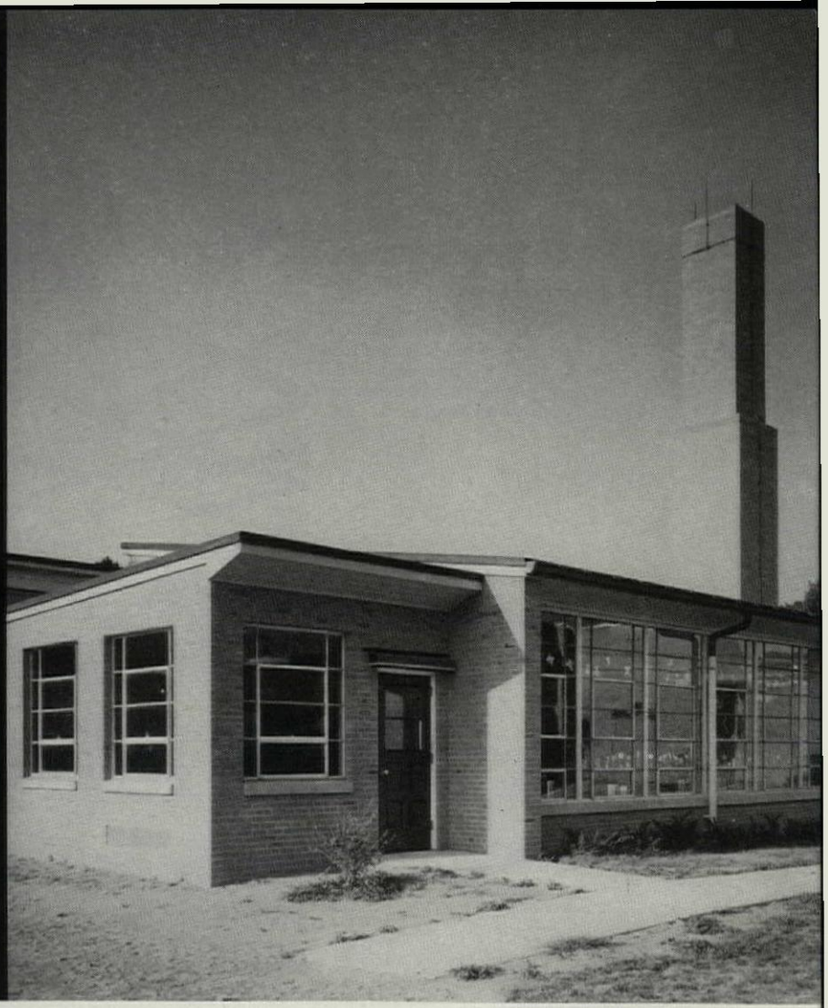


Ceco Architectural Projected Windows also contributed toward an economical, functional building. Their solid hot-rolled sections provide easy wall-bearing anchorage... strength... flexibility of ventilation... plus beauty and good daylighting.



This sill detail, with the window frame overlapping the stone sill and the joint properly caulked, provides efficient watertightness and drainage. Another school-wise feature is the marble stool.





Close-up detail of Normandy Road School.
Note the variations in window use.

How a school for 400 students was built on a limited budget . . .

ARCHITECTS CUT FRAMING COSTS 15% WITH CECO STEEL JOISTS

It takes more than ingenuity to meet building budget problems . . . knowledge of workable short cuts is important here. So Architects Mellenbrook, Foley & Scott drew deeply on experience in designing the Normandy Road School, Bay Village, Ohio. The problem was to accommodate a set number of students—with a limited budget. Ceco Steel Joist Construction contributed to the solution by saving 15% over other floor and roof framing methods. It is the lightest of all fire-safe constructions and is easiest and fastest to erect. Ceco *Standard* Steel Joists were used effectively in classroom, office and corridor areas—bays being from 9′ 9⅝″ to 27′ 4½″ wide. Extended ends provided low-cost sunshade overhangs, cantilevered over the window areas. Ceco *Longspan* Steel Joists with nailer strips simplified framing of gymnasium areas. At least a month's time was saved because steel joists are erected faster than heavier framing. All Ceco deliveries were timed to meet the schedules of the contractor. Here is another example of Ceco performing on the architect-contractor-supplier team to help meet a building need. Next time, call on Ceco Product Specialists. They will assist you in planning and saving.

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This view in the Board of Directors Room of the recently completed general offices of the Brown Shoe Company, St. Louis, Mo., shows how Permacoustic provides a ceiling that is beautiful and acoustically functional.





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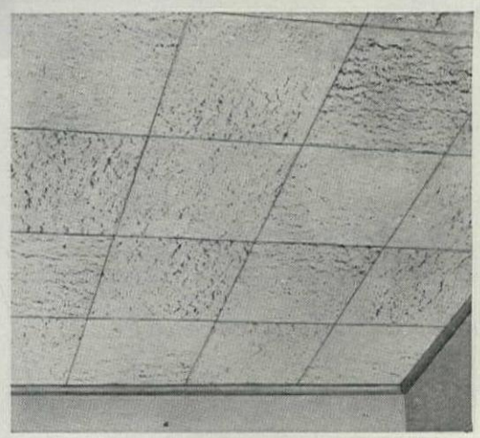

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	ACOUSTICAL EFFICIENCY	
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cycles per second	cemented to plaster board (mounting No. 1)	mechanically mounted on special metal supports (mounting No. 7)
125	.04	.56
250	.21	.53
500	.75	.60
1000	.88	.73
2000	.85	.88
4000	.78	.88
noise reduction coefficient	.65	.70
weight per sq. ft.	1.3	1.3

*Also available in 7/8" thickness

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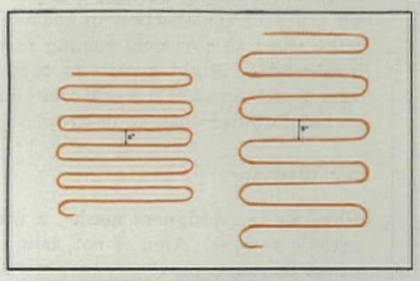


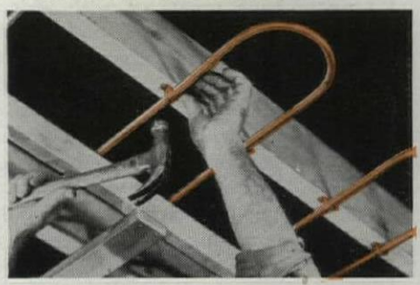
NEW ANACONDA GRIDS* (PG® 's) contain 50 linear feet of Type L Copper Tube and come in two tube sizes—left, ⅜" (½" O.D.) for ceilings; right, ½" (⅝" O.D.) for floors.



DESIGN AND LAYOUT is simplified by Anaconda's free layout kit of printed, gummed PG scale drawings, which show precise layout of heating panels on blueprints.



MACHINE-FORMED PG's are compactly packaged 4 to a carton. One tube end of each PG is expanded so that it can be solder-connected in series without requiring fittings.



PG's ARE EASILY INSTALLED—A ⅜" PG weighs only 10 pounds, is easily lifted and propped in place, leaving worker's hands free to fasten straps. Here, metal lath goes under the PG's.



A HOOK TYPE FASTENER offers another easy, quick installation method. Fasteners are partially set in joists, PG's are positioned, and fasteners driven home.



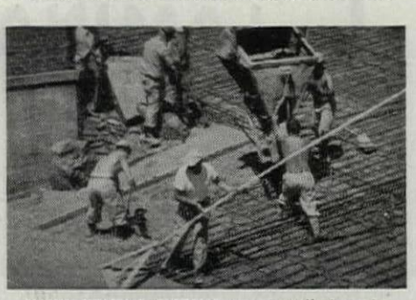
HEAT FOR THIS basement game room will be provided by ½" PG's embedded in concrete. For floor or ceiling installations the pre-formed Anaconda Panel Grid offers many economies.



CEILING INSTALLATION ready for plastering. Note tube spacing narrows to 4½" c-c nearest the outside walls, and supply lines to panel circuits run next to outside wall.



NO SAGS OR DIPS in the tube lines permits a uniform plaster thickness, which means savings in time and materials.



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For Radiant Panel Heating



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EXCERPTS

Continued from p. 188

the Aegean Sea, expressing serenity and nobility. Modern designers are not bound by the material, the order or the locality; all these are items subject to change. But serenity and nobility are changeless, a truth which an artistic revival might well underscore.

▸ Distinction between items suitable to standardization and mass production, and items not suitable. Mechanical "cores" of houses are suitable; living quarters are not. A city's system for mechanized transportation is suitable; its system for pedestrians is not. The failure to distinguish between the two categories has marked a technological trend as it would not mark an artistic trend.

▸ The service to our nation that could be rendered by far greater achievement in architecture and the allied arts. No sane man will question the need for architects to join other builders in devising plans to ameliorate atomic disasters, whether this be reinforcing buildings or decentralizing cities. But should we overlook the possibility of architects working, whether as designers or citizens, to avert the disasters? Architecture has never been called a destructive art. Architects, by nature, as by training, are on the constructive side. Others may teach or preach synthesis in modern life; architects can build it into the surroundings, and by the massive influence of environment can directly affect modern life. Increasingly, American architects are building abroad, and the need for all types of construction in backward countries (now so obviously coming forward) is incalculable. Might architects be emissaries who would forward a world-wide inclination to build rather than to destroy?

BY WHOM?

Have we the designers needed a widespread artistic revival? And, if not, how can their ranks be augmented?

I dare say that no one who has been active in architects' organizations will assert that all registered architects conceive their calling to be a great art with wide esthetic, humanitarian or spiritual implications. There are too many other motives for entering the building field, one of the country's largest industries. But if it is a minority that has the wider view, it is a large minority and an impressive one. Impressive, for one thing, because of their works; it is not difficult to name 100 firms whose buildings are already counting as examples of precisely the artistic revival that has been mentioned, drops in the bucket though these buildings may be. The enlightened minority is also impressive because of its educational efforts.

Yet my thoughts go back to a summer at Cranbrook. The various arts were not gathered under one roof, it is true, but they were under immediately adjoining roofs. What I remember is not so much the exact curriculum, and not only what happened in the working hours, but rather what happened between those hours: the congenial and rewarding contacts between designers of many skills at lunch tables, following the morning sessions; at dinner tables following the afternoon sessions; and after the voluntary evening work, those invaluable walks and conversations amid Eliel Saarinen's buildings and Carl Milles's sculpture.

Visualize such an art-center set, not in a comparatively remote countryside, but in the midst of a great university, such as Columbia. This center could work not only toward the goal of congenial collaboration between various arts, but toward all the other goals which have been mentioned: the grasp of the conserving and creative forces at their best; the wider understanding of "function"; the distinction between changeable and changeless factors, and between those suitable and not suitable to standardization and mass production; and finally the service not only to one student body and one city but to the nation. To assert man's right to the creative impulse and the free use thereof would at all times be invaluable; especially so today and to us, standing under the hydrogen sword of Damocles."

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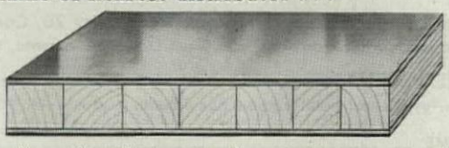

(Above) Section showing superior 5-ply construction of Farlite tops. Core is staved lumber with hardwood cross banding. This construction, used in finest cabinet work and flush doors, is extremely warp-resistant and provides extra smooth, flat surfaces. Farlite surface and backing sheets are Resin Bonded to the core. Edges finished with either Farlite or metal.

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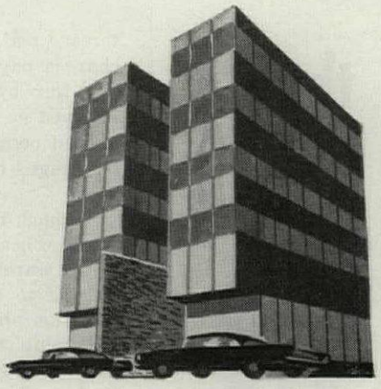

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Regardless of the type or size of structure; office building, hotel or apartment house, school, hospital, or house, SelecTemp heating can be economically and efficiently installed. Flexible copper tubing, smaller than your little finger, carries low pressure steam to each room unit.

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EXCERPTS

Continued from p. 142

terest, real estate taxes and other fixed charges payable under the mortgage method. But by sale and lease-back there is involved no such cloud on the credit horizon as that occasioned by execution of bond and mortgage. It can be a good deal from every angle.

So much for existing buildings. Any well-rated concern interested in a new plant, store, warehouse, office building, etc., will do well to explore the possibilities of construction planned to fit their needs and title ownership reposing with investors content with a fixed rental under a long-term lease. Such a leaseholder will almost invariably find it a far better arrangement than any tying up of its own capital and credit in title ownership. Moreover, the idea can go beyond realty. One of the nation's leading corporations—in fact, one of the top ten—leases automobiles for its traveling representatives rather than makes the capital investment.

ADVANTAGES TO TITLE OWNER:

The position of the title owner is relatively secure. He does not have to give the operation his personal attention. He can sit at home and collect his net rental, a fixed return on his investment. In some instances he may have arranged with the leaseholder for additional income in the form of a percentage of any increased net annual income over a stipulated amount, in which event both parties could have a share in added revenues.

If there is a mortgage on the property, and usually there is, the title owner pays the interest and amortization from the rental he receives—but this still leaves him a fair and reasonable return on his investment.

The mortgage payments by the title owner are reportable by him as income. However, he is permitted to deduct depreciation on buildings or other improvements from his taxable income. This depreciation may more than offset any portion of his taxable income represented by mortage amortization.

Ultimately the mortgage will be liquidated and he will own the property free and clear, besides having had a fixed and satisfactory return on his investment all along. With full liquidation or any substantial reduction of the mortgage he can well afford to pass along some of the benefit to the leaseholder in the way of reduced rental. In many such deals this is taken into account at the outset and provision is made for a reduced rental in any optional renewal of the leasehold after expiration of the original term.

ADVANTAGES TO LEASEHOLDER:

Inasmuch as such arrangements are almost invariably on a net basis, the leaseholder has agreed to pay all local real estate taxes and operating costs, make all necessary repairs and maintain the property in good condition. He is, of course, also obligated to pay rent to the title owner.

His position differs from the title owner's

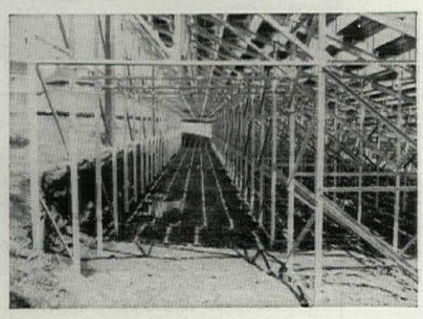
continued on p. 197



Snyder

STEEL BLEACHERS

- ***portable***
- ***sectional***
- ***permanent***



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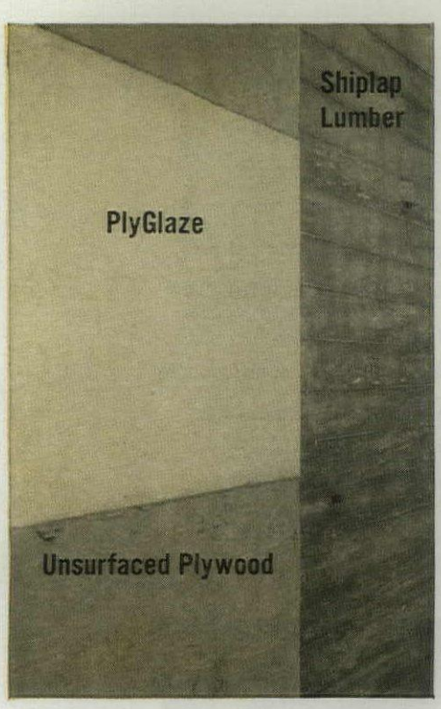

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READ "finest" both ways: PlyGlaze *itself* has the finest, smoothest surface of any form material; PlyGlaze-formed *concrete* surfaces are the finest—smooth, even-textured, with no trace of grain pattern. Savings on finishing costs alone frequently offset slightly higher cost of this premium material. See Sweet's File or use coupon for more information.

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Tacoma 2, Washington



EXCERPTS

considerably in that he does not enjoy a fixed income. If, for example, business declines and the building's income is reduced, the leaseholder continues to pay the fixed rental to the title owner. On the other hand, if he is able to improve the net income, the additional profit goes into his pocket—less any percentage thereof he may have agreed to give the title owner.

The rent paid by the leaseholder to the title owner is obviously deductible from his taxable income.

VARYING EXAMPLES:

It is not always necessary—nor always best—to sell and lease back the whole of a property. One may sell the land and retain the building. It is fully as practical for an investor to acquire title to land under an existing building, and lease that land to the owner of the building, as it is for a land owner to adopt the time-honored custom of giving a long lease—say 99 years—



580 FIFTH AVE.

to a builder. This is well illustrated in the case of the former Empire Trust Co. building at 580 Fifth Ave., New York—which case also offers a direct comparison with conventional first-mortgage financing.

My purchase price for this 33-story office building on 25,000′ of valuable land was $6 million—all cash. A conventional mortgage of $3,750,000 was found to be readily obtainable from an insurance company. With interest and amortization totaling a constant of 6.5%—or about $244,000 a year—the mortgage would be liquidated, fully paid up, in 27 years and 6 months. But there was a choice. I could sell the land under the building for the same $3,750,000 and lease it back for 27 years at an annual ground rent of $244,000, with optional renewals for extended terms thereafter at $100,000 a year. The first method offered the security and pride of free-and-clear possession of this fine, well-located property in 27 years, the second only a stack of rent receipts and the privilege of paying $100,000 from that time on.

To the surprise of all concerned the second method was chosen. Of the $244,000 payable annually under the mortgage, an average of about $139,000 would be applied to amortiza-

continued on p. 206



50 to 75 is a good average, but with care you can get up to...

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PLYGLAZE'S tough, hard surface stands up indefinitely under repeated concrete pourings. PlyGlaze forms are worn out only when the panels are cut into unserviceably small pieces. With proper design and care you should get 50 to 75 re-uses. Actually, *over* 200 have been obtained—even then PlyGlaze continues to form good-looking concrete.

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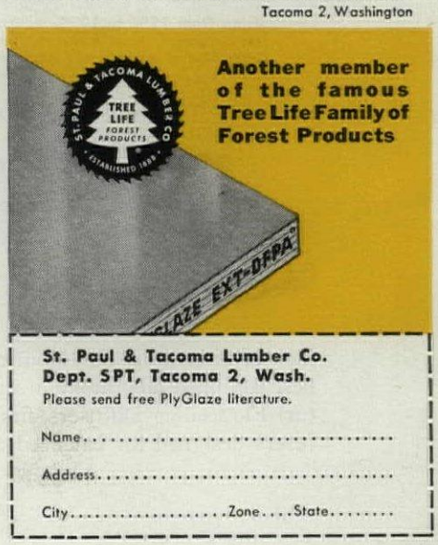

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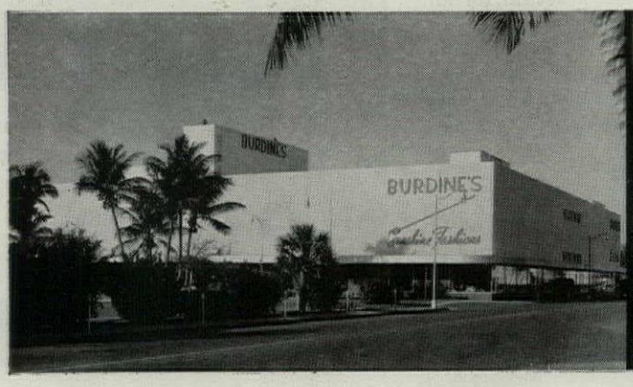
Air Distribution

Puts shoppers in buying mood at Burdine's . . .

It isn't often that a mechanical engineer says "The equipment has usually exceeded the performance of published data." Yet that's the comment made after Uni-Flo equipment was installed throughout the beautiful new home of famed Burdine's in Miami Beach, Florida. Not only was performance above par, but, as can be seen below, the Venturi-Flo Diffusers are small and inconspicuous in appearance, harmonize with the decorated ceilings, are easy to adjust. Experience indicates, too, that Venturi-Flo Diffusers keep ceiling smudge at a minimum.

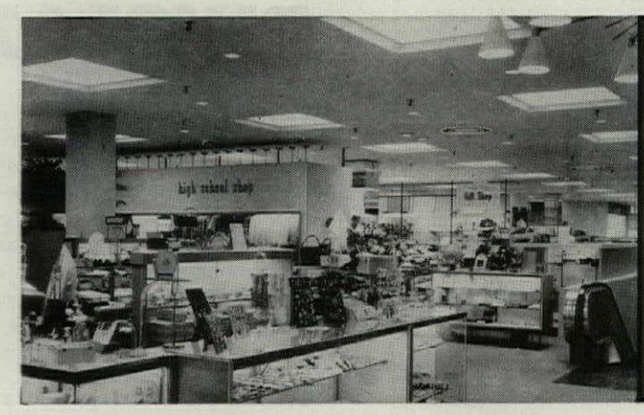
Architects: WEED, RUSSELL, JOHNSON, AND ASSOCIATES. *Interior Designer:* RAYMOND LOEWY. *Structural Engineers:* NORMAN J DIGNUM AND ASSOCIATES. *Mechanical Engineer:* R. L. DUFFER. *Air Conditioning Contractor:* HILL-YORK SALES CORP.



New, two-story building (83,400 square feet) covers approximately a city block, provides an ultra-modern, luxurious setting for Burdine's "Sunshine Fashions."



Entire store is air conditioned for shopping comfort. Venturi-Flo Diffusers distribute the conditioned air quietly, unobtrusively, efficiently.

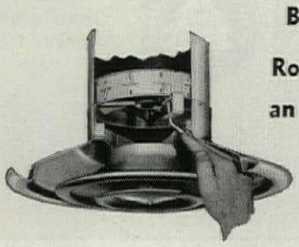


Using from 15% to 100% outside air, the atmosphere throughout the building is kept fresh and inviting for personnel and shoppers, regardless of store traffic and weather conditions.



Venturi-Flo Ceiling Diffusers provide efficient diffusion, rigid construction, quiet operation, easily adjustable deflection and volume control, advanced styling.

BLAZING THE TRAIL TO BETTER AIR DISTRIBUTION



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Barber-Colman Company's entrance into the air distribution field twenty years ago started an increasing flow of pioneering developments. From the largest and best equipped laboratory in the industry came the Venturi-Flo Ceiling Diffusers, first of a series of ceiling diffusers designed for balanced air distribution in modern buildings. In these units, air patterns are adjustable after installation from vertical to horizontal discharge. A wide range of styles and sizes is available for recessed or surface mounting, with or without integral lights. Accessories include volume control, air flow balancing and air turning devices. For latest literature and expert engineering advice, consult your nearby Field Office or write us.

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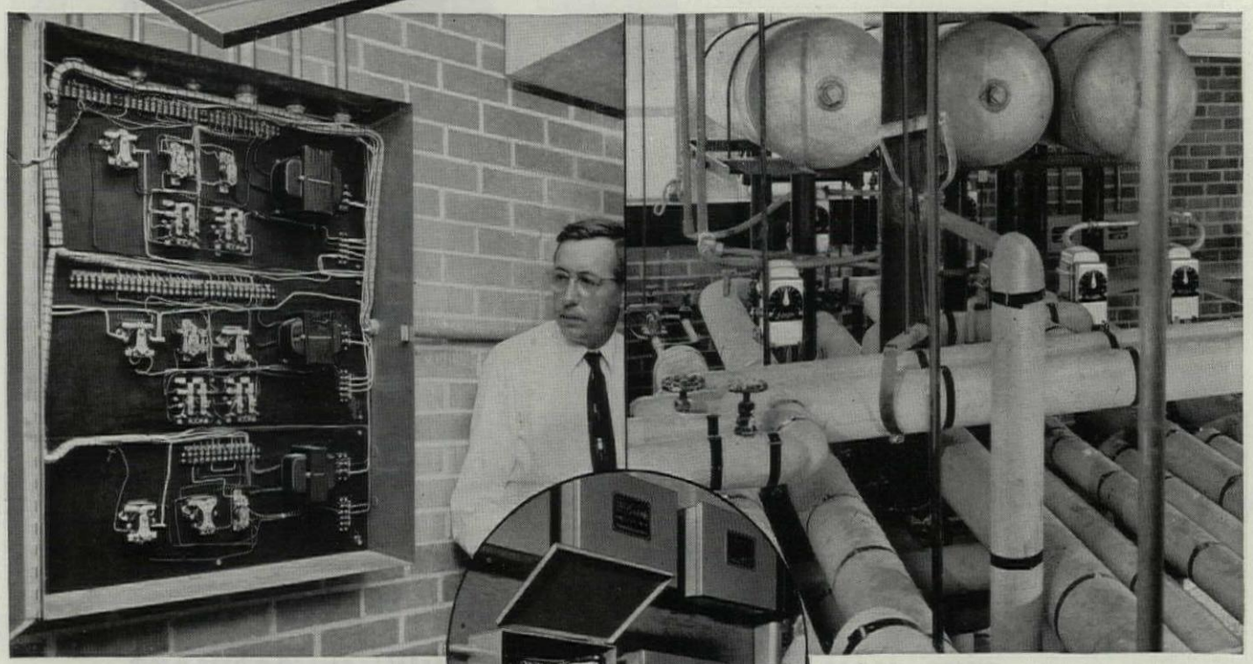
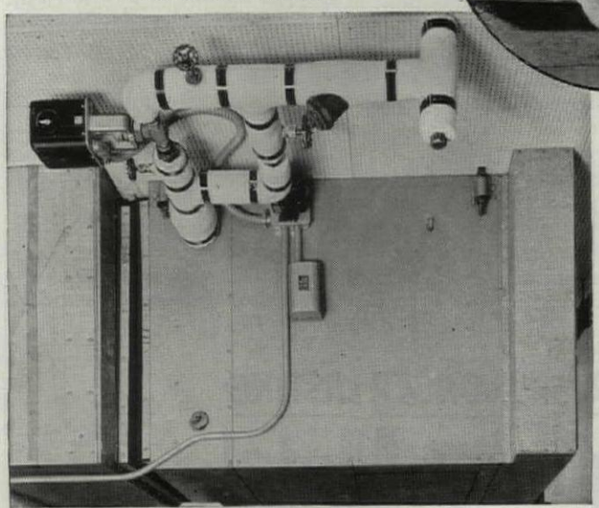
Architects-Engineers: RICCIUTI, STOFFLE & ASSOCIATES. *Associate-in-Charge:* J. BUCHANAN BLITCH. *Structural Engineer-in-Charge:* LOUIS J. ROSENBOHM, JR. *Mechanical Engineer-in-Charge:* ED. W. PENEGUY. *Consulting Electrical Engineer:* LOUIS N. GOODMAN & ASSOCIATES. *Mechanical Contractor:* CABIRAC MECHANICAL CONTRACTORS, INC. *Electrical Contractor:* WEISFELD & SON. *Sheet Metal Contractor:* BLATTMAN SHEET METAL WORKS (Uni-Flo Air Distribution Equipment used throughout hospital).



"Control Center" for completely automatic cooling, heating, rehumidification, reheating systems. Serves as central junction box, houses prewired accessories and numbered terminal strips.

Left: Electronic "Control Centers" for five zones of radiant and convector heating. Above: Six Motor-Operated Valves (under expansion tanks) are positioned by outdoor reset controls.



Damper Motor (under duct) and Motor-Operated Valve (near ceiling) control damper and hot water supply for blower-type unit heater in kitchen area.

• Engineering of the remarkable indoor climate system in this hospital represents a milestone in conditioned air techniques. From heat treatment rooms to therapeutic pool facilities, from the gymnasium to the nurses' wing, practically every room had different temperature and humidity requirements. Even though every modern control feature was employed to solve these problems, the simplified automatic electric and electronic systems cost less to buy, operate, and maintain. You, too, can offer *"better* control . . . electrically!" Phone your nearby Field Office, or write us for data, prices, and expert engineering assistance on any automatic control problem.

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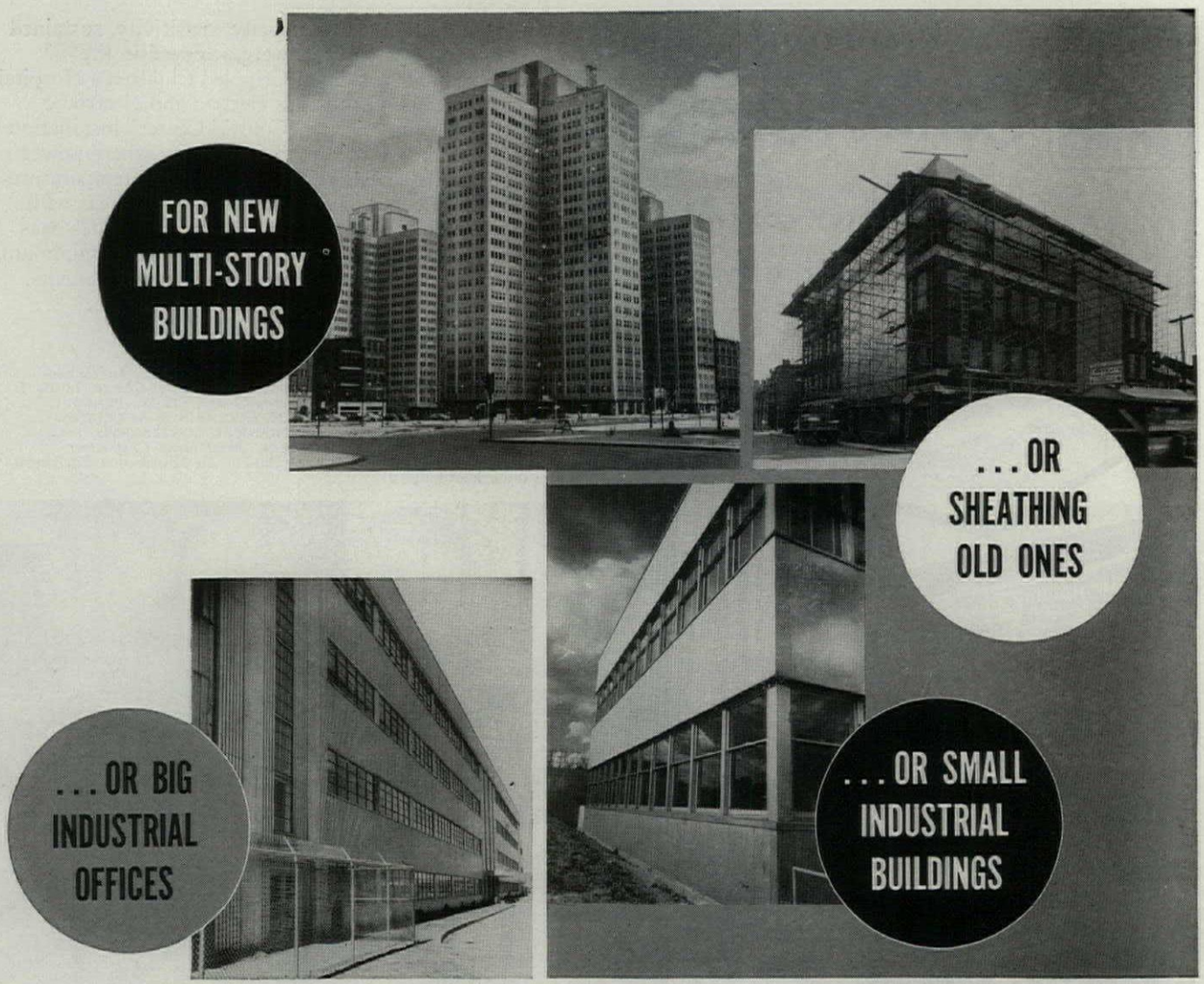

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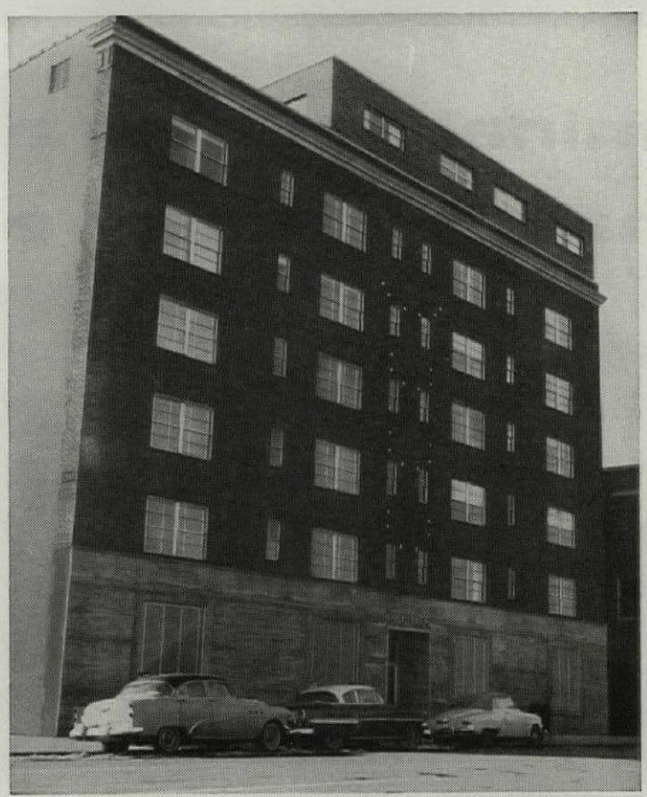
G-E packaged air conditioning enables architect to "stretch" rentable space



RULE BUILDING has eight G-E Packaged Air Conditioners connected to two forced-draft cooling towers in old elevator penthouse. Ripstra-Turner Company were the contractors for the conversion.

Putting air conditioning equipment in an existing building generally reduces net rentable floor space. However, when architect Robert Morris, of Wichita, Kan., finished converting the 7-story Rule Apartments to the Rule Office Building, he had actually *added* rentable space.

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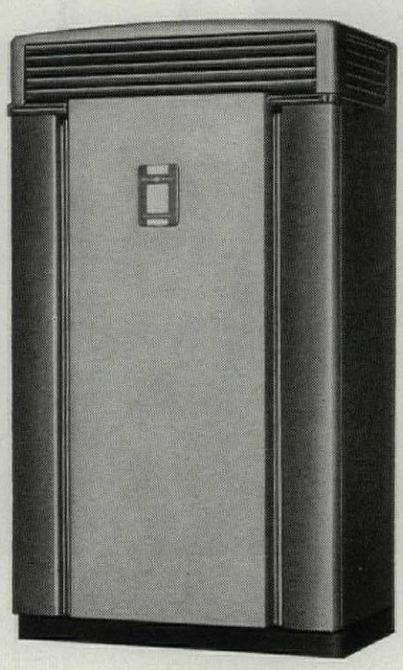
- Muggy Weather Control removes excess moisture in any weather without over-chilling or clammy cooling. Simple damper control.
- Built and factory assembled by General Electric. 5-year warranty covers entire sealed cooling system, including freight and labor.



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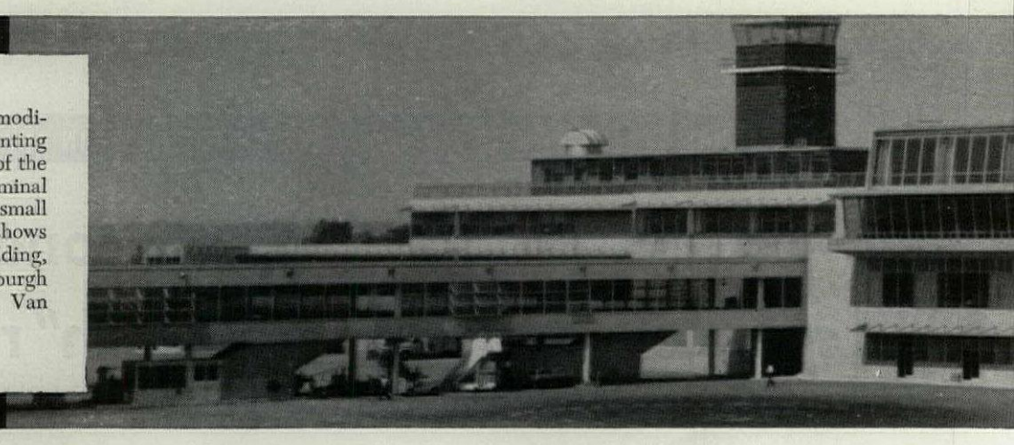


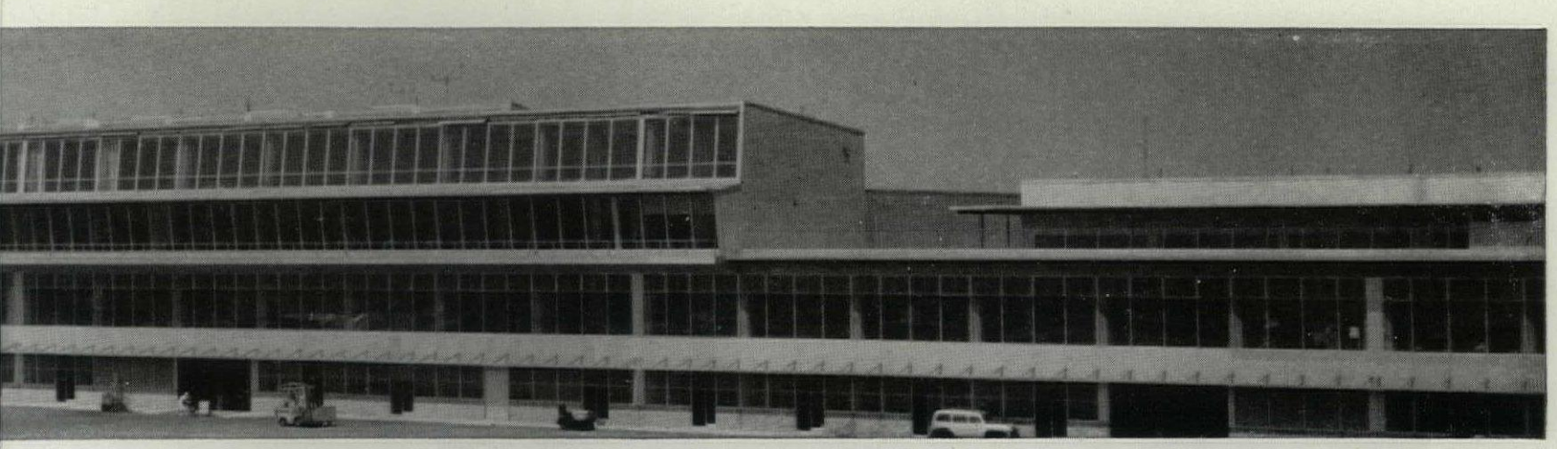
BASICALLY CONSTRUCTED in the form of a modified "F"—with the two short arms representing the passenger loading piers—the main part of the new Philadelphia International Airport terminal building is three stories high, topped by a small fourth floor and control tower. This view shows the over-all field side of the terminal building, with its impressive application of Pittsburgh Glass. Architects: Carroll, Grisdale, and Van Alen, Philadelphia, Pennsylvania.

New Terminal Building at the
makes extensive use



CLEAR VIEW of the landing area from the third floor is obtained through Solex-Twindow® units. These units are composed of two lites of glass—¼" Solex® heat-absorbing, sun-glare-reducing glass on the outside, and ¼" polished plate glass on the inside, with a sealed-in air space between them. Solex-Twindow units are noted for their ability to reduce substantially the load on the air-conditioning system; they cut down on room-side condensation, minimize cold air downdrafts.

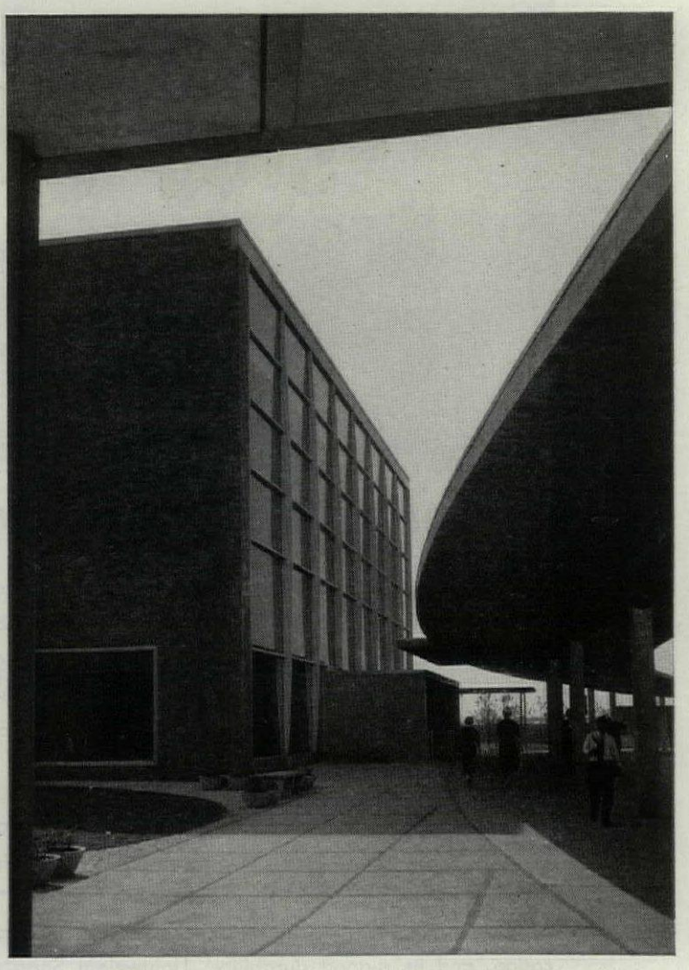
Design it better with **Pittsburgh**



Philadelphia International Airport of PITTSBURGH GLASS



FRONT LOBBY of this new airport building, with its 41-foot ceiling, is entirely glazed with Pittsburgh's Solex-Twindow units. This means the maximum in glare-free daylighting, as well as added comfort for passengers and personnel.



THE COMBINATION of the sweeping overhead canopy and the soft, green-tinted Solex in the windows emphasizes the graceful lines of the exterior . . . achieves a modern, functional environment.

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

Glass

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PITTSBURGH PLATE GLASS COMPANY

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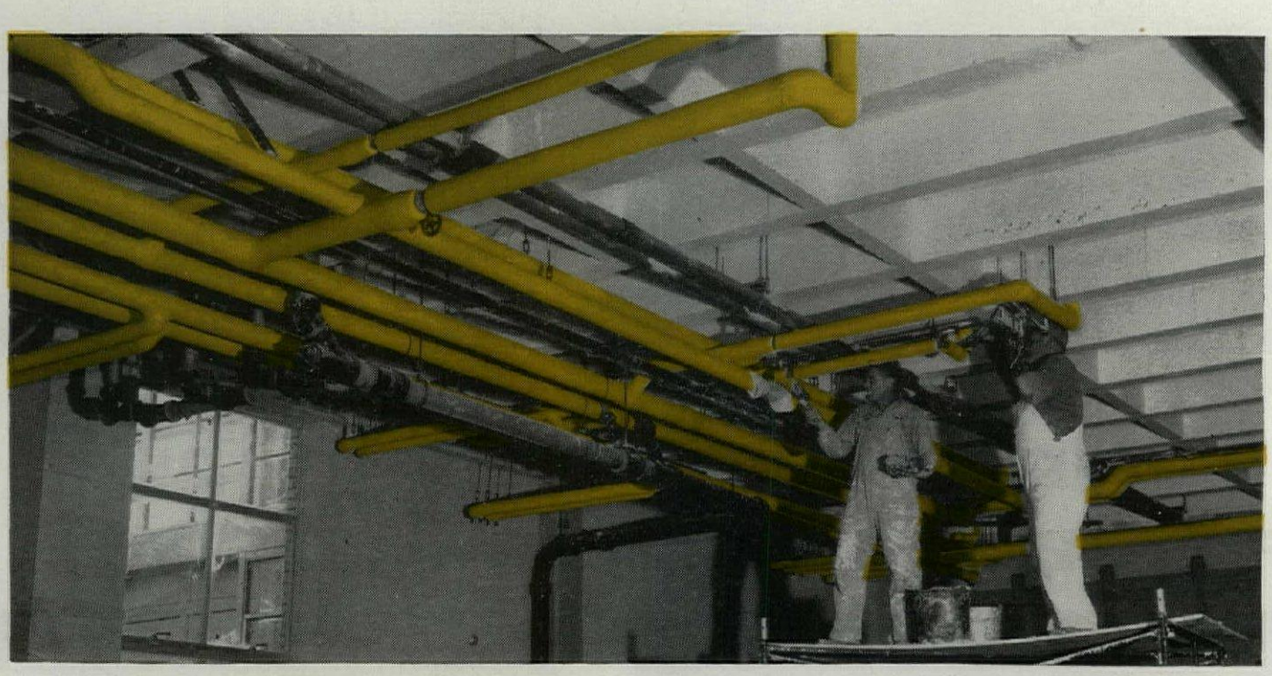
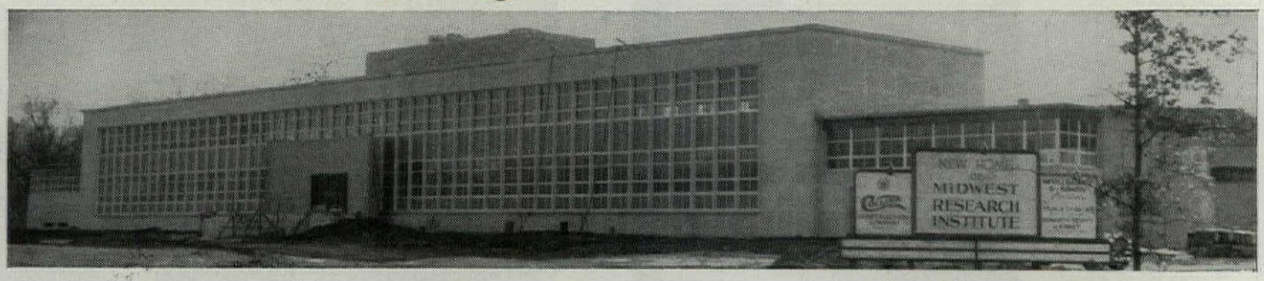


gb SNAP*ON saves b.t.u's in



America's most modern research institute...

Take a good look at the country's most modern research institute, soon to be completed in Kansas City, Missouri. It's the new building of the Midwest Research Institute, a non-profit organization that in the last decade has made outstanding contributions to the development and growth of midwestern industry and agriculture.

Heated piping in the new M. R. I. building* is insulated with G-B Snap*On, the new one-piece molded pipe insulation of fine glass fibers. Highlight features of Snap*On are its superior thermal efficiency, extreme ease of application, and its rugged durability. Lightweight Snap*On, in 6-foot sections with a single seam, were snapped on the pipe in a fraction of the time it takes to apply conventional segmented insulations. There was virtually no waste or breakage, for Snap*On is a rugged, resilient material that will not chip, flake, break or crumble.

Snap*On is available in sizes from ¾" to 33", and in varying wall thicknesses. If you have a job on the boards that calls for insulation of chilled or heated piping where temperatures do not exceed 350°F., see Sweet's File (Architectural) for complete data on this revolutionary new pipe insulation. Or better yet, call your local G-B distributor who maintains local stocks of Snap*On. He's listed in the Yellow Pages in 57 cities.

*Architect: Neville, Sharp & Simon; **contractor:** Collins Construction Co.; **insulation contractor:** Kelly Asbestos Co; **mechanical engineers:** Howarth, Scott & Kinney.

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Thermal and acoustical glass fiber insulations • Pipe Couplings and fittings • Railroad gaskets and supplies

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1948 Advance originates compact, light-weight Lead-Lag slimline lamp ballast design.

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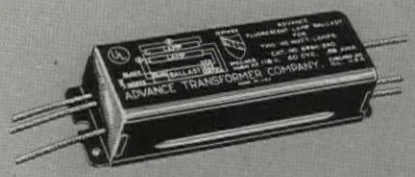

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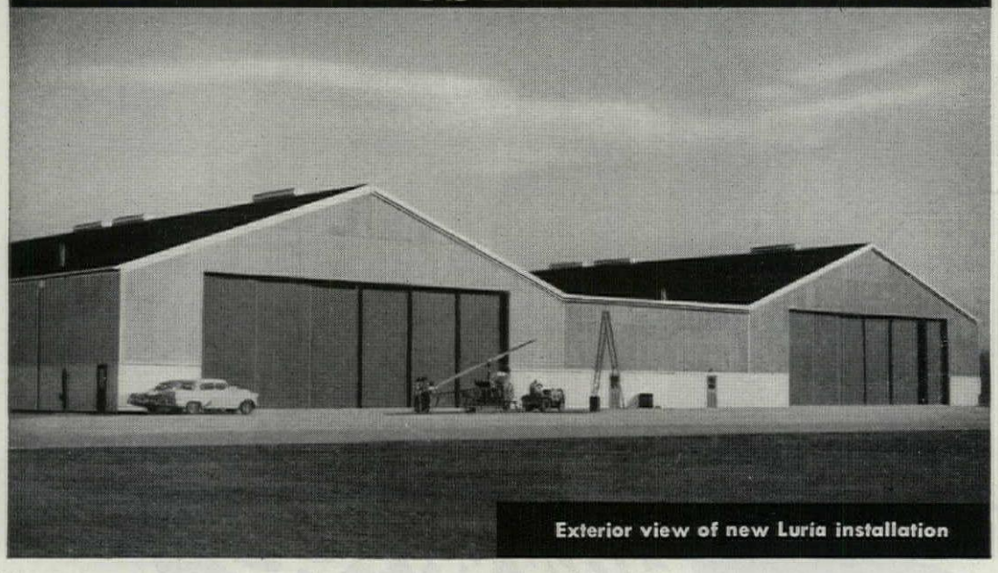

Exterior view of new Luria installation

BELL *Aircraft* CORPORATION
TEXAS DIVISION

Chooses

LURIA Standardized Buildings



Interior . . . showing Bell's rotor assembly

THE "LURIA SYSTEM OF STANDARDIZATION" LOWERS YOUR BUILDING COSTS . . . AND ADDS HIGH SPEED TO YOUR INDUSTRIAL EXPANSION

One of the primary reasons why Luria Buildings were selected by Bell Aircraft . . . and became a vital part of the world's most up-to-date facilities for manufacturing helicopters . . . was because these standardized buildings of structural steel components *surpass the requirements called for in the building codes.*

But *permanency of structure* is just one of many assets provided by Luria. Among the others are *adaptability* and a *flexibility of design* that make possible almost *any* type of structure and almost *any* type of architectural treatment. As a result, Luria Buildings can be "custom-built" to your *individual* requirements . . . without sacrificing the advantages of standardization.

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EXCERPTS

Continued from p. 197

tion, which would be reportable income, even though the money simply whisked through my bank account to the mortgagee. The net cash income of the building to me after paying interest, amortization, other fixed charges and operating expenses would be $400,000 a year, but income tax would be payable on $539,000.

On the other hand, when paid as rent the entire $244,000 was deductible from taxable income. As between a taxable income of $539,000 and one of $400,000, the difference represented by the average amortization would mean a tax payment of, roughly, $70,000 annually on income that could not be retained. A little figuring with the aid of the compound-interest table will demonstrate that $70,000 a year set aside and conservatively invested at 4½% would amount to $3,450,000 in 27 years.

Should obsolescence overtake the building who knows but what, 27 years hence, an owner needing capital might have difficulty in mortgaging for $3,450,000, or be put to the cost of demolition in order to utilize the value of his land? On the other hand, should the building retain an approximation of its present desirability for 27 years, which seems within the realm of probability, the income over fixed charges and operating expenses, at or near present rentals, could be well over $600,000. A leasehold at $100,000 a year would then be a valuable holding indeed, and a readily salable one.

Of the $3,750,000 added capital made available, about $400,000 was spent on the building in air conditioning, general modernization, and in creating an additional floor in the formerly high-vaulted banking quarters. These improvements brought substantial additions to the rent roll, gave the tenants increased convenience and efficiency, and served the business community by adding rentable area in a time of dire need for office space. It was a good deal all around.



STATE-MADISON

ON LEASED GROUND:

That the sale and lease-back arrangement is quite practical where an improvement stands on leased ground is shown by the State-Madison building (the former Boston Department Store) in Chicago. Incidentally, this property also illustrates syndicate participation, for

continued on p. 210



CUTS COSTS

CHASE copper drainage tube fits within standard partitions!

For a neater, more compact drainage installation, insist on *Chase* Copper Tube for soil, waste and vent lines.

Chase 3″ Copper Drainage Tube fits *within* standard partitions, eliminates the need for costly and unsightly furring-out construction that's required with ordinary drainage materials.

The smooth inside surfaces of Chase Copper Drainage Tube and Solder-Joint Fittings permit fast, even drainage... there are no internal projections to form waste-trapping pockets. And, of course, *copper* can *never* clog with rust!

What's more, because *installation* costs are lower, the *total* cost of a quality Chase Copper Drainage System is little or no more than the cost of an ordinary system.

Chase Copper Drainage Tube and Solder-Joint Fittings can mean a *quality* job at little or *no* extra cost. When planning, be sure to specify *Chase!*

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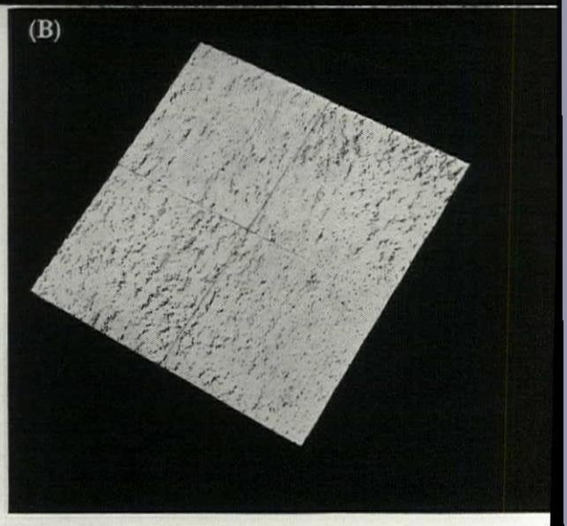
Charlotte†	Denver	Kansas City, Mo.	New Orleans	Rochester†	(†sales office only)





The beautiful way to quiet a room is with these U.S.G. acoustical materials

(A) CORRUTONE—an entirely new concept in ceiling construction. Consists of a perforated, electro-galvanized, bonderized enameled steel panel upon which rests a fire-resistant, highly sound-absorbent mineral wool pad. It's economical, adaptable, easily maintained; has a .85 NRC. Striking in its simplicity, CORRUTONE enhances almost any architectural design.

(B) ACOUSTONE*—the original fissured, mineral acoustical tile that offers extraordinary beauty and sound absorption. It's incombustible, highly light-reflective, washable; can be painted repeatedly without loss of efficiency.

(C) MOTIF'D* ACOUSTONE—in many distinctive designs that enable the architect to create ceiling effects of unique beauty. It's made by a special patented process exclusive with U.S.G. Shown here is the handsomely textured Striated pattern, one of an exciting new series of designs.

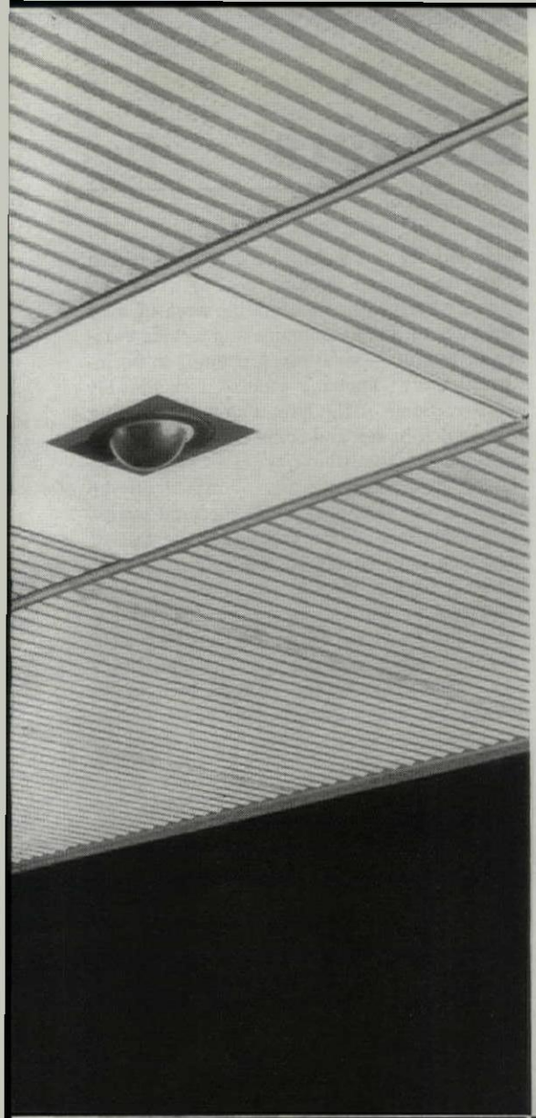
Another highly efficient acoustical tile is AUDITONE.* A lightweight, low-cost wood fiber tile, it's light reflective, easy to maintain, paintable.

(D) SLOTTED AUDITONE—many unusual ceiling effects, complementing most any interior design, can be achieved from this one pattern.

(E) PERFORATED AUDITONE—provides a clean, functional pattern.

USG®
UNITED STATES GYPSUM

UNITED STATES GYPSUM the greatest name in building



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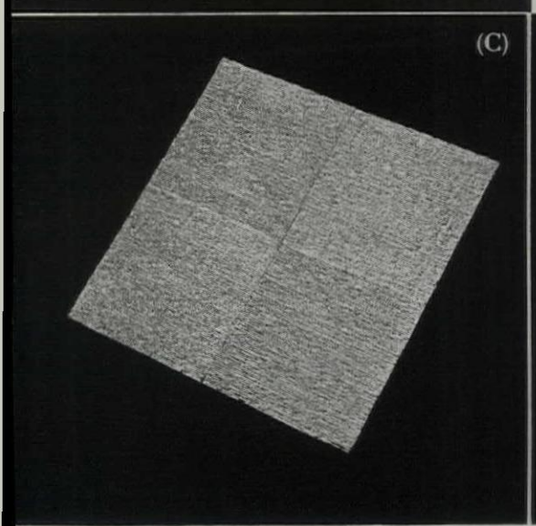
Sound control is fundamental in today's building design. Architects everywhere turn to United States Gypsum for sound control products to meet their requirements.

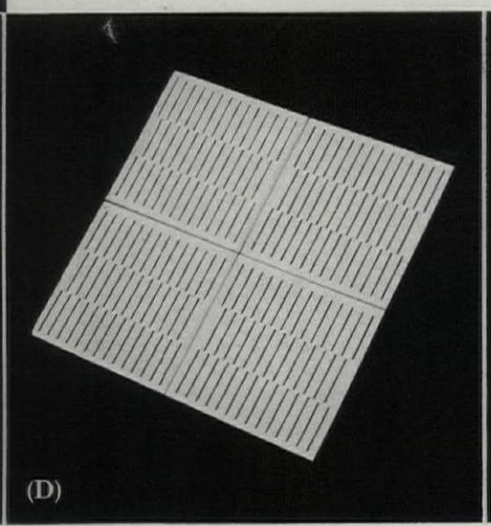
Skilled applicators using U.S.G. systems and methods can choose and erect the proper material in the most satisfactory and economical way.

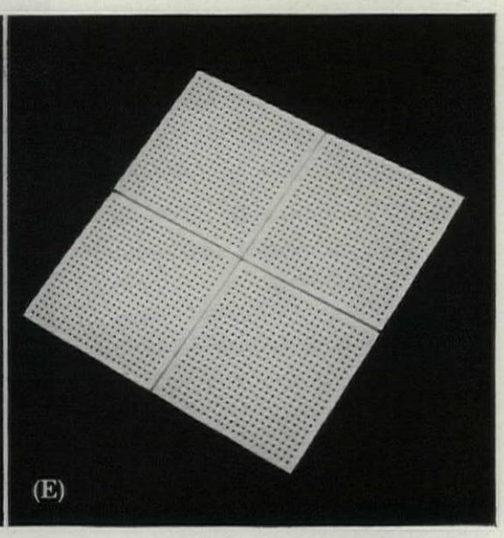
Sound control is a job for experts

Contact your nearby ACOUSTONE tile contractor, or write United States Gypsum, 300 W. Adams St., Chicago 6—a staff of sound control experts is at your disposal for consultation. Refer to SWEET'S CATALOG, Section $\frac{10a}{Uni}$ for technical information.

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







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1. DIGEST OF PRACTICAL ACOUSTICS. A 64-page book, showing examples of sound control in all types of structures, plus valuable installation and maintenance data. 2. ACOUSTICAL HANDBOOK FOR ARCHITECTS AND SPECIFICATION WRITERS. An encyclopedia of application procedures with suggested specifications. 3. MAINTENANCE INSTRUCTIONS for acoustical ceilings.



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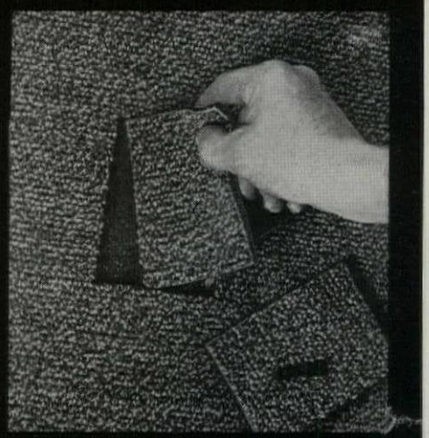
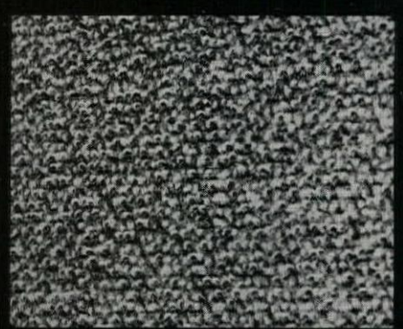


There is no such thing as a *permanent* stain, cigarette burn or scuff damage in **LOMA LOOM** carpet.

Just cut out the damaged section and replace it with a new piece the same size and shape. No one can tell where the repair was made.

Amazing? That is only one of the reasons for the popularity of **LOMA LOOM** carpet. In addition, **LOMA LOOM** — a tough Nylon and sturdy wool blend with a built-in sponge rubber cushion — is both noise proof and shock proof; it retains and radiates heat.

LOMA LOOM is economical to install, and it can be laid over cement, tile, sub-flooring or plywood.



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NU-TREND *In Custom-Dyed Colors*

SUPER *The Ultimate In Quality*

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SIDNEY BLUMENTHAL & CO. INC.

ONE PARK AVENUE, NEW YORK 16, NEW YORK

EXCERPTS

Continued from p. 206

after buying the building I sold it to such a group and leased it back.

The structure has a rentable area of over 1 million sq. ft., accommodating a wide variety of tenants—some large enough to be internationally known, others considerably smaller. Some of the land under the building was owned in fee and some held under long-term lease from the city. However, a $9 million first mortgage was obtained on the building and that portion of the land owned in fee. This of course facilitated the sale of my remaining equity to the syndicate that leased it back to me. As the lease was for a fixed rental, with no provision for participation by the title owner in possible added revenue, any increase in the building's $2,500,000 gross annual rental income redounds entirely to the benefit of the leaseholder.



42 BROADWAY

DEPRECIABLE LEASEHOLD:

New York's 42 Broadway is a 21-story office building with a gross rent roll of $970,000 annually. Encumbered only with a first mortgage of $1 million, it was owned by Charles F. Noyes. Mr. Noyes wanted $4,200,000 for the property, and was willing to accept a purchase-money second mortgage for $2,200,000. With examination of the financial setup showing that the property would earn $260,000 a year after servicing both mortgages, I paid $1 million cash for the title. At practically the same time I sold this million-dollar equity to an investor for $650,000 on condition that he would lease the property back to me for $100,000 a year. At first blush this may look like an outright capital loss of $350,000; however, it meant acquisition, at that figure, of a leasehold returning an annual net profit of $160,000. Moreover, quite a chunk of that annual profit could be offset by depreciation. The leaseholder cannot deduct depreciation on the building or on anything else that he doesn't own, but Uncle Sam quite fairly and correctly permits the cost of the leasehold—in this case $350,000—to be depreciated annually for tax purposes by a figure equal to the $350,000 divided by the number of years in the lease.

The fact that I subsequently sold my leasehold is beside the point, but it seems

continued on p. 214

Sinclair Oil's New Chicago Headquarters —Completely Sound Conditioned with Acousti-Celotex Tile







Sinclair Oil Building, 155 North Wacker Drive, Chicago
Owner: John W. Galbreath & Co., Inc.
Architect: Holabird & Root & Burgee
Builder: Turner Construction Company
Acoustical Contractor: James L. Lyon Co.



Lighting and air conditioning also included in integrated* system

John W. Galbreath & Co., Inc. has gone all-out for employee efficiency and comfort in this outstanding new Chicago office building. Throughout the 200,000 square feet of the building, Acousti-Celotex Mineral Tile traps machine clatter and voice chatter, reduces routine noise in general and private offices and corridors. For the Sinclair Oil Company and other tenants, this means that errors will be reduced, over-time lessened, productivity increased.

Low in Cost—Easily Maintained—Acousti-Celotex Tile provides economical sound-conditioning. No special maintenance is required. Beauty and cleanliness add to the advantages of highly effective sound-absorption. Acousti-Celotex Tile can be washed *repeatedly*, painted *repeatedly* without loss of sound absorbing efficiency.

*Acousti-Celotex incombustible Perforated Mineral Tile is installed on the Celotex Acousti-Line® Metal Suspension Ceiling, where Tile, light fixtures and air diffusers become interchangeable parts of the ceiling. When a new layout is desired, units can be quickly relocated . . . economically!

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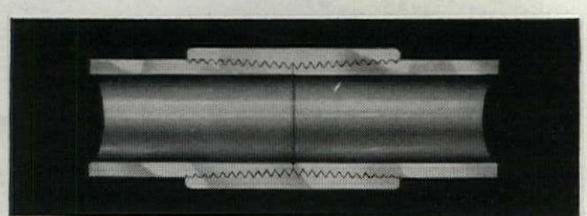
Don't let your clients face the costly problem of corroded conduit sometime in the future. Take care now. Install a conduit system that gives wiring lifetime protection . . . National Electric Sherarduct Rigid Steel Conduit.

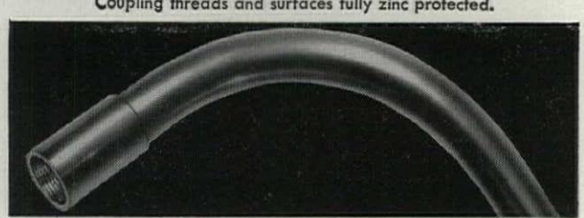
NE's Sherardizing process permanently fortifies Sherarduct against rust and corrosion. Sherardizing actually alloys a zinc coating to the steel conduit providing 100% protection that includes every hill and valley of every single thread. This is galvanizing at its best.

Consider NE's baked-on Shera-enamel for added corrosion protection, Sherarduct's tight, butted joints and easy bending, working, and fishing qualities, and you've got the answer to why Sherarduct is galvanized conduit at its best.

If you're responsible for specifying long-lasting, economical protection for electrical systems in office, factory or home, *be sure* with National Electric Sherarduct Rigid Steel Conduit.



Coupling threads and surfaces fully zinc protected.



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from the word "GO"

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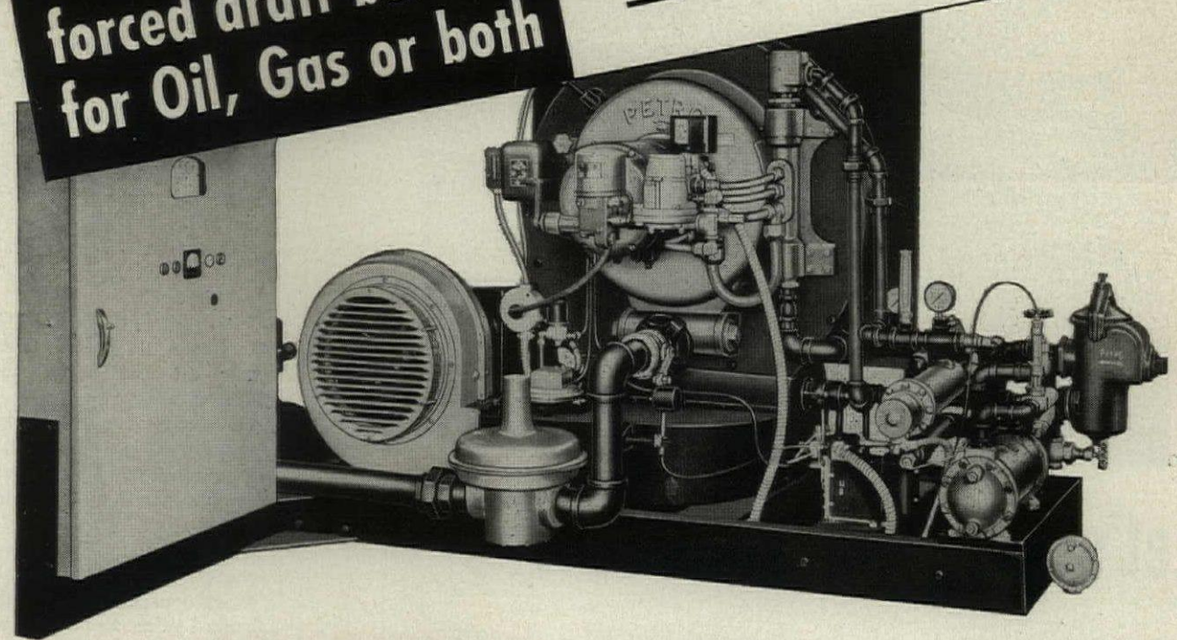
forced draft burners for Oil, Gas or both

A COMPLETE FIRING SYSTEM IN A SINGLE PACKAGE



Quickly converts your present boiler to automatic firing

LOW FIRST COST

This Petro package unit is much more than a conversion burner. It is a *complete* combustion system in which all elements are correctly balanced—and integrated—a thoroughly engineered firing plant.

Includes burner (for oil, gas or combination oil-gas), fuel system, forced draft air supply, control panel, and preformed refractory combustion throat. Installation requires little more than bolting the entire unit to the boiler-front, and making safety and service connections for power and fuel.

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Neat, safe, and complete—the Petro control panel is totally enclosed with all instruments wired and tested at the factory. Can be attached to frame as shown, turned 90° or 180° or mounted elsewhere in the boiler room.

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OIL—Petro's highly efficient horizontal rotary oil burner is adaptable to the entire range of fuel oil grades. Exclusive Petro Thermal Viscosity System automatically heats the heavier oils before injecting into atomizing cup. Assures quick pickup with sure and economical firing of lower cost fuels.

GAS—Designed for all types of gas—high or low pressure—the Petro circular arrangement of multiple gas jets provides a thorough mixing of gas and air *ahead* of the combustion zone. A real fuel saver. Adaptable to steady or fluctuating load requirements.

COMBINATION OIL-GAS—In one compact unit. Gives alternate stand-by fuel and permits taking advantage of fuel price fluctuations. Fuels can be switched in a matter of seconds.

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

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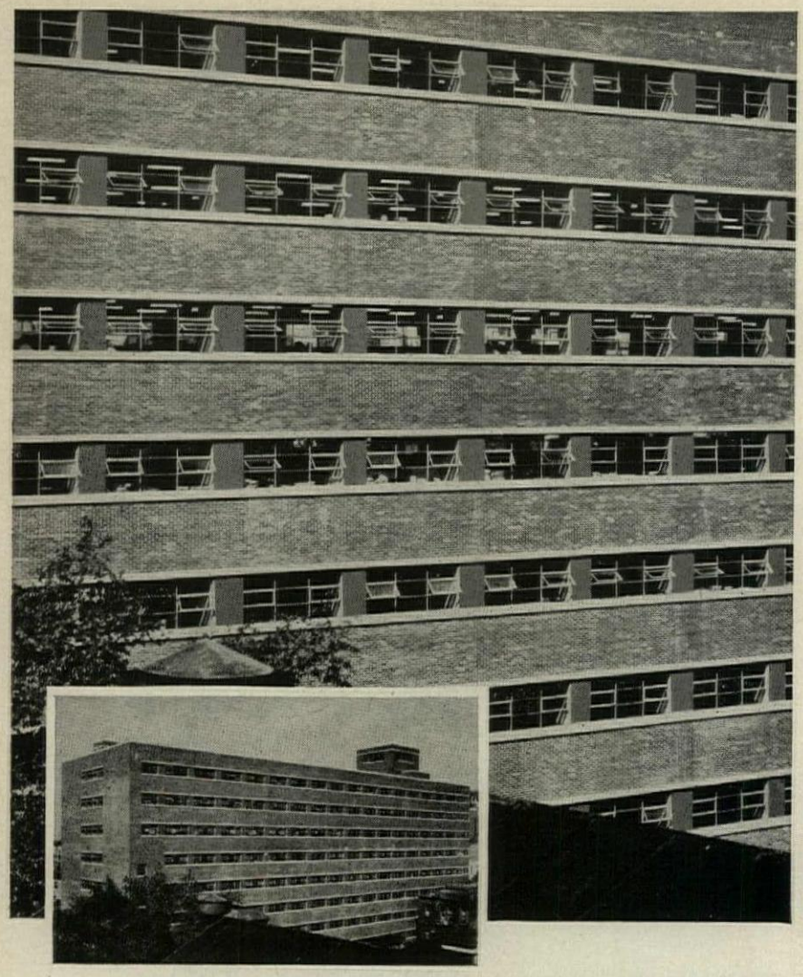

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For mullions, spandrels, and trim.

With Alberene Stone — in tones that range from silvery gray to dark gray; greenish blue to black; and jet black.

Alberene Stone — *the natural silicate* stone — offers durable "dark accent" beauty. Its low absorbency, fine grain and absence of stratification prevent chipping and cracking in freezing weather. Its all-silicate mineral components resist chemical attack and loss of surface polish.

Alberene Stone can be cut into sections as thin as 7/8" and 1¼". It offers designers economy, and increased flexibility in design — such as greater depth of reveal in spandrels.

For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Avenue, New York 16, N. Y.

ALBERENE STONE

provides LOW ABSORBENCY protection

EXCERPTS

Continued from p. 210

pertinent to mention here that, to be depreciable at such a rate, the initial term of a lease with optional renewals should be long enough to indicate good faith taxwise. For example, with an initial lease term of five years and a succession of optional five-year renewals the Bureau of Internal Revenue would look with a critical eye—and justly so—on any attempt to depreciate the full value of the leasehold in five years.

The first and second mortgagees are getting precisely what they asked for in the way of security and return; they are presumably well content. The title owner who gets a fixed annual return of close to 15.4% on his $650,000, without any effort or worry on his part, and with the privilege of offsetting that return for tax purposes by an annual depreciation of 2% on the full value of the building, should be very happy indeed. I am thoroughly satisfied with the profit rung up on my sale of the leasehold. The present leaseholder, with a net return of $160,000 a year, against which he may charge depreciation of the cost of his leasehold, has an investment that is undoubtedly much to his liking. The building's occupants should be happy that a sound financial setup will assure adequate maintenance and efficient operation.

THE ARRANGEMENT IN REVERSE:

Instances may arise where, rather than acquire a property with a view to reselling and leasing back, it will be preferable to acquire the leasehold and then the fee. Such a case appears in the former S. W. Strauss office building at 565 Fifth Ave., New York. There we purchased a leasehold, the land having been owned by the Gerry estate over a long period of years. Thorough examination of the tax structure disclosed some factors we thought needed correcting, and we found the same feeling to be true with regard to certain features of the lease. So we entered negotiations with the Gerry estate for the land. Upon finding that the purchase could be financed by a mortgage at 4% interest, with a moderate amortization rate, we bought the ground under the building. For the first time ownership of land and improvement became merged. Thereafter certain changes were made in the building and some of the rents adjusted so that the property could be set up for a sale and lease-back arrangement, with the land once more divorced from the building.

As a matter of fact, we have found that a custom-made lease, tailored to fit the circumstances of a particular case, with adequate renewal options, is tantamount to ownership. Such a lease may well provide for periodic rent-reduction benefits to the leaseholder based on capital accumulation and reduced interest charges for the title owner as a result of amortization. By assuring the title owner a fixed income, against which depreciation may be charged, the property is set up for a sale by him of either land or improvement or both, as he may wish, to a life insurance company or some other reservoir of the public thrift.

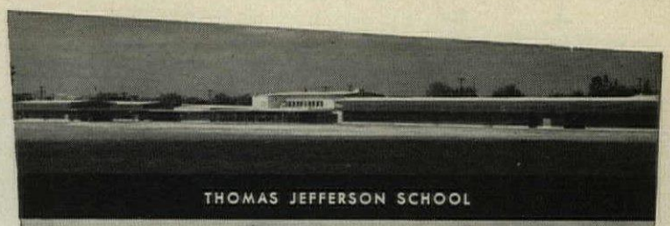
Excerpts continued on p. 218

SCHOOLS:
San Gabriel, California

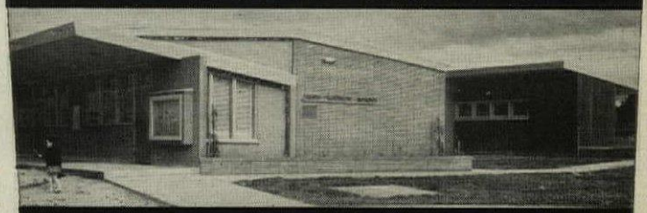
ARCHITECTS:
Kistner, Wright & Wright, Los Angeles

MECHANICAL ENGINEER:
Chester D. Walz, Los Angeles

Janitrol gives clean, quiet heating for these schools



THOMAS JEFFERSON SCHOOL



JAMES MADISON SCHOOL

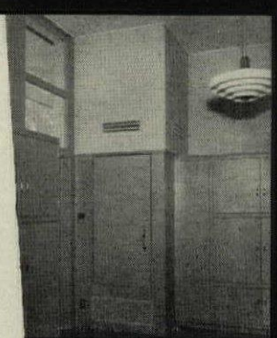


CALVIN COOLIDGE SCHOOL

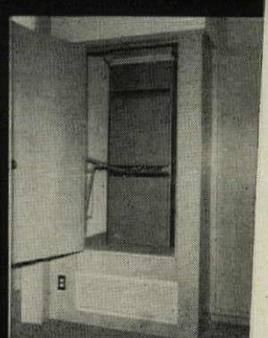
More than ninety schools by this architectural firm and mechanical engineer use this forced warm air system of heating that proves to be most functional and economical. Each room has its own gas-fired conditioner located in a corner closet. This permits individual temperature control for each classroom, according to the student activity.

Over 4,000 Janitrol furnaces installed in schools in Southern California since 1948 meet the requirements for quietness, good ventilation and uniform heating; and the extra filter capacity means cleaner air. Also, the schools appreciate the minimum of maintenance and the long life Janitrol gives them.

For design and specification information, write for A. I. A. Files on Commercial and Industrial Gas Heating.



Exterior of corner cabinet containing room conditioner. The two warm air outlets are shown above the woodwork, air return is below access door.



Inside, the compact Janitrol conditioner is completely accessible from the front . . . an outside air inlet supplies combustion air.

Janitrol
GAS-FIRED UNIT HEATERS

Janitrol Heating & Air Conditioning Division
Surface Combustion Corporation, Columbus 16, Ohio
West Coast: Natural Gas Equipment Co., Pasadena

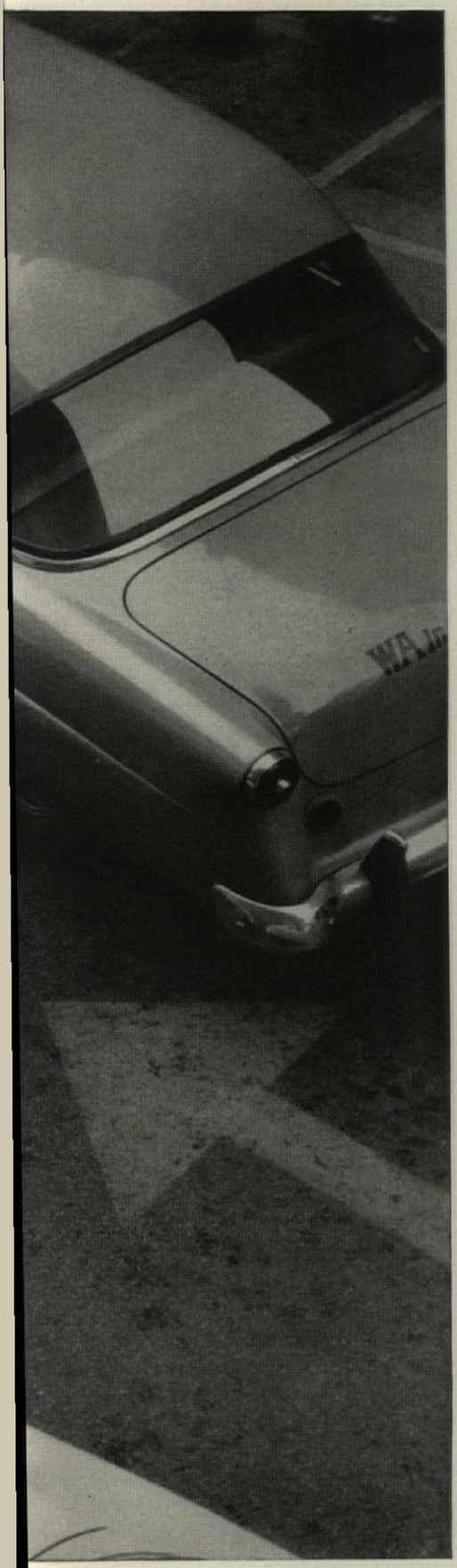
for better design . . . see an architect

ALSO MAKERS OF *Surface* INDUSTRIAL FURNACES AND *Kathabar* HUMIDITY CONDITIONING

Keep your client's employees



out of the traffic stream!



This illustration is not exaggerated when you think of working conditions in thousands of offices which do not use partitioning for privacy and efficiency.

To help you give your clients more productive, livable offices at the lowest cost, Virginia Metal Products does this:

1. VMP sells the advantages of properly designed working areas.

For example, VMP offers *ratio-delay studies* which accurately rate office efficiency. These reports are before-and-after studies of firms who have installed VMP MOBILWALLS to eliminate their traffic stream problems.

A recent study for a radio-tv representative who installed VIRGINIA METAL PRODUCTS MOBILWALLS shows that—

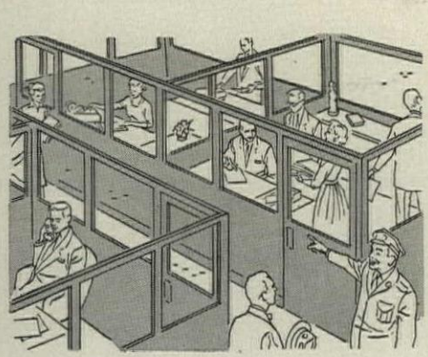
- **Office Productivity increased 30%**
- **Delays and Lost Motion were cut 58%**
- **Time devoted to Distractions and Correction of resulting Errors was cut 55%**
- **The VMP MOBILWALL installation added as much to the work output of the office as could have been added by a 30% increase in employees and payroll!**

These studies are available for your use.

2. VMP works with you to improve the quality and service on VMP MOBILWALLS.

VMP *is a can-do company*. Our sales representatives and factory engineers make your sales and design problems their problems. Their purpose is to give you more help, more experience, more skill in the handling of your specifications.

...and do it best with metal, movable VMP MOBILWALLS



3. VMP MOBILWALLS have modern styling for executive and clerical offices. They fit perfectly and are expertly finished. Colors are restful and permanent. Surfaces never chip, warp or crack—are washed clean with soap and water. Because they are metal, with many distinctive locking features, VMP MOBILWALLS can be moved at anytime to suit changes in floor plans.



4. INSTALLATION TAKES A FEW HOURS, with skilled erection crews part of VMP's service. Working out of nearby warehouses, VMP crews save your time and the client's money. You get exactly what VMP engineering originally promised to deliver... the best solution to designing more productive, livable offices... solved permanently with metal, movable VMP MOBILWALLS!

Interested? Write to Dept. AF-3 for complete, illustrated literature.

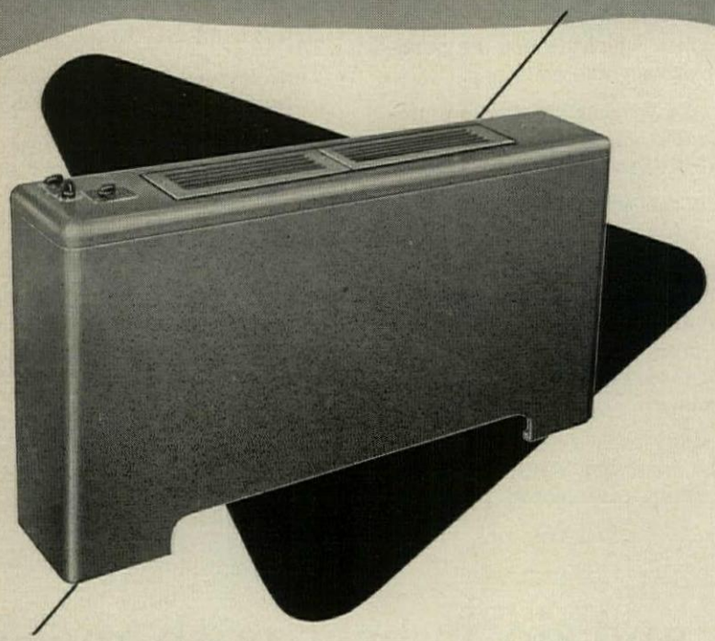
Virginia Metal Products, inc.

ORANGE, VIRGINIA

Subsidiary of Chesapeake Industries, Inc.

FOR MORE USABLE ROOM SPACE . . .

Specify **BUSH** Remote Air Conditioning Units



The ideal unit for hotels, hospitals, office buildings, motels and other multi-room installations. BUSH Remote Type Units, featuring individual room control, provide heating, cooling and circulation of filtered air. Available in vertical or horizontal models.

ADVANTAGES . . .

- Shallow depth front to back permits full use of room space.
- Low noise level, quiet operation. 2-speed fan motor.
- Fan, motor and drain pan is one complete assembly, easily removable for cleaning and maintenance.
- Sturdy construction, galvanneal metal fabrication guarantees long life.
- Easily installed. Units are reversible, vertical units can be installed left or right hand without changes.
- Coil is properly baffled to insure against any by-passing of air. Internal parts are completely covered with a rubber-based undercoating.
- Auxiliary drain pan permits easy connections to drain line.
- Filter is easily removable through the bottom opening. No dismantling of the unit is required.

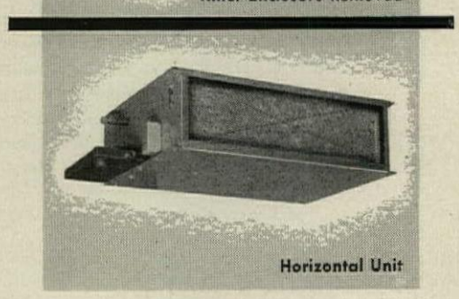
Request free descriptive literature.



Outside Casing Removed



Inner Enclosure Removed



Horizontal Unit

BUSH MANUFACTURING COMPANY

WEST HARTFORD 10, CONNECTICUT

EXCERPTS

Continued from p. 214

Swimming pools—size and cost

Excerpts from an article by George D. Butler in the January issue of Recreation, *published by the National Recreation Assn.*

It is estimated that the number of pools in America, exclusive of private-estate pools, increased from 8,200 to 13,300 during the last six years.

The National Recreation Assn. has long proposed that a city provide outdoor swimming space—in pools or beaches—to take care of 3% of the population at one time, allowing 15 sq. ft. of water area per person. The Tile Council of America suggests typical pool sizes for communities varying from 4,000 to 90,000 population; these range from 600 sq. ft. per 1,000 people in the former to 320 sq. ft. per 1,000 in the latter.

The need to qualify any formula for determining the size of pool a city needs is illustrated by the situation in Levittown, L.I., a new community of nearly 80,000 people. It has nine outdoor pools, each 75' x 125', or more than 1,000 sq. ft. of pool area for each 1,000 people. This amount is far in excess of suggested standards. In spite of this, and of the fact that Levittown is only a few miles from the exceptional bathing facilities at Jones Beach State Park, the pools are so popular that it is often necessary to close the gates to prevent overcrowding.

POOL SIZE. The estimated number of persons who are likely to use the pool for various types of activities must be taken into account in calculating the required size. A frequently quoted study of pool attendance, made at Iowa State College, indicates that:

1. The smaller the community, the larger the proportion which will use the pool.

2. For cities under 30,000 the maximum daily attendance will be between 5 to 10% of the population.

3. The average daily attendance is about 2 to 3% of the population.

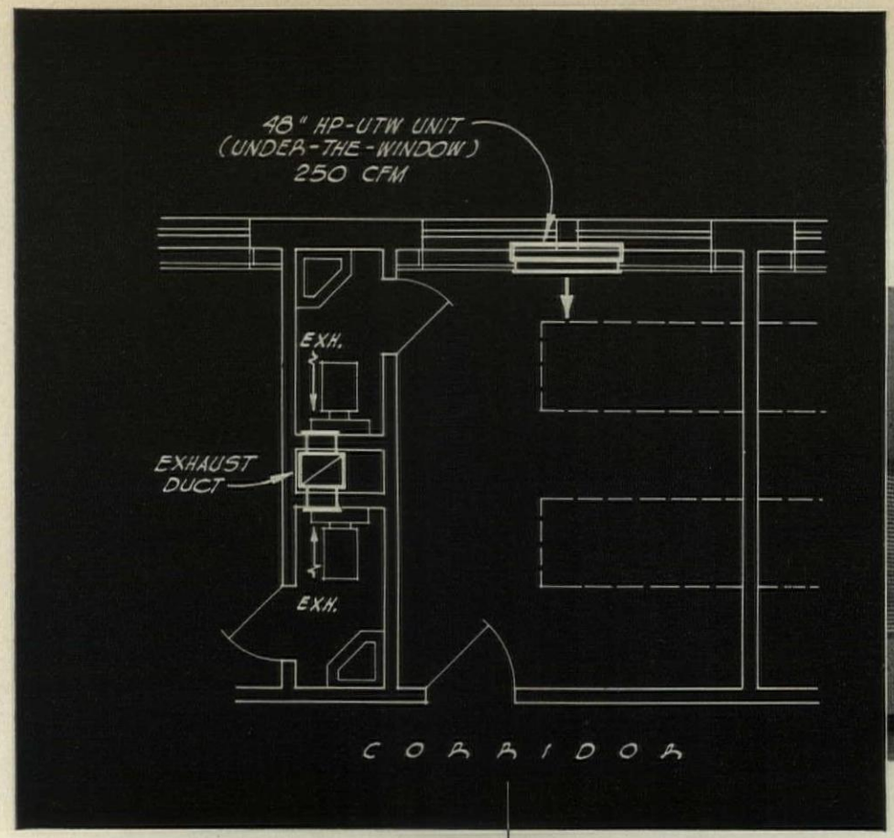
4. Maximum daily attendance at any one time is about one third of the daily attendance.

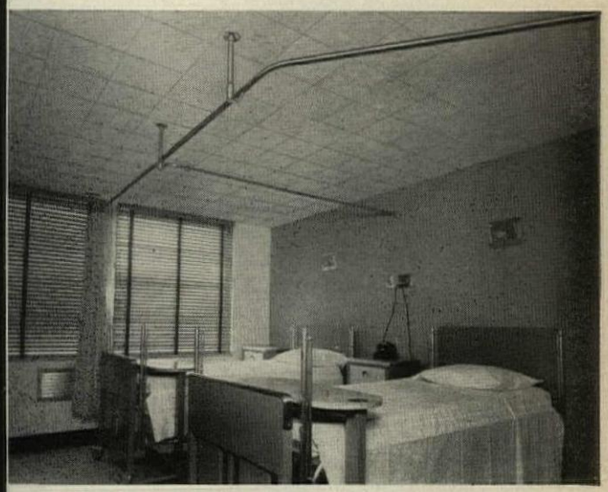
5. Maximum daily attendance will generally be two to six times the average daily attendance.

6. The attendance at any one time on maximum days is about the same number as the average daily attendance.

One consulting engineer has determined that the people of a given community with suitable pool facilities may be expected to take a total number of swims equaling twice the total population. He estimates that the

continued on p. 222

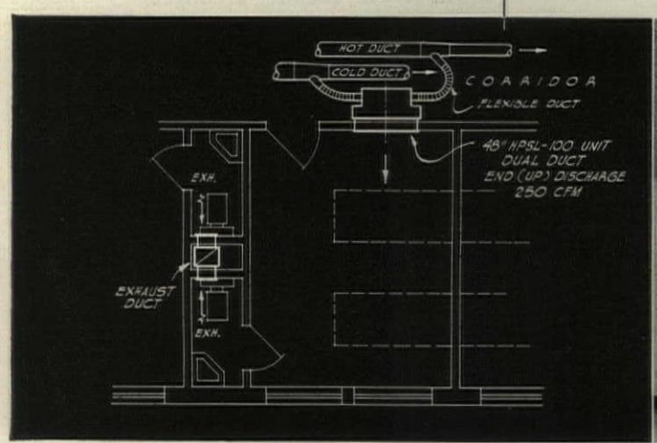


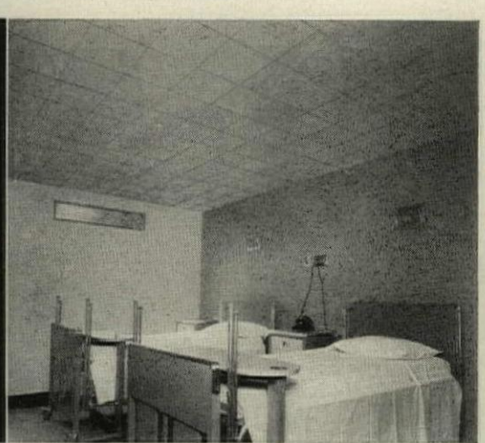


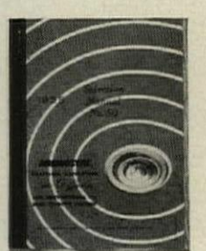
All-air high velocity units for **hospital air conditioning**

In successful use in many hospitals throughout the country, Anemostat HV round, square and straight line units are adaptable to a wide variety of architectural designs. Diagrams and photographs show typical applications of straight line units.

The All-Air High Velocity system of draftless air distribution offers many important advantages for hospital air conditioning. High velocity units, used with smaller than conventional ducts, save space and money. They substantially reduce sheet metal required, can be installed faster, with less labor. Since there are no coils in All-Air HV units, clogging and odors are eliminated. They operate entirely with air processed in the main equipment room; no fans, filters or electric motors are needed with All-Air HV units.







• *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.

Perlite-concrete design

LIGHTWEIGHT INSULATING FIREPROOF CONCRETE ROOF DECK SPECIFICATION MANUAL—By Dale A. Lehr, 218 pp. Perlite Division, Great Lakes Carbon Corp., 612 So. Flower St., Los Angeles 17, Calif. Limited free distribution.

Building designers will find very useful this new manual on perlite concrete for roof decks, in which, for the first time is taken an authoritative and sound engineering approach to a subject of growing importance. The book contains numerous tables and diagrams of roof construction that simplify design. A looseleaf binder enables supplementary information to be added later, when available.

Perlite aggregate, formed by "popping" a siliceous volcanic rock at 1,500 F, weighs less than one-tenth as much as sand or gravel. It can be used alone as a non-structural insulation fill or mixed with portland cement and water to form a lightweight structural concrete of high insulative value. The book presents data for both types of application.

Design tables in the manual enable a designer to pick out the thickness of roof deck required for various mixes to obtain a desired overall insulation value. The compressive strength of the slab also is given, thus enabling the designer to check the thickness for load-carrying capacity.

The tables give coefficients of heat transfer (U-values) for slabs on permanent forms of various types, on metal lath and on paper-backed wire mesh. The effect of ceilings is taken into account. Accompanying drawings show details of the various types of construction.

Also included in the manual are typical specifications and recommendations for mixing, handling and testing perlite concrete, technical data for subpurlins and a discussion of commonly encountered problems, with suggestions for avoiding or correcting them.

"Engineering News-Record" 6/29/54

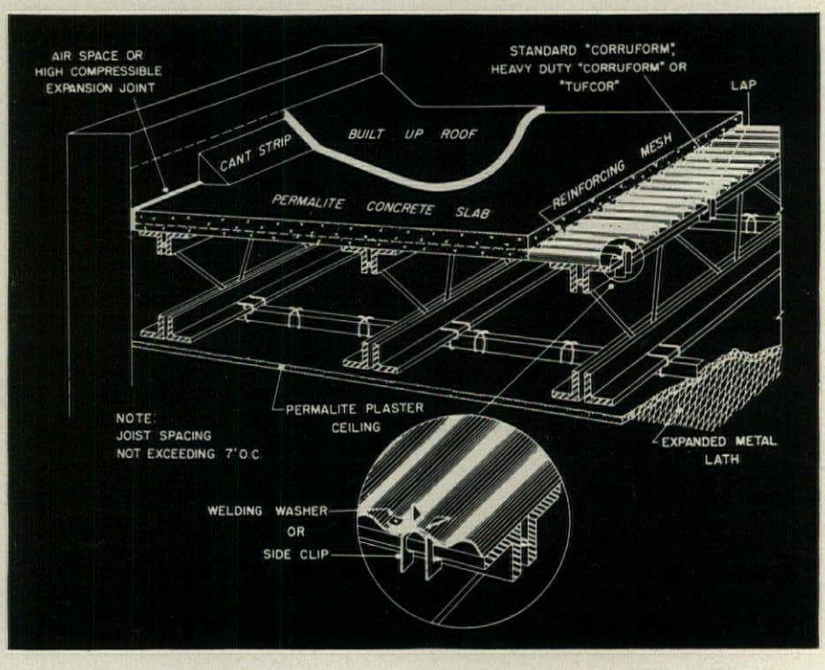
This Solid Engineering Information Can Save You Hours on Every Job. *Don't Delay—Write Today* for Information on How to Get Your Copy of the Permalite Roof Deck Manual!

Get this new complete data on

Lightweight Insulating Concrete

Roof Deck Construction

to save you time and make your work easier!



The big, new Permalite Roof Deck Manual gives you, for the first time, *complete, factual, reliable data* on the use of lightweight, insulating concrete in open-web roof deck construction. Leading architects and designers agree that this 220-page volume provides complete engineering information in easy-to-use form . . . all the different roof forms and types of suspended ceilings, with page after page of tables on slab thickness, weights, strengths and U-factors, already worked out for you to make specifying quick, easy and accurate. You can get this authoritative handbook, packed with usable, every-day working information, from the Permalite franchisee serving your area – for his name and address

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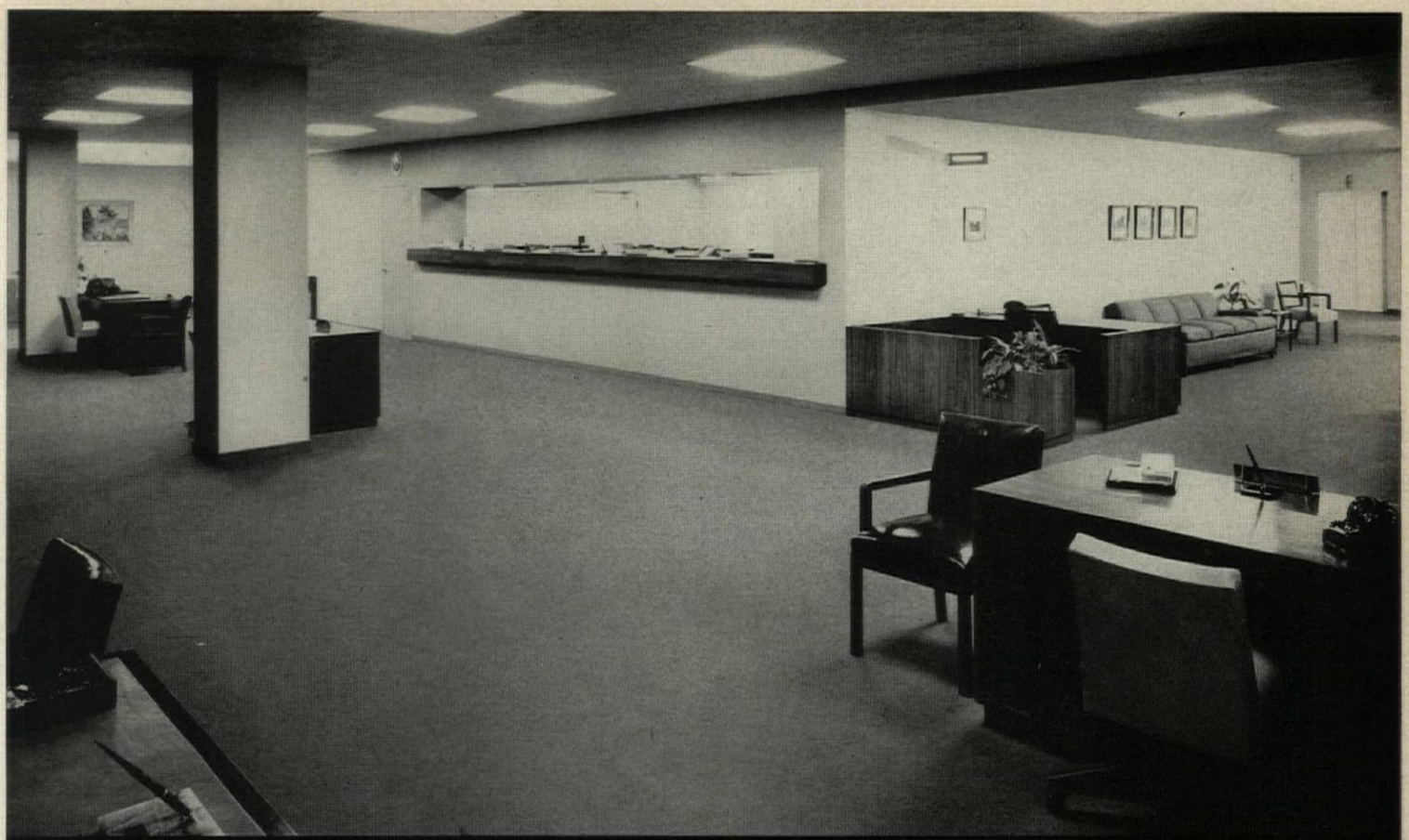

Do your clients know that Carpet saves up to 65% on floor maintenance?

Recently completed studies reveal that carpet is *not* expensive. In fact, carpet saves money because it cuts cost of floor maintenance as much as 65% per year. This fact is shown by a comprehensive analysis of three separate studies comparing carpeted floors with non-carpeted floors. The studies were based on the cost and amount of labor, material and equipment necessary to maintain 1000 square feet of floor space. Here are the results:—

Average maintenance of non-carpeted floor .	$350.00 per year
Average maintenance of carpeted floor . .	$123.00 per year
Savings with carpet	$227.00 per year

This amounts to a 65% saving — a valuable fact for you to have on hand for your clients when you specify carpet.

Carpet has many other advantages. In addition to its beauty and comfort, carpet is excellent for sound-proofing, too. This is particularly important when your job calls for open planning. Carpet absorbs up to 90% of floor noise, reduces "floor fatigue." Carpet also cuts down overall room noise, creates an atmosphere of calm efficiency.

Ask your carpet supplier to show you the wide variety of textures, patterns and colors of today's new carpet. Custom designs are available in many weaves and qualities to meet your specifications.

How to cut floor maintenance costs. Send for "Cutting Costs with Carpet," a study containing complete research on the cost analysis of carpeted vs. non-carpeted floors. Write to the Carpet Institute, Inc., Dept. A-2, 350 Fifth Avenue, New York 1, N. Y.

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EXCERPTS

Continued from p. 218

total swims per season will represent the equivalent of 20 peak-load days, although it may reach the equivalent of 25 or 30 peak-load days in municipal pools.

C. P. L. Nichols, municipal supervisor of aquatics in Los Angeles, allows 15 sq. ft. for each bather and 30 sq. ft. for each swimmer. He defines a person using water less than 5′ in depth as a bather and one using water 5′ or deeper, a swimmer. His total is multiplied by the number of shifts or peaks per day to determine the total daily capacity of the pool. This formula allows more space per patron than the standard proposed by the American Public Health Assn., which estimates that 27 sq. ft. of water 5′ deep or more or 10 sq. ft. of shallower water is required for each person in attendance at the pool at one time, whether in the water or not. This standard when applied to pools with 75% or more of the area less than 5′ deep calls for about 12 sq. ft. for each person in attendance.

POOL COSTS. The National Recreation Assn. made a study of swimming-pool costs in 66 cities that constructed outdoor pools between 1948 and 1952. It revealed that the pools, not including bathhouses, cost on the average between $12 and $12.50 per sq. ft. of water surface, with a median cost of $12.04 per sq. ft. The average cost of 60 pools, including bathhouses, was $16.61 per sq. ft. of water surface, with a median cost of $15.98.

A 1954 study of outdoor pools, conducted by the Conference for National Cooperation in Aquatics, covered the cost of 63 pools, not including bathhouses, built between 1948 and 1954. The average cost per square foot of water surface for pools with less than 4,000 sq. ft. was $15.30 and for pools with 4,000 to 6,000 sq. ft., $11.46 per sq. ft. For larger pools the average costs for three groups were $12.28, $14.65 and $10.90, respectively.

The Charles M. Graves Organization, park and recreation engineers of Atlanta, has worked out the following schedule for estimating pool costs which include the pool with its fittings, underwater lights, fencing, deck and mechanical equipment—everything but the bathhouse itself:

Size of pool in sq. ft.	Cost per sq. ft.
0- 4,000	$11-$12
4,000- 5,000	10- 11
5,000- 6,000	9- 10
6,000- 7,000	8- 9
7,000- 8,000	7- 8
8,000-14,000	6-

It is estimated in 1953 that a well-constructed bathhouse could be built for about $12 per sq. ft.

Kenneth H. Larkin, pool designer of Kansas City, offers this estimate of costs of swimming-pool projects, including the pool and bathhouse completely equipped and ready for use:

Size of pool in sq. ft.	Cost per sq. ft.
1,800	$16.67
4,000	15.25
9,000	12.22

Excerpts continued on p. 226

school architects: regardless of how much more you might spend, you cannot buy a more practical or a more dependable **school sound system** than a ***Bogen***



A system for every budget, functionally designed according to the recommendations of the U. S. Office of Education, and built by the country's largest manufacturer of sound systems.

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see catalog 31a/Bo
in Sweet's File

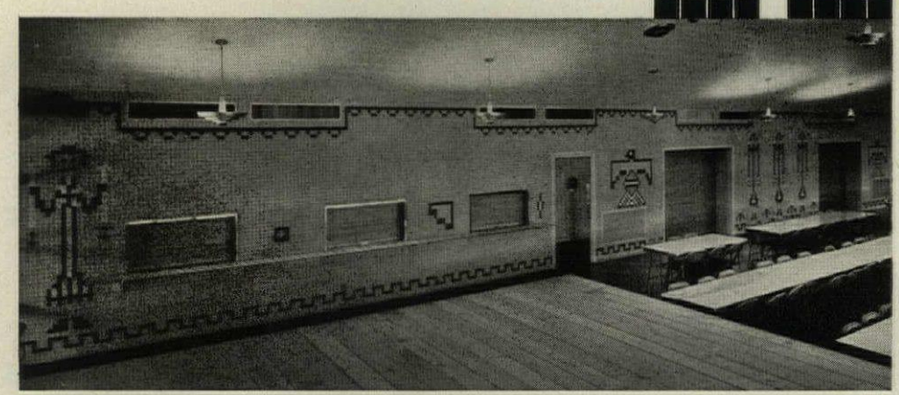


mural in Suntile ceramics

BRIGHTENS SCHOOL CAFETERIA, SAVES MAINTENANCE

In this new Arizona high school cafeteria a mural in Suntile Ceramics, 100 ft. long by 10 ft. high, combines fresh decorative interest and a durable, easily maintained surface.

Conceived by architect Edward S. Varney, and developed by the school's art students, the mural is based on colorful Navajo Indian motifs whose geometric forms could be readily reproduced in 2″ x 2″ unglazed, Satinized Suntile Ceramics. Colors are grey, black, white, turquoise, rose, yellow, jade green and red.



Mesa High School, Mesa, Arizona • Edward S. Varney, architect

SPECIAL DESIGN SERVICE

Layouts for this tile installation were made by our Special Design Service—a group of trained ceramic artists who are prepared to execute your own sketches faithfully or submit suggested tile designs—at no obligation to you, of course.

For further information on our Special Design service just write us. Address Dept. AF-35,

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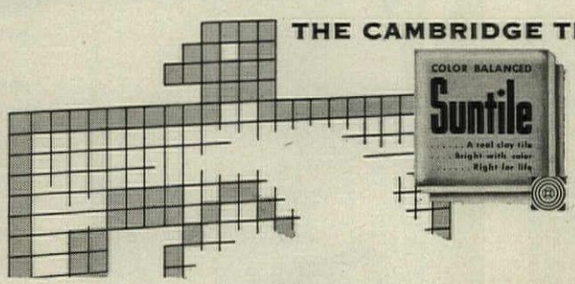

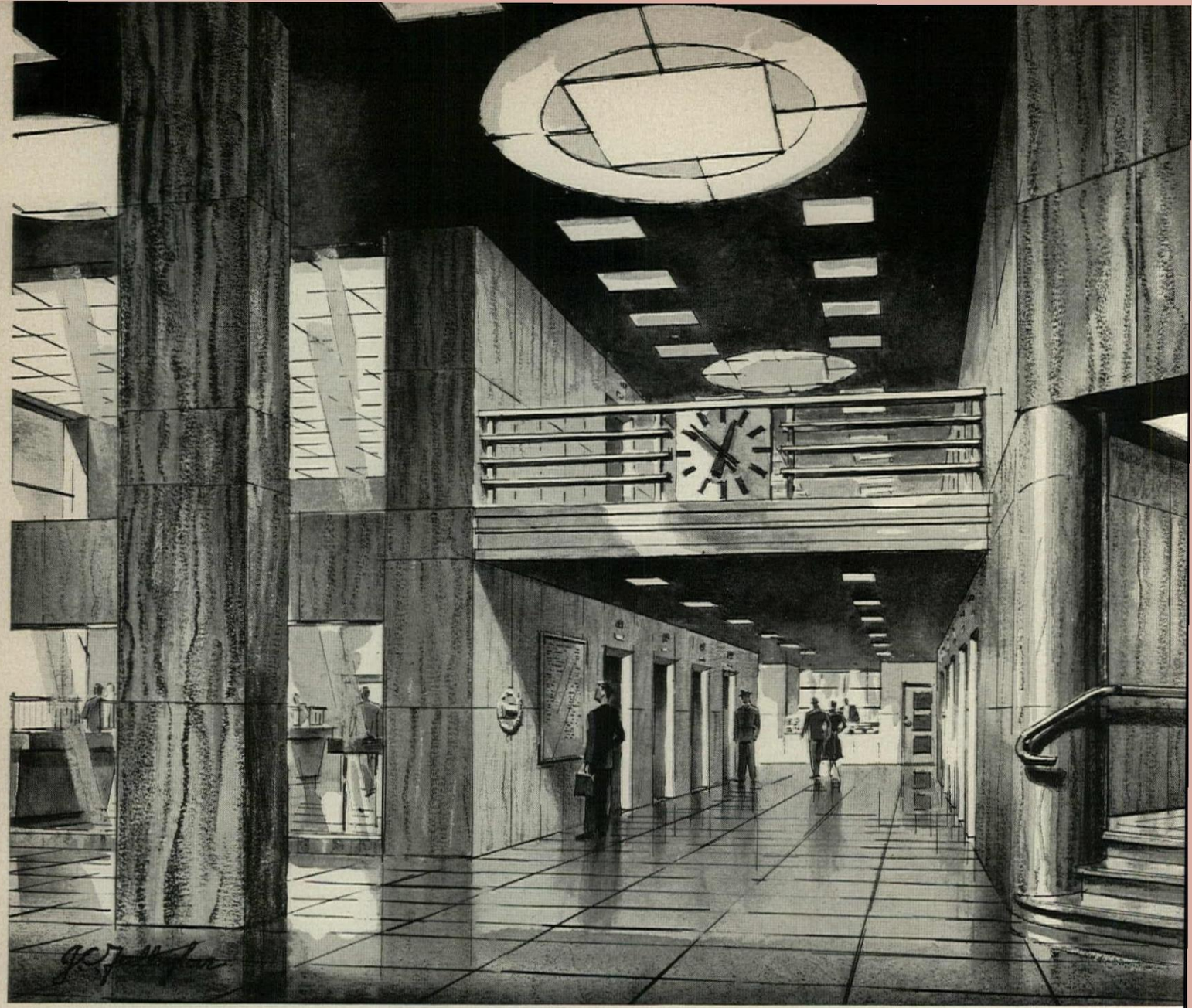

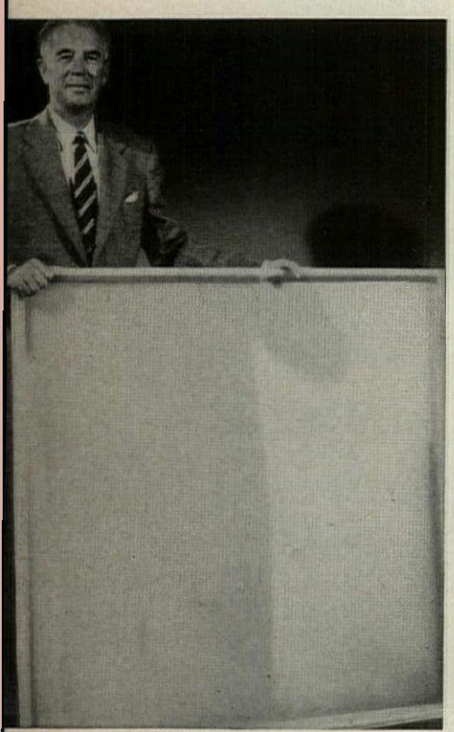

Lightweight, rigid 4' x 4' modular unit of extruded "Lucite." This unit evenly diffuses and transmits pleasing light without glare—it also withstands direct exposure to sunlight.

Good lighting is good business

Utilize the superior lighting properties of Du Pont LUCITE® acrylic resin



Light-diffusing ceilings are also made from corrugated panels of extruded "Lucite." This material offers strength, rigidity and durability with freedom from discoloration.

Leading architects and lighting engineers know the importance of lighting as a modern design element. Du Pont "Lucite" gives a harmonious architectural blending of design and light at efficient levels. Extruded "Lucite" pleasingly diffuses and faithfully transmits light at low surface brightness. It has exceptional strength, durability and freedom from discoloration... assures years of steady peak lighting performance.

"Lucite" can be found to meet a wide variety of design specifications. It is readily fabricated in modular-size units and corrugated panels which are used in luminous ceilings or islands of light to create beautiful effects. "Lucite" is available in many colors.

Write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 293, Du Pont Building, Wilmington 98, Delaware, for further information on extruded "Lucite."

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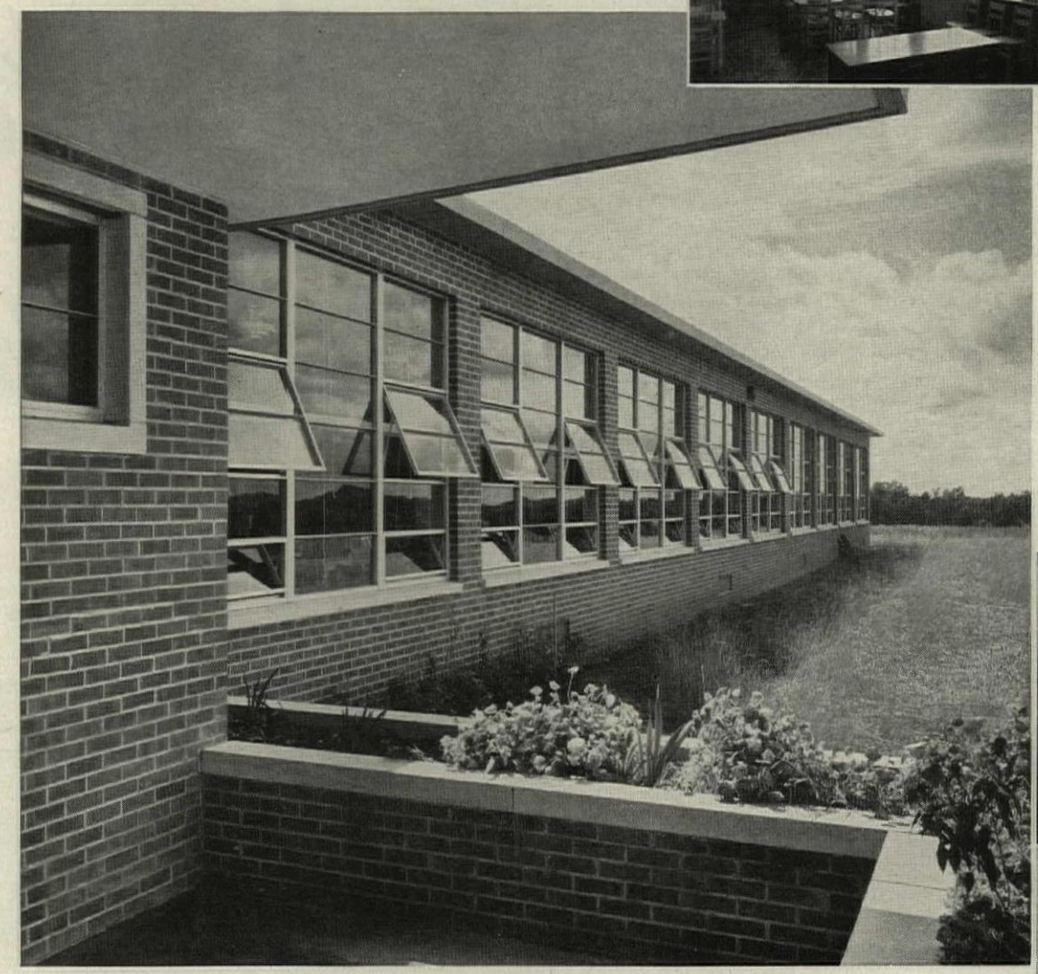
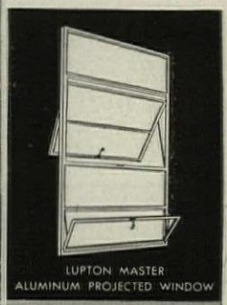
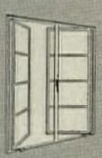


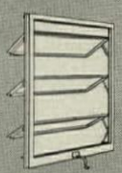
West End High School, near Clarksville, Va. Architect: S. N. Mayo, Richmond, Va. Contractor: Mottley Construction Co., Farmville, Va. Windows: Lupton Master Aluminum Projected Windows.



LUPTON MASTER ALUMINUM PROJECTED WINDOW



LUPTON CASEMENT ALUMINUM OR STEEL



LUPTON ALUMINUM AWNING WINDOW



LUPTON ALUMINUM DOUBLE HUNG WINDOW

Brighter classrooms for "brighter" students . . .

Lupton answers modern education's demand for brighter, more airy classrooms with windows specifically designed for schools. Here, in this new Southern school, the Lupton Master Aluminum Window was used. Wall to wall installation has practically brought the outdoors right into the room.

The Lupton Master Aluminum Window has a distinct advantage — it will never need painting. This offers an immediate saving. As the years go on, there will be additional savings — no periodic repainting, no sticking windows, no warping, no difficult operation due to clogging layers of paint.

Lupton Metal Windows, backed by over 40 years in window manufacturing and design, offer long life with minimum maintenance. Ask for more details, or write for full information . . . Lupton makes a *complete* line.

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IN COMMERCIAL AND INDUSTRIAL BUILDINGS



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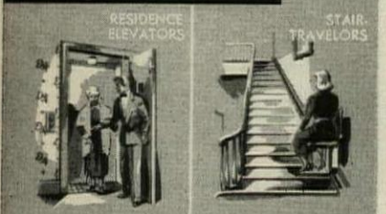

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EXCERPTS

Continued from p. 222

Ten principles of good lighting

Excerpts from the conclusions of Digest No. 70, *published by Britain's Building Research Station*

1. We see better the more light we have. Adequate visual performance is achieved if about 10 lumens per sq. ft. are provided for casual or intermittent tasks, and 50 lumens per sq. ft. for difficult and fine work. In terms of daylight, this means a daylight factor of 2% for casual work and 10% for fine work, and provision of curtains or blinds to cut out sky glare on bright days.

2. We see better if the main visual task is distinguished from its surroundings by being brighter, or more contrasting, or more colorful, or all three. It is therefore important to identify the main focal points and build up the lighting from their requirements.

3. We see better if the things we have to look at are seen in an unobtrusive and unconfusing setting, neither so bright nor so colorful that it attracts the attention away, nor so dark that work appears excessively bright with the result that the eyes are riveted on to the visual task. Good lighting therefore provides a moderate and comfortable level of general lighting, with preferential lighting on the work. This can be called *focal lighting*.

4. The surroundings should be moderately bright, and this should be achieved by combination of lighting and decoration.

5. No source of light should be a source of glare discomfort. Luminaires should be designed to prevent excessively bright areas being visible. Windows should be provided with curtain blinds or louvers to be brought into use when the sky is very bright.

6. Plenty of light should reach the ceiling, in order to dispel any feeling of gloom and to reduce glare.

7. Sources of light should be chosen to ensure that the color rendering which they give is satisfactory for the situation in which they will be found.

8. Care should be taken to eliminate any discomfort from flickering light sources.

9. A dull uniformity should at all costs be avoided. Small brilliant points of light give sparkle to a scene without causing glare.

10. The lighting of a building should be considered always in relation to its design and in particular to the scheme of decoration to be installed. On no account should lighting be considered to be merely a matter of windows or fittings. The whole environment enters into that which constitutes a good lighting installation.

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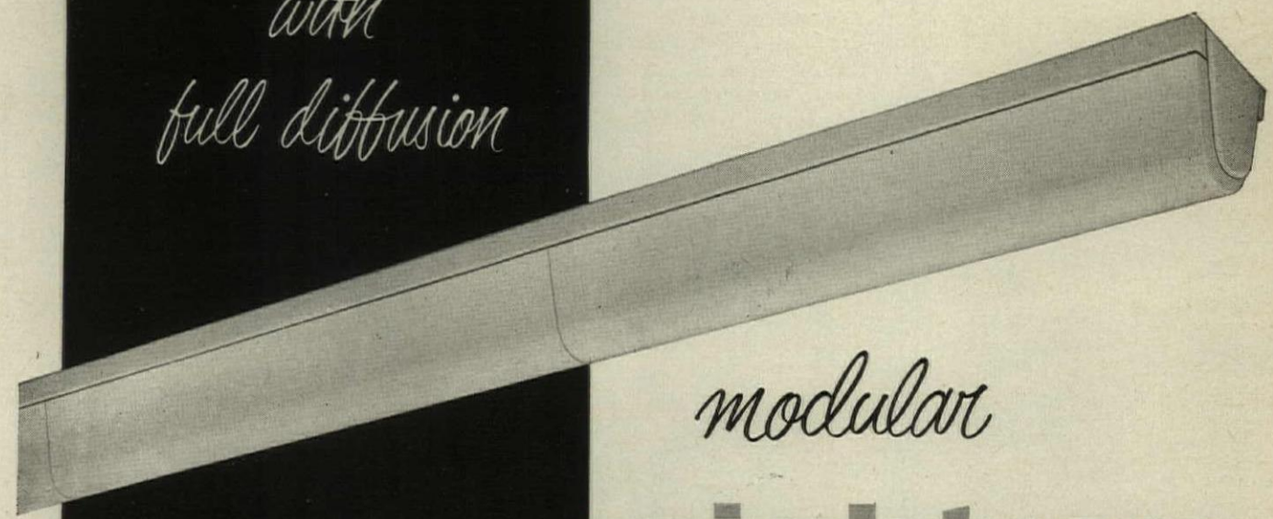
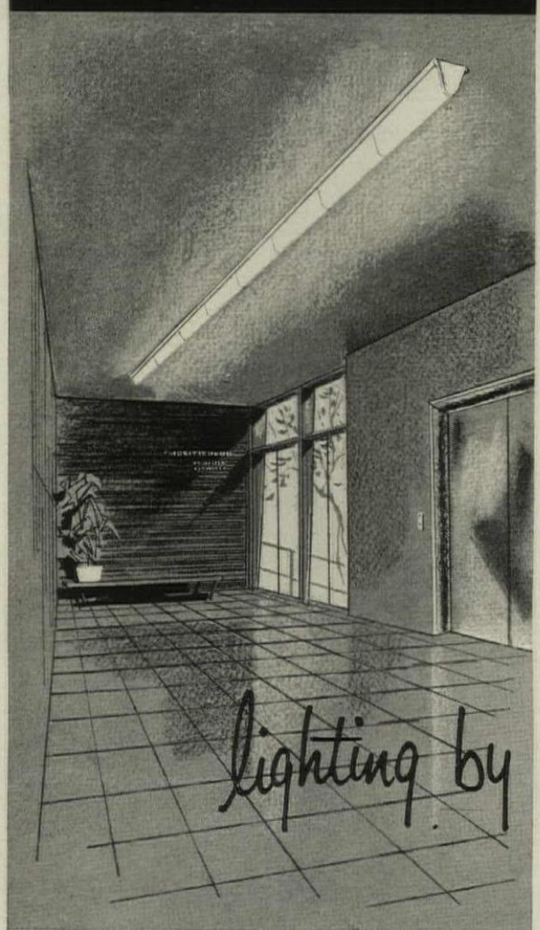
lines of light *with full diffusion*



modular sightron



For flowing lines of glareless light, tailored to the exact dimensions of corridors or utility areas . . . modular Sightron by Lightolier in 2 foot modules, joined tightly end to end. Injection molded, pure white, smooth polystyrene diffusers with matching white housings present a trim, crisp appearance, blend gracefully into interior design. Diffuser sends light in all directions for overall area illumination; snaps out with one hand for easy relamping and cleaning. Rapid start ballasts light lamps instantly. Available in several sizes for commercial or residential applications.

Write today for a free copy of Lightolier's complete Architectural Lighting Portfolio.

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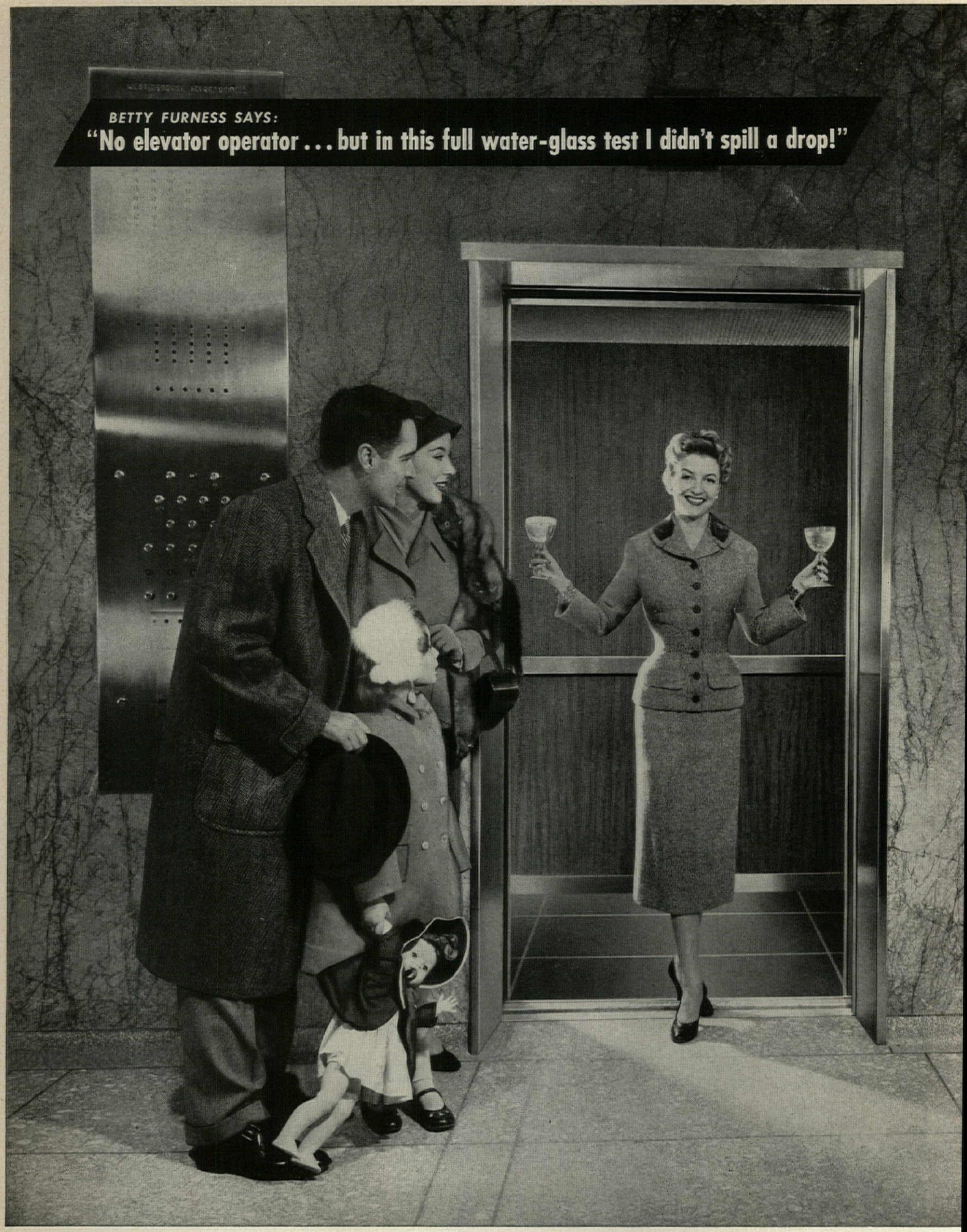
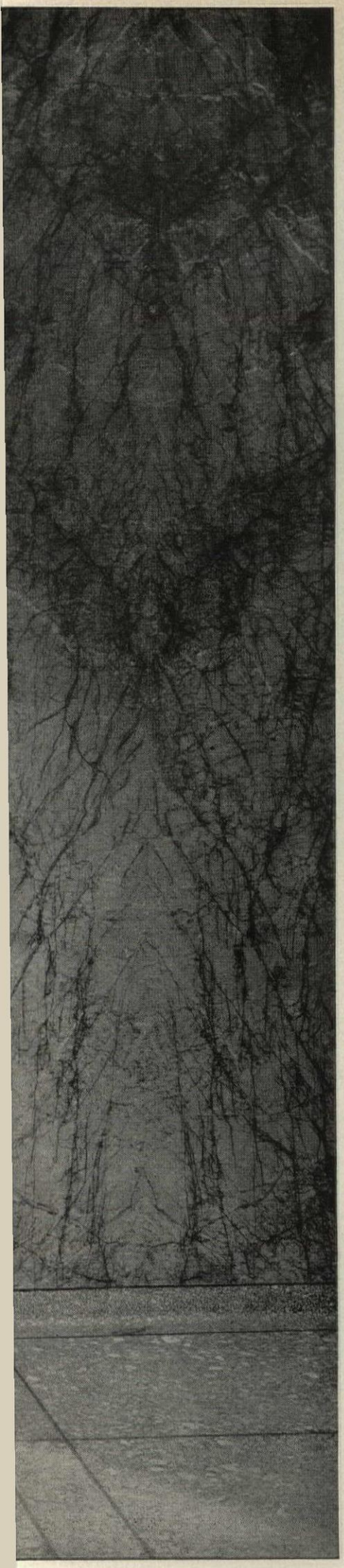

BETTY FURNESS SAYS:
"No elevator operator . . . but in this full water-glass test I didn't spill a drop!"



New Westinghouse Elevator Control Ends Annoying "Door-Scare" Forever

Delighted passengers in heavy-traffic buildings report complete confidence in Westinghouse Operatorless Elevators with Exclusive New TRAFFIC SENTINEL.

The last objection to heavy-duty operatorless elevators has been overcome once and for all by exclusive New Westinghouse TRAFFIC SENTINEL. This remarkable elevator door control forever eliminates frightening, irksome, premature door-closing movements which can startle passengers.

Proved by Water Glass Test

On Westinghouse Operatorless Elevators, equipped with exclusive new TRAFFIC SENTINEL, the car and corridor doors remain completely motionless while passengers are entering or leaving.

There is positively no movement of the open doors—a full glass of water held next to them will not spill a drop.

Gone is any trace of passenger anxiety, worry, or "door-fright." TRAFFIC SENTINEL guides Westinghouse Operatorless Elevator doors with its "electronic hand" far more expertly than the most highly trained operator.

Invisible Beams Control Doors

Invisible infra-red beams "watch" passenger movement and synchronize door closings automatically according to traffic flow. They adjust door-open time differently for passengers entering and leaving the car and close doors only after the last passenger passes safely through.

Tenants—to a man, woman, and child—are delighted and amazed at this mind-reading marvel.

Cuts Door-Open Time

TRAFFIC SENTINEL not only inspires complete confidence among passengers *but* speeds traffic movement by eliminating all unnecessary door-open time.

If you are thinking of new building or modernization, we'd like to show you TRAFFIC SENTINEL and discuss elevatoring in general. Call our nearest office today, or write Westinghouse Elevator Division, Dept. SPX, 9 Rockefeller Plaza, New York City.

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J-98717

BOOKS

ORGANIZED INDUSTRIAL DISTRICTS—a Tool for Community Development. By Theodore K. Pasma. For sale by the Superintendent of Documents, US Government Printing Office, Washington 25, D.C. 111 pp. 8" x 10¼". Illus. 65¢

Planned or organized industrial districts are being developed in increasingly big numbers each year. Prior to 1940, only 24 were in existence, but 52 were added in the forties and 35 more since 1950. Last year FORUM reasoned that it was high time information on this growing development was gathered and packaged (AF, April '54)—and so did the US Commerce Dept.

Released at year-end, the government's new booklet is a comprehensive text on the planning and operation of industrial districts fortified with documentary information from more than 100 established districts coast to coast. Scope of the book is indicated by these chapter headings: planning, organization, costs and financing, control services and facilities, and promotion. The final chapter is comprised of the case histories of a dozen successful districts.

FIRE ENDURANCE OF OPEN-WEB STEEL-JOIST FLOORS WITH CONCRETE SLABS AND GYPSUM CEILINGS. By James V. Ryan and Edward W. Bender. Published by National Bureau of Standards, Order from the Government Printing Office, Washington 25, D.C. Building Materials and Structures Report 141. 17 pp. 8" x 10". Illus. 20¢

This publication describes fire-resistance tests on a number of floor constructions which are typical of those suitable for use in homes, apartments, stores and office buildings. The results reported will be useful to building and code officials as well as architects and engineers concerned with the selection of ceiling constructions for aplication below steel joist floors for the purpose of providing varying degrees of fire resistance to the structure.

The report's conclusions:

▸"Open-web steel-joist floors with ceilings of perforated gypsum lath and gypsum-perlite plaster will provide fire resistances up to 1¼ hour and those with adequate reinforcement to more than four hours, covering the range of requirement in many building codes.

▸"Even relatively thin coats of plaster and lath as normally applied without reinforcing lose strength to the point they can no longer support their own weight while still of considerable fire-protection value.

▸"The use of some form of reinforcing to reduce the span of lath and plaster between supports and thereby keep the ceiling in place and functioning as protection to the joists and slab is essential for fire resistances of two hours or longer."

USEFUL OBJECTS TODAY—teaching portfolio No. 4. By Greta Daniel. Published by the Museum of Modern Art. Distributed by Simon & Schuster, 630 Fifth Ave., New York, N.Y. 56 pp. 8"½ x 11". Illus. $2.95

A survey of familiar implements. Kitchen utensils, tools, glass and dinnerware, lamps, clocks, luggage, bowls and vases are handsomely photographed and contained in a looseleaf portfolio. The plates are accompanied by an introductory text on the development of modern design and its place in our civilization.

ARCHITECTURAL DRAFTING. Second ed. By William J. Hornung. Published by Prentice-Hall, Inc., 70 Fifth Ave., New York 11, N.Y. 221 pp. 8¾" x 11½". Illus. $4.50

A complete home course in architectural drafting. The chapters of this book follow the sequence of planning and constructing a house.



Junior High School, Keene, New Hampshire
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Architect: J. A. Britton
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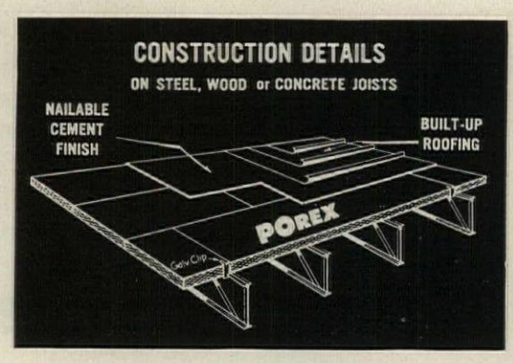
Plain POREX for short spans and Composite POREX for long spans are also ideal for Auditoriums, Gymnasiums, Armories, Churches, Factories and many others.



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Plain	3"	¼"	10	—	90	50	—	—
Composite	3"	¼"	14	—	—	—	100	60

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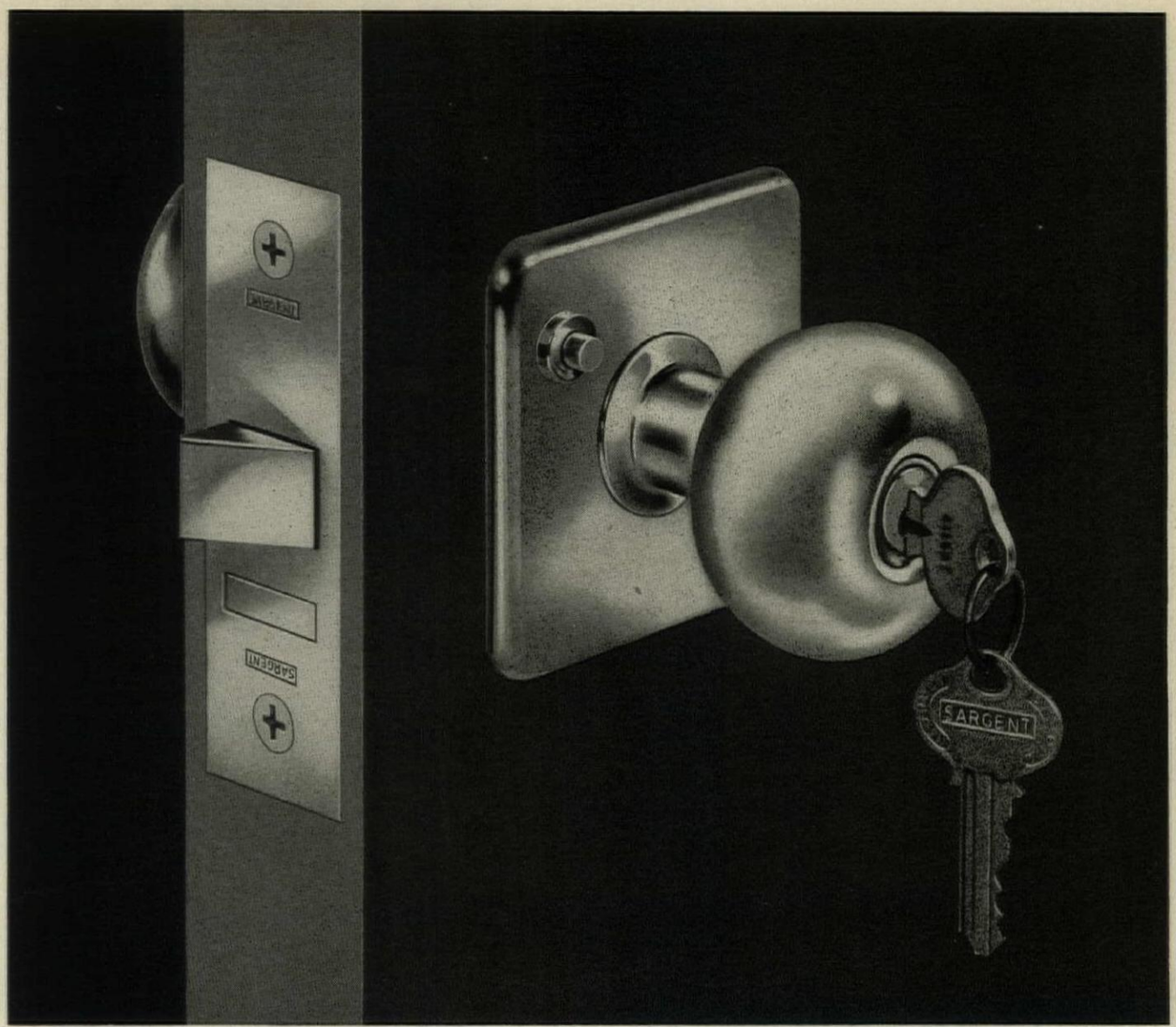

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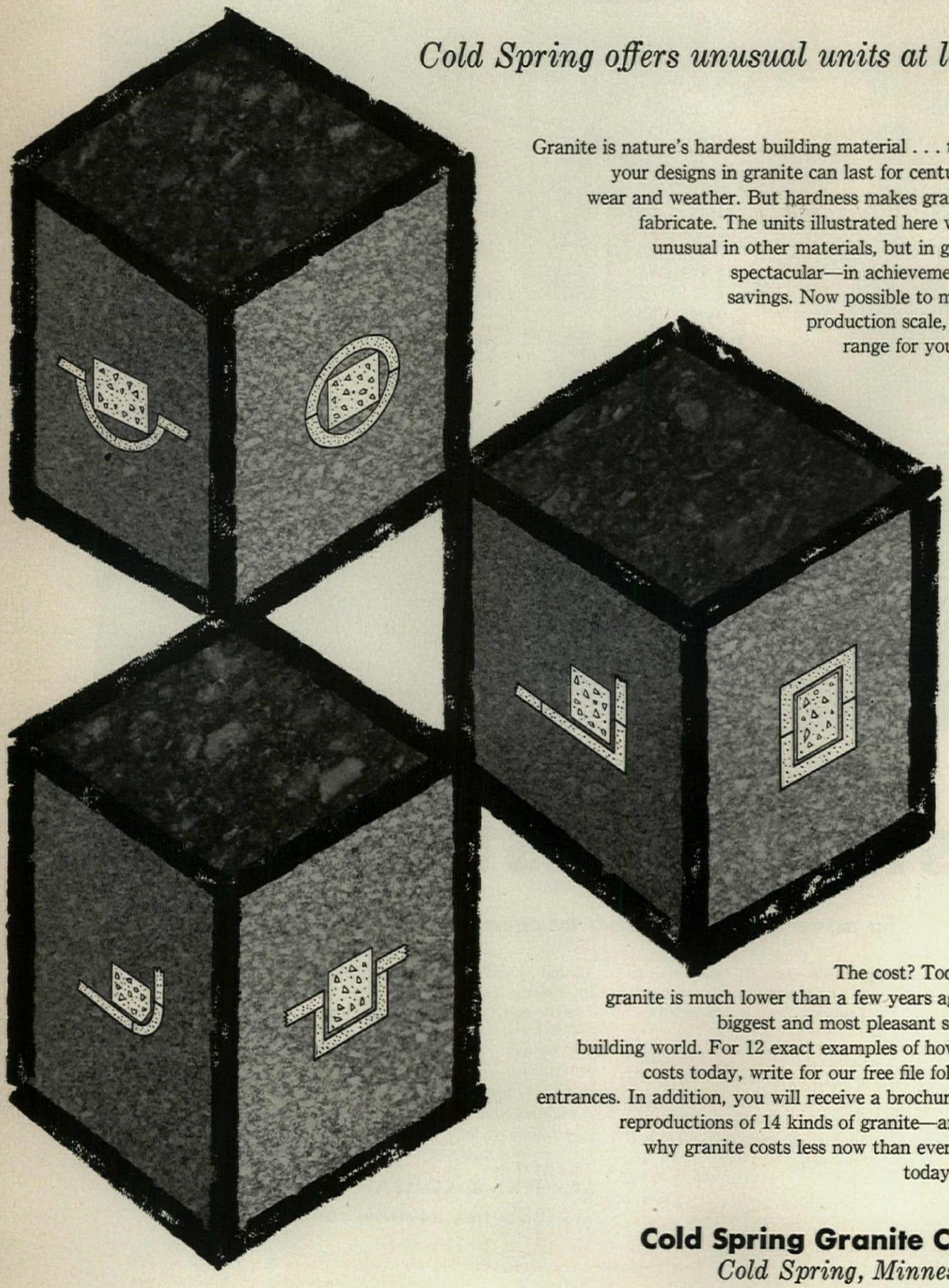

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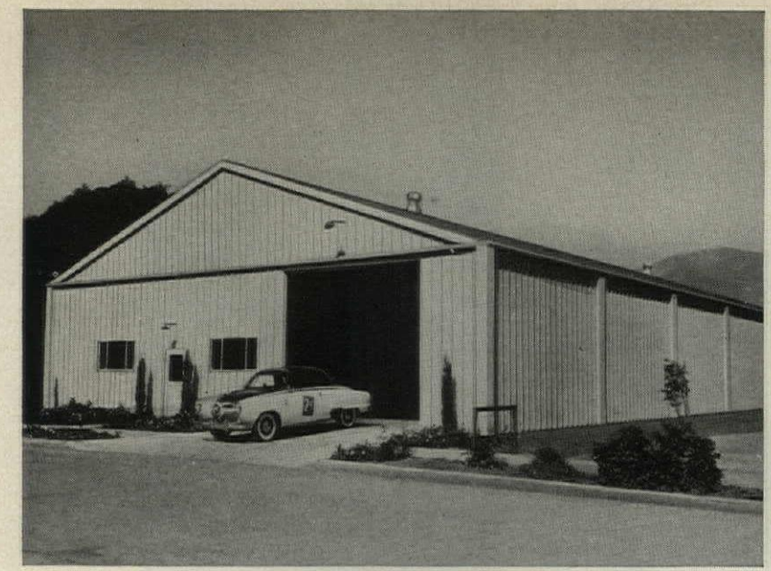
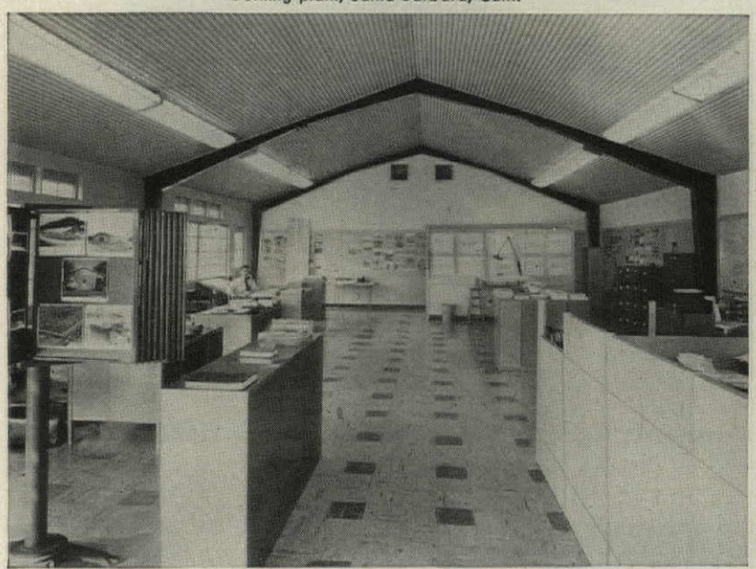


Bottling plant, Santa Barbara, Calif.



Building and industrial equipment, Albuquerque, N. M.



Architect and builder's office, Paso Robles, Calif.



Hardware store, Lafayette, Calif.

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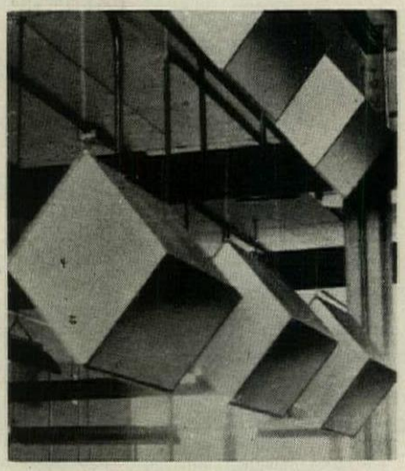
Library of the Minneapolis School of Art

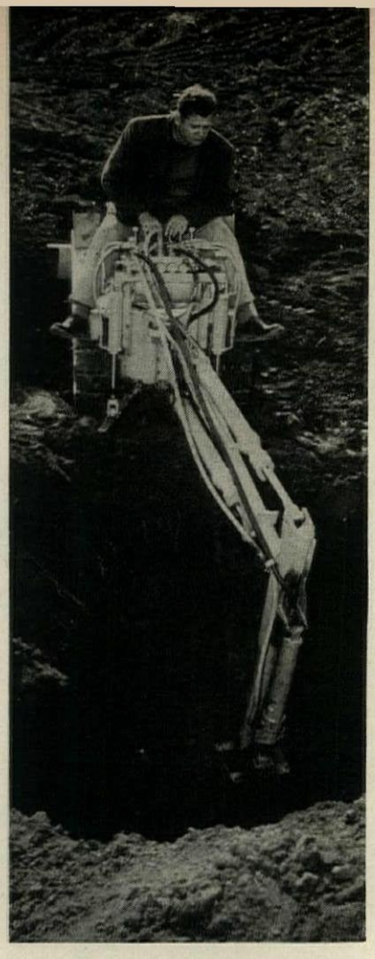
PRODUCTS



Breezy blowers rest easy on T's (p. 254)

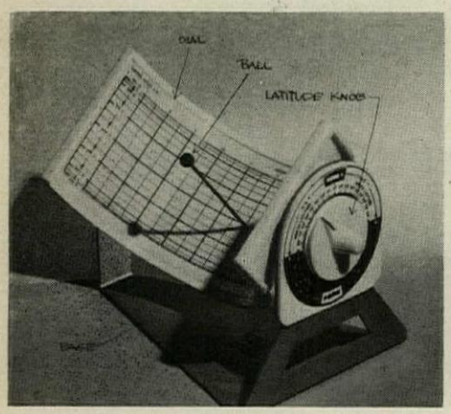


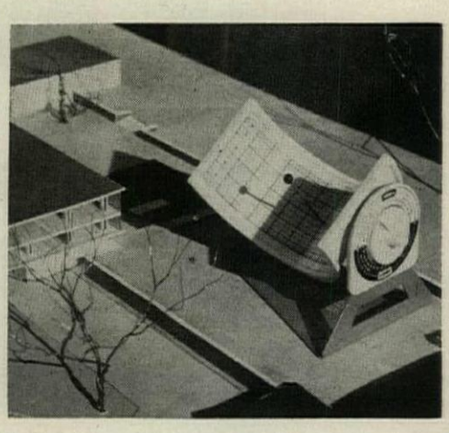
Square clouds clobber loud sounds (p. 246)



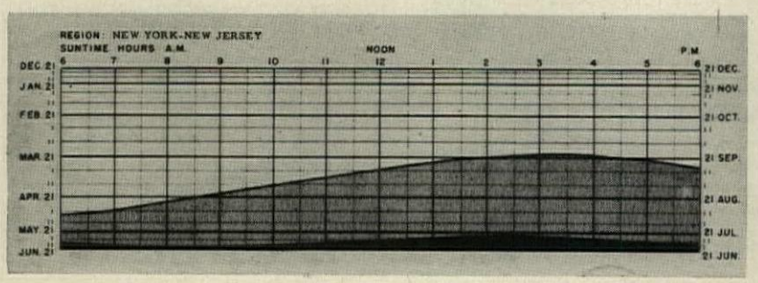
Hydraulic haunches for deep digger (p. 266)

Shade Dial reproduces on models light, shade and shadow effects of sun





SHADE DIAL, building model and any light source can be used to determine sun's position any time of day and month for any part of world, and to help design shading devices accordingly for underheated as well as overheated periods of the year. The chart for N.Y.–N.J. area (from booklet accompanying the instrument) indicates hottest hours in black; cool in gray.



Two research architects, the Olgay Brothers of Princeton University's Department of Architecture, have made many impressive studies on the effects of climate on structural form (FORUM, Aug. '54). The *Shade Dial,* a unique little by-product of their research, is impressive in its simplicity.

Cognizant that window insulation accounts for the greatest portion of heat entering a building, the Olgays developed this calculator as a practical, inexpensive means of studying shading needs. (The *Shade Dial* is priced at about $8, compared to $600 up for complicated, less-flexible, custom-made sun machines.) The instrument consists of a half-round dial calibrated for seasonal and hourly changes. It is placed near a building model with its North point oriented to the model's. A small ball on a pin, when illuminated (by daylight or electric lamp), casts a shadow on the dial. To determine the insolation for a given time, the dial is tilted until the ball's shadow falls on the point indiacting the hour and month. The model then will be illuminated accordingly. A latitude knob adjusts the angle to suit any geographical location, above or below the equator. An architect designing a building or group of buildings for anywhere in the world can readily determine the shading needs and plan louvers, overhangs accordingly—or turn his building around until a problem side is shaded.

Distributor: Universal Corp., Dallas, Tex.

continued on p. 238

PLUG IN ANYWHERE—WITH ELECTRIFLOOR!



. . . because this structural floor system has unlimited electrical availability built right in

Design your next building around Fenestra* Electrifloor† and it can *never* become electrically obsolete! Electrical, telephone or intercommunication outlets can be installed in any or every square foot of floor space—any time—from the day it's completed, for the life of the building. Desks and partitions can be moved, office layout changed or new electrical equipment installed without the trouble and expense of tearing up walls and floors for new wiring.

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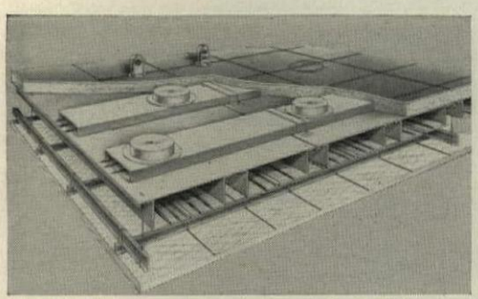
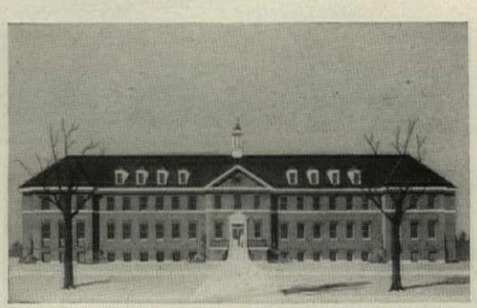
2. Capacity of cells is 2½-3 times greater than most other cellular floors, protecting against dangerous crowding of wires.

3. Flat, smooth surface saves concrete fill and provides utmost economy in preparation of finished flooring.

4. Designed for greater strength with lighter dead weight, giving you unusual structural design economy.



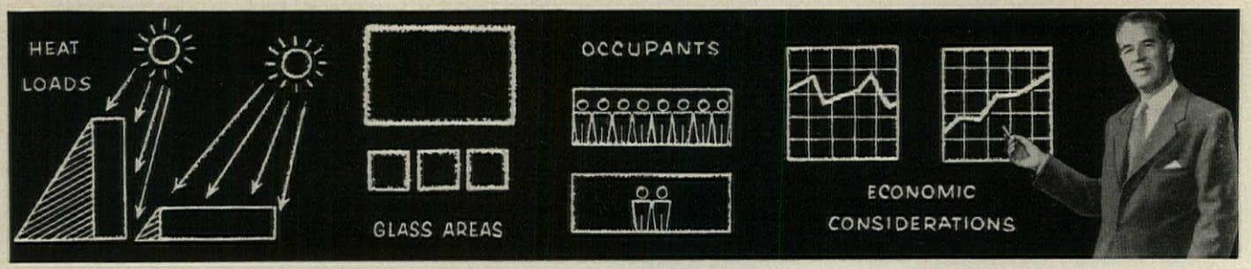
NEPCO header ducts connected to Fenestra cellular steel floor panels make it possible to use all the large area cells, any time, as wiring raceways for electrical, telephone or intercommunication service.



OFFICE BUILDING for the Norfolk Division Office of THE TEXAS COMPANY uses Fenestra-Nepco Electrifloor to protect against electrical obsolescence. Architect: E. Bradford Tazewell. Contractor: Doyle and Russell.



CENTRAL OFFICE BUILDING, Department of Employment, Sacramento, California, is another modern office building using Electrifloor. Specified by Division of Architecture, State of California. Contractor: George A. Fuller.



Heat loads and glass areas and number of occupants and floor areas, economic considerations and taxes and depreciation and operating costs—all these factors (and still others) influence the choice of an air conditioning system for a large building. And since these factors vary from building to building, obviously no one system—or even two or three—can answer each building's needs best. That's why York carefully selects and then precision-engineers each Yorkaire System to fit its particular building.

This ability to meet each building's exacting specifications, to bring the *right kind* of air conditioning to any building, old or new—and to do it all at a reasonable price—appeals so strongly to our first-time customers that they call it a "new concept" of air conditioning. York's method is possible, not only because York Engineers have a great variety of quality Yorkaire Systems from which to select, but also because these men are highly skilled professionals in the science of air conditioning.

You'll discover a "new concept" of air conditioning in New York's Colgate-Palmolive Building

Superb in design, striking in appearance, New York's Colgate-Palmolive Building reflects the finest in materials to match its Yorkaire System of Air Conditioning. Bring this right kind of air conditioning into your building. Call your York District Office (listed in the classified phone directory of all major cities). Or write to York Corporation, York, Pa.

* * *

Two York Turbo Water Cooling Systems, totaling 1800 tons of refrigeration capacity, supply cooling for 1400 Model CF Yorkaire Conditioners. Owner and General Contractor—Uris Brothers; Architect —Emery Roth & Sons; Consulting Engineer—Henry Oehrig; Mechanical Contractor—Raisler Corporation.



York refrigeration air conditioning

YORK CORPORATION

the quality name in air conditioning

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

The right windows make a REAL DIFFERENCE . . .



Ask the school custodian!

He'll tell you how easy it is to screen and clean Fenestra* Intermediate Steel Windows safely—and economically—from the *inside*, without ladders or scaffolds. He knows, too, that your school will save on maintenance. Every window member is steel—for strength. Sturdy hardware stays firmly attached. And if you specify Super Hot-Dip Galvanizing, you'll save additional thousands of dollars in painting costs every few years.

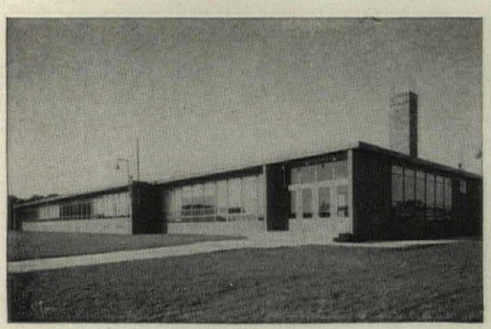
Create Ideal "Learning Atmosphere"
These beautiful steel windows let in more daylight because the steel window members are rugged, yet slender. So you get more glass area and clear vision view per window opening.

They give you better ventilation, too. Tilt-in vents bring in plenty of fresh air, *without* drafts...shed rain to the outside. Other vents project out to form weather-protective canopies over their openings.

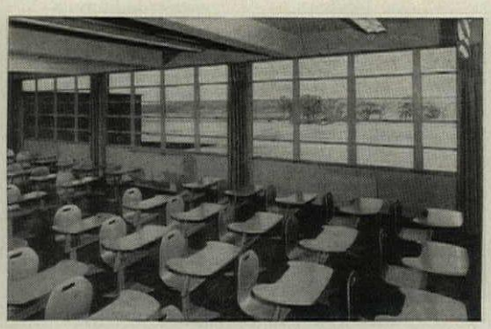
For further information, call your Fenestra Representative. He's listed in the yellow pages of your phone book. Ask for our authoritative booklet, called *Better Classroom Daylighting*. Or write Detroit Steel Products Company, Dept. AF-3, 2296 East Grand Blvd., Detroit 11, Michigan. *®

Fenestra | **INTERMEDIATE STEEL WINDOWS**

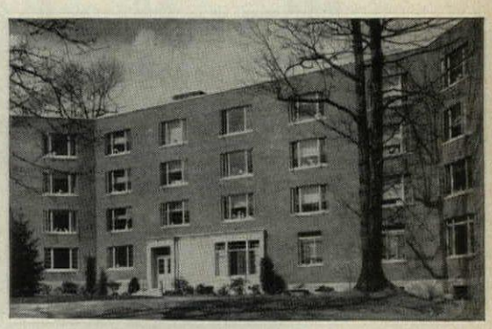
Architectural, Residential and Industrial Windows • Metal Building Panels
Electrifloor* • Roof Deck • Hollow Metal Swing and Slide Doors



INDIANA. Orchard Park Elementary School, Highland, Indiana. *Architect:* Bachman & Bertram, Hammond, Indiana. *Contractor:* John F. Rahn, Inc., East Chicago, Indiana.



ILLINOIS. Lincoln Way High School, New Lenox, Illinois. *Architect:* Childs & Smith, Chicago, Illinois. *Contractor:* Robert G. Regan Co., Joliet, Illinois.



MASSACHUSETTS. LaSelle Junior College, Newton, Mass. *Architect:* J. Williams Beal Sons, Boston, Mass. *Contractor:* Park Construction Co., Inc., Boston, Mass.

PRODUCTS

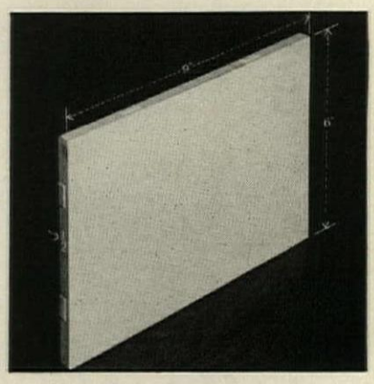
Continued from p. 234



LARGE CERAMIC WALL TILE with integral spacers assures straight, slim joints

Mosaic's nicely proportioned rectangular tile makes an interesting wall treatment for small rooms as well as expansive areas. This new, smooth glazed 9" x 6" x ½" quality tile, produced in satin and high gloss finishes in numerous colors, is reported to be competitive with thicker facing materials and glazed structural units not only in initial cost but in upkeep. Made in individual steel dies by the dust pressed method with integrally cast lugs on the edges for uniformly close joints (about .044"), the units go up quickly in either mortar or mastic beds, install for $1.75 to $2.50 psf, depending on building conditions, application method and local labor. Trim shapes are available at no premium in price.

Another economy is not as obvious: although the difference in thickness between this tile and 1½" glazed structural units



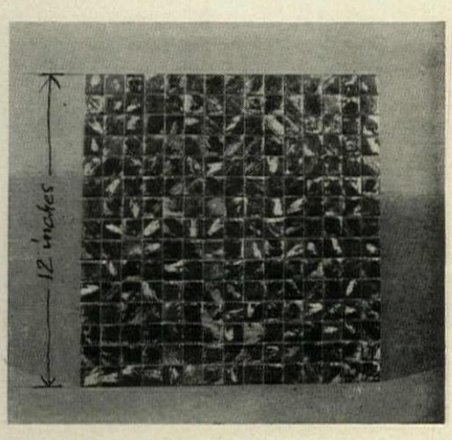
amounts to 1", in a room with rough measurements of 10' x 12', the inches add up to an extra 3⅝ sq. ft. of floor space.

Manufacturer: The Mosaic Tile Co., Zanesville, Ohio.

TINY TILES in beautiful tones can be used indoors or on exteriors

Since ancient days a palatial ornament, mosaics have been avoided in more prosaic structures because of the painstaking labor needed to apply the little fragments. A few companies recently have eliminated much of the toil by mounting small tiles on flexible backings, so that patterns can simply be applied in sheets. The ¾" units made by the Puerto Rican company *Joo* come assembled in 1' squares, larger units in fact than conventional individual wall tiles. In addition, the *Joo* ceramic tiles are produced in an extraordinary range of rich variegated colors: 50 standard and ten 22-k. gold-finished textures; and the firm's *Cristanac* line of satin-glass mosaic comes in 84 hues. Both are impervious to the vagaries of the weather. Of actual cost-saving in applica-

continued on p. 242



HOW PRONE TO DOUBT,
HOW CAUTIOUS ARE THE WISE.
—Homer

IF YOU ARE SATISFIED
YOU'VE PICKED THE RIGHT HEATING SYSTEM,

We respect your judgment as an architect or engineer, in your specification of heating method. That's your job. Building owners depend on you to discriminate. They look to you to select the heating equipment that will give them the best heating result, with the greatest safety, and at the lowest practical cost per BTU.

Obviously, there are times when you are limited. Client-preference, locale and other factors *can* rule. But, where you *have* a choice of heating method, we're sure you consider *coal,* and when you do . . .

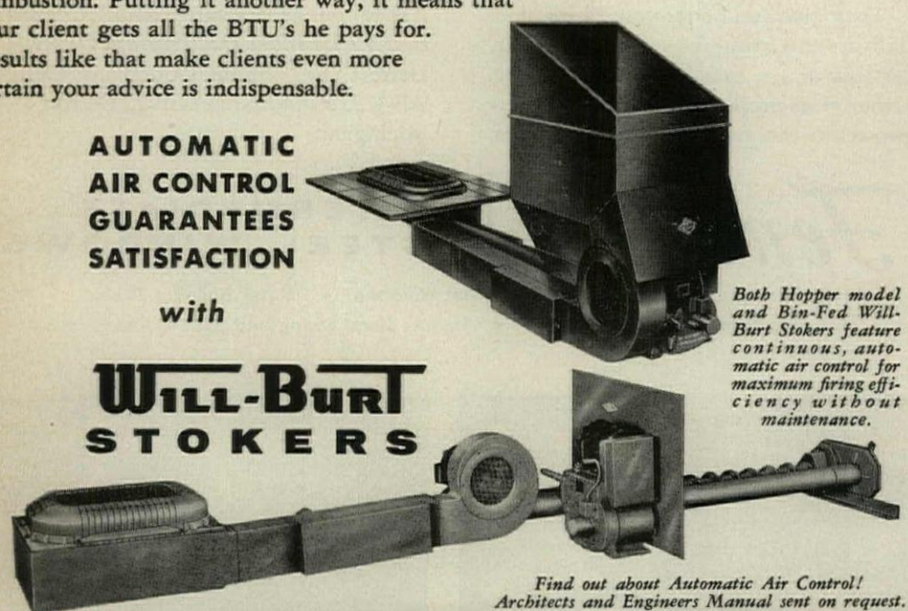
. . . consider firing it with a Will-Burt Automatic Air-Controlled Stoker. Air-Controlled, you know, means that the fuel bed *always* gets just the amount of air needed for efficient combustion. Putting it another way, it means that your client gets all the BTU's he pays for. Results like that make clients even more certain your advice is indispensable.

then you must have checked all of them!

AUTOMATIC AIR CONTROL GUARANTEES SATISFACTION

with

WILL-BURT STOKERS



Both Hopper model and Bin-Fed Will-Burt Stokers feature continuous, automatic air control for maximum firing efficiency without maintenance.

Find out about Automatic Air Control! Architects and Engineers Manual sent on request.

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OUR TWENTY-SIXTH YEAR IN THE STOKER BUSINESS

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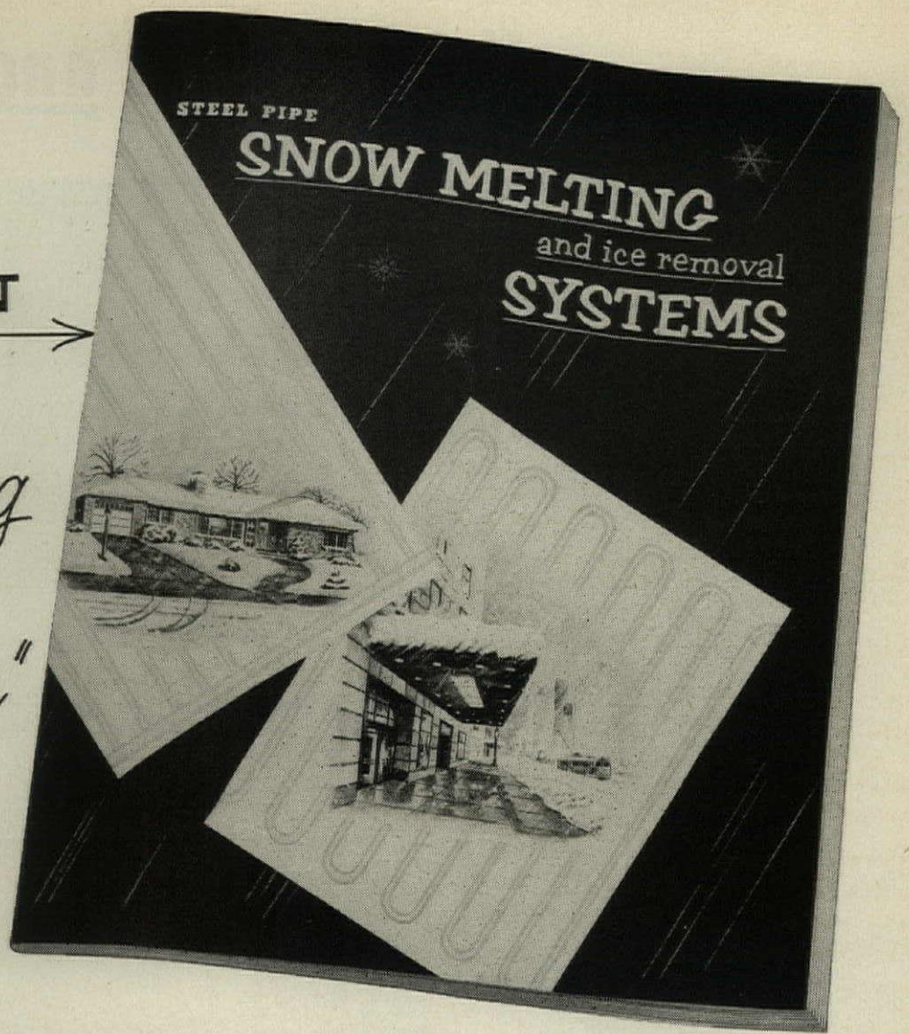
You **CAN** *"do something about the weather"*



CONTROL IT WITH STEEL PIPE SNOW MELTING

When Mark Twain said, "Everybody talks about the weather but nobody ever does anything about it," he was reckoning without the ingenuity of modern science. Today we "seed" the clouds to produce rain, dissipate fog chemically and mechanically, produce sunshine electronically, and *melt snow as soon as it touches ground.*

The use of modern snow melting and ice-removal systems is a sound investment in areas where snow and ice are a detriment to the free, safe, sure movement of people and vehicles. Progressive businesses now make their own weather as far as controlling the all-winter accessibility of their properties is concerned. Sidewalks, driveways, ramps, shipping docks, parking areas, garage and service aprons, airplane hangars, crosswalks, even bridge floors and private spurs and tracks, can and are being made "weather-proof."

For these snow and ice removal systems *steel pipe* is the overwhelming choice for commercial, industrial and domestic installations. Why? Because steel pipe has not only been proved in more than 60 years of hot water and steam heating applications, but has also the advantages of economy and adaptability for the panels, coils and runs of modern snow melting systems. Yes, steel pipe is first choice . . . the most widely used pipe in the world for heating, plumbing, snow melting, fire sprinkler systems, and the transmission of power, steam and air.

Send for a free copy of the 32-page color booklet "Steel Pipe Snow Melting and Ice Removal Systems."

Steel Pipe is First Choice

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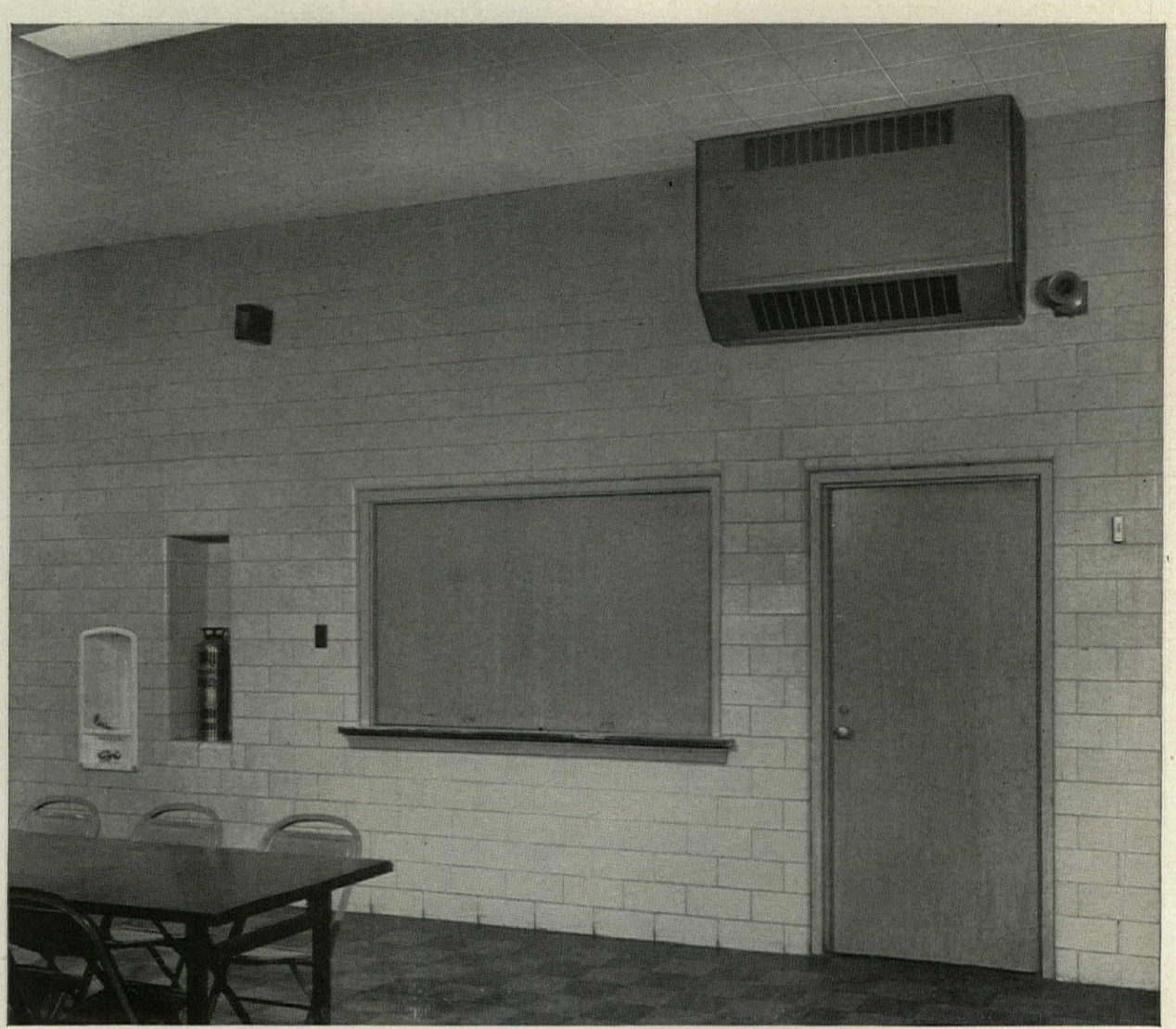
How to heat and cool with just



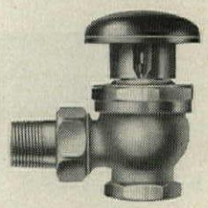
Dunham Vari-Temp Cabinet, inverted on wall of St. Bartholomew School, Chicago, Ill.
Architect: Barry and Kay, Chicago. Heating Contractor: Northwestern Heating & Plumbing Co., Evanston, Ill.

From radiator traps

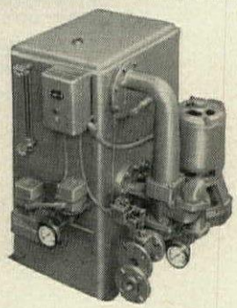
to fully engineered systems

you can DEPEND ON DUNHAM for

everything you need in heating

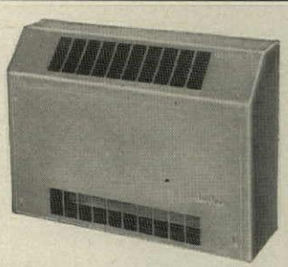


Dunham Radiator Valves. Complete line of radiator valves, traps and other specialties for steam heating.

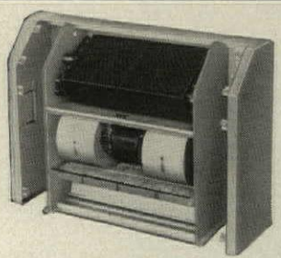


Dunham Vacuum Heating Pumps. Single and Duplex models. No close clearance parts. Only one moving element.

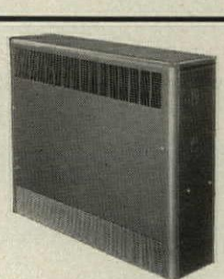
one unit...DUNHAM VARI-TEMP



Dunham Vari-Temp Heating-Cooling Cabinets—neat, compact units.



Interior view of Vari-Temp showing two blower fans, heating element damper and easily cleaned filter.



NEW DUNHAM CABINET UNIT HEATER. *Moderately priced cabinet unit heaters—for steam and hot water.*

Specify Dunham all-weather Vari-Temp® and you have *more* than a heating system . . . *more* than a cooling system. You have *both* . . . and with *just one unit.*

Dunham Vari-Temp is a simple solution for your clients who want year-round air-conditioned comfort in their buildings, but can't afford costly space-using central system ductwork. Vari-Temp eliminates ducts since a single riser can supply hot water for heating, chilled water for cooling to each unit.

Individual room control. Dunham Vari-Temp Units heat, cool, ventilate, filter and dehumidify air on *room-by-room basis*—ideal for hotels, motels, hospitals, apartments, offices and other multi-room applications.

Versatile Vari-Temp not only heats and cools with water, but also heats with steam. Furthermore, you can mount this newly expanded line of comfort conditioning, double-duty cabinets on the floor, walls or ceiling . . . fully or partially recessed . . . or even completely conceal them.

For all the facts about versatile, all-weather Vari-Temp, write for Bulletin AF-3, C. A. Dunham Company, 400 W. Madison Street, Chicago 6, Illinois.

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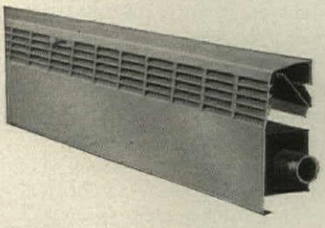
HEATING & COOLING EQUIPMENT

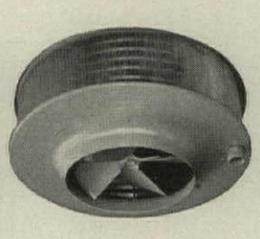
RADIATION • CONTROLS • UNIT HEATERS • PUMPS • SPECIALTIES

Quality First for Over Fifty Years

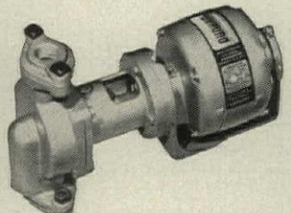
C. A. DUNHAM COMPANY • CHICAGO • TORONTO • LONDON



Dunham Radiation. Full range of sizes and types of convectors, baseboard and finned tube radiation.



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



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

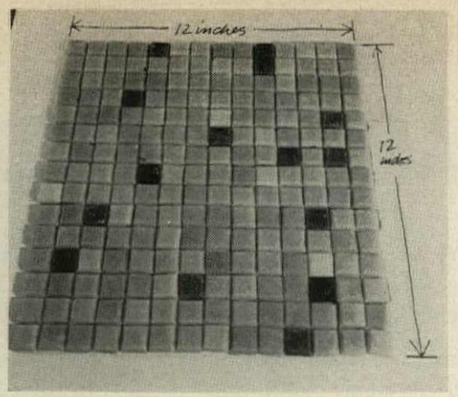


Dunham Vari-Vac®. Precision temperature control system uses continuous-flow "cool" steam, cuts fuel costs up to 40%.

PRODUCTS

Continued from p. 238





tion, Miami's Stewart Tile Co. has written: "After performing various installations with *Joo* glazed ceramics, we have concluded that a substantial saving in installation costs results in the use of the product because of the elimination of joint lines, vertical and horizontal; the material is applied directly to the cement bedding and the dilatory grouting operation is reduced to a fast sponging of the surface. Because of the above reasons, we hereby [were able to] reduce our previous quotation from $6,225 to $3,916.

Prices of the *Joo* tile are 68¢ psf for the colored tile, $1.80 for the gold finish; *Cristanac* glass units ranges from 90¢ to $1.50 per sq. ft. The square sheets can be ordered in one type tile or random mixtures. And, of the tiles themselves, one can only visualize Main Street exteriors and interiors with a glitter rivaling the Temple of Santa Sophia.

US Representative: Ralph Torres Jr., 5940 Granada Blvd., Coral Gables, Fla.

Amtico *PERMALIFE* Vinyl Flooring...

It's all-Vinyl... colors go thru and thru!

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Available in Terrazzo and Mosaic Designs, Plain and Marbleized Colors (In tile and sheet form)

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Send samples and complete information about Amtico Permalife Vinyl Flooring to:

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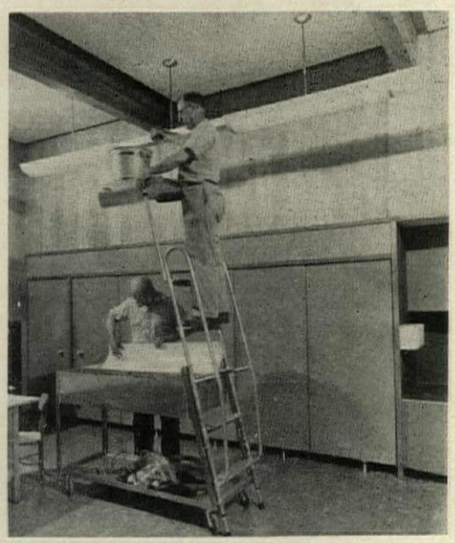
Please attach coupon to your business card or letterhead.

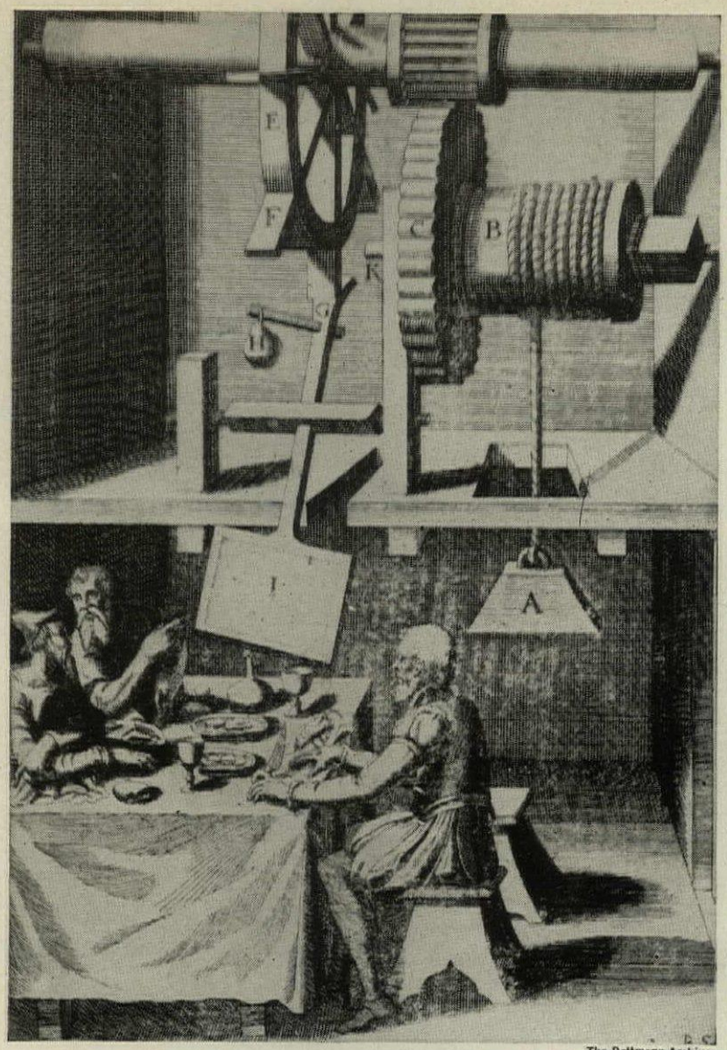


WASH TANK ON WHEELS with attached ladder is useful maintenance appliance

Care of ceiling lights and other hard-to-reach overhead fixtures can be made easier and safer with the *Rol-Away* lightweight wash tank. The truck features a patented aluminum ladder that slides through guides when a workman steps on it until its rubber feet touch bottom, so that truck and ladder rest solidly on the floor as a unit. While standing on the top step the user can lean on two curved side handles and steady himself against the front bar. As he steps down off the ladder, it is released to "up" position. The truck has two tanks large enough to handle a full section of 4' fluorescent fixture. A shelf is provided for cleaning paraphernalia. *Rol-Away* is also suitable for other kinds of building maintenance—replacing lamps, washing ceilings and window blinds. It is priced at $203.75.

Manufacturer: Rol-Away Truck Mfg. Co., Inc., 6143 S. E. Foster, Portland, Ore.

continued on p. 246



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Here's somebody's idea of how to solve the ventilating problem—with a gravity engine—back in 1662. Today Airtemp can help you solve your clients' air conditioning problems.

Whatever
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problem—

AIRTEMP

is ready to help you!

Airtemp offers these "pluses" to those planning commercial and industrial air conditioning

Airtemp has the Right Equipment
To meet your *every* air conditioning need, Airtemp has a complete line of precision-built equipment—conventional or specially engineered—for a room or a building.

Experienced Engineers "at Your Service"
You are offered the advisory services of engineering specialists—pioneers in commercial and industrial air conditioning—through Airtemp Construction Corporation, a subsidiary of Chrysler Corporation.

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The Chrysler name is widely known. Over the years, it has gained public confidence for its leadership in quality and engineering.

Low Cost Result of Peak Efficiency
With Airtemp, both the installation cost and the operating costs are low. This extra economy is a result of Airtemp's extreme efficiency.

Nationwide Service Organization
You are guaranteed dependable local service by Airtemp's network of personnel and facilities.

AIRTEMP SOLVES VARIED INSTALLATION PROBLEMS





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Ostheimer Building, Philadelphia, Pennsylvania. Owners: Ostheimer Realty Company. Architects and Engineers: The Ballinger Company.



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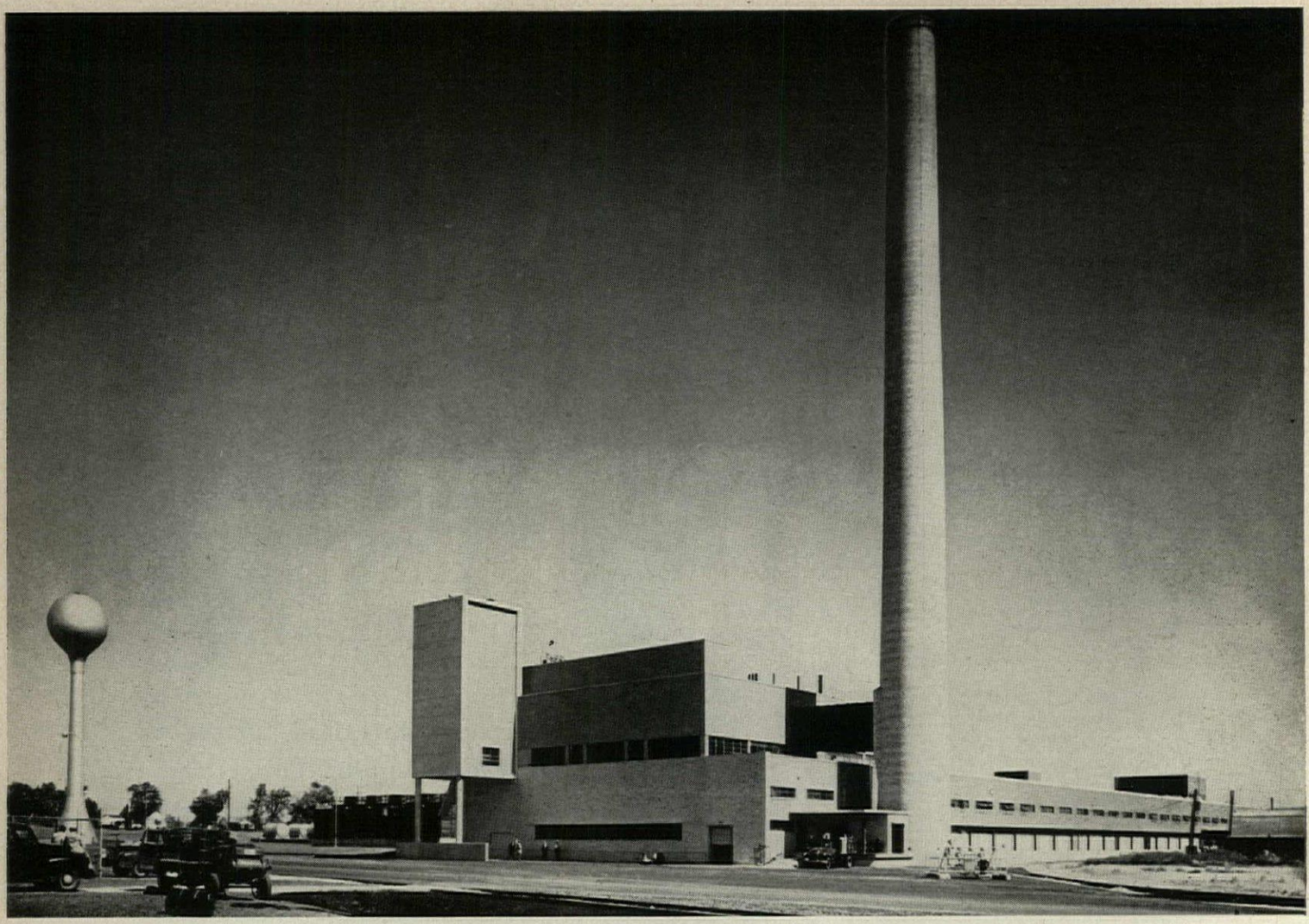
Comfort Zone



AIR CONDITIONING • HEATING FOR HOMES, BUSINESS, AND INDUSTRY



DESIGN FOR PURITY

Thousands of test tubes . . . almost a mile of chemical workbenches . . . tons of chemicals . . . acres of laboratories, all these make up the seven-buildings-in-one of the new Armour Laboratories at Kankakee, Ill.

Temperatures range from 70 below to 140 above in these buildings dedicated to man's never-ending fight against disease. Everything has been thought of to make Armour Pharmaceuticals as safe, pure and standardized as it is possible to make them.

Ingalls takes pride in the fact that it was selected to supply and erect the steel in construction of these buildings to exacting specifications.

FABRICATED STEEL FOR:

Power Plants • Industrial Buildings • Hangars
Bridges • Office Buildings • Churches • Stores
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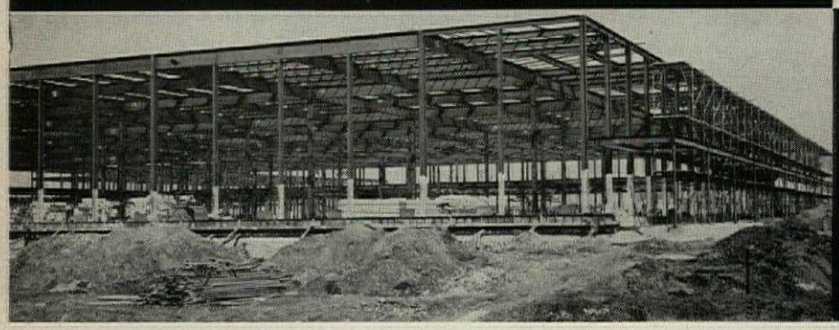
ARCHITECTS: Holabird, Root & Burgee
GENERAL CONTRACTORS: George A. Fuller Company



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THE INGALLS IRON WORKS COMPANY
BIRMINGHAM, ALA.

SALES OFFICES: Birmingham, New York, Chicago, Pittsburgh, Houston, New Orleans, Atlanta

PLANTS: Birmingham, Ala., Verona, Pa., North Birmingham, Ala., Pascagoula, Miss., Decatur, Ala.

RŌ-WAY BUILT



is Built to Last!

OVERHEAD TYPE COMMERCIAL AND INDUSTRIAL DOORS

FROM start to finish, long life is solidly built into every Ro-Way overhead type door.

It begins on the drawing board, where exceptional ruggedness is designed and engineered into every detail—the kind of ruggedness that can take years and years of ups and downs in stride.

It shows up in the fine quality of Ro-way materials—selected west coast lumber and specially designed hardware of heavy gauge steel.

It's assured by Ro-Way construction—with all joints mortised and tenoned, waterproof glued and steel pinned; with sections rabbeted for weather-tight fit; with millwork both drum and hand sanded for finest finish; with all hardware Parkerized and painted *after* fabrication for maximum rust prevention.

And it's there in every Ro-Way operating feature—the Taper-Tite track and Seal-A-Matic hinges that work together for easy opening and sure, weather-tight closing; the ball bearing Double-Thick tread steel rollers that glide smoothly and quietly; and the Power-Metered springs that are matched and tension-balanced to the weight of the individual door.

Built? Yes—*built to last!* And that means satisfied clients. If that's what *you* want, specify Ro-Way overhead type doors for all commercial and industrial applications.



FREE ARCHITECT'S MANUAL. ***Complete details, specifications, drawings, etc. of entire line of Ro-Way doors. Especially helpful in selecting just the right door. Request Manual 55—on your letterhead, please. No cost or obligation, of course.***

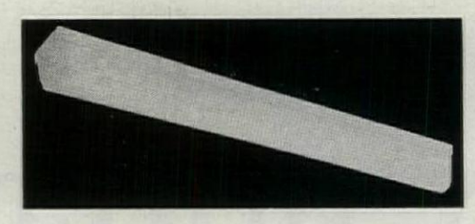
ROWE MANUFACTURING CO., 953 Holton St., Galesburg, Illinois

PRODUCTS

Continued from p. 242

ONE-TUBE FLUORESCENT FIXTURE joinable for unbroken shaft of light

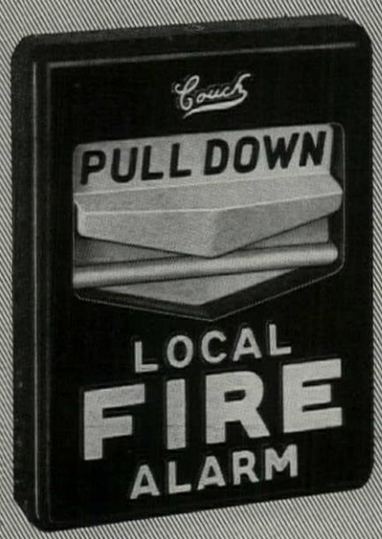
Mountable on wall or ceiling, the latest of the *Modular Sightron* lamp fixtures has a triangular contoured diffuser of white styrene. The 4′ fixtures each house one 40-w. rapid-start lamp and can be strung end to end for a continuous strip of soft, glareless light uninterrupted by dark connecting bands. The base, 4¾″ wide, is finished in white enamel. Diffusers and reflector snap out for relamping and cleaning. Retail price is about $30; with low-power factor and convenience outlet, $29.

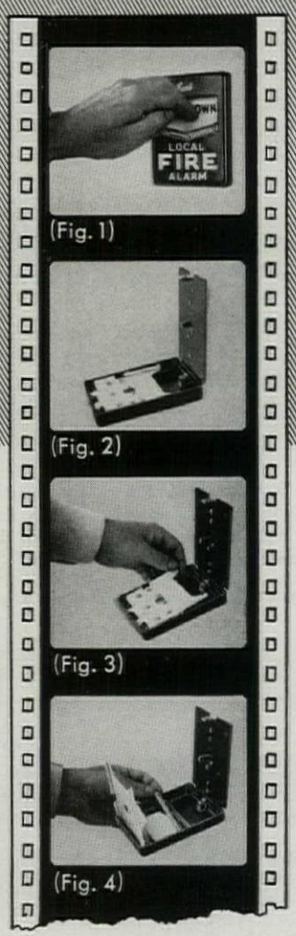


Manufacturer: Lightolier, 11 E. 36 St., New York, N.Y.

NEW MODERN DESIGN

and SIMPLE OPERATION





Couch NON-CODE FIRE ALARM STATION

Here is an all new non-code UL approved fire alarm station for use in all types of buildings. Clean and simple in appearance, this station provides complete dependability of operation. Its two-position locking mercury switch element provides positive contact when operated, but is not affected by shock or vibration. The element is hermetically sealed for protection against dirt and moisture.

The film strip at the right shows the ease with which the station is reset after use.

(Fig. 1) Station closed and about to be operated
(Fig. 2) Open station
(Fig. 3) Lift up sliding front panel
(Fig. 4) Replace glass rod (broken glass is self-clearing)

For complete details on this and other Couch fire alarm equipment write for Data Sheet F1

Simplified Systems of Communication

S. H. Couch Company, Inc.

Private telephones for home and office . . . hospital signaling systems . . . apartment house telephones and mail boxes . . fire alarm systems for industrial plants and public buildings.

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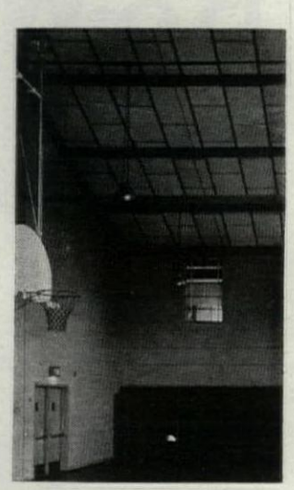
In Canada: Canadian Marconi Company, Montreal.



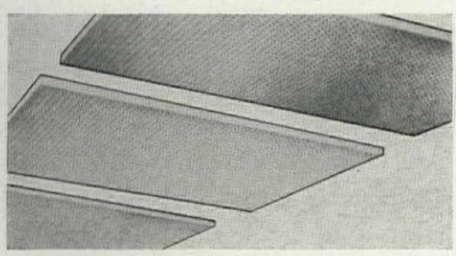
TWO SOUND SOPPERS: one offsets noise; other corrects bad cases

Because gymnasium and factory noises run up and down the sound scale, acoustics specialists Elof Hansson, Inc. and Sonosorber worked out for just such areas two kinds of materials with good absorption in both high and low frequencies. One, a rigid, perforated board, becomes an integral part of a structure. Another, a lightweight box, hangs from the ceiling like a chandelier.

Hansotone, the new building product, is a 32″-wide 1″ and 1¼″-thick wood-fiber board developed exclusively as a permanent form and finished ceiling for poured-in-place gypsum roof decks. The 4′, 8′ or purlin length boards are mounted on standard sub-purlins 32⅝″ o.c., wire mesh reinforcement placed on top, and gypsum concrete poured over the strong *Hansotone* base. (Designed to allow proper curing of the monolithic roof, the boards are treated against mildew and termites.) Light cross T's support butt joints between boards or, where a less active overhead pattern is wanted, out-of-sight splines can be slipped into the kerfed edges. Prepainted white, the acoustical ceiling requires no further decoration.

Cost of a complete deck, including *Hansotone* and sub-purlins runs 40¢ to 50¢ psf about 5¢ more than for a comparable roof

continued on p. 250





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Nucleus of the system is the world-famous Seeburg Select-O-Matic which holds 100 records, plays up to 400 selections of 45 r.p.m. music when Extended Play records are used. Programs may be automatically arranged, in advance, to play a single record, five records or up to 25 hours of music without repetition. All at the touch of a finger . . . without handling a record.

For Business and Industry. Seeburg will work with you and your clients to bring the acknowledged benefits of music to their businesses. To do this Seeburg now makes available . . . under its own label . . . the finest library of work and background music ever recorded. This library, plus a complete Seeburg High Fidelity Sound System, gives you the opportunity to specify the most advanced, practical and economical music service ever developed.

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Opens up New Horizons



MOVING STAIRWAY PLANNING SERVICE

The rapidly widening use of moving stairways has made necessary a planning service to help building owners, architects, consulting engineers and designers determine the moving stairway size, location and arrangement best suited to each project.

Without cost or obligation to you, Peelle engineers will help you to determine your vertical transportation requirements and work out a suitable plan that will take into consideration both the functional and design aspects of the installation. Simply call us or write us fully about your requirements.

in Building

THE MOVING STAIRWAY is adding a new dimension to vertical transportation. It is a tool which enables architects and management to plan more fluidly, to use space to better advantage and to control the flow of traffic. Moving stairways occupy less space than elevators and cost far less to run and maintain, yet one moving stairway can move from 4,000 to 8,000 people an hour with no waiting or crowding. That's why moving stairways fit so well into the new American economy where time and space are at a premium and the public demands service and convenience. That's why you see them everywhere, in subway stations, at piers, in museums, in office buildings and in many new kinds of places.

Moving stairways enhance profits, increase property values, add to the utility of buildings and transportation systems and improve public relations.

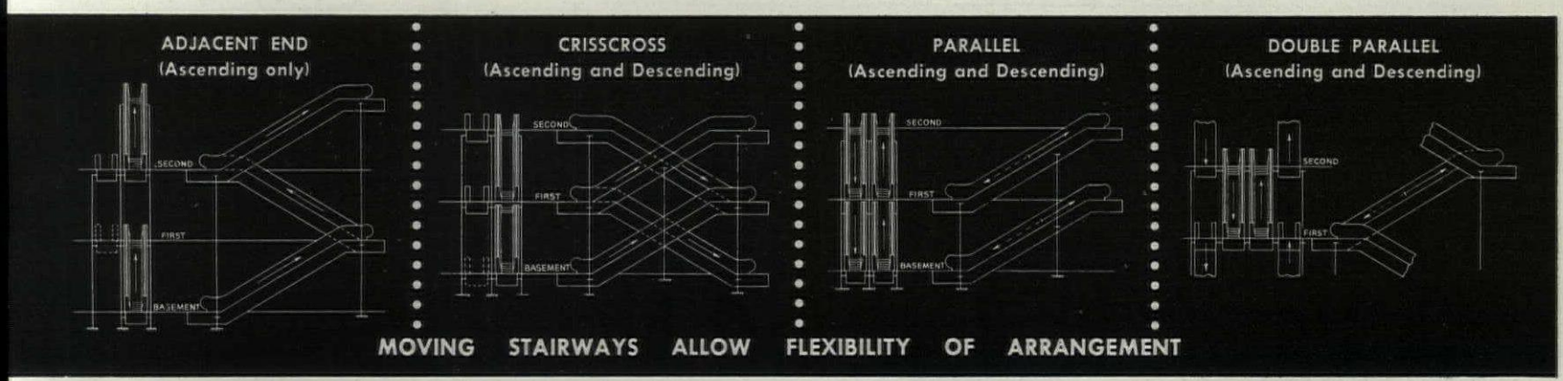
IN TRANSPORTATION TERMINALS moving stairways extend transportation to the inside of the building and move hurrying crowds to and from buses, trains or planes with dispatch and without confusion.

IN HOTELS AND BANKS moving stairways free valuable ground floor areas for high rental by making it easy and convenient for the public to reach business places located on upper levels.

IN INDUSTRIAL PLANTS moving stairways promote better labor relations, expedite the movement of employees from floor to floor and eliminate delay during peak rush hours.

IN STORES AND SHOPPING CENTERS moving stairways are a powerful merchandising force, moving people to upper sales floors and exposing merchandise to impulse sales.

IN MANY OTHER BUILDINGS moving stairways are performing valuable services. They help theatres fill balconies, make roof and sub-basement parking areas more convenient, move crowds at stadiums and race tracks and add to the convenience and profit potentials of many other kinds of property.



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

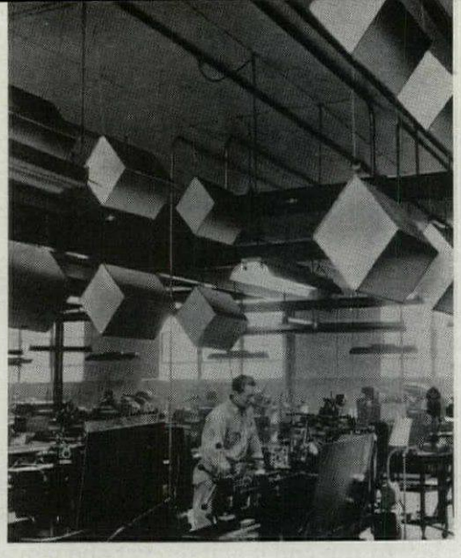
PRODUCTS

Continued from p. 246

constructed with nonacoustical form boards, Hansson reports. Considering *Hansotone* has 230 sound-trapping perforations psf, the charge for hole-making seems modest indeed.

Manufacturer: Elof Hansson, 220 E. 42 st., New York 17, N.Y.

Sonosorbers, the sound-sponge pendants (photo right) are suited for already-reverberating industrial and commercial areas where regular acoustical surface treatment



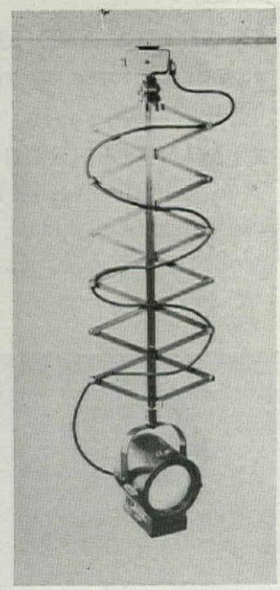
for airborne noises is neither applicable nor adequate. (Vibration and sound conduction through structure is another problem.) These 2'-long prismatic boxes, consisting of perforated aluminum panels with glass-fiber cores, weigh 2½ lb. each. Volume absorbers, they have absorption areas which, for certain frequencies, are larger than their physical dimensions. They may be hung at will amidst the tumult, grouped in clusters or as screens. Existing sprinklers or lighting fixtures need not be disturbed.

Situated in the intense sound area, the faceted shapes tend to attract and absorb or drain off sound waves by bouncing them around until they lose their potency. Shipped unassembled, 25 to a carton, *Sonosorbers* cost about $8 a unit. Maintenance people can rig them up without disrupting plant activities.

Manufacturer: Sonosorber Corp., E. Orange, N. J. *Distributor:* Elof Hansson, 220 E. 42 St., New York, N.Y.

SCISSORS LIFT AND TROLLEY simplify display lighting adjustments

A new and very practical device for show-window installation is Century's counterbalanced *Lite-Lift.* Fastened to the yoke of a spotlight, this pantagraph link permits free up and down maneuvering of the fixture *after* mannequins and display are all set up; and makes it easier to focus, relamp



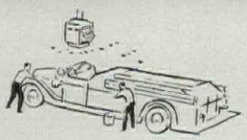
or change colors at any time. Attached at top to a trolley—a wheeled hanger with its own switch and fuse—which rides sideways in a standard busway, the folding arm unit can permit horizontal adjustments. It will also simplify wiring and minimize cable. With trolley the *Lite-Lift* lists at $54.10; without, $32.

Manufacturer: Century Lighting Inc., 521 W. 43 St., New York 36, N.Y. and Los Angeles 46, Calif.

continued on p. 254



BACK IN THE DAYS of the prancing fire horses, the heating equipment at the fire station was often merely an old stove and a pile of firewood. In cold weather, stoking was practically a full-time job. When the stove overheated, the roof sometimes burned off the fire station, which entertained the public but was most humiliating to the firemen.



Today the heating stove has disappeared, along with the horses. Push-button heating, under precise automatic control, now helps keep the equipment ready to roll, and assures the men's comfort.

The Humphrey Model A Gas Unit Heater, pictured above in a Louisville fire station, represents modern automatic gas heating at its best. It has such Humphrey-developed features as Dual-Flame Burner with stainless steel tips; non-clogging pilot; Free-Flow Heat Exchanger with unrestricted, non-baffled interior; and Tilting Front. Both burner and fan are operated by accurate, automatic thermostat controls, while full 100% automatic safety controls provide the ultimate in protection.

In a fire house, heating equipment must operate 24 hours a day, 7 days a week. Humphrey Unit Heaters, for more than 25 years, have been demonstrating their ability to give peak performance in the hardest service.

Truly they are today's finest heating equipment, not only for fire stations but for every other type of commercial, industrial, and public building.

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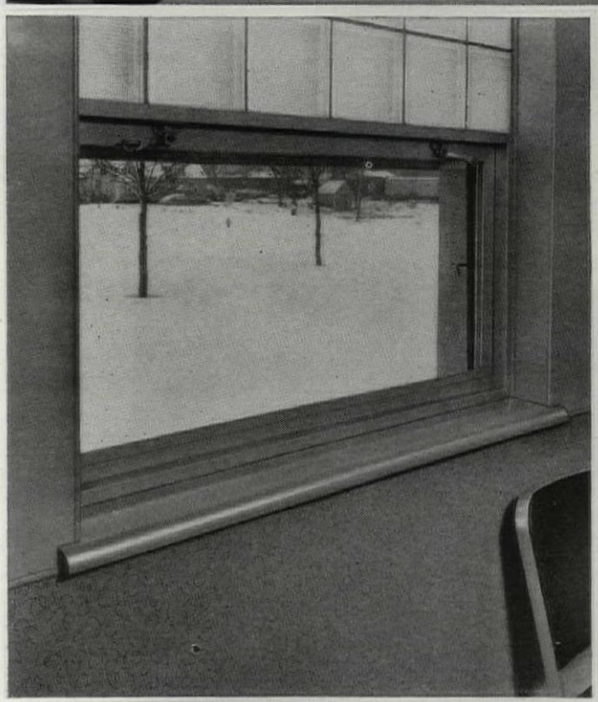
Humphrey
Greatest Name in GAS HEATING



A special-design application in a midwestern plant office. Upper wall is Consoweld 10 in Dusty Green Echo. Wainscoting is Gray Holiday, with Twin-Trim moulding. Movable partitions are faced with Consoweld wood grain in Harvest Brown Birch. Baseboard is a ⅜" thick strip of Consoweld, available on special order. Desk top is Consoweld Gray Echo. Wall materials are applied directly over cement block.



Window detail: the sill is post-formed of Consoweld Dusty Rose Irish Linen, made to order for this application.

How **Consoweld** can be used for specially designed interiors

Consoweld is a melamine-surfaced plastic laminate available in 46 patterns, color-tuned by Color Research Institute of America.

Exceptionally fine effects can be achieved with planned applications of Consoweld to walls, desks, tables, and counter tops. Consoweld comes in two thicknesses—the standard Consoweld 6—1-16", for shop-fabricated tops; and Consoweld 10—1-10"—for on-the-job application. It may be applied directly over cement blocks, gypsum lath, or sheathing-grade plywood. Consoweld Twin-Trim matched mouldings provide large areas of unbroken color. Get complete details and data file folder—mail the coupon or write.

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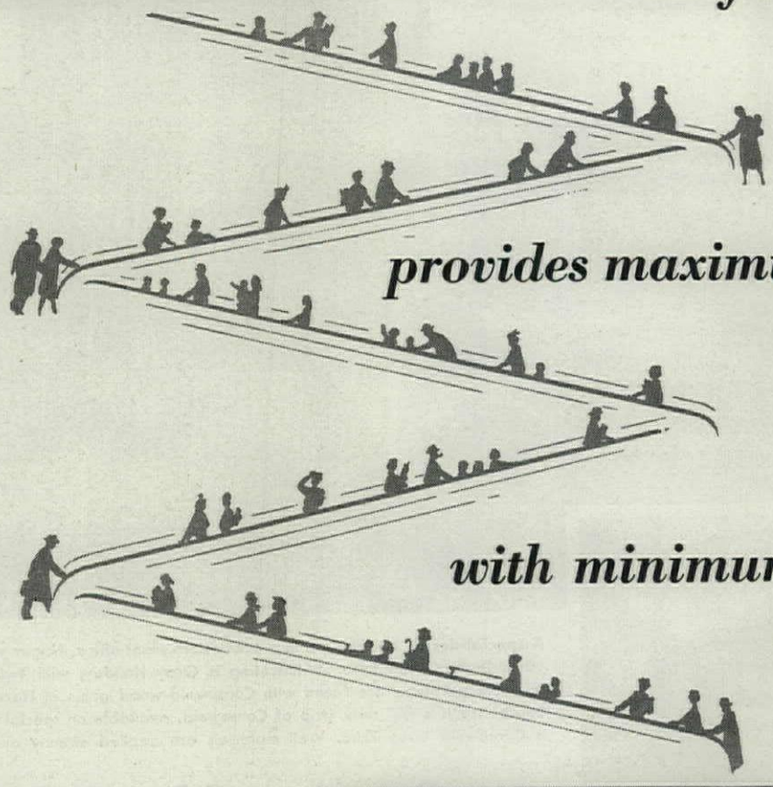
assures client satisfaction...



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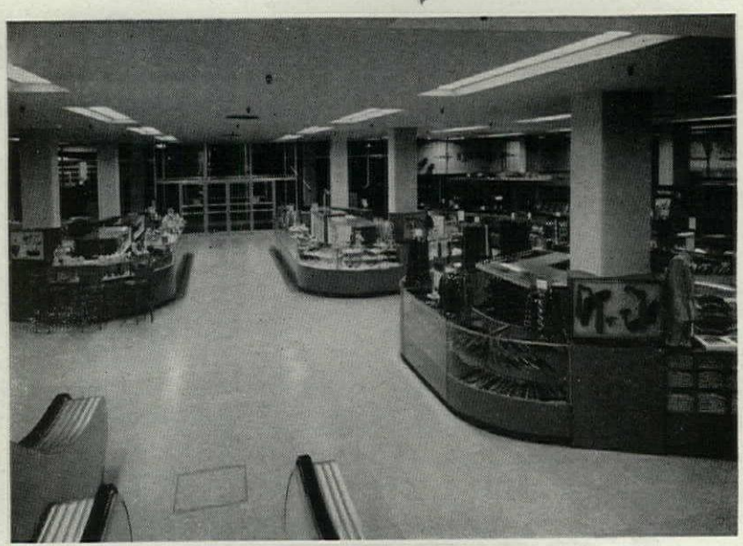

See Sweet's for specifications or *write Dept. AF3.*
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History has proven that yesterday's dreams are today's problems and tomorrow's improved living.

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Despite the impressive record of MOLDED PLASTICS in industry, MACK MOLDING COMPANY would be the last to imply that PLASTICS can improve any product or solve any problem. However, we do stress the availability of our "*collaborationists*" (engineers) to pass upon the desirability of using MOLDED PLASTICS in solving your problem, and to make constructive recommendations.

You possibly have a potential money maker for yourself and we hope to gain correspondingly higher production for MACK MOLDING PLASTICS components.

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recessed lighting fixture

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all these advantages?

attractive design

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lenses and diffusers

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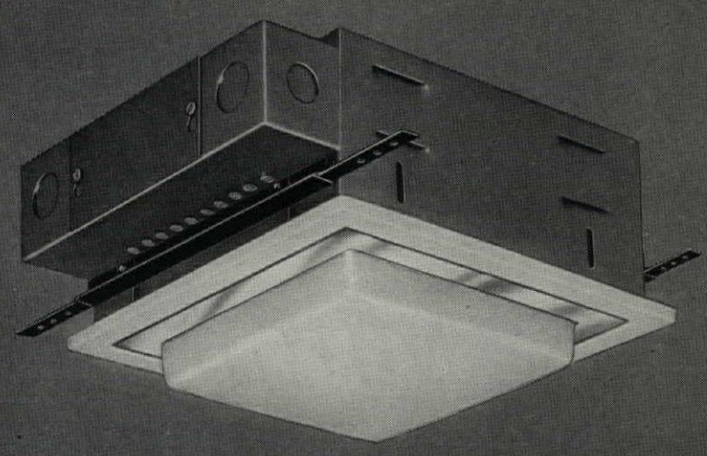

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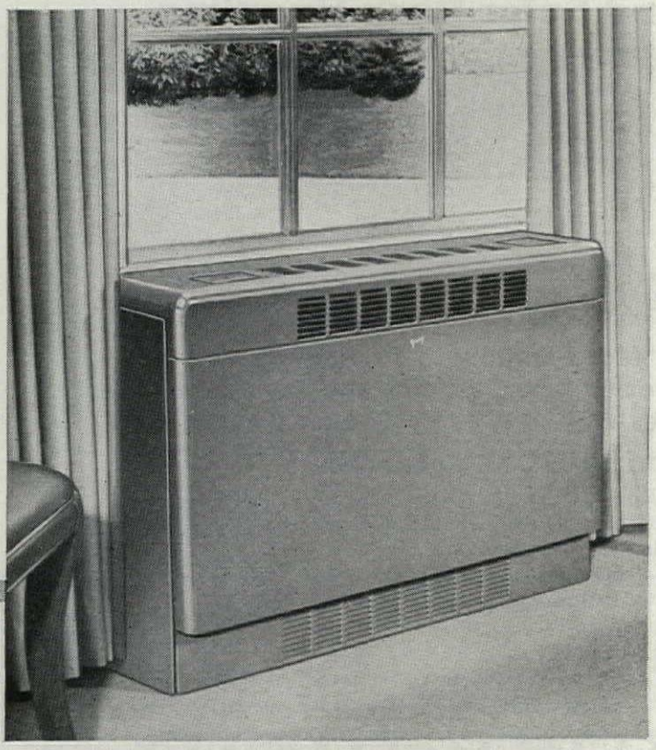
Four Season

AIR CONDITIONING

in one compact unit . . .



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for HOSPITALS, HOTELS, MOTELS, SCHOOLS, APARTMENTS, HOMES

"Roomaire" Conditioners can be installed either free-standing or partially recessed.

"Roomaire" Conditioners provide four season air conditioning in one compact, individually controlled unit. They cool, dehumidify, heat, ventilate, filter and circulate, operating with hot water in winter and chilled water in summer . . . using *the same piping.*

"Roomaire" units are ideal for installation in hotels, hospitals, motels, schools, apartments, homes and public buildings where individual room conditioning is desirable. Only 9¼" in depth, the "Roomaire" Conditioner requires a minimum amount of floor space, and it can be partially recessed if desired.

The functional design of the "Roomaire" unit provides efficient air distribution through grilles at the top and front of the cabinet. Recirculated air is drawn through a return air grille at the bottom of the unit and fresh air can be admitted through a dampered opening in the back of the unit (optional). All air passing into the unit is filtered through permanent, cleanable type filters. Component parts are completely accessible with removal of the front panel.

"Roomaire" Conditioners are available in three sizes, 200, 400 and 600 cfm with nominal cooling capacities of ½, 1 and 1½ tons to meet every room conditioning requirement. For complete details on "Roomaire" Conditioners see your nearest Young Representative listed in the yellow pages of your telephone directory or fill in the coupon and mail it to the Young Radiator Company, Racine, Wisconsin.

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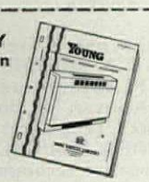

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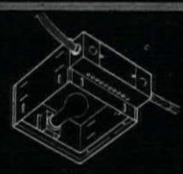
Handsome, corrosion-proof STAINLESS STEEL lens frame. Baked white enamel ceiling frame. Lenses to blend with any decor. Concealed hardware preserves clean ceiling.



SIMPLE INSTALLATION AND MAINTENANCE

Shallow depth, simple mounting method assures easy installation in any type ceiling. DOOR-IN-DOOR construction prevents light leak. Spring-latched lens frame gives instant access for relamping.



COOLEST OPERATION

Highly efficient cooling system assures lowest operating temperatures, extends lamp life.

A LENS OR DIFFUSER FOR EVERY APPLICATION

FRESNEL LENS—for controlled down light with low surface brightness.

OPAL GLASS BOWL—provides soft, warm down light with upward spill to lessen contrast. Squared corners enhance this diffuser.

ALBA-LITE LENS—for even, diffused down light.

SEMI-DROPPED LENS—for controlled down lighting with ceiling spill for lower contrast.

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Available for special applications in many sizes and variations. Among them: Psychiatric units, 2—3—4-in-line, 4-squares, and many others.

THREE SIZES

A size for every application... Underwriters' Laboratories Approved in all sizes. 60/100 Watt, 150/200 Watt, 300 Watt.

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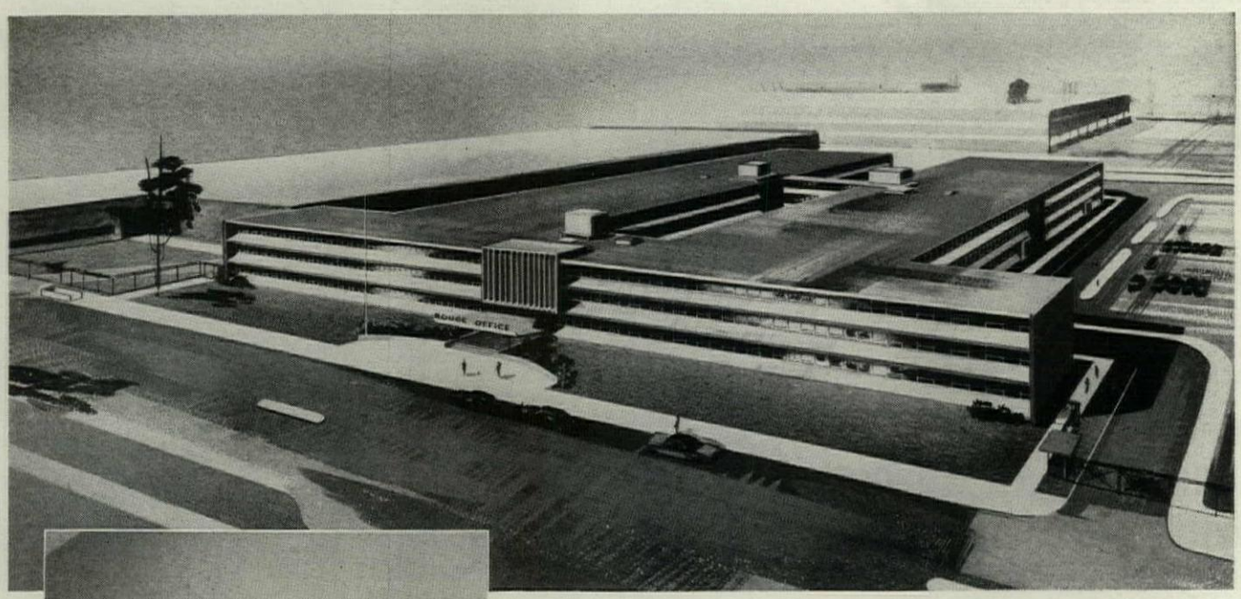

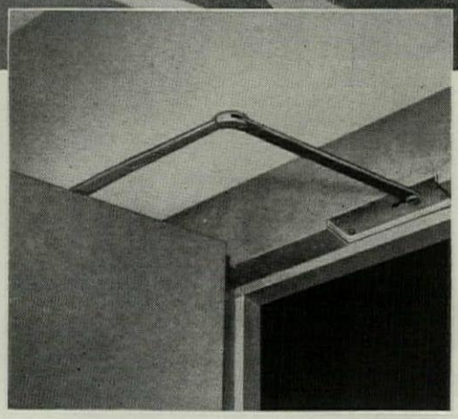

See how unobtrusively the "Inador" installs, as shown here on an interior door of Ford's new Rouge Office Building, Dearborn, Mich. Eberle M. Smith Associates, Inc., Dearborn, Mich. are the architects and Long Construction Company, Kansas City, Mo., the contractors.

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- **Regular Arm Series and Holder Arm Series**—the latter especially suited for hospital use!
- **Famous Guarantee!** For 2 full years, providing recommended sizes are used!

Only a Liquid Closer gives so much *Rugged Dependability!*

Only Concealed Design gives so much *Modern Beauty*...it's the

NORTON "INADOR"

Headquarters for five Ford manufacturing divisions will be the new Rouge Office Building at Dearborn, Michigan. The 3-story, 369,000 square foot structure, utilizing the unusual "lift slab" method of construction, features handsome, modern styling. And it's designed, too, to "stand-up" under unusually heavy use, for the years to come!

As a result, it represents an ideal application for Norton "Inador" Closers, which were selected for interior door control. The "Inador's" construction preserves the building's trim, functional beauty. Yet, since the "unseen" mechanism is of the true Liquid Type, it provides the full measure of reliability —for smooth, low-maintenance operation in heavy-traffic use!

These are the reasons why *you* should choose Norton "Inador" for that new building of yours that needs the best in rugged, modern closers!

Write today for FREE Catalog on full Norton line of Concealed and Surface Door Closers.

NORTON®

Dept. AF-35, Berrien Springs, Michigan

"Over 70 Years of Leadership in the Door Closer Industry."



UNARCO

ROYAL-AIRE *a distinctive conditioner*

featuring UNARCO "pump-down" control system

It is doubtful that any air conditioner can match the efficiency and beauty of the UNARCO ROYAL-AIRE. This all-new conditioner provides "just right" cooling comfort, adding distinction to *any* setting.

Oversize cooling coils . . . accessible, hermetic motor-compressor units... and the exclusive UNARCO "pump-down" control system, which prevents compressor damage... are but a few outstanding features of the ROYAL-AIRE line.

Available in five capacities (3 to 15-ton) the ROYAL-AIRE is *balance-engineered!* This insures full cooling capacities and quiet operation under all conditions, producing a pleasurable climate and atmosphere for any size room.

The ROYAL-AIRE is eminently suited to comfort-cool dining rooms, taverns, drug stores, clothing stores, and offices... to cool wherever the *ultimate* in efficiency and long life is desired. Address Heating & Cooling Division for descriptive literature.

Union Asbestos & Rubber Company
332 So. Michigan Ave., Chicago 4, Ill.
Canadian Representative: Albern Universal Ltd., Toronto

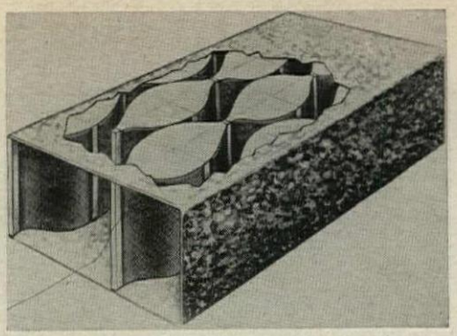
UNARCO ®

the *finest* in heating and cooling products *at no extra cost*

PRODUCTS

Continued from p. 250

SCIENTIFIC SOUND TRAP for air conditioning does away with duct linings



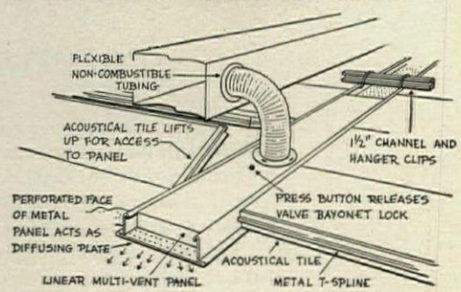
Sound has some mysterious impacts: the glass shattered by a soprano, the dog running to a silent whistle, the dental patient demoralized by a poised drill. In noise, a counterpart to the old saw about the weather might be: "It's not the magnitude but the frequency."

Whirrings and dronings are an annoyance factor common to many air-conditioning systems. And as delivery quickens to high velocity, so do the furies of the fans and air streams—often beyond the absorption capacities of conventional duct insulation.

But when M.I.T. acoustial experts Bolt, Beranek & Newman tackled the job of analyzing and muffling jet-engine roar in testing tunnels they evolved the "soundstream" principle and engineered devices to absorb and/or deflect sounds of varying cycles with different materials, all arranged in parallel lengths for minimum impedence of the air flow. Industrial Sound Systems, who fabricated the equipment, saw in it tremendous potential for combatting less fiendish but no less complex noises in air distribution systems for auditoriums, hush TV studios and workaday office buildings. This soundstream principle is now realized in the *Aircoustat*, a silencer packaged as a duct section that can replace duct linings at half their price and do a far more effective job of noise reduction. It is produced in several types for different sound control problems. So pre-engineered are the *Aircoustat* silencers that a section of *Aircoustat* matching the duct size will be the right one for the job. List prices start at $60 for a 4'-long *type J* (suitable for general commercial conditions) sized for 12" x 14" duct. Generally an *Aircoustat* for a 12" x 12" duct can replace a 100' length of duct liner; for a 4' x 4' duct, it does the job of 400 lin. ft. of 4"-thick material, and performs far better over a broad spectrum. Specifically the cost of quiet is about 4¢ per cfm of air delivery. *Manufacturer:* Industrial Sound Control, Inc., 45 Granby St., Hartford, Conn.

FLUSH-TO-CEILING DIFFUSER delivers conditioned air at zephyr intensity

Proving that good suspension systems are worth moduling into, *Linear Multi-Vent* 42"-long diffuser pans combine with *Celotex Acousti-Line* ceiling much the same way as the *Conner* panel air-conditiong outlet (*Products*, April '54). The new model diffuser, of the low velocity variety, is set easily between furring channels on standard 4' grid spacing without tools or tile cutting, and its flexible tubing collared onto air-supply duct lines. (Highly compressible and stretchable, the attached tubing allows wide leeway in alignment of panels and duct openings. If radical changes in occupancy and relocation of full-height partitions make it necessary, *Linear* units can be shifted as simply as any other demountable component of the ceiling.)



Each *Linear Multi-Vent* unit is equipped with an adjustable valve for metering air

continued on p. 258

HIPPODROME GARAGE

43rd to 44th Sts., Avenue of Americas
NEW YORK, N. Y.

ARCHITECTS
Kahn & Jacobs



8 Balanced Door Units in the entrances to Hippodrome Garage

more .... Ellison doors



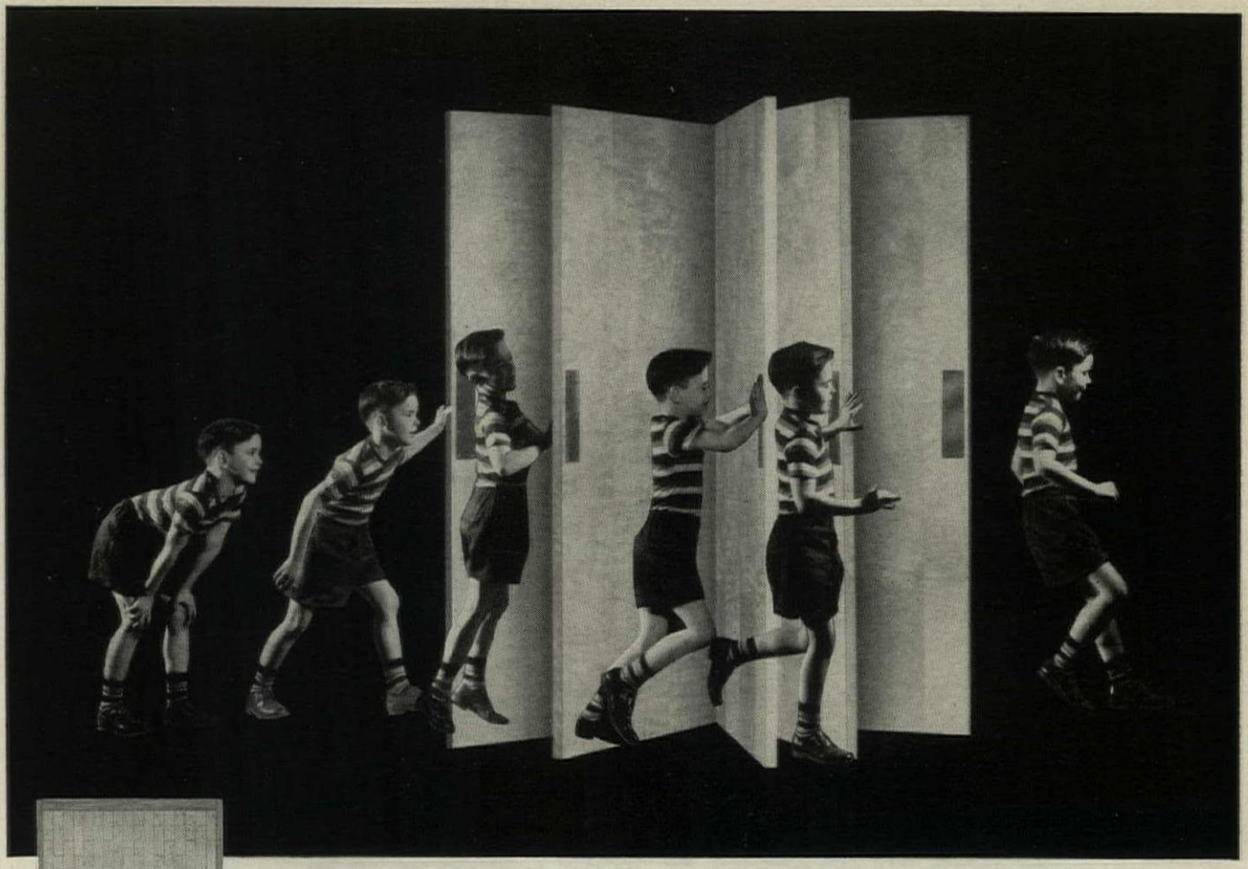
The Door that lets TRAFFIC through QUICKLY

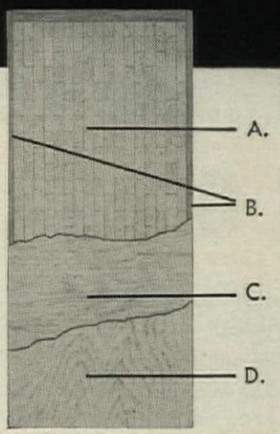
Ellison the BALANCED DOOR

ELLISON BRONZE CO.
Jamestown, New York

representatives in 73 principal cities in the United States and Canada

Roddiscraft — *quality wood craftsmanship for over 60 years*





A. Cores — low density wood blocks glued under pressure with water resistant resin glue

B. Edge strips — double thickness top and bottom, side edges — same wood as face veneer

C. Crossbanding—hardwood veneer glued with water-proof phenolic resin glue to both sides of core

D. Face veneers — selected face veneers glued with phenolic resin glue to both sides of the door and belt-sanded smooth

Meet the door that's *built for abuse!*

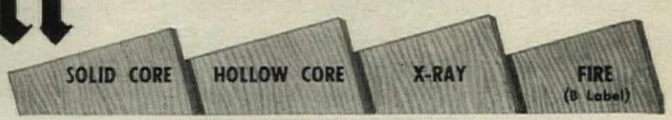
It's Roddiscraft's Standard Solid Core Door . . . constructed to the quality standards that have long made Roddis solid core doors the first choice of architects for schools and other installations where there are heavy traffic hazards.

Every Roddiscraft solid core door is welded into a single unit — core, crossbanding, and face veneers — with strength unsurpassed by any other wood door on the market. They are impervious to water — will not warp, crack or check — resist fire up to 40 minutes, and provide sound resistance only slightly less than special sound-proof doors.

But get all the facts. Write for full details on Roddiscraft doors, or see our catalog in Sweets Architectural File.

Roddiscraft — one source for all your door needs

Roddis Plywood Corporation, Marshfield, Wis.
Warehouses in Principal Cities





WEARS LIKE--

MATICO ASPHALT TILE FLOORING

Plastic-Reinforcement Gives This Fine Product *Extra* Durability . . . Clearer Colors

There's nothing old-fashioned about MATICO!

Not content to let well enough alone, MATICO research people have come up with a special new formula that increases the toughness of asphalt tile many-fold. The secret is in polystyrene plastic.

Here, now, is a product that combines the best features of asphalt tile . . . easy installation, all-purpose use, and low cost . . . with the extra advantages of *longer* wear . . . crisper, brighter colors!

Naturally, this makes MATICO the outstanding choice for almost every type of installation—schools, hospitals, offices, stores and private homes. And MATICO performs equally well on, above, or below grade.

Why joust with tough flooring problems — specify MATICO Asphalt Tile Flooring.

QUALITY CONTROLLED MATICO PRODUCTS Guaranteed by Good Housekeeping

5A219

MASTIC TILE CORPORATION OF AMERICA

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

Manufacturers of: Aristoflex • Confetti • Parquetry • Asphalt Tile • Cork Tile • Plastic Wall Tile

In MILWAUKEE'S NEW CENTRAL Y.M.C.A.



"The Best Showers That Money Can Buy"

will be automatically regulated by



POWERS *Thermostatic* WATER MIXERS

Each of the 312 showers in this attractive modern building will be thermostatically controlled with Powers mixers. They're entirely automatic. Bathers always get safe, comfortable showers without danger of slipping and falling while trying to dodge an unexpected shot of cold or hot water.

Regardless of *pressure* or *temperature* changes in water supply lines . . . shower temperature remains constant wherever bather wants it.

Powers Mixers Save Water. No time or water is wasted by bather having to get out from under shower due to fluctuating temperature. For utmost comfort, safety, economy and service (in 60 cities) if required . . specify and install Powers mixers.

Consult Powers on Shower Planning. For engineering data on thermostatic control for all types of shower baths call your nearest Powers office or write us direct.

THE POWERS REGULATOR CO.
Skokie, Ill.
Offices in
60 Cities
(b95)

POWERS CONTROL
Since 1891

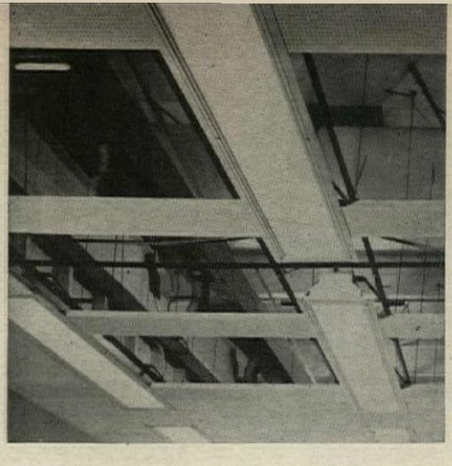
Only one shower accident may cost many times more than POWERS MIXERS



Architects: GRASSOLD, JOHNSON & ASSOCIATES
MILWAUKEE, WIS.
Consulting Engineer, Plumbing: LOUIS R. SCHMAUS CO.
Plumbing Contractor: WENZEL & HENOCH CO.
KOHLER Fixtures by CORDES SUPPLY CO.

PRODUCTS

Continued from p. 254



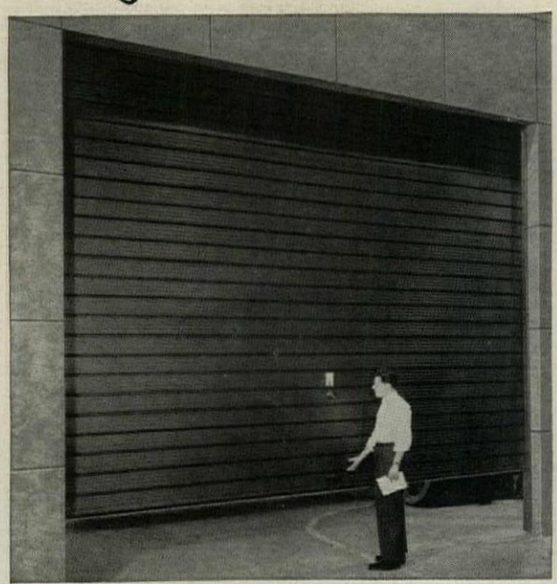


flow; it works like a miniature plenum, using its perforated face plate for noiseless, unobtrusive delivery of conditioned air.

Because rate of diffusion through *Multi-Vent* reaches only 50 fpm 6″ away from the panel face, air can be dispersed at temperature differentials of 20° to 25° without creating cold drafts or hot blasts. The system is claimed, in fact, to be capable of keeping room air temperature within 1° of the comfort zone the year around; and the high differential is said to cut amount of air needed for given loads by 40%, making possible proportionate savings in supply lines, ducts and filters. Cost of pans to serve 1,000 sq. ft. of floor area run about $220; where used in over-all plenum setups —for which the diffusers need no flexible tubing or attachment collars—installation runs about $65 less.

Manufacturer: Multi-Vent Div., Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.

Simplicity... *the keynote of* **MODERN** *design*



MORRISON

Roly-Door *steel sectional doors*

RESIDENTIAL • COMMERCIAL • INDUSTRIAL

CLEAN, MODERN FUNCTIONAL SIMPLICITY that blends with all types of architecture is the hallmark of Morrison Roly-Doors.

SIMPLIFIED DESIGN ensures safe, easy, trouble-free installation and operation . . . manual, electrical and by remote control.

BONDERIZED, ALL-STEEL, WELDED CONSTRUCTION provides lasting good looks and a durability that defies the weather and years of hard use.

ECONOMICAL INSTALLED COST made possible by sound engineering and modern, precise, mass production . . . Roly-Doors cost no more than ordinary wood or metal doors for the same purpose.

OVER 100 STANDARD SIZES ready for immediate delivery and facilities to produce special sizes to individual specifications provide a Roly-Door for every overhead door requirement.

NATIONWIDE SALES AND SERVICE . . prompt delivery and expert installation service are offered by Roly-Door Distributors and Dealer-Installers located in the principal cities of the U. S. and Canada. They are listed in classified telephone directories.

Complete Roly-Door Specifications are available in Sweet's Architectural File or from:

Roly-Door Division

MORRISON STEEL PRODUCTS, INC.

652 Amherst Street, Buffalo 7, New York

Also manufacturers of MOR-SUN WARM AIR FURNACES and MORRISON SERVICE BODIES

In Canada, Roly-Door Distributors, Ltd., 1330 Bloor Street W., Toronto 4, Ont.

METALLIC CALKING maintains tough elastic seal through rough-weather duties

Contractors on heavy construction involving big applications of aluminum or steel will find myriad uses for *Alumilastic* weather- and water-resistant calking-glazing material. Compounded with aluminum powder and a slow-drying vegetable oil, the metallic-looking product forms a hard skin in 48 hours, sets up a positive yet pliable adhesive bond within two to three weeks, never quite dries out. Available in several consistencies for application with knife, calking gun, brush or spray gun, *Alumilastic* can be used as waterproofing around skylights, stacks, window and door frames; as isolation between dissimilar metals for prevention of galvanic corrosion; as pointing for copings; as setting for stone facings; or as moisture barrier between concrete and adjoining metal surface. It sells for about $2.80 per gal. in drum quantities.

Manufacturer: The Parr Paint & Color Co., 18402 Syracuse Ave., Cleveland, Ohio.

FOLDING WARDROBES accommodate various classroom needs and layout

Continuing to keep school requirements in mind, Brunswick-Balke-Collender is now producing a line of natural-wood classroom wardrobes, thoroughly tested for wear and tear, that are adaptable to almost any classroom scheme. Although designed to be recessed flush with wall surface, the wardrobes' construction obviates special ceiling framing and wall supports. They are made in three models, each with as many door sections as required.

Making minimum demands on corridor space, the *Series 1000 Receding Type* folds its doors back, in flat pairs, completely in-

continued on p. 262



But where will you connect Miss Foster?

Whether you're planning or building offices for your own use or for rental to others, you'll need electrical circuit connections throughout the floor area—to efficiently utilize every square foot of space. You can't crowd all desks around wall outlets and it's dangerous and unsightly to run exposed raceways across floors. How then can you obtain maximum electrical adequacy plus space flexibility? The answer is General Electric Q-Floor wiring, the system that provides complete electrical availability for typewriters, dictating machines, calculators, telephones, intercoms, lighting, postal machines, and other electrically operated equipment.

The General Electric Q-Floor wiring system is designed for installation in cellular steel subflooring, and makes every square foot of floor space available for outlets. Every cell is a raceway for present and future circuit requirements. No costly alterations, no litter, no tie-up of space, no matter how often or how much your electrical requirements change. And it is doing a job in office buildings like famed Lever House in New York City, and in industrial buildings and institutions across the country.

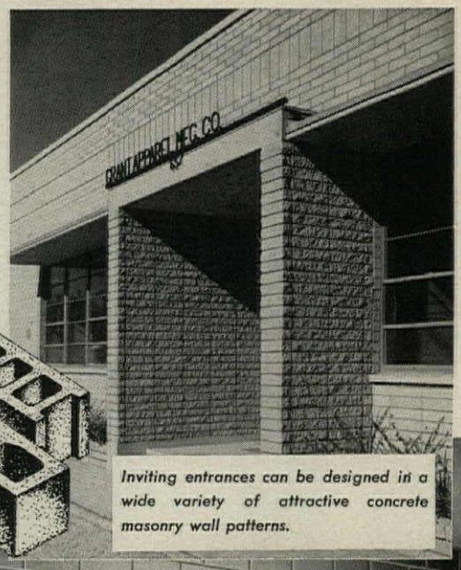
For more information on General Electric Q-Floor wiring, call your G-E Construction Materials district office, or write to Section C49-34, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product

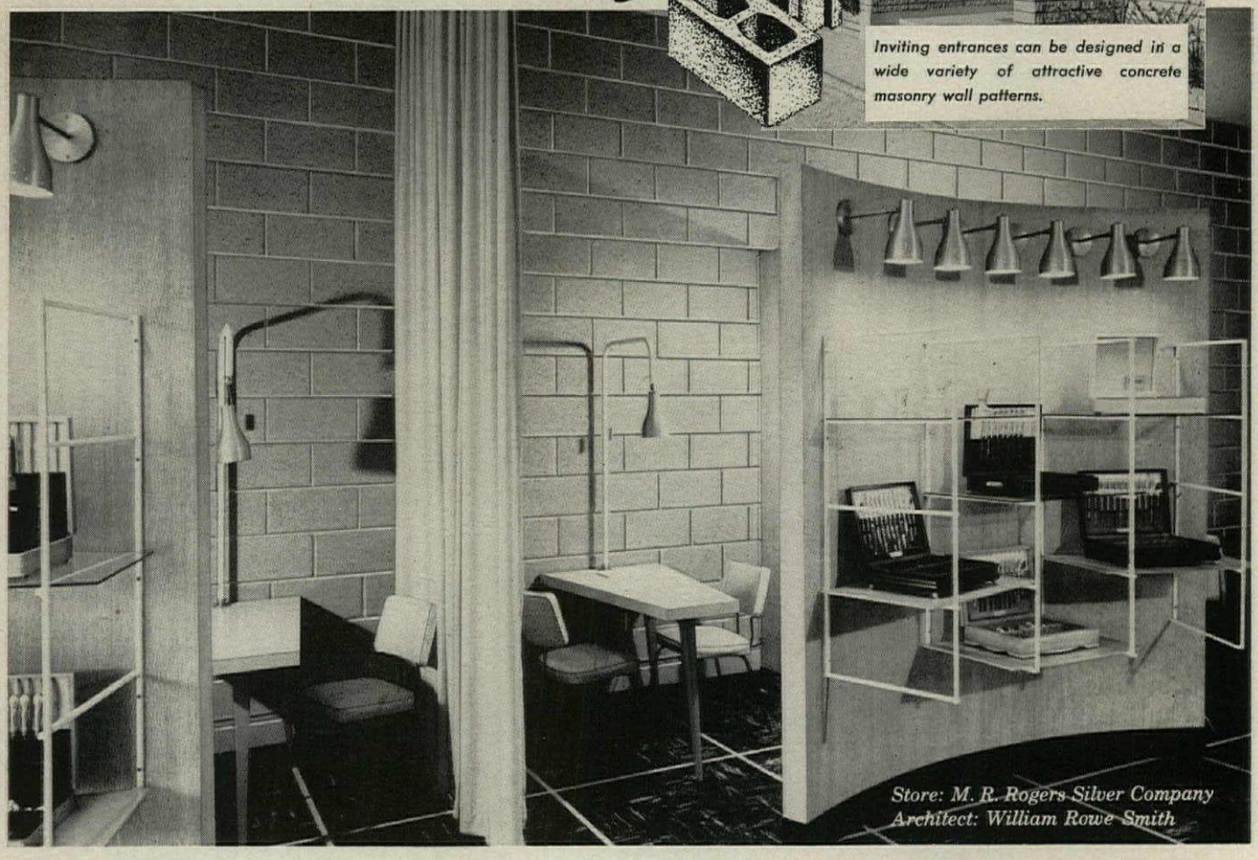
GENERAL ELECTRIC

Inviting new fronts, smart store interiors with

Concrete Masonry



Inviting entrances can be designed in a wide variety of attractive concrete masonry wall patterns.

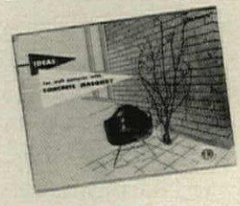


Store: M. R. Rogers Silver Company
Architect: William Rowe Smith

DESIGN VERSATILITY is the key to the widespread use of concrete masonry for contemporary stores and shopping centers. Split-block, 4″ high units, and other attractive block styles in a wide variety of textures, colors, and wall patterns make store entrances more inviting, the facades of many types of business buildings more attractive.

Smart exposed block interior walls make a perfect texture and color setting for merchandise . . . and usually save considerably on interior finish costs.

Helpful design aid:



Many new concrete masonry wall patterns are shown in the handy reference booklet, "Ideas for Wall Patterns with Concrete Masonry," which was an exceptional merit award winner in the 1954 AIA—Producers' Council Product Literature Competition. Ask your local NCMA member for your copy.

National Concrete Masonry Association

38 South Dearborn St. Chicago 3, Illinois



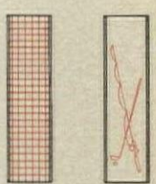
The first new...all-new "Custom" door at standard prices

An outstanding example of the "Kawneer Touch" . . . the new all-welded aluminum door can be "customized" to your needs. Now you can specify a door that is 10% stronger than similar doors, provides a clean, seamless, eye-appealing appearance, and features interchangeable hardware . . . yet the cost compares with other standard doors. Here is the only stock door that can be styled to any type of store. Learn all about it now. See your Kawneer dealer or write Kawneer, Niles, Michigan.

Now! —identification hardware "individually designed"



Style "M": Cosmopolitan hardware for *double-acting* doors.



Style "B": Coronet "Pull Handle" ideal for symbol.



Style "B": Coronet "Push Bar" provides length for full name.

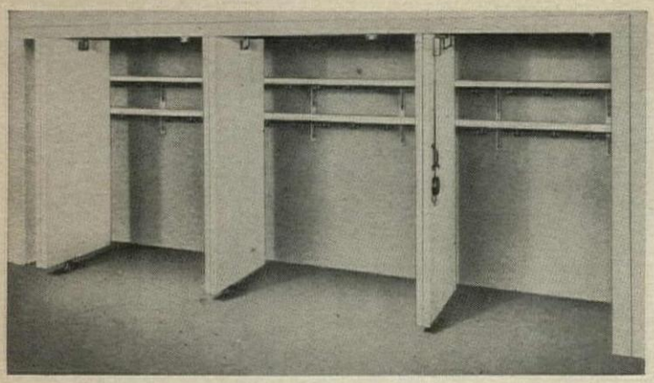
Kawneer offers a choice of four different styles of hardware. The two styles shown have interchangeable face plates. If you wish a face plate to identify any type of business or name, all you do is have artwork prepared. Kawneer will laminate it in plastic, etch it on aluminum, or produce it on any material you desire and in any color. The cross-hatch plate is then merely replaced right on the job with the new design.

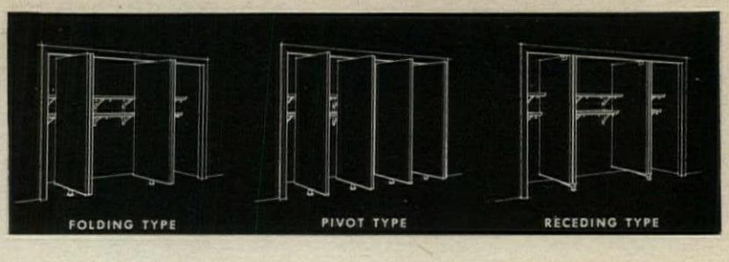
Completely welded construction for greater strength—lower cost

- 10% stronger than most doors
- New "deep-weld" penetrates metal 100%
- Hairline joints and unblemished finish for attractive appearance
- No exposed, unsightly screws
- Seamless tubular frame construction
- Long lasting beautiful alumilite finish



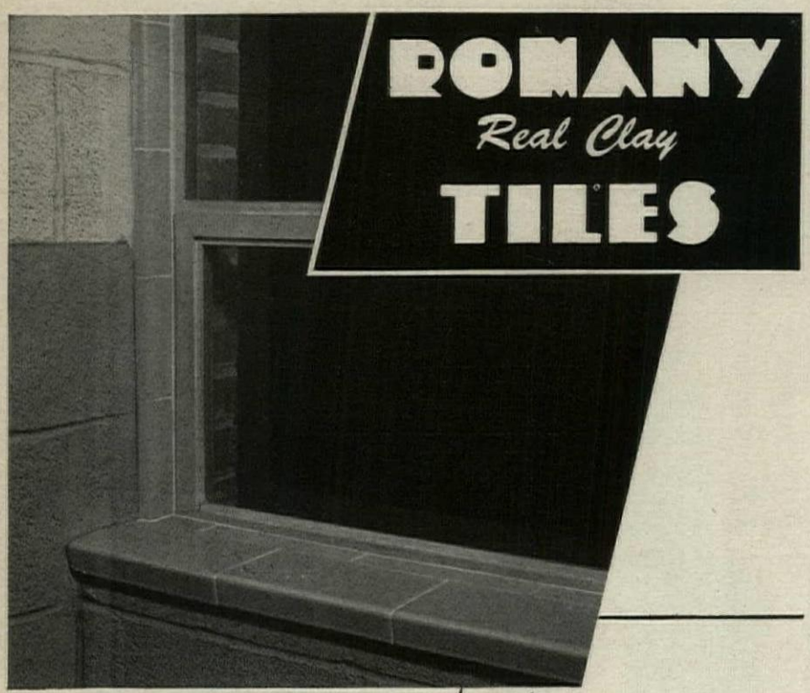
PRODUCTS *continued from p. 258*





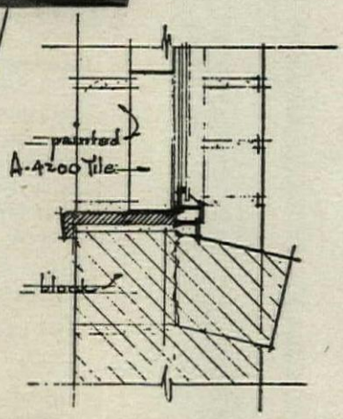
side the closet space. Where continuous shelving is needed and more space available for access, the *Series 2000 Pivot Type*, with doors mounted individually and pivoted on vertical centers, provides this feature at modest cost. The *Series 3000 Folding Type* combines the wide-entrance feature of the *Receding* wardrobes with the full storage shelf of the *Folding* and is recommended where aisle space (and building budget) can take it. Teachers' and supply closets also are available as are overshoe and umbrella racks. Other optional equipment are chalk boards and cork boards on door faces for use during the school day. Each installation is fabricated to meet room requirements.

Manufacturer: Horn Div., Brunswick-Balke-Collender Co., 623-633 S. Wabash Ave., Chicago.



TILE FOR MODERN WINDOW SILLS

This new flat smooth tile is economical and wear proof. It meets the growing demand for tiled window sills in residences, stores, etc. and has a special use in school rooms where it offers desirable space for exhibits plus welcome cleanliness. Priced to compete with most window sill materials. The A-4200 Cap illustrated, detailed into the window jamb, neatly and inexpensively covers transition between a metal window and wall material.



Every Architect should have our Sample Tile Chart No. 6. It's free.

UNITED STATES CERAMIC TILE COMPANY

Member: Tile Council of America and Producers' Council, Inc.

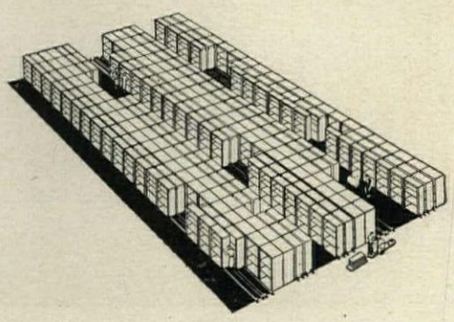
217-J FOURTH ST., N.E., CANTON 2, OHIO



MOBILIZED STORAGE SYSTEM floats aisles for extra capacity

Shelf and drawer capacity can be stretched 30% to 70% over a given floor area, with the Dolin patented track technique. In this mobile storage method, about two thirds of the present (or new) cabinets and shelving units are set on heavy steel bases fitted with grease-packed ball-bearing wheels and placed on the special tracks. Behind each row of fixed units two mobilized rows are set up—each having one unit less than the fixed—in as many repeats of the pattern as can be made in the available space. In spite of close

continued on p. 266





Existing Road Improved. The Ninety-Sixth Street overpass on the F. D. Roosevelt Drive along the East River, New York, is typical of much new construction designed to speed traffic flow. Monel was specified for gutters because a long-wearing, low-maintenance metal was desired in the structure built for the city by the Triborough Bridge and Tunnel Authority.

How to keep an *Overhead* problem *Under* control

This 4-block-long highway overpass is built with four expansion joints and two dams.

Under these six spots are six gutters.

They don't have to be painted. They seldom have to be looked at. And they may never need any maintenance work done on them!

What kind of gutters are these? They are permanent gutters — made of Monel® Roofing Sheet.

Because of its nickel-copper composition, Monel possesses a unique combination of properties — properties not found in other non-ferrous roofing metals.

Monel, for example, is stronger and tougher than structural steel. It is tough and hard. It resists stresses, strains and wear. Its low coefficient of expansion reduces the possibility of fatigue failure.

In the location pictured above, the effects of dirt, soot, fumes and dampness must also be considered. But they don't bother Monel. And what about the *salt* used on the roadway to reduce ice hazards during winter storms? It doesn't hurt these corrosion resisting gutters in the least.

Monel, of course, is equally well suited for many jobs in addition to gutters. It is adaptable to almost all types of public works, commercial buildings — even homes. Specify it for complete roofs — flat, standing or batten seam. And for flashings, skylight frames, reglets, cornices, downspouts, louvers and ventilators.

Remember — you do your clients a *lasting* service every time you specify Monel. It's a *lasting* metal!



Installing Monel Gutter under expansion bands at the north abutment of the overpass. Monel is easy to bend, cut and weld. Although relatively thin gauge sheet is used (in this case .062"), Monel gutters have ample strength to withstand deformation during installation . . . and abrasion and flexure after installation. ***Consulting engineers: Brown & Blauvelt, New York.***

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

INCO TRADE MARK **Nickel Alloys**

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



East Harlem General Hospital
Architects: Charles B. Meyers Associates
Department of Public Works of the City of New York: Hon. Frederick H. Zurmuhlen, Commissioner
Project Manager: Sam Garringer
General Contractors: Wilaka Construction Company

Hollow Metal *at its best*

- ★ **Hollow Metal Doors & Frames**
- ★ **Elevator Entrances**
- **Convector Enclosures**
- ★ **Metal Base & Trim**
- **Metal Wainscoting & Wall Linings**
- ★ **Custom Partitions**
- ★ **Stall Partitions & Cubicles**
- ★ **Stainless Steel Specialties**
- **Hollow Metal Specialties**
- **Special Hollow Metal Lockers**

Once again, SUPERIOR FIREPROOF DOOR & SASH COMPANY, INC., has been chosen to furnish the "HOLLOW METAL" for an outstanding project.

This time, THE EAST HARLEM GENERAL HOSPITAL.

Doors and frames constitute only a portion of "HOLLOW METAL."

HOLLOW METAL is the mark of a trade that has the ability to coordinate and fabricate many related sheet steel products.

It is not an afterthought of manufacturing a few more items. Rather it is the experience of having made these specific related products over a long period of time.

Thirty-five years of experience in manufacturing "HOLLOW METAL" has given us the ability to combine planning and production with economy into a service for the construction industry.

As Hollow Metal Men, we are proud to have provided the products starred (★) for The East Harlem General Hospital.

Superior FIREPROOF DOOR & SASH CO., INC.

EXECUTIVE OFFICES: 4175 PARK AVENUE, NEW YORK 57, N. Y. • **PLANTS:** NEW YORK AND SCRANTON, PA.



. . . the finest structures rest on

RAYMOND FOUNDATIONS

PAN AMERICAN LIFE INSURANCE COMPANY
New Orleans, La.

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PRODUCTS

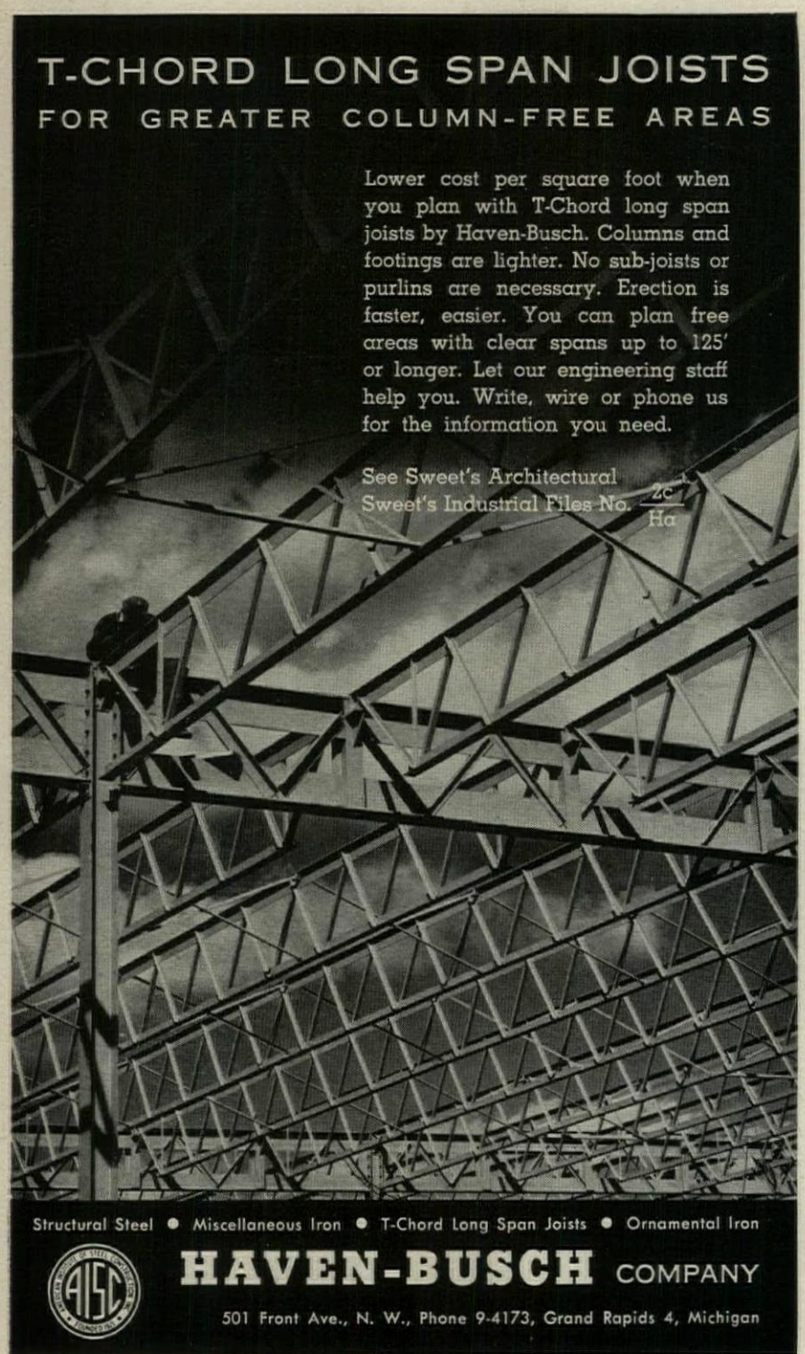
Continued from p. 262

quarters, any storage unit can be reached very quickly.

The sketch (p. 262) illustrates a Dolin arrangement costing $6,800 which fits 275 shelving units in a 2,205 sq. ft. area where there had been 189 for a 46% reduction in space. With yearly rental at $3.50 psf, the cost of such an installation will be amortized in about five years.

Manufacturer: Mobile Storage Div., Dolin Metal Products, Inc., 315 Lexington Ave., Brooklyn 16, N.Y.





POWER WHEELBARROW is versatile materials handling device

Easy-to-switch front-end attachments convert the *R-15 Moto-bug* into an all-around materials handling device. Fitted with a hopper body, the unit has a 15 cu. ft. carrying capacity; with a flatbed platform it takes on a one-ton load. Now the *R-15* can be obtained with a hydraulic fork attachment which lifts up a ¾-ton load 7' high in 14 seconds. These accessory units should make the *R-15* particularly practical in loading work and general construction work as well as in industrial plant service.

The mast of the hydraulic lift can be tilted 10° backward for balance, or 2° forward to help the 30"-long forks in picking up or releasing loads. Direct-drive, the *Moto-bugs* have full power forward and reverse, and carlike steering. The machine





perks along at speeds up to 6 mi. an hour. Current price for *Moto-bug* unit with hopper is $1,175; with flatbed platform $1,150; with fork lift $1,750; and a combination *R-15* with hopper body and flatbed $1,245.

Manufacturer: Koehring Co., 3026 W. Concordia Ave., Milwaukee 16, Wis.

BABY BULLDOZER can dig skinny holes fast, or fill in big ones

The *Agricat*, a diminutive crawler tractor with ambition, does not let its size stand in the way of doing rough jobs well. A new hydraulically operated backhoe attachment, the *Agrihoe*, turns this 58"-long bulldozer

continued on p. 270

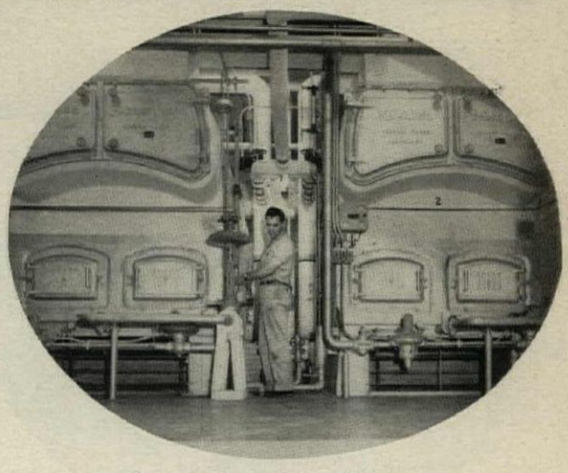
HOW "RESERVE STEAM" HELPS MRS. BAIRD'S BREAD CO. KEEP PACE WITH GROWING MARKETS



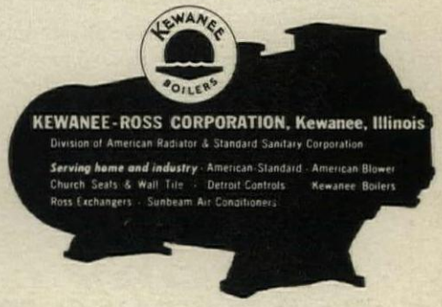
KEWANEE reserve plus rated

. . . BOILERS PROVIDE FOR FLUCTUATING LOADS AND FUTURE EXPANSION

It's "full steam ahead" for growth at Mrs. Baird's Bread Co., Dallas, Texas. That's because management looked well into the future in planning the company's modern plant. Take the boilers as an example. Past experience proved that boilers with reserve capacity could economically provide sufficient power to meet the needs of expansion. Kewanee Reserve Plus Rated Boilers were installed, with 50% extra power built in for additional capacity requirements. When fluctuating loads demand more steam at once . . . it's there with Kewanee. When expansion calls for more steam . . . it's there with Kewanee. So, when you consider boilers, don't be misled by promises that a boiler delivers enough steam to meet average daily requirements. Look for reserve to assure performance beyond the call of usual duty. Consider Kewanee Boilers, rated on nominal capacity to operate at "cruising speed". You'll get greater efficiency at lower cost, plus longer boiler life. Only a boiler rated on nominal capacity can make that guarantee.



Here are 2 Kewanee No. 5188 Boilers installed at Mrs. Baird's Bread Co.



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TODAY
YOUR CLIENT MAY NEED THIS INTERIOR SET-UP



TOMORROW
YOUR CLIENT MAY NEED THIS INTERIOR SET-UP



OR HE CAN HAVE ANY COMBINATION OF INTERIOR SET-UPS

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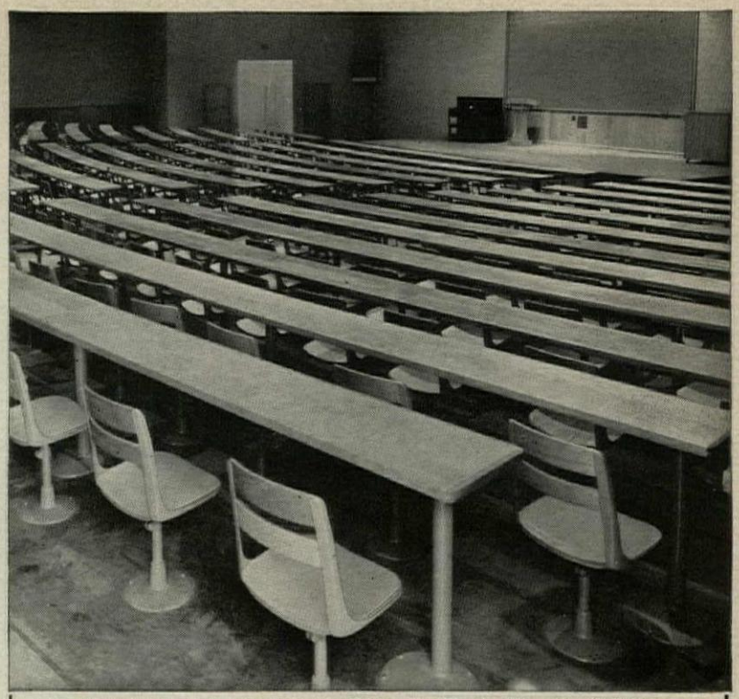

Walker Hall, University of Florida, Gainesville, Fla. Architect: Guy C. Fulton

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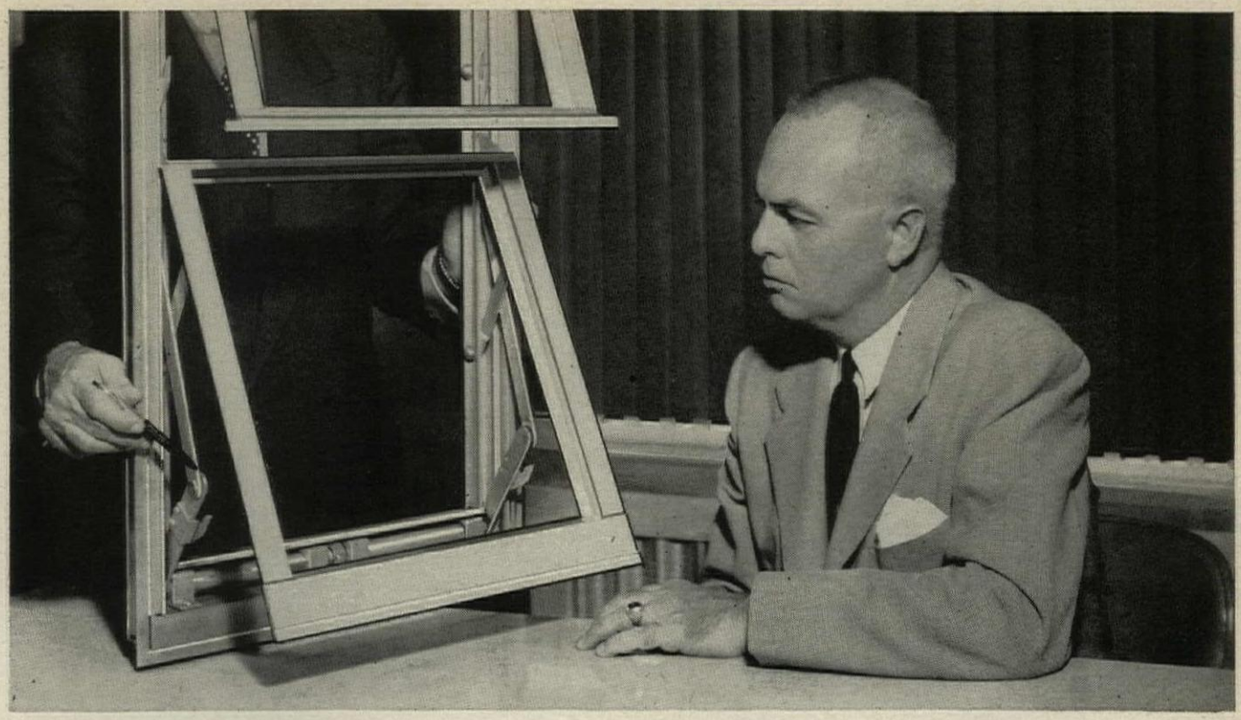

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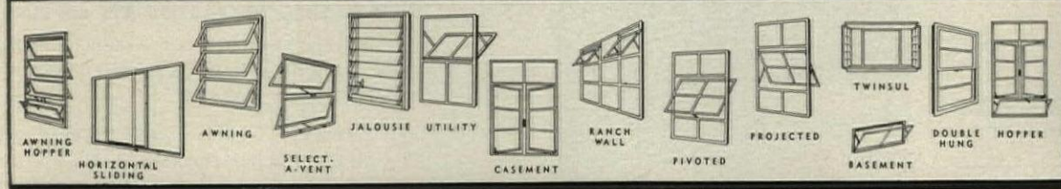

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PRODUCTS

Continued from p. 266

into a very versatile machine, capable of digging trenches as well as doing backfilling and rough grading work, at an attractive price to the contractor: $2,989 F.O.B.

Counterbalanced against the bulldozer scoop, and resting on retractable feet beneath its hydraulic cylinder haunches, the tractor can send its 9"- or 12"-wide bucket 10′ out, dig 6′ down and load up to 8′ high. In one hour the *Agrihoe* will dig a 50′ trench, 14"-wide, 3′-deep trench not in easy soil but through debris-filled territory.

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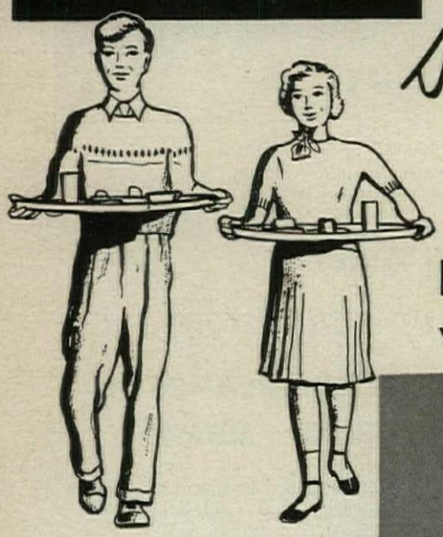
schools



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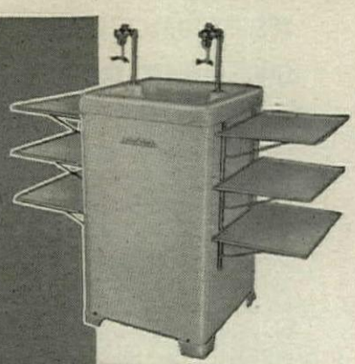
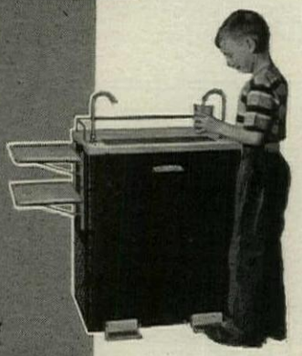


CAFETERIA COOLER with splash-proof cast-iron porcelain enameled top, chromium-plated trim, push-back glass fillers.



LO-LEVEL COOLER ...just the right height for "the small fry." Foot-pedal operation promotes convenience and speeds serving.

Active, impatient pupils... boundless delay and confusion in the cafeteria... unless it is well organized! One of the best methods of expediting servings is to install Halsey Taylor dependable, efficient coolers.

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TECHNICAL PUBLICATIONS

CEMENT

Medusa Cements Manual. Medusa Portland Cement Co., 1000 Midland Bldg., Cleveland 15, Ohio. 26 pp. 3¼" x 6¼"

FABRICS

Walls of Fame. Vicrtex Vinyl Electronically Fused Fabrics. L. E. Carpenter & Co., Empire State Bldg., New York 1, N.Y. 12 pp. 8½" x 11"

GLASS BLOCK

Skytrol Glass Blocks for Toplighting Your Buildings. Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh, Pa. 8 pp. 8½" x 11"

A Special-Purpose Glass Block for Use in Areas with Severe Sun Conditions. Kimble Glass Co., Toledo 1, Ohio. 4 pp. 8½" x 11"

Suntrol Glass Block for Reduction of Glare and Heat. Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh, Pa. 8 pp. 8½" x 11"

HARDWARE

Kramer Control Hardware. Kramer Manufacturing Co., 2833 Third St., San Francisco, Calif. 8½" x 11"

HEATING, VENTILATING AND AIR CONDITIONING

Hydro-Flo Hot Water Heating Products. Catalogue GK-954. Bell & Gossett Co., Morton Grove, Ill. 24 pp. 8½" x 11"

Pritchard Lo Line Cooling Towers. J. F. Pritchard & Co., 4625 Roanoke Pkwy., Kansas City 12, Mo. 4 pp. 8½" x 11"

Radiant Panel Heating with Anaconda Preformed Copper Tube Panel Grids. Pub. C-6-R. American Brass Co., Waterbury 20, Conn. 24 pp. 8½" x 11"

continued on p. 274

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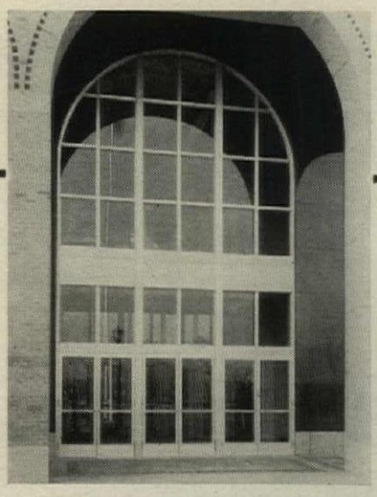

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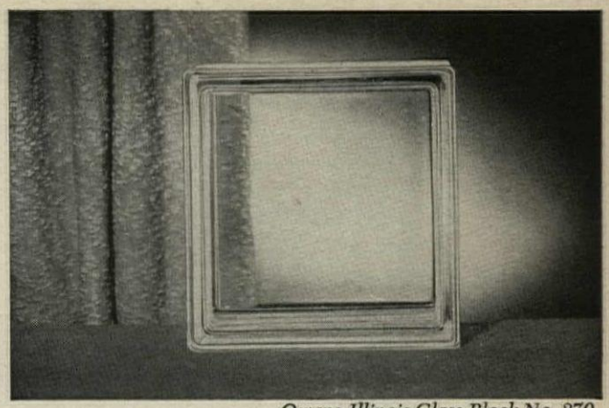

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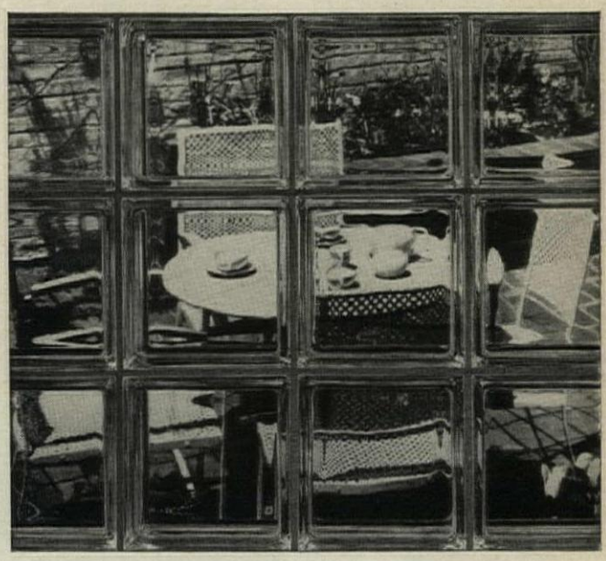

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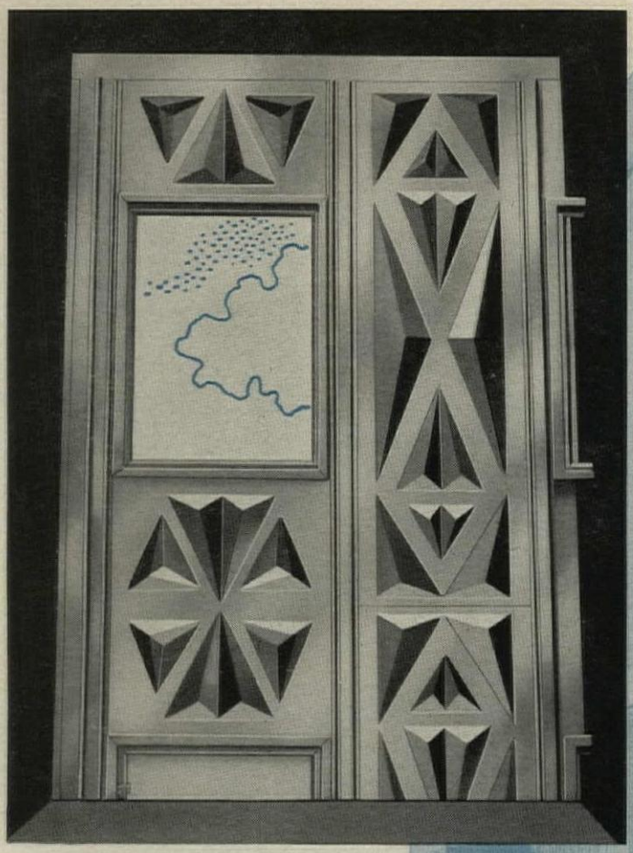
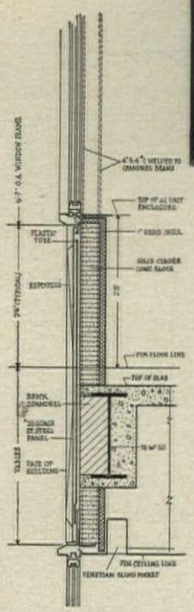


Stainless steel panel to be used on Socony-Vacuum Building. Stamped faceted design adds stiffness as well as beauty.



Detail drawing showing how stainless panels will be installed.

STAINLESS STEEL ARMOR ...for a New York GIANT!

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PRODUCTS

Continued from p. 270

Water Heaters and Heating Boilers Catalogue. Portmar Boiler Co., 193 Seventh St., Brooklyn 15, N. Y. Leatherbound, looseleaf. 8½" x 11"

Young Remote "Roomaire" Conditioner. Catalogue No. 7754. Young Radiator Co., Racine, Wis. 3 pp. fold-out. 8½" x 11"

INSULATION

Firesafe Churches. Form G-93. Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill. 3 pp. fold-out. 8½" x 11"

LIGHTING

Guide to Fluorescent Luminaires for Commercial and Industrial Applications. Bul. B-5799-B. Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa. 28 pp.

Lighting with that Lightolier Flair. Lightolier, 346 Claremont Ave., Jersey Cty, N.J. 16 pp. 11" x 8½"

RLM Standard Specifications for Industrial Lighting Units. RLM Standards Institute, Suite 818, 326 W. Madison St., Chicago 6, Ill. 8½" x 11"

Stage Lighting Switchboards. Bul. GEA-6168. General Electric Co., Plainville, Conn. 24 pp. 8½" x 11"

LUMBER

Comparative Costs of Walls, Partitions, Roofs for School Buildings. National Lumber Manufacturers Assn., 1319 18th St., N. W., Washington 6, D. C. 28 pp. 8½" x 11"

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The Answers to Many of Your Cleaning Problems. Bul. No. 154. Spencer Turbine Co., Hartford, Conn. 12 pp. 8½" x 11"

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Facts about Neoprene for the Engineer. Neoprene Notebook No. 62. E. I. du Pont de Nemours & Co., Wilmington, Del. 8 pp. 8½" x 11"

SOUND CONTROL

Acoustical Tile Adhesive Handbook. A. Z. Bogert Co., Ambler, Pa. 15 pp. 8½" x 11"

SUNSHADES

Specifications for Venetian Blinds. No. 18-LO. Levolor Lorentzen, Inc., 391 W. Broadway, New York 12, N. Y. 8 pp. 8½" x 11"

TILE

Stark Ceramics Catalogue No. 55. Stark Ceramics, Inc., Canton 1, Ohio. 28 pp. 8½" x 11"

WALL AND CEILING PANELS

1955 Marlite Catalogue. Marsh Wall Products, Inc., Dover, Ohio. 8 pp. 8½" x 11"

WINDOWS AND DOORS

International Doors for Industry and Aviation. International Steel Co., Evansville, Ind. 16 pp. 8½" x 11"

New Mosler "Picture Windows" for Drive-in Banking. Mosler Safe Co., 320 Fifth Ave., New York 1, N. Y. 4 pp. 8½" x 11"

Revolving Doors. 1955 Catalogue. International Steel Co., Evansville 7, Ind. 28 pp. 8½" x 11"



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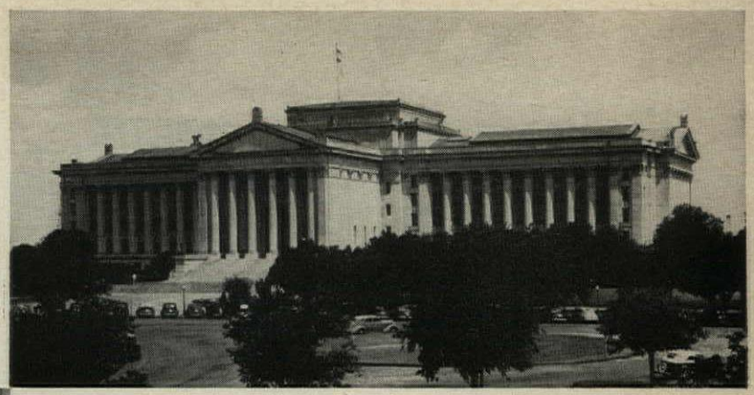

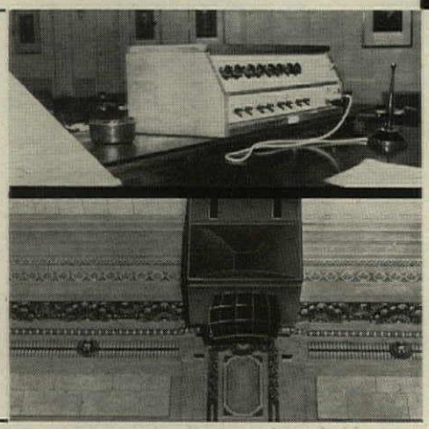

The control center for the Altec Public Address System in the Oklahoma House of Representatives is the special console controlling the 10 M-11 microphones. The system, which includes six 1400 series amplifiers, culminates in the A-5 Horn System with H-1505 H.F. Horn and 288 Driver.

The House of Representatives in the imposing State Capitol of Oklahoma is equipped with sound products by ALTEC LANSING. The complete public address system in this historic chamber — microphones, amplifiers and speakers — is by ALTEC LANSING . . . assurance of dependable, highest quality performance.

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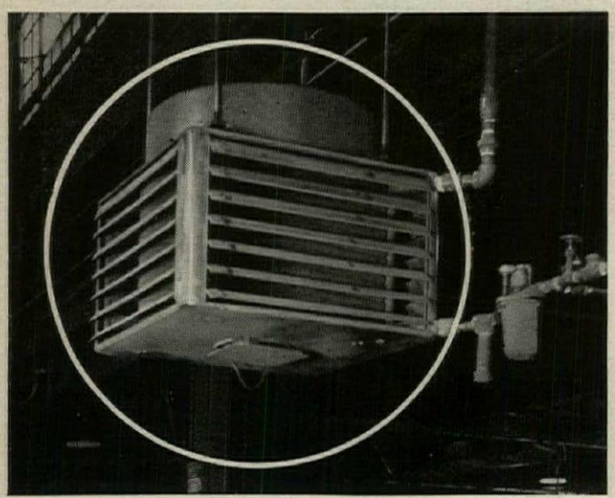

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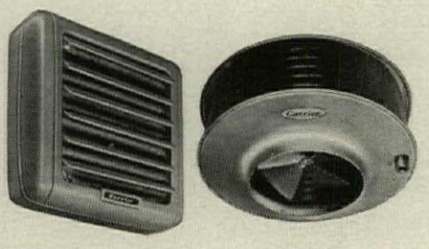

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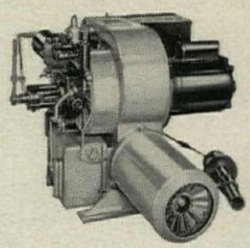

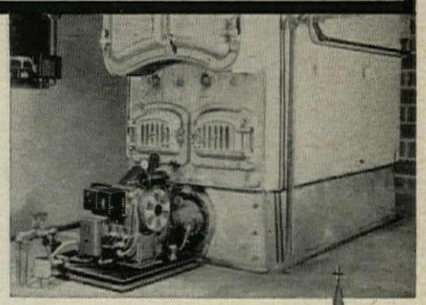

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ELEANOR LE MAIRE, Designer



Eleanor Le Maire made her first mark in the field of interior design in 1929—the $5 million Bullocks-Wilshire store project in Los Angeles. Miss Le Maire heads a staff of fifty, including architects, designers, lighting and color experts. Among her better known design jobs are the new Manufacturers Trust Company interiors in New York, the Neiman-Marcus stores in Dallas and Preston Center, Burdine's in Miami and Fort Lauderdale, and the Hotel New Yorker.

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(at left)

JACK OWEN says, "You've got a roof of superior strength when Corruform and Tufcor are used. Big savings in time and labor costs because these materials are easy to place and weld."

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(at right)

HAROLD HERES says, "Corruform and Tufcor keep the entire job moving ahead on schedule. That means savings in construction costs."

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Granco Products keep job on schedule, reduce labor costs, save time.

BATON ROUGE, LOUISIANA—One of Louisiana's most modern schools is scheduled for fall completion. Situated on the northern edge of this capitol city, the Glen Oaks School consists of five buildings, connected by covered walks.

Heavy Duty Corruform and Tufcor, specified for the buildings' roof slabs, contributed to substantial savings in time and labor costs. For example, on two of the Glen Oaks buildings, 30,000 square feet of Tufcor was laid in 30 hours.

Harold Heres, Vice President of Caldwell & McCann, contractors on the new Glen Oaks School, says, "there are no unexpected slow-ups when Tufcor or Corruform are specified. That's what we like about these materials—you can be sure you've got a tough, strong roof and construction is much faster."

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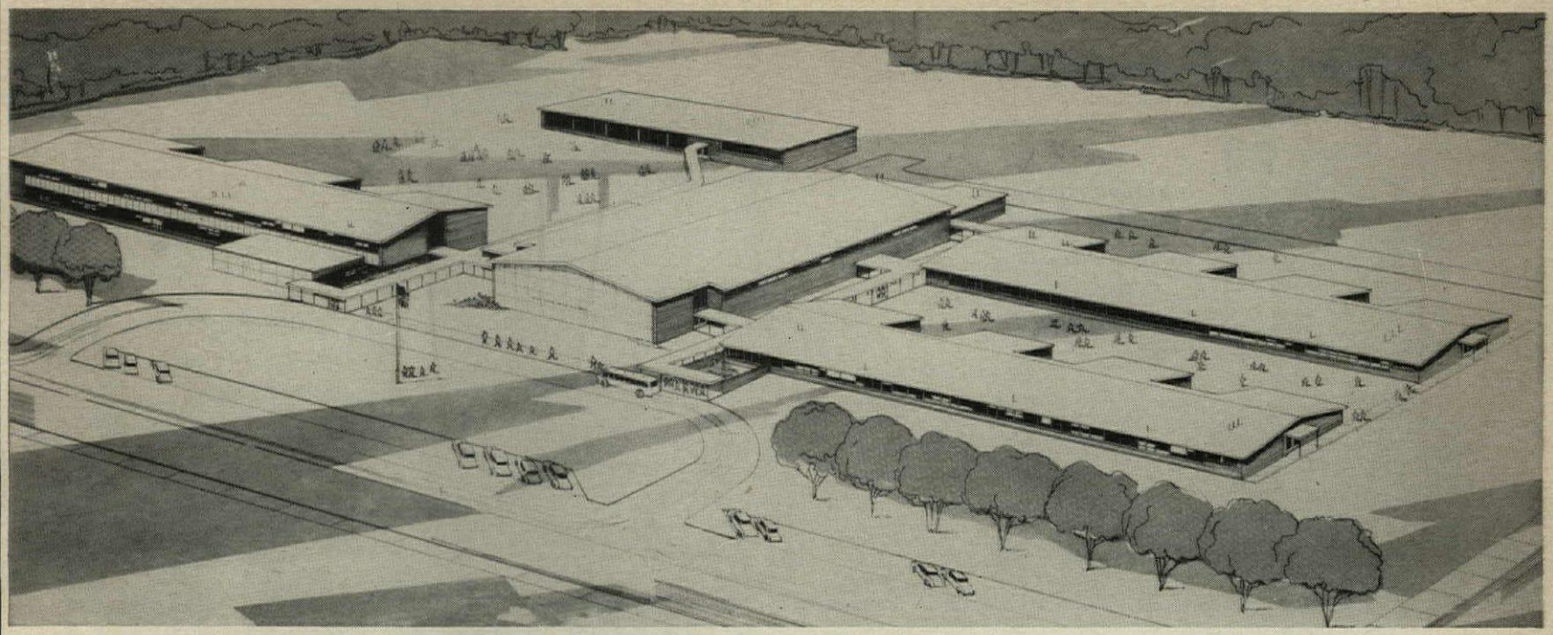

Glen Oaks School, *Baton Rouge, Louisiana* • Architects: *Manson and Thompson, Baton Rouge, Louisiana*
Associate Architects: *Goodman and Miller, Baton Rouge, Louisiana* • Contractor: *Caldwell & McCann, Baton Rouge, Louisiana*

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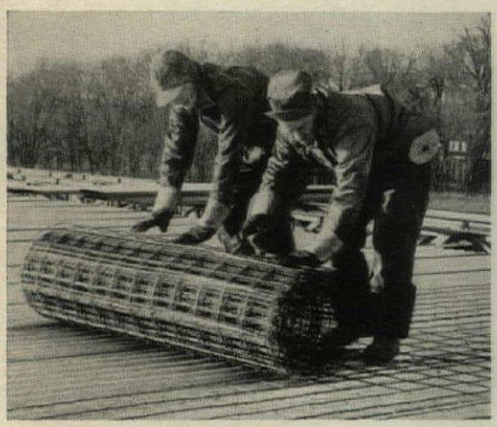

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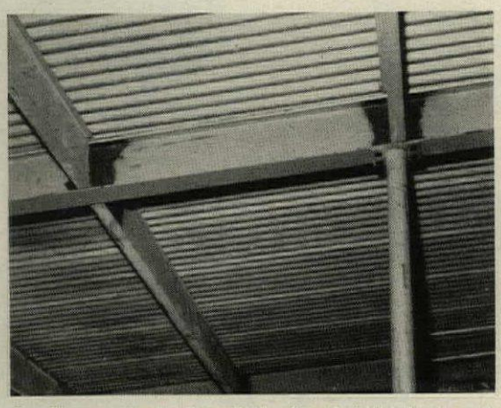

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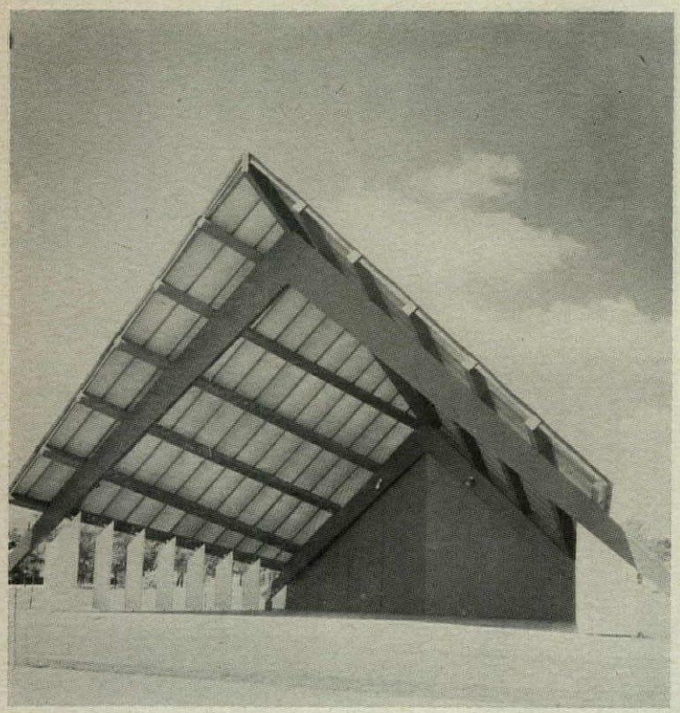

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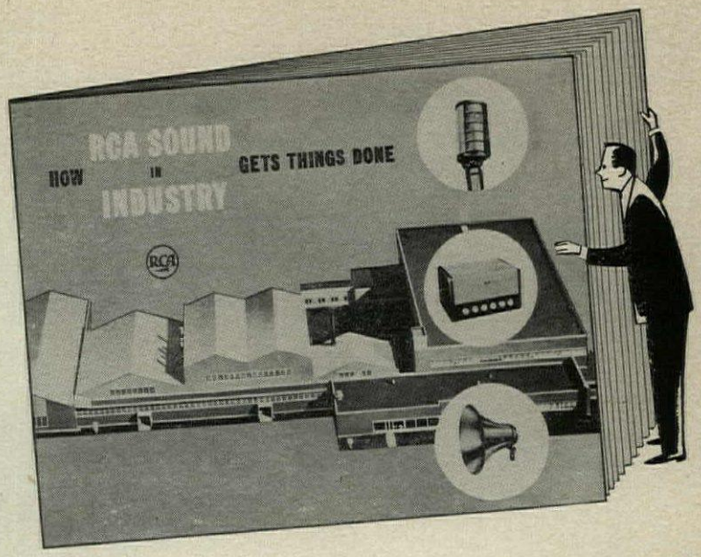

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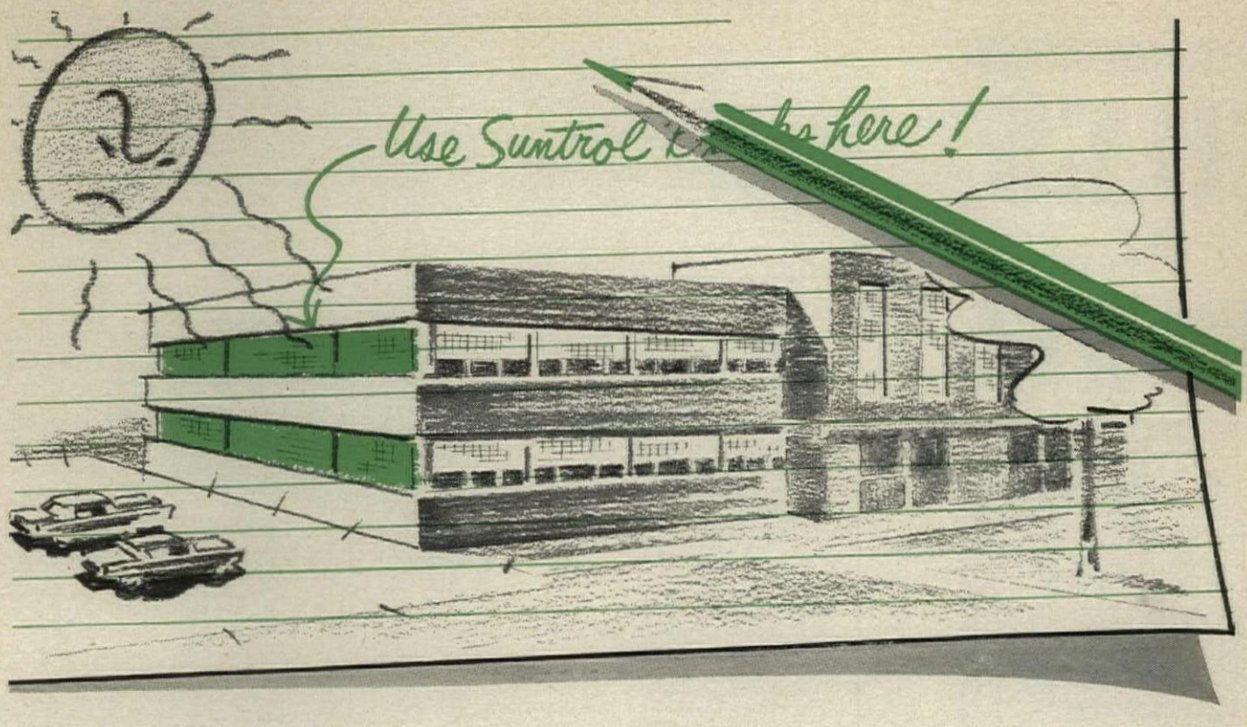

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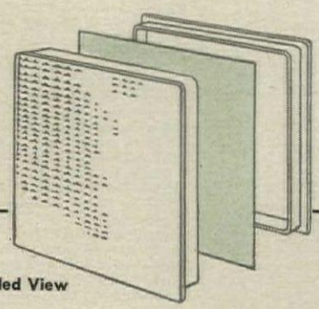

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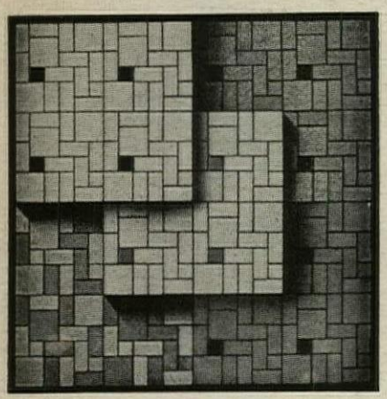

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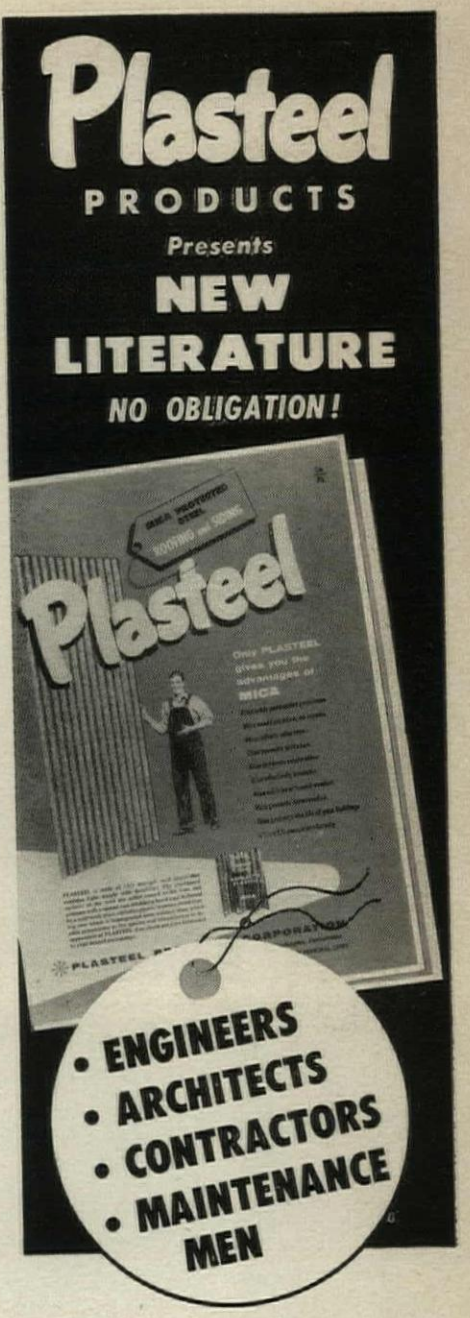

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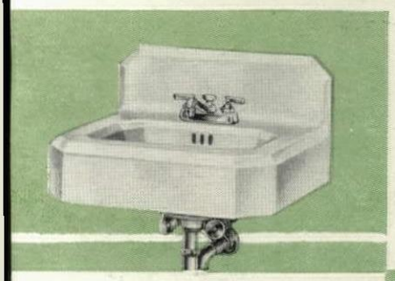

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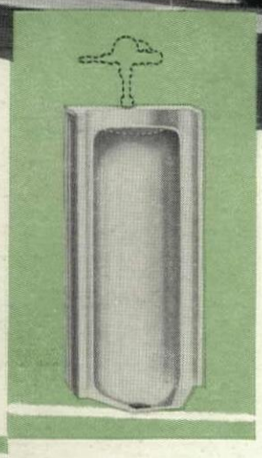

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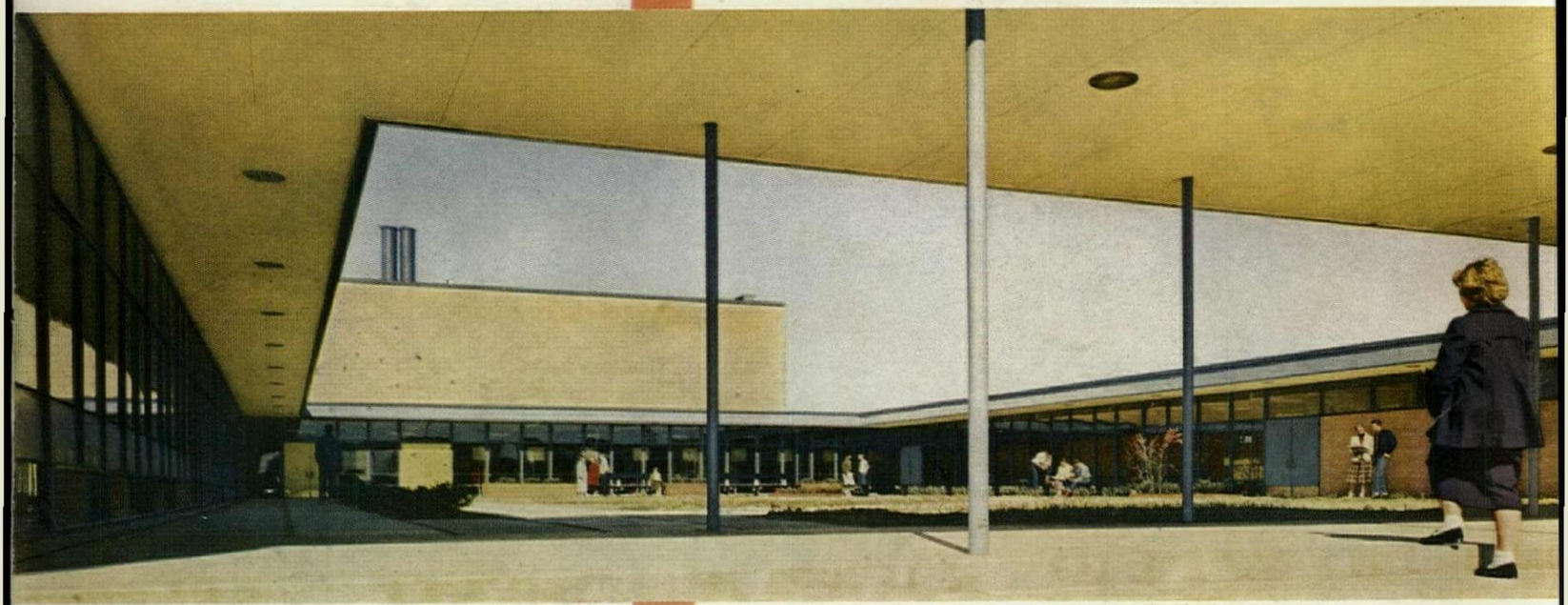
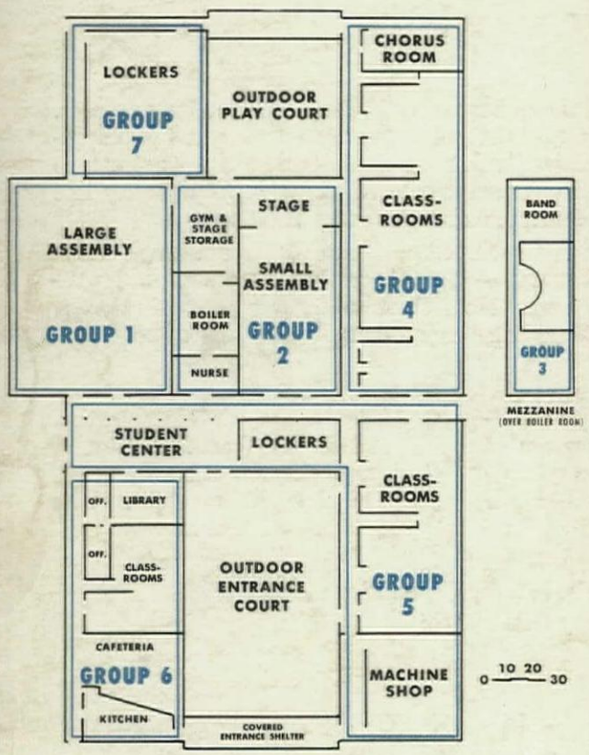


Norman High School, Norman, Oklahoma, recipient of the First Honor Award of the American Institute of Architects in 1954. Architects and Engineers: Perkins & Will, Chicago, and Caudill-Rowlett-Scott & Associates, Oklahoma City, Oklahoma, and Bryan, Texas. Heating Contractor: Fischer Engineering Co., Norman, Oklahoma.



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