

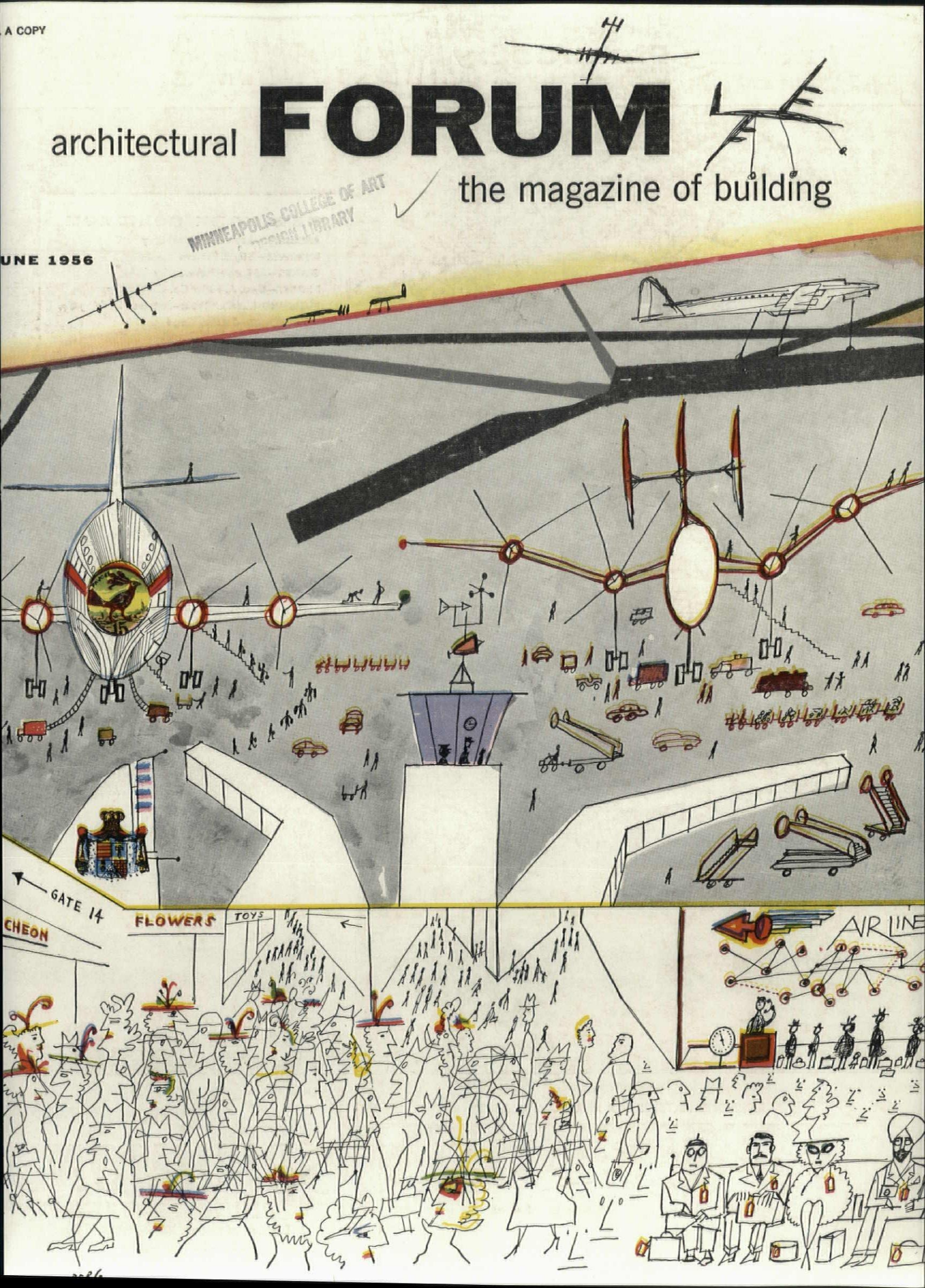
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# FORUM

the magazine of building

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# FORUM

the magazine of building

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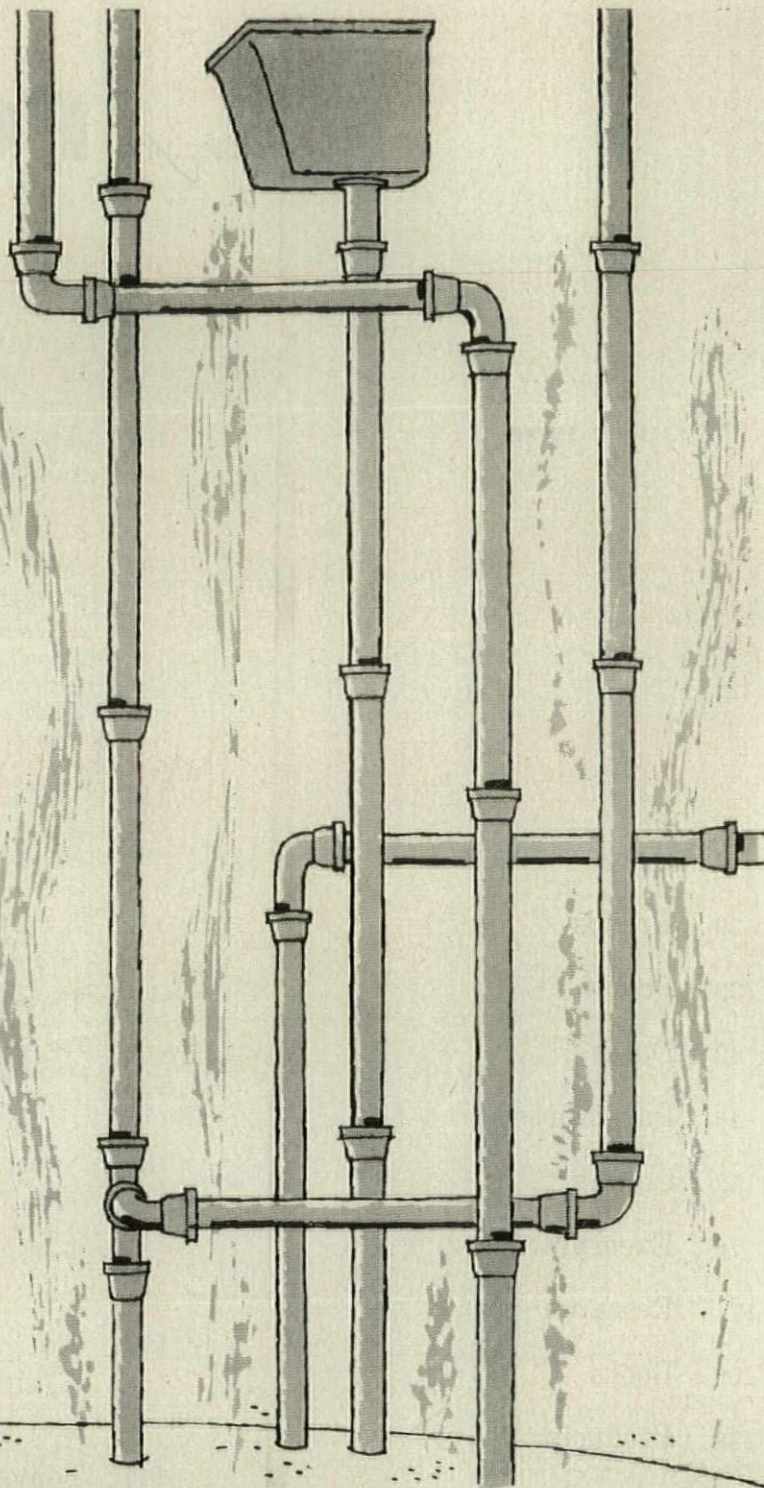
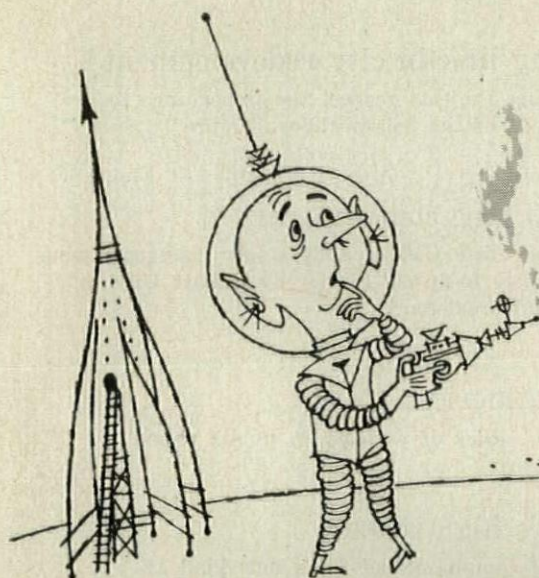
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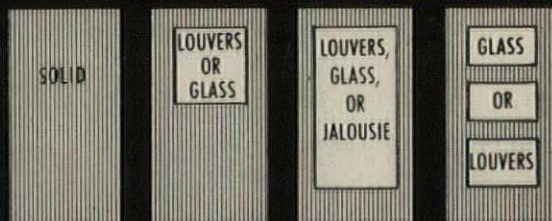
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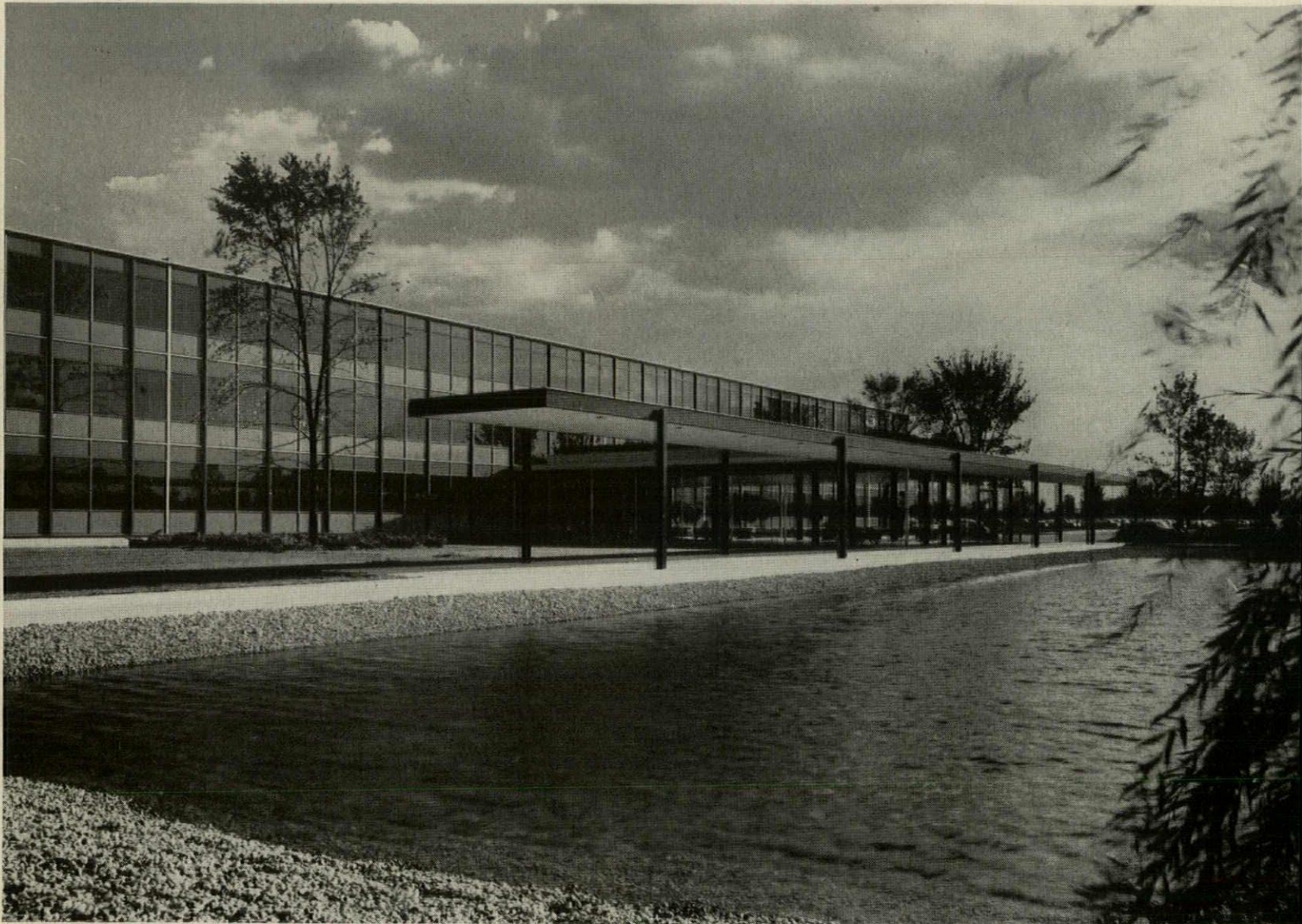
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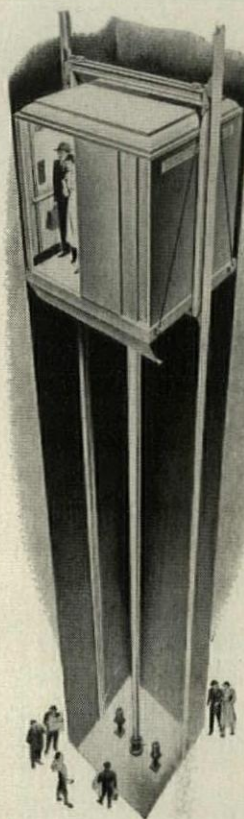
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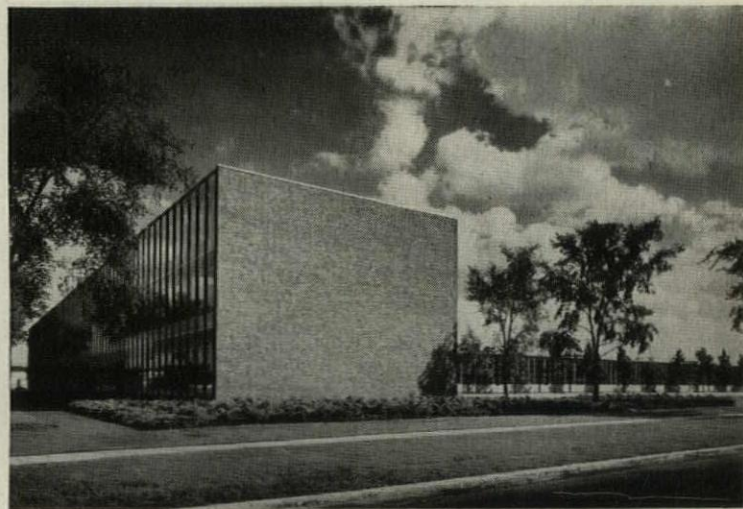
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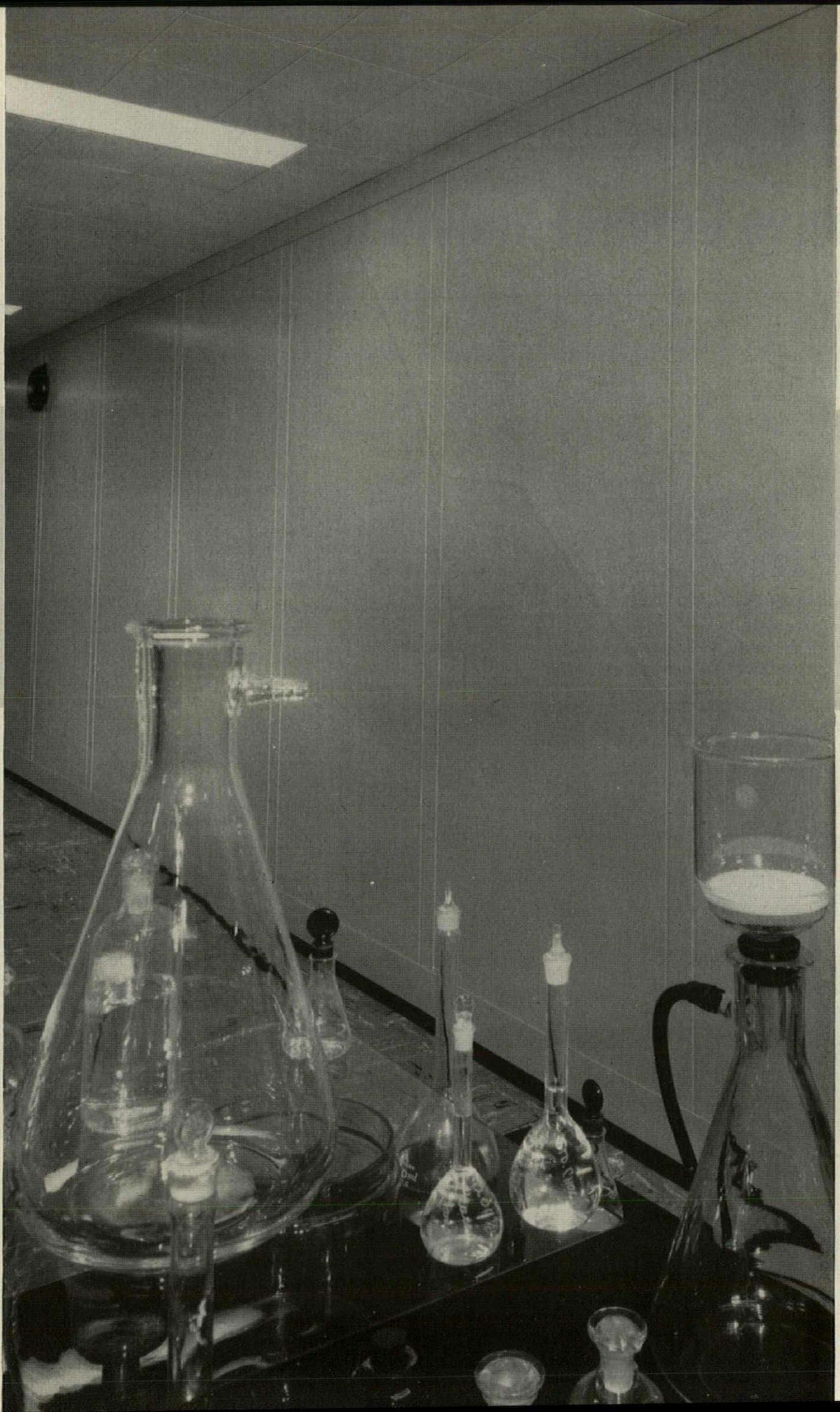
*Administration and Shop Buildings*

# Elevators *Passenger and Freight*

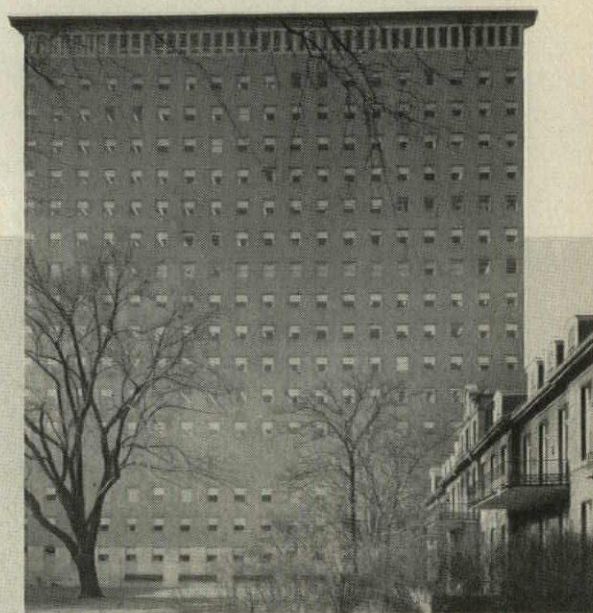
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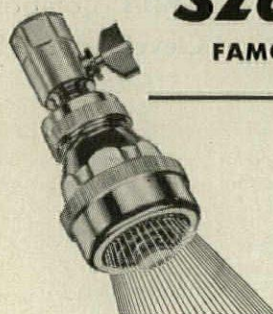
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department heads and nursing groups were consulted often. Also, questionnaires filled in by 3000 hospital patients were available for study. Guidance was also secured from American Hospital Association and other authoritative sources. Before final plans were completed, all advice, ideas and suggestions were put to the test of thorough discussion in executive conferences. As are thousands of other *expertly planned and skillfully erected* buildings, the new Clarkson Memorial Hospital is completely equipped with SLOAN *Flush Valves*.



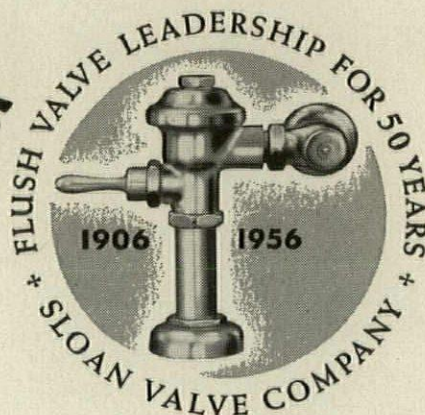
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## Advisory group will consider Capitol alterations plans; protests increase

Mounting opposition to plans for altering the East front of the Capitol in Washington bore fruit a month ago, with careful reconsideration of the proposal promised before a final decision to proceed with the project.

On behalf of the Commission for the Extension of the Capitol (composed of the Vice President, the Speaker of the House, the Senate and House Minority Leaders and the Architect of the Capitol J. George Stewart announced the appointment of an advisory committee of three leading architects to assist "in determining the proper architectural



STEWART

treatment of the East front." A supplementary committee of six associate architects and engineers was appointed to help develop whatever Capitol plans are finally adopted.

With no report expected from the advisory committee before fall, the historic facade that has served for generations as the backdrop for Presidential inaugurations apparently would be safe through the summer. This delay would give opponents an opportunity to register objections with Congress, which adopted the legislation for the change (often rejected before) without any public hearings.

Architectural committee members:

► Henry R. Shepley, senior partner of the Boston firm of Shepley, Bulfinch, Richardson & Abbott. In Washington Shepley previously was a consultant on the design of 14th St. Bridge. His college and hospital buildings in New England and New York include the Lamont Library at Harvard.

► John F. Harbeson, of Philadelphia's Harbeson, Hough, Livingston & Larson. In Washington his buildings include the Folger Library and administrative building for the Pan American Union, and he was a consultant on remodeling the Senate and House chambers in 1950.

► Arthur Brown Jr., FAIA, 82, of San Francisco, where he designed the Coit Tower and City Hall. In Washington, he designed the Labor and ICC buildings.

Named as associate architects and engineers for the extensive Capitol work that will be done regardless of the final decision about changing the East front were: Roscoe DeWitt and Fred L. Hardison, of Dallas; Alfred Easton Poor and Albert Homer Swanke, of New York, and James M. Shelton and Alan G. Stanford, of Robert & Co. Associates, of Atlanta.

Ranks of objectors grow. In recording creation of the architectural advisory committee, the *Washington Post & Times*

*Herald*, in a reference to FORUM's editorials against any changes that would "desecrate" the East front (AF, Feb. and April), reported: "The consultants apparently were brought in to insulate Congress from criticism raised by some architects, led by ARCHITECTURAL FORUM. The magazine thinks the building looks fine now, is a familiar symbol in the country, and should be left alone."

But the magazine was far from alone as an objector. The New York chapter of the AIA adopted a resolution opposing the project and voted to send copies to all other AIA chapters as well as to appropriate Senate and House committees.

Last month the annual meeting of the AIA's Washington (DC)-Metropolitan chapter also adopted a resolution opposing the proposed East front changes and recommending that the national AIA "exert its strongest influence to oppose any alteration which would conflict with the sense of this resolution." The Capital area architects opposed "both for esthetic and historic reasons . . . any changes which would alter in material or design this central portion of the building . . . [which] is by general consent the most historic and as it stands one of the most beautiful buildings in the country."

Walker, Hamlin ask support. On the editorial page of the *New York Times* last month a lengthy letter from twelve leading AIA members explained why they felt the East front should be preserved. "It is up to the American public to show architectural appreciation and to defend a monument that has been well done," they wrote. "The people must be heard from to prevent obliteration of Latrobe's work. The undersigned architects hereby testify that it is worth saving."

The signers: former AIA President Ralph Walker; Talbot F. Hamlin, whose *Benjamin Henry Latrobe* was awarded the 1956 Pulitzer Prize in biography last month; Antonin Raymond, winner of the 1956 Gold Medal of the New York AIA chapter (p. 39), James Grote Van Derpool, Lawrence G. White, Robert S. Hutchins, Arthur C. Holden, Eric Gugler, Francis I. Keally, Harvey Stevenson, Julian E. Berla and Albert Simons.

Architect-of-all-trades. Whatever the outcome, the East front dispute focused attention on the extraordinary architectural-and-whatnot assignment of the Architect of the Capitol, who now supervises not only a staff of 35 in his immediate office, but also some 1,200 maintenance and operating personnel for the Capitol complex of almost a dozen buildings and big park areas.

The main bosses of incumbent Civil Engineer Stewart, a former representative

NEWS continued on p. 12



### Nervi acting as consultant for concrete design store center

During his recent US visit Italian Engineer Pier Luigi Nervi was retained as a structural design consultant for the Lenox Square Shopping Center in Atlanta, which will be built of reinforced concrete, with large areas of it exposed.

The center's designers, Architects Toombs, Amisano & Wells, engaged Nervi for two reasons: 1) to help them refine their concrete design (in an area, incidentally, where reinforced concrete is already used extensively because it is so economical), and 2) to advise them on formwork and concrete placement, particularly the development of the most efficient repetitive processes.

Dominating the entrance to the center will be a large "fashion area" court, shaded by an immense flat concrete roof

(see cut). This court will be a meeting place for shoppers, and will be available to the center's two department stores and smaller shops for outdoor events. On Nervi's advice, supporting columns for this expansive concrete canopy, about 30' above the ground, will be spaced on 60' centers in each direction (instead of 60' in one direction, 30' in the other, as in the preliminary sketch). Shaded, uniform arcades around each building will be about 15' high, and the two-story department store buildings (3rd floors in basements) will be 30' high. In final designs, air-conditioning ducts may be incorporated in the concrete structural elements.

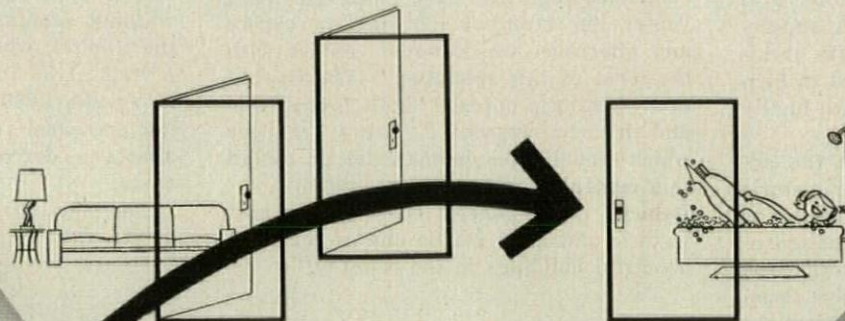
Total cost of the center, to be owned by the Noble Foundation, of Ardmore, Okla., will be about \$15 million.



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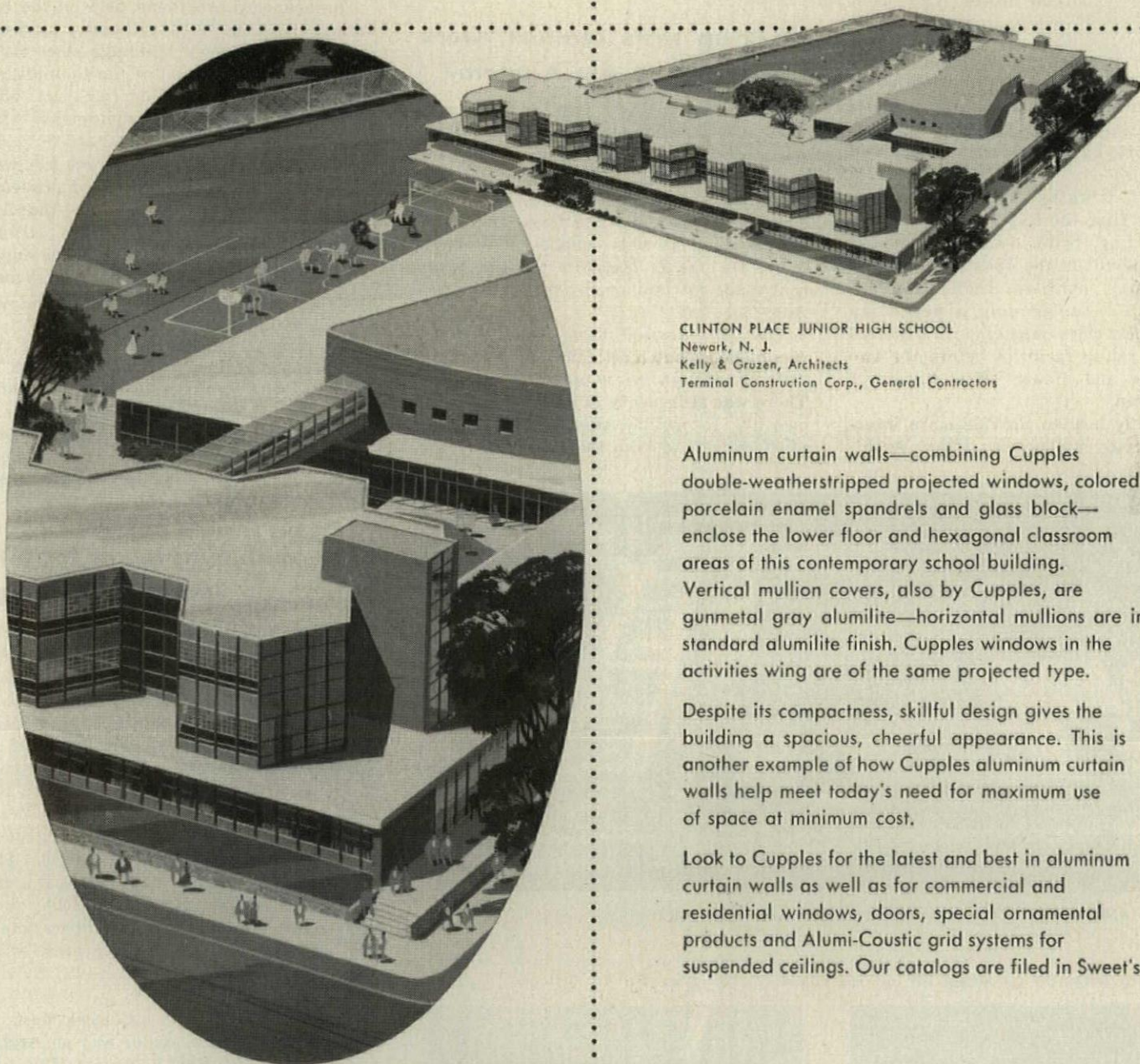
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from Delaware (1935-37), who took the \$17,500 post two years ago, are probably the most demanding and independent clientele in the world—the 96 members of the US Senate, and 435 members of the House.

**\$100 million program.** Altogether building and modernization projects now being developed under the Architect of the Capitol involve an estimated \$100 million, or more. This includes a new Senate Office Building now under construction (\$22 million), a pending third House Office Building (\$32.5 million), an immense 1,000-car underground garage, a "security" chamber, or congressional air-raid shelter, and at least \$16 million for the proposed 36' extension of the East front of the Capitol, if finally undertaken.

**Transportation stumper.** For the present one of the architect's most perplexing problems, but one that also gives him a chance to do some modern architectural pioneering, is short haul, minor volume rapid transit.

Since 1907 there has been a 700' mono-rail subway from the Capitol to the Senate Office Building, with two 18-passenger cars custom-built in the Washington Navy Yard. House members have grumbled chronically for having only a pedestrian tunnel to their office quarters, are expected to demand riding facilities before the two new Senate and House office structures are completed.

But exactly how to provide more inter-building service is another matter. Archi-

tect Stewart laments that American ingenuity has not yet produced any really adequate plan for fast, efficient horizontal transportation inside a building or linking adjacent buildings. "We are whizzes in providing vertical transportation in the form of elevators," he says, "but haven't given much thought to how to cover ground in a long, low building"—(an increasingly important problem with the growth of expansive, single-floor industrial plants, shopping centers, sprawling airports).

Conveyor belts have received consideration, but probably will be ruled out as too slow for the distances involved, as well as too hazardous for congressmen, no matter how deft and agile their political footwork.

## Mock-up tests comfort, work conditions of Air Academy

In Colorado Springs, construction crews were at work on roads and utilities for the Air Force Academy. Foundation work for barracks and academic buildings was scheduled to begin before year's end, and everyone seemed eager to forget the bitter design and materials squabble over Skidmore, Owings & Merrill's original plans that made last summer extra torrid (AF, Aug. '55).

That the revised design had suffered was obvious, but most felt that it had not suffered enough to ruin it as a whole. There was still plenty of glass, and enough masonry to mollify the pressure groups (just enough to take the fine edge off the

original designs). Latest official announcements referred to "whitish," rather than white marble, which would allow several additional masonry firms to bid the job.

For all-season cadet comfort, Air Force technicians and Minneapolis-Honeywell specialists have been working with the architects to produce the best possible working and living conditions throughout climatic conditions that include blazing sunlight days, very cold nights, extreme and rapid temperature changes. Sensitive temperature and air-movement recording instruments were installed in two on-site mock-up cadet rooms that cost \$18,920, while select young Air Force 2nd Lts. lived and worked in them under conditions approximating those cadets will find.

The academy architects, sold on the big savings possible from full-scale, mock-up sections of projected buildings since their use of a dummy section of the Connecticut General Insurance building (AF, Oct. '55), are thus testing all room equipment—windows, shading devices, lights, etc.

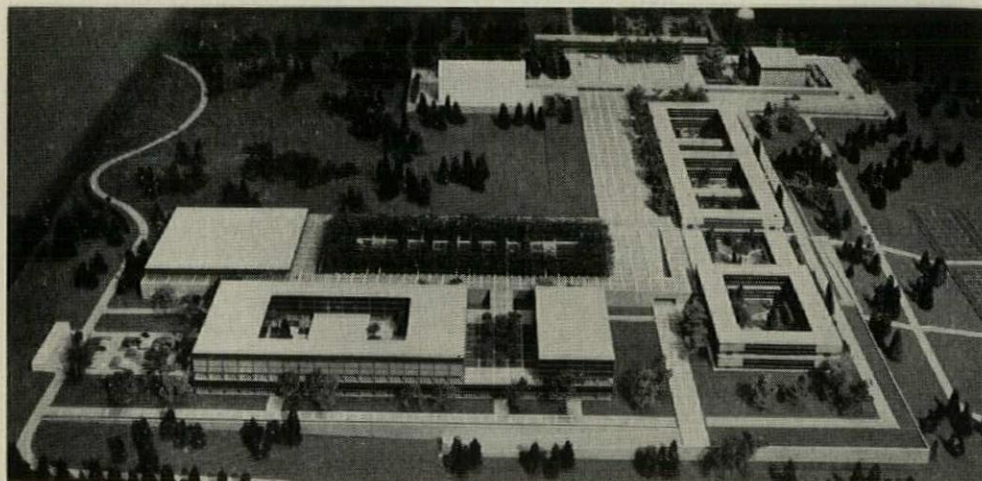
Attention of a slightly different sort was being given to another aspect of academy housing. Approval was granted the Air Force (by the watchdog House Armed Services Committee) to spend approximately \$1,400,000 for 47 houses that will shelter in something above Spartan simplicity the faculty, deans, and commanding officer.

Lt. General Hubert Harmon, CO of the school (now at Lowry Air Force Base in Denver), will occupy a 16-room, 5½-bath, \$90,000 house, while two subordinate deans will each have 12-room, 4-bath, \$60,000 houses. Forty-four faculty houses (4 bedrooms, 4 baths, including servant quarters) will cost \$31,500 each.

## Gold-aluminum tower for NY; bronze on Seagram building

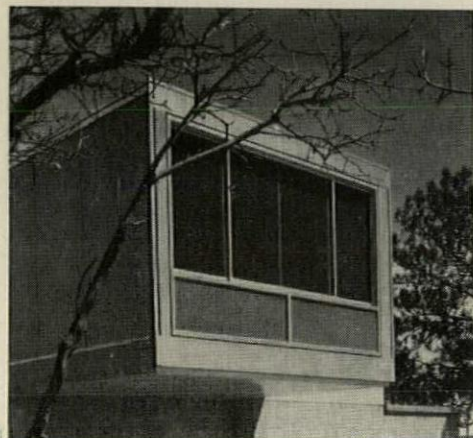
Heat reflective aluminum that will make the entire structure give off a golden luster will be used for the skin of a new Grand Central area office building in New York announced last month by President Henry H. Minskoff, of Sam Minskoff & Sons. A new type of gold-colored extruded aluminum will be used for mullions on the 34-story, 528,000 sq. ft. building, said Minskoff. And other dull gold extruded aluminum pieces for the spandrels. The base of the structure will be pearl gray granite and stainless steel; the lobby decorated with colorful terrazzo floors, marble walls and a ceiling covered with aluminum and plastic. Architects: Sylvan and Robert L. Bien.

One block north, and one block west on Park Ave., work was under way on Architect Mies van der Rohe's 38-story House of Seagram (AF, April '55), which will set a sheathing precedent, will be covered entirely with bronze (153,000 sq. ft.) and windows of pinkish gray glass (275,000 sq. ft.) that will blend with the copper alloy as it ages and weathers. Total weight of the exterior bronze: 3.2 million pounds. Associated with Mies on the work are Architects Philip Johnson and Kahn & Jacobs.



CLASSROOM AND LIBRARY (foreground); cadet quarters, administration (r)

EXTERIOR AND INTERIOR OF MOCK-UP to test structure, living conditions, fittings





# Guggenheim Museum to rise—victory for Wright in 12-year design battle

From time to time, architectural geniuses produce signal works of art—and sometimes they even get built. But the greatest work of too many good men is still on paper, and will stay there. The loss to the artist when this happens is not nearly so great as the loss to a people who must live without a great work.

Twelve years ago, when Frank Lloyd Wright produced his design for New York's Guggenheim Museum—a soaring spiral of concrete topped with a giant, domed skylight over the round inner court (AF, Jan '46 *et seq.*)—the wise men of architecture were quick to say that it would never be built. (They said the same about his craggy bronze monolith of a synagogue, designed for a Philadelphia suburb.)

The odds were against him: cost (there was only \$2 million in the kitty), and officialdom (New York City's building department scratched their heads at the design). It looked like one of those good designs—never built—that architectural students are always reading about under the "proposed" heading.

But last month Frank Lloyd Wright had his day. His prairie tower in Oklahoma had finally been built (AF, Feb. '56), fund-raising for the synagogue was nearing completion (the contract went to Haskell Culwell, Price Tower builder and expert on Wright designs), in New York Harry Guggenheim announced that the spiral museum would be built. The mu-

seum had already moved into temporary quarters, and the builders (Euclid Contracting Corp.) were ready to start as soon as demolition of existing buildings was completed.

Behind this happy ending was a 12-year struggle. Wright finished his design in 1944 and received the approval of Solomon Guggenheim. Five years of delay followed, during which patron Guggenheim died, in 1949, but left a bequest of \$2 million expressly for construction of the museum (Guggenheim and Wright preferred the term: Archeseum).

Meanwhile, the New York building department had interposed objections. It was not sure about occupancy limits, there weren't enough fire stairs, and besides, what held the thing up, anyway? Besides those official complaints, there were unofficial ones: museum officials feared there would not be enough loading and storage space, nor enough light from Wright's continuous spiral strip windows.

Those problems were six years in the final solving. Slim, finlike columns, with an inverted taper, will support the coil of concrete, swelling to a depth of 32' at the top. Famed New York Engineer Jacob Feld represented Wright at the building conferences, supervised various changes. The offending fire stair was widened, and an additional one brought into the design; the angle of a flight of steps was changed, and finally the building department ceded its pontifical approval, issued a permit.

## "Philadelphia Panorama" shows city planning for 25 years ahead

Latest step in the development of planning for Philadelphia was the opening last month of the "Philadelphia Panorama", sponsored jointly by the City Planning Commission, the Citizen's Council on City Planning and the Board of Trade and Conventions.

The locale, appropriately, was the city's newly renovated Commercial Museum, part of the complex of convention and visitor's facilities along the west bank of the Schuylkill, hard by the greenery of the University of Pennsylvania campus. City officials were quietly proud that a modest \$3.5 million outlay had transformed the museum into four modern exposition floors and completely air-conditioned the huge, adjoining Convention Hall, scene of presidential nominations, providing a five-building exposition center to rival New York's new \$32 million Coliseum (p. 21).

Focal point of the \$250,000 exhibit, largest permanent city planning exhibit in the country, is a giant three-dimensional model of downtown Philadelphia today, on a 50' to the inch scale. Divided into ten multiblock sections, different units flip

over automatically as a recorded voice describes plans for the city, revealing on the other side that same area as it will appear when all planned improvements have been completed.

A large-scale diorama of the entire city as it might appear in 25 years, and blown-up aerial photographs of individual neighborhoods, surround the exhibit. Before-and-after photographs show pleasant Philadelphia streets of the mid-19th century, and the same streets turned into slums. For those shocked into awareness by such reminders of how many of their fellow-citizens must live, the next exhibit offers a solution—the planned rehabilitation of the thousands of brick, one-family houses, still structurally sound, that line mile after mile of the city's streets. Graphically demonstrating that the high-rise structure is not the only solution for a city's housing problem, the displays transform squalid slum yards into pleasant grassy areas and brick walks.

Beginning as a Better Philadelphia exhibit in 1947, when more than 400,000 saw it in Gimbels department store (AF,



**PHILADELPHIA UPHEAVAL**, when sections of huge model are revolved from top to bottom, shows the present city, and what it will be like after various rehabilitation and redevelopment projects are completed. At left is Planning Commission Chairman Albert M. Greenfield, with Architect Oskar Stonorov, designer for Philadelphia Panorama.

Dec. '47), many of the components of the Panorama later gathered warehouse dust for many years. In 1953, Mrs. Albert M. Greenfield, then trade & conventions board chairman, formally requested Edward Hopkinson, then city planning commission chairman, to have the exhibition updated and set up again in Commercial Museum. Little was done for two years. Then, with the recent—and stormy—appointment of her husband, Philadelphia realtor, banker and philanthropist Albert M. Greenfield, to succeed Hopkinson (AF, April '56), the exhibition began to take shape.

Architect Oskar Stonorov, AIP, was asked to design the exhibition, including both the updating of the existing material and the creation of a number of new graphic presentations.

## AGC becomes fourth sponsor for modular measure plan

Modular measure for construction moved ahead on two fronts last month.

► After supporting this simplified 4" module system of dimensioning for several years, the Associated General Contractors accepted an invitation of the American Standards Ass'n. to become the fourth official "sponsor" of this movement—along with the modular coordination office of the AIA, the National Assn. of Home Builders, and The Producers' Council, Inc.

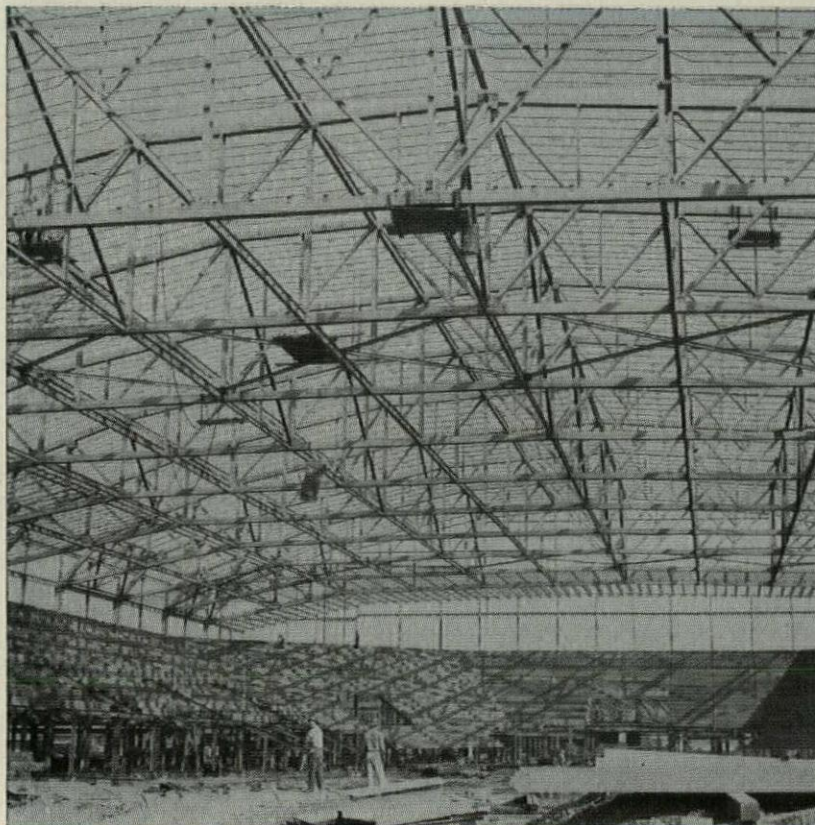
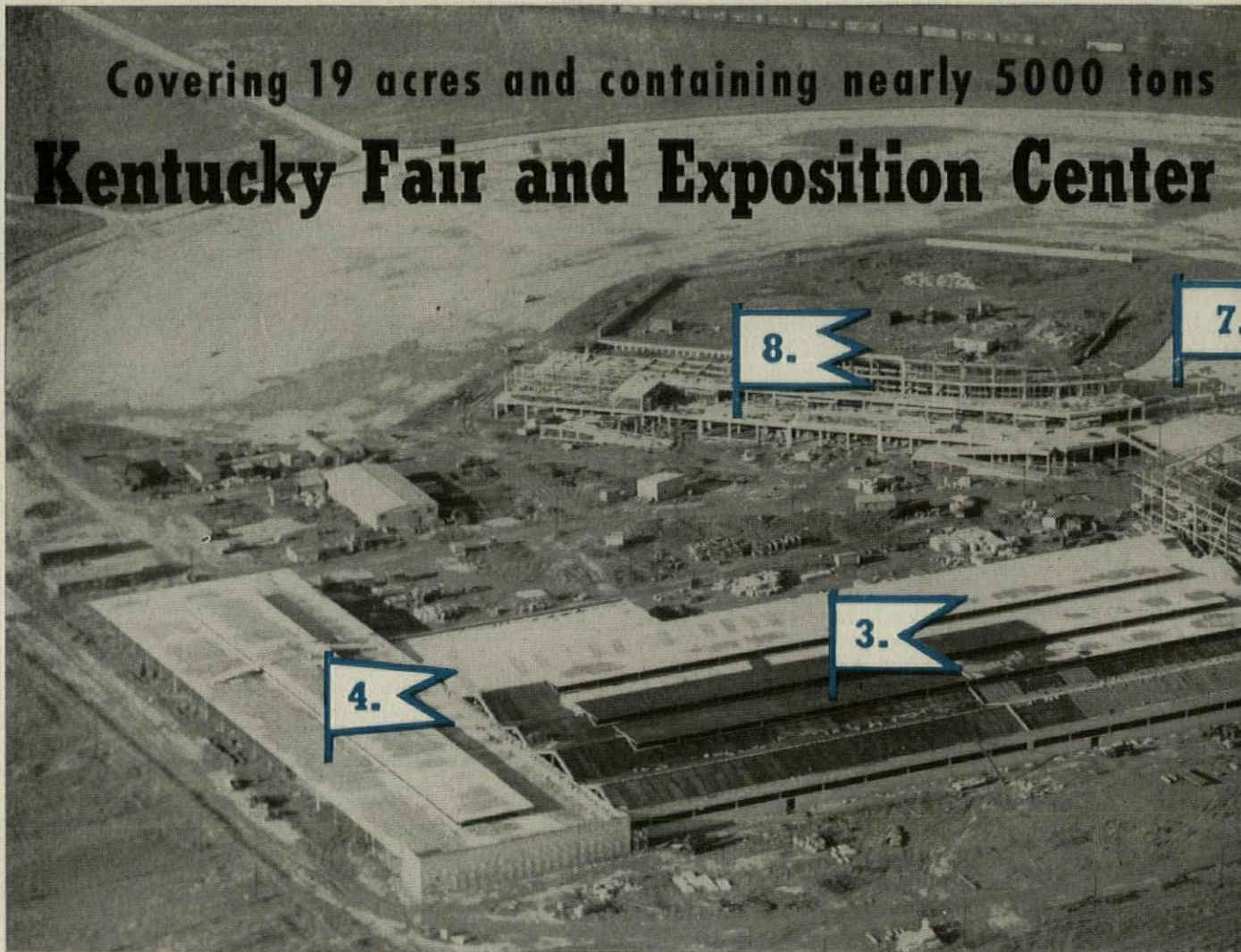
► To enlist widespread support of individual architects, contractors and others who wish to help promote this uniform dimensioning plan, the ASA and sponsoring organizations also announced formation of a Modular Building Council. This is intended "to broaden the financial support of the present program by inviting small, as well as large subscriptions . . . make possible establishment of a technical staff to work with the ASA in further developing and extending Modular Measure."

NEWS continued on p. 16



Covering 19 acres and containing nearly 5000 tons

# Kentucky Fair and Exposition Center



## IDENTIFICATION OF AREA STRUCTURES

1. ARENA (Coliseum) Building—295' x 468'—weight of structural steel, 2,400 tons.
2. EXPOSITION BLDG.—310' x 722', containing 883 tons of structural steel.
3. LIVESTOCK PAVILION BLDG. — 314' x 558', containing 810 tons of structural steel.
4. SHEEP and SWINE PAVILION — 137' x 557', containing 266 tons of structural steel.
5. ADMINISTRATION BLDG. — Two-story annex to Arena Bldg.—98' x 141'; weight, 166 tons.
6. RESTAURANT BLDG. — Two-story annex to Arena Bldg.—98' x 141'; structural weight, 140 tons.
7. WARM-UP RING BLDG. — 100' x 160' with 100-ft. roof trusses. Weight of steel, 87 tons.
8. STADIUM — Consists of 3 fan-shaped sections—277' x 277', 216' x 343', and 216' x 162', respectively. 391 tons of structural steel went into the supporting framework of this structure.



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The largest structure in the group is the Coliseum building which is 295' wide x 468' long, and contains the main arena surrounded by bleachers under which are three floors. The major portion of the high arched roof is supported by ten 295' trusses. 2,400 tons of structural steel went into this one building.

The Coliseum Building is flanked on the right by the Exposition Building, a one-story, rigid frame structure, 310' wide x 722' long; and on the

left by the 314' x 558' Livestock Pavilion Building, which is also a one-story rigid frame structure.

The other buildings in the Center are listed in the column at the left. In the background is shown the partially erected Stadium which when completed will contain 391 tons of structural steel.

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*General Contractor for buildings 1 through 7: Virginia Engineering Company, Newport News, Va.*

*General Contractor for Stadium: Robert Simmons Construction Company, Inc., Louisville, Ky.*

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## AMERICAN BRIDGE

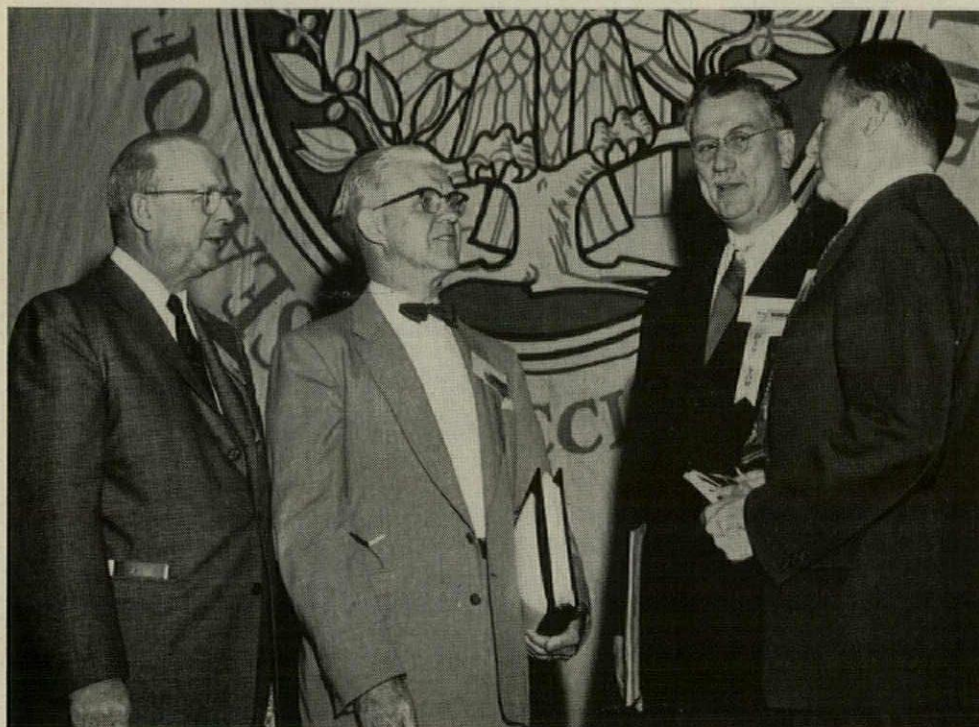
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UNITED STATES STEEL



# AIA convention: Burchard urges effort to peaks, not averages, of excellence

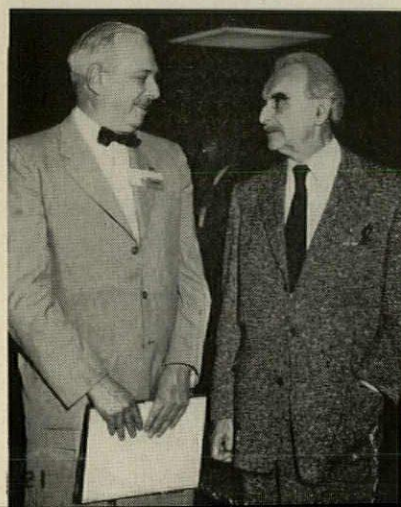


**TOP INSTITUTE OFFICIALS** holding informal conference were (l to r) Secretary Edward L. Wilson Jr., Fort Worth; President George Bain Cummings; Treasurer Leon Chatelain Jr., Washington, D. C. (elected as new president); Executive Director Edmund R. Purves.



**WELCOME** to opening session by President Paul Robinson Hunter of host chapter (Southern California).

**CORRIDOR CHAT** between convention keynoter John E. Burchard (l), dean of humanities at MIT, and Architect Richard Neutra.



The best wine was served first when the 99-year-old American Institute of Architects held its 88th annual convention in Los Angeles last month. No other speaker ever quite matched, and few approached in quality of thought the penetrating keynote address of Professor John Ely Burchard, dean of the school of humanities and social studies at Massachusetts Institute of Technology and president of the American Academy of Arts and Sciences.

A graduate of MIT's school of architecture who labored in the business vineyard for more than a decade before he became an educator, Dean Burchard spoke precisely to the point of the convention theme, "Architecture for the Good Life."

**Peaks vs. averages.** It is not so much a matter of averages, but of peaks, that provides the architecture for the good life, said Burchard. High averages, while worthy, he declared, do not define the good life, which is "a matter of things that uplift the spirit. The Arch of the Etoile and the tree-lined streets that come to it and depart are more important to the good life of the poorest Parisian than a tenth of one per cent improvement in his sub-standard dwelling."

Exploring why 20th century US architecture has achieved so high an average, but such a lack of "mountain peaks," Burchard put his finger on the paradox of US waste with the ephemeral, and penuriousness with the permanent.

"Americans are enormous consumers, even scandalous consumers," he said. "At this very moment there is something resembling a gray market in steel for buildings; because the automobile industry is so avid a consumer, built upon a process of artificial, unnecessary, and in the light of other world standards, even immoral obsolescence." This spirit of "throw-away-before-used-up" which, he pointed out, is expressed in many products other than automobiles—notably glass—plays hand-in-hand with the traditional American sense that conditions at any given moment are ephemeral, producing "a social climate in which building for permanence seems to have little meaning."

**Too poor for esthetics?** "In the richest land the world has perhaps ever known, we say over and over again that we cannot afford esthetic extras; the national government cannot afford them; the richest industrial firms cannot afford them; the universities cannot afford them.

"We cannot really plead this economic excuse for our omission of art because of course we can afford it. The plain fact is we do not want it very much." That Americans do not work at producing "the larger, common, nonmuseum art environment which has characterized every previous high culture is bad enough," he said, but "it becomes sickening when we talk in hypocritical terms of economic barriers almost as though it were a matter of morality to build a building cheaper. If there is any morality at all in great architecture on the economic side, it probably rests in wasting money for elegance."





**Persistence pays off.** Dissecting other obstacles in the way of achieving the "peaks," including attitudes toward landscape, the divorce of US architecture from US sculpture and painting, confusion of style with architectural morality, and failure to educate a public receptive to great architecture, Burchard maintained there were ample reasons for hope. "That American architecture has grown so well almost in opposition to the soil seems to me a tribute to the persistence of American architects," he said.

"I cannot believe that in the long run the wealthiest nation in the world, and in some ways the most daring, will not cease to be timid and tepid in its acceptance of its total esthetic opportunity and responsibility. American architecture is now mature; it needs only to become great."

**Luckman potpourri.** A number of points worthy of attention were made at the concurrent annual meeting of the AIA-spawned Producers' Council by Los Angeles Architect Charles Luckman (who, coincidentally, rose to the top in the business world before entering fully into the profession of his first choice). Said the former Lever Bros. chief executive:

► For orderly and practical solutions for many of the problems involved in renewing our cities, and simultaneously accommodating their explosive growth into the ever-expanding, mushrooming suburbs, one of the greatest needs is for more cooperative regional planning on an area wide basis.

► Color and texture in their architecture are becoming increasingly important in designing today's new buildings.

► Efforts should be made to give clients a greater role as the judges for design competitions such as the recent London Embassy competition of the State Department (AF, April).

► Architects and educators should strive not only to improve architectural education for the profession, but for more and better education about architecture for the entire public.

► The "corporate client," particularly the organization with a continuous program of design and construction, has become the architect's most important client today.

► The increasing complexity in building programs requires an increasing amount of cooperation among the architect, the builder and the client from inception of the idea to completion of the project.

**Stein for city design.** As FORUM went to press, the convention had not reached its end. But an advance copy was available of the address by Architect and City Planner Clarence Stein when he formally received the Gold Medal, the institute's highest honor.

In this address Stein presented the case for the garden city, declared "such communities cannot be secured by the ordinary piece-meal process of city planning." He called upon the architect to deal "with the whole environment in which his building is an essential, harmonious part, and without which the architect's work is impotent . . . The architectural profession

must fill the same position in design of modern cities as it has in design of buildings."

**Chatelain's election certain.** Before the convention closed it also was virtually a certainty that Treasurer Leon Chatelain Jr. of Washington, D. C. (nominating committee choice), would be elected president, succeeding George Bain Cummings. Chatelain, 54, was born in Washington and received his degree in architecture from George Washington University, for which he has since designed a number of structures. He also has designed many District office and commercial buildings, was president of the Washington-Metropolitan AIA chapter, and a member of the Joint AIA-ASPE Committee. Slated to be elected with him were: as 1st vice president, John N. Richards, Toledo; as 2d vice president, Philip Will, Jr., Chicago, and as secretary (re-election), Edward L. Wilson Jr., Ft. Worth.

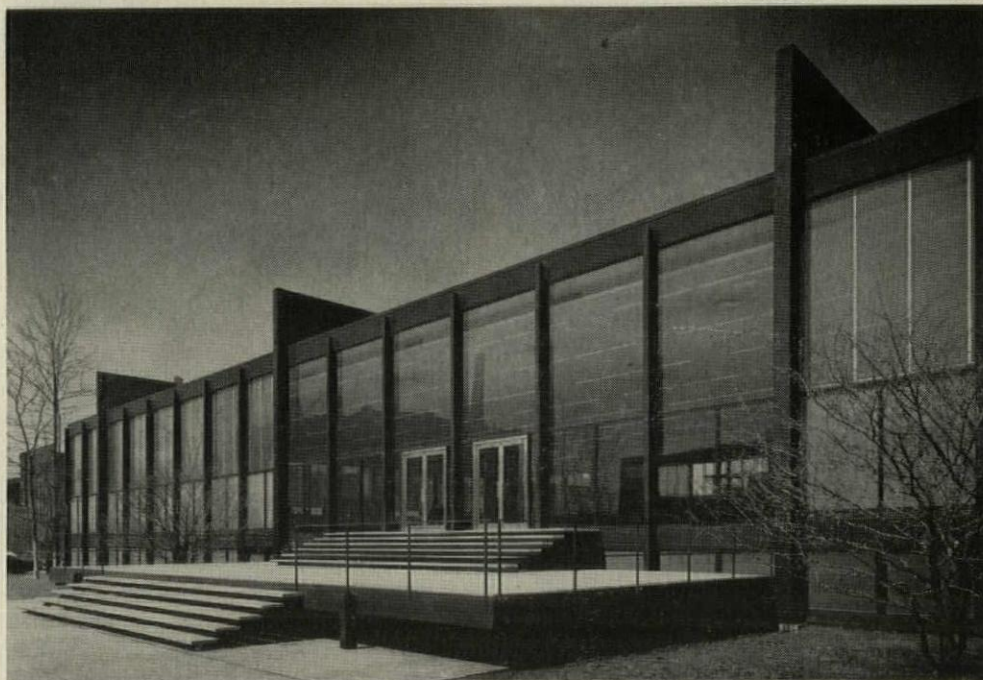
Four honorary memberships were given during the convention to: Leon Zach, president of the American Society of Landscape

Architects; Thomas S. Holden, vice chairman of the board, F. W. Dodge Corporation; Brig. Gen. Thomas North, secretary of American Battle Monuments Commission, and John Frederick Lewis Jr., president of the Pennsylvania Academy of Fine Arts.

Four honorary fellowships were bestowed on: Jean Maunoury, Chartres, France, architect for the Chartres Cathedral; Gustavo Wallis, Caracas, Venezuela, past president of the IX Pan American Congress; Ernesto N. Rogers, Milan, Italy, architect and editor, and Edmundo G. Lucero, president of the Philippine Institute of Architects.

At the Producers' Council session three men received "Modular Trophies" for doing the most to advance modular measure last year: Leonard G. Haeger, technical director for Levitt & Sons, Inc., of Levittown, Pa., former NAHB research chief; Fred M. Hauserman, president of the E. F. Hauserman Co., Cleveland manufacturers of metal partitions; and H. B. Zackrisson, chief of the engineering department, US Army Corps of Engineers.

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### IIT dedicates Crown Hall, new design building by Mies

A month ago Illinois Institute of Technology dedicated the new building for its institute of design and departments of architecture and city planning, designed by its Architecture Department Director Mies Van der Rohe and Pace Associates, associate architects.

The structure is called S. R. Crown Hall in honor of a brother of IIT Trustee Col. Henry Crown, Empire State Building owner. S. R. Crown, who died in 1921, was a co-founder of Chicago's Material Service Corp., world's largest producer and supplier of construction sand and gravel, of which Col. Crown is now board chairman, and brother Irving, the third

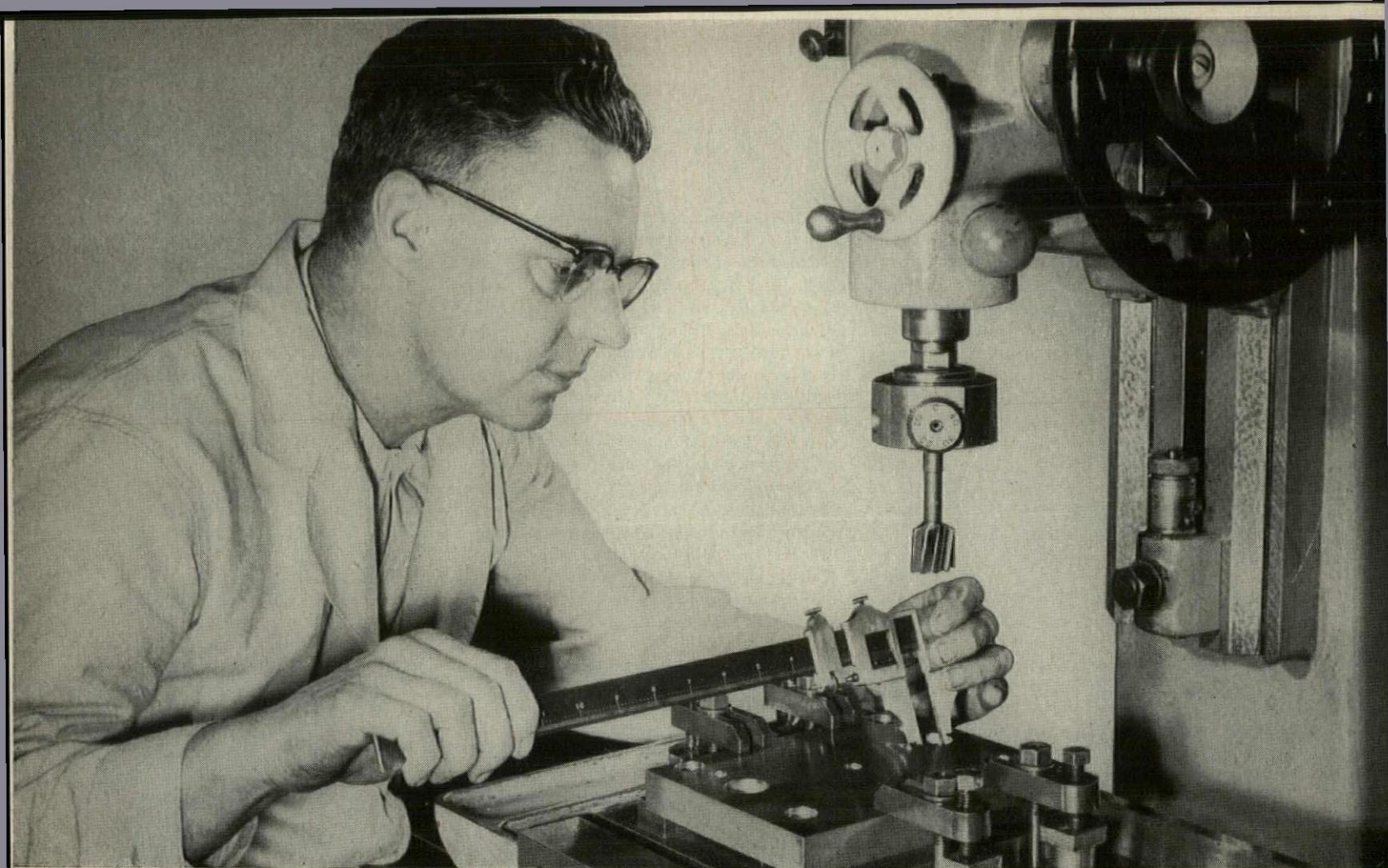
co-founder, executive vice president. Collectively, the Crown family contributed \$250,000 toward the cost of this \$800,000 structure, and more than 1,000 individuals and companies provided the balance.

Said Architect Eero Saarinen in his address at the dedication service:

"It is fitting that, in this city, architecture should be taught in the proudest building on the campus. It is time that architectural education came out of the dingy attics of the past into this serene temple of the present. Here, under these exposed-on-the-exterior beams, is a visual lesson of what Mies once said: 'It is true

*continued on p. 21*





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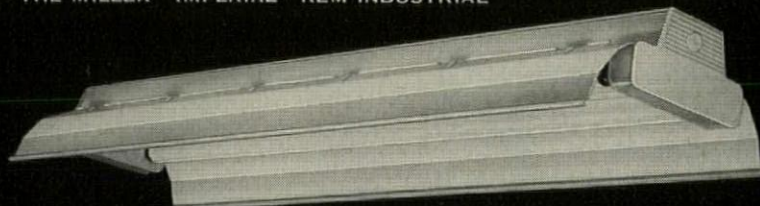
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that architecture depends on facts, but its real field of activity is in the realm of significance.'

"It is also fitting and symbolic that city planning and industrial design are placed under one roof—literally one roof—with architecture, which is where they belong and where each can benefit by association with the others.

"And, by the way, you young architects will find that two twin qualities necessary for an architect are humility and crust. Humility for the problem and the realities; crust for solving it and sticking with the essentials of the solution. Students of architecture, infect your brethren with these two qualities—humility and crust. Give the city planners crust, and give the industrial designers humility . . .

"Today, when so much stress is laid on the common denominator—on teamwork, on a vernacular—on the impersonal, we tend to forget the importance of the in-

dividual. Such thinking does us harm. It allows the practice of making the designer the little boy in the back room, design a mere commodity sold by the sales office.

"Great architecture is both universal and individual. The individuality comes through—as here at IIT—as the result of a special quality. It is a quality which is perhaps least understood. It is a quality that cannot be taught by teaching. It is a quality that can and cannot be seen in every part of this group—in the flashing, in the corners, in the materials, in the proportions, in the placing of the buildings. This quality is the philosophy and the thinking behind the whole complex.

"The universality comes because there is an architecture expressive of its time. But the individuality comes as the expression of one man's unique combination of faith and honesty and devotion and beliefs in architecture—in short, his moral integrity."

## NY dedicates Coliseum: 301,000 sq. ft. of show area; 533,000' of offices

With Governor Harriman and a platform full of lesser office holders gracing the dedication ceremonies, New York opened its immense Coliseum—a temple of trade shows that generated little architectural enthusiasm.

Functionally, and as a business stimulator, the structure drew widespread praise. On that score even Frank Lloyd Wright, in a CBS interview after the ceremonies, commented that he thought it would be a wonderful thing "for New York," although he hoped similar buildings would not appear elsewhere.

While it was early to judge on its earliest runs, after the first exhibitions only minor flaws were reported in the building's operating procedures, and these were all quickly adjusted. For several weeks, however, exhibitors experienced provoking labor troubles with telecast and exhibition installation specialty crews, but these involved jurisdictional, human problems, not building or design deficiencies.

**Manship medallions.** Architects for the Coliseum, said to be the world's largest structure built specifically for exhibitions, were Leon and Lionel Levy, with Aymar Embury II, Eggers & Higgins, and John B. Peterkin as a consulting and advisory committee. On its high, almost stark side walls, which put an abrupt end to the westward vista across Central Park South (see cut), are four 11' square aluminum medallions by Sculptor Paul Manship, representing the arms of the US, New York State, New York City, and the Triborough Bridge & Tunnel Authority, the agency that built the project. Structural engineer for the building was Dr. Jacob Feld, and the assignment won for him last month the citation of the ASCE metropolitan section as "Metropolitan Civil Engineer of 1955."

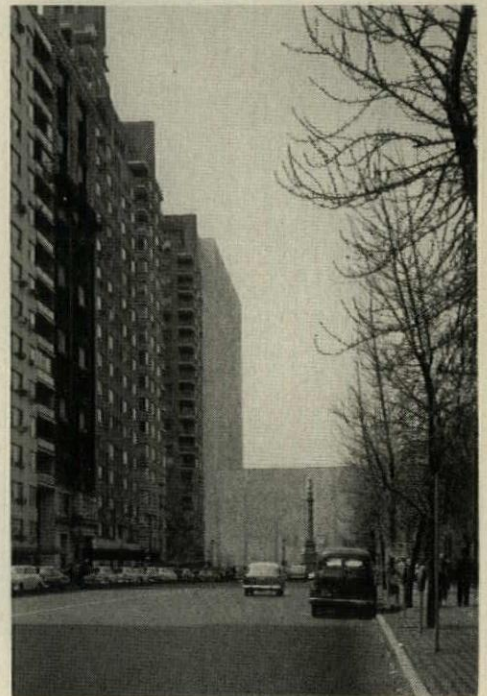
Dedication ceremony brochures recorded that the Coliseum building has 301,160 sq. ft. of exhibition space, and cost an estimated \$35 million. This cost includes another 533,000 sq. ft. of air-conditioned office space in the separate 20 floors of a tower that put the city's Triborough authority in the public office rental business (once opposed by the NY Real Estate Board, but no deterrent to Realtor C. F. Noyes' office in accepting the management contract for this part of the project).

**"Predominantly" housing.** Not counted in this \$35 million estimate was a \$10 million, 612-unit private enterprise housing project on 47.1% of the total redevelopment site. At one time congressional critics questioned the propriety of HHFA's \$6 million Title I subsidy to New York for these combined projects, when they could only

qualify for such a grant if they were classified as a "predominantly residential" redevelopment—a feat accomplished by crediting as "residential" 18,000 sq. ft. of garage space in the Coliseum reserved for housing tenants, notwithstanding the fact the Coliseum occupies 52.9% of the property. But by that time the city already had a signed contract for the grant in its pocket, approved in January, 1952, days before the Truman administration went out of office.

Two days after the Coliseum was dedicated, Robert Moses, head of the Tribor-

*continued on p. 25*



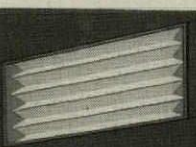
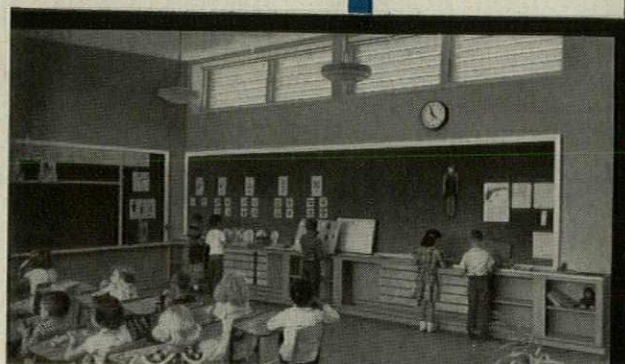
**MASSIVE COLISEUM** rears virtually a blank wall, abruptly cutting vista across Central Park South (top). Aerial view of completed two-block structure shows its position off southwest corner of Central Park, beside traffic-burdened Columbus Circle intersection of Broadway, Eighth Ave. and Central Park South (59th St.).







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ough authority and chairman of the Mayor's Committee on Slum Clearance spoke at the ground breaking for this back-of-the-Coliseum housing, two 14-story buildings by Architects Sylvan and Robert L. Bien that will rent for more than \$50 a room per month. On this occasion Moses replied to "criticism and abuse" from persons who disputed his policy of clearing

deteriorated areas and turning the land over to private developers who put up housing beyond the means of most families whose homes have been demolished. Title I was not meant to provide low-rent housing, he declared. "The main purpose is to clear slums and get private sponsors to put up modern housing at rents commensurate with the area's new character."

## Planners mull Gruen's Ft. Worth plan, registration, metropolitan problems

Amidst a growing shortage of city planning personnel, two major conferences last month explored the myriad problems of renewing our cities—(and some of the professional problems of planners themselves). In Providence the American Institute of Planners held its annual meeting; at East Lansing, Mich., a National Conference on Metropolitan Problems was conducted by Michigan State University.

As for the increasingly critical personnel shortage, the engineering and executive display advertising pages of the *NY Times* blossomed a month ago with sizable copy soliciting a "City Planning Engineer—Engineering graduate (C.E. or Arch. E.)." And at the AIP meeting, AIP Executive Director Perry Norton jokingly commented that "about three-quarters of our members (about 1,500 now, compared with 230 in 1945) seem to be running around trying to recruit each other for jobs."

**Ft. Worth plan dissected.** At one AIP panel on central business districts about 50 members engaged in a spirited discussion that mixed both praise and criticism of Architect Victor Gruen's comprehensive plan for converting the heart of downtown Ft. Worth, Tex. into one huge auto-free area (AF, May).

Some delegates hailed the plan as a bold, revolutionary attack on downtown decay now crippling most cities. They thought it good because it marks the first time total downtown problems have been set up for solution on an over-all, rather than piecemeal, basis. Gruen's plan has a good chance of success, they felt, because it is backed by most local business interests, who presumably will be willing to pay for the rebuilding job.

Other delegates criticized the plan as "visionary," however, and one gloomily predicted that "I don't think the scheme will be carried out at all."

Some critics, apparently unfamiliar with the total plan, said Gruen erred in redesigning the central business district as a kind of giant shopping center that will be in competition with outlying shopping centers. The primary function of a central business district, said these planners, is not only as a retail trade area but more as an "intelligence" center which houses such functions as business offices, banks, courts, government buildings and the like.

Another delegate said he was opposed to

the idea of loop highways around central business districts, because creation of such "rings" may hamper future growth and create new planning problems.

**Planners' professional problems.** In a preliminary report, AIP's committee on professional registration policy recommended that the institute take a position in favor of professional registration of some acceptable title that would specifically describe their profession and prevent unqualified persons from using such a title. Registration of a professional title "is not subject to some of the arguments against registration of the practice of city planning," the report observed, "and undoubtedly would be far easier to accomplish. If experience with this form of registration indicates the practicability and sufficient advantages, consideration could then be given to registration of the practice of city planning." Chairman of this committee was Frederick P. Clark.

Another preliminary report on education for city planners was submitted by a committee headed by Harvey S. Perloff, former chairman of the graduate program in planning at the University of Chicago and now director of Resources for the Future, Inc., a Ford Foundation unit.

Perloff said educators are not recruiting or attracting enough first-rate students into city planning, and study courses rely too heavily on "bits and pieces of accumulated wisdom." To raise city planning education standards he recommended that: students have a full, general educational background; their training be built around a "planning core" of essential technical knowledge; schools aim at making each one a "generalist-with-a-specialty," rather than a "narrow specialist or the amateur generalist."

To succeed retiring President John T. Howard, the institute elected Planning Consultant Walter H. Blucher, of Chicago and Flossmoor, Ill. Blucher, born in 1901 and graduated from Detroit College of Law in 1923, was director of Detroit's City Planning Commission from 1924 to 1934, executive director of ASPO from 1934 to 1953, and is now a consultant to



BLUCHER

ASPO, to the Toronto Metropolitan Planning Board, and for a Chicago metropolitan planning study.

AIP's annual distinguished service award for general excellence in city planning was given to Charles B. Bennett, former planning director for Milwaukee and Los Angeles.

**Michigan conference.** Said City Manager O. W. Campbell of San Diego at the National Conference on Metropolitan Problems at Michigan State University: "Our way of life today has become so complicated that Americans often live in one city, make a living in another, go to church in a third, send their children to school in a fourth, find recreation in a fifth, and become true citizens of none."

Tracing the origin of some of the problems that now bedevil metropolitan areas, Campbell explained to more than 200 delegates to this conference that about 33% of the population lived in cities in 1910, today 57%. In the transition, said Campbell, "the increase in governmental complexity can only be classed as appalling. Most metropolitan problems arise because there is no agency to solve them. It is almost incredible that no agency, government, or institution has been created to plan and conduct the main services and facilities vital to the metropolitan community."

### McConihe named PBS chief, E. K. Mills general counsel

General Services Administrator Franklin G. Floete appointed Washington Realtor F. Moran McConihe as Commissioner of the Public Buildings Service last month, the first permanent appointee to the position since the resignation last November of Peter A. Strobel (see p. 39). A former president of the Washington Real Estate Board and former NAREB vice



McCONIHE

president, McConihe, 52, had served since Feb. 1 as a special consultant to the President to develop plans for elimination of the Capital's numerous unsightly, ramshackle "temporary" government office buildings erected during both World Wars.

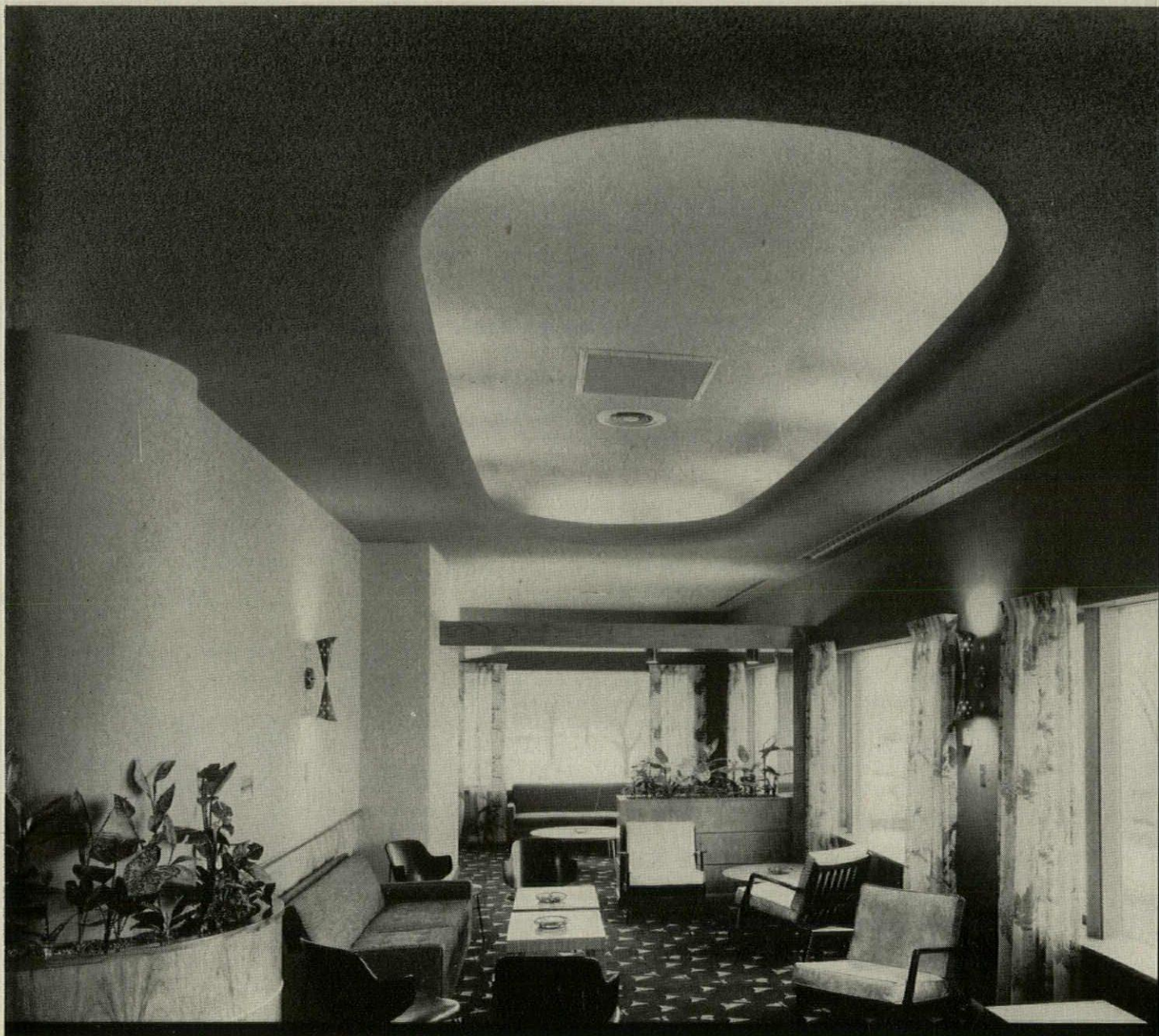
In resigning his White House berth to take on the biggest building management job in the country, McConihe wrote to the President that he felt he could "not only carry out the original mission you assigned me, but also render additional service to your administration." This apparently was a reference to a 10-year lease-purchase program for replacing all Washington's "tempo" with permanent, modern office buildings that has been prepared by PBS, but not yet released.

To succeed Maxwell H. Elliott, chief counsel of GSA since it was founded in 1949, Floete appointed Attorney Edward K. Mills, Jr., 50, former mayor of Morristown, N. J.

for news about TRENDS—p. 29



*For complete freedom of line and form*



Plasterer: JOHNSON, RACINE  
 Architect: SEITZ, RACINE  
 Job: ELKS CLUB, RACINE

### Coralux Sound Absorption Table

Coefficient of sound absorption recorded for Coralux Acoustical Plaster— $\frac{1}{2}$ " thick, unpainted natural finish, applied over standard Coralux scratch and brown gypsum plaster. Coralux Acoustical Plaster meets Federal Specifications SS-A-111, Acoustic Materials, Type 11, and Type 111, Class K and HH.

| Frequency         | Coefficients* |
|-------------------|---------------|
| 128               | .33           |
| 256               | .19           |
| 512               | .41           |
| 1024              | .78           |
| 2048              | .74           |
| 4096              | .87           |
| NOISE COEFFICIENT | .55           |

\*As determined by a nationally known laboratory



# CORALUX

## ACOUSTICAL PLASTER

A Schundler acoustical, insulating, and incombustible treatment

In application where sound control and incombustibility are important requirements, Coralux Acoustical Plaster can be used with several distinct advantages:

- 1—COMPLETE FLEXIBILITY of design, permitting soft lines and surface breakups so important to many interiors.
- 2—LOWER COST than virtually any acoustical treatment of equal incombustibility and sound control.
- 3—GREATER SPEED of application. Up to 750 yards can be finished in a day when machine applied.
- 4—EVENS IRREGULAR SURFACES that present such serious problems to rigid acoustical applications.
- 5—PERMITS RECESSING OF SERVICES, and much greater resourcefulness in lighting design. Note lighting in photo on left hand page.

Smooth working, non-setting and lightweight (9 oz. p.s.f.  $\frac{1}{2}$ " thick), Coralux dries to a foamy, off-white finish that soaks up sound like a sponge. Machine applied it can be finished with carpet-like uniformity, virtually eliminating any joint marks on even the largest areas.

Today, with Coralux Acoustical Plaster, you can meet every requirement for speed, beauty, economy, sound control, and incombustibility. Matched sets of one machine finish and one hand finish texture displays are available on request.

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**RATED FIREPROOF MATERIALS, ACOUSTICAL & INSULATING**  
Developers and producers of incombustible mineral products including Ebbtone Acoustical Tile, Fesco Insulation Board, Coralux Acoustical Plaster, Coralux Perlite Aggregates, Mica Pellet Vermiculite, High Temperature Insulating Blocks and Insulating Cement.

**Ideal for Machine Application,  
for Old or New Work**

The light, plastic, non-setting qualities of Coralux — its rigidly uniform particle sizes — make it ideal for high speed, trouble free machine application.

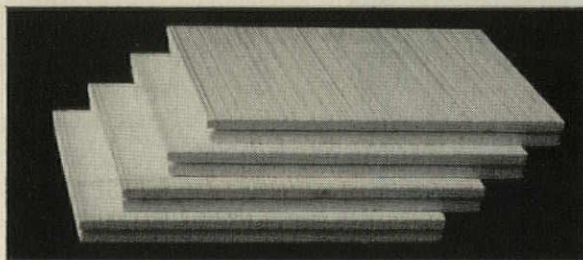
**BASE-NEW WORK:** The base may be a brown coat of any accepted plaster mix, or may be applied directly to the underside of structural concrete; combination concrete joists and filler block systems, or precast concrete units. Any masonry unit to be so covered must be clean, dry, free from scale, efflorescence or poorly bonded segments, and shall have completed hydration.

**BASE-OLD WORK:** Wash off water soluble paints, stains or coatings, dust, grease, dirt; repair all loose or poorly bonded plaster or masonry; repair and fill in cracked or checked areas. Wherever possible, roughen up the surface for better bond.



### EBBTONE ACOUSTICAL TILE

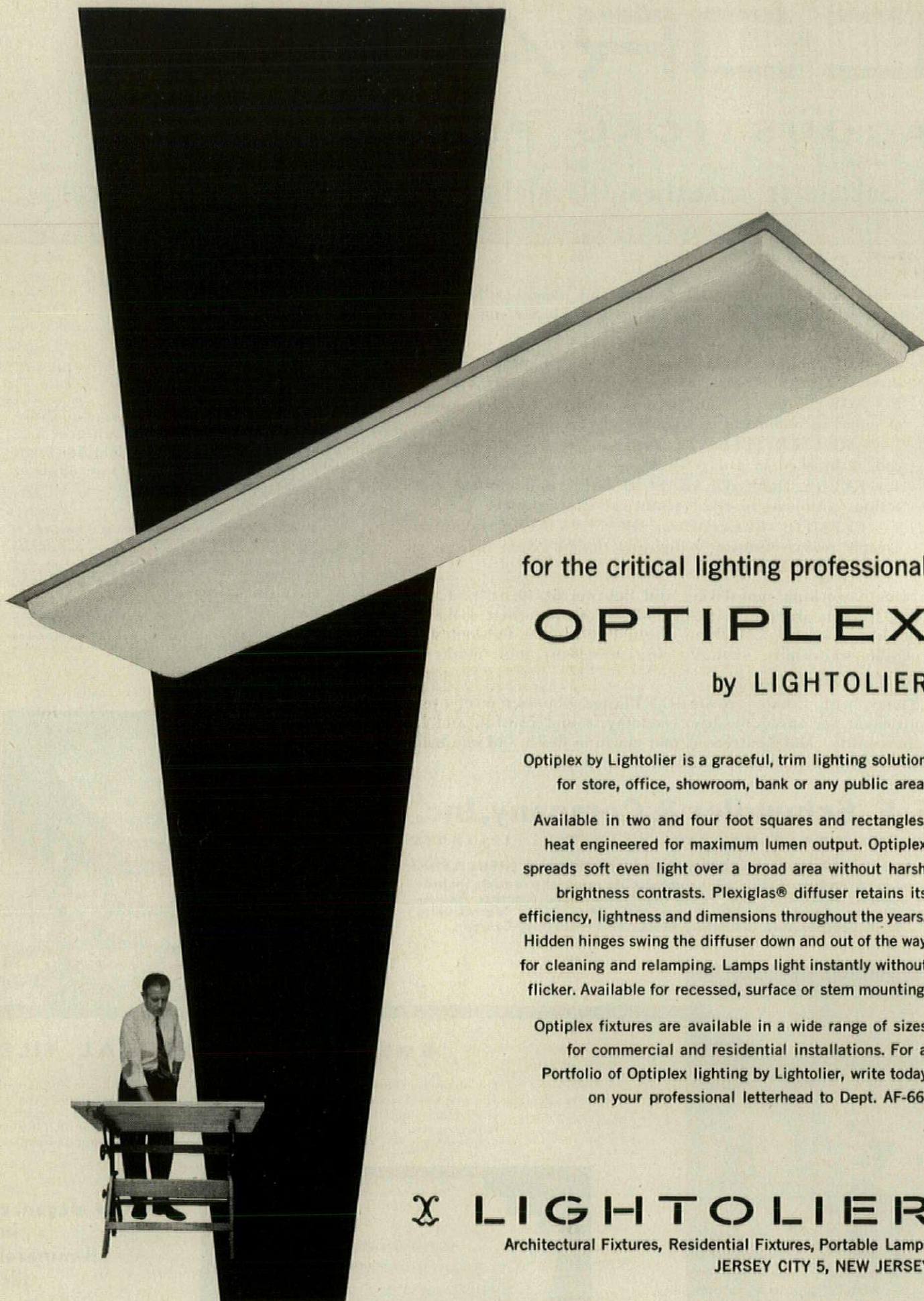
For interesting contrasts of color, texture and line, combine Ebbtone Acoustical Tile with Coralux Acoustical Plaster. A brilliant natural white Ebbtone has an unequalled light reflectant value of 81%, and an outstanding acoustical rating especially in the 500 to 2000 cycle range. For example, its NRC at 1000 cycles is .95. Write for complete data and matched presentation samples.



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all-mineral  
tile







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Architectural Fixtures, Residential Fixtures, Portable Lamps  
JERSEY CITY 5, NEW JERSEY



## BUILDING VOLUME: January-April outlays trail 1955, despite 18% gain in private nonresidential work

Although total construction expenditures for the first four months of 1956 slipped just below comparable 1955 figures after April's outlays had been tallied, two construction leaders reiterated their belief there would be a marked gain in building in the months ahead, and for the full year would establish another all-time spending record.

AGC President Frank J. Rooney predicted that the coming months would "see a steadily soaring volume toward the \$44.5 billion forecast by AGC in January"—a \$2 billion gain over 1955. A month ago Walter W. Schneider, chief of construction statistics for the Commerce Dept., also suggested that 1956 would ultimately see a 10% gain in new construction over 1955.

According to Commerce and Labor Dept. data (see charts and table), January-April private nonresidential outlays were up 18%, with private business construction the outstanding performer that has risen considerably higher than the gains forecast for it earlier. Expenditures for industrial buildings from January through April ran 22% ahead of the same period in 1955, and for April this year were 28%

higher than during April '55. Private commercial building has maintained a 25% lead over January-April outlays last year, and for April was 18% higher than during April '55.

Private hospital and institutional work is substantially lower than a year ago, and private education building also down a trifle. Religious building is slightly ahead of 1955.

**Laggard housing.** The most important decline in construction spending has occurred in private housing, which was off \$340 million, or 8%, from January through April, compared with the first four months of 1955.

According to BLS, private housing starts in April totaled 105,000 (public starts 1,000), or a seasonally adjusted annual rate of 1,110,000. For the year's first four months private starts totaled 349,000, about 16% below the total for the same 1955 period, but 11,200 units higher than for the corresponding months of 1954.

Inasmuch as 1954 ended with slightly more than 1.2 million private starts, it might be argued that the same could happen in 1956. This year, however, residential mortgage financing is not as readily available as two years ago, and barring an early relaxation in the credit situation, industry observers now predict a total of slightly under, rather than slightly over 1.2 million private starts by year's end.

### EXPENDITURES BY BUILDING TYPES

|                              | First 4 months |        |        |     |
|------------------------------|----------------|--------|--------|-----|
|                              | Apr. '56       | 1956   | 1955   | %±  |
| <i>(millions of dollars)</i> |                |        |        |     |
| <b>PRIVATE BUILDING</b>      |                |        |        |     |
| Residential (nonfarm)        | 1,207          | 4,386  | 4,675  | -6  |
| Nonresidential*              | 662            | 2,613  | 2,212  | 18  |
| Industrial                   | 236            | 910    | 743    | 22  |
| Commercial                   | 253            | 1,012  | 808    | 25  |
| Offices; lofts; ware-        |                |        |        |     |
| houses                       | 98             | 399    | 334    | 19  |
| Stores; restau-              |                |        |        |     |
| rants; garages               | 155            | 613    | 474    | 29  |
| Religious                    | 53             | 219    | 215    | 2   |
| Educational                  | 40             | 160    | 162    | -1  |
| Hospitals; institutions      | 24             | 100    | 112    | -11 |
| Public utilities             | 351            | 1,278  | 1,289  | -1  |
| *PRIVATE TOTAL               | 2,333          | 8,675  | 8,635  | **  |
| <b>PUBLIC BUILDING</b>       |                |        |        |     |
| Residential                  | 18             | 76     | 88     | -14 |
| Nonresidential               | 322            | 1,197  | 1,372  | -13 |
| Industrial                   | 35             | 129    | 314    | -59 |
| Educational                  | 205            | 777    | 752    | 3   |
| Hospitals; institutions      | 25             | 90     | 102    | -12 |
| Military                     | 97             | 348    | 335    | 4   |
| Highways                     | 280            | 810    | 765    | 6   |
| Sewer; water                 | 102            | 353    | 315    | 12  |
| *PUBLIC TOTAL                | 917            | 3,105  | 3,150  | -1  |
| *GRAND TOTAL                 | 3,250          | 11,780 | 11,785 | **  |

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

## BUILDING MONEY: Fed still keeps tight rein on credit

In Washington some administration officials disputed the wisdom of the Federal Reserve's credit tightening policies. President Eisenhower, however, registered his confidence in the Reserve's judgment as an independent agency, and Fed Chairman William McChesney Martin reiterated that it had no intention of making credit tight except in the interest of a sounder, non-inflationary economy. By mid-May federal bond prices were slowly edging upward again, which meant lower yields, which in turn signified a trend toward easier credit. Among those waiting for still easier credit conditions was the US Treasury itself, as recorded by Under Treasury Secretary Randolph Burgess, who said the Treasury planned to issue some new long-term 3% bonds "when there is a somewhat better market."

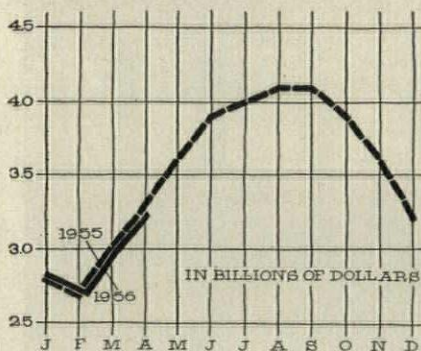
In the interim, building money continued tight, but had not disappeared. Reports of investment activities of 40 major life insurance companies, for instance, showed that their new nonfarm mortgage loans on dwellings and business properties were \$81.7 million during the first week in May, or 29.8% of their week's new investments, compared with \$67.9 million, or 22.2%, in the corresponding week a year earlier. So far this year, through the first week in May, they had put a total of \$1,741 million or 37.0% of their new investments, into nonfarm mortgages, compared with \$1,549 million, or 33.7%, a year earlier. To find borrowers, New York's big Chase Manhattan Bank was using both TV and sprightly full-page cartoon ads in tabloids to advertise home improvement loans (high-yield), thus proclaiming that it had money to lend—at a price.

The first FHA Title VIII mortgage sold under its new incarnation as the Capehart Act (AF, March '56, News) brought a two point premium. A group of school endowment funds and a philanthropic investor agreed to pay 102 for the \$12.5 million FHA mortgage covering 944 units of military housing at Abilene Air Force Base in Texas.

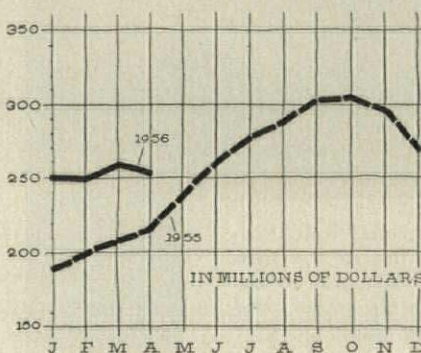
The high price—some four points more than East Coast investors were paying for FHA Sec. 203 home loans in that area—was evidence that the investment world recognized that the new Capehart Act had spawned an entirely new kind of super-safe mortgage paper.

What makes the new Title VIII so enticing is the Defense Department's guarantee to meet the mortgage payments. Says Vice President Arthur M. Hurd of Pringle-Hurd & Co., New York mortgage brokers who arranged the first loan: "FHA insurance becomes academic. Attorneys think an investor could go directly to the US Court of Claims to enforce the Pentagon's guarantee without first going through FHA procedures."

TRENDS continued on p. 32



**TOTAL CONSTRUCTION** expenditures in April were \$3,250 million, a seasonal increase from March, but 1% below the outlays of \$3,283 million in April '55.



**PRIVATE COMMERCIAL** construction expenditures for the first four months of 1956 remained on almost a plateau, but were substantially above January-April '55 spending, totaling \$1,012 million this year, compared with \$808 million a year ago.

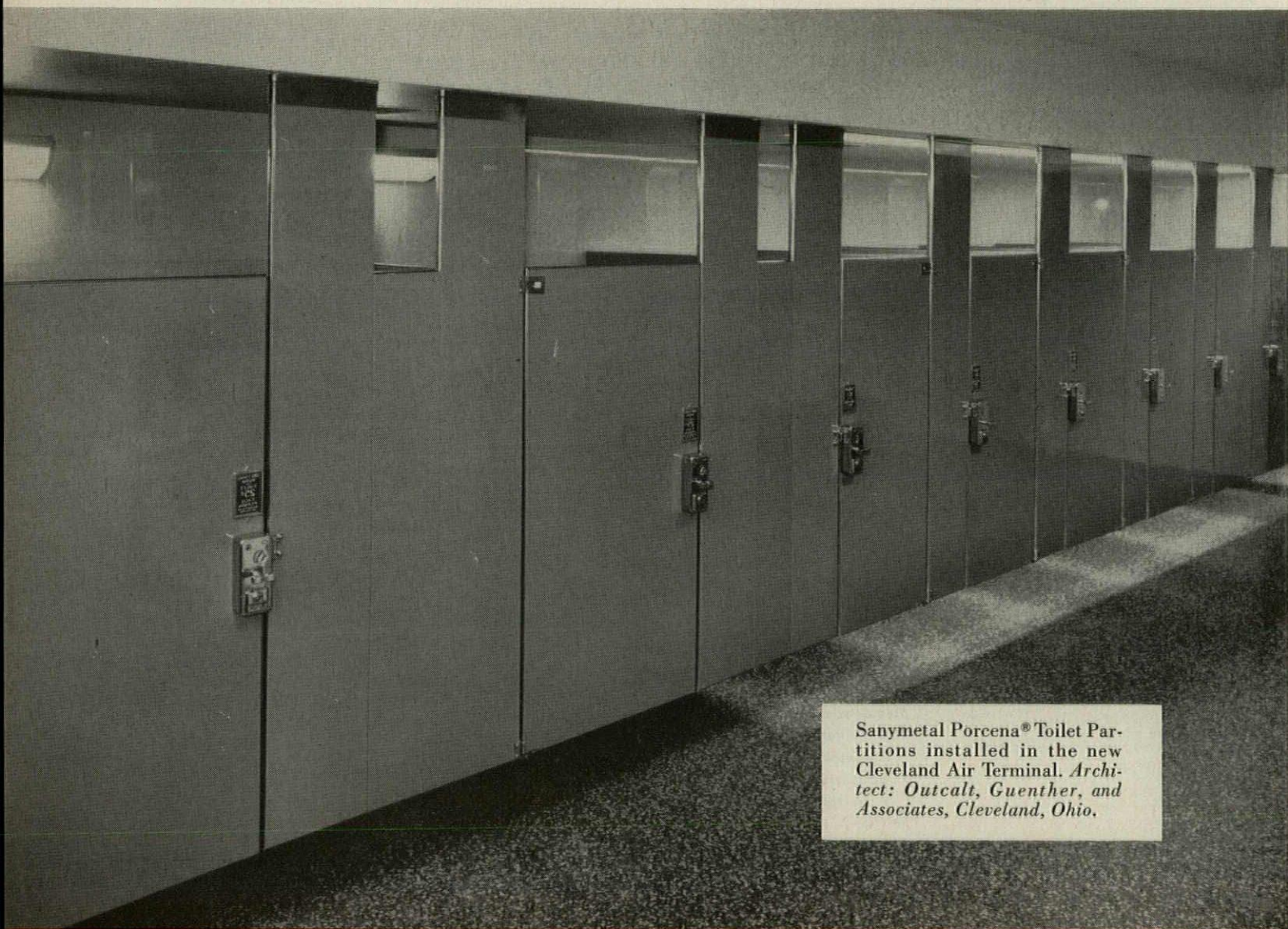


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## TOILET ROOM ENVIRONMENTS

Elsewhere in this magazine you have seen a thought-provoking discussion of washrooms.

From your point of view washrooms are not too rewarding—the best treatment of them hardly calls forth the praise you can get by a good facade, or effective handling of window areas.

But in the minds of those who own, who occupy, and who visit a building, washroom areas quickly develop strong, if unexpressed, opinions.

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## BUILDING MATERIALS: Structural steel shipments set record, but price boost, strike, still loom; plywood prices drop 10%

Steel continued to hold the spotlight in the building materials picture, and last month made both good and bad news for construction.

On the encouraging side, structural steel data from the American Institute of Steel Construction gave evidence of stepped up deliveries, and new contracts that pointed to a major increase in large building operations. For the first time on record structural shipments passed the 300,000 ton mark in March (306,760 tons), the highest previous shipments in the last two years having been 293,532 tons in April, 1954, and 289,128 tons last September. The record set in March sent first quarter shipments this year to 843,638 tons, a 26% gain over the 667,002 tons shipped in the same period a year ago, and 62% better than the industry's 1947-1950 first quarter average shipments.

New contracts signed in March totaled 365,517 tons, or 28% greater than March '55 contracts. For the first quarter new orders reached 1,102,410 tons, a 45% increase over last year's January-March orders, and more than twice as great as the industry's 1947-1950 average for the period of 535,000 tons. As of April 1, the backlog of fabricators' unfilled orders was a fat 2,463,000 tons (see chart).

**How big a price rise?** On the discouraging side was the certainty of a major boost in steel prices after June 30, and the uncertainty whether there also might be a disruptive steel strike before a new mill-workers' contract assured continued production after that date.

"Steelmen talk of a price boost to \$15 more per ton—the biggest hike in history," said a TIME study of the outlook. "Steelmakers argue that the base price of steel is too low to start with. On the Dept. of Labor wholesale price index, steel prices between 1939 and April 1956 rose 131%, about the average for all commodities. However, many industries where demand

was also high got much bigger price boosts, e.g., nonferrous metals went up 195%, lumber and wood products 305%.

"Furthermore, as Republic Steel President C. M. White points out, the industry's net income in relation to its worth has usually lagged well behind other industries. As one result, says White, steel stocks have a market value of only eight to ten times earnings, while chemical stocks sell at 20 to 30 times earnings."

After reviewing the industry's special problem of financing highly expensive new plant expansions out of retained earnings, TIME concluded: "There is little doubt that a price rise is coming. Steelmakers will have to guard against making it so big—i.e., putting it too far above wage increases and expansion costs—that its inflationary effects will harm the entire economy."

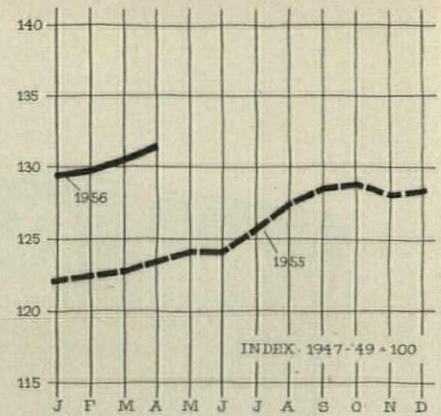
**Plywood prices drop.** After an extended period of stability (107.5 on the BLS price index from January through March) wholesale plywood prices dipped in April (see chart and caption), and last month suffered their biggest price drop in two years.

For more than two months high production and rising inventories squeezed the industry, which finally began to cut production schedules as April ended. To move oversupplies, last month prices for index grades that held close to \$88 MSF for almost two years were dropped to \$80. In competing with the over-abundant fir plywood sheathing, prices of green dimension lumber were also off about \$1 MBF at months' end. Although pine and fir board prices were weak, quotations for upper grade lumber, timbers continued strong.

## EARNINGS: First quarter reports show marked gains

Construction and building supplies firms reported generally favorable first quarter earnings. Increased commercial and industrial construction suggested that they could still anticipate that total 1956 income would equal, or slightly surpass 1955. Reports from some of the leaders:

|                               | Net earnings | % gain over '55 1st quarter |
|-------------------------------|--------------|-----------------------------|
| Armstrong Cork ..             | \$5,800,000  | 13                          |
| Johns-Manville ...            | 4,100,000    | 51                          |
| Lehigh Portland ..            | 1,500,000    | 9                           |
| Penn-Dixie Cement             | 900,000      | 50                          |
| US Steel .....                | 104,200,000  | 43                          |
| Republic Steel ....           | 25,000,000   | 38                          |
| Jones & Laughlin.             | 13,600,000   | 41                          |
| Revere Copper & Brass .....   | 3,100,000    | 2                           |
| Bridgeport Brass ..           | 1,700,000    | 29                          |
| Reynolds Metals ..            | 11,600,000   | 58                          |
| Minneapolis-Honeywell .....   | 4,500,000    | 22                          |
| Crane Co. ....                | 2,100,000    | 217                         |
| Merritt-Chapman & Scott ..... | 2,600,000    | 121                         |



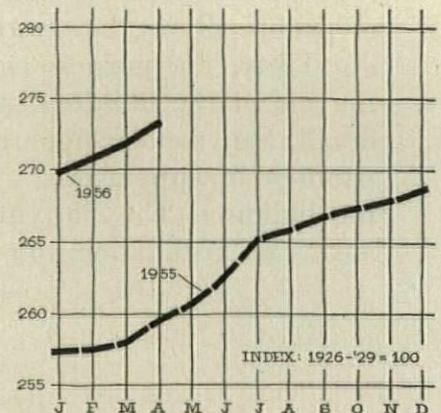
**BUILDING MATERIALS PRICES** rose 0.5%, from 130.5 in March to 131.2 in April on the BLS index of average wholesale prices. During the first four months of 1956 the increase totaled 2.2%. Average prices for lumber continued their rise from March to April, were 3.3% above prices in December. Plywood prices, however, slipped 0.5% during April, although still 1.1% higher than during December.

## BUILDING COSTS: Labor called main cause of rise

For the 24th month in a row the index of construction costs for nonresidential buildings compiled by E. H. Boeckh & Assoc. climbed upward. Over the two years since this index last registered a temporary decline the increase was 8.4%.

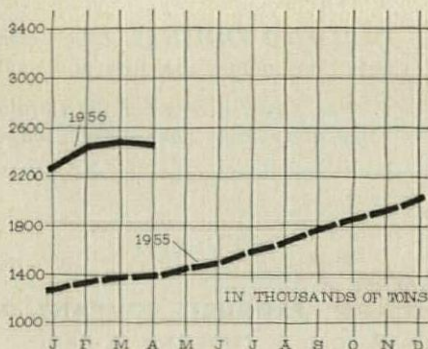
Boeckh attributed the March to April gain this year (see chart) mainly to higher labor costs, although the 2.2% increase in average wholesale prices for building materials since Jan. 1 also contributed substantially to rising costs.

As the bargaining season for new building labor contracts reached its height, only one major stoppage was reported up to mid-May. In Cleveland 30,000 workers in 17 trades went on strike seeking a 25¢ an hour boost from the BTEA, which had offered a three-year contract with three annual 15¢, 12½¢ and 12½¢ increases. Settlement after two weeks: 2-year contract for 17½¢ more now, 16½¢ next year.



**CONSTRUCTION COSTS** for nonresidential buildings rose 0.6%, from 272.0 in March to 273.7 in April on the index compiled by E. H. Boeckh & Assoc. For the first four months of the year the increase in the Boeckh Index, which was 268.6 in December, was 1.9%.

for news about PEOPLE—p. 39



**STRUCTURAL STEEL** unfilled orders on April 1 were 2,463,000 tons, a slight decrease from 2,476,000 tons a month earlier, according to American Institute of Steel Construction data. The portion of the backlog scheduled for fabrication through July was 1,186,000 tons.





Edway Building, Memphis, Tennessee. Architects: Harker and Heyer, Memphis. Contractor: George E. Bass and Co., Jackson, Mississippi. Walls: Lupton Type-H Aluminum Curtain-Walls, with a 3'-7" module. Insulated spandrels with  $\frac{1}{8}$ " aluminum exterior facing, 16 ga. galvanized steel interior facing. Projected-type window ventilators opening out at bottom.

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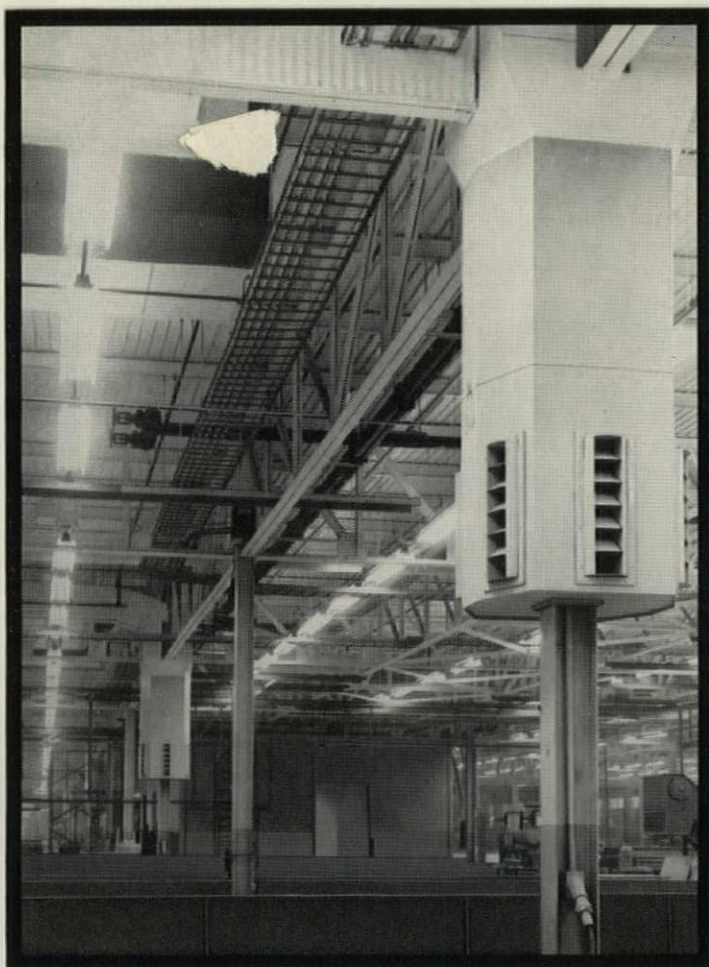
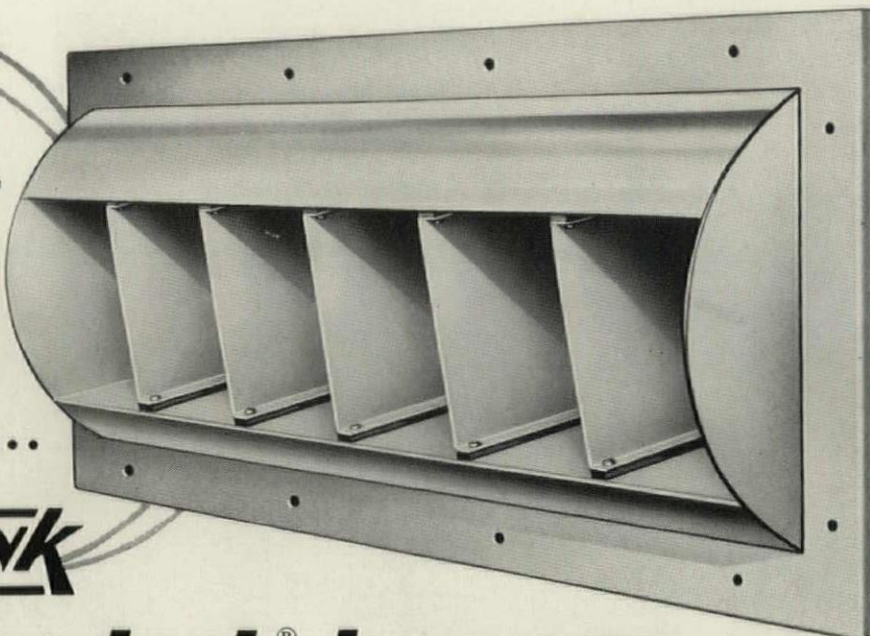
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High outlet velocity combined with large free area gives exceptional capacity for its size.

### **THROW AND ENTRAINMENT**

The unusually long throw of this unit reduces the amount of branch ducting normally required. High entrainment of secondary air assures thorough mixing of supply air with room air.

*For performance data and range of sizes, write or mail coupon.*

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Organization

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City  Zone  State



W. S. & THOMAS V. TALLEY ARCHITECTS  
213 PROFESSIONAL BUILDING • LAKELAND, FLORIDA  
POST OFFICE BOX 1104 • PHONE MUTUAL 3-1231

February 20, 1956

NATCO CORPORATION,  
527 5th Avenue,  
Pittsburgh, Pennsylvania.

Re: New High School  
Mulberry, Florida.

Gentlemen:

The amount of money budgeted for the construction of the New Mulberry High School required us to keep costs to a minimum therefore we selected Natco "Uniwall" tile because of the economy offered by using a prefabricated single unit wall having a high resistance to moisture penetration.

This is the second school project on which we have used "Uniwall" tile and the School Authorities are impressed with the pleasing light buff color of the exterior and the permanent easily cleaned interior that "Uniwall" presents.

On the Mulberry High School the tile was used for load bearing walls and also for curtain walls around a light steel frame, and they proved satisfactory in each case.

We thought that you would like to know that since these schools have been completed we have had many compliments on their appearance and the bright, cheerful feeling of the interior.

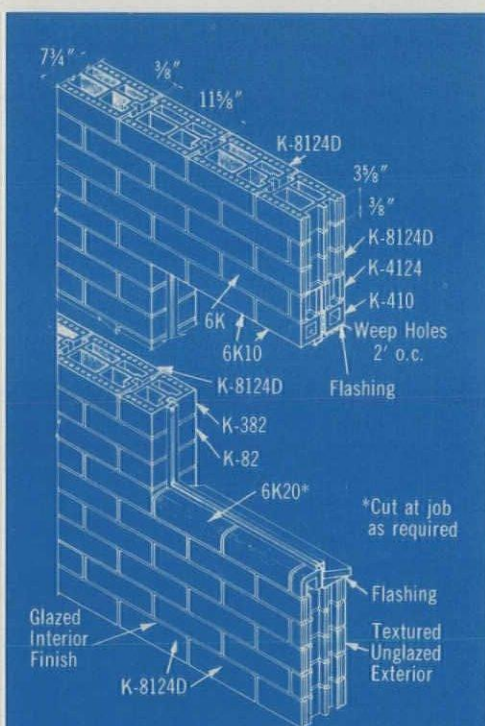
Yours very truly,

W. S. & THOMAS V. TALLEY  
Architects

By: *Thomas V. Talley*

TVT/

... "The school authorities  
color of the exterior..."



#### TYPICAL WALL AND WINDOW CONSTRUCTION DETAILS

Showing the use of Natco Uniwall in metal window frame installations. Similar applications are used for windows with wood surrounds. Also for typical wood windows and doors by placing nailing strip in the tile recess.



**NATCO**  
QUALITY  
CLAY PRODUCTS  
SINCE 1889

**NATCO**

Boston 16, Mass., 20 Providence Street, Tel. Hubbard 2-3549—2-3556  
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Cherry V-Plank and plywood built-ins make the fireplace wall a focal point, give the whole room spaciousness and charm. Yet all the V-Plank paneling shown costs just \$105 retail.

## Cherry V-Plank by Weldwood

**... a textured panel for comfortable traditional, or a warm accent for modern. Beautifully prefinished—at 78 cents per square foot\***

The warmth of native American cherry ... handsomely textured in a random plank effect ... gives a glowing beauty to this traditional setting. Available in a variety of popular woods (see below), Weldwood V-Plank panels give new opportunities for distinctive interiors—traditional or modern—at remarkably low cost. *Colonial* V-Plank provides pegged effect.

**CONVENIENT SIZE:** Stocked in 4 by 7 and 4 by 8 foot sizes, 1/4-inch thick. Large panels save handling and installation time—yet give effect of separate planks. Installation can be by Weldwood Contact Cement method—which requires no face nails—or by face nails concealed in v-grooves, which fall on 16-inch centers. Beveled edges give

v-groove effect between adjacent panels, and conceal joints.


**FINISH:** V-Plank panels are available prefinished, or unfinished at lower cost. Unfinished panels can be finished to specification after installation. Weldwood factory finishes meet Government Specification MIL-F-002319A (QMC) of July 10, 1953—and save time, mess, and cost of on-the-job finishing. The slight additional cost of prefinished panels is considerably less than the cost of on-the-job finishing—and V-Plank panels, like all interior Weldwood paneling, are guaranteed for the life of the building.

**USES:** V-Plank can be used vertically or horizontally, and provides a striking interior for residential, commercial, and office use. Easy to keep clean, prefinished V-Plank requires only an occasional waxing.

**WHERE TO SEE IT:** Call your Weldwood Architect's Service Representative, or visit your lumber dealer or any of 87 United States Plywood Branch offices in principal cities. In Canada: Weldwood Plywood Ltd.

**Suggested Specification:** Wall paneling shall be Weldwood (species) V-Plank plywood paneling, as manufactured by United States Plywood Corporation, 1/4-inch in thickness, in panels (4 by 7, 4 by 8) feet in size, glue bond shall be Urea Formaldehyde hot press method; exposed faces shall be in random-plank effect, with alternate grooves falling on 16-inch centers; panels to be prefinished in accordance with U. S. Government Specification MIL-F-002319 A (QMC); panels to be installed (horizontally, vertically), over existing wall, on studs, or on furring strips, face nailed with 3/4-inch brads on 6" centers on outer edges of panel and on 12" centers on intermediate studs, concealed in v-grooves (or with Weldwood Contact Cement, according to instructions of manufacturer).

# Weldwood®

V-Plank† Paneling 

Product of

UNITED STATES PLYWOOD CORPORATION

United States Plywood Corporation  
Architect's Service Department  
55 West 44th Street, New York 36, N. Y.



Please send me data folder on Weldwood V-Plank, together with sheet of installation drawings and instructions.

☐ Please include 48-page Weldwood full-line catalog with price information. AF-6-56

Name.....

Company.....

Address.....

.....



Prices per square foot of 6 fine V-Plank prefinished woods: (from left) walnut 78¢, Korina® 78¢, mahogany 78¢, Samara† 51¢, cherry 78¢, oak 78¢. †Trade Mark \*Approximate Retail Price



# NEW

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Give your clients the advantages of Stanley's new Magic Carpets in color . . . the *first* colorful new idea in automatic door controls! Here is superior operation, easy maintenance, long life — plus the new STANLEY feature — a range of appealing colors that will enhance the architectural style of any building entrance.

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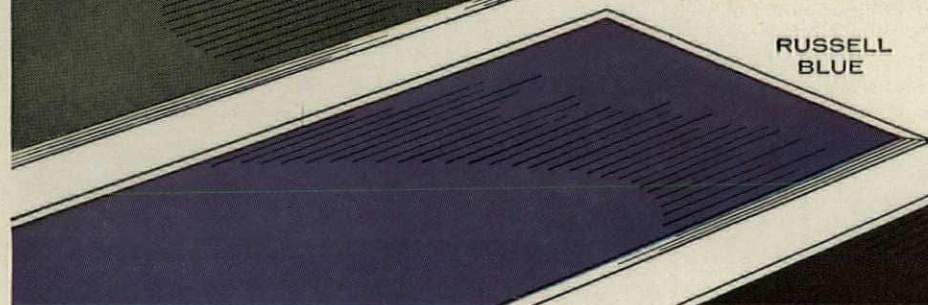
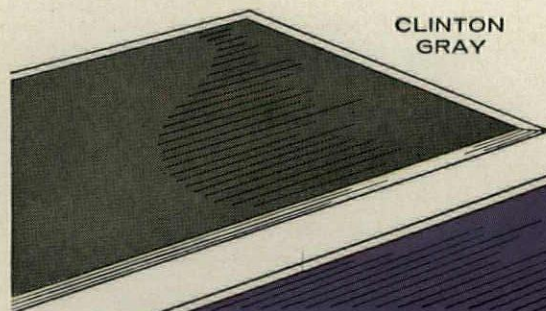
GROVE HILL  
GREEN

CLINTON  
GRAY

### 4 DISTINCTIVE *Colors*

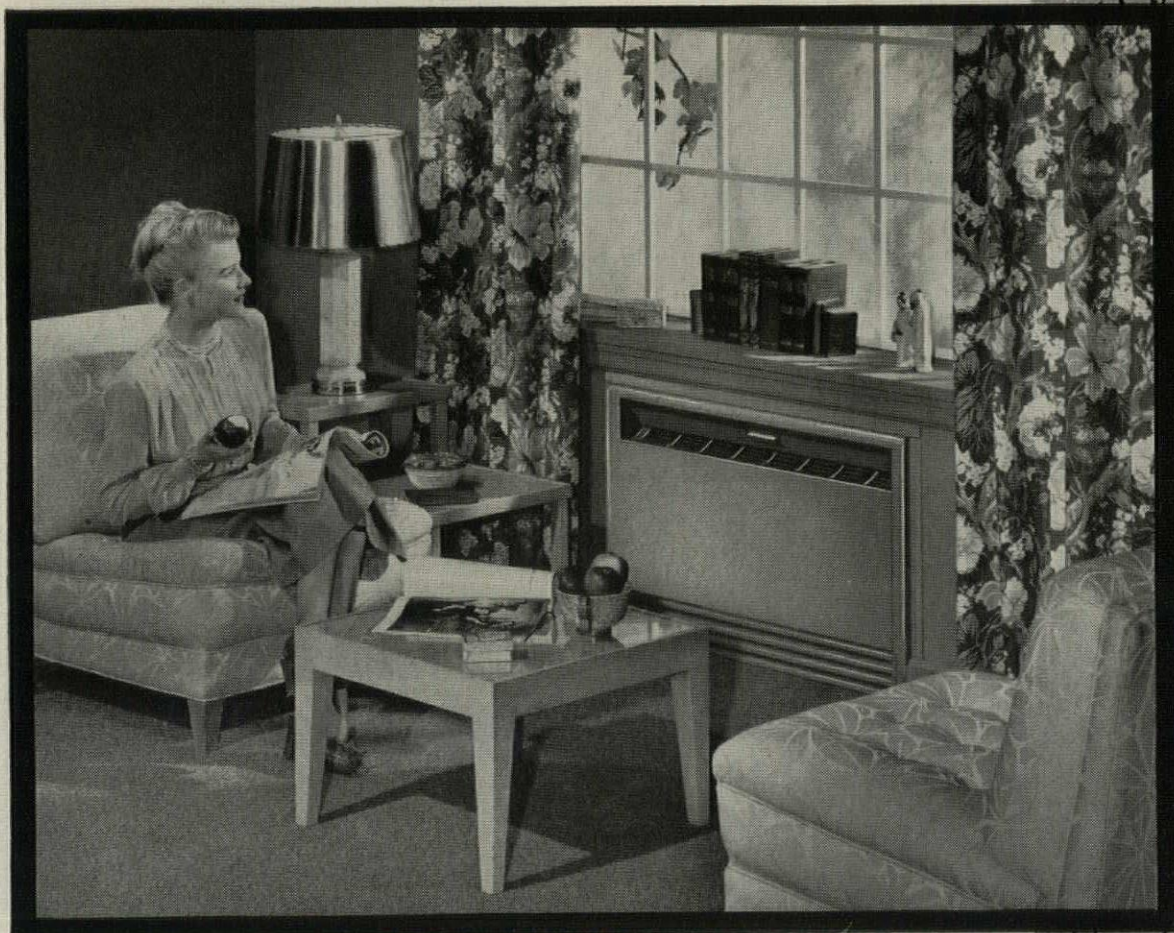
RUSSELL  
BLUE

BAILEY  
BROWN





*Gentle heat*  
*uniform, healthful*

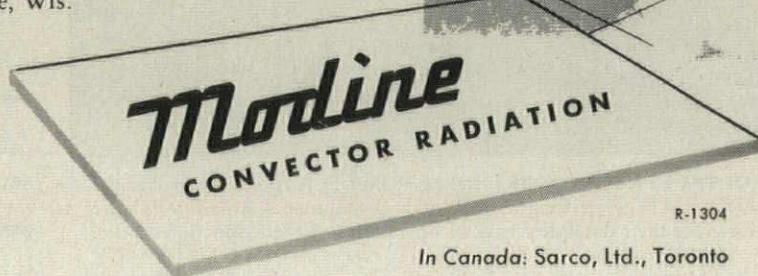


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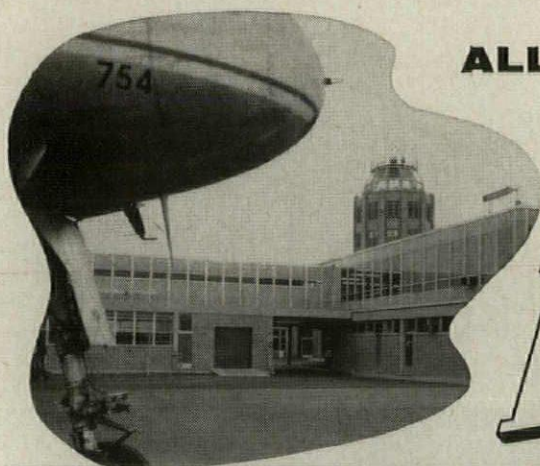
standing, fully and partially recessed. Call the Modine representative listed in your classified phone book, or write Modine Mfg. Co., 1507 DeKoven Ave., Racine, Wis.



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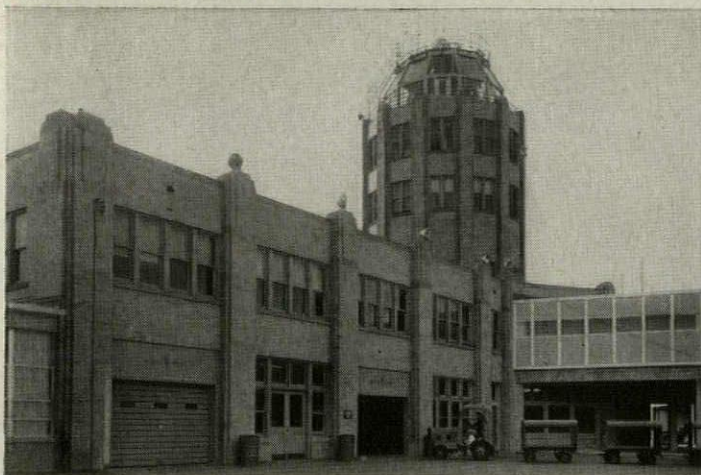
**MORRISON**

**Roly-Door**

*Steel Sectional  
Overhead Doors*



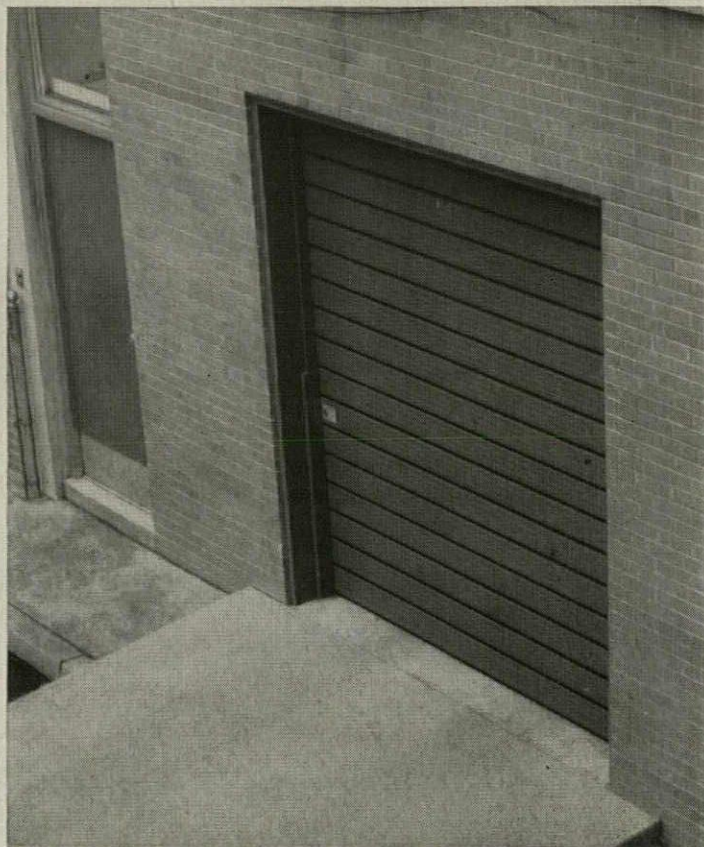
**AIR FREIGHT** via Capital Airlines moves both ways through these two Roly-Doors. This double installation also provides the shortest route for baggage between planes and ticket counter.



**QUICK DELIVERY** of baggage to and from American Airlines Flagships is aided by these Roly-Doors which permit the baggage "trains" to load and unload right behind the ticket counter.



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**ROLY-DOORS CONTRIBUTE** functional simplicity, economical durability, and time and labor-saving efficiency to the day-to-day operation of the Buffalo Airport. Roly-Doors—for every overhead door requirement—are available for immediate delivery.

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**GENERAL CONTRACTOR:** Frederick T. Williams Co., Buffalo



## Floyd Bryant gets top Defense Dept. construction post;

### AGC directors assign all executive duties to James Marshall



BRYANT

**NEW BRASS.** Taking over last month as assistant secretary of defense for properties and installations, charged with achieving coordination and maximum efficiency in the planning and execution of military construction programs, was former California oil executive **Floyd S. Bryant**, 62 this month, rated highly as an administrator although without particular prior service in building. Rhodes Scholar Bryant served on the American Commission for Relief in Belgium under Herbert Hoover in 1914, later was a Red Cross ambulance driver and then an artillery lieutenant in World War I. He joined Standard Oil of California in 1922, headed its producing department, was a director and vice president when he retired from the company last year and became a special assistant to the Secretary of Defense to review recommendations on reorganizing departmental activities made by the Commission on Organization of the Executive Branch of the Government. Bryant succeeded **Franklin G. Floete**, who was transferred to head the General Services Administration after former Chicago Textile Executive **Edmund F. Mansure** resigned in February because of "personal obligations," left without a quarry a House committee that had been concentrating its fire on him in investigating the award of a huge nickel plant construction contract in Cuba.

#### CONTRARY OPINIONS

After a series of hearings before a House judiciary subcommittee investigating possible "conflict of interest" cases of businessmen in government, **Peter A. Strobel** resigned last November as Public Buildings Commissioner in the GSA (AF, Dec. '55). Strobel vigorously denied any wrong-doing or abuse of his official position. The New

York Times declared his resignation resulted from "direct pressure from the White House." A month ago the House committee's report was released. Three Democrats expressed their belief his activities did involve a conflict of interest. Three Republicans wrote that his private business activities put him in "a fundamentally inconsistent and untenable position," but did not violate any laws. A third opinion, from former Representative **Sidney A. Fine**, New York Democrat now a New York State court justice, made it a 4-to-3 decision for Strobel. Wrote Fine: "The evidence is clear that he performed services of outstanding value to the government at a great personal sacrifice and that his position . . . resulted in no direct nor indirect benefit either to him or to his firm."



MARSHALL

#### COMMAND CHANGES

AGC directors reconciled themselves to the fact **H. E. (Doc) Foreman** would not be able to resume the full activities and responsibilities as chief executive, gave Executive Director **James D. Marshall** complete authority for the management of association affairs. Foreman, slowed down by a heart ailment (AF, Sept. '53), will retain his old title of managing director, serve full time as a "consultant and advisor on high-level policies . . . without overtaxing his health." **William E. Dunn** was named assistant executive director, but will continue to give special attention to labor matters and legislation. **Charlson I. Mehl** was advanced to the position of administrative secretary.

**HONORED:** AIA Technical Secretary **Theodore Irving Coe**, 20 years on the institute staff editing its standard filing system and alphabetical index (also chairman of the District of Co-



RAYMOND

lumbia board of zoning adjustment), given the institute's Edward C. Kemper Award for outstanding contributions to the profession or the institute; Czech-born New York Architect **Antonin Raymond**, who first worked for Cass Gilbert (1910), was an associate of **Frank Lloyd Wright** in Japan (1916), designer of the *Reader's Digest* building in Tokyo and many other outstanding structures in Japan, the Far East and the US, awarded the 1956 Medal of Honor of the AIA New York chapter; Architects **Robert Bellows**, of Boston; **Gardner Acton Dailey**, of San Francisco, and **Alfred Easton Poor**, New York, elected associate members of the National Academy of Design; **Maxwell Mayhew Upson**, board chairman of Raymond Concrete Pile Co., feted with a dinner and testimonial bronze plaque in New York on April 22, his 80th birthday, in recognition of more than half a century as "constructor, engineer and inventor."

#### THREE R's PLUS

A little more learning is usually an advantageous thing. For architects this summer M.I.T. was offering some valuable extra learning in a special short course (Aug. 13-31), "The Artist, Materials, and Technology," directed by **Richard Filipowski**, associate professor of visual design in its department of architecture. This course, said Filipowski, aims to "introduce artists and architects to many recent pertinent industrial techniques. . . . In recent years artists have found that form expressed through contemporary media can indeed become a vital and integral part of architecture." Some of the top lecturers for this course: Harvard Design School Dean Emeritus **Joseph Hudnut**; M.I.T. Architectural Professors **Eduardo Catalano**, **Robert B. Newman**, **Lawrence B. Anderson**; Sculptor **Constantino**

**Nivola**, Lighting Engineer **Richard Kelly**, and **Hideo Sasaki**, assistant professor of landscape architecture at Harvard.

For advanced study in real estate, because the business "is becoming too complex and interwoven for old-fashioned, untrained hands," New York realty owner and investor **Louis J. Glickman** announced four \$1,250 scholarships in the business administration schools of Columbia University, Indiana University, University of California (Berkeley), and the Wharton School at University of Pennsylvania.

#### COMMERCIAL CLIQUE

First officers elected by the new commercial-industrial chapter of the 2,000-member Building Contractors Assn. of California, which calls itself "the nation's oldest and largest regional association of contractors": president, **John Meskell**, of Pasadena, 1955 BCA president; vice president, **Al Krumvieda**, Norwalk; secretary-treasurer, **Gordon T. Davidson**, North Hollywood. Sixty builders at the chapter's first meeting discussed the possibility of instituting a bid depository and uniform bidding procedures.

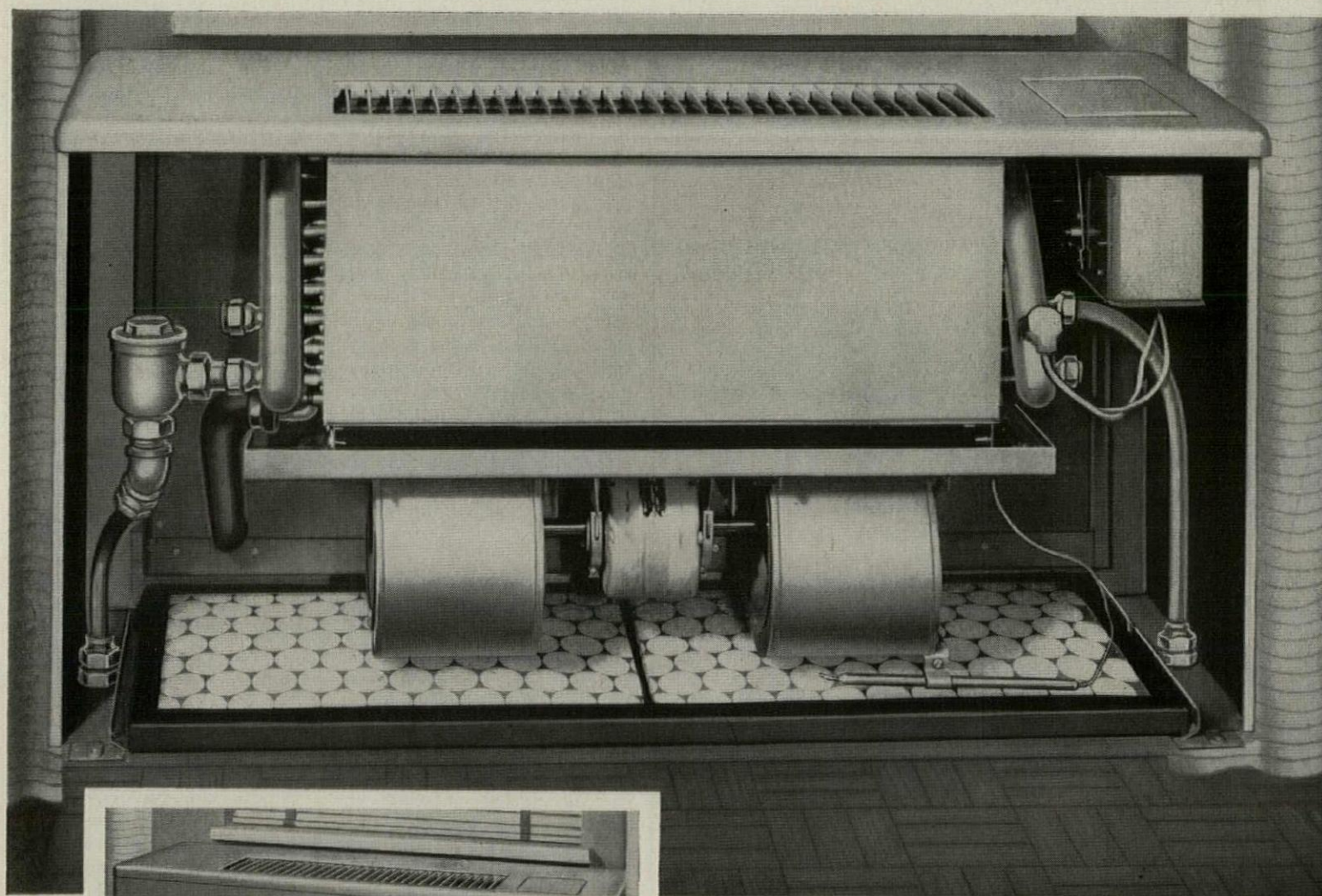
**DIED:** **Russell C. Mahon**, 66, founder (1912) and board chairman of the R. C. Mahon Co., which has eight divisions and a business of almost \$50 million annually in engineering and fabricating a wide variety of building products, industrial equipment and structural steel items, March 30 in Detroit; Engineer **George Richard Roberts**, 73, who retired in 1950 as chief of the construction section of the US Public Buildings Service, April 12 in Washington; **Mark Levy**, 76, appraiser and realty financing expert, former president of the National Institute of Real Estate Brokers, the Chicago Real Estate Board, and 1932-38 NAREB treasurer, April 13 in Chicago; Engineer **John Prince Hazen Perry**, 74, former head of the construction and facilities division of the Munitions Board, expeditor (1952-53) for the overseas air bases program, retired vice president and director of Turner Construction Co., April 14 in New York.



# AMERICAN-Standard products in the news

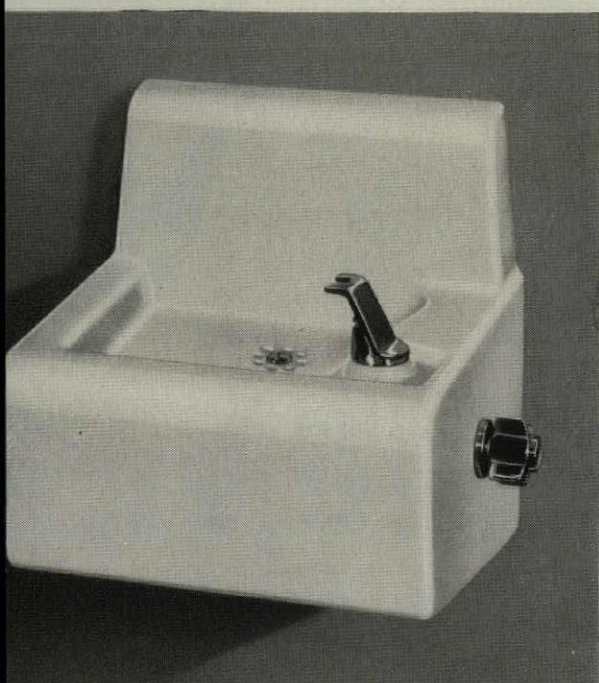
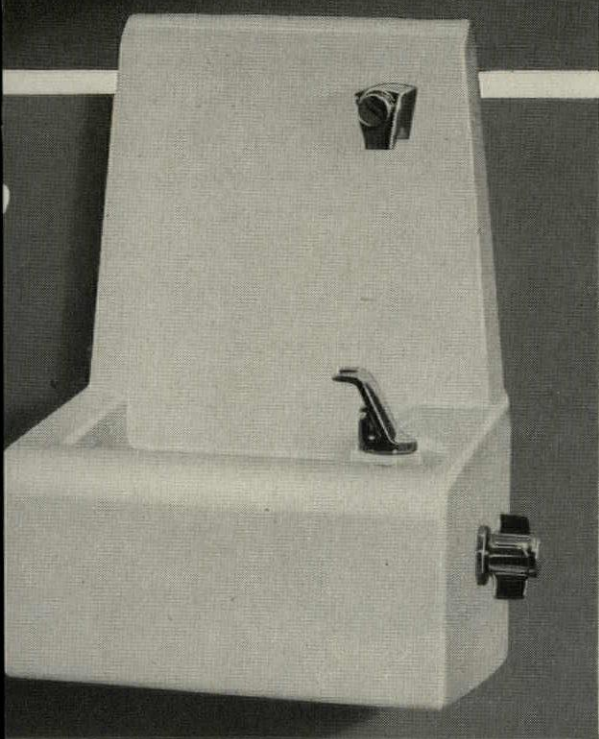
*New Design  
Drinking Fountains*

*Self-Contained  
Remotaire*

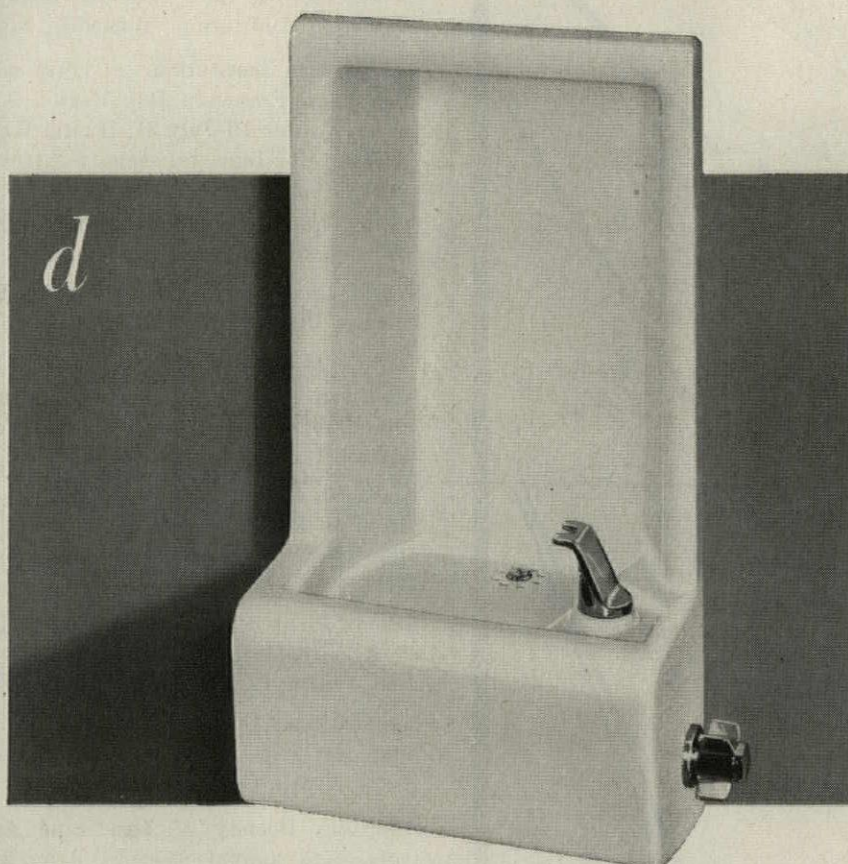


**HEATING AND COOLING IN ONE SELF-CONTAINED UNIT.** Here's the fast, inexpensive, convenient way to air condition hotels, offices and institutional buildings—especially existing structures. No central plant equipment is required. Installation can be made quickly in any room or on any floor without affecting the rest of the building. The new Self-Contained Remotaire heats, cools, ventilates, filters and exhausts. Each unit has a complete, built-in refrigeration circuit. Provision is made for connection to existing two-pipe steam or hot water heating systems. Mounted into and supported by the wall, the Self-Contained Remotaire projects less than 11" into the room. Cabinet dimensions are 21½" high and 40" wide.





**NEW AMERICAN-STANDARD FOUNTAINS** have a simplicity of design that fits perfectly with the modern architectural trend. And they are available in a wide variety of sizes, styles and colors. The examples shown here are (a) Sharon, (b) Calistoga, (c) Saratoga, and (d) Tioga. They'll not only add to the appearance of the buildings you plan, but also afford extra years of service for your clients. The one-piece bubbler—of non-tarnishing Chromard—allows easy cleaning, and is designed to prevent squirting or direct contact with the nozzle. The Nu-Re-Nu valve assures dependable operation.



FOR MORE INFORMATION about American-Standard plumbing and heating-cooling products, write to AMERICAN-STANDARD PLUMBING AND HEATING DIVISION, 40 West 40th St., New York 18, N.Y.



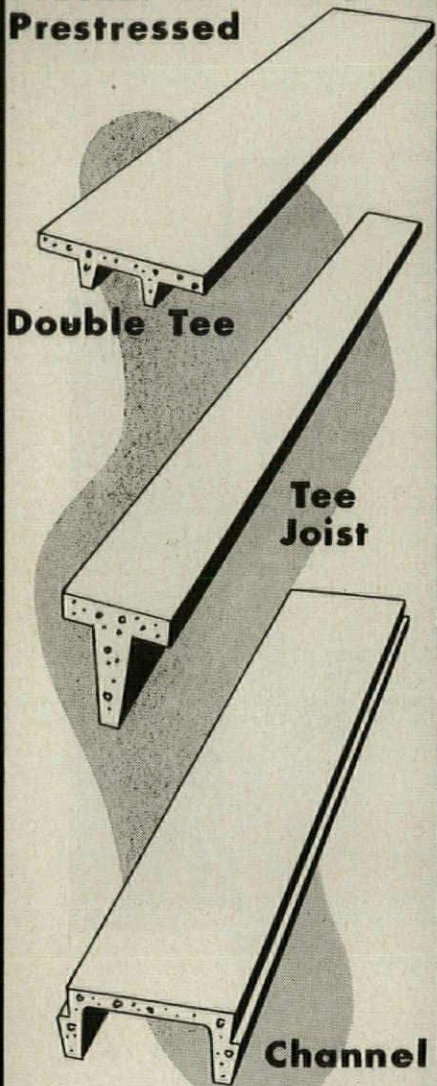
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## DATES

"Twenty Years of Photography by Gottscho-Schleisner," Architectural collection, June 5 through summer, Museum of the City of New York, N.Y.

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

National Fire Protection Assn., annual meeting, June 4-8, Hotel Statler, Boston, Mass.

Forest Products Research Society, national meeting and exhibit, June 4-7, Municipal Auditorium, Asheville, N.C.

Smithsonian Institution, traveling exhibition. "San Francisco Bay Region Architecture," June 15-July 31, Hunter Gallery of Art, Chattanooga, Tenn.; "Architectural Photography," June 5-July 31, Calif. College of Arts & Crafts, Oakland, Calif.

World Conference on Earthquake Engineering, June 12-16, Univ. of California, Berkeley.

American Society for Testing Materials, annual convention, June 17-22, Chalfonte-Haddon Hall Hotel, Atlantic City, N.J.

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

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

International Design Conference, 6th annual conference, June 23-July 1, Jerome Hotel, Aspen, Col.

American Society of Landscape Architects, 57th annual meeting, June 24-27, Cleveland Hotel, Cleveland, Ohio.

National Assn. of Building Owners & Managers, annual convention, June 24-28, Biltmore Hotel, Los Angeles.

Massachusetts Institute of Technology, special two-week summer programs: "Plastics in Building," starts July 2; "Structural Design for Dynamic Loads," starts Aug. 6; "City & Regional Planning," starts Aug. 20; at M.I.T., Cambridge, Mass.

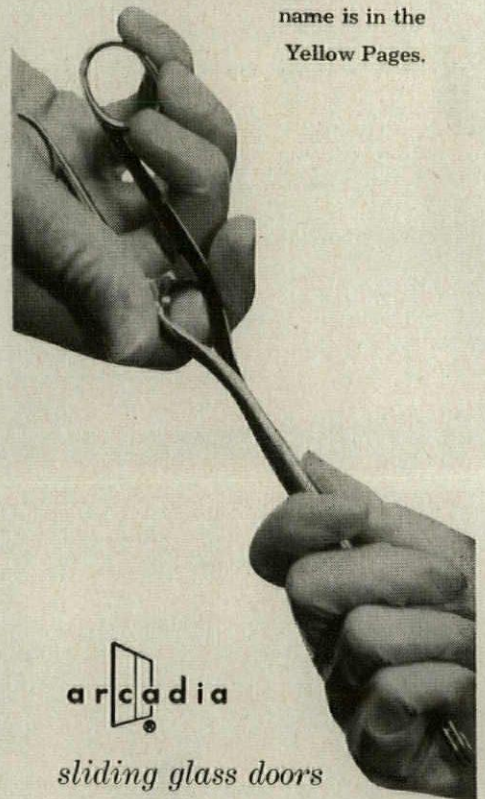
International Federation for Housing & Town Planning, annual convention, July 22-28, Vienna, Austria. Information: Charles Ascher, 838 West End Ave., New York 25, N.Y.

National Shade Tree Conference, annual convention, Aug. 20-24, Royal York Hotel, Toronto, Canada.

*skilled hands...*

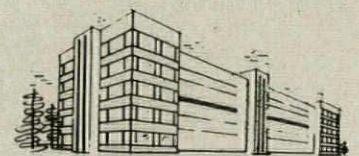
... dedicated to healing the sick and infirm, need the help of the most favorable environment to speed the healing process. That's why architects and builders turn to Arcadia sliding walls of glass to provide the cheerful and bright atmosphere that encourages unrestricted convalescence. The quiet and easy operation of Arcadia steel or aluminum sliding glass doors makes them an indispensable part of hospital construction across the country.

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**SURCO TERRAZZO** type flooring is here tastefully blended with modern furniture to provide a cheerful and congenial atmosphere to this office lobby.

Although most of our floors are waxed this one has remained unwaxed since its installation nine months ago, yet it still retains a glossy finish.

**SURCO TERRAZZO** was applied  $\frac{1}{4}$ "- $\frac{3}{8}$ " thick after the concrete slab was completely cured. In this particular installation no expansion joints were used. Drilling through the floors for telephone or electrical wiring presents no problem since **SURCO TERRAZZO** will not crack or craze from ordinary drilling operations.

For beautiful economical floors with resilience comparable to quality hardwood floors, use **SURCO** terrazzo-type material.

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for home and industry.





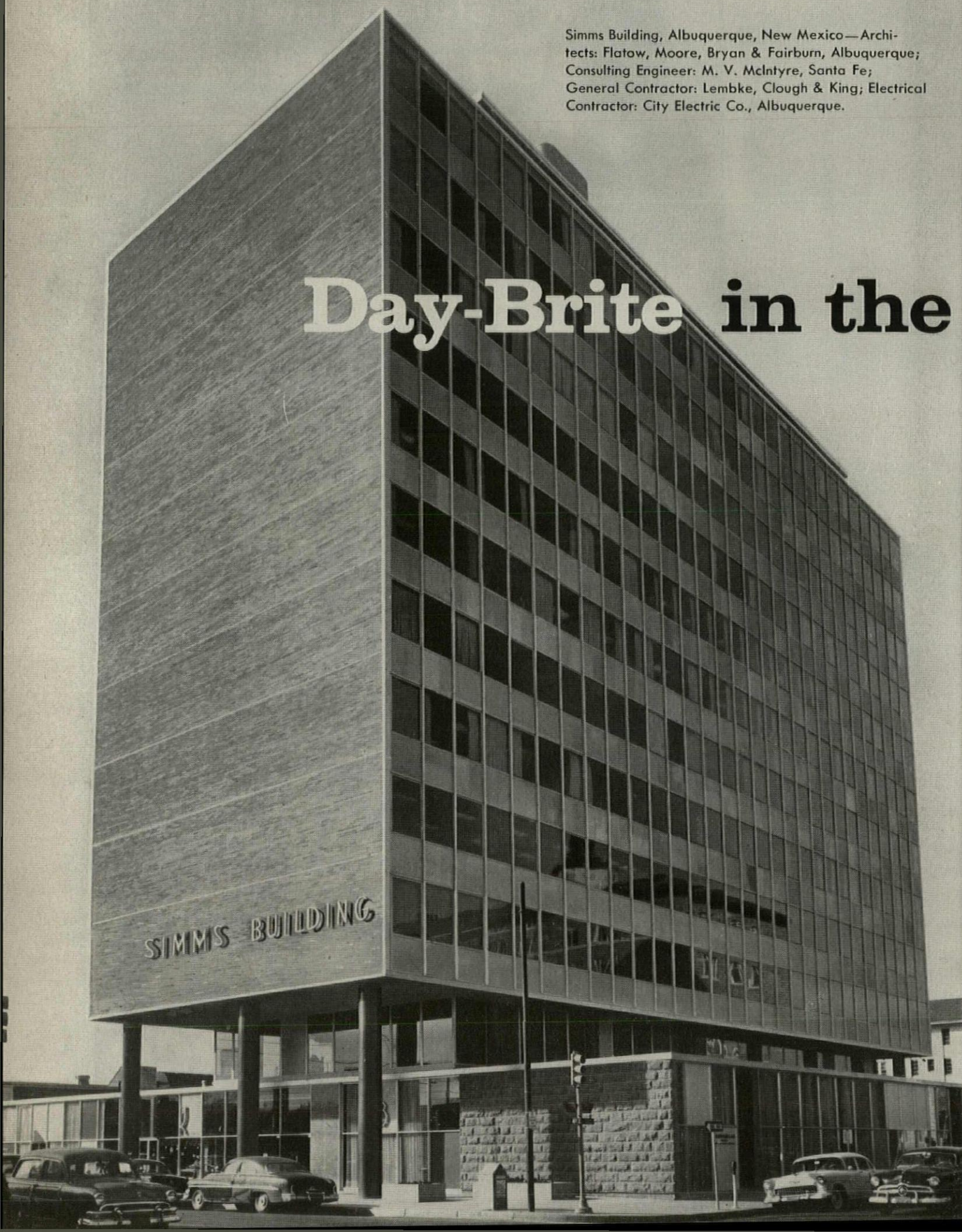
Lighting by **DAY-BRITE** makes the big difference...



Simms Building, Albuquerque, New Mexico—Architects: Flatow, Moore, Bryan & Fairburn, Albuquerque; Consulting Engineer: M. V. McIntyre, Santa Fe; General Contractor: Lembke, Clough & King; Electrical Contractor: City Electric Co., Albuquerque.

# Day-Brite in the

SIMMS BUILDING

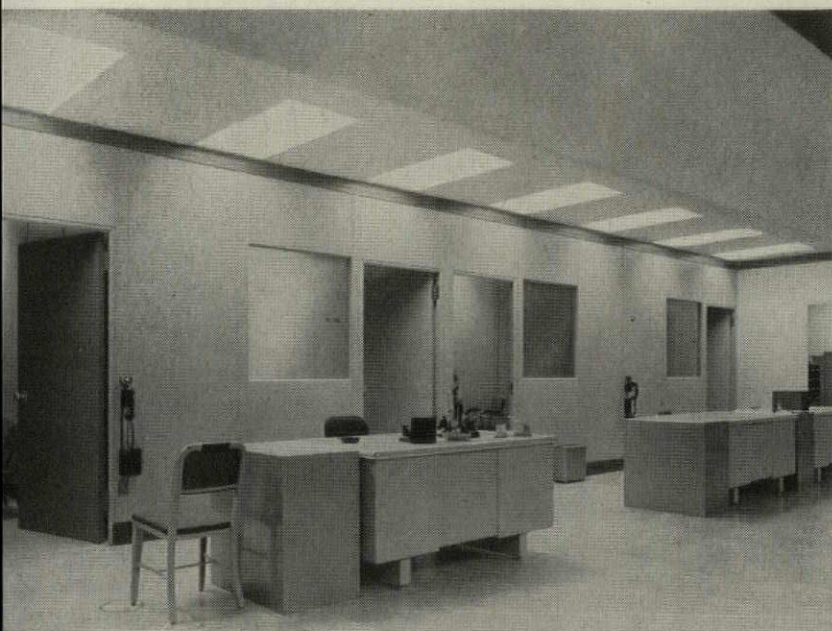




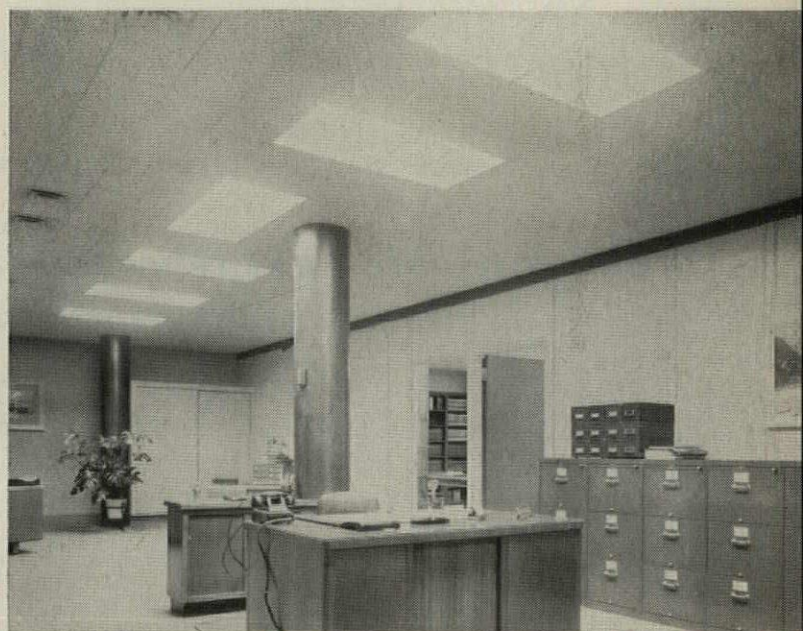
Large office spaces are well-lighted throughout, especially on desk tops.



# "Land of Enchantment"



This "straight-run" office area illustrates easy adaptability of Day-Brite Mobilex to different lighting requirements.



Quiet dignity, combined with uniform over-all lighting, in an executive office.

The most modern building in New Mexico—land of enchantment—is the recently completed 12-story Simms Building at Albuquerque . . . It is lighted by Day-Brite—another of many examples of how these modern fixtures lend themselves to modern architectural design.

The famous Day-Brite ribbed-glass enclosed MOBILEX® fixtures, recessed in acoustical-tile ceilings, were used throughout the rental-office areas. The illustrations show how these fixtures assure uniform, eye-comfort illumination on desk tops and other work areas.

Before you specify, see, examine and compare Day-Brite—look at the fixtures, not just the pictures. Your Day-Brite representative will gladly show you. Look for him in your classified phone directory. Or, send for 8-page descriptive Architectural File.

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dimensional stability...*

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Interiors are brighter because Kilnoise Acoustical Tile reflects up to 88% of the light that strikes it.

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

(JUNE 1956)

About 1,600 thesis-worn architectural students will receive degrees from accredited architectural schools this month, finally emerging from under the late-burning fluorescent lamps of their college drafting rooms into the commercial sunlight. The first big question in their minds: *What shall I do with the scale model of my thesis?* The second: *Where shall I go to work?*



The second answer may be easy. This year the lights in nonacademic drafting rooms are also burning bright. Job captains we know are saying there are more openings for draftsmen, even beginners, in the offices than there have been within the memory of man. A good draftsman is harder to find than a good secretary.

This situation has even created a certain amount of competition for graduates. In the past few weeks we have traveled several thousand miles in the country, and everywhere have found architectural educators in a state of pleased surprise at the market for their product. Recruiters, a familiar sight for years at aeronautical and chemical engineering colleges, have been appearing in architectural schools, too. Recruiting seems to be particularly competitive for graduates in city planning; there are very few *urbanists* being graduated. One thing is true of all branches of architecture, of course; the proportion of the freshman class in most architectural schools which finally graduates is very small. Attrition runs up to 95% in some schools. Marriage, design, and night marches through structural engineering courses all take their toll.

A further restriction on availability of architectural graduates was pointed out not long ago in a dinner conversation with Dean Leopold Arnaud of Columbia; he mentioned that almost a quarter of his graduates would be going off on traveling



# PARENTHESES

fellowships for a year before settling down on drafting boards. For a prospective employer the green hills and noodles of Italy are stern competition.

\* \* \*

The classic way for a practicing architect to line up prospective employees in college, of course, is to take on the pleasant chore of visiting critic. This method seems to be holding up well, and it is also reported that visiting critics are taking their criticism very seriously. This was not always true; in our own days in architectural school the students once collected all the tracing paper sketches one prominent visiting critic made at each student's drafting board up and down our drafting room. When he had gone back to New York, and the sheets of tracing paper were all superimposed, you're right, his suggestions all aligned exactly; they were the same thing. This visiting critic's ability to make repeated 3-B sketches in the exact same scale drew admiration from all.

Other methods of getting to know students while they are students include the establishment of scholarships, an admirable program which some big firms have been able to undertake. Another is a program of summer internships in offices for



sophomores and juniors. We'll be watching one of those this summer and will report on how it works out. One thing is sure—anything that can be done to bring the colleges and the profession closer is good for both.

## (REPORT)

Here are statistics indicating what happened to one group of architectural graduates after they finally did fight through the curriculum. These are among the most difficult of statistics to find, incidentally. These ones come from the well-loved Ernest Langford, director of the Dept. of Architecture at Texas A&M College for the past 35 years, who recently was coaxed into standing up and making an after dinner speech on the occasion of his retirement to a less taxing role as professor. He had

been surveying the fate of his students, and reported:

*Of the total number of 960 graduates, half of whom have graduated in the last ten years, about 100 are practicing architecture as principals, 100 as associates, 100 as draftsmen. About 300 are building contractors, superintendents of construction, estimators, salesmen of building specialties, or are employed in federal or state agencies. About 200 younger graduates are in some branch of the armed services. The other 150 graduates are scattered as teachers, doctors, ministers, or are employed by railroads, oil companies, clay products companies, steel fabricators, etc.*

Another statistic may reveal even more about the man and his students. Over the years Langford, as his alumni will testify, has helped out many students with small loans when they have run into financial trouble. Of this money, he reported at the banquet, only \$25 was outstanding—"And I think that's coming in soon." He smiled mistily.

## (THE LAST TOURIST)

If you are starting to check reservations and think yearningly of that summer trip abroad, sympathize with an architect friend of ours who found Europe so compelling last summer that he kept postponing his return to the U.S. After surviving the tough winter over there by retreating toward Africa, he at last pulled into N.Y. harbor this month, trapped finally by business obligations just when he really should be starting the other way.

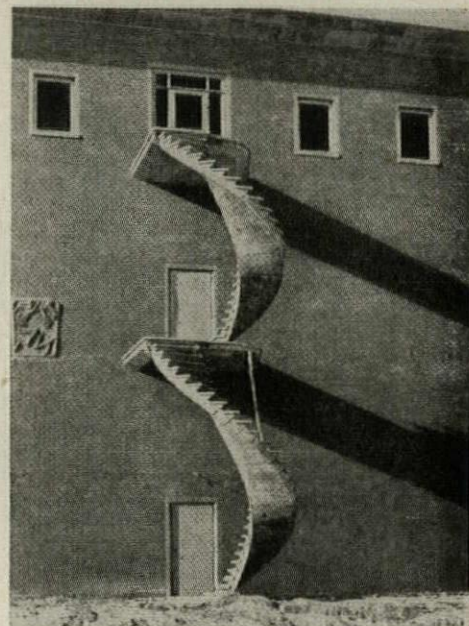
He was disconsolate when we talked with him in a dark bar the other evening. But it is true that after his long affair with the voluptuous architectural beauties abroad, he was trying manfully to reconcile himself to the plain virtues of sturdy, healthy, faithful, Miss Savings-and-Loan at home. He sighed, "Yes, it was beautiful. I loved it all, all that old stuff. Of course, to be honest, the buildings are terribly corny. Really, have you ever seen anything cornier than St. Peter's?"

He looked up brightly, then paused, and his eyes dimmed, and he added morosely, "But can you think how it would look in South Dakota? Another vermouth, waiter."

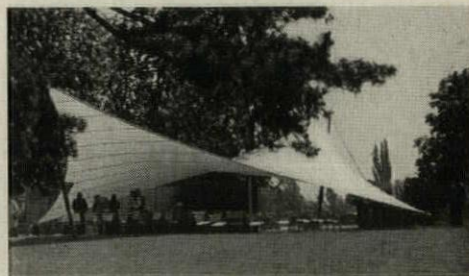


## (EQUILIBRIUM)

Here are two taut constructions from abroad: the first, a gracefully draped pair of ribbon stairways, as photographed by Cement, the Dutch magazine. These stairs



are a demonstration of prestressing technique, not actual stairs in use, it should be explained for parents with small children. Next, a suspended tent construction by



Frei Otto in Germany, which looks much the same shape as Eduardo Catalano's famous hyperbolic paraboloid house-roof in Raleigh, N. C., although it is probably almost the reverse in stresses (but could concrete be poured or sprayed on this canvas as formwork?).

On a recent trip to Raleigh we went over to admire Catalano's spectacularly beautiful house, which is tucked away at the end of a twisting woods road. Obviously the narrowness of the road has not deterred sight-seers, the bane of living in a good modern house. Tacked to a tree along the entry drive is a despairing sign, "Visitors Will Be Prosecuted."—W.McQ.

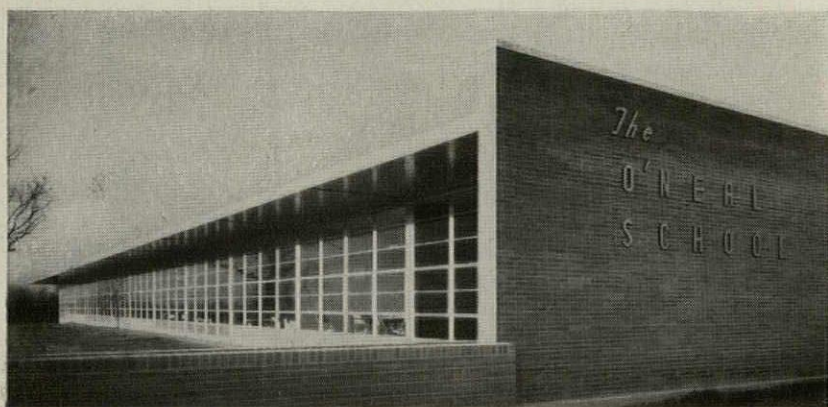


*Fenestra*

SCHOOL DESIGN  
NEWS

## Fenestra Galvanized-Bonderized Intermediate

Steel Window curtain walls give O'Neal School the



O'Neal Elementary School, Poplar Bluff, Missouri. *Architect:* Glen Drew, Poplar Bluff, Missouri. *Contractor:* George A. Gassman Construction Company, Poplar Bluff, Missouri.

One of the quality features of the schools designed by Glen Drew, AIA, Poplar Bluff, Missouri, is floor-to-ceiling curtain walls of Fenestra Galvanized-Bonderized Windows.

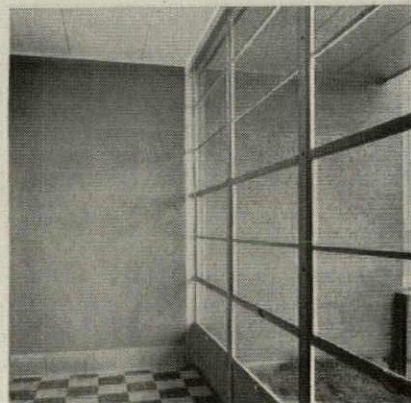
This design saves money two ways! First, during construction, the prefabricated window sections are quickly installed to enclose the building and eliminate work lost because of bad weather. Second, the exclusive Fenestra Galvanized-Bonderized finish assures minimum window maintenance cost for the life of the building. No painting is needed and the strength of steel keeps the windows weather-tight and easy to open. They will never warp, sag, swell or

stick, and the hardware stays on even with hard use.

Hot-dip galvanizing is recognized as the finest finish for steel windows. The zinc surface actually alloys with the base steel! Fenestra galvanizing is done in a special plant with automatic controls to assure a smooth, uniform surface. Then the windows are Bonderized for extra protection and to prepare them for decorative painting, if desired.

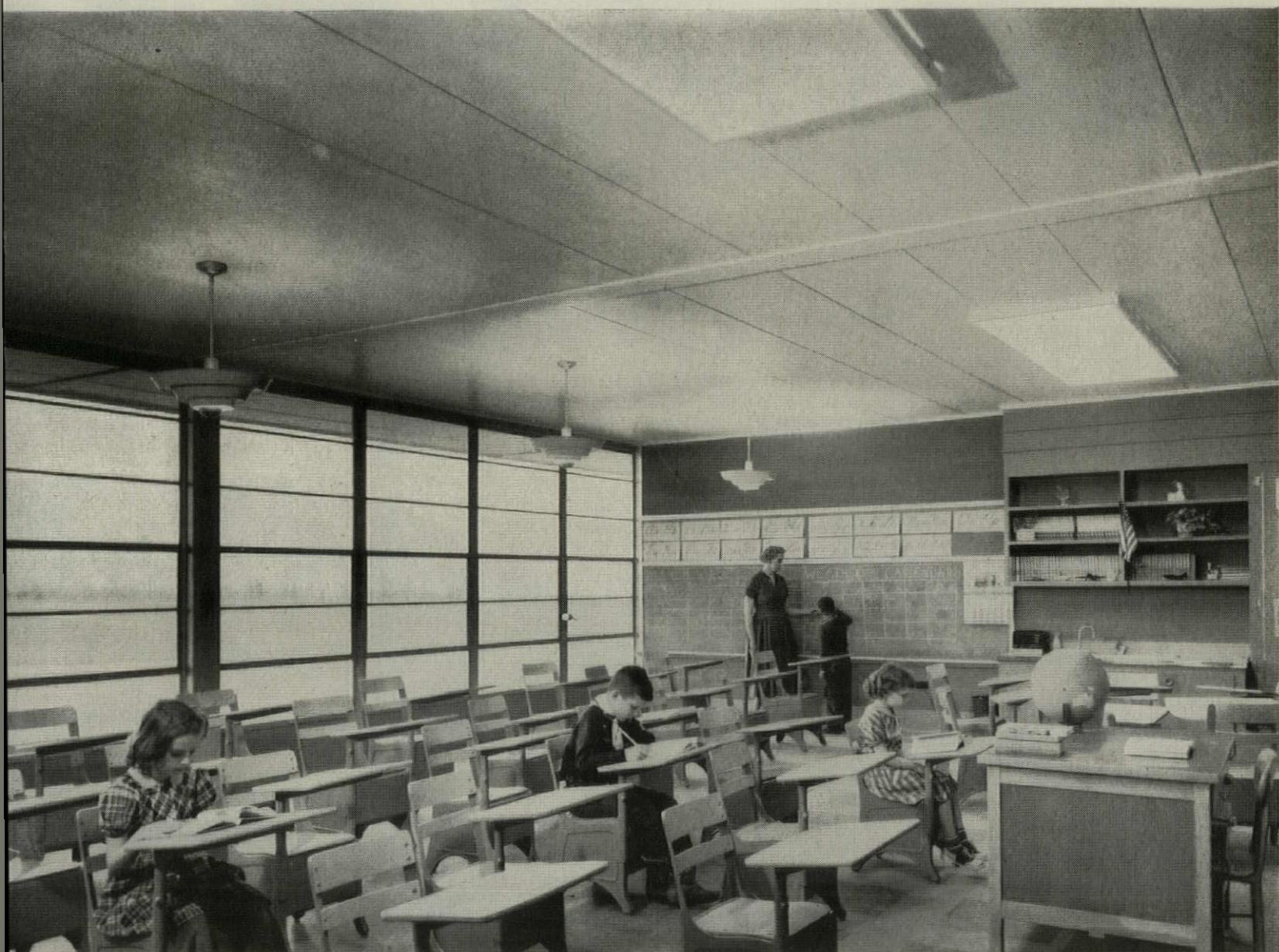
Fenestra Galvanized-Bonderized Intermediate Steel Windows are made in a wide range of styles and sizes for all types of school designs. For complete information call your local Fenestra Representative—listed in the Yellow Pages—or mail the coupon below.

**Here's how** Fenestra Galvanized-Bonderized Intermediate Steel Windows are used to form the complete exterior curtain wall for O'Neal School classrooms. They are easy to frame with the Fenestra Acoustical Building Panels used for the structural roof and overhang. The sill vent is glazed and painted in bright colors for extra decoration.



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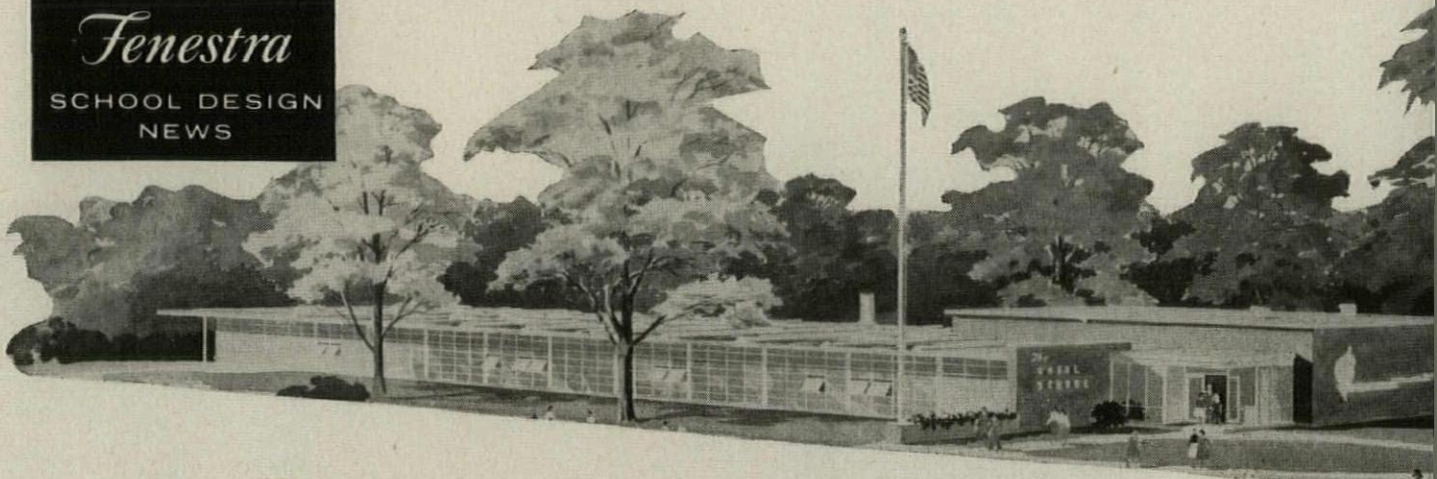
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CITY \_\_\_\_\_ STATE \_\_\_\_\_



## *Fenestra*

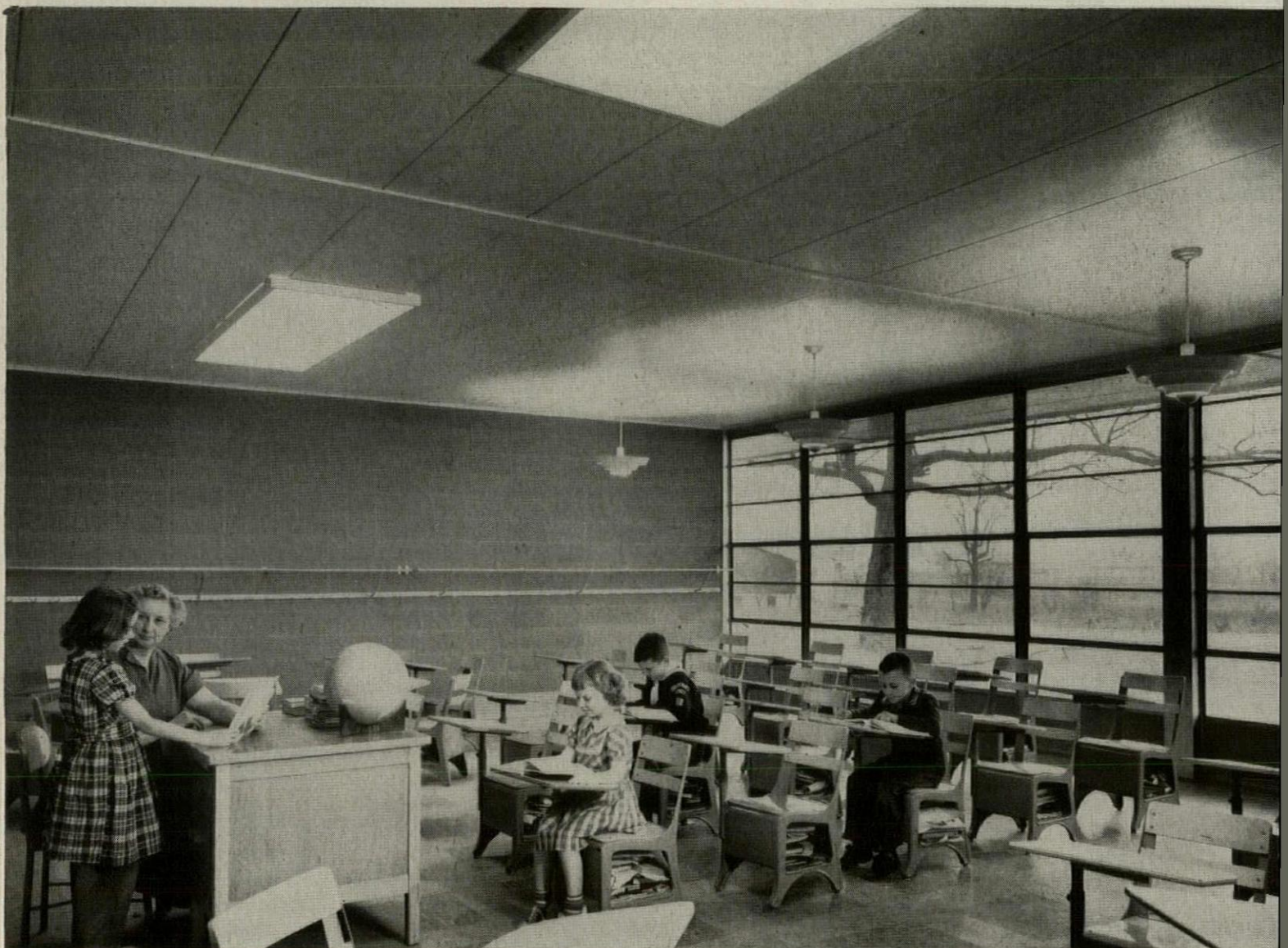
SCHOOL DESIGN  
NEWS



The O'Neal Elementary School, Poplar Bluff, Missouri, is a recent Glen Drew designed school. With an area of 15,872 square feet, it cost \$9.62 per square foot including all equipment, ready for occupancy. It was built for \$3,000 less than the original estimates, a typical result of a Drew design.

*Contractor—George A. Gassman Construction Company, Poplar Bluff, Missouri.*

The metal pan acoustical ceiling of Fenestra Building Panels is shown in this classroom at O'Neal School. Acoustical material is "built in" the cellular panels and the bottom steel plate is perforated to absorb sound. Another typical Drew detail is the skylight frame containing fluorescent tubes and diffusing element that convert it into an economical lighting fixture. Skylights are 24" wide, same as the panels, which eliminates on-the-job cutting.



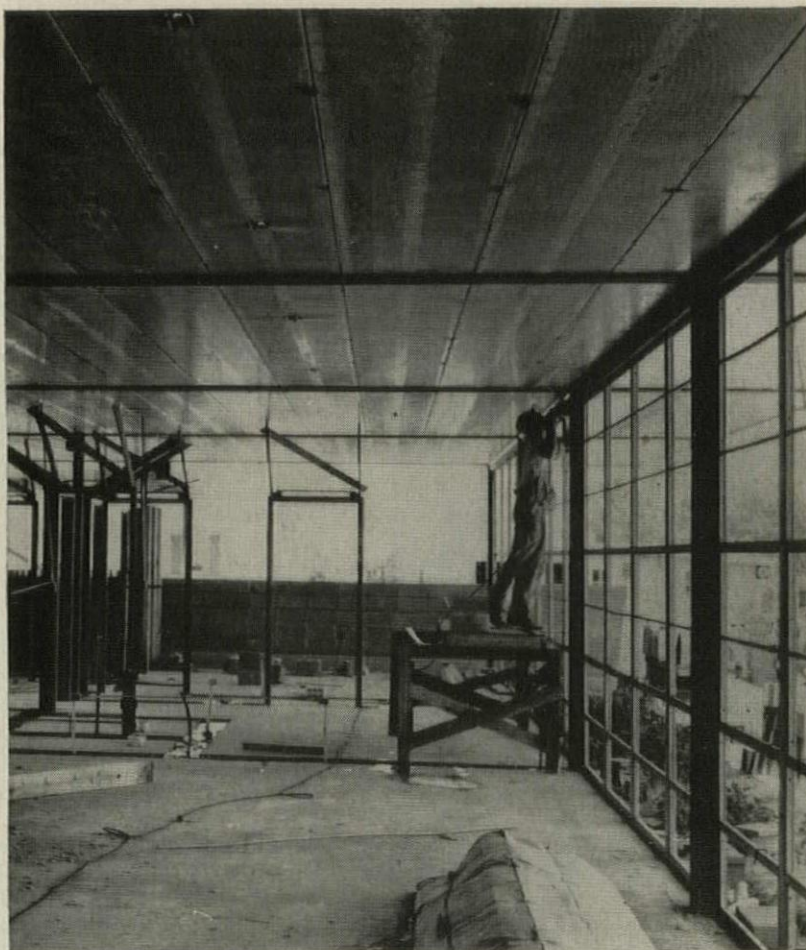


Architect  
Glen Drew, AIA,  
Poplar Bluff, Missouri,  
designs with  
Fenestra Building Panels to  
**CUT SCHOOL COSTS  
FROM  
FOUNDATION  
TO ROOF!**

Attractive, livable schools, designed for community needs, that can be built and maintained economically, are a problem in most school districts.

Architect Glen Drew, Poplar Bluff, Missouri, has shown Southeastern Missouri school boards how to get the most out of their construction dollars. As a result of economy features conceived on his drafting board, Drew has been commissioned to design 21 of Missouri's most recent schools. They have been built in the \$6.50 to \$10.00 per square foot cost range including construction, mechanical equipment and trim.

Drew's use of modular design and unique arrangements of standard building products makes the contractor's job a simple one of rapid assembly. Starting at the top, he uses Fenestra\* Acoustical Building Panels for the roof. These 24" wide cellular steel panels span up to 30 feet and combine the structural roof deck with a metal pan



This construction photo of O'Neal School shows how Architect Drew uses the fast erection of Fenestra Building Panels and curtain walls of Fenestra Galvanized-Bonderized Steel Windows to close in a school quickly. This allows other trades to work "indoors". Contractors on Drew jobs can eliminate "down time" for weather as a contingency.

acoustical ceiling in one lightweight, quickly erected building unit. The five different materials required to duplicate this construction could not be bought and erected for the cost of this prefabricated modular unit. *Only one trade is required for installation!*

Maintenance costs are reduced, too. The ceiling may be washed or repainted whenever necessary, without affecting acoustical efficiency. It will never sag, fall or stain as will many applied acoustical materials.

By using Fenestra Building Panels to span interior masonry bearing walls, scarce structural steel can be reduced to a minimum. Plain panels may be combined with the acoustical panels for overhangs and other areas.

If you are looking for the key to low-cost, high-quality school design and construction, be sure to get the facts on Fenestra Building Panels, today. Call your local Fenestra Representative or mail the coupon below.

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## LETTERS

### PRODUCTS INFORMATION

#### Forum:

As a builder subscriber to your magazine, it would be very convenient if you had a reader's request form for new products described on your editorial pages. It would save your subscribers a great deal of time in obtaining further information.

DANIEL A. WEST, *president*  
Jodan Construction Corp.  
Malverne, N.Y.

• Reader West and others who want further information on new products will find a new "products information coupon" at the end of the products department.—ED.

### DESIGN CRITICISM

#### Forum:

I cannot refrain from making three comments on the article "Three Critics Discuss M.I.T.'s New Buildings" (AF, March '56).

1. Bruno Zevi's criticism is excellent. Whether one agrees with it or not (and I do) it is forthright, authoritative and unequivocal. J. M. Richards takes a step in the approved modern direction of "be nice to everybody," although he has allowed some meaning to enter his criticism. Dr. Giedion comes nearest the current ideal of concealing the lack of anything to say by a freshet of words showing familiarity with the names of people who may or may not have something to say.

2. Your note that the auditorium's acoustics "may evoke new kinds of [musical] composition" provides the ideal example of modern topsy-turvy, strained thinking (?) well expressed in the following limerick:

A scientist, living at Staines,  
Is working with infinite pains  
To invent a new sound  
Which he hopes, when it's found,  
Will travel much faster than planes.

3. Your statement that "The discussion [by these critics] should not be too difficult for the intelligent reader to follow" I find patronizing, condescending and extremely offensive. Am I mistaken in believing that the FORUM is directed to professionals with esthetic training—and even authority? Is it, instead, directed to fifth graders who need to be let down lightly into big words and abstract ideas?

BERNARD HEATHERLEY, *architect*  
Penfield, N.Y.

• Yes, Reader Heatherley is mistaken: while FORUM's readership is soundly based on a large group of professionals, its unique job is to spread esthetic awareness throughout a much larger group, including building owners. While well-educated, FORUM's nonprofessional audience sometimes has difficulty understanding the jargon of some architects and architectural critics.—ED.

#### Forum:

Your critique of the M.I.T. buildings (AF, March '56) gave me my first op-  
*continued on p. 56*

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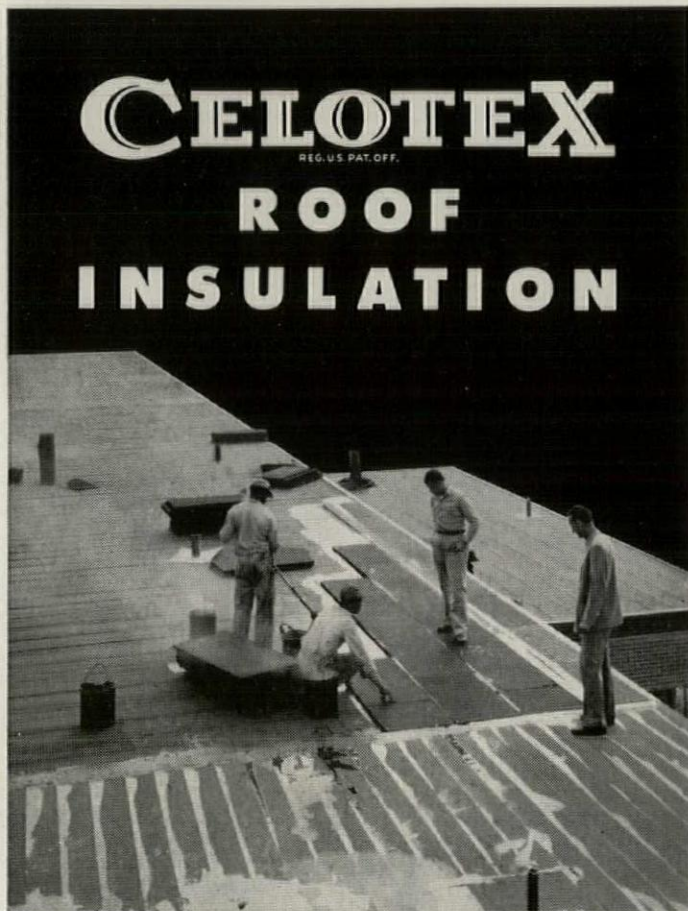
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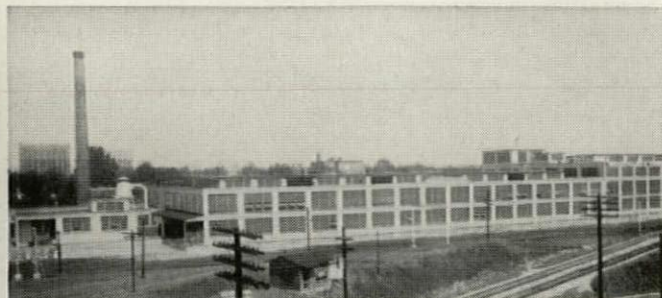
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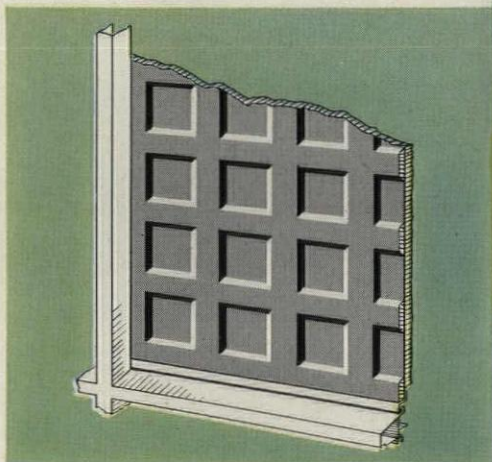
The recently completed 12-story First Security Bank building in Salt Lake City clearly illustrates the unusual architectural freedom you can gain with durable porcelain enameled curtain wall construction.

Ribbed panels effectively accentuate the vertical lines of the design. Their reddish-brown and off-white colors create a pleasing contrast. And further variation in form and color was achieved by the use of waffle-patterned, porcelain enameled spandrels in a warm gray.

Besides lifetime beauty, these durable curtain walls also offer you opportunities to cut costs and gain usable space. For example, the code-complying wall panels, less than 2 inches thick, give First Security the greatest possible floor area. And being light-weight and easy to erect, curtain walls require less structural steel and are installed in a fraction of the time required for masonry construction.

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If you would like additional information on this modern architectural development, write us at the address below.



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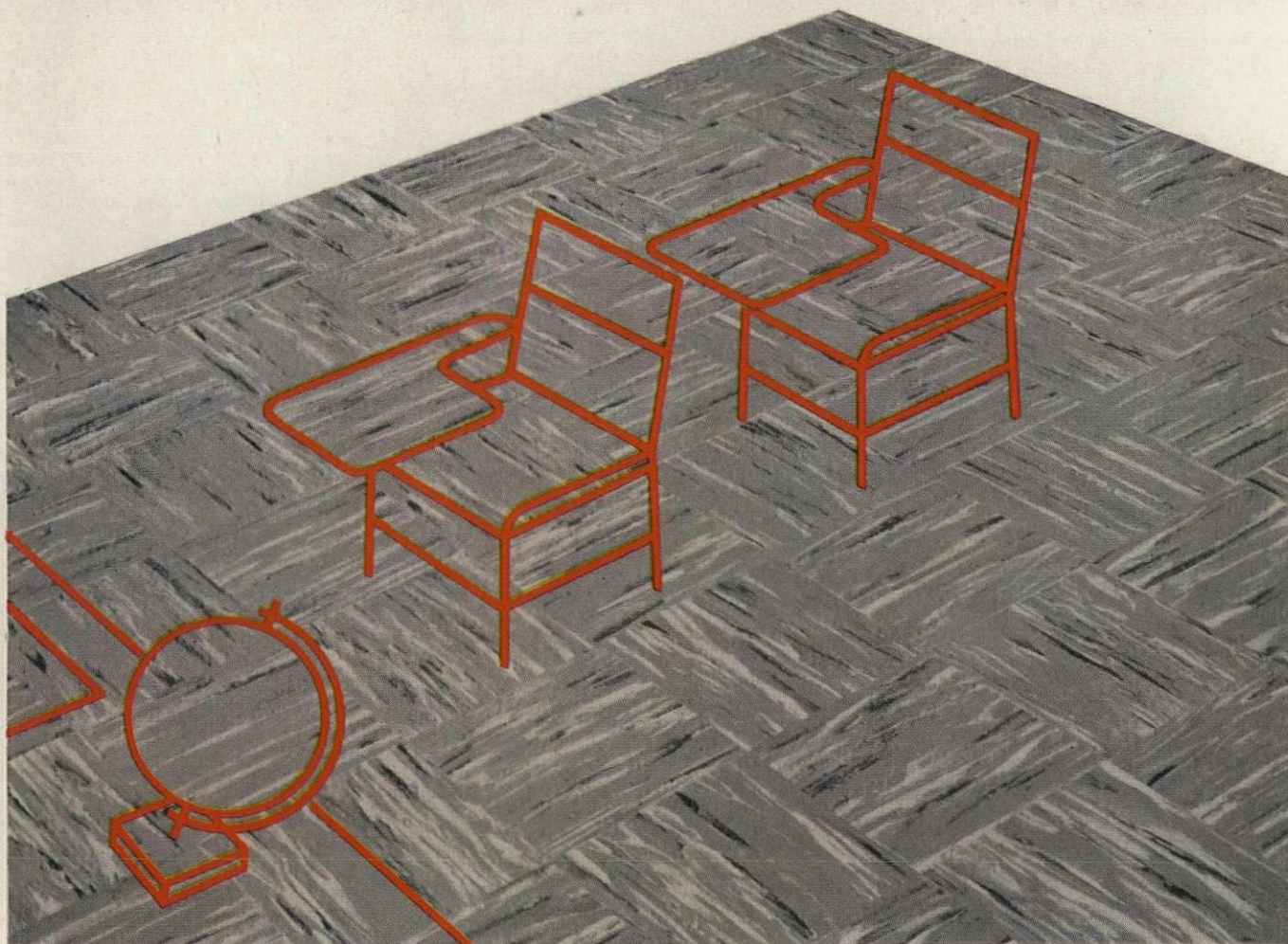
And Vina-Lux makes light of maintenance, too — doesn't take muddy tracks, grease or chalk dust seriously, and its smooth, tightly-textured surface keeps that fresher, cleaner look for years without the need of wax. When your problem is school flooring, you'll discover new designing freedom in Vina-Lux. Write for information, samples and color chart.

*Pattern shown: Kodiak*



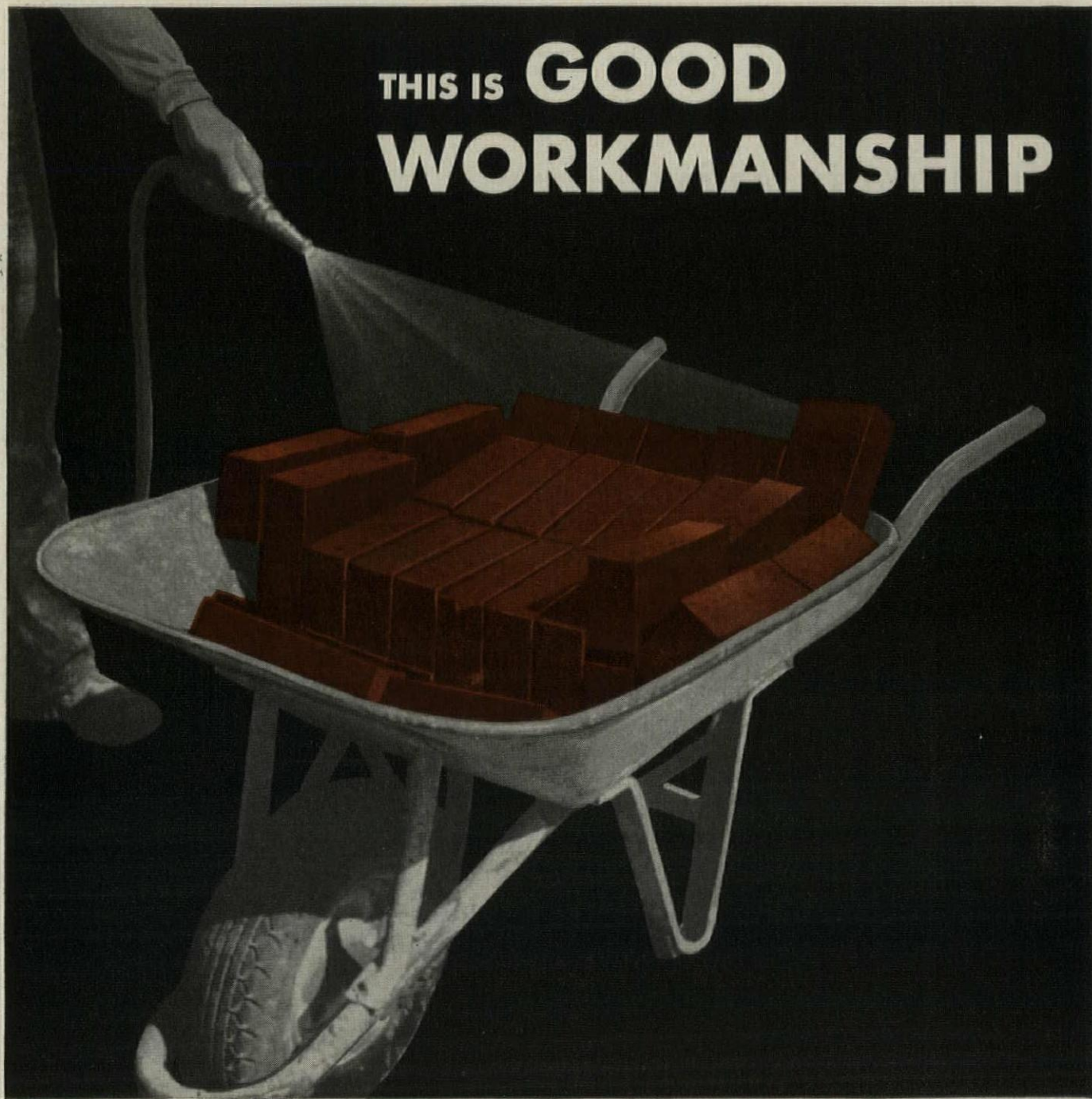
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Expect trouble when dry, absorbent brick are placed in the wall. If their rate of absorption is too high at the time they are laid, they will suck the water out of the mortar too fast, even though the mortar has high water-retaining capacity. The result may be a poor bond, and a leaky wall.

Brixment mortar has high water-retaining capacity. It resists the sucking action of the brick. It stays plastic and workable longer. Brixment mortar therefore provides added protection against excessive absorption—but even when Brixment mortar is used, absorbent brick should still be wetted.

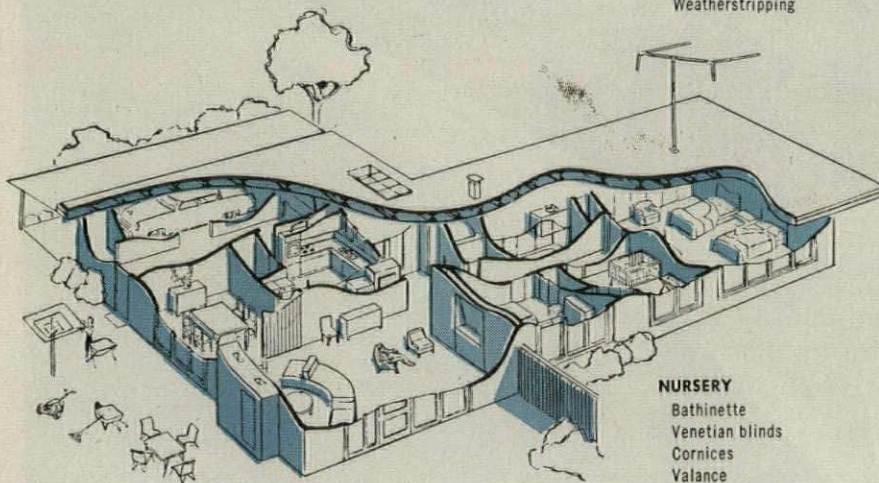
In addition to great plasticity, high water-retaining capacity, and bonding quality, Brixment mortar has great resistance to freezing and thawing, and freedom from efflorescence. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

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## LETTERS *cont'd.*

portunity in a number of years to read an intelligent evaluation of the design pertinent to contemporary architectural structures. This sort of literary criticism is rather stimulating, healthy and unique. Such a contribution by the FORUM represents this magazine's interest in the refinement of our architecture. The discussion of the commendable along with the weak attributes in our contemporary architecture will certainly be of great interest to professional engineers, architects, teachers, students and persons interested in architecture. This exchange of philosophical ideas and criticism will reflect in a more mature architectural development in all levels of the profession.

We look forward to more of these articles in the future.

DAVID L. ARDITO, *assistant professor*  
Department of Architecture  
University of Notre Dame  
Notre Dame, Ind.

### SCHOOLHOUSE ECONOMIES

Forum:

Your editorial on "False Schoolhouse Economies" (AF, March '56) is one of the best and most concise statements of the problem that I have seen thus far. In fact, I think that you should consider reprinting it for distribution where it would do the most good, particularly for public consumption and also for school boards and educators.

JOHN W. MCLEOD, *architect*  
McLeod and Ferrara  
Washington, D.C.

Forum:

Your editorial is a much needed clarification. We hope you can reprint it to counteract some of the people who are sabotaging professional services for school design—the best bargain currently available in America.

ERIC PAWLEY, *architect*  
Research secretary  
Staff Executive Committee on School Buildings  
American Institute of Architects  
Washington, D.C.

### FANTASTIC ARCHITECTURE

Forum:

Your "Architecture in America" series has been splendid. I, too, hope John Clarence Laughlin's "whole caboodle" of unusual pictures finds a publisher. With buildings coming down around our ears as "Progress" stomps rampant across our land, unless these houses are photographed there will be a sad missing link in our flamboyant past.

MAXINE G. TRIVELY  
Librarian, Architectural Library  
Clemson College  
Clemson, S.C.

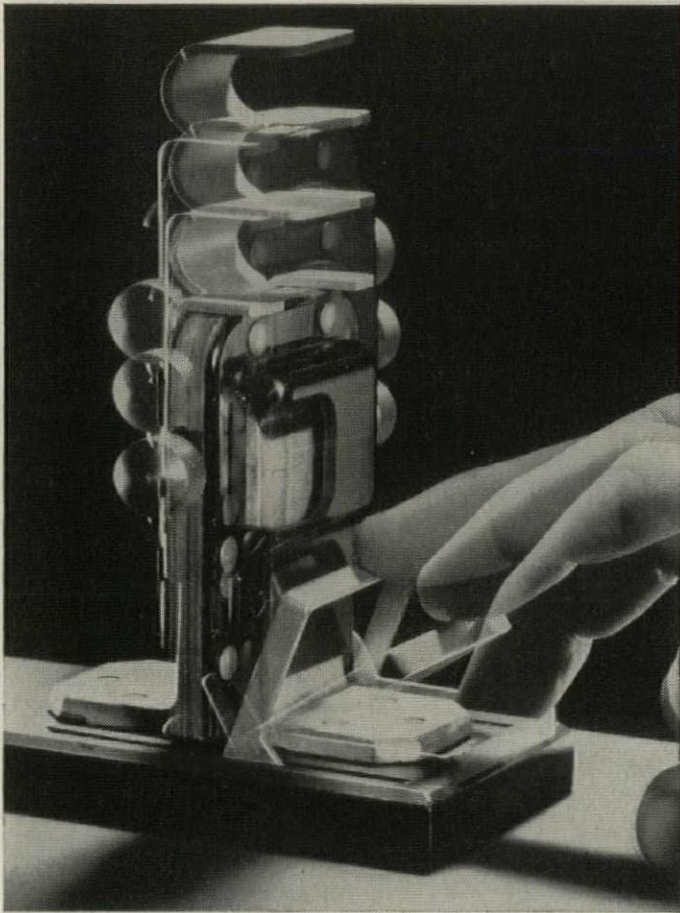
Forum:

"Fantastic Architecture" (AF, Apr. '56) is one of the most charming things I have seen published in quite some time.

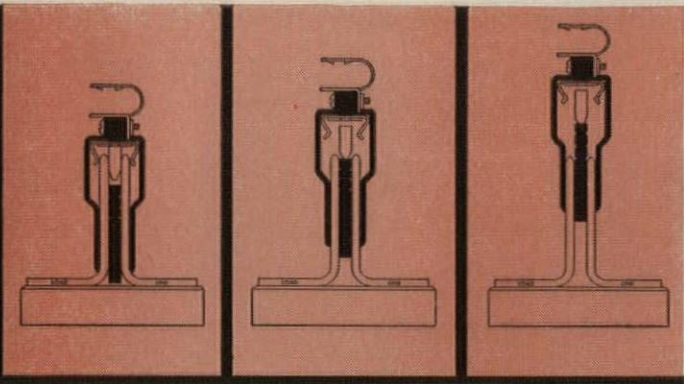
However, it is my considered opinion that one photograph went astray. I con-

*continued on p. 58*





The Vacu-Break action is shown by a manually actuated demonstration model of a switch-head. A section of the arc-restricting chamber has been cut away to picture the operation.



1. "ON" POSITION—head has been thrust down on stationary line and load contacts. Contacts engage a self-aligning copper slug, completing circuit and reinforced by the Clampmatic pressure spring to assure a bolt-tight contact.

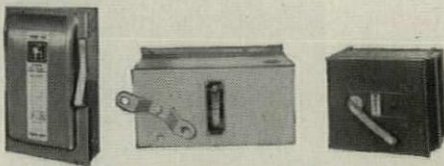
2. SWITCHING TO "OFF"—head is carried swiftly upward by operating ball, aided by Clampmatic pressure springs. Arcs are smothered instantly because oxygen and ionizable gas in chamber are restricted.

3. FULL "OFF" POSITION—stationary line and load contacts are completely covered and remain in slots of chamber, assuring positive alignment and maximum safety. Chamber also acts as seal against dust and dirt.

## Switch to Vacu-Break Clampmatic

**FOR SWITCHING SECURITY,  
LONGER PRODUCT LIFE**

**Bulldog design controls arcing, eliminates costly maintenance!**



Safety, efficiency, economy! When you want these operating advantages in safety switches, bus plugs, power panels and switchboards, turn to Bulldog Vacu-Break Clampmatic®.

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minimize pitting and burning—thus eliminating maintenance caused by excessive arcing. (2) Clampmatic action provides bolt-tight contact pressure. (3) Dependable switching mechanism guarantees positive switching security.

A switch to Vacu-Break Clampmatic is a switch to greater safety, longer product life, no costly maintenance. Consult your qualified electrical contractor or Bulldog field engineer, or write Bulldog Electric Products Company, Detroit 32, Michigan.

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## LETTERS *cont'd.*

sidered the "structural palm trees" gracing the striking Beverly Hilton elevation [same issue] another extreme example of "inner-need functionalism" and certainly should be included in "Fantastic Architecture." Organic flying buttresses? What next?

JACK CRAYCROFT, architect  
Pacific Grove, Calif.

### Forum:

Congratulations on the design for the cover on the April issue. The restraint and quality are new and refreshing.

JULIAN E. KULSKI, architect  
Northeast Planning Associates  
Charlotte, Vt.

### Forum:

I enjoyed "Fantastic Architecture" in the April FORUM.

You have dated the San Francisco firehouse (Engine Co. 15) 1880. But 1880's would have been more accurate. Research in municipal reports of San Francisco during recent years indicated July 30, 1884 as the date the Board of Fire Commissioners recommended construction of a firehouse on California St. After approval by the board of supervisors, construction proceeded so that it was completed during the summer of 1885 and accepted by the Board on Aug. 20, 1885.

You may be interested in the following



treatment and photograph of it in my article, "The Gothic Revival in California, 1850-1890," in the Oct. '55 issue of the *Journal of the Society of Architectural Historians*:

"In the spirit of travesty on the Gothic romance and satire on the Gothic Revival architect expressed in Lowell's poem, "The Unhappy Lot of Mr. Knott," is Engine Co. 15 on California St. in San Francisco. Built in 1884, it may be regarded as a clever burlesque of Gothic decorative detail. The symmetrical first and second stories are piquantly accented by the asymmetrically disposed tower. The tri-

*continued on p. 62*





*Fountain luncheonette in store of L. Bamberger & Co., Plainfield, N. J.*

## Bastian-Blessing Food Fountain

### Installed in L. Bamberger Store

It isn't all done with mirrors here, although they make a wall and add to the attractive, spacious feeling of this six-bay installation in the Plainfield, N. J., store of L. Bamberger & Co. The fast, pleasant food service at a profit is accomplished by the unusually effective combination of practical efficiency and modern beauty of Bastian-Blessing equipment.

Service at the six counter bays which seat 48 people is speeded by other Bastian-Blessing units. There are, for example, two 30-gallon Fast-Serv fountain units (see panel at right), four refrigerated base units, two pass-through refrigerated display cases that divide the service opening, two sandwich stands, a griddle stand, and a food warmer. The automatic conveyors and the dishwashing equipment were also furnished by Bastian-Blessing.

Fountain and food service in department stores frequently calls for the solution of difficult space, efficiency and cost problems. Here again, a complete line of equipment and an unequalled planning service are your best assurance of getting right answers to your specific needs. For information about plans or for catalogs, write The Bastian-Blessing Co., 4205 W. Peterson Ave., Chicago 30, Illinois.

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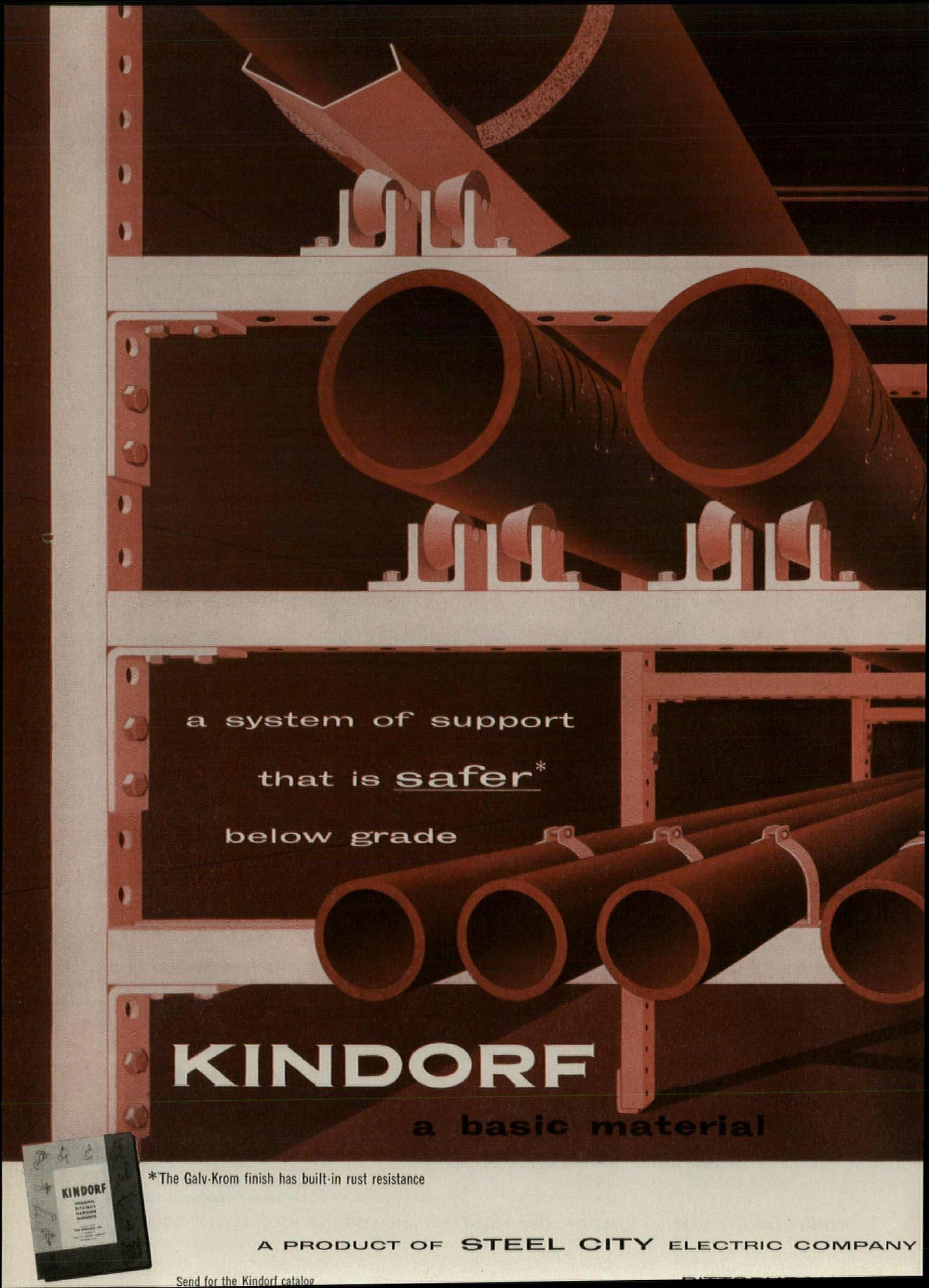
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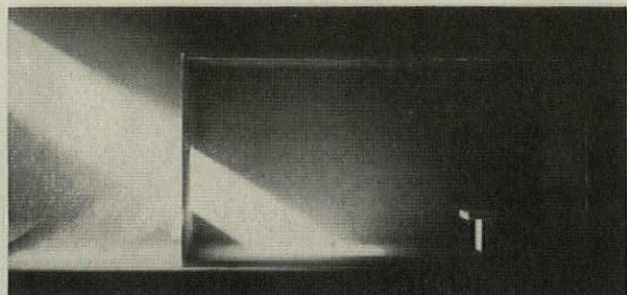
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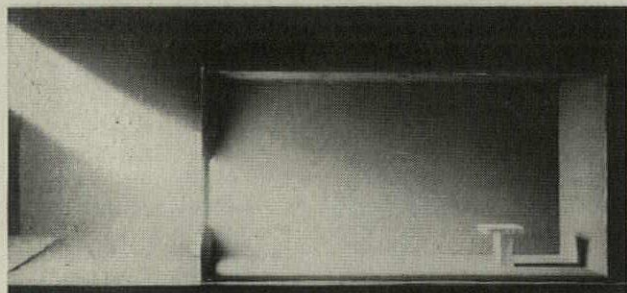




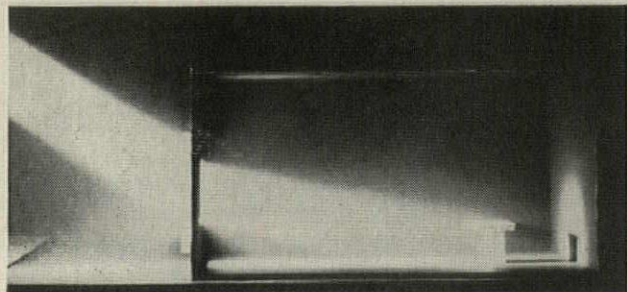
## THERE'S MORE TO daylight THAN MEETS THE EYE



"Smoke box" photo—window glazed with clear glass.



Diffusing glass in smoke box.



Directional diffusing glass in smoke box.

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You'll get a good idea of how wrought iron pipe's durability has served and saved for others by reading over our bulletin, *Piping for Permanence*. We will be glad to send you a copy, or answer any specific inquiry that you might have concerning the use of wrought iron in corrosive services.

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**LETTERS** *cont'd.*

partite façade consists of a central portal surmounted by a transom window in the form of a quasi-Tudor arch replete with tracery which is flanked by side entrances with quatrefoils above. The triple disposition is reflected in the upper story separated from the lower by a horizontal course decorated with paterae. The gabled, crenelated parapet is dominated by a central finial and flanked by two corbelled finials—all in the form of fire hydrants, the center one of which is capped with a fireman's hat—while portrait heads of former San Francisco fire chiefs appear at the uppermost left and right just under the parapet as grotesques!"

LYLE F. PERUSSE  
*The University Library  
University of California  
Los Angeles, Calif.*

**PARKCHESTER'S DESIGN BOARD**

Forum:

Your article on "The Contractor" (AF, Feb. '56) makes certain criticisms of Parkchester, Metropolitan Life's huge prewar housing project in The Bronx. A statement of what actually took place might help to set the matter straight.

Metropolitan's President Frederick Ecker wished to help the City's housing conditions, and to do it in a large way. He had Eken in mind as the builder, but the first man he needed was an architect. He asked Architect Shreve [Harold, not Tom as FORUM called him.—ED.] because of his reputation to advise him on the best procedure.

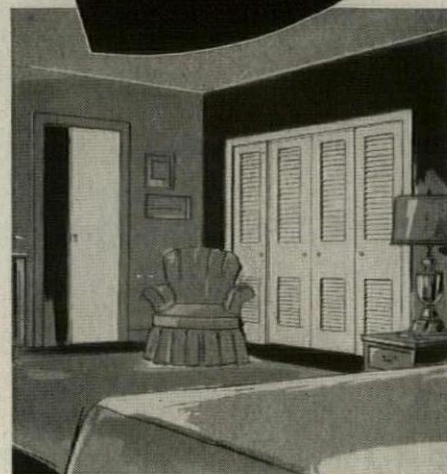
Eken did *not* propose a board of design, *nor* did he propose that it be set up by the builder *nor* in the builder's office. The board of design was *not* a "misapplication," it functioned extremely well. At no time was the procedure "nice and easy" or "incomplete."

In Shreve's office a building committee was normal practice. The Parkchester board of design was a building committee, a remarkably complete and competent group of experts. The board started at once to work out the owners' problems, and the architects (three of them on the board and many others as assistants) started to design the building and site plans. The two machines functioned side by side, the architects submitting designs to the board, and the board approved them with a few changes. The builder's position was as chief expert on construction and watch-dog of the budget for the owners.

The difference between the normal setup of owner, architect and builder and that of the Metropolitan, architect and board of design, was in the more perfect functioning of the latter. As it operated, the owners had not only the best brains in the city to keep them informed, but everyone knew what everyone else was doing and there was a minimum of delay in making decisions. The design and produc-

*continued on p. 66*

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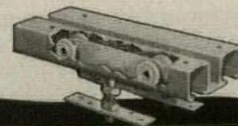
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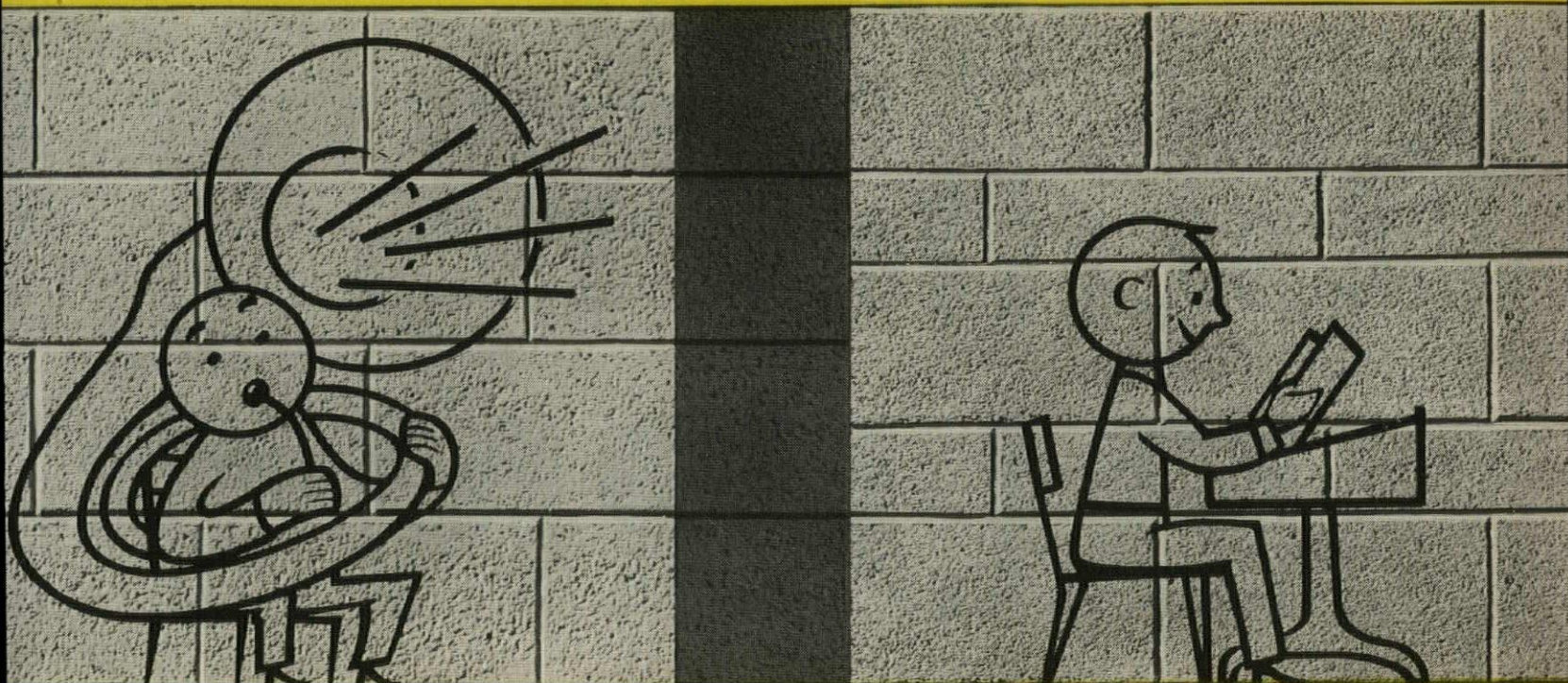
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**And the band played on...**



## **thanks to sound-absorbing Concrete Masonry**

**E**XPOSED Concrete Masonry interior walls are a sure cure for the sound problems in schools. Unpainted block will absorb up to 68% of noise in classrooms and corridors. This means a quieter, more productive school building.

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But the biggest plus of all is the lowest in-the-wall cost of any building material.

Call your local block producer for the whole story about Concrete Masonry. He is a member of NCMA and a good man to know.



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build to  
BURN?**





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GALVANIZED REINFORCING LATH

*with gypsum lath and plaster  
multiplies fire resistance of buildings*

Fire safety costs so little.

Actually, walls and ceilings of gypsum lath and plaster, reinforced with Keymesh, cost less than most substitutes. Just see how they *multiply* fire safety.

Take open-web steel joist floors and concrete slabs with gypsum ceilings, for example. With  $\frac{1}{2}$  inch of lightweight aggregate plaster, reinforced with Keymesh-like lath, a fire endurance limit of 3 hours and 28 minutes was obtained.\*

Without reinforcement, the limit was 55 minutes. Keymesh adds 2 hours and 33 minutes to the fire endurance limit because it holds the plaster in place. When lath and plaster were omitted,

the fire endurance limit was only 7 minutes.

You'll find equally important protection when simple columns and beams of buildings are protected in this same way. It's so good that insurance companies cut their rates because of the greater fire safety. Actually, these lower rates quickly pay the cost of the lath and plaster.

Think of it. Greater fire safety. Acoustical properties, if you wish. Durability. Low maintenance. Beauty. Takes any decoration. Yet... this fire safe construction costs less than most substitutes. And it can slash insurance rates enough to quickly pay for the plastering.

## *Actual Fire Test Shows Amazing Value of Keymesh-Type Plaster Reinforcement\**

Ceiling of gypsum lath — **KEYMESH**-type reinforcement and  $\frac{1}{2}$ " gypsum plaster with lightweight aggregate

Ceiling of gypsum lath and  $\frac{1}{2}$ " lightweight aggregate gypsum plaster

Ceiling unprotected

Fire endurance limit

**3 hrs. 28 min.**

**55 min.**

**7 min.**

\* See Building Materials and Structures Report 141, National Bureau of Standards; "Fire Endurance of Open-Web Steel-Joist Floors with Concrete Slabs and Gypsum Ceilings"

## KEYSTONE STEEL & WIRE COMPANY

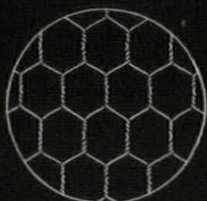
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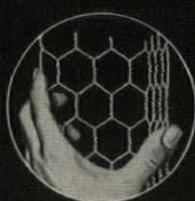
Use these three keys to stronger plaster

3 KEYS TO  
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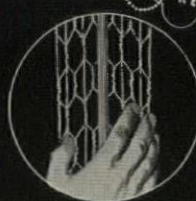
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KEYBEAD



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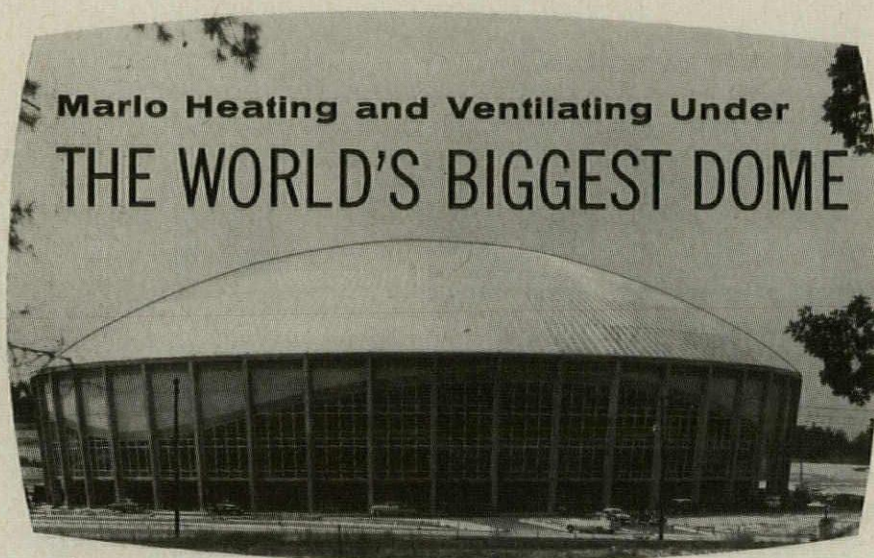


**KEYCORNER** strip lath, pre-formed to fit snugly in corners. Lies flat when applied to joints. Galvanized to prevent rust streaks.



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## 22 Ceiling Units Installed In Massive 13,500-Seat Coliseum

Comfort conditioning the cavernous interior of this unusual new structure in Charlotte, N. C., is a man-size job. The huge aluminum dome, easily the world's largest at more than 332 feet in diameter, covers an area of two acres.

Heating and ventilating the new coliseum is accomplished by 22 Marlo Ceiling Units, with a combined capacity of 336,800 cubic feet per minute.

The building was designed by architect A. G. Odell, Jr. General contractor was Thompson & Street Co., mechanical contractor was Hopkins, Hicks and Ingle, and engineer was Mechanical Engineers, Inc., all of Charlotte.

View at right shows some of the 22 Marlo Heating and Ventilating Units installed in the new coliseum. Write today for more detailed information on these and other Marlo air conditioning units.



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## LETTERS *cont'd.*

tion of drawings was entirely under control of Shreve, Clarke and Clavan, all architects.

A. L. HARMON  
White Plains, N.Y.

• FORUM welcomes this first-hand description by Reader Harmon of Parkchester's board of design operation as it looked to him. Architect Harmon is a former partner of the late Harold Shreve.—ED.

### MAIN STREET

Forum:

Your excellent round table report, "Modernizing Main Street" (AF, Feb. '56) is a stimulating and very useful statement.

One of the most significant things that is occurring in the thinking now being directed toward the revitalization of the "Main Street" for cities of all sizes is the accepted concept that "Main Street" must be provided with the amenities of the modern shopping center or it will be completely incapable of competing with decentralization now taking place.

Our "Main Street" business areas have barely grown in their thinking beyond the cow-town days. They still contain most of the old false-front concepts and have not adjusted to the motor age. This is more than a mere rehabilitation job. It is a city planning job. When grass grows on "Main Street" again, it will be an economic success. But grass cannot be permitted to grow *behind* "Main Street." Shade trees over the paved parking areas would be more useful.

CARL FEISS  
Planning and urban renewal consultant  
Washington, D.C.

Forum:

Your article, "Modernizing Main Street," with its distinguished opinions and suggestions, is a unique and much needed revelation of the psychology of small retailers. Its proposals for overcoming the merchants' mental block were indeed interesting. From my experience in designing more than 1,500 retail stores throughout the country, I have worked out several ways to remove this blockade. One method is the carefully planned, step-by-step modernization program, tailored to the retailer's needs and budget. Another is the estimation of his potential sales. Such a statistical analysis, completed prior to any architectural planning, helps the retailer obtain a modernization loan and assures him of getting maximum returns from every square foot in his renovated store.

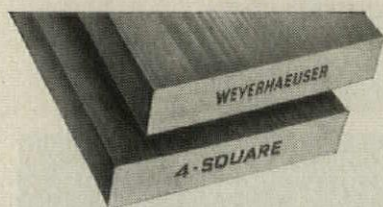
CHARLES S. TELCHIN, architect  
New York, N.Y.

### DESIGN COMPETITION

Forum:

World Fairs, exhibitions and competitions are important steps on the road of  
*continued on p. 72*





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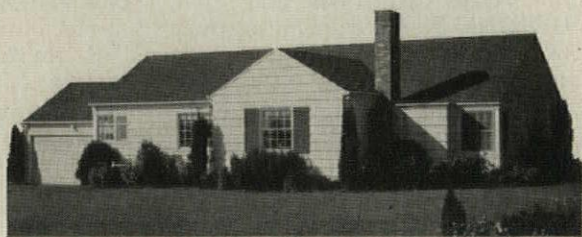
## A LIVING ROOM PANELED

## WITH West Coast Hemlock SIDING

Because Hemlock is so beautiful, the architect designing this modern home selected Hemlock siding for the interior. Its light, warm color mellows with age. Its straight grain and fine, even texture are pleasing to the eye. These characteristics, plus light weight, stiffness, and high nail-holding power, make Weyerhaeuser 4-Square West Coast Hemlock ideal for a wide range of uses. Freedom from pitch, loose knots, and splinters adds to its workability. Natural finishes or paints go on beautifully, and hold very well.

That's why this species often is called the "Ability Wood." For framing and sheathing, siding, molding, flooring, paneling, and scores of other uses, West Coast Hemlock has few equals.

More and more architects are specifying this versatile Weyerhaeuser 4-Square West Coast Hemlock. Write for descriptive literature.

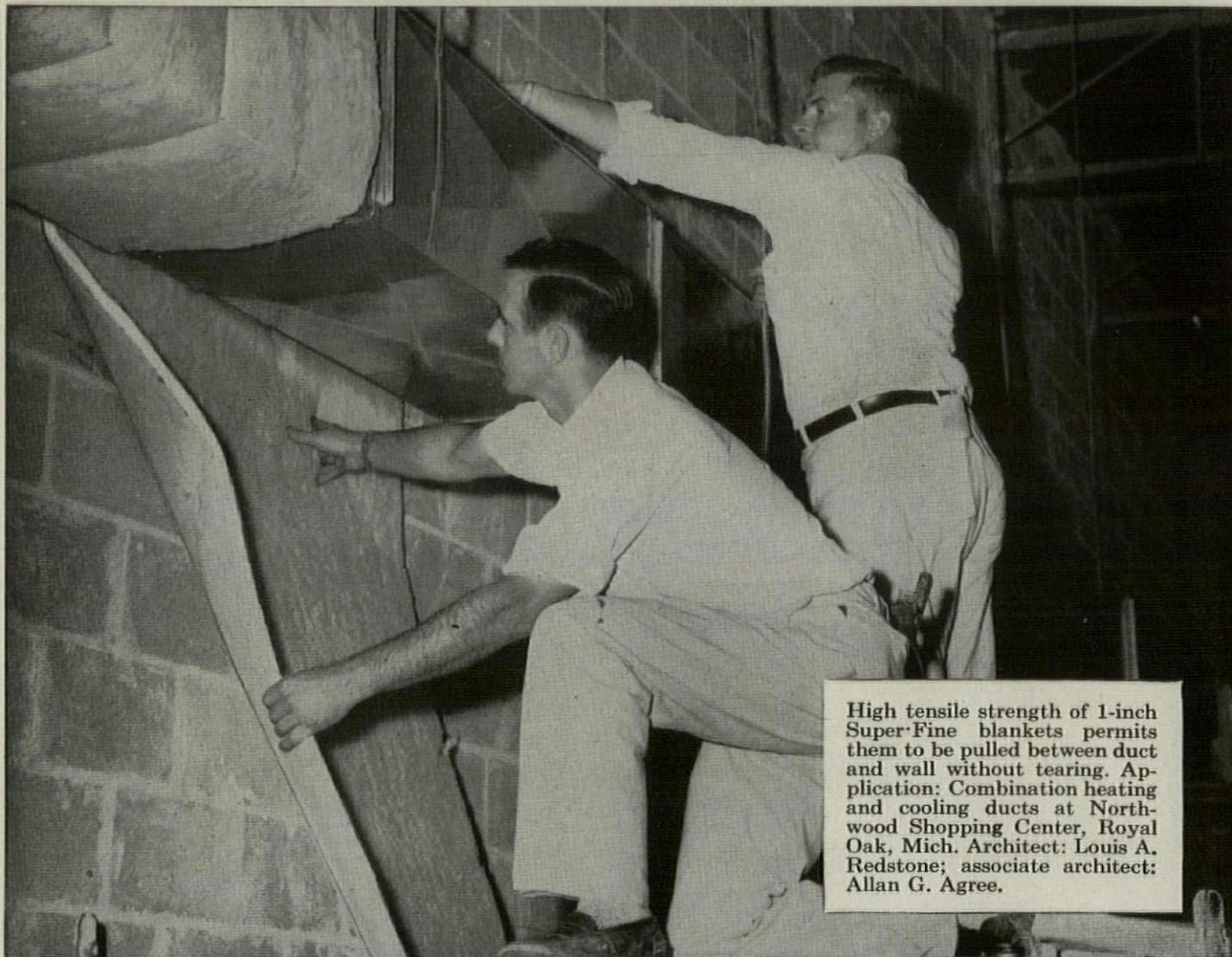


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## New shopping center benefits in 3 ways with efficient Super-Fine duct insulation

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**1. High insulating efficiency.** Super-Fine's long, fine glass fibers form millions of dead air cells, effectively reducing heat loss or gain.

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**3. Swift, money-saving installation.** Lightweight Super-Fine blankets are pleasant to handle; cut easily with an ordinary knife. Without precision measuring or fitting, they were simply wrapped around adhesive-coated ducts and secured with light-gauge wire. Strong and resilient, they were pulled between wall and duct—were fitted readily

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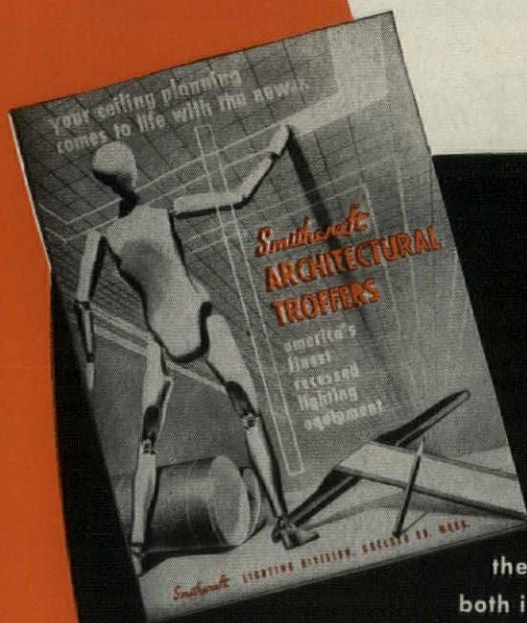
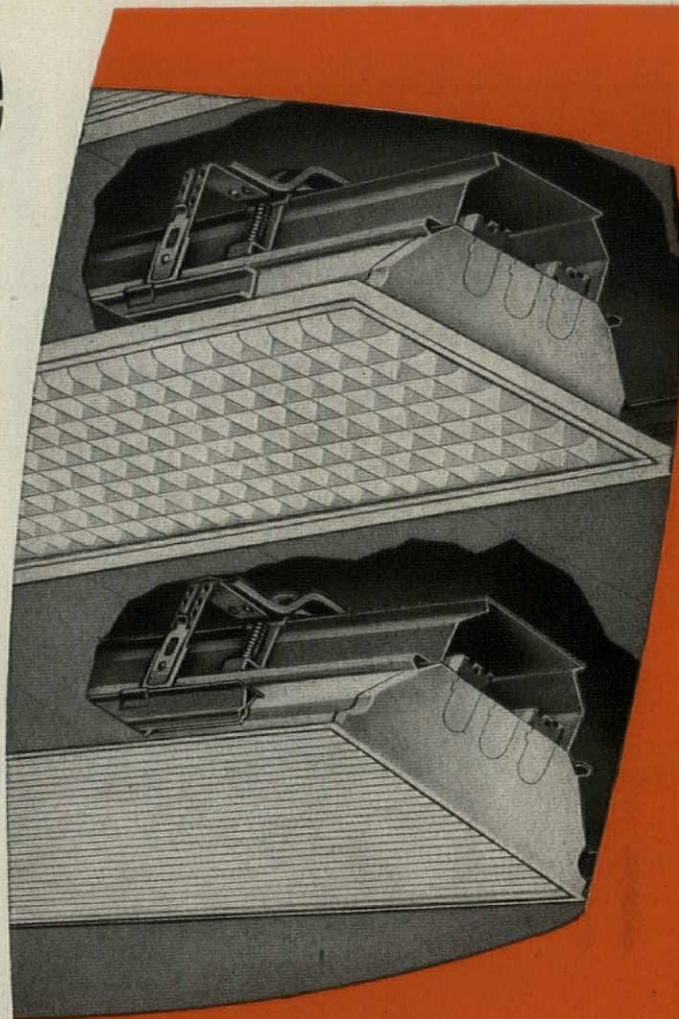
## L·O·F GLASS FIBERS COMPANY

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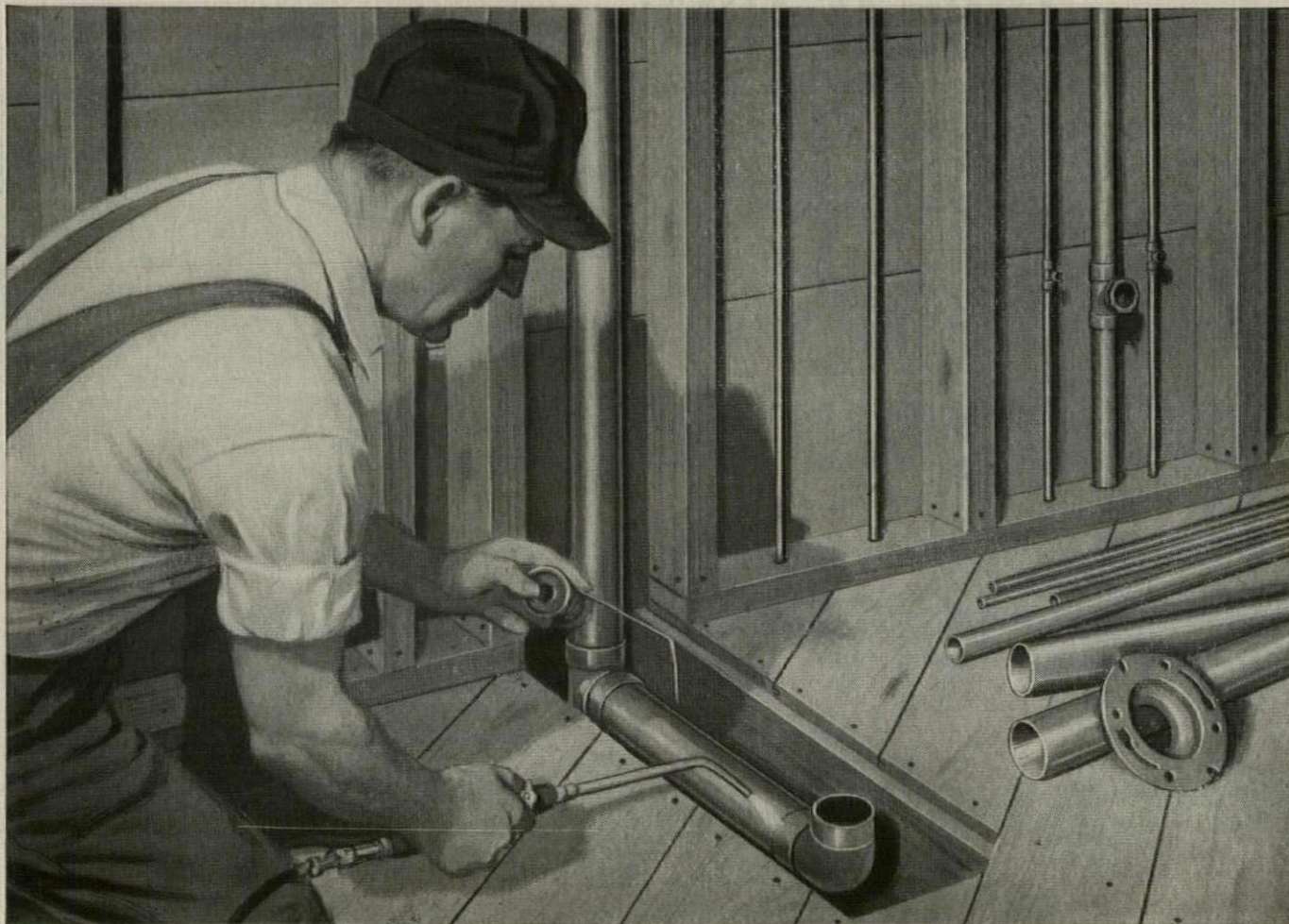
However, equally important is the other half of the story . . . the exclusive "hidden" features that provide the unlimited versatility, high efficiency and cost-chopping economy in both installation and maintenance. For example, Smithcraft's patented Yoke-Aligner\* so effectively simplifies installation that only a screwdriver is needed from start to finish! Developments like these are just as important to the architect and engineer as are Smithcraft's outstanding lighting performance and appearance.

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Drainage lines of Chase copper tube *resist corrosion—can't clog with rust—stay efficient* over the years! Their interior is smoother; flow is unobstructed at joint connections—*larger volumes* of waste water can pass through them because friction is *reduced!*

Chase copper drainage tube is 4 times *lighter* than ordinary drainage pipe. Can be pre-assembled and installed with great savings in time! It can be cut to length right on the job. Requires fewer joints because it comes in 20 foot lengths. And rugged, leakproof solder joints fit within standard partitions, eliminating expensive furring out!

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*Longer-lasting radiant heating installations are economical, quick and clean when made from Chase copper water tube. No worry about leaks or repairs—can't clog with rust!*

# Chase



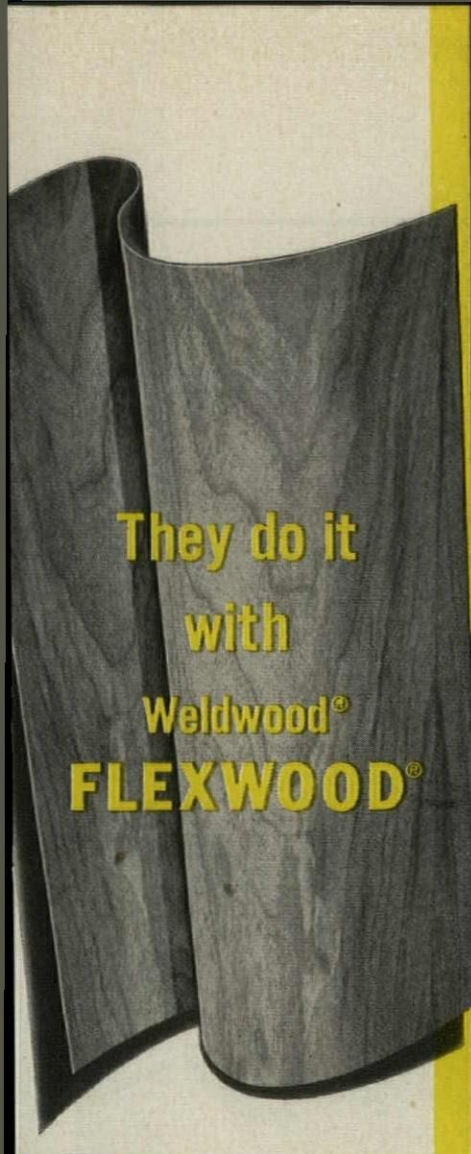
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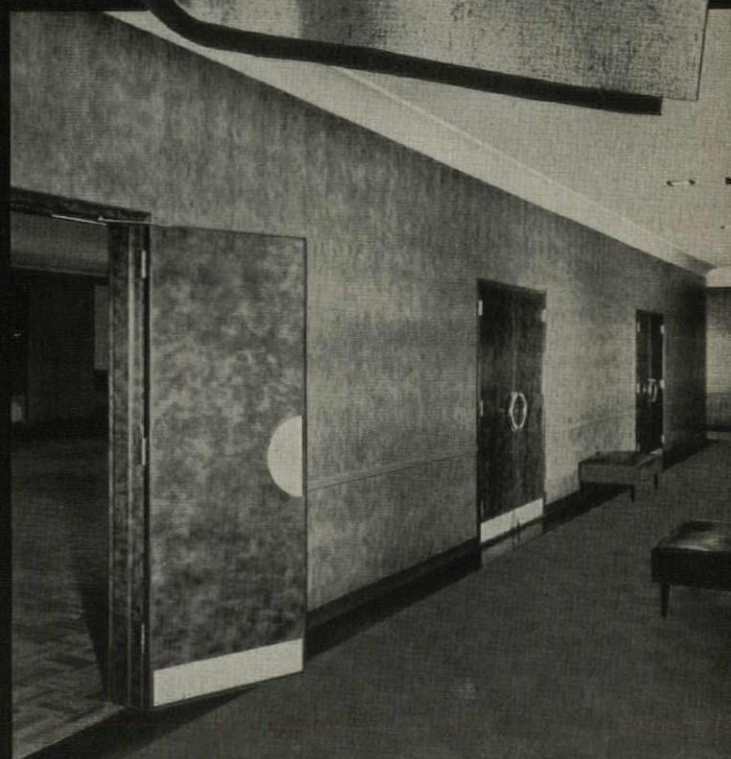
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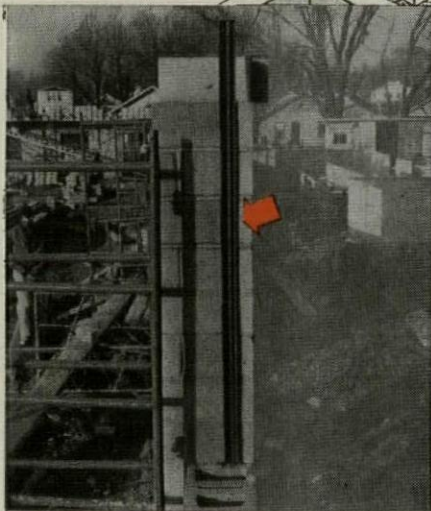
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## LETTERS cont'd.

progress in the field of architecture.

They are a kind of "stock exchange" of ideas. Modern American architecture was defeated in the Chicago World Fair and did not recover for the following 25 years. Only years later the Chicago Tribune Tower Building Competition revived the idea of progressive thinking in modern architecture in the USA.

The recent Porcelain Enamel Design Competition for a youth center and a school (AF, March '56) is another step forward, but it seems this contest was not an "exchange" of different ideas of architecture presented by the future Sullivans and Frank Lloyd Wrights of the US.

The outcome looks more like variations on one theme with only minor deviations in instrumentation. It seems that only a certain school of thought has won the competition, i.e., Mies Van der Roheism."

Does Harvard (eight winners) have a monopoly to hatch 50% of all able young American architects, with a poor showing by M.I.T. (six winners) and other schools (seven winners), or do Harvard men contribute more to open contests, or are they smart enough to predict the likes and dislikes of the jurors, or do the jurors have a distinct preference of one particular trend or manner in architecture?

Is this young generation of architects under the spell of one and only one architectural concept—one idea monopolizing architectural thinking, one school claiming to represent the only dogma, the one true faith?

There is a certain discipline in the entries, but are there not other disciplines just as valid, but more human, more joyful and more creative? One wonders how other schools of architectural thinking would have conceived a youth center.

NORBERT L. TROLLER, architect  
New York, N. Y.

### ARCHITECT PR

Forum:

I noted with interest your editorial on architect public relations in your January issue.

The architect has got to stop being sort of a wallflower standing on the sidelines waiting for somebody to come up and tap him on the shoulder and invite him to dance. He's got to stop thinking of architecture as something highly special all by itself and think more of the construction industry as a whole. He will be a better architect according to his own lights if he widens his horizon.

Leadership is where you find it, and we ought to find it to a high degree among architects, and if architects provide leadership, they will be recognized as leaders.

Certainly the FORUM can be, and can continue to be, a powerful influence toward a more integrated and rounded building industry. Keep up the good work!

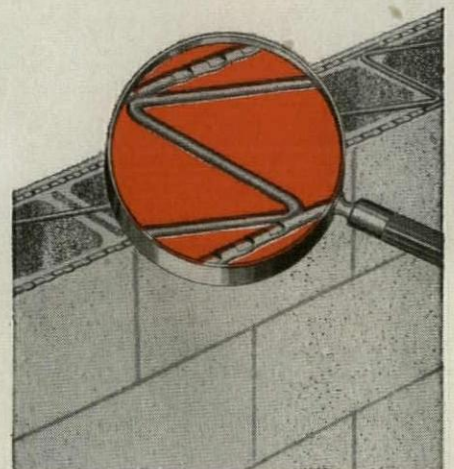
HOWARD T. FISHER, architect  
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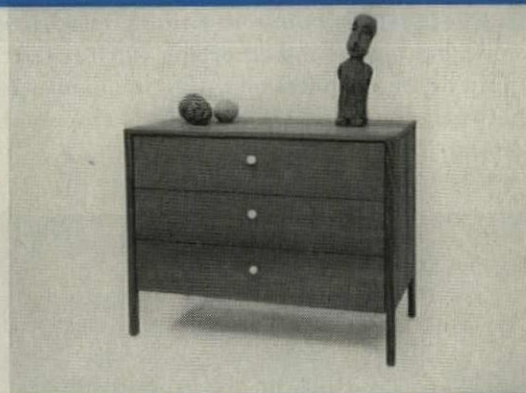
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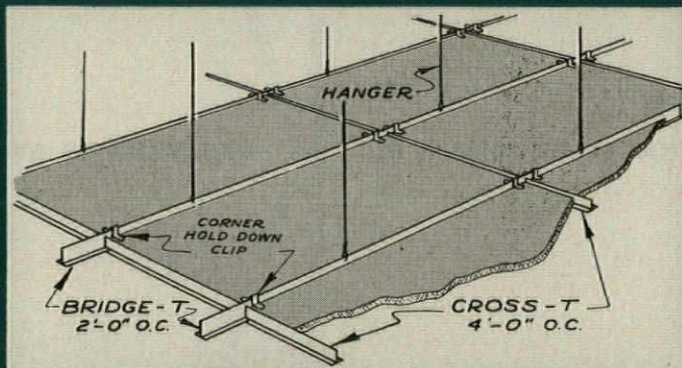
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## Toward urban orderliness

*Excerpts from a talk by Architect Arthur Holden at a forum sponsored by Cooper Union*

Our city is majestic, it has greatness, it has beauty, but it is the beauty of accident. Our city's beauty lacks order. Although the city respects order, this respect is given to the order of laws and contracts rather than to the order of intelligent physical arrangement. Before we can win back the sense of physical order, which we have lost, we must learn how to revise our estimates of the factors in our life which are changeable. A change in our ideas about the limitations of capital finance and capital credit; a change in our ideas about the taxation of real property.

How can we provide for open space if we tax land on a basis which provokes its overcrowding? When are we going to recognize that we should make our taxes as nearly as possible into a charge to pay for the rental equivalent of service? Where private property is so arranged that there is a public purpose served, perhaps if we

applied our ingenuity and imagination to it, we might find a way to assign credit increments that would have the effect of reducing realty taxes. This would encourage planning which preserves needed open space or furnishes facilities that are needed to produce coordinated design, group design, and the design of environment rather than the nineteenth-century idea of the design of interminable façades.

## The bad client

*Excerpts from an address by Architect Cloethiel Smith before the convention of the National Assn. of Housing and Redevelopment Officials*

With each new experience in building, I am more convinced that our biggest failure today is the client. A good client plus a good architect make a good building. Unless you have both, you can't get the best building. By "bad client," I don't mean the opinionated, tough or hard-to-deal-with individual or agency. Often, these "bad clients" who really have an idea are good ones in the sense that either the

architect quits or is fired and, even if the job goes ahead, there is usually something good that comes out of a positive relationship. And, if he is really a good "bad client," he is courageous—he'll take a chance. He may give you a bad time as you try to convince him on something you think is right but you may find this struggle a splendid testing ground. Finally, once you get the "go ahead" from a good "bad client," he usually has the courage to stick by his decisions.

The worst client is the nice, well-meaning, cautious and indecisive one. He rarely fires his architect; he just worries him to death with reappraisals. His extreme caution makes him mistrust everyone connected with building. Usually, he gets a dull job because he finally succeeds in dulling everyone around him.

The very worst client is the group client. Somehow, no matter what individuals make up the group, collectively, their tendency is to be "well meaning, cautious and indecisive." In the rebuilding of cities and communities, government — city, county, state or federal — is the bad client. Of course, citizens are the ultimate clients but we have all done far too much wish-thinking about the effectiveness of citizens groups as clients. This group is always pic-



for

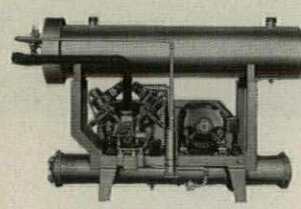
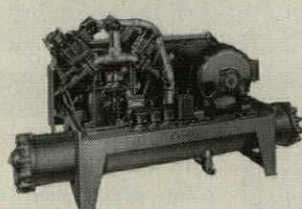
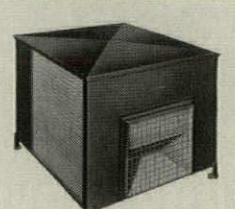

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tured as made up of brilliant and discerning fellows who will take action with a capital "A"—but who usually act even less decisively than their official representatives in the government.

Why is this government client bad? Individually, most representatives of the government would be good clients; collectively, they are bad. They are changed by the group. Everyone and no one is really responsible. No one is really in charge. From the first discussion of any large-scale project, there are so many collective and indecisive groups involved that the architect finds he soon acquires a similar group pallor. There are two essential components of a good job: a good client and a good architect, both working together and both taking full responsibility for what they build.

## US London Embassy

*Excerpts from a column by "Astragal" in The Architects' Journal of Britain*

The American authorities have been very quick in judging and announcing the result

of the limited competition for the new US Embassy building in Grosvenor Square (AF, April '56). The winning design was presented in London by the Architect, Eero Saarinen in person, exactly three weeks after designs had to be sent in. The runner-up was Edward D. Stone.

Mr. Saarinen's is clearly only a preliminary sketch and we can be sure, knowing how beautifully detailed his buildings always are, that as the work proceeds he will introduce more elegance and refinement. But it is equally clear from the sketch that the conception of the building is on exactly the right lines; although the architect has rightly made no attempt to design "in keeping" with the commonplace neo-Georgian blocks that have now replaced almost everywhere the original Georgian houses, he has retained the old rhythm and has been careful to avoid an abrupt change of scale.

The west side of Grosvenor Square will set a standard that perhaps the rest of Mayfair can be persuaded to follow, and I wish the opportunity could be taken of restoring some character to the garden in the middle, the banal layout of which dates from the time when the Roosevelt statue was put up at the end of the war.

## Shoppers' world revisited

*Excerpts from a report by the Framingham, Mass., planning board on the effects of Shoppers' World on the downtown shopping district*

This report is not based on exhaustive research, but it indicates accurately the effect of Shoppers' World (AF, June '47 and Dec. '51) on both the pre-Shoppers' World downtown shopping area and on the town as a whole.

Shoppers' World has been in operation as a regional shopping center a little over four years and was planned and was publicized about three years before that, so it has been a factor in Framingham's thinking for over seven years.

When plans for Shoppers' World were announced there were several who claimed that such a large merchandising enterprise would certainly ruin the existing downtown shopping area. There were others who held opposite opinions; five firms (two national and three local) backed their opinions by opening stores in Shoppers' World and keeping their downtown stores.

*continued on p. 80*

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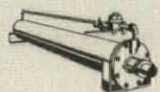
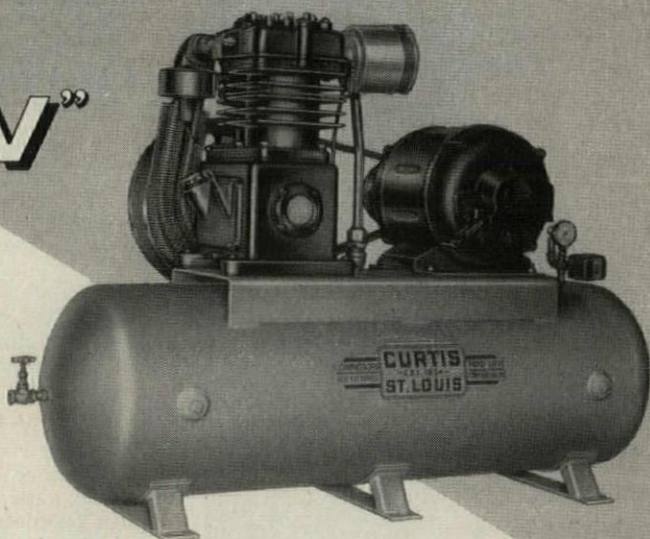
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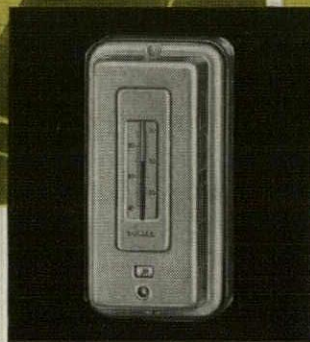
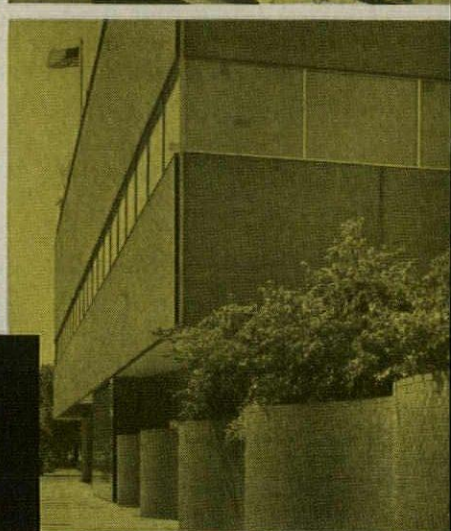
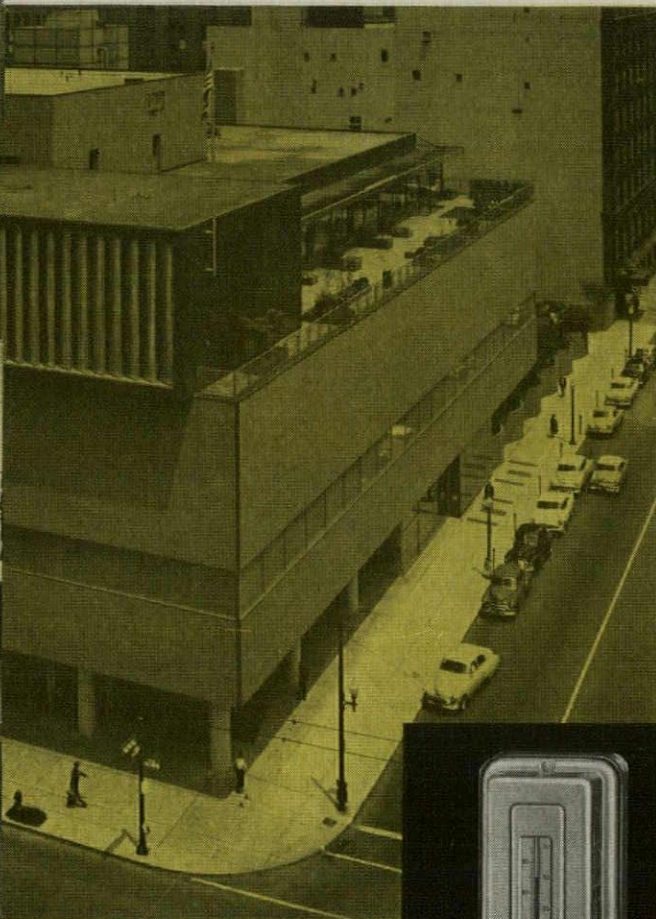
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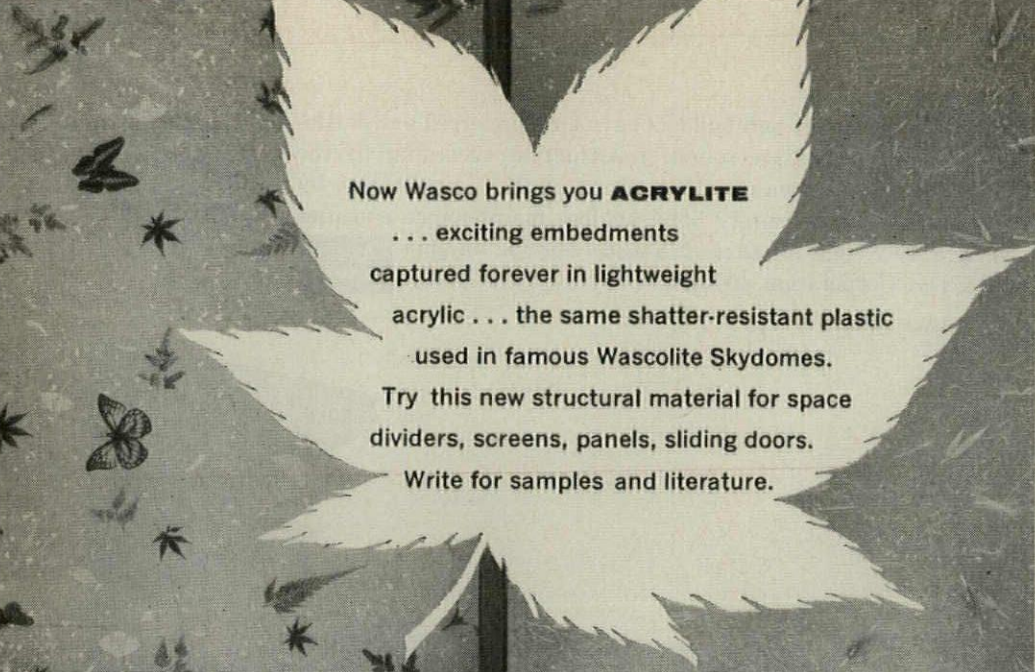
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## EXCERPTS *cont'd.*

All seem satisfied after four years. For several months after the opening of Shoppers' World in early Oct. '51, it seemed that the prophets of doom were partly right as business fell in the downtown area. After the first of the year those merchants who would match Shoppers' World advertising and merchandising effort soon recaptured their lost volume, and many have gained consistently since.

Within nine months of Shoppers' World opening nearly all of the capable downtown merchants had regained their lost volume. This was not done without considerable effort. The downtown merchants held highly promoted cooperatives sales days. The owners of the store buildings went to considerable expense to increase parking facilities near their buildings so that downtown Framingham now has some of the best parking facilities in this region for older business centers. This however does not mean that parking is adequate.

While all the downtown merchants would like to be more prosperous, there is every indication that they are doing as well as merchants in similar areas in other towns of similar size. There is a feeling among a number of them that Shoppers' World is getting a larger percentage of the business of the residents of new developments than they are. Since Shoppers' World is closer than downtown Framingham to the larger developments in both Natick and Framingham, this is probably at least partly true. However, there is also the probability that if Shoppers' World were not there, new stores would have been built to serve these new residents. Shoppers' World probably arrested or decelerated rapidly rising property values in downtown Framingham, but it has not depreciated them. Assessments have remained almost stable for the last four years.

The principal property owners state that their expenditures for increased parking facilities were both desirable and necessary, but admit that the advent of Shoppers' World did spur them to act sooner and more boldly. They have not reduced any store rents, and have increased some. While there are no vacancies in desirable store properties, the waiting list for possible vacancies in the downtown area is appreciably shorter than it was four years ago.

Shoppers' World itself has had its problems. The company that promoted and constructed the facility has gone bankrupt. It has been taken over by the mortgagor who is now operating it. A few of the original tenants have given up and either moved or gone out of business. The majority of the tenants are still there and are prospering. They do not seem to be affected by the problems of their landlord. The basic idea of a regional shopping center seems to be sound. The original assessment on the property was reduced

*continued on p. 84*

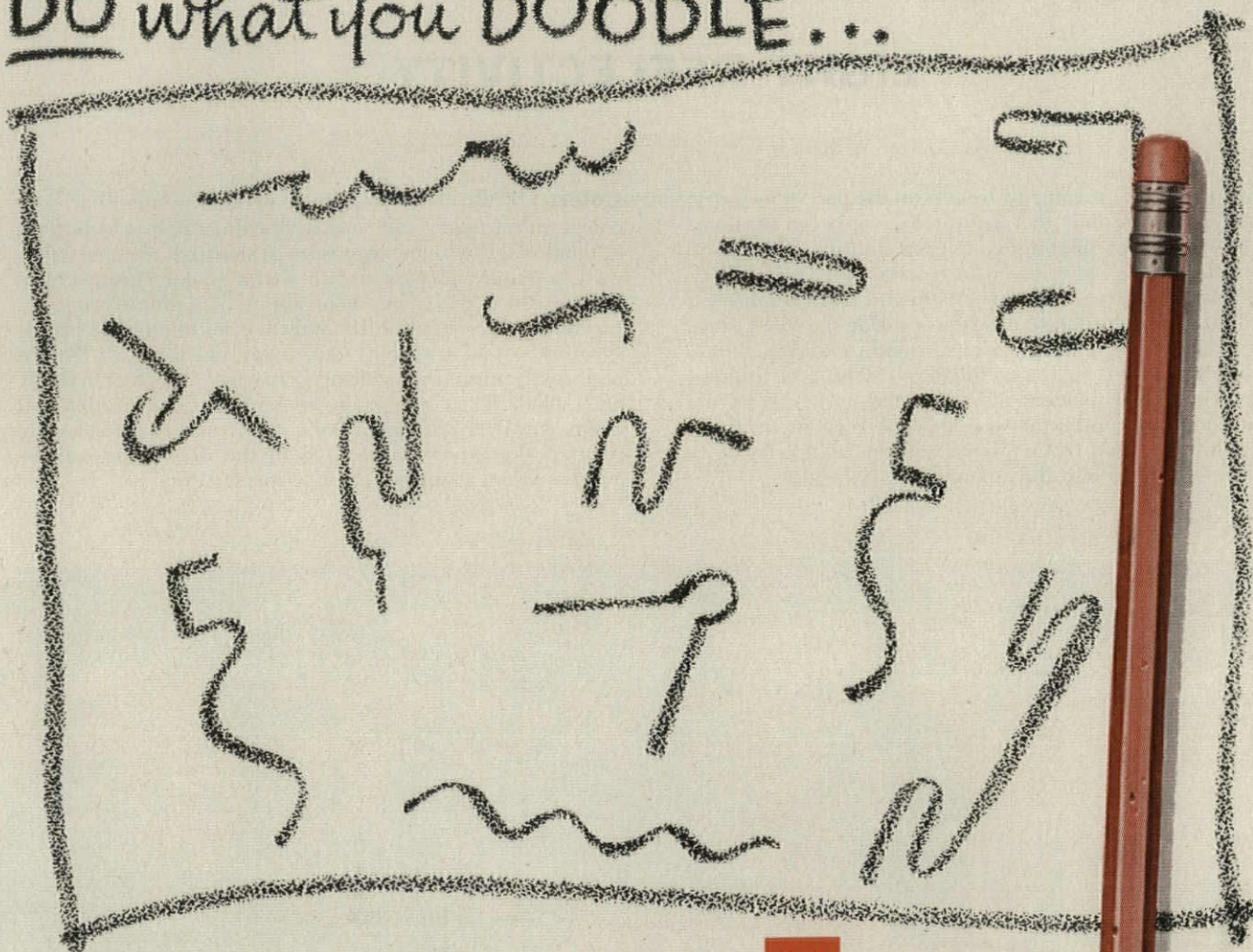


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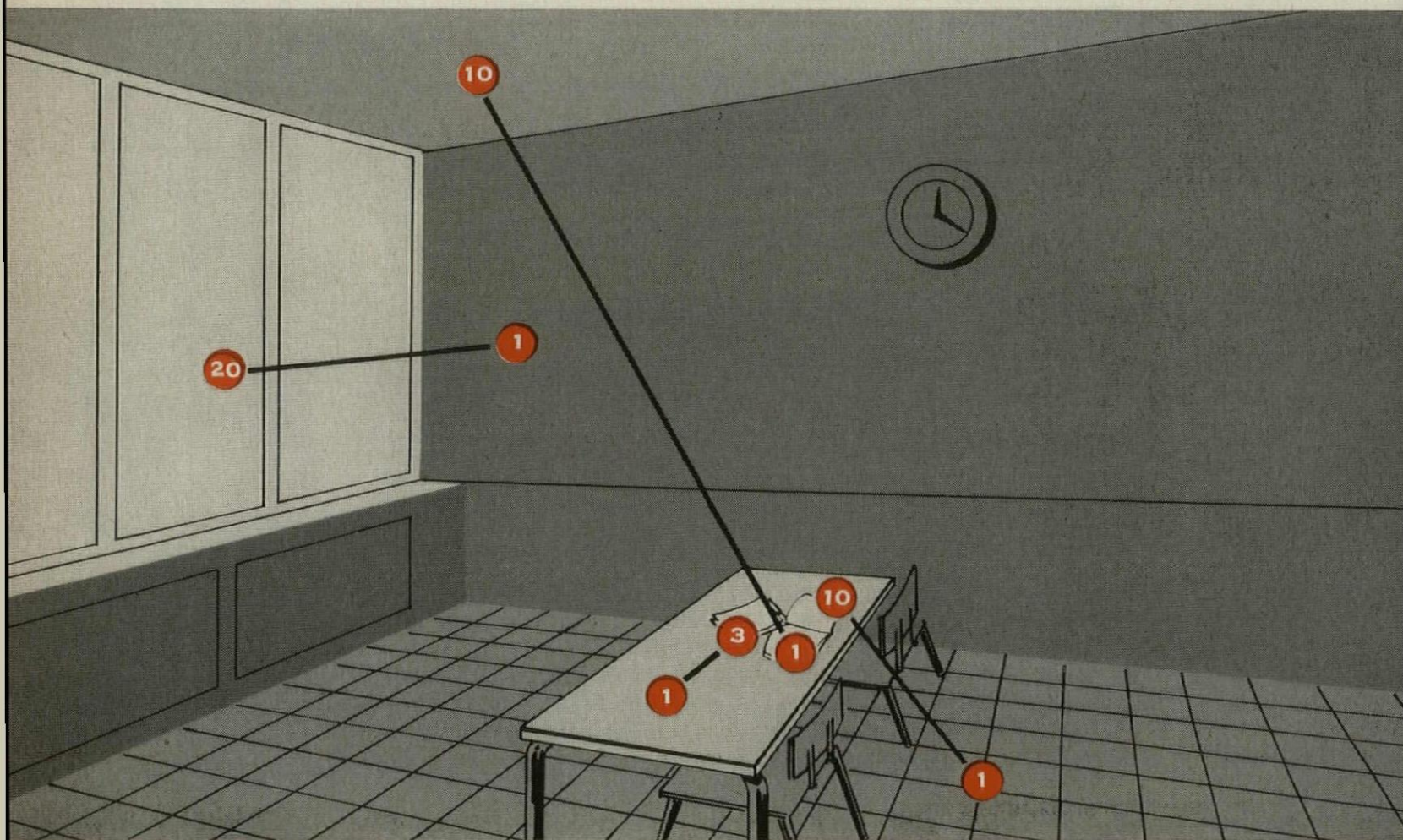


*An increasingly important factor in choosing floors . . .*

## LIGHT REFLECTIVITY

Today, there is a growing awareness on the part of industry, schools, hospitals, and other institutions—and even the home owner—of the vital importance of good lighting. More and more attention is being given to fenestration and artificial illumination. At the same time, more and more emphasis is being placed on the choice of surfaces inside the room, since these reflect the light and affect its brightness and quality. Because the floor is such a dominant element in an interior, the percentage of incident light reflected by it has a great effect on seeing conditions—and hence is very important to the architect. Two factors determine the light reflectivity of a floor—its color and the amount of surface gloss.

**Color.** While it is, of course, generally true that light colors reflect more light than dark colors, it should be kept in mind that the human eye is more sensitive to some colors than to others. A person with normal color vision is most sensitive to a wave length of about 570 millimicrons—a greenish yellow in approximately the middle of the visible spectrum—and sensitivity falls away toward both the red and violet ends of the spectrum. Because the great majority of resilient floors are made of combinations of different colors, however, they offer wide opportunities for selecting patterns that are suitable to both the decorating scheme and the visual requirements of a specific area.



In certain areas where close work is done, such as school classrooms, offices, and laboratories, the importance of proper lighting cannot be over-emphasized. The above diagram illustrates the recommendations of the Illuminating Engineering Society for comfortable seeing conditions in schoolrooms. The maximum brightness

ratios between various surfaces are as follows:  
 Between the task and adjacent surfaces—3 to 1  
 Between the task and the floor—10 to 1  
 Between the task and the ceiling—1 to 10  
 Between the windows and adjacent surfaces—20 to 1

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**Gloss.** In addition to color, gloss also has some effect on the light reflectivity of a floor—a high-gloss surface will have a lower light reflectance than a matte surface. This is illustrated by the diagrams shown at the right.

Figure 1 shows that a matte surface reflects light in all directions. A high-gloss surface, on the other hand—as shown in Figure 2—reflects most of the light in the direction of specular reflection, and a relatively small amount in the direction in which the light reflectance measurement is made. If this material is viewed at the angle of specular reflection, it will appear very bright. However, what actually will be seen is a more or less distinct image of the source of illumination combined with the light reflected by the pigment particles of the material.

For this reason, the surface gloss of a material affects not only its light reflectivity, but its color value as well. The colors in a high-gloss waxed and polished floor will appear somewhat darker than the same colors in a material with a matte finish. This is especially true of the darker colors. For example, the black in Armstrong Imperial Black Custom Corlon Tile, No. 462, with its high gloss, appears to be much darker than the black in Armstrong Ebony Asphalt Tile, No. B-905, which has a lower gloss surface—yet both products have, basically, the same black pigments.

Apart from its effect on the light level of the room, gloss has a considerable influence on the appearance of the finished floor. Very glossy flooring materials tend to show up minor irregularities in the subfloor surfaces. Imperfections that may not be noticeable in the bare subfloor become obvious when the resilient floor has been installed. Very glossy materials, therefore, require careful subfloor inspection and preparation in order to insure the best appearance. Extra maintenance care also is required.

#### Free Light Reflectivity Chart (1956 Edition)

To aid architects in the selection of a proper floor, the Armstrong Cork Company has prepared a table of light reflectivity values of its various flooring materials, corrected for the color sensitivity of the human eye. These values range from a high of 55% for Granette Corlon, Pattern No. 6180, to a low of 2.2% for plain black rubber tile. Between these two extremes lie more than 300 different colors and color combinations in various Armstrong floors, so that by referring to this chart, architects can easily select a resilient floor that fits their specifications perfectly. To obtain the latest revised edition of this chart, write Armstrong Cork Company, 1606 Rooney Street, Lancaster, Pennsylvania.

FIG. 1

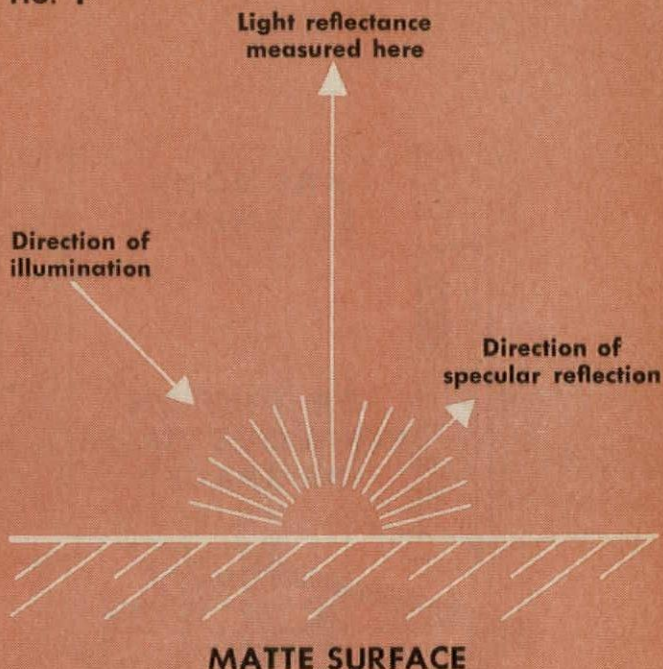
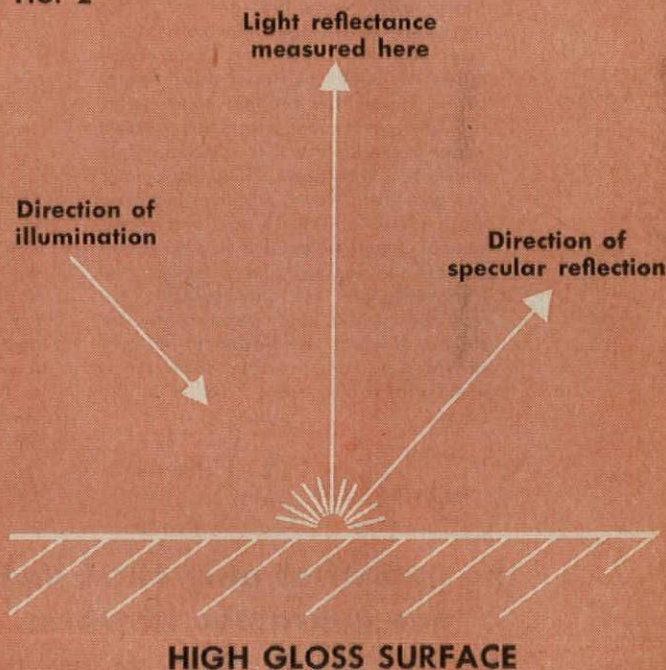


FIG. 2



**A**RMSTRONG CORK COMPANY makes all types of resilient floors for all types of interiors. Almost any flooring problem can be met with one or more of the floors in the Armstrong Line. As a result, we have no special bias toward any one type and can offer architects impartial recommendations on any flooring problem. Our main interest is to aid you in making a sound flooring selection. Armstrong Architectural-Building Consultants throughout the country are glad to assist architects

and make specific recommendations for individual jobs. Your Armstrong representative has a wide variety of experience and training in resilient flooring. He can also call upon the Armstrong Research and Development Center and the Armstrong Bureau of Interior Decoration for assistance. For helpful information on any flooring question, call your nearest Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, Lancaster, Pennsylvania.

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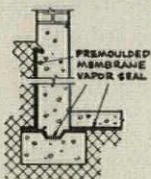
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## EXCERPTS *cont'd.*

by \$1 million and thus reduced the taxes received by the town by about \$45,000 per year, but this was not caused by the bankruptcy.

At present Shoppers' World is assessed for \$2,217,000 and paid to the town \$104,199 in real estate taxes in 1954. The various stores also pay a substantial amount in corporation taxes, some of which gets back to the town. In 1954 the average employment was 770, and at the peak the employment was 1,400 persons. These items are of substantial benefit to the town. For those who might still think that it would be nicer not to have Shoppers' World as a competitor there is a very good possibility that if Framingham had vigorously opposed its location here, it would have located just across the line in Natick, and we would have had the competition without receiving the taxes.

In summary, Shoppers' World has been a good development for Framingham.

### Urban renewal's failure

*Excerpts from an address by Architect Henry S. Churchill before the annual conference of the AIA's Central States Region*

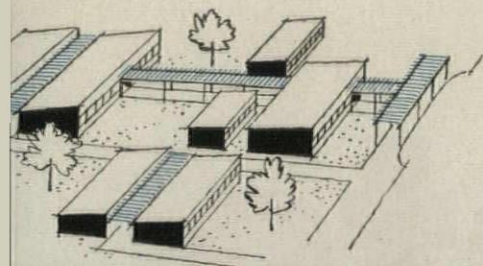
The comprehensive approach to urban renewal is the only possible one; it is the essence of contemporary city planning and calls for the highest degree of collaboration between many skills and disciplines—the paper planner, the economist, the architect, the realtor, the traffic engineer, the administrator and politician. All these and more besides must work together in an effort to achieve a city for the citizens. Piecemeal remedies will fail, or worse, aggravate other ills.

We look at the congested traffic in our streets and are appalled. We turn in desperation to the highway engineers and oddly enough they prescribe bigger and better highways, highways that are now costing upwards of a million dollars a mile. Every city in the country is building expressways like mad, splitting good residential areas into pieces, wrecking priceless park lands, climbing up, over and through cities already hacked into bits by railroad yards and trackage. Someday we will wake up to the obvious fact that a highway engineer has no more sense of civic or social responsibility than had the railroad engineer. It will then be too late. Mass transit? Perhaps, but not if it remains a conversation piece. Mass transit as an alleviation of traffic congestion is certainly sound in theory, but it still needs to be proved in practice.

Nowhere have I yet heard, in any serious discussion at an effective administrative level, of any proposal to limit the height and bulk of structures, particularly down-

*continued on p. 90*





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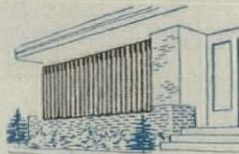


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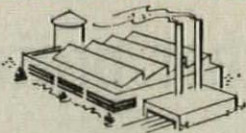
Name \_\_\_\_\_

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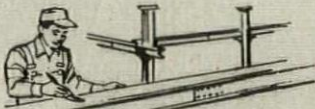


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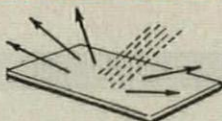
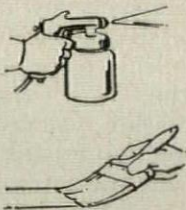


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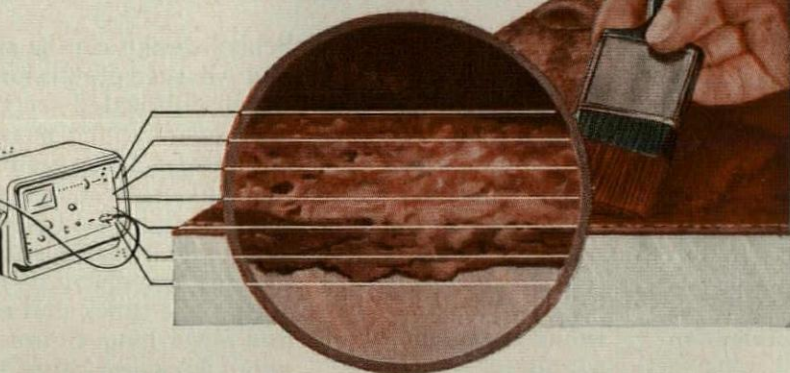
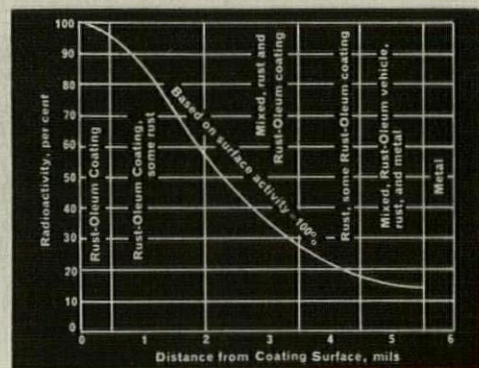
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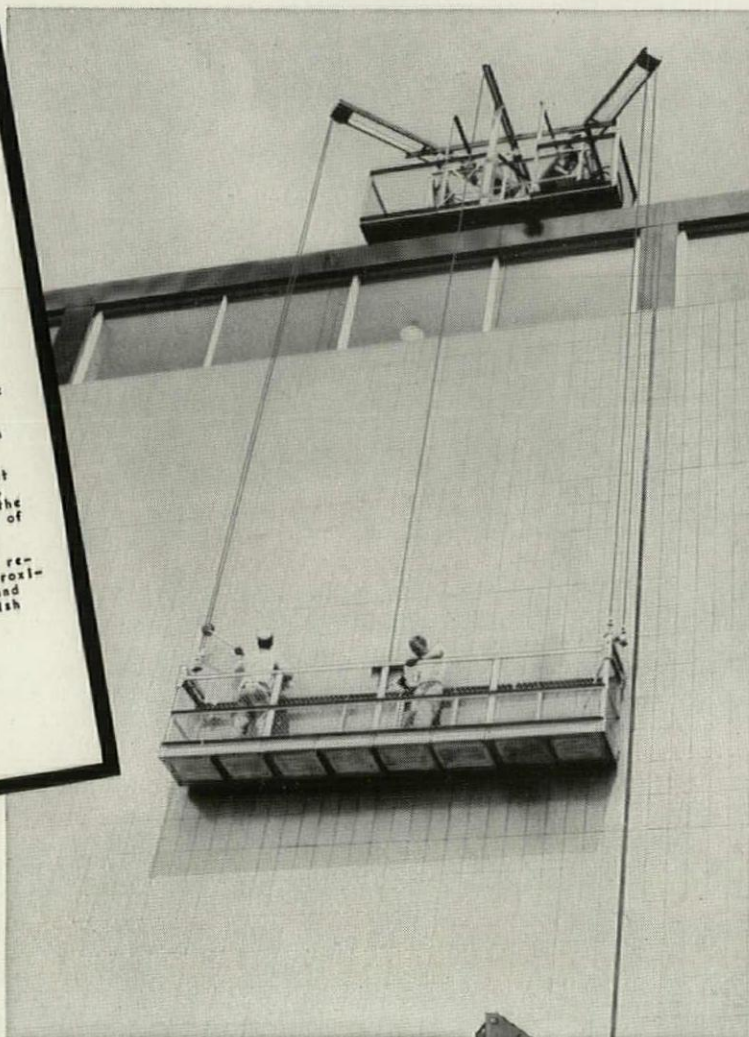
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A. M. Ferst  
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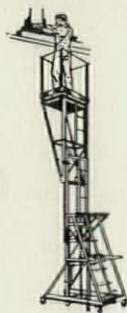
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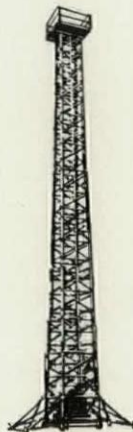
New York Office: 342 Madison Ave., New York 17, New York



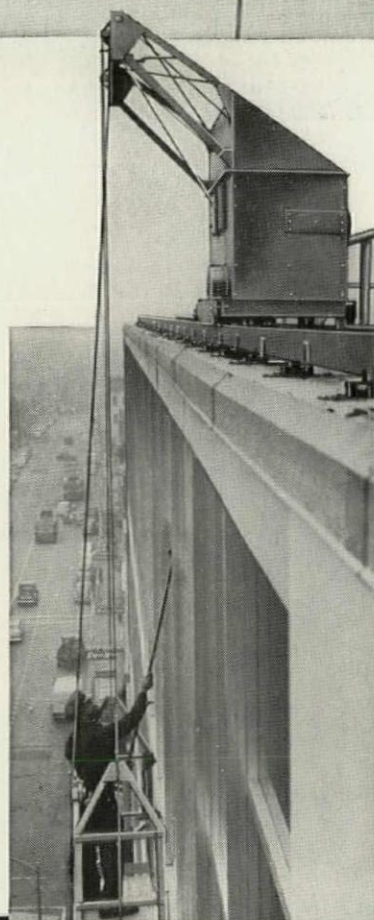
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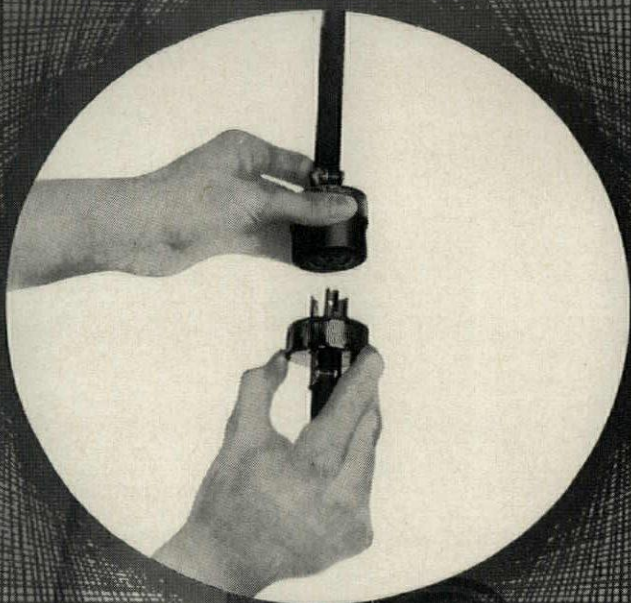
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**UNION PACIFIC RAILROAD**

## EXCERPTS *cont'd.*

town commercial structures, to a rational relation to the capacity of the street system. Until that is done expressways, parking garages underground and all the other palliatives will continue to be quite ineffectual.

FHA financial policies have been so discriminatory against in-city building that there has been none to speak of. Low down payments, guaranteed cheap money, disregard of neighborhood quality and community standards have all aided the exploitation of cheap suburban land while every form of obstructionism and harassment has been thrown at the city builder. Consequently, private enterprise, even in those instances where it wanted to, has not been able to play a part in urban rebuilding. As a result of these FHA policies, two things: We have now more slums in our cities than we ever had before and, also, we have thousands of acres of potential suburban slums that menace our future.

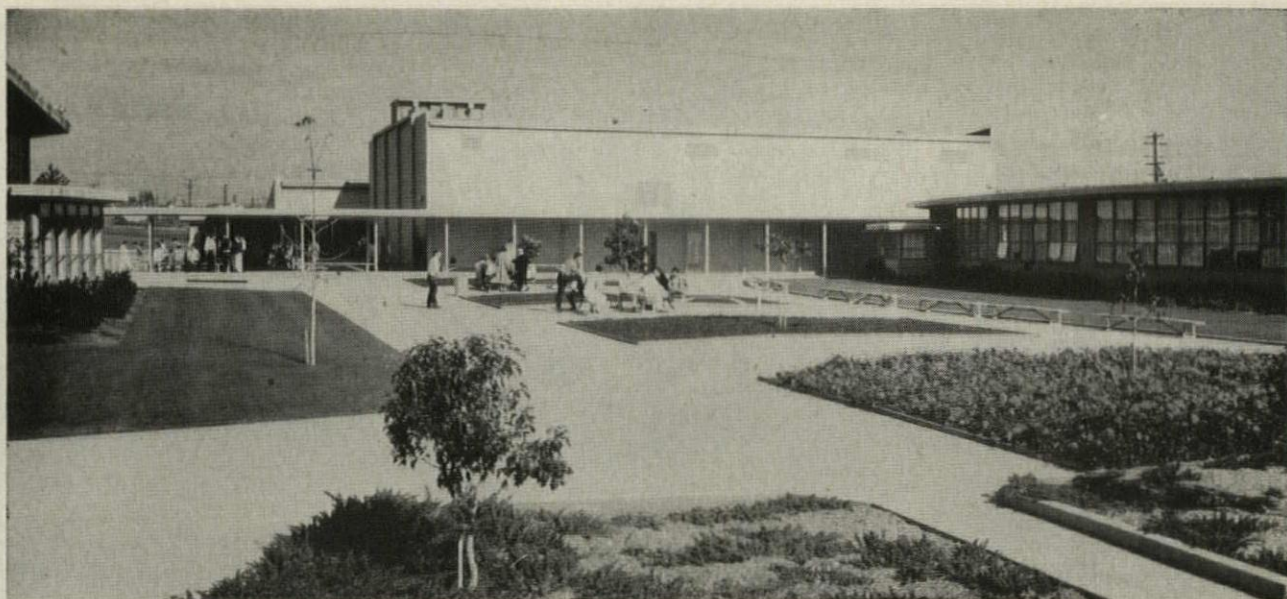
Real estate taxes too are a paradox relevant to the total problem. The paradox consists in slum land being so highly priced that it must be continued in its use as slum land. The high prices generally do not reflect a real or even potential use-value; they only reflect a valuation for tax purposes which the city must, by all means, maintain in order to maintain its borrowing power. Consequently urban rebuilding is too costly for the customers, and cannot be undertaken except in very limited instances, without subsidy. And the subsidy, in our curious way of going about these things, usually takes the form of an abatement of the very taxes that prevented action in the first place. On careful consideration this, somehow, seems silly.

Urban renewal is a failure, and will continue to be a failure until people who are responsible for your cities take stock of what is wrong besides the red tape. I have sat in on discussion after discussion of these things and have invariably noted that the following points are sedulously avoided: one, no one is willing or able to talk about the basic relation of subsidy to private enterprise or to face the real estate quandaries so ably discussed by Miles Colean in recent articles (AF, April, May & June '55); two, that no one is really willing to face a program of reduction of center-city density, or the necessity, in the face of vast technological changes, for new living patterns; three, no one will look the ad valorem tax squarely in the eye; and fourth, all eyes close when someone says that in 50 years there will be at least 50 million more people in the US, most of them in the cities.

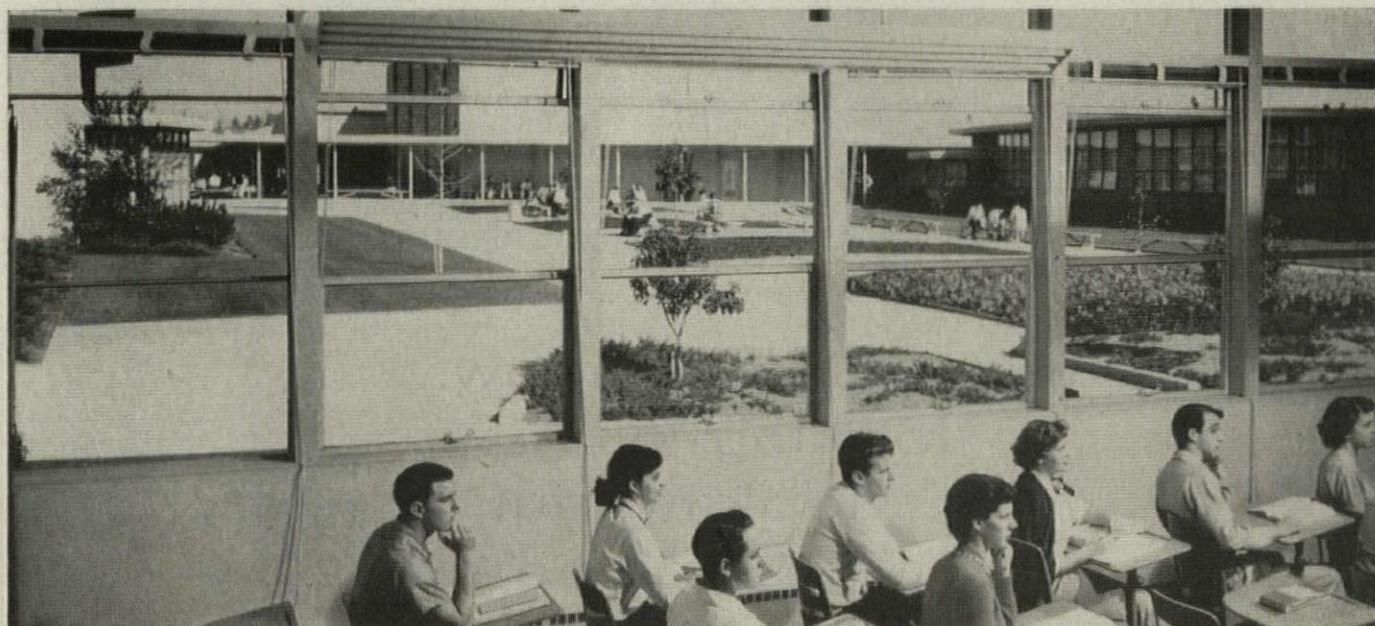
Admittedly these things have perfectly enormous economic consequences. It is about time that thought was given to equating the consequences of facing the facts with the consequences of continued

*continued on p. 93*





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Lamson's newest suburban store in Toledo, Ohio. Architects: Weinberg & Teare, Cleveland.

not a wiggle in a window...  
 looking in,  
 looking out,  
 • looking at

, Ever walk by a store ( or a house) and see reflections wiggle in the windows?  
 When glass is not distortion-free, it spoils the looks of the building and the things  
 you see through the windows.

But see how well the glass speaks for the store shown above (and the merchandise  
 inside). It's L·O·F *Parallel-O-Plate*\* Glass — the most distortion-free  
 (the only *twin-ground*) plate glass made in America. Yet in most localities,  
 it costs no more than ordinary plate glass.

So it *pays* to have *Parallel-O-Plate* Glass in your windows, storefronts, display cases  
 and mirrors. It's better, any way you look at it — looking in, looking out or looking at.

Read the column at the right for important facts on *Parallel-O-Plate*.

\*®



**PARALLEL·O·PLATE GLASS**

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



## PARALLEL-O-PLATE FACTS



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

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

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

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

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

For further information, call your Libbey-Owens-Ford Distributor or Dealer (listed under "Glass" in the yellow pages). Or write Dept. 8866, Libbey-Owens-Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio. \*®

# LIBBEY OWENS FORD

## EXCERPTS *cont'd.*

thoughtless shoveling of hundreds of millions into expedient expressways, futile subsidies, and the continued deterioration of the city, physical and spiritual, for lack of any real action or intelligent planning.

I suggest these points for future collaboration, to the end that gradually our cities become again livable and our countryside less devastated:

► City planning and urban problems are not separable from regional planning and suburban sprawl. This truism must have more than lip service. For one thing, there is less water than you think.

► Traffic congestion is not solved by highway engineers.

► Zoning has degenerated into a device to "stabilize" land values. It must shortly be returned to some more useful purpose or else abandoned.

► In rebuilding the city, new patterns must be devised suitable to our new technological devices. But in doing this inspiration can be found, if you will look for it, in the older parts of your city. There you will often discover quiet and beauty in the way land is used, the way buildings are sited, the way streets are laid out.

► Take a good long look at taxes, financing costs and the relation between the professions of the government agencies and their practices. This is an economy of private enterprise for profit, and if the system is to continue profit cannot be defined in terms of a bureaucrat's salary.

► If the city is slowly and steadily made better there will come a time, in 15 or 20 years, when people will start to flee their suburban slums for the amenities and comforts of the city.

## Fire resistance of prestressed concrete

*Excerpts from the British Building Research Station Digest No. 84*

Information at present available on the fire resistance of structural members of prestressed concrete is limited to the results of tests made on some simply supported prestressed beams and on floors incorporating prestressed concrete units. From this work some general conclusions can be drawn. However, two facts must be mentioned at the outset

1. The results of fire resistance tests on normal reinforced concrete members cannot be used to assess the fire resistance of prestressed concrete units even of the same size.

2. A system of prestressed concrete construction can be given any grade of fire resistance by suitable design, including protection, of the members; because of lack of data it is, at present, necessary

*continued on p. 98*

## CONTRACT FURNITURE

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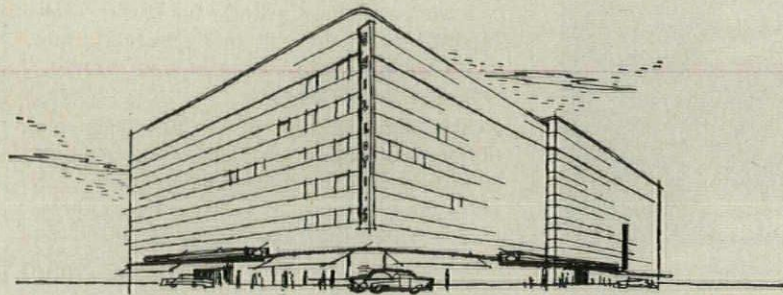
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*Comfort story of a modern department store*

## How Honeywell Electronics makes



*Sbillito's Department Store, Cincinnati, O., a Federated Department Store.  
Engineer: Leo S. Weil & Walter B. Moses, New Orleans, La., and St. Louis, Mo. Architect: Potter, Tyler, Martin & Roth, Cincinnati.*



**Typical shopping areas** in Shillito's illustrate need for accurate control of large open spaces—maintained ideally by Honeywell Electronic Temperature Control. Other major advantages of the installation are:

... *central control*—one operator at the Honeywell Supervisory DataCenter can read and adjust temperature at 36 locations throughout the store.

... *savings on cooling*—outside air is used to help cut costs of refrigeration.

... *savings on maintenance*—with central electronic control, fewer men are needed to maintain all mechanical equipment.

... *quick response* of electronic control system keeps indoor climate ideal regardless of changes in customer occupancy.



## central air conditioning pay off



### *Honeywell Supervisory DataCenter provides central control of modernized air conditioning system in seven-story building*

A MODEL of centrally air conditioned comfort—that's Shillito's Department Store, southern Ohio's largest.

It's a model of air conditioning convenience and economy, too—thanks to Honeywell Electronic Temperature Control, chosen to govern the Cincinnati store's recently installed central heating and cooling system.

Air conditioning units scattered throughout the store had caused discomfort and maintenance headaches. Shillito's management wanted a new central system—and *central control* of the system. Honeywell Electronics provides it.

One man now can control the entire system from the Honeywell Supervisory DataCenter. At this single point he can adjust 38 thermostats and check temperatures at 76 different locations divided among the store's seven floors.

The result is better shopping climate for customers; better supervision of the air conditioning system that saves money for management—on fuel, power and maintenance.

Honeywell Electronic Temperature Control offers many unique advantages in air conditioning management. It can serve your clients well in any building, new or existing, by providing new efficiency and economy in heating, ventilating, air conditioning and industrial control.

Call your Honeywell office for the new booklet that tells more fully how to apply electronics to your clients' problems—and for information on the economical Honeywell Periodic Maintenance Plan. Or write Honeywell, Dept. MB-8-102, Minneapolis 8, Minn.

MINNEAPOLIS  
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**Electronic Controls**

112 offices across the nation



# Magnificent

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*The creative spirit necessary to achieve great building is never lacking. Neither are the means. Both should be used together.*

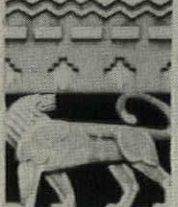
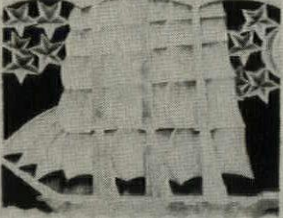
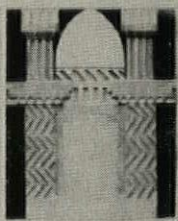
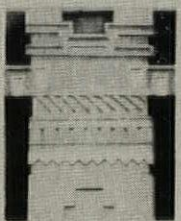
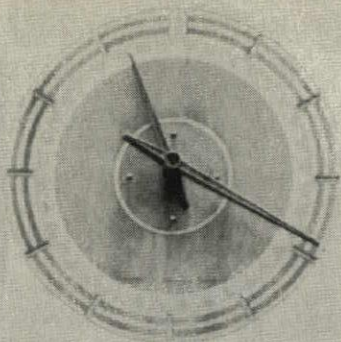
*No one building material can be exclusive. But some few materials are appropriate—in fact necessary. Indiana Limestone is one of these. It is — by positive proof — the most versatile, most adaptable, most beautiful building material available today. And strangely enough, it is also the most economical.*

*Write now for the new brochure, "New Concepts in the Use of Indiana Limestone," to the Indiana Limestone Institute, Bedford, Indiana.*



INDIANA LIMESTONE









# 4

## Reasons Why:

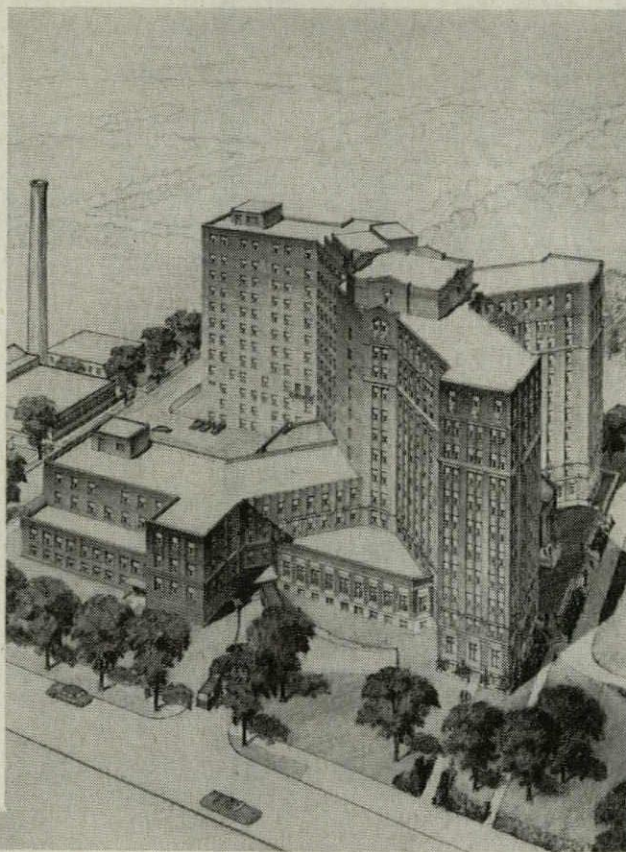
- Installation is fast, economical, permanent.
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- It requires no upkeep, no maintenance.
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Clow (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8, and 10" sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain) in 18' random lengths 3, 4, 6, and 8" sizes.

# CLOW

## I.P.S.\* Cast Iron Pipe

### in 400-Bed Hospital Addition



Architects: Fugard, Burt, Wilkinson and Orth, Chicago  
Plumbing Contractor: M. J. Corboy Corp., South Bend, Indiana.  
General Contractor: McGough Bros., St. Paul, Minnesota

In this beautiful, \$4,000,000 addition to Hurley Hospital, Flint, Michigan, the downspouts, drains and waste lines are all Clow I. P. S. (threaded) Cast Iron Pipe.

This is but another of innumerable instances exemplifying the regard in which Clow Cast Iron Pipe is held by architects, engineers and plumbing contractors who design and build for *permanence*, freedom from maintenance costs, fast and economical installation.

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\*Iron Pipe Size O. D.

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on the job, with ordinary tools of the piping trade.

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and Heating Supplies

## EXCERPTS *cont'd.*

to err on the side of safety.

When the thickness of any part of a prestressed concrete beam is less than about 2", there is a risk, if the unit is exposed directly to fire, of explosive spalling of the concrete leading to early collapse. Such units are usually precast with pre-tensioned steel and are used in composite floor construction. The fire resistance of an unprotected composite floor of this type may be as low as 15 to 20 minutes. The addition of a protective covering, e.g., plaster, on the exposed faces of such members will prevent spalling of concrete as long as the covering remains in place, and will increase until the steel reaches its critical temperature. Any desired improvement in the fire resistance of a given construction can be effected by the choice of a suitable protection. Variability in behaviour of plaster in fire tests makes it difficult to give exact figures for the contribution to be expected from direct application. Increases of up to ½ hour have been obtained with ½" of plaster, but the maximum period will be reached only when the coating remains intact for this period. A ceiling of plasterboard fixed to battens below a floor will give protection for times varying from 10 minutes for ¾" plasterboard without additional finishes to 25 minutes for ½" plasterboard with 3/16" plaster finishing coat. Sprayed asbestos 1" thick applied direct, or a suspended ceiling of 1" vermiculite/gypsum plaster on metal lath can give increases of 2 hours or more.

Fire tests have shown that the time to collapse for larger sizes of prestressed concrete beams is determined largely by the rise in temperature of the prestressing steel; when hard-drawn wire is used, collapse usually becomes imminent when the wire reaches a temperature of 400° C (750°F); at about this temperature the strength of the steel is reduced to half its strength at normal temperatures. If the hard-drawn wires in a prestressed concrete beam reach a temperature over about 150° C (300° F), there will be a considerable permanent loss of prestress.

A concrete cover of 2½" to the steel will give a fire resistance of 2 hours. Longer periods of resistance may be developed by increasing the thickness of the concrete cover, which should then be lightly reinforced to retain it in position around the cable or cables. For a fire resistance of 4 hrs. or more, it may be necessary to encase the beam with a material of better insulating properties than normal concrete. Thus a fire resistance of 4 hrs. may be obtained by encasing a beam having a concrete cover of 2½" with a 1" thickness of vermiculite concrete, a ¾" thickness of vermiculite gypsum plaster or a ¾" thickness of sprayed asbestos. When it is known that a prestressed concrete member must have an added protective covering, appropriate steps should be taken during the casting of the member.



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## Los Angeles Temple

The Church of Jesus Christ of  
Latter Day Saints

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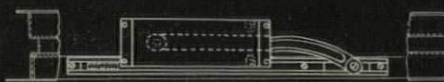
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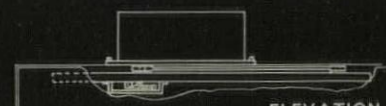
NORTON DOOR CLOSERS, Dept. AF-66, Berrien Springs, Michigan.

A Modern Door Closer For  
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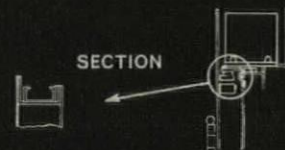
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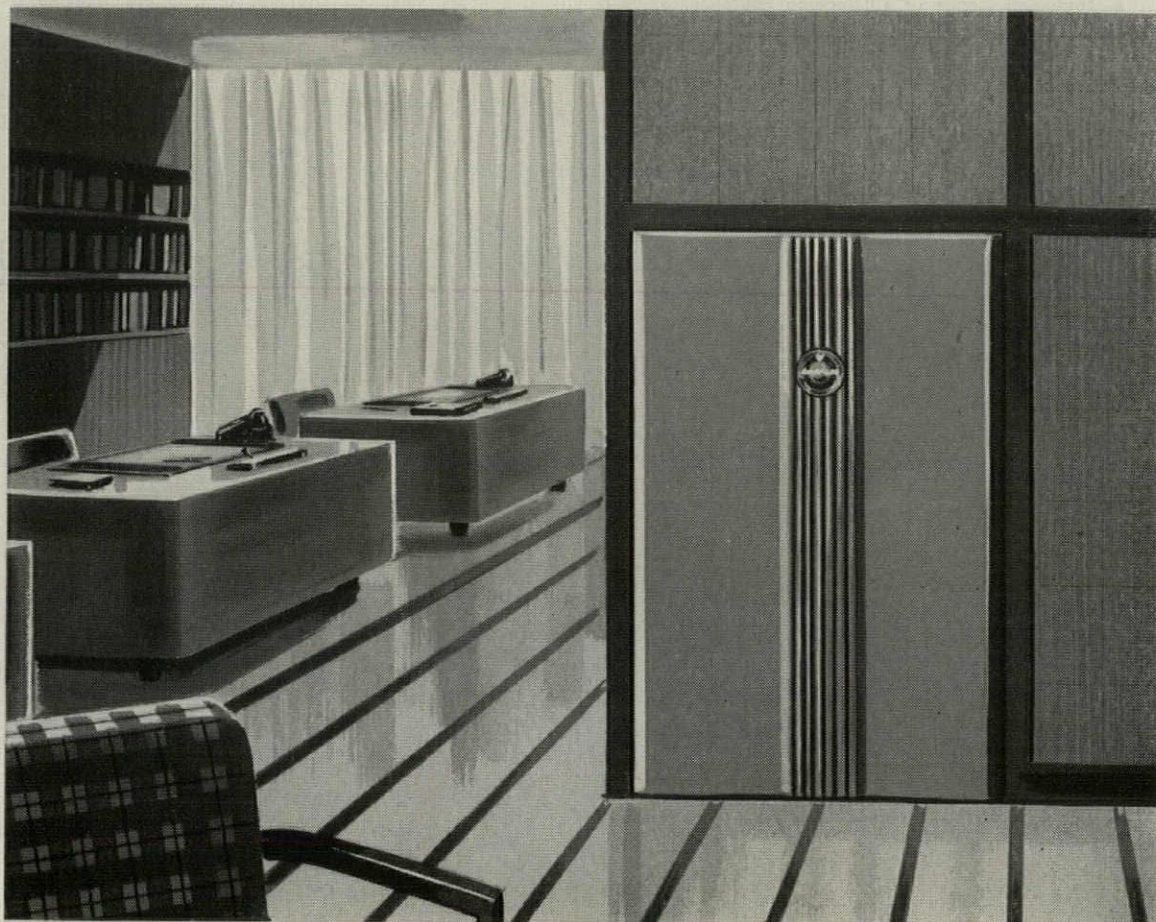
ELEVATION



SECTION

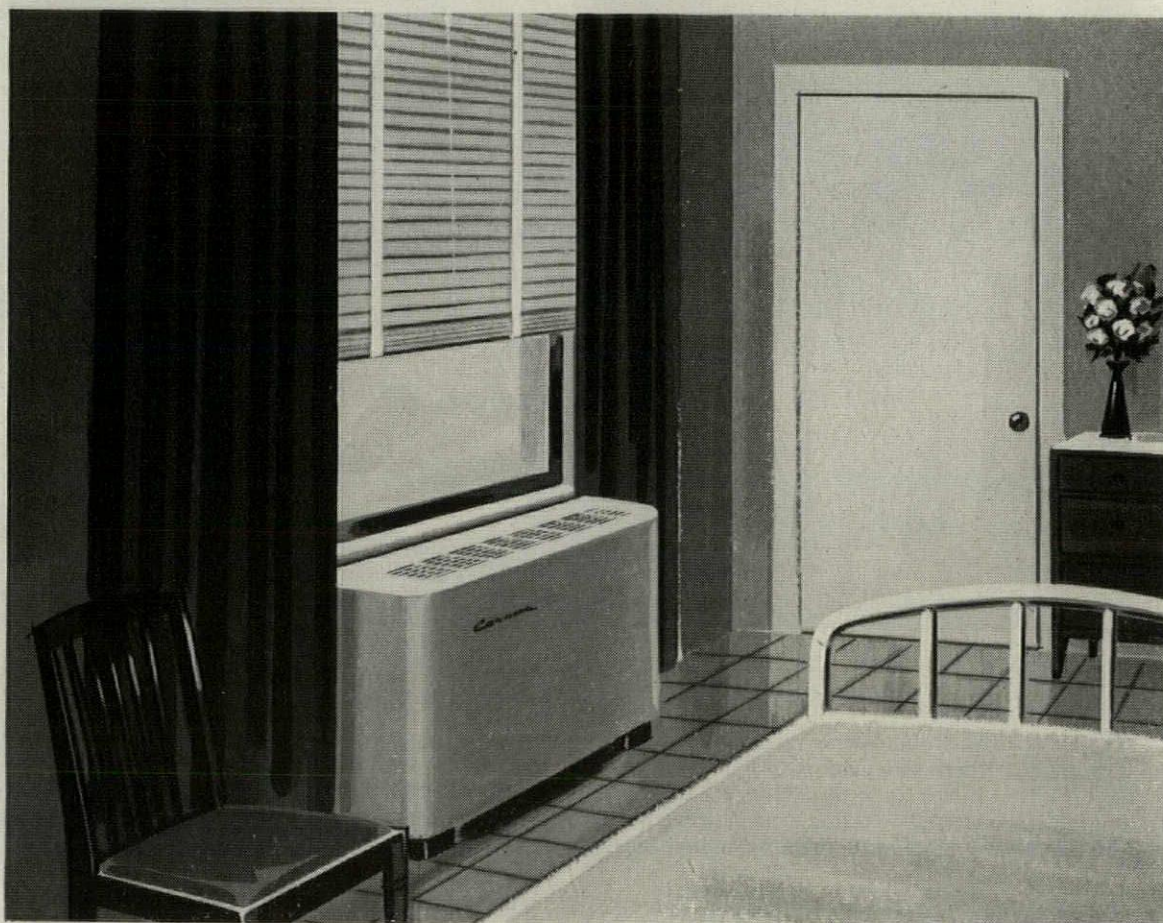


# Carrier again makes news



▼ *Carrier's New Room Weathermaker*

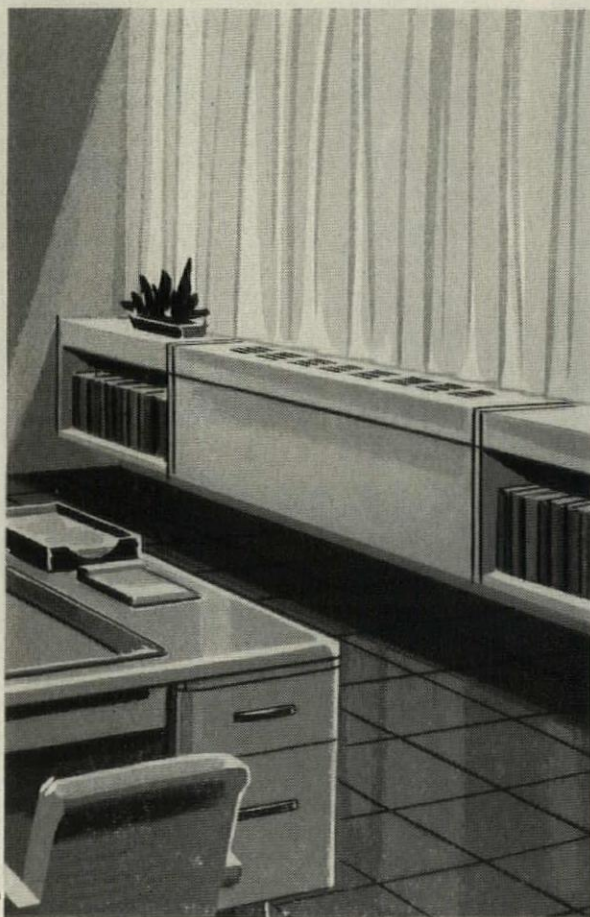
*New Carrier Weathermaker* ▲







▲ *Carrier's New Unit Weathermaker*  
*New Carrier Modular Weathermaster Room Unit* ▼



## Here are the newest ways to air condition an apartment building, a hospital, a hotel, a motel, an office building

The four Carrier units you see here have one thing in common—they're brand new!

They open up a good many interesting design and application possibilities in the jobs you're just starting.

They may even suggest compelling changes in plans you've virtually completed.

**The New Carrier Weathermaker\*** (top left) is the one self-contained air conditioner designed for lower installation costs. It requires less space and permits more freedom in the location of the unit, singly or as part of a multiple unit system. Can be installed with or without ductwork, built in the wall, or located completely in the room.

**Carrier's New Room Weathermaker** (bottom left) is an extremely flexible fan-coil unit. It can be mounted horizontally or vertically, with or without cabinet. Put it on the ceiling or stand it on the floor anywhere in the room. Attach it to a wall. Fur it in. Or recess it under a window. Three sizes— $\frac{1}{2}$ , 1,  $1\frac{1}{2}$  tons. For chilled or hot water, or direct expansion. Provides individual control of summer cooling or winter heating.

**Carrier's New Unit Weathermaker** (top right) is a fan-coil unit designed for overhead installation. It installs easily in the top of a closet, over a corridor or hallway, or behind a wall. Three sizes— $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 ton. For chilled or hot water, or direct expansion. Provides individual control of summer cooling or winter heating.

**The New Carrier Modular Weathermaster\* Units** (bottom right) bring a new flexibility to the world's finest air conditioning—the Carrier Weathermaster System. The new under-the-window units with their modular components fit into a variety of combinations—decorative ledges, built-in cabinets and modern bookcases. Now it's easy to make air conditioning part of interior design.

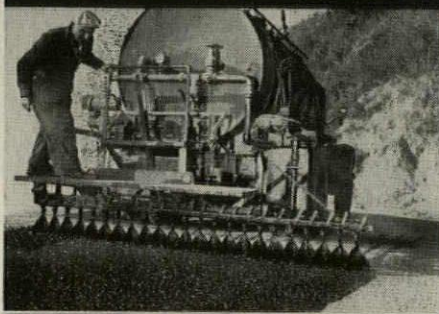
\*Reg. U. S. Pat. Off.



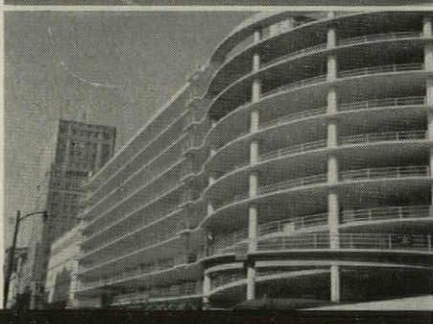
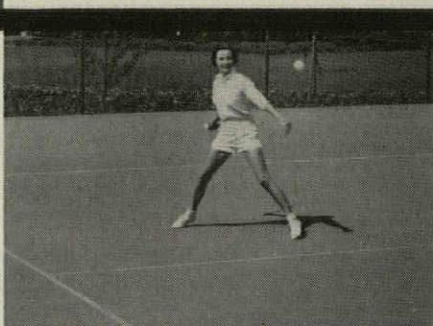
air conditioning  
refrigeration  
industrial heating



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## Flexibility, Imagination and a Spiritual Quality in this Church Installation — by **LITECONTROL**

This lighting installation at the First Methodist Church, Sarasota, Florida exemplifies what can be done with *adaptations* of standard Litecontrol fixtures. We are proud of the ingenuity expressed in this job but more important, it shows how Litecontrol fixtures, either standard or modified, can be made to fit into almost any interior functionally and appropriately.

While incandescent lens box lighting was indicated, the Church Committee preferred a different type of system. Responding to the challenge, our District Sales Engineer, Mr. Frank Moos, of Tampa, Florida, in collaboration with the architect and engineer, visualized the symbolic and functional arrangement shown, with recessed fluorescent troffers in the shape of a cross.

All troffers have hinged covers — they may be relamped from a catwalk above the ceiling. Corning Albalite #66 glass diffuses the light. This glass is cloth bound on the outside edges to prevent any rattling or vibration from organ reverberations. With cross pieces omitted along the rows, except at the corners, the glass appears as a continuous piece. Four foot, Rapid Start lamps are used for ease in handling. They are wired on two and three circuits, to provide variable intensity.

If cost control is a major factor in a lighting installation, standard Litecontrol fixtures will save money — and do a quality job. Yes, and if modification of standard fixtures is required to solve a special problem, you can rely on Litecontrol for the touch of imagination the situation requires.

INSTALLATION: First Methodist Church, Sarasota, Florida

ARCHITECT: Garry A. Boyle, Tampa, Florida

ENGINEER: Nathan A. Groat, Tampa, Florida

CEILING HEIGHT: 25 feet

INTERIOR FINISHES: Ceiling off-white acoustic tile and plaster; pews dark mahogany; floors pale green carpet.

FIXTURES: In cross, 38-two-lamp Rapid Start troffers, with hinged covers for top service, Albalite #66 glass panels, with lamps wired on two circuits. Remainder of fixtures are 21-six-lamp 40 W Rapid Start 8 foot troffers, as above and 18-three-lamp 40 W Rapid Start 4 foot troffers. These are all wired on three circuits.

INTENSITY: All lamps on, average 25 footcandles maintained.



# LITECONTROL

## Fixtures

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# Housing Milestone

## Precast 'Incor' Concrete Framing Cuts Erection Time and Cost on Big Philadelphia Housing Project

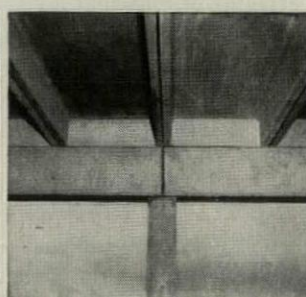
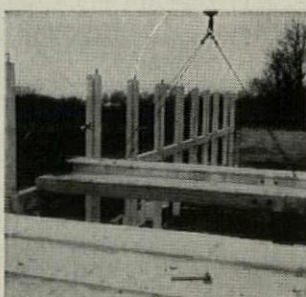
● Philadelphia, City of Homes, writes a bright, new page in the record of low-rent housing progress by providing comfortable, fire-safe dwellings for 412 families in its 500,000-sq.-ft. Liddonfield Housing Project, at a cost of less than \$8. per sq. ft. of floor area.

Use of precast 'Incor' concrete columns, floors and roof decks for the 52 two-story buildings made possible assembly line speed in erecting the 20-ft.-wide units, ranging in length from 150 to 200 ft., at the rate of two a week.

All units were fabricated with 'Incor' 24-Hour



Cement for fast, economical production and erection. You *know* what 'Incor'\* will do . . . always dependable high early strength fits into well-scheduled, assembly-line production, assuring maximum output from the form investment . . . smooth-working mixes speed placing, improve appearance . . . sound reasons for insisting on America's **FIRST** high early strength portland cement. \*Reg. U. S. Pat. Off.



First step is erection of two-story columns and spandrels. Next, 3-ft.-wide precast floor channel slabs are placed across building's full width. Right, under side of floor—smooth concrete surfaces only require painting.

PHILADELPHIA HOUSING AUTHORITY  
LIDDONFIELD HOUSING PROJECT

Architects:  
LIDDONFIELD ARCHITECTS OF  
PHILADELPHIA

Civil Engineers:  
BARTON & MARTIN  
Philadelphia

General Contractor:  
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# architectural **FORUM**

the magazine of building

## About this month's FORUM

When FORUM decided to investigate for its readers the business of building and operating public toilets, we expected no help and got none from TIME or LIFE or FORTUNE or SPORTS ILLUSTRATED. The mountain of nickles and dimes that is raked together out of those lock-slot doors is a vision financially edifying. Yet, so far as we know, FORTUNE has never been interested in the business. Thus far, FORUM has been the only magazine in the shop to campaign for a better atmosphere in these lowly places, the orphans of building (see p. 138).

Usually we *do* rely rather heavily on the chance to "borrow" information out of the world's biggest magazine pool of that commodity. For example, when we alighted on the airport subject (p. 116), the first move of Mary Jane Lightbown, as research director, was to find out what FORTUNE might have collected on airports in preparing for last January's story on airlines economics.

And when illustrations are needed on any number of different themes there is always the enormous and beautiful "morgue" of LIFE as a first source to look into.

We know of no other publication serving a single art and a single industry, whose editors have FORUM's lucky opportunity to get served by such a worldwide rapid-fire news service conducted by a

crackerjack corps of reporters and correspondents. No duldards, these men know exactly how to proceed when FORUM asks the real lowdown on community feeling regarding some newly erected building, or asks for local expert opinion on its prospect of success.

Though FORUM has this chance always to reach into a big common pool of information, its editors do not necessarily regard any single public character in exactly the same light as do the editors of the big magazines. For example, as this issue attests, we have always had a special and private fondness for a scrappy and cherky blue-eyed Irishman who was once president of the New Haven Railroad and the chief butt of a wickedly eloquent group of editorial and advertising writers along the line, who hated to have the trains late and didn't want to pay for parking at the station. Yes, we speak of Patrick McGinnis. We have no doubt that FORTUNE's editors knew him better than we did as a financial manipulator but we knew him better than most, as a man with a flair for high colorful style and brilliant rearrangements in building and rolling stock (p. 106).

Long ago we learned that anybody's taste in neckties does not necessarily correlate with the profile his stocks draw on the market record, and many an operator whose

financial edifice has been shaky has a very stable place in architectural history. The other day we delightedly listened to a Westport, Conn. commuter who exclaimed how wonderfully McGinnis has enlarged the station-side parking lot and added, casually: "Of course sooner or later the railroad must be allowed to charge for it." For McGinnis the financier this admission comes too late. But in any case FORUM will always be for McGinnis as the man of vision who raised up a fine bright railroad architecture like a flag of hope.

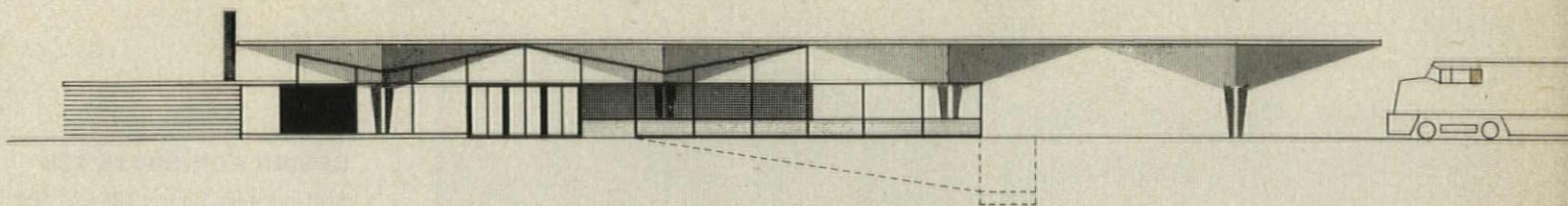
But we were talking about the TIME-LIFE family and its internal interchange of information and opinion. The exchange works both ways, for FORUM passes on many a choice architectural or building story which the others might otherwise have missed. And we have learned to welcome now and then a Sunday phone call at home from some anxious TIME or LIFE researcher checking the facts on such a story. (They have a funny schedule on those weeklies, working week ends and taking off in midweek.) Then again, FORUM will gently nudge these people, as they know, to give proper credit for new buildings to the architect. But they stay ruggedly independent in what they say, as do we. They have to be shown.

THE EDITORS









Section through proposed new station by Marcel Breuer

## NEW OPERATIONS, NEW FACE

*Although the New Haven railroad may be better known for its bloopers and bad luck, a proposed restyling of stations and rolling stock shows how any corporation can make a better appearance before its public*

Many corporations reorganize, but few of them go to the bother of changing the expressions on their corporate faces. Last year, in the furore of floods, broken schedules, and financial accusations which ended the brief reign of Patrick B. McGinnis as president of the New Haven Railroad, the curtain was lowered on a unique corporate redesign just as it had begun to rise. McGinnis' ideas were many, and he was in process of symbolizing them to the public. Completed, an architectural redesign of all facilities would have been his best (and perhaps his only good) piece of public relations. But in the fall the rains came, and he left. The program remains, however, and it may be a model for many other corporations in other fields and in brisker health than the railroads.

The program started with the design of a magnificently flamboyant, unrailroadlike president's office, several floors high, in the dignified old Grand Central building in New York. The cast included such designers as Florence Knoll (who was McGinnis' advisor on the whole program) and Herbert Matter, and such architects as Minoru Yamasaki, Marcel Breuer and Eero Saarinen. Their assignment: to keep the iron in the railroading look, but to shuck the dowdy air of muddy-green desuetude which makes many first-class US RR lines look like relics. Designer Matter was commissioned to give the existing facilities a vivid, lively new look by redesigning the symbols (see below) and, with Flor-

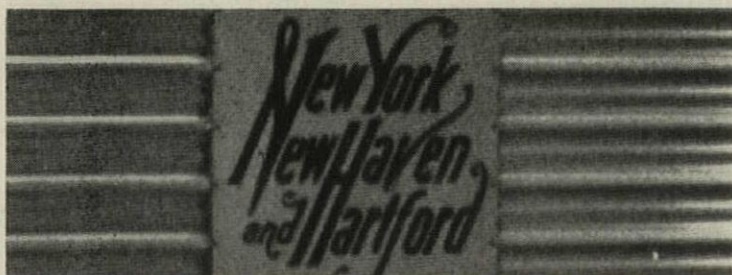
ence Knoll, repainting the station houses and rolling stock as their maintenance numbers came up. Breuer was asked to design not only a new railroad station (above and p. 110), but also three new trains. Saarinen was asked to relocate and design a station. Yamasaki had a myriad assignment, which began with the president's office: big and small stations, overpasses, standard canopies, etc. For a year and more the program highballed. Presented on these pages are some of the projects.

But during this year there had been a rising mumble of complaints from the New York commuters on the New Haven line about slow service and pay-parking. McGinnis finally snarled back, the commuters howled and the situation deteriorated into a vindictive quarrel. Then came the real washout; millions of tons of angry water were loosed by the 1955 fall hurricanes into the New Haven's operating area, dealing the line a mammoth financial blow, and making trains even later. President McGinnis shortly accepted the presidency of the Boston & Maine, on higher ground.

The New Haven today has recovered from neither the rolling assaults of nature, nor the startling antipathy of offended commuters. According to George Alpert, the line's new president, work is being rushed on the three main problems: roadbed improvement, safety features, and new locomotives.

What of the architectural plans? Until the blood subsides in the commuters' eyes, the bright paint colors will be played down on the New Haven. Then, in peace, when solutions to the other problems are in hand, the new managers will take another look at the proposed architectural changes. Most men in the building industry will agree that their portfolio of proposals can't be matched by any other railroad anywhere.

Old trademark

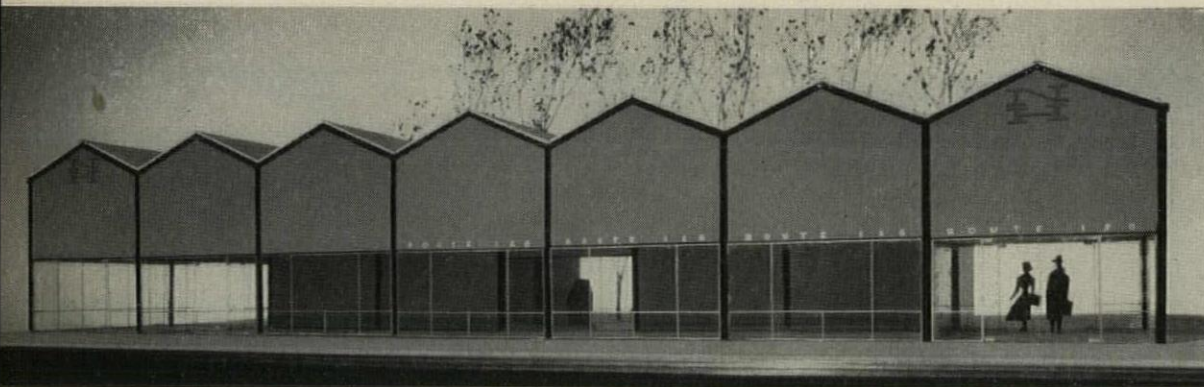


PHOTOS (ABOVE & OPP. P.): B. CLINN

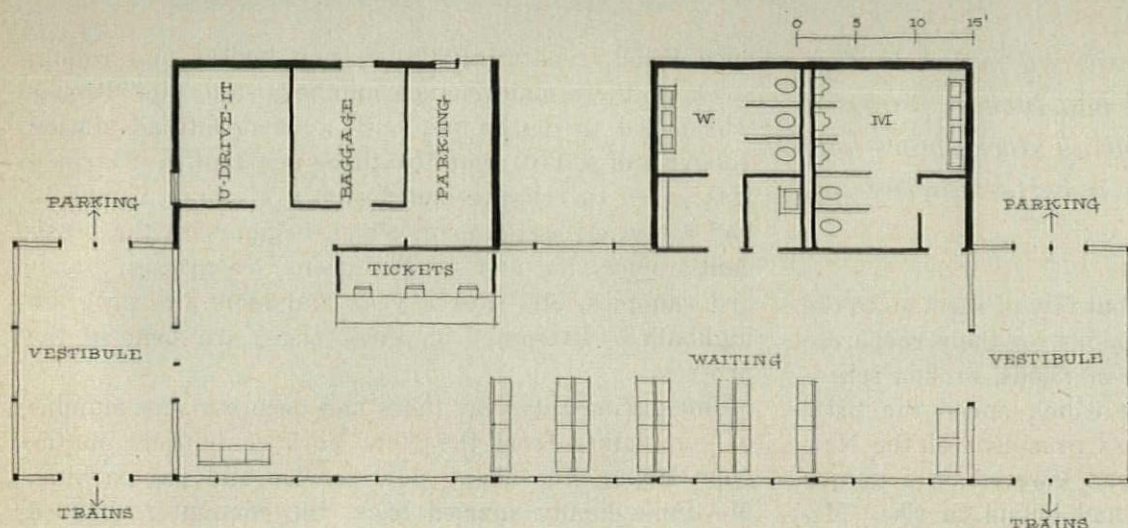
New trademark







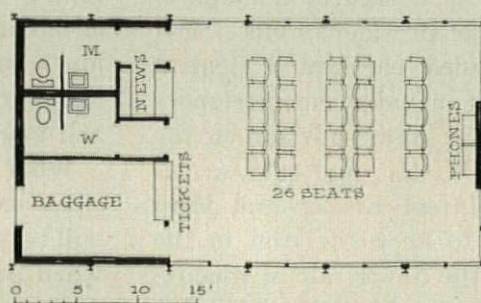
MODEL PHOTOS: LOUIS CHECKMAN

**DESIGN FOR ROUTE 128**

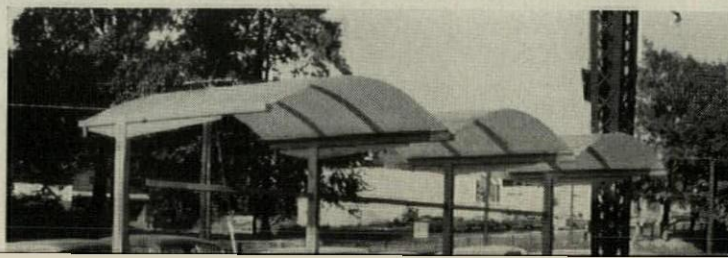
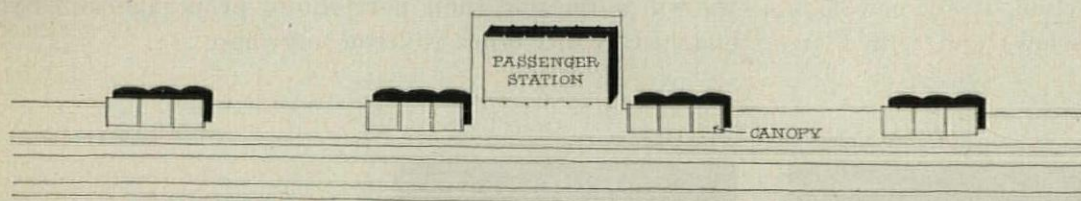
Station for Route 128 on the New Haven, including food concession, car rental offices and other facilities, was designed for a rapidly growing passenger point. Says Yamasaki: "We decided on this scheme because we felt that the waiting room should be a long glass-enclosed room paralleling the tracks, so that it was in a sense an enclosed air-conditioned platform. The commuter who allows himself but a short period of waiting for his train, and is thus more anxious to see the approaching train, could be indoors. The vestibules were made large because we felt that commuters might congregate there too. The design of the roof is a unit system which allows for expansion—which would further accentuate the feeling of an indoor platform."

**NOROTON HEIGHTS STATION**

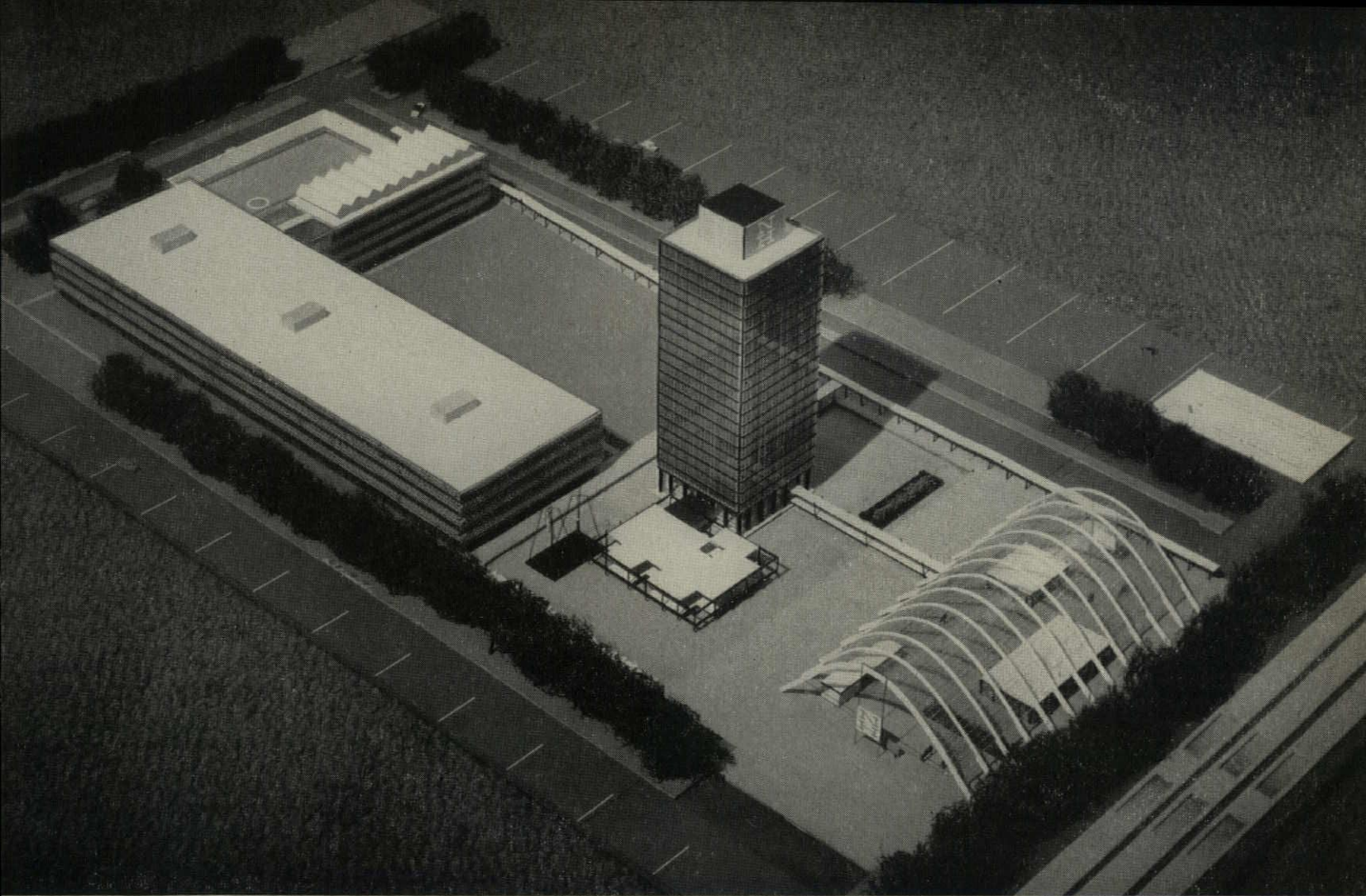
Noroton Heights waiting room is typical of the small, standardized shelter suggested by Yamasaki for pick-up points which need only ticket space, newsstand and a little shelter.

**STANDARD CANOPY**

Canopy by Yamasaki of plastic and steel, replacing bulky timber shelters, was to be standard on platforms throughout system. Groups of three vaults each were designed to be placed along track at intervals of 80', the length of a railroad car. Canopies originally were to be only 6'-8" high—an effective umbrella height—but railroad engineers raised this one at Noroton Heights, Conn.



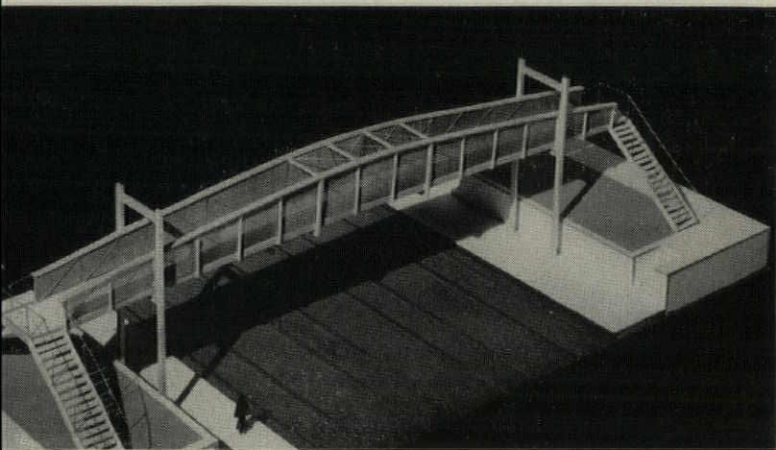




#### NEW STATION FOR NEW HAVEN

This project includes also a consolidated headquarters office building for the railroad, a new hotel (combining motor and rail hotel), a large parking facility for commuters' and employees' cars, and perhaps a shopping center. Transparent, parabolic roof over station section was chosen by Yamasaki as a striking symbol to emphasize that this location would be the center of the New Haven's operations. Under the roof (of heat ab-

sorbing glass) are smaller buildings, heated and conditioned, to house ticket operations, coffee shop, etc. This development, if completed, may eventually be profitable for the New Haven. Developer Herbert Greenwald of Chicago is interested in backing it as a self-liquidating property; he thinks it is a feasible project financially, but should be even bigger, include some housing, and tie into the general redevelopment plan for the city.



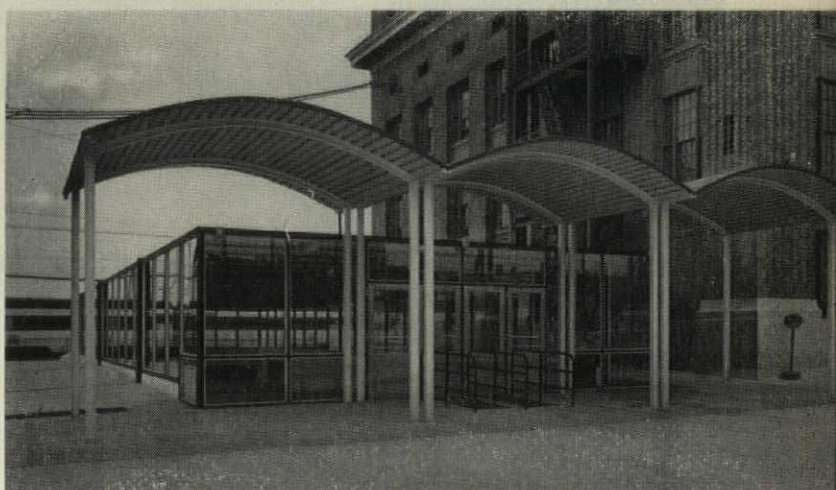
#### PEDESTRIAN CROSSING

Yamasaki's bridges for Pawtucket and Sharon were designed as truss frames, using the truss depth to screen sides. Stairs were broken with landings to minimize climb.

#### COMPLETED SHELTER

Ramp shelter at New Haven by Yamasaki, Leinweber & Associates was one tangible product of the design program accomplished before it was interrupted. Designed in two weeks and built for \$35,000, this shelter protects a passenger ramp from sweeping winter winds and dignifies the entrance with the triply vaulted shelter. The canopy serves also as a waiting station for taxis. Structure of ramp shelter is steel frame, with exposed steel joists.

JAY STORM STUDIO







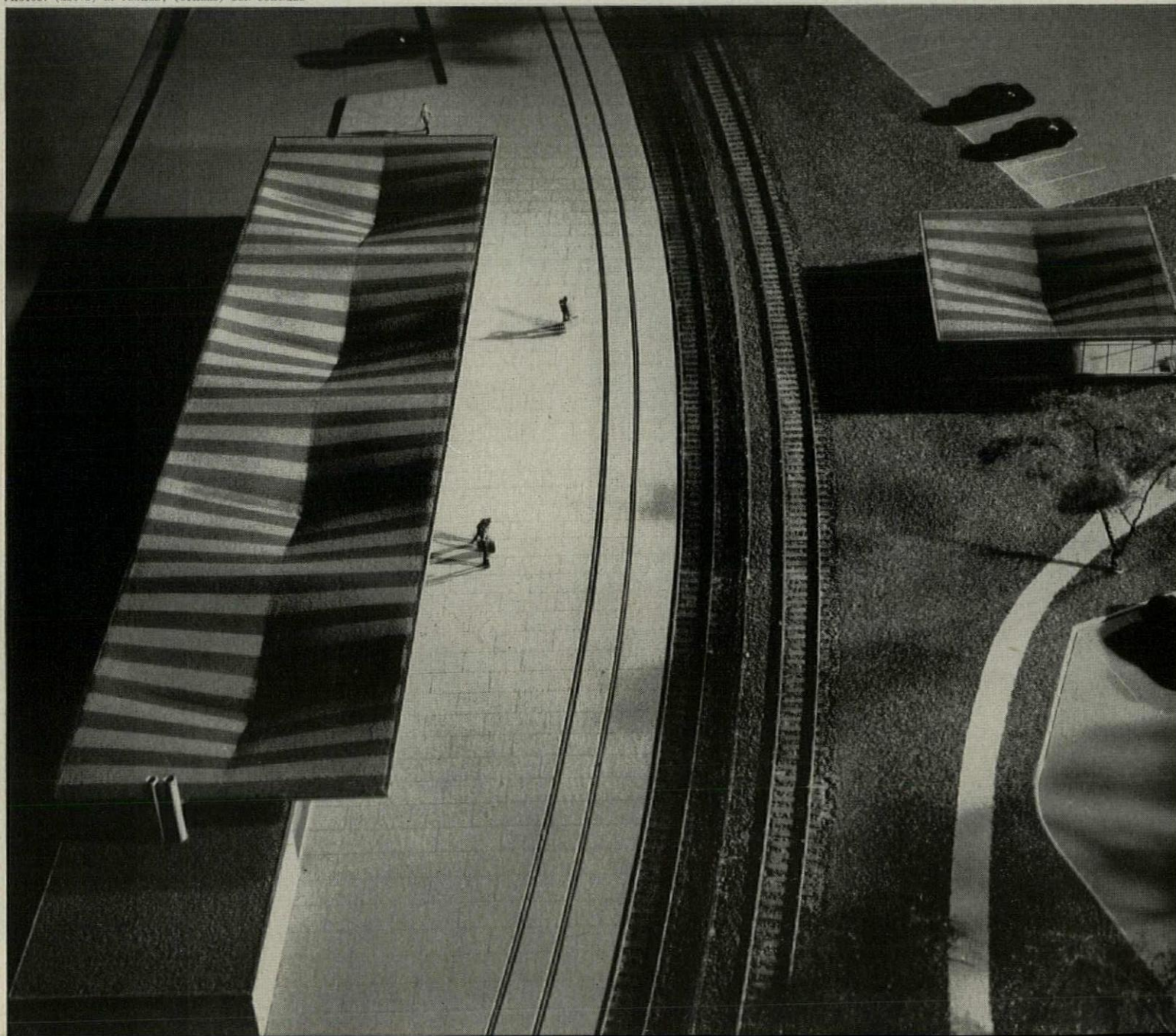
# GREENWICH STATION

Proposed Greenwich station by Eero Saarinen & Associates would be elevated and span a street, to take maximum advantage of railroad-owned

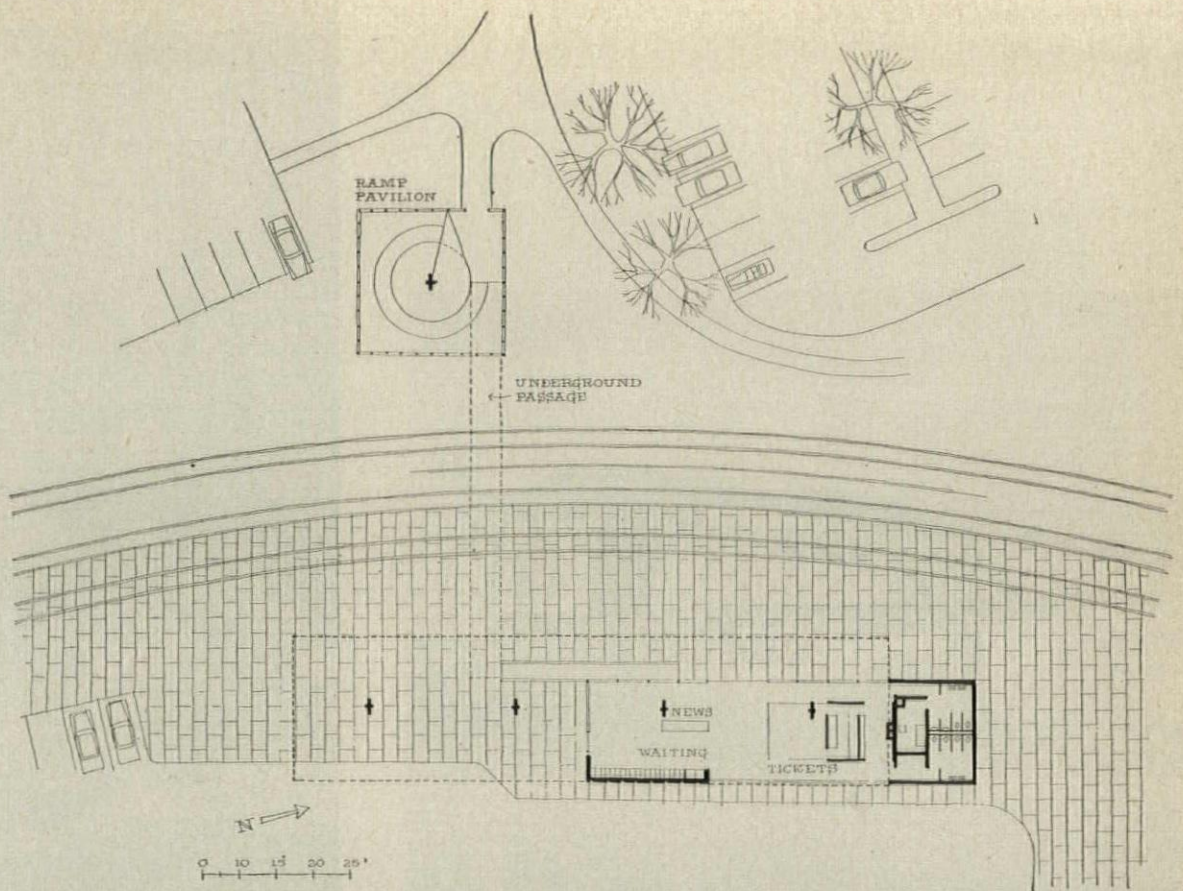
property for parking. Continuous roof parallels rail traffic, would be made of stainless steel or another white metal, shaped in stiff double curva-

ture. Comments Saarinen: "I wanted a twentieth-century, maintenance-free station with some of the dynamic feeling of a train."

PHOTOS: (ABOVE) R. YEAKEL; (OTHERS) BEN SCHNALL



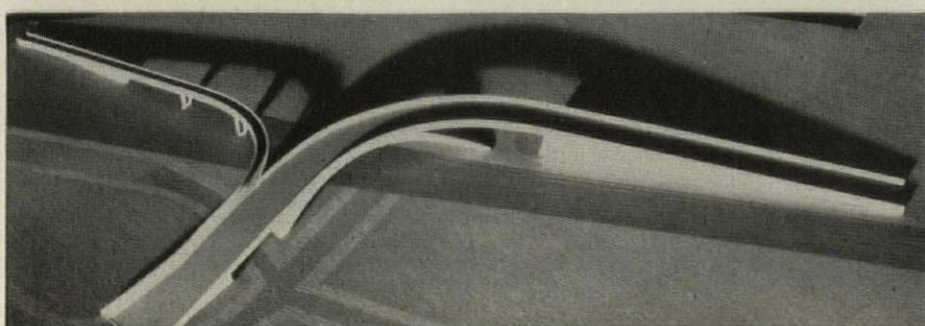
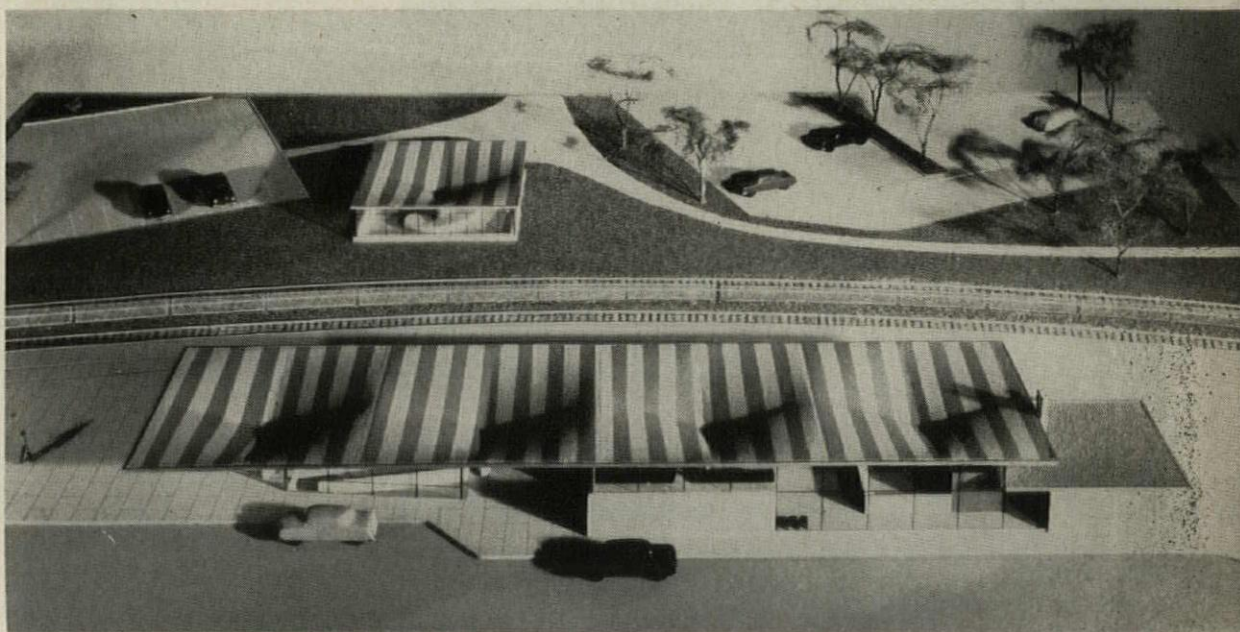
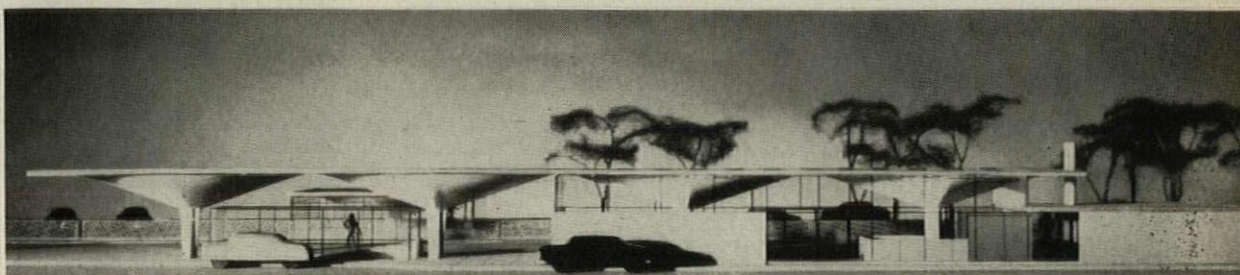




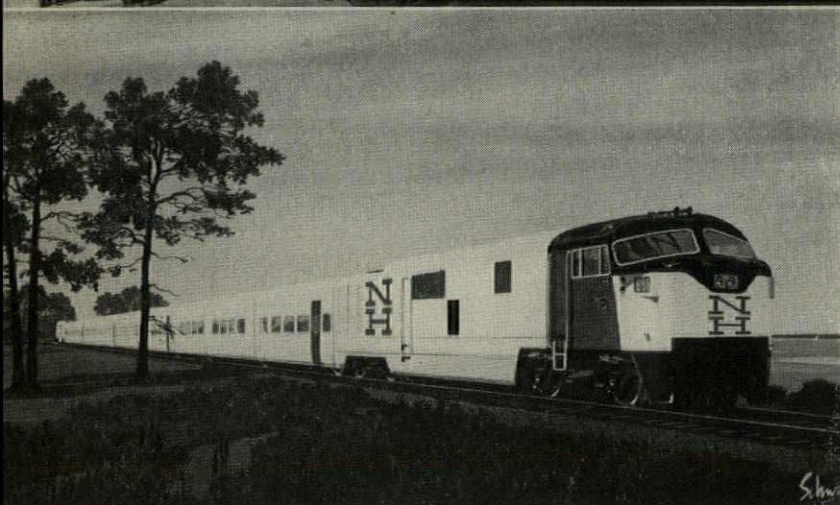
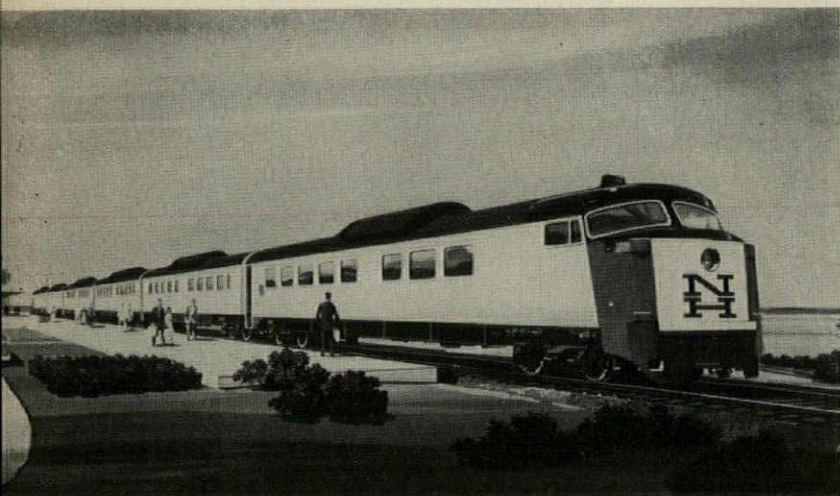
## NEW LONDON STATION

Typical of the simple methods which the architects utilized to achieve effects in their designs for the New Haven is the finish on the roof of this Marcel Breuer design for New London. The stripes are roll roofing. Typical of the strength and grace the architects drove for are these thin-shell concrete roof structural units, composed of four parabolic saddle shells grouped around a central pier, cantilevered (see section on p. 107). Plans call for this station to be built on reclaimed land along the harbor line in the Thames river; all-day parking lots are to provide space for 1,600 cars, with a special short-term parking lot for wives awaiting the return of their commuter husbands. A boat basin and other recreational facilities have also been suggested to fill out land use.

Station itself is a combination of roofed shelter and totally enclosed shelter. Grade crossing which now exists at the New London station is replaced by an automobile overpass (also of thin shell concrete construction—see photo bottom, right) including a pedestrian ramp which parts company with the main bridge on the ascent. Small shelter across tracks contains entrance to passenger tunnel under right-of-way.



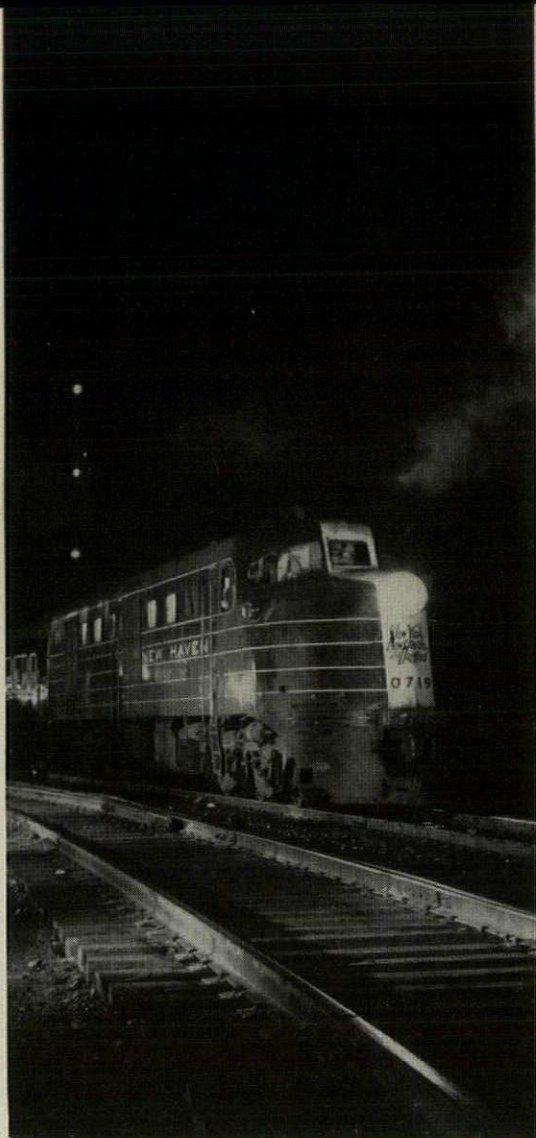




### BREUER'S TRAINS

Another assignment undertaken by Marcel Breuer's office was the design of trains on three different chassis for the New Haven Railroad, shown in renderings. The top is the RDC "Hot Rod" coach by the Budd Co.; each coach, conventional in length and height, is self-propelled. Next below is "Train X," built low to the tracks and wheeled unconven-

tionally—with two structural units per coach, expressed horizontally in Breuer's design by a change in color of the anodized aluminum skin. The bottom train is Breuer's adaptation of the famed stainless steel "Talgo," each of whose coaches has three structural components coupled with diaphragms. Breuer designed the interiors as well as the skins.



GRAPHIC HOUSE

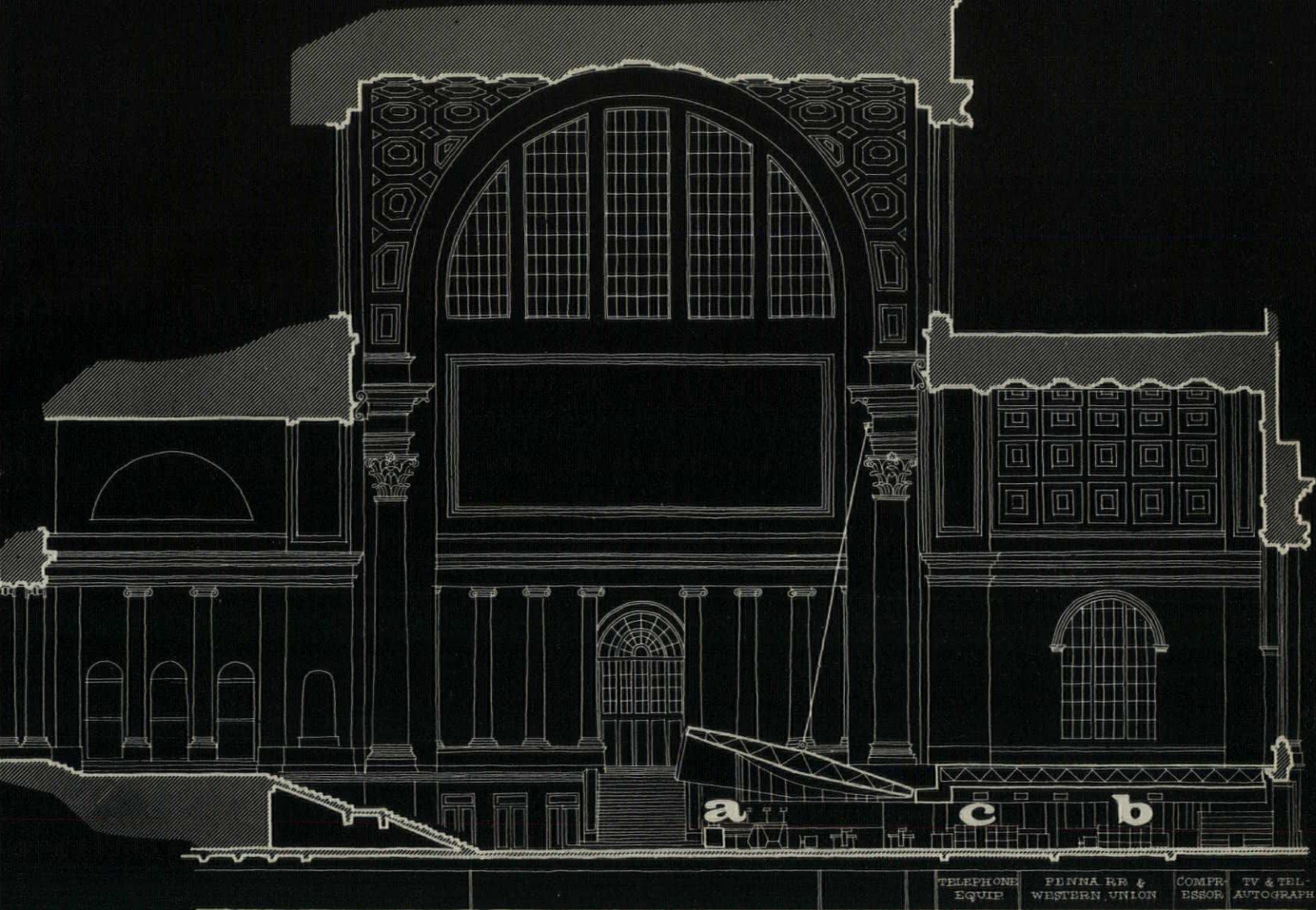
A view (above) of the New Haven in action today.

Another view of the New Haven in action today.



B. GLINN





**Section** through waiting room of Penn station showing new facility. At A, ticket selling counter, clerk looks at TV

screen which shows him train charts at B. Phone reservation clerks at C also are connected visually by TV with charts, B.

## CLASSIC STATION, MODERN IMPROVEMENT

*Beneath the high ornate vaults of its New York terminal, The Pennsylvania Railroad is hanging a canopy of steel over an electronic ticketing operation. Result: a new lease on life for a historic old building*

The morose magnificence of Penn Station in New York has recently been invaded by a battalion of workmen who are executing a piece of inventiveness which will bring a remarkable change to passengers' concept of railroading. Into the floor of the half-century-old building they are plugging an electronic marvel of trip-scheduling and ticket selling, a \$2 million investment in modern machinery which will put the Pennsy ahead





**Present Penn Station** interior, as shown partially by montage of several photographs. Right in rendering, the

canopy that is being hung, and its plan. Lester Tichy is architect; Paul Weidlinger, structural engineer.

even of the airlines in this complicated part of the transportation business. It is a bold move on the part of the line's president, James M. Symes; the Pennsy, however, has an old tradition of managerial boldness.

In 1901, when Alexander Cassatt, president of the Pennsylvania Railroad\*, proposed to build a new terminal on 33rd St. in Manhattan, he was advised "Build in Hoboken." There was no way to get the Pennsy trains across the Hudson River to Manhattan. "There'll be a way," he replied. When, nine years later, Penn Station stood complete, connected underground and under-river to New Jersey, it was Architects McKim, Mead & White's artful reproduction of a Roman Bath that first awed the public. But behind the bath stood the reproduction of the iron and glass Crystal Palace Cassatt had requested as a trainroom, and under both was the functionally exciting track layout Cassatt had demanded. One weakness in the whole admirable design: the ticket-selling booths, which were handsome, but obviously had been added to the Roman Bath as a twentieth-century afterthought.

It has taken a half century for the Pennsylvania to decide to correct this small, annoying weakness, but finally they are doing it in a way which might have drawn the admiration of insistent old Alexander Cassatt himself. The electronic pavilion designed by Architect Lester Tichy on the marble floor of the old Roman

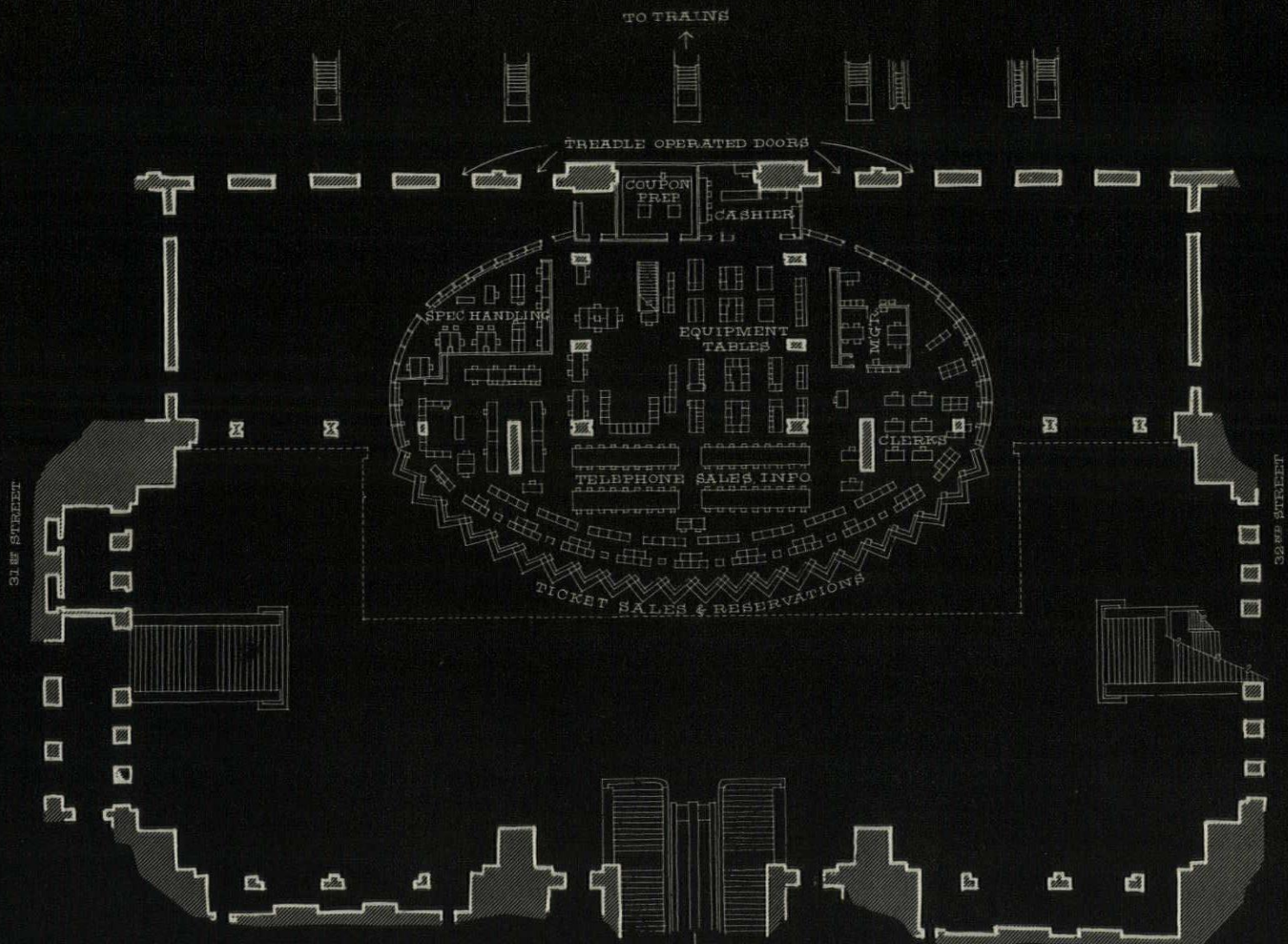
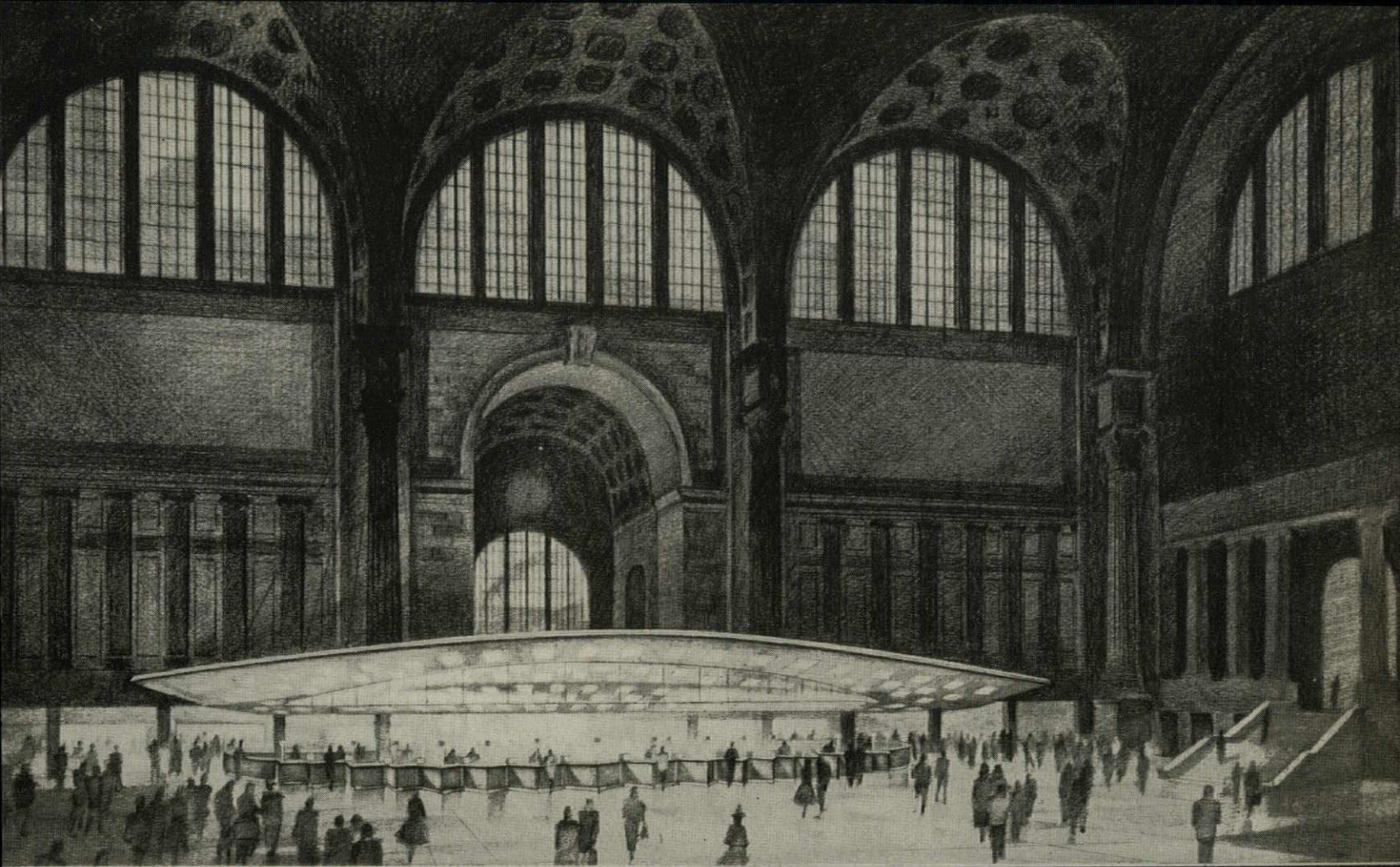
Bath will contain a battery of closed-circuit TV eyes which will stand at the ticket sellers' elbows and connect visually with the reservation charts to the rear of the service island. Without leaving his counter or his customer the ticket seller will be able to survey the possibilities over all the available train charts and offer an immediate, accurate reservation. The efficiency of each ticket seller will be multiplied; almost all routes will be sold at each booth.

The structure housing this service will be symbolic of it, an unabashed production in modern materials and environmental techniques, a shiny *machine for ticket selling* inside the porous magnificence of McKim, Mead & White's classic. Part of the roof of the ticket pavilion will be hung by cables from high on the massive old column behind it (the column is easily strong enough to take on this unanticipated load; no extra reinforcing will be necessary). The pavilion roof will partition this part of the station off from the rest of the interior vastness by directing conditioned air down on the ticket sellers and machines. Another ingredient of this roof: 118,000 w. of illumination.

Included in this new concentration of services will be the telephone reservation and information bureaus now located in other parts of the building. On the level below the new ticket house will be built air-conditioned workrooms for the ticket auditors, and lounges, washrooms and locker facilities for bureau employees.

\* and brother of famed American Painter Mary Cassatt









ANDREAS FEININGER—LIFE

ARTHUR SHAY—FORTUNE





In the air the customer may be treated like a king. But on the ground he still has to fight his way through a chamber of horrors. Sheer size, and the coming of 160-passenger jets, call for new thinking about air terminals

## THE AIRPORT SCRAMBLE (see cover)

In the whole air-age race for ground facilities, the consumer is the one fellow who continues to suffer from taxation without representation. Airlines are busy scrambling for the best routes and the best space on the ground. Cities are busy scrambling for air terminals that will enhance their commerce and prestige without becoming a burden to the taxpayers. Advertisers and concessionaires busily lay their traplines, baited with all the nuisance value they can summon. The "commodity" getting least consideration is the little man who is making it all possible—the customer.

Once he is on board, this fellow is getting somewhere. But getting to his plane, or getting home, he could ask for a lot of improvements. The outgoing passenger seldom finds such amenities as pleasant waiting space with enough comfortable seats, a good view, and desks for writing postcards. The arriving passenger, whose main object is to get his bag and get out, has even less luck. First he must clamber down a set of portable steps that is none too steady, dodge maintenance trucks across a stretch of pavement that can be windswept and slippery, hike down a long corridor to a crowded waiting room. Here he is made to thread his way through a maze of souvenir stands, lunch counters, pinball parlors, soft-drink machines, revolving automobiles, and a gaudy array of animated advertising—all placed there in the misguided hope that he may look, buy and help the airport break even. He may also have to do some broken-field running through outgoing passengers lined up at the ticket counters. After several hundred feet of this, he might be reduced to the point where he would put a dime in an orange pop ma-

chine. But if he did he would almost certainly be last in line at the baggage claim.

Why does this mess persist, even in some of the newest and shiniest US air terminals? Compared with railroads, say airlines and airport officials, commercial aviation has "grown like Topsy." But this is hardly an excuse for an industry to perpetuate inefficiencies, much less repeat earlier planning mistakes.

A consolidated airlines terminal is built in a curious and complex fashion. The airlines do not put up the money, but do pay about 55% of the total revenues of the average large airport through their landing fees, utilities and building rentals. The financial interest of any one airline in any one airport is fairly well diluted: the total amount all airlines pay all airports is estimated at less than 5% of the airlines' total operating expenditures. Yet any design for a terminal must pass an airlines committee, composed of airlines using the airport in question and normally chaired by the largest user. It is up to the city to provide building money with federal help (up to \$1 million in matching funds this year, with priority given to safety meas-

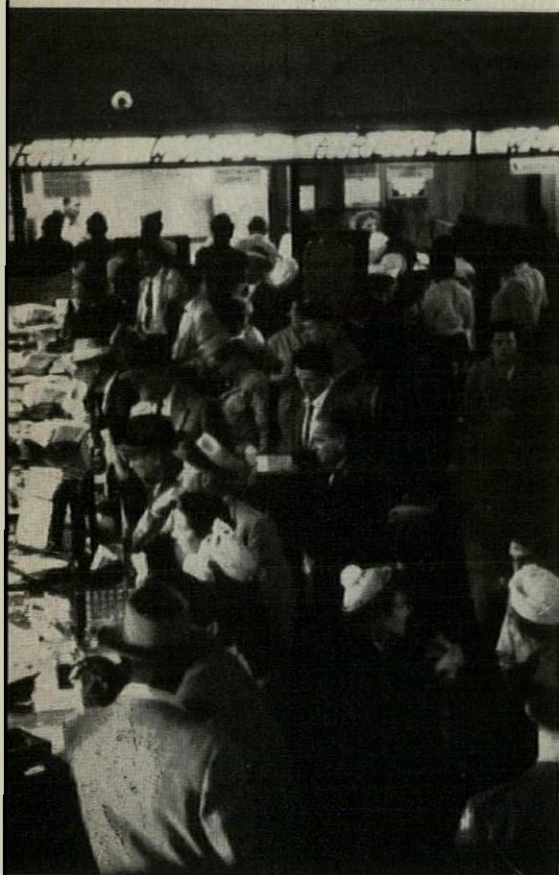
**The mess outside:** tangled skein of ground traffic and pedestrians.

**The mess inside:** bedlam and hard benches. Is he thinking about trains?





PHOTOS: (BELOW &amp; BOT. OPP. P.) JAN BRENNES—LIFE



**The long line** at ticket counters is annoying for those in it and those who have to thread through it. Improved ticketing and communications systems and general information counters will be even more needed in the heavy traffic of the jet age.

ures such as runways, clear zones and lighting). The city must have airport revenue beyond the payments from airlines if the terminal is not to drain public funds; continuous expansion out at noisy old Smith Field does not always sit well with citizens more directly interested in new schools, highways and hospitals. So the city turns to revenue bonds, and the free show of the airport is turned into a paying one by making it a shopping and entertainment center—primarily for spectators, who outnumber passengers about four to one. The trouble is that passengers, especially incoming ones, are too often lumped in with the general melee and pushed around as a captive source of revenue.

#### PUBLIC UTILITY . . .

#### OR PENNY ARCADE?

At Pittsburgh, for example, there are so many side shows going on that finding the important things—an airplane or a taxi—takes a long walk and a close search. This terminal building, one of the biggest in the world in proportion to its city, probably leads all others in revenues from food, liquor, merchandise and advertising: according to one estimate, averaging 40¢ per enplaned passenger, compared with 28¢ in Detroit, 27¢ in Philadelphia, 25¢ in San Francisco, 20¢ in Kansas City and St. Louis, 18¢ in Seattle and Los Angeles, 17¢ in Washington, D.C., 15¢ in Boston. Chances are this high return actually represents a low yield per square foot of

floor space. Whatever its financial success, the propriety of this great marble jukebox has been questioned by many a traveler.

If Pittsburgh is overbuilt, most terminals have been underbuilt in view of the expanding traffic, and many have been so obsolete and inflexible they have had to be abandoned. Two of the best new US airport buildings, St. Louis (AF, May, '56) and Cleveland (p. 121) are both handsome and expansible. Newark, with a great clear span roof along the field side, can be cleared of its counters and concessions and used as a hangar, should need arise for a still larger passenger building. Both Newark and Philadelphia, however, have a common failing: incoming passengers have to thread their way well over 500' between concessions on one side and outgoing passengers lined up at ticket counters on the other, to find the baggage claim hidden in a remote corner. Today, this is annoying; in another few years the increased traffic will make it impossible.

#### COMING: NEW PROBLEMS WITH JETS

Airports have hardly caught up with the piston-engine plane. Now, hovering on the horizon, is the swept-wing specter of the jet, an air leviathan that will nearly double the speed of present-day craft (to 600 mph plus) and the capacity as well (to perhaps 160 seats per plane, tourist-class seating). In the race to capture their share of a promising mass market, hotly competing airlines have ordered nearly 200 DC-8's





and Boeing 707's, dozens of "junior jetliners" seating 80 to 90, plus nearly 200 turboprops and well over 200 conventional piston planes. Adding all these to the holdovers from the present fleet, the available seats will be nearly twice the number of passengers CAA conservatively estimates for 1960. To fill their planes the airlines must stimulate a vast market beyond the fast-rising traffic curve, with the lure of speed and lower fares.

Handling huge new volumes of passengers and baggage—up to 160 peoples surging through the terminals at every take-off and landing—is one of the most pressing problems facing airport operators and their architects in the jet age. The maze will have to go. Separation of in-passengers, out-passengers, spectators, baggage and cargo will be mandatory. Routes will have to be short, wide, direct and clearly marked by signs that do not have to compete with a jumble of advertising. Faster loading will become vital if the number of gate positions is to be kept to a workable—and walkable—minimum. Many new terminals already split passenger and baggage flow into separate in and out levels and speed it by moving stairs, automatic doors, baggage chutes and conveyors. Here are some of the newer experiments that may have to be adopted soon:

*Decentralized gate check-in* and baggage claim may have to replace the forcing of all passengers through a single bottleneck.

*Electronic ticketing*, perhaps similar to the scheme for New

York's Pennsylvania Railroad Station (p. 115), will be needed to speed up lines at ticket counters.

*Self-claiming of baggage:* United Airlines reports that self-claim is 50% faster, with only one misclaim occurring during the experimental handling of 25,000 pieces of luggage, and has extended the system to 23 cities. Only one porter at the exit is needed to take baggage checks, freeing others to help people who need it. Cleveland's new terminal is switching to self-claim, may even eliminate handing over the stubs.

*Passenger conveyors* will speed the long walk down the three "fingers" of the terminal now abuilding in Dallas. Costing about \$80,000 each, these will carry passengers on 1½ mph, 40"-wide rubber belts with moving hand rails out some 250' toward the plane gates and back, ramping up 5' over truck underpasses.

*Field waiting rooms* are proving a welcome addition in Milwaukee (see AF, Sept. '55). Located well



**The long wait** at baggage claim counters could be improved by more counterspace, baggage trains drawing up alongside the customers' counter itself, self-claiming of baggage, and baggage conveyor systems. By the time these passengers got to the baggage claim they had walked almost 1,000' the last 500' unnecessarily down the length of the main waiting room (see photos above, left).

**The long walk** inside big new terminals is often equipped with heat, light and view, but it's still a long walk.

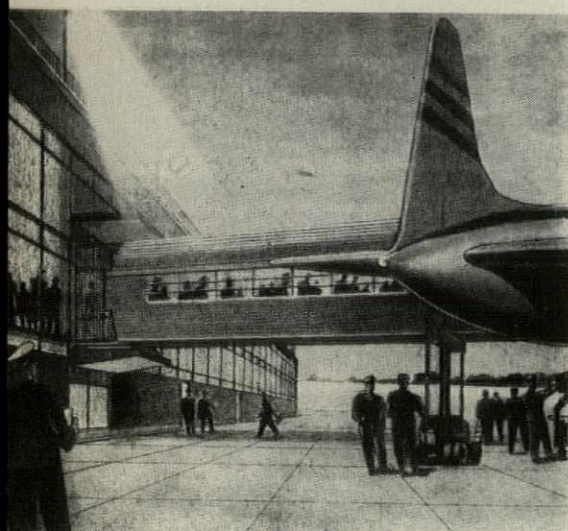






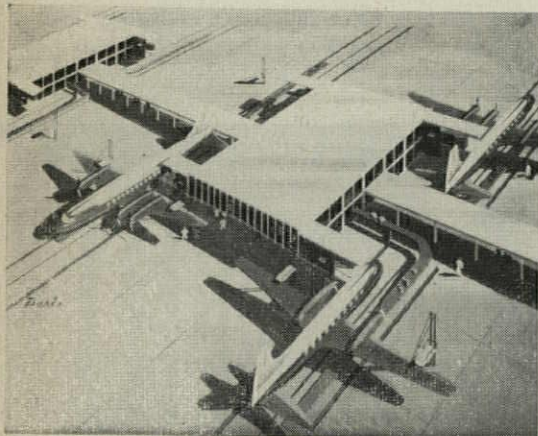
N. R. FAHMAN—LIFE

Jet transport: the Boeing 707



Passenger bridge swings out on wheeled leg, telescopes up to the plane door.

United Air Lines' mechanized airdock



out on each finger they provide seating, washrooms, telephones, telegraph and parcel lockers—basic conveniences that cut down loading delays caused by passengers using the main building.

*Streamlined plane servicing* is on the way. At many new airports underground piping and pits have replaced the inefficient, unsafe tangle of separate trucks for gasoline, oil, water, sewage, electricity and air conditioning. With jets taking on up to 20,000 gal. of fuel per flight—the contents of four large fuel trucks—direct piping becomes almost essential, and the industry will have to work out a way of standardizing brands of fuel to avoid a staggering duplication of storage and piping facilities.

*Passenger bridges* at second-story level have been recommended for years to eliminate the unprotected walk across a slippery apron and up rickety stairs to the airplane. By next year Chicago's O'Hare Field may actually have pilot models in operation (sketch, center left).

*Airdocks* which integrate all the loading and service activities have been tested and are now headed for limited operational use. One is the Whiting Loadair, where the plane rolls onto three dollies which pull it sideways to a covered passenger bridge at the upper level and to baggage and cargo conveyors below. A Loadair has been tried for a year at New York's International Airport and may be installed at several

other airports. United Airlines has finished testing a mockup of its own UAL Airdock at Denver and is now building an operational model there. In this system, designed by Architect John Train and other members of the Chicago office of Skidmore, Owings & Merrill, the plane is winched in tail-first to fixed unloading and servicing platforms (lower left). Not only do the airlines now lose time on the ground positioning and removing all their equipment, which in turn requires more gate positions, but the duplication of equipment and manpower creates a serious traffic problem and higher costs which must be passed on to the passenger. Airlines have considered consolidated baggage handling and servicing by a terminal services company but have been unable to get together.

*Underground terminals* may prove useful to protect passengers from jet noise and blast as well as normal field operations and weather. Passenger tunnels leading to loading islands out on the apron are reported under consideration in Canada, which has the added problem of snow drifting up against building "fingers." In a scheme proposed by Australia's Department of Civil Aviation, jet airliners would taxi up ramps and roll down into chocks at one of 18 gate positions on an elevated apron. Passengers would enter the terminal at ground level, walk through tunnels and into elevators which would pop up from



the apron at each gate position and roll forward to the plane's door to load passengers, baggage and cargo. Then chocks and elevator would be retracted flush with the apron and the plane would roll down a 3% slope to an engine-starting area well away from the terminal building. In the US, the new airport at Wichita makes use of short tunnels instead of fingers (p. 123). An early proposal for Los Angeles by Pereira & Luckman shows a central dome connected by tunnels to satellite domes around which planes could taxi and park freely. Architect Welton Becket, their associate on the latest scheme (p. 124), recently told a group of airport commissioners that, ideally, he would put everything but the control tower underground, gaining protection from noise and ideal control of environment with electric light and air conditioning.

*Direct buses* from downtown terminals to the plane on the apron would eliminate completely the transshipment of passengers and baggage through a field terminal. London and Zurich, among other European cities, use buses to the field terminal and other buses to loading positions on the apron, particularly for noisy Comet jetliners which have been relegated to remote start-up areas. The design for a *direct* bus from downtown, with built-in loading bridge at the level of the plane door, has long been in the files of American Airlines.



*Cleveland's tower and dining room, seen from the field*

## NEW US AIRPORTS

Since 1950 at least 18 new terminal buildings have sprung up at major airports around the US, and countless others have been built at smaller fields. At the 37 largest terminals, reports the Airport Operators Council, \$40 million in improvements is underway and plans have been made for a whopping \$453 million more.

Newest big terminal to open is the \$3.7 million building at Cleveland's Hopkins Municipal Airport (photos above and be-

low). Cleveland has a carefully studied circulation system (overleaf), unobtrusive concessions and an uncluttered lobby, handsome accent walls of red, blue and yellow glazed brick, nonbearing walls and partitions for easy expansion. Designed by Architects Outcalt, Guenther & Associates, it was built in eight stages at a cost of \$22 per sq. ft., gradually replacing the adjacent old terminal without interrupting operations.

*Spacious lobby has central flight information board*

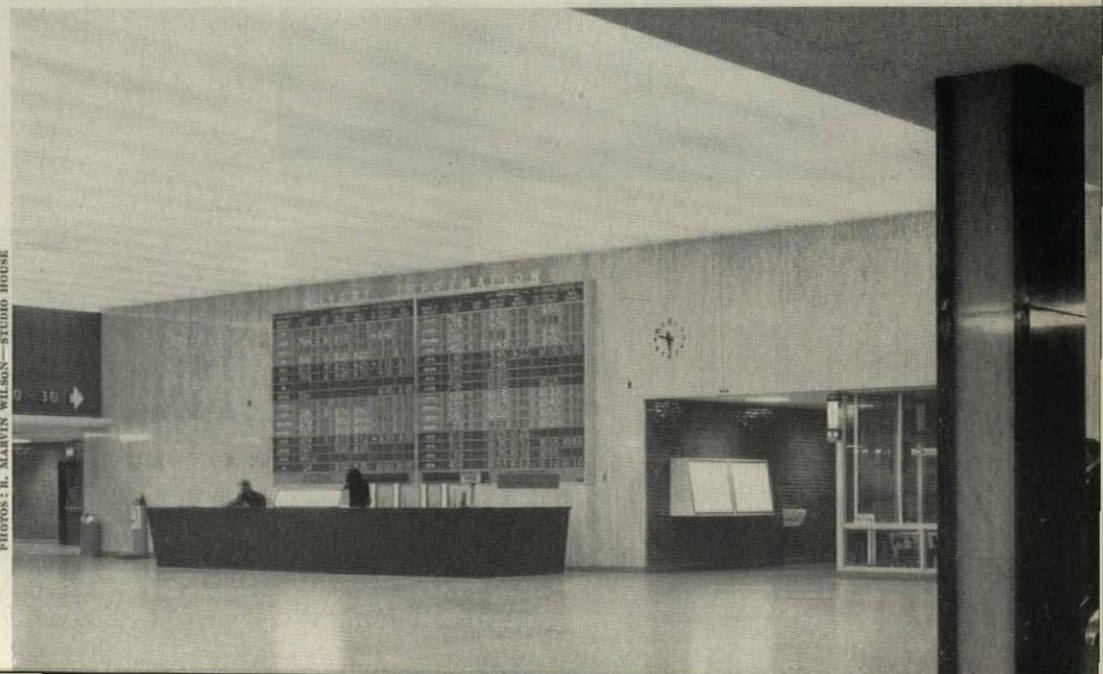
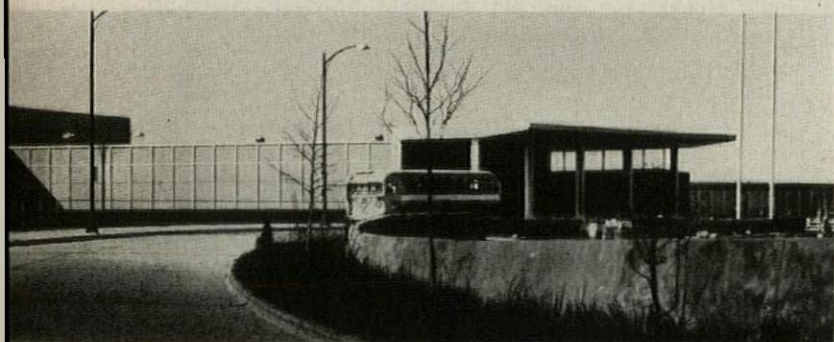
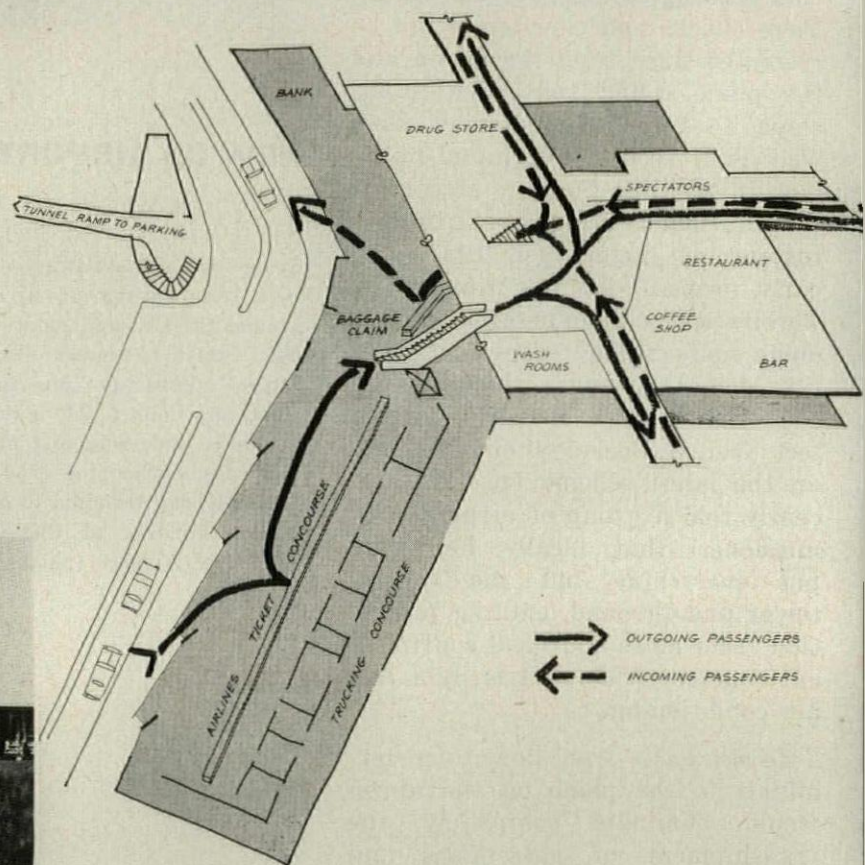


PHOTO: R. MARVIN WILSON—STUDIO HOUSE



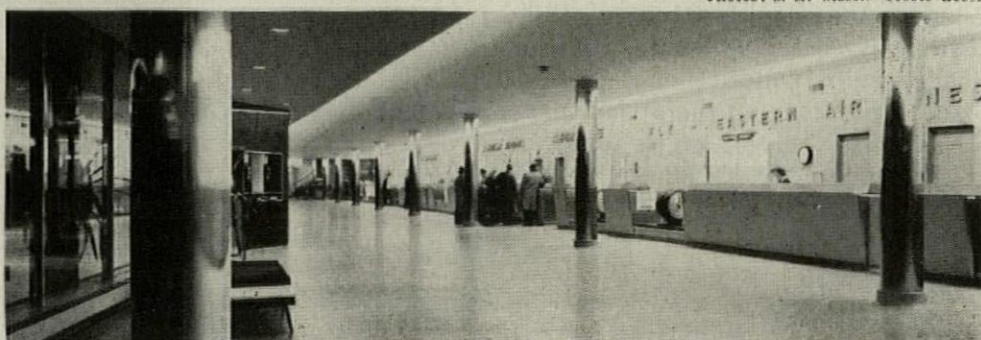


**Second tower**, at the end of Cleveland's central loading "finger" and spectator deck, is used for control of ground traffic. Below this is special waiting room for VIPs. Split-level plan, right, is close to CAA's ideal for quick entrance and exit, one-way circulation.



**Visitors** enter at upper level, cross bridge to main lobby over road for passenger vehicles. At right is 4,000-car lot, with tunnel ramp to lower level.

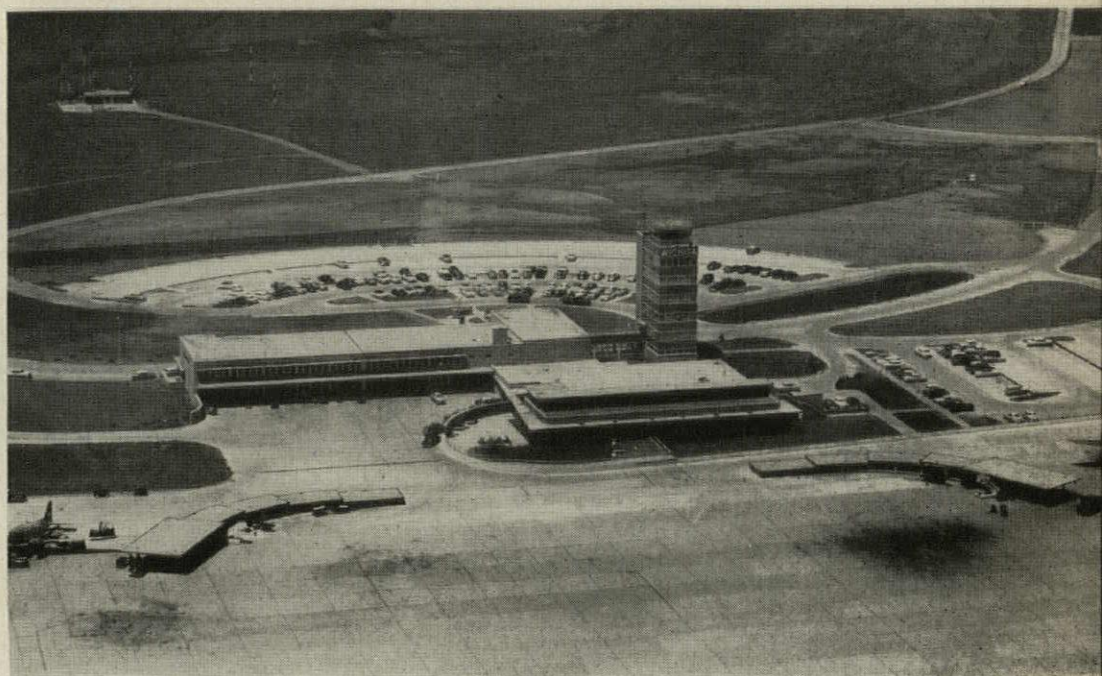
**Passengers** enter doors set in canted walls at lower level, carrying bags a short 40' to ticket counters opposite before ascending moving stairs to main lobby.



PHOTOS: R. M. WILSON—STUDIO HOUSE

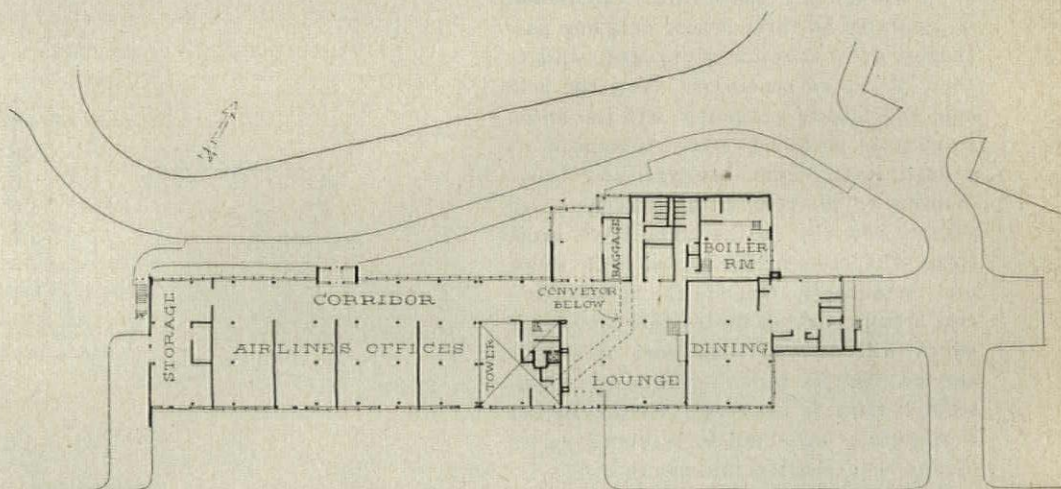


**WICHITA** built its new \$10 million airport out of 2,000 acres of Kansas prairie, was able to try passenger tunnels under its new apron instead of fingers with truck underpasses. Passengers debark at one of three plane positions on each side, walk down covered ramps into tunnel and take moving stairs to lobby level. Baggage trains and other service vehicles can move freely around the two loading "islands" and back to airlines wing at left. This scheme gives almost completely unobstructed view of all ground operations to control tower and to dining room in front, where tables are terraced for still better view. Architects: Thomas-Harris-Calvin & Assoc. Planning consultants: Leigh Fisher & Assoc.

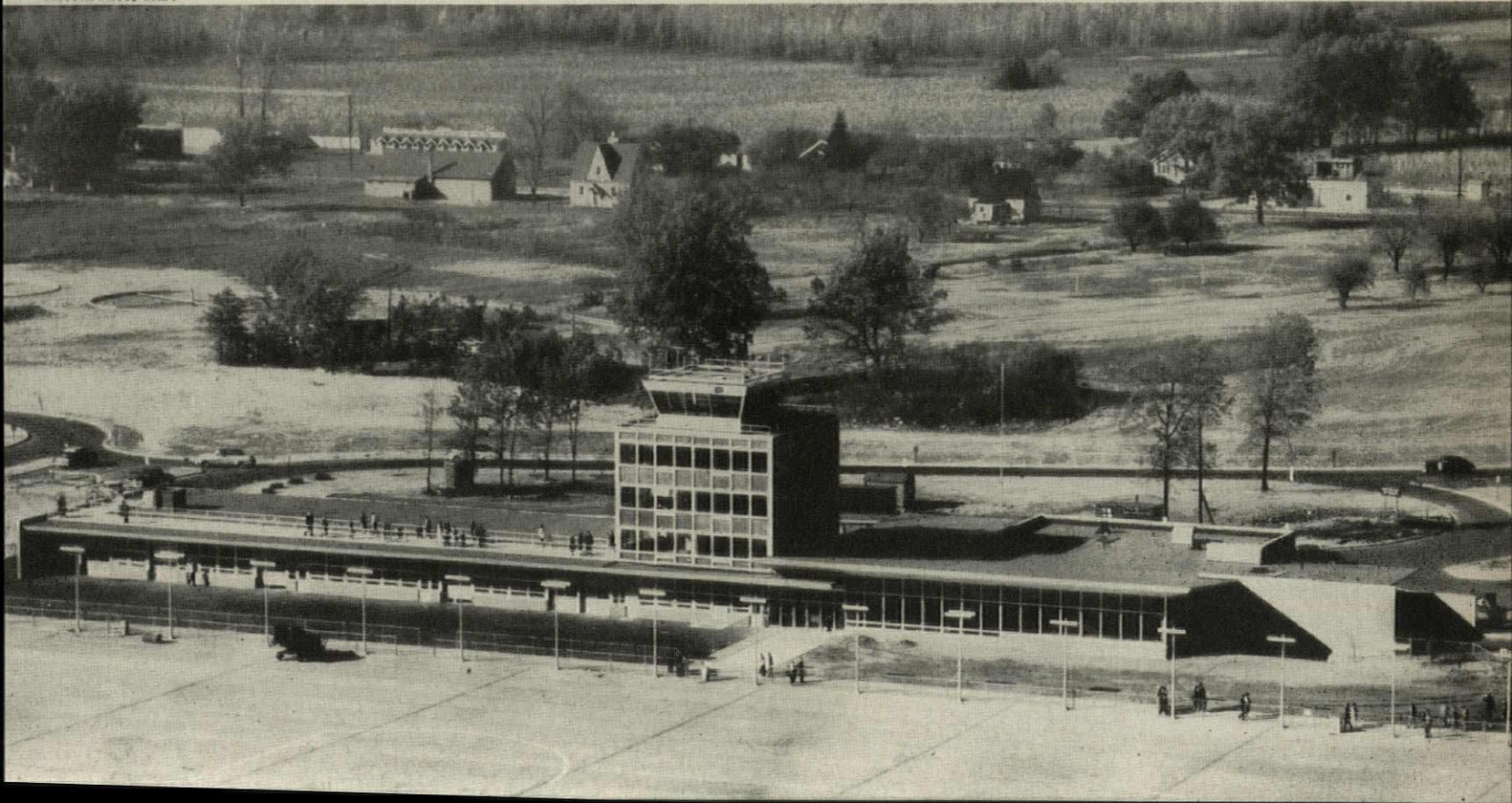


KARABAUGH &amp; MILLSAP STUDIO

**TOLEDO**, one of the best small terminals, has a simple, direct plan (right), appropriately advertises the "glass center of the world" with generous double glazing. Wide overhang on the south blocks summer sun, shelters airlines operations at left. A unique conveyor belt speeds baggage from center of field side, under lobby to claim counter near central exit. Architects and engineers: Stepleton, McDonnell, Barber & Evans. Planning consultants: Leigh Fisher & Assoc.



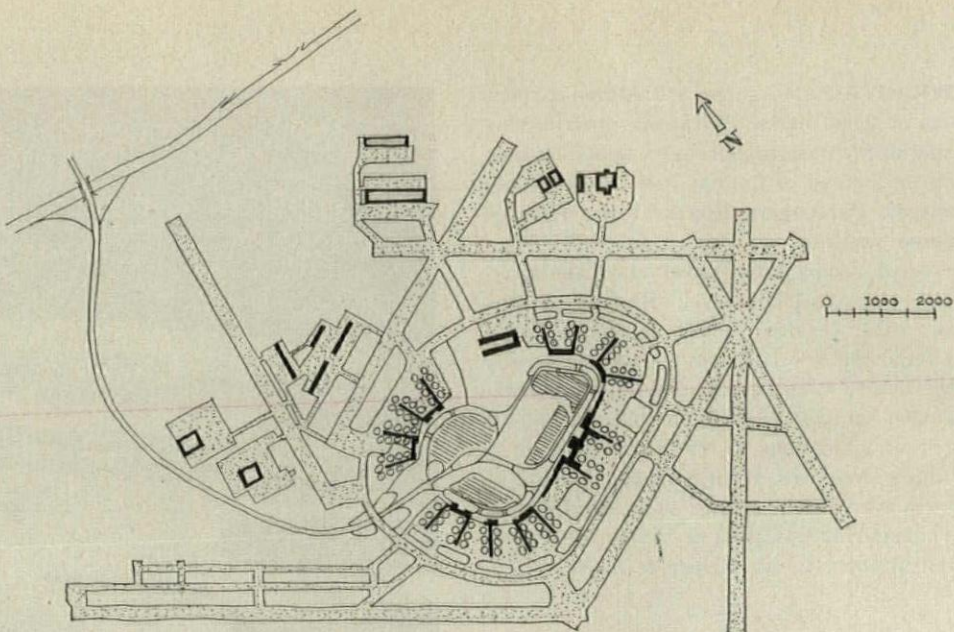
HAUGER PHOTO CORP.



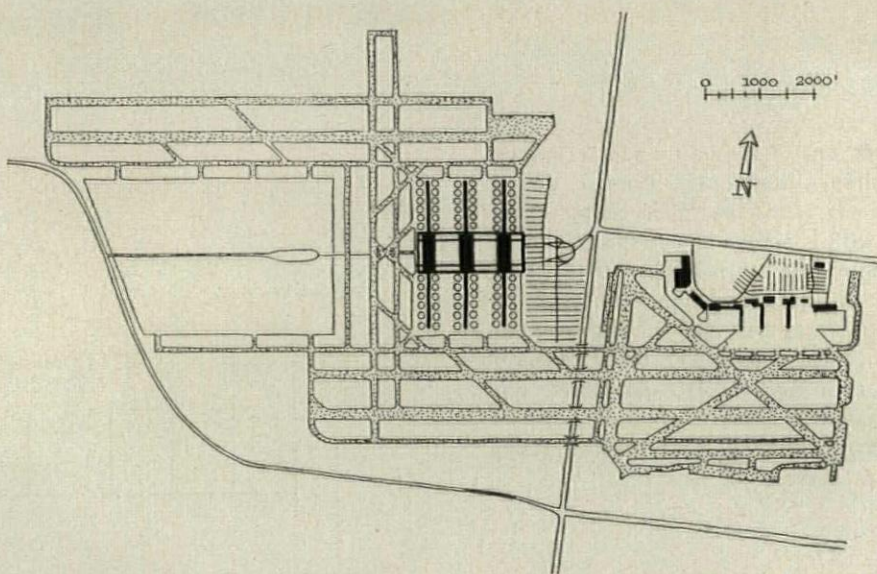


## THREE NEW GIANTS

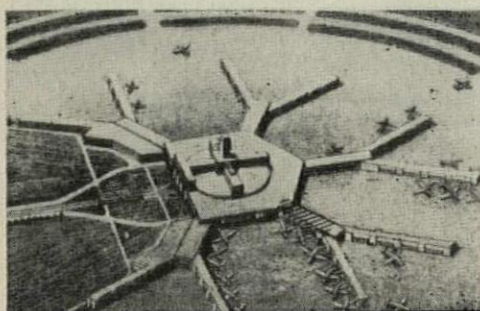
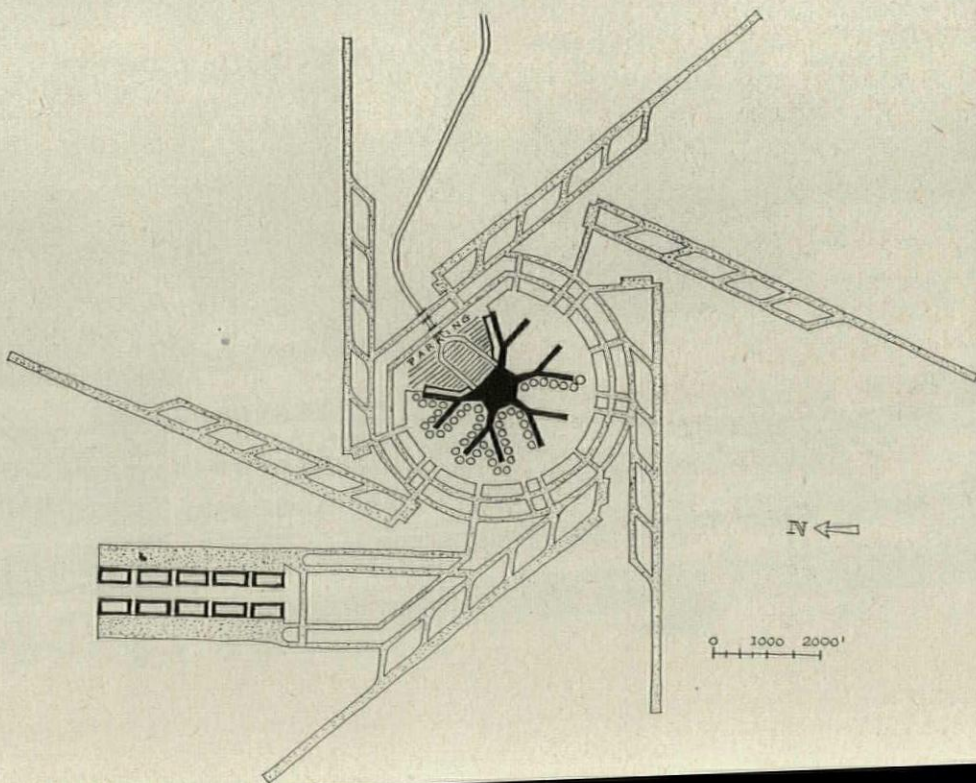
**NEW YORK** is finally underway on its \$60 million "Terminal City" at Idlewild with a 24-gate International Arrivals building designed by Skidmore, Owings & Merrill under Port Authority Design Coordinator Wallace Harrison. Passengers for 17 foreign airlines enter along outer wings, mount to concourse and gates. Arrivals deplane in center "U," pass through customs at ground level. Visitors ramp up to mezzanine under arched lobby, look down on customs or ascend to rooftop restaurant. Seven smaller terminals for domestic airlines will complete oval around depressed parking for 6,000 cars.



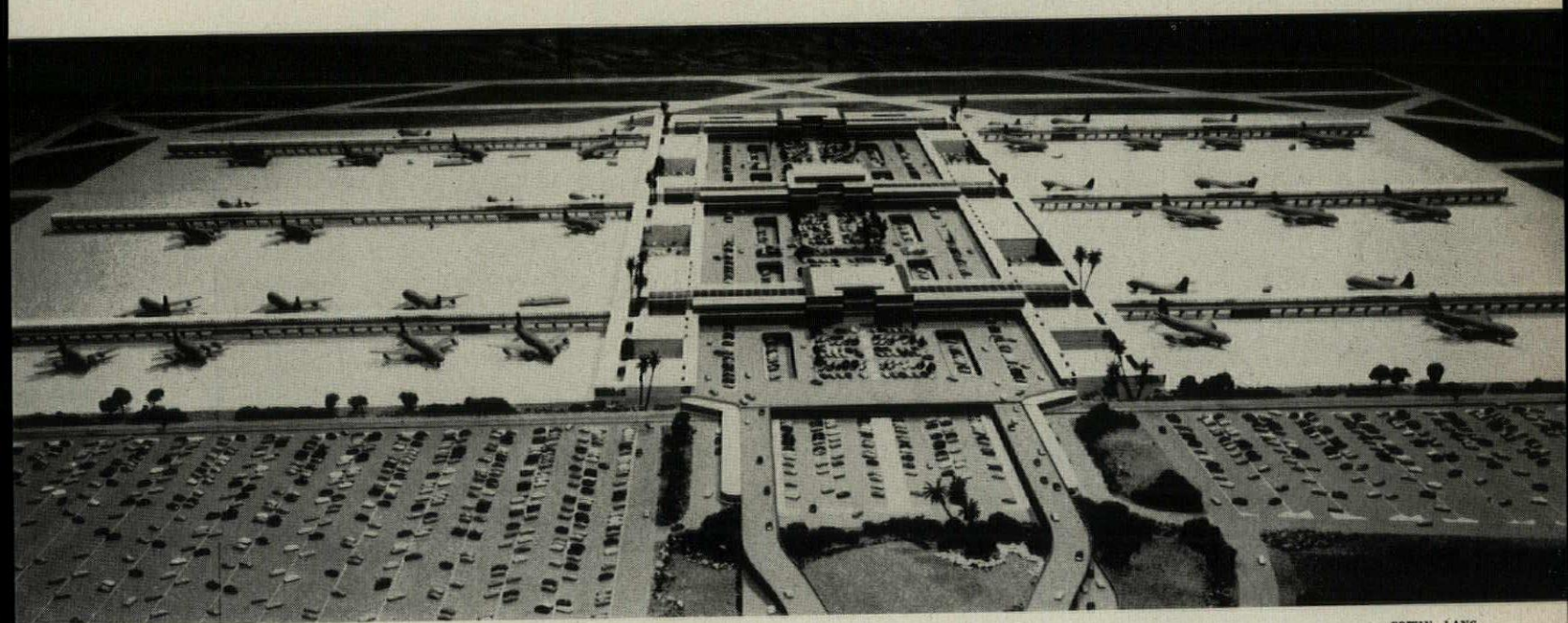
**LOS ANGELES** proposes a more compact string of 14 unit terminals around a two-story garage for 3,000 cars. Circulation is separated on three levels: outgoing passengers enter at second-story level, walk to their planes on concourses along the field side and fingers extending onto the apron to 66 gate positions. Arrivals come in at ground level, claim baggage and leave. Waiting or interconnecting passengers and visitors can rise to the third level, cross three 470' cross-bridges lined with shops and restaurants. Outside the 30-acre central area is parking for another 6,000 cars which will demand some sort of shuttle service. The \$50 million scheme by Architects Pereira & Luckman, Welton Becket & Associates and Paul R. Williams, comes up for bond election this month.



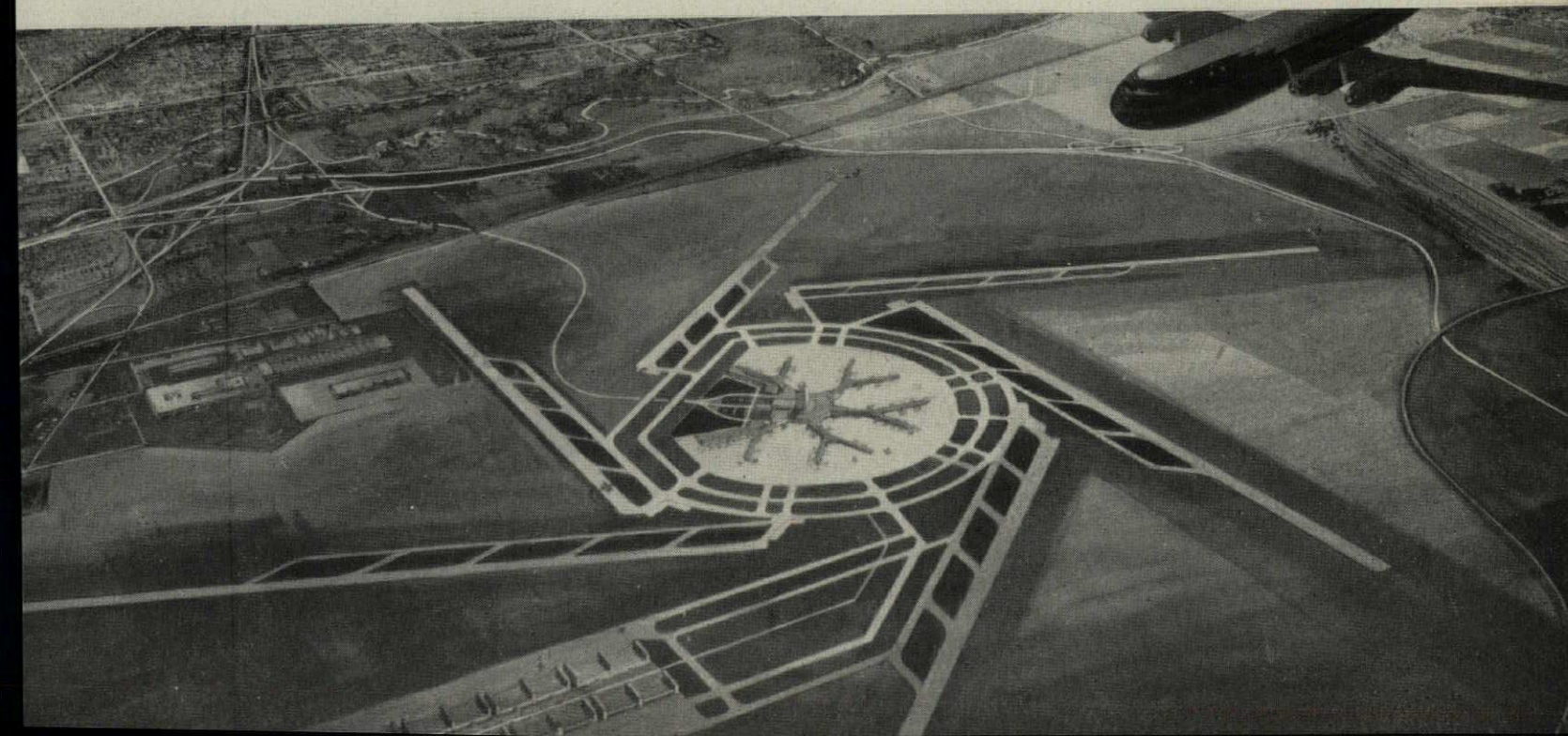
**CHICAGO**, with a high percentage of interconnecting flights, elected a big centralized terminal, has already built the first stage at O'Hare Field to take pressure off Midway Airport, the busiest and one of the wretchedest terminals in the US. One of the five split fingers with 16 gates is in operation; as the others are added the center "hole" will be filled in with a concourse over parking and bus turnaround. Airport consultant: Ralph H. Burke.







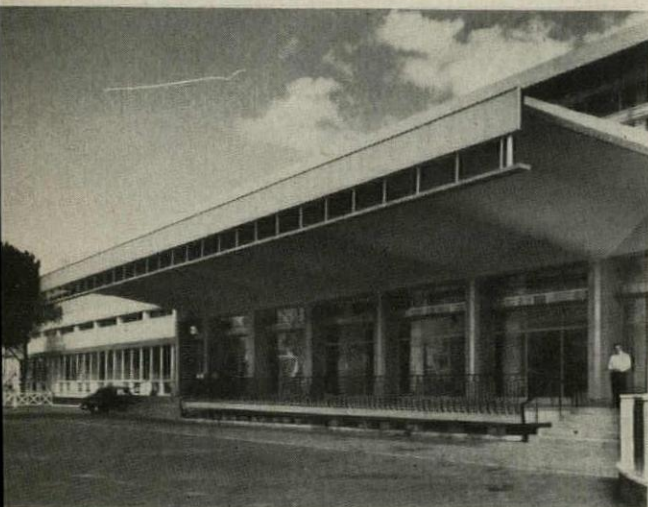
ERWIN LANG





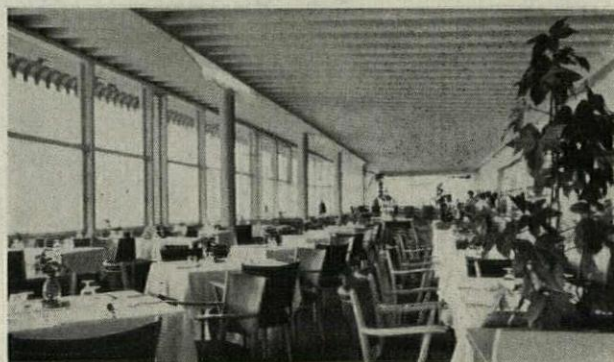
## AIRPORTS ABROAD

Overseas, many airports show that speed and courtesy can be happily combined on the ground as well as in the air, and that when they are, it is the best kind of travel advertising. Here are four airports in Europe and one in Mexico, all of which reflect an awareness that the architecture of good service is the architecture of good public relations. These terminals are trim, fresh, courteous and inventive. Concessions and advertising are restrained, not king-size in eight tasteless, artificial flavors.



**ROME** airport has a main entrance canopy crinkled with folds of shell concrete, repeated in the bright, spacious restaurant overlooking the field. Bottom photo shows the ticket counter gallery near the entrance, neatly designed with glazed mezzanine above but perhaps a little narrow by US air-traffic standards.

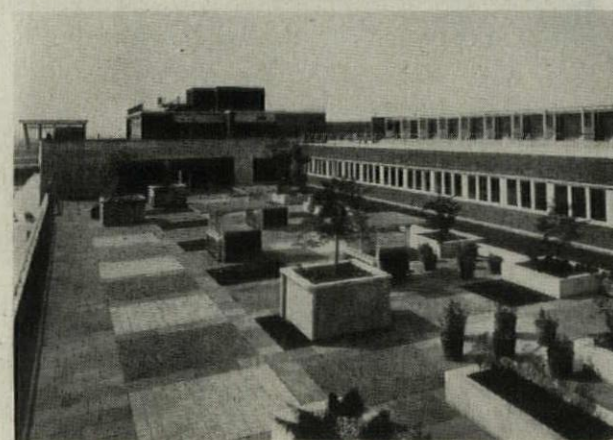
**ZURICH:** dining room, waiting room and café are simply decorated and bright with sunshine and flowers. In the waiting room (center) there are enough comfortable seats to go around, a view of the field, and no disturbing through-traffic. Architects: A. and H. Oeschger.







BRITISH INFORMATION SERVICES



ANDREW REID

**LONDON** has ten direct channels with baggage conveyors to speed passengers through customs, little greenhouses along the field-side gallery (top). On the second floor is a carpeted lounge and bar, on the apron level an outdoor café with glass windcreens. Bottom photo shows rooftop "waving base" with patterned deck and planting boxes. Architect: Frederick Gibberd.

ALBRECHT BRUGGER



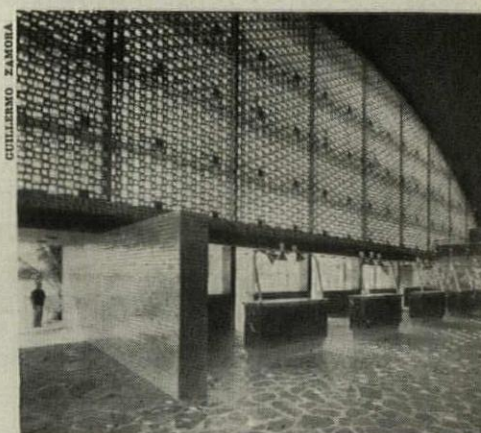
**STUTTGART:** visitors can stroll along a flower-lined walk, sit on benches to watch the airplanes on the field. Architect: Prof. Sagebiel.

**ACAPULCO:** has an airfoil roof, a main hall cooled by breezes and speckled by sun through an open lacework of concrete tile (also used on the control tower). Architects: Mario Pani and Enrique del Moral.

MARILYN SILVERSTONE



GUILLERMO RAMOS



MARILYN SILVERSTONE







*Inbound passengers enter one-story wing under covered spectator deck*

PHOTOS: P. E. GUERRERO

*Outbound passengers have a spacious waiting room open on lee side*





**TERMINAL BUILDING:**

**PUERTO RICO INTERNATIONAL AIRPORT**

**OWNER:** Puerto Rico Ports Authority

**ARCHITECTS & ENGINEERS:**

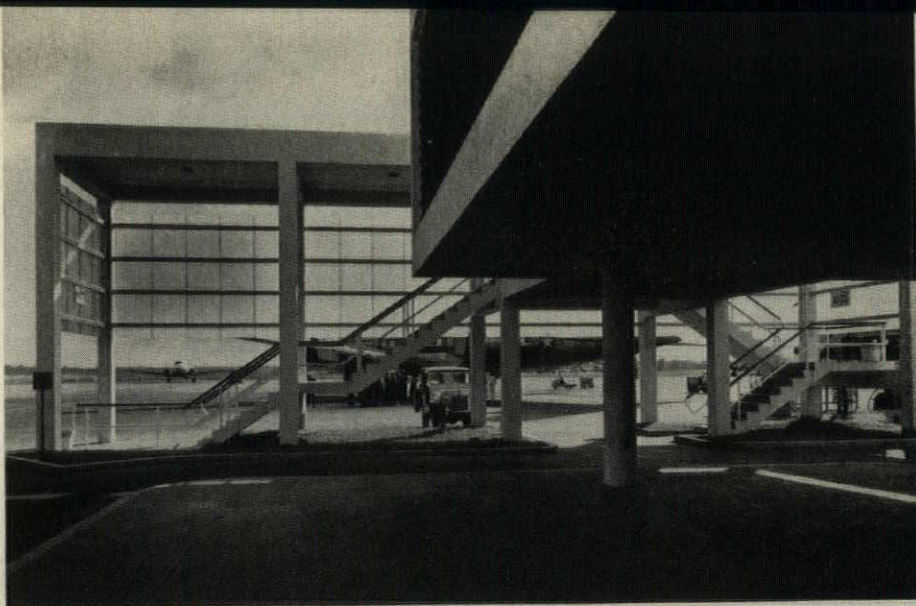
Tippetts-Abbett-McCarthy-Stratton

(Walther Prokosch, project manager).

Consulting architects: Toro-Ferrer & Torregrosa

Interior designer: Warner-Leeds.

**GENERAL CONTRACTOR:** Caribbean Enterprises Corp.

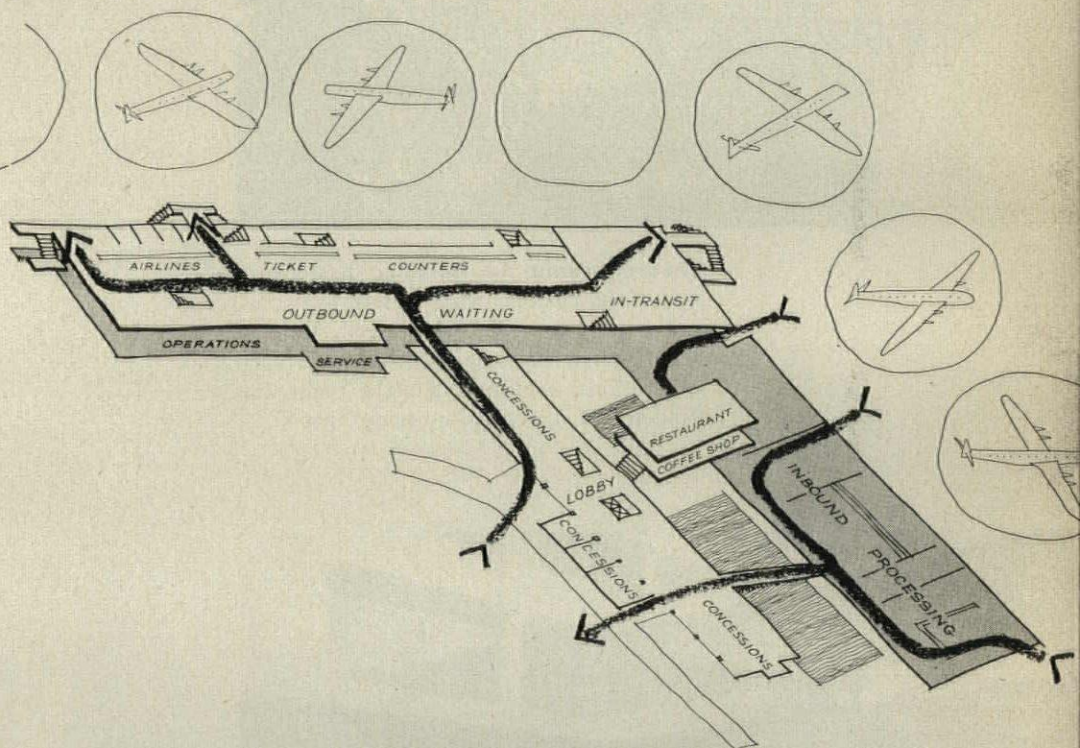


*Corner gates are reached by handsome stair structure shielded by corrugated plastic windscreens.*

## **SAN JUAN: COMPLETE TRAFFIC SEPARATION,**

### **A FRESH BREEZE IN DESIGN**

Puerto Rico's sparkling-white new terminal, a vital gateway to the island's growing economy, is designed to handle heavy traffic comfortably in completely separate "in" and "out" patterns for both airplanes and passengers. On the field side of its "F"-shaped plan (sketch, right), incoming planes taxi up to five gates along the one-story inbound wing; passengers step directly into customs, then walk up an outside ramp, through one end of the main lobby and out again to cars and buses. Outgoing passengers enter the other end of the lobby, ascend a separate ramp to the large outbound waiting room above airlines operations, catering kitchen and an assembly room for nonscheduled flights; after ticketing they descend to one of five outgoing gates. In-transit passengers have their own waiting space at the corner, where the middle three gates can be used for San Juan's relatively few through flights or quick turnaround flights. Central lobby and concessions are equally available to in and out passengers and spectators but are not stretched out along any required route. Above are kitchen and banquet rooms, 30 hotel rooms, two floors of offices (part of which will probably be turned into additional hotel rooms). The \$3,350,000 terminal building, designed by a team under Architect Walther Prokosch, was built for a low \$15.30 per sq. ft. yet surpasses many more expensive airports in efficiency, gentility and pleasant use of the outdoors. Even the nearby firehouse and lowly outbuildings are treated with the same design approach, giving the airport an unusual over-all unity. Said one city official from the mainland US: "It makes me want to drop a bomb on our own new terminal and start over again."



*Ramp open to entrance side, leads from lobby to outbound waiting room*





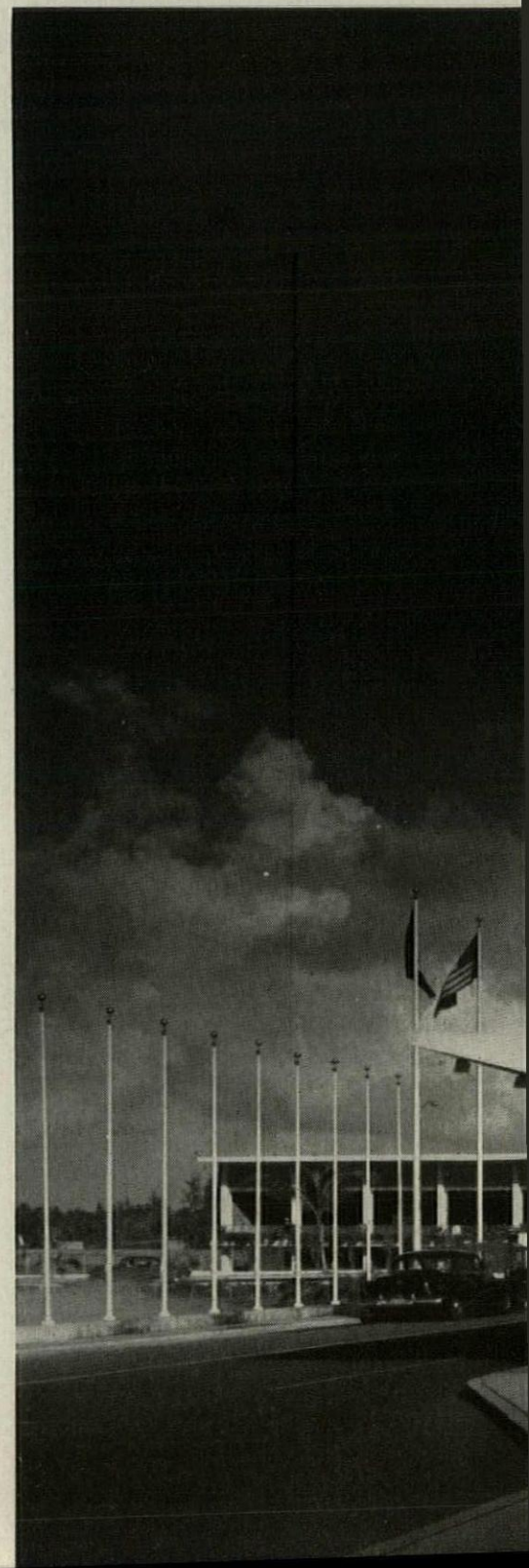


**Covered ramp** for incoming passengers leads from customs wing at left, over pool and directly through lobby to exit. Canopy is blue-green vinyl plastic sprayed on wire mesh. Thin cantilevered slabs shade the windows of the air-conditioned block.

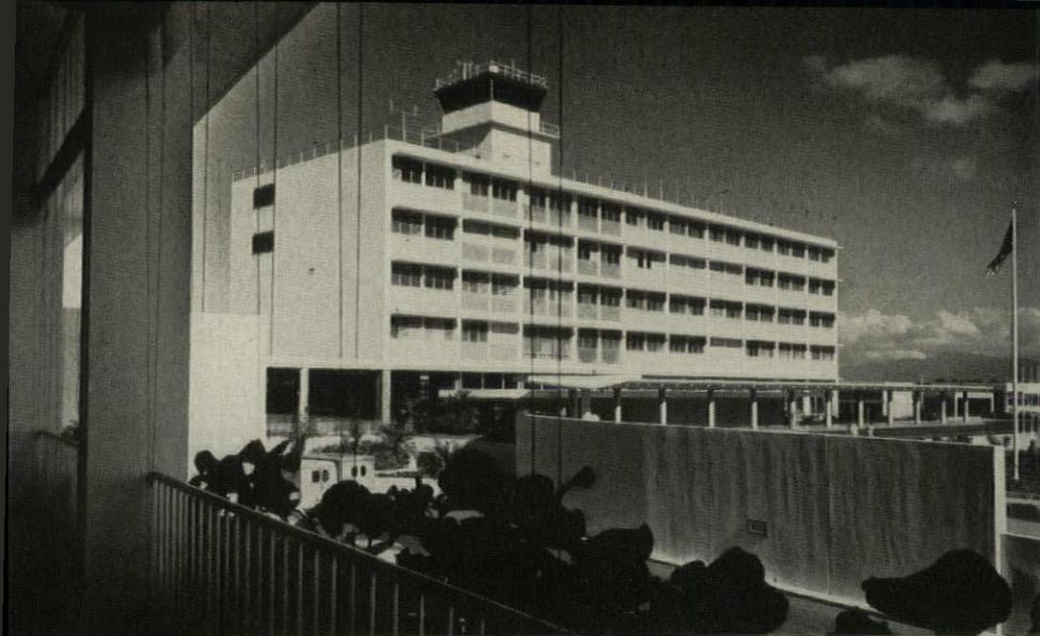


**Garden court** for visitors has a second pool, and a shaded sitting terrace under the coffee shop. Dining room above looks out to airfield, ocean, distant mountains.

**Stair tower** at exit end of central office block is treated as a strong sculptural element. Pedestrian tunnel under road leads to sunken parking lot. Spray pond, lighted at night, is actually the "cooling tower" for the air-conditioning system.

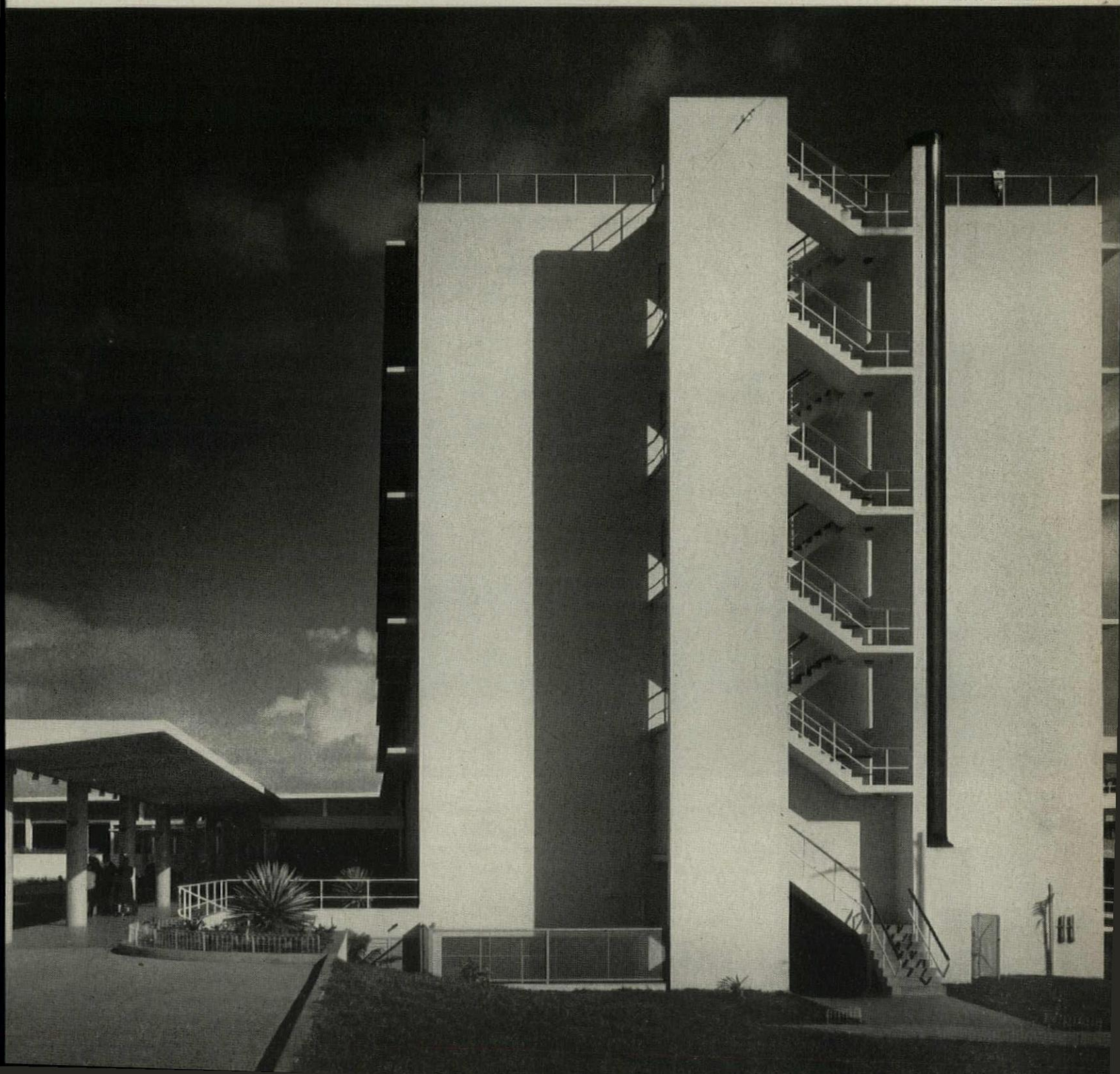






**Clean-cut frame** of office block in reinforced concrete is enlivened with spandrels of gray stucco, blue-green tile. View is from outbound waiting room.

PHOTOS: P. E. GUERRERO





The corner stores have an important place in neighborhood life, in its creative activity and in its social vitality. But our new housing developments are being built without them

## THE MISSING LINK IN CITY REDEVELOPMENT

*A talk by FORUM's Associate Editor Jane Jacobs before the April conference on urban design at Harvard University*

Sometimes you learn more about a phenomenon when it isn't there, like water when the well runs dry—or like the neighborhood stores which are not being built in our redeveloped city areas. In New York's East Harlem, for instance, 1,110 stores have already vanished in the course of rehousing 50,000 people.


Planners and architects are apt to think, in an orderly way, of stores as a straightforward matter of supplies and services. Commercial space.

But stores in city neighborhoods are much more complicated creatures which have evolved a much more complicated function. Although they are mere holes in the wall, they help make an urban neighborhood a community instead of a mere dormitory.

A store is also a storekeeper. One supermarket can replace 30 neighborhood delicatessens, fruit stands, groceries and butchers, as a Housing Authority planner explains. But it cannot replace 30 storekeepers or even one. The manager of a housing project in East Harlem says he spends three-fourths of his time on extraneous matters; he says: "I'm forced into trying to take the place of 40 storekeepers." He is no better trained to handle this than a storekeeper and not as good at it because he does it grudgingly instead of out of pleasure of being a neighborhood hub and busybody. Also it happens that most of the tenants heartily dislike him, but he is the best they have in the way of a public character in that superblock and they try to make him do.

The stores themselves are social centers—especially the bars, candy stores and diners.

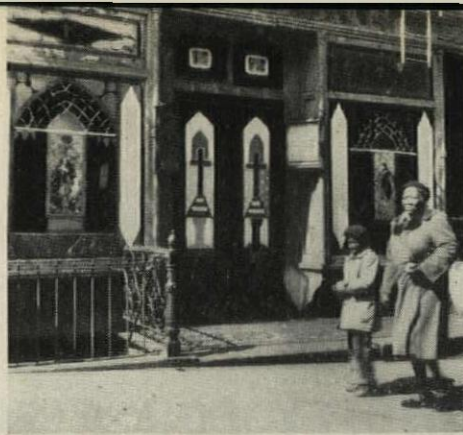
A store is also often an empty store front. Into these fronts go all manner of churches, clubs and mutual uplift societies. These store-front activities are enormously valuable. They are the institutions that people create, themselves. Sometimes



*The "dead" neighborhood formed by new housing developments like this one in East Harlem, New York City, takes into account little beyond sanitary living space, formal playground and sacrosanct lawn.*

PHOTO: KERRY A. MAYER





*The living neighborhood is a complex of little organisms like this East Harlem store-front church and store.*



they end up famous. Many real ornaments to the city have started this way. The little struggling ones are even more important in the aggregate.

Most political clubs are in store fronts. When an old area is leveled, it is often a great joke that Wardheeler so-and-so has lost his organization. This is not really hilarious. If you are a nobody, and you don't know anybody who isn't a nobody, the only way you can make yourself heard in a large city is through certain well defined channels. These channels all begin in holes in the wall. They start in Mike's barbershop or the hole-in-the-wall office of a man called Judge, and they go on to the Thomas Jefferson Democratic Club where Councilman Favini holds court, and now you are started on up. It all takes an incredible number of confabs. The physical provisions for this kind of process cannot conceivably be formalized.

When the holes in the wall disappear, several different things can happen. Stuyvesant Town in New York City clearly demonstrates one result. That development is now surrounded by an unplanned, chaotic, prosperous belt of stores, the camp followers around the Stuyvesant barracks. A good planner could handle that belt. But beyond this, in an even more chaotic area, is another belt. Tucked in here are the hand-to-mouth cooperative nursery schools, the ballet classes, the do-it-yourself workshops, the little exotic stores which are among the great charms of a city. This same process happens whether the population is middle income like Stuyvesant Town or predominately low income like East Harlem.

Do you see what this means? Some very important sides of city life, much of the charm, the creative social activity and the vitality shift over to the old vestigial areas because there is literally no place for them in the new scheme of things. This is a ludicrous situation, and it ought to give planners the shivers.

When rebuilding happens wholesale, sometimes there is almost no convenient vestigial area left. In one project, in this fix, in East Harlem, the people are very

much at loose ends. There is a "community center" but it is a children's center. Some settlement house workers fine-tooth-combed that development of 2,000 people to find where they could make easy-going contact with adults. Absolutely the only place that showed signs of working as an adult social area was the laundry. We wonder if the planner of that project had any idea its heart would be in the basement. And we wonder if the architect had any idea what he was designing when he did that laundry. We wonder if it occurred to either of them that this represents one kind of social poverty beyond anything the slums ever knew.

Even in the projects a decade old the inhabitants do a lot of visiting in old neighborhoods but relatively few visitors come to the new. Nothing to do.

There are degrees to which all this can be better or worse. Putting in shopping centers, defining neighborhood units in proper geographic and population scale, mixing income groups and types of housing, and being very sensitive about just where the bulldozers go, are all basic. There is already thinking, if not much action, about these matters.

Here are four added suggestions:

► First, look at some lively old parts of the city. Notice the tenement with the stoop and sidewalk and how that stoop and sidewalk belong to the people there. A living room is not a substitute; this is a different facility. Notice the stores and the converted store fronts. Notice the taxpayers and up above, the bowling alley, the union local, the place where you learn the guitar. We do not suggest these units be copied, but that you think about these examples of the plaza, the market place and the forum, all very ugly and makeshift but very much belonging to the inhabitants, very intimate and informal.

► Second, planners must become much more socially astute about the zoning of stores and the spotting of stores. Fortunately, in retail business economic and social astuteness can make fine allies if given a chance.

► Third, architects must make the most out of such fortuitous social facilities as laundries, mailbox conglomerations and the adult hangouts at playgrounds. Much can be done to play up instead of play down the gregarious side of these seemingly trivial conveniences.

► Fourth, we need far more care with outdoor space. It is not enough that it lets in light and air. It is not enough that unallocated space serve as a sort of easel against which to display the fine art of the buildings. In most urban development plans, the unbuilt space is a giant bore. The Gratiot plan for Detroit by Stronorov, Gruen and Yamasaki (AF, March '55), which is not to be built, the Southwest Washington plan by I. M. Pei (AF, Jan. '56) and some of the Philadelphia work such as Louis Kahn's Mill Creek (AF, July '55), are unusual exceptions. The outdoor space should be at least as vital as the slum sidewalk.

There is the problem of what to do with activities that go into empty stores and basements. True, nobody planned for these among the old tenements and brownstones, but physically there were places to insinuate them. There is no such flexibility in rebuilt neighborhoods. The answer is *not* in providing multipurpose public rooms for them. They will die on the vine. The essence of these enterprises is that they have a place indisputably their own. Unless and until some solution for them can be found, the least we can do is to respect—in the deepest sense—strips of chaos that have a weird wisdom of their own not yet encompassed in our concept of urban order.

We are greatly misled by talk about bringing the suburb into the city. The city has its own peculiar virtues and we will do it no service by trying to beat it into some inadequate imitation of the noncity. The starting point must be study of whatever is workable, whatever has charm, and above all, whatever has vitality, in city life, and these are the first qualities that must find a place in the architecture of the rebuilt city.



Building onto 1920 Georgian, North Carolina State demonstrates how well two opposed styles can complement one another

## DESIGN CONTINUITY FOR A SCHOOL OF DESIGN

Contemporary architecture, being no longer on the defensive, can now afford the virtues of the secure—politeness, generosity and agreement that somebody else's dish is not necessarily poison. North Carolina State's new home for its school of design is one of the nicest demonstrations yet of this pleasant stage of maturity.

To express these virtues architecturally, with little contemporary precedent

to draw on, is not easy. The successful means used here included an attenuated link between new wing and old campus landmark, repetition of brick and white marble trim, and blank end walls to avoid confusing competition between old and new façades.

Cost, including fees: \$328,710 for new wing, \$14.67 per sq. ft.; \$106,500 for remodeling old building, \$3.75 per sq. ft.; average, \$8.58 per sq. ft.

LOCATION: Raleigh, N.C.

ARCHITECT: F. Carter Williams

Macon S. Smith, partner in charge

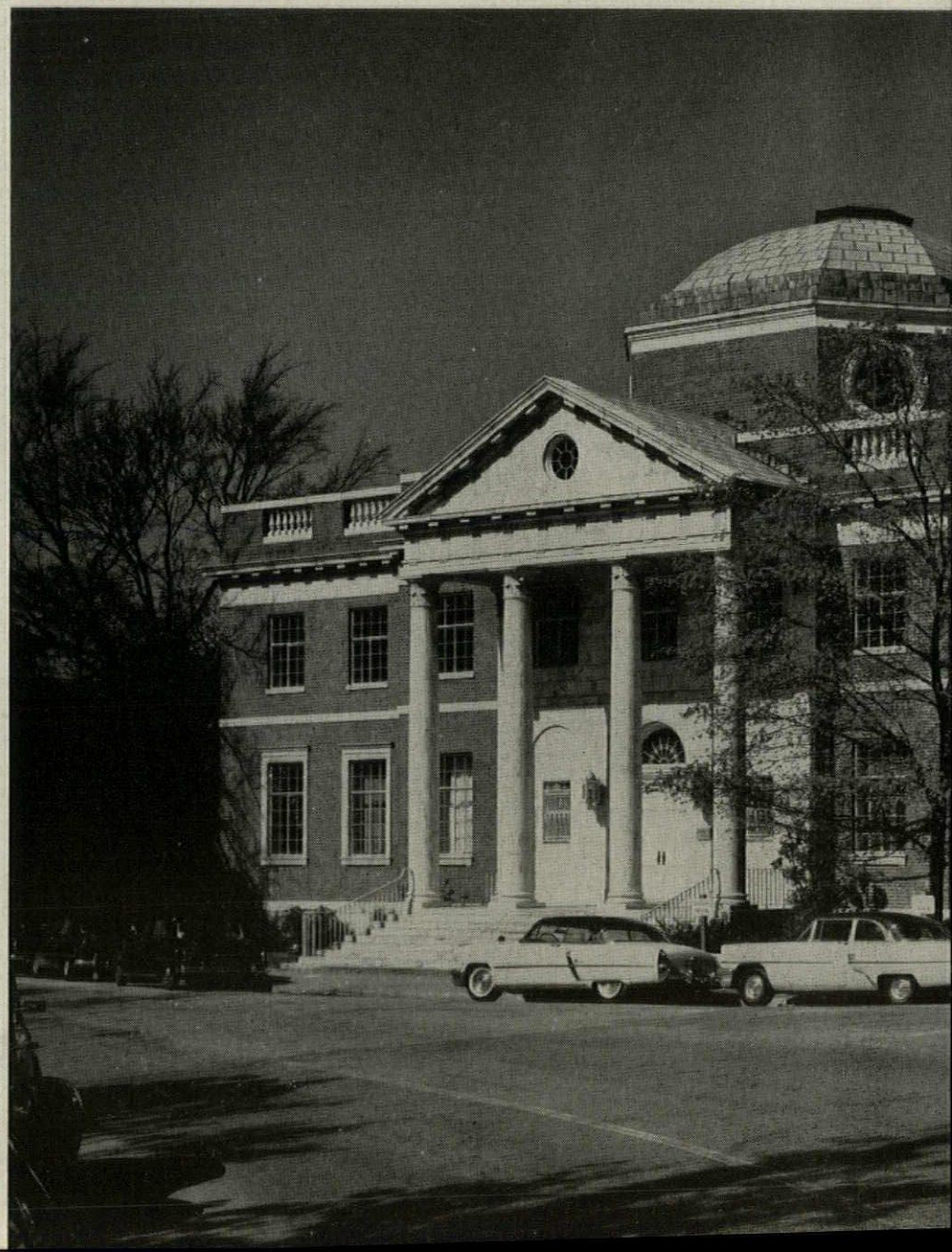
CONSULTING ARCHITECT: George Matsumoto

ENGINEER: Bernard Crocker Jr.

LANDSCAPE ARCHITECT: John Lippard

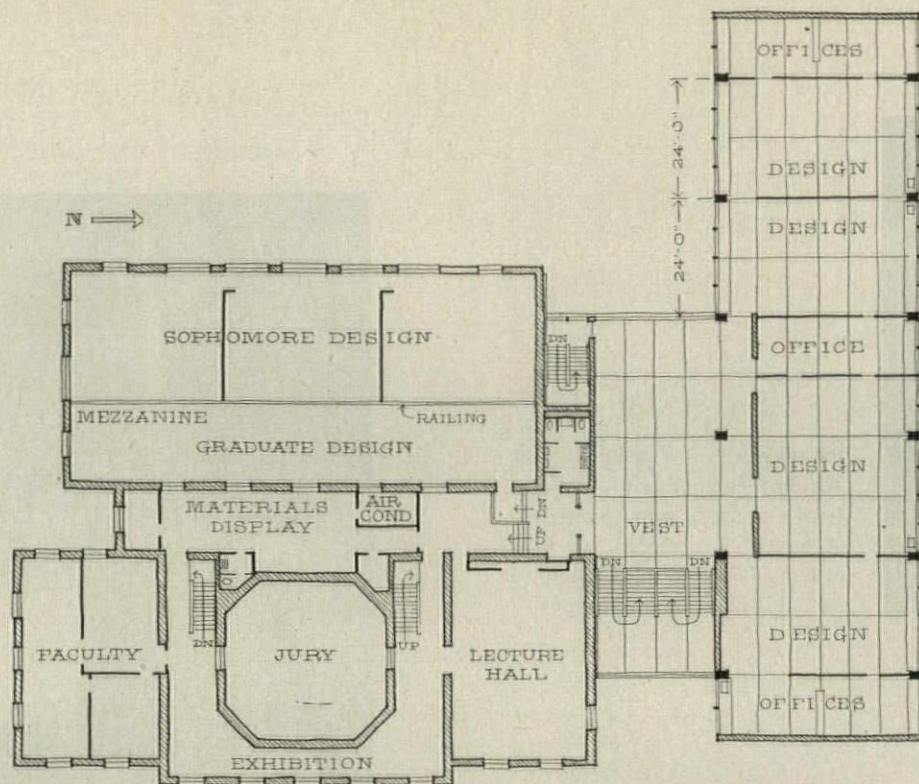
CONSULTANT: Lewis Clarke

GENERAL CONTRACTOR: Dickerson, Inc.

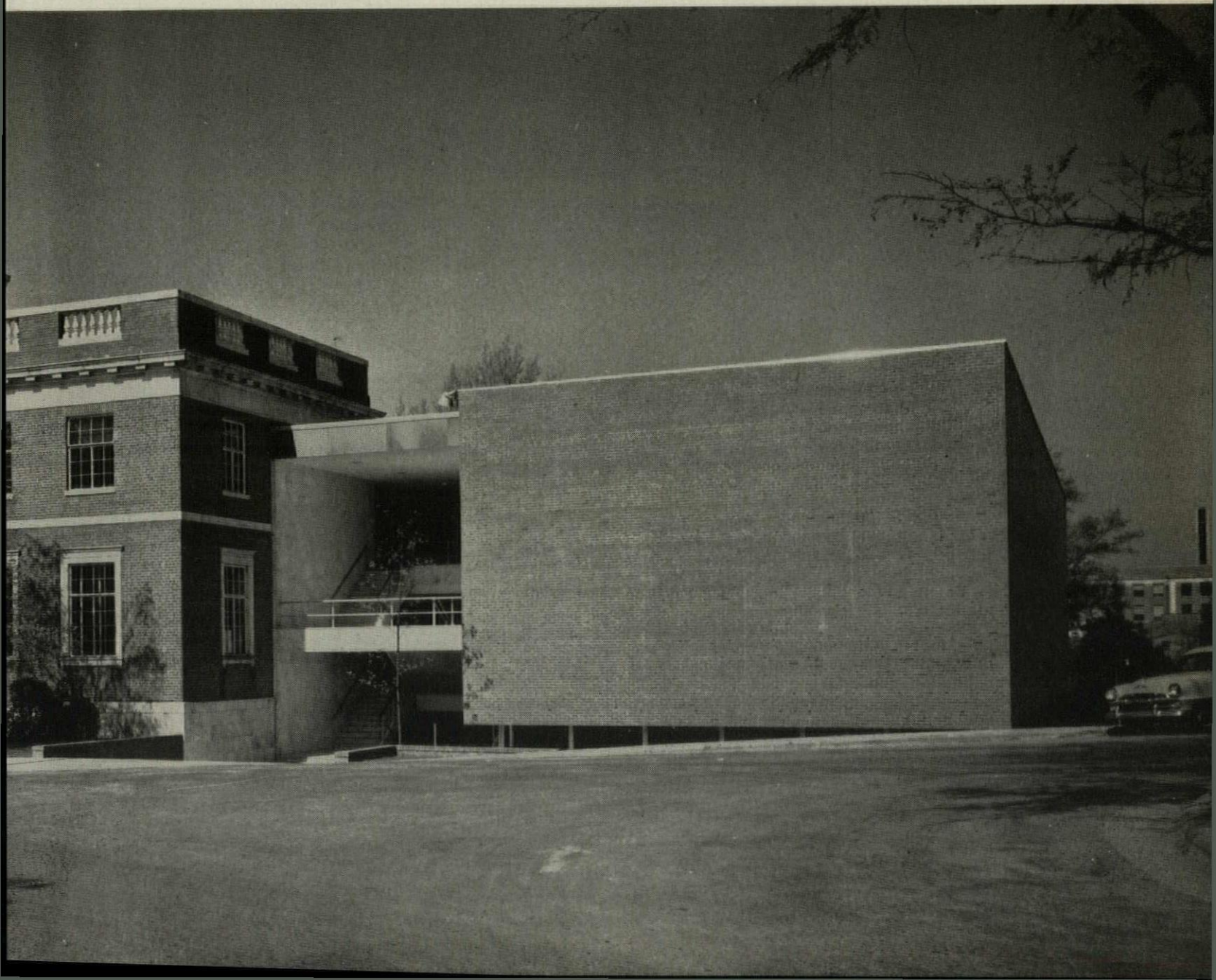


JOSEPH W. MOLLITOR

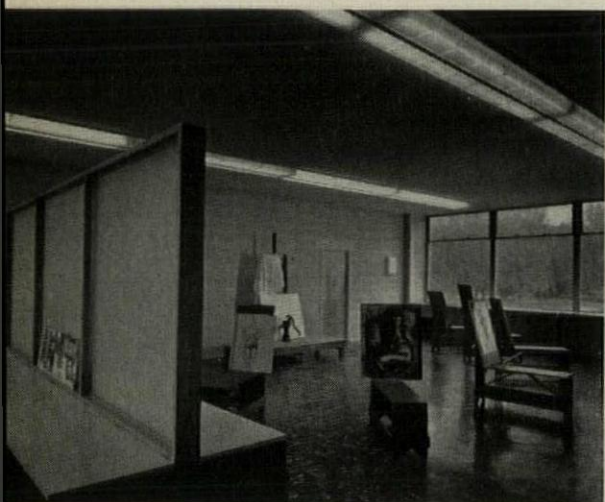




**Plan** shows old and new space at third floor level; other floors in both buildings are similar. Old building yielded 28,550 sq. ft.; new building, 22,404 sq. ft. Old portion was formerly library, designed in twenties by Hobart Upjohn.







**Interior** of new wing is very flexible; each floor is a clear-span rectangle with partitions of movable dividers or non-bearing block. Wing is planned for addition of fourth story.

ROBERT B. TUCKER

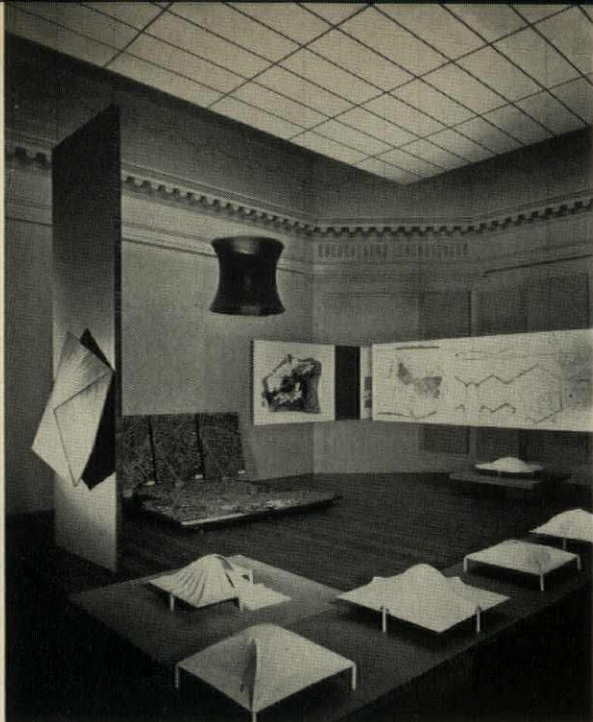


**Open link**, with primary job of preserving polite distance between old and new, achieves variety of interesting semi-outdoor spaces. Ground level is setting for sculpture.



**Curtain wall** is aluminum frame with aluminum panels and glare- and heat-resisting glass in fixed and operating sash. Structure is steel columns and joists with concrete floor slabs.

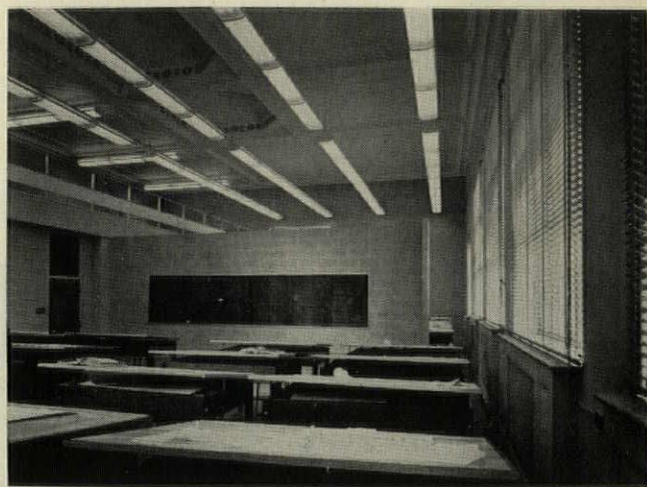




**Display** is arranged in jury room beneath dome. This was originally upper part of octagonal lobby on floor below. New floor of steel joists on steel frame is supported on old columns. Light-diffusing hung ceiling, hanging clear of plaster-garlanded walls, exemplifies consistent policy of respect for the old without compromising the new.

**Open link** between old building and new wing provides covered, breezeway (windway in winter) vestibule at all three floors, with open balconies at upper floor levels and landing. Materials are marble and common brick as in old building.

PHOTOS: JOSEPH W. MOLITOR



**Drafting room** for sophomores, with mezzanine for graduate design, occupy old 21'-high reading room. Block dividers and new mezzanine are frankly additions, in peaceful co-existence with old walls.





## THE GREAT AMERICAN

**THIS IS YOUR TOILET  
PLEASE KEEP IT CLEAN**

Travelers who return from the relatively decrepit glories of the old world to the powerful, prosperous cities of the US and take up traveling in local conveyances, frequently register shock at one basic aspect of our native environment. This shock occurs when that time comes, as it must to all men, women and children, when they have to use the public toilets that are an adjunct to public conveyances. Frequently these US facilities are sub-Balkan in their offensiveness.

This is paradoxical in the US, the home of modern bathrooms. Mark Twain observed with amusement that Americans of his day were prouder of their bathrooms than their parlors, and this pride in plumbing is still very evident in most houses and apartments. Gleaming porcelain is a US success symbol recognized equally with gleaming automobiles. This social emphasis sometimes reaches an improbable degree; recently it was reported that members of a high school sorority in the Midwest solemnly visited the homes of all prospective pledges, inspected the bathrooms, and turned down any unfortunate maiden whose parents still had a bathtub with legs, instead of the modern panel-sided type. Progress in plumbing is not only appreciated, but is sometimes essential.

Why then the crepuscular condition of so many public washrooms? Those who bear the painful responsibility of providing washrooms for the public say that the users are to blame, that since the war people have been conscientious despoilers of all clean washrooms. The reasons do not lie in plumbing techniques, which many years ago were perfected to dispose of all reasonable and expected manner of human waste. The civil engineers have done their part; it is an uncivil public who mess things up.

The architectural lengths to which some proprietors go to protect their sanitation and sanity from marauding slobbers are evidence of the situation. The first protection is coin-operated booths, which—say the experts—are not treated so poorly as free facilities, or at any rate, provide some insurance against desecration. The proprietor of one roadside restaurant whose plumbing was thoroughly jammed when someone dumped a bag of orange peels in a toilet immediately installed coin booths and has had no trouble since. The



# TOILET

It isn't always so great

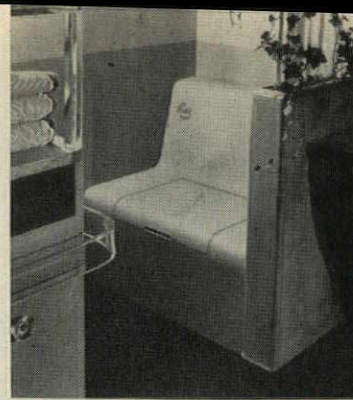
proprietors of the Howard Johnson restaurants along the Jersey turnpike insist on hourly inspection of both men's and women's rooms by assistant managers (Howard Johnson buys 675,000 paper towels per week just for the New Jersey turnpike Johnsons so the opportunity for sloppiness is truly immense). Several parking garages in Washington D.C. have installed buzzer-lock systems on the restroom doors similar to those used in the safe-deposit sections of banks. When the cashier sees a bona fide parking customer approaching the door to the rest room, she puts a finger on the buzzer in front of her, and the restroom door unlocks for the customer. If the person in need of plumbing solace is not a customer, she buzzes not.

One stolid way to solve the problem of public washrooms is to ignore it. At the shopping center which bills itself as the world's largest and most complete, this rather primary ingredient was omitted; there are no public washrooms at the Cross County Shopping Center in Westchester, N. Y. outside of the facilities in some of the stores. Rockefeller Center, with its platoons of tenants' washrooms, has a total of 30 toilets and urinals on street and concourse levels, apart from those accessible beyond the stern posture of headwaiters in restaurants or other commercial establishments.

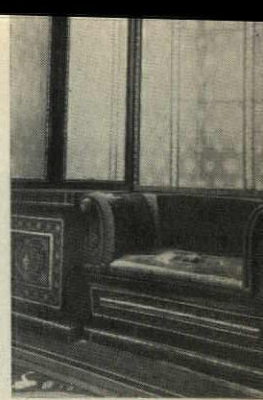
Today's building codes do protect and provide for people in most cities. Only the health department can enforce sanitation, however, and in many cities this job is obviously too difficult. Architects and builders can help civilize the public in two ways: by designing facilities for minimal maintenance and by making washrooms handsome enough to earn the respect of the user.

Washroom design is not necessarily a mechanical hack process; enough examples exist to indicate that there is a standard of quality beyond that indicated by the monumentally efficient products of the fixture manufacturers. Washrooms are a department in which today an immense amount of money\* is invested—much more money than thought. In a year when the importance of bringing humanism into architecture seems to be the primary topic of designers' conversation, perhaps the washroom is an appropriate place to begin.

\* Current cost of installing a washstand, toilet, stall and accessories runs about \$750.



1



2

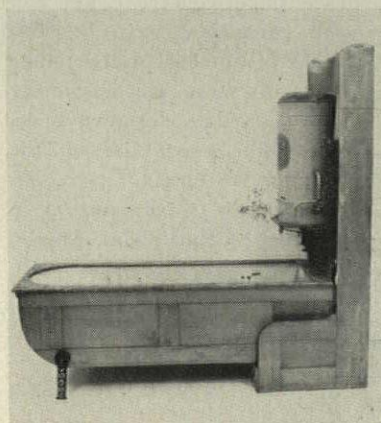
## EVOLUTION

The two examples of toilets above span a wide space in the esthetic of the W.C. The one on the left (1) is an ultimate example of the fixture with the "factory soul"; it was designed and exhibited as part of a plastic house exhibit a few years ago. The other toilet (2) is the personal one of a recently deposed monarch, and has the design soul and finish of a kitten. Today's trend in bathrooms very understandably has gone far toward the first example for simple reasons of sanitation and maintenance. But beyond the point where a fixture is easy to keep clean, some designers think there is little need to make a W.C. resemble the force diagram of a jet.

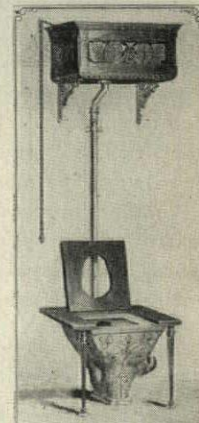
In history, washrooms began very elaborately but soon settled down to practicality and cleanability. Evidence has been found of the existence of interior latrines, with open drain plumbing, in the Indus Civilization 5,000 years ago. Herodotus also implies the existence of plumbing in his age, and traces have been found of fairly elaborate sanitary disposal facilities at Tel el-Amarna in ancient Egypt.

The invention of the modern valve water closet is credited to Sir John Harrington in England in 1596; but the device did not catch on for many years. One of the first examples in America was installed in the home of Henry Wadsworth Longfellow in 1840. Despite historically higher standards of delicacy and sanitation, "modern plumbing" has been very slow to advance in the orient. One reason for this put forward by English Historian Reginald Reynolds is the wide use of collected human excreta in oriental farming. In his book, *Cleanliness and Godliness*, Reynolds mentions a "commercial gentleman who was sent to Cathay by a company of merchants engaged in the sale of chemical fertilizers. . . . When he received an urgent request for information (from his home office) after six months of silence, he was constrained to cable his employers that he had 400 million competitors."

Early American plumbing was ingenious. One tub, circa 1880, was the predecessor of the Murphy bed (3) folding up when not in use. The heater could be controlled by the bather, but water had to be dipped out and disposed

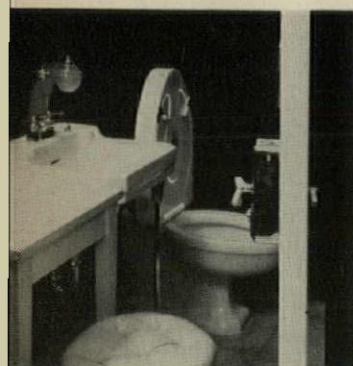


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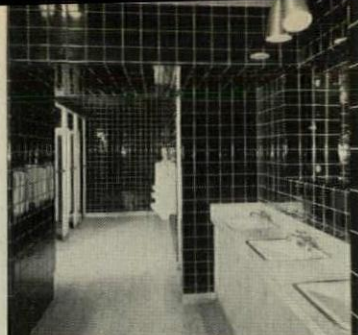


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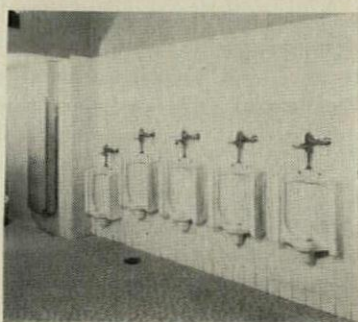
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6



8



9

of. Ornate toilet (4) was manufactured about 1900.

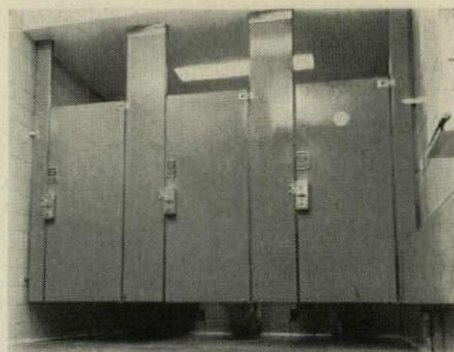
A major modern step in design was taken in the twenties in the return to thin-stemmed washbasins, wall-attached, for simple maintenance. A mop could be run under one of these more easily than around the massive mount. Then came open-front seats dispensing with hinged covers. The next step was to wall-mount fixtures (8), and this elimination of base has even been extended to the partitions in many recent washrooms (9). Wall-hung fixtures are seldom really cantilevered from partition; there generally is additional support under the finish flooring. In maintenance the mop has been replaced or reinforced by the squeegee, and floor drains have been added. Special fittings (10), such as this one in a wash-room of the Hartford Statler (by Architect William B. Tabler), also reduce the time required for routine cleaning. One tendency now seems to provide built-in basins in counters, especially in hotel bathrooms (7).

Recent refinements in the design of the public W.C. are mainly devoted to reassuring the transient user of cleanliness. These include elaborate paper-covered seats and seats which are treated with germicidal rays between usings (5). The newest piece of equipment of the public washroom is not really very new any more, and is gaining slow acceptance. This is a female urinal, designed to be used without physical contact. Bidets are also on the increase in the more expensive new US hotels.

Another improvement in many new washrooms is in control of washbasin flow of water by foot pedal. Single-faucet designs with mixer controls are also coming in. Spring faucets are said to be declining in popularity.



10



11

## ECONOMICS

The provision of pay-booths, pay-showers, and pay-dressing rooms in public places is no small industry in the US. Wall-hung example above (11) is in Cleveland Municipal Airport by Outcault, Guenther & Associates, architects. At least three sizable national organizations are devoted to these rental facilities. These companies sell their coin-lock equipment or take over concessions in busy spots, claiming from 15% to 50% of the gross as their fee. The annual receipts from the public coin-fed toilets on the lobby of one 2,200-room New York hotel in 1955 were \$15,400. A 1,200-room hotel in Boston grossed \$14,810. A small hotel in New York has two twin-stall washrooms off its lobby with 5¢ coin locks on their doors. The yearly revenue averages \$280, enough to pay for redecorating the rooms every three and a half years.

Another money decision which must be made in washrooms is whether to provide towels or blowers (6) for hand-drying. Manufacturers of the blowers make a good case of maintenance. Use of their devices eliminates most of the littering of paper. Although provision of the driers (available also in adjustable models to dry faces, too) is much more expensive than a towel dispenser, the manufacturers claim that 5¢ worth of electricity can dry as much skin as a dollar's worth of paper towels, and the first cost of the blower can be amortized in two or three years.



12



13

## CHILDREN

The provision of small-scale bathroom fixtures for children—sometimes referred to as demijohns—is general practice today (12). Many educational authorities also are advocating individual bathrooms for each classroom to replace the conventional consolidated toilet rooms.

The newest public plumbing facility for children is the diaper room. This boon to traveling mothers is now being designed into a number of new terminals, highway restaurants, etc. An example (13) is in the new San Francisco Airport designed by W. P. Day.



## STANDARDS

Most public washrooms are shaped and sized by the laws prevailing in the community or by the standards adapted by the owning organization. The New Jersey Turnpike Authority, for example, worked out a careful arithmetical computation before building its ten pair of washrooms (maintained by concessionaire Howard Johnson). Traffic anticipated when this road was opened in 1952 was between seven and eight million cars: actually, in the past year, the traffic has been 26 million cars, and the plumbing sometimes has been taxed. The total number of toilets and urinals on the turnpike is 272. New facilities are being rushed. New York's Grand Central Station, on the other hand, has had to do very little remodeling of facilities since the station was built in 1913. The total number of toilets and urinals is 257.

One shift in programming office building facilities is still ahead of many city codes. This is the provision of a greater proportion of facilities for women office employees than men. Architects queried in this regard report that the minimum legal stipulation generally proves adequate for male facilities in practice, but minimum legal female facilities often do not, and should be programmed carefully with the client.

Here is general comment extracted from reports by three widely separated US architectural offices and one firm of engineers, all respected for their care and thoroughness in detailing:

### 1. Office of Albert C. Martin & Associates, Los Angeles

"It is our feeling that natural lighting gives an atmosphere of freshness and warmth difficult to duplicate by artificial means. For this reason, wherever possible, we use large areas of glass. Even though opaqued, it is psychologically pleasing. Ventilation systems vary, of course, but we always plan a washroom for the best possible circulation of air, incorporating both mechanical methods and fresh air supplies directly into the areas wherever feasible.

"As to recent 'trends' in the field, color is becoming more important. The feeling is that washrooms should be pleasing as well as functional. This explains the increased emphasis on vestibule design so that planters, vanity tables and mirrors, comfortable chairs transform the area into an attractive lounge, adjacent to the functional facilities.

"Compartmentalization is increasing. Toilet facilities and lavatory fixtures are well separated, many times by partitions . . . a good trend, we think. It not only makes the room more pleasant, but eliminates much cross-traffic.

"One fault we are working to control is the installation by others of accessory equipment once the washroom has been constructed. So many public buildings employ services which bring in their own towel racks, dispensers and wastebaskets all out of harmony with the architectural plan, that we make every attempt to design built-in facilities and specify definite types of accessory fixture.

"The hand drier is excellent because it prevents the litter of paper towels, and the unattractive sight of soiled linen towels on a roller. However, unless many hand-driers are provided, there is the danger of a "waiting line" and poor traffic circulation. The hand drier is rather noisy—an important drawback in a room where sounds are likely to reverberate against hard walls.

"A stray hairpin can clog an entire plumbing system, and we try to supply as many points of access as we can, so that it doesn't take a day to put a clogged system in working order."

### 2. Office of Kivett & Myers, Kansas City, Mo.

"We try, where budgets will allow, to have all the fixtures

wall-hung. This eases maintenance by allowing easier mopping. As for wall materials, we have most often used a 5" x 12" ceramic glazed tile laid out as an integral part of the masonry wall construction. We normally lay these to a block joint, which makes a very nice looking job. Sometimes we have used marble, and on budget jobs, concrete block painted with low maintenance paint. Ceilings vary from painted plaster to acoustic tile of various types, depending on acoustical conditions. We are very concerned about lighting and ventilation. We believe that a room well lighted and well ventilated will receive the respect of employees and they will be much neater in the use of the facilities.

"As for paper towels and blower hand driers, we have used both, and find both are successful. Normally, we conform to the desires of the client regarding which one we use, depending on his past operating experience.

"As for soap dispensers, this is one item that always gives us a lot of trouble. We have used individual soap dispensers at each basin or piped-type dispensers from a central supply, or powdered soaps from a dispenser, or sometimes just a plain bar of soap at each basin. The biggest problem with liquid soap is the clogging of the machinery unless it is maintained on a periodic basis. Liquid soap is still the preferred kind, however.

"As for the human element, we know of no way to keep people from losing articles, women from wiping lipstick on the walls, and throwing litter on the floors. The only thing that we can do is to try to create an atmosphere that is so inviting that anyone would feel like a criminal if he abuses the premises. This works to a degree, but is not foolproof. The best we can do is to make everything as maintenance-free as possible, and of materials not easily harmed.

"As for toilet stalls, we have had good success with flush-type metal partitions with a baked enamel finish. We have used marble very widely and find this compares well in cost, good looks and ease of maintenance. In washrooms which have a great deal of traffic to them we try to provide separate in and out doors."

### 3. Office of Kenneth Franzheim, Houston, Tex.

▶ "An increasing number of women employees is evident in the Southwest. However, the proportion of women to men employees is not as great in the Southwest as it is in the industrial areas of the North and East.

▶ "The use of wall-hung plumbing fixtures and ceiling-hung toilet compartments is increasing in the monumental class buildings.

▶ "The wait-and-see attitude still persists regarding stand-up urinals for women.

▶ "Roll-type tissue dispensers with friction control rollers are gaining favor over cabinet dispensers for fold-type tissue.

▶ "Ceramic tile walls full ceiling height in lieu of wainscots of tile or structural glazed units and plaster are preferred.

▶ "Lighting fixtures flush with ceiling and arranged over toilet compartments and plumbing fixtures are taking the place of lighting centered in toilet rooms.

▶ "The number of water closets generally follows the standard rule.

| Water closets | Persons (either sex) |
|---------------|----------------------|
| 1             | 1 to 9               |
| 2             | 10 to 24             |
| 3             | 25 to 49             |
| 5             | 50 to 100            |

1 for each additional 30 persons, over 100 persons.

▶ "Urinals: One water closet less than above number for



each urinal in men's toilets, except the number of water closets must be not less than two-thirds of the number scheduled above.

▶ "Lavatories: One lavatory for each ten persons if total capacity is up to 100. Add one lavatory for each 15 persons over 100."

▶ "Water closets: Wall-hung, extended lip, with open front seats and foot-controlled flush valves.

▶ "Urinals: Wall-hung with foot-controlled flush valves.

▶ "Lavatories: Wall-hung, combination hot and cold, temperature controlled and foot operated.

▶ "Toilet compartments: Ceiling-hung porcelain enamel with chromium plated hardware. Equipment includes friction roll paper holder, slide latch, coat hook and bumper on door. Pocketbook shelf on door in women's toilets.

▶ "Towel dispensers: Stainless steel paper towel dispensers flush mounted on wall adjacent to bank of lavatories between lavatories and exit.

▶ "Waste receptors: Stainless steel, flush mounted adjacent to towel dispenser and between towel dispenser and exit. Receptor may be combined in same fixture with towel dispenser forming a single unit.

▶ "Shelves: Not generally used but may be provided in women's toilet rooms recessed over lavatories.

▶ "Lighting fixtures: Flush ceiling units over each toilet compartment and located over banks of lavatories."

#### 4. Office of Abbott, Merkt & Co., New York

"The increase among women employees may demand additional facilities for them, hence wise planning relates men's and women's facilities so that any substantial shift in ratio can be met by shifting a dividing wall.

"Stalls should be of metal, and our basic layout anticipates a minimum size of 2'-8" x 5'-10" with doors swinging inward. Urinals are set with a 4" tiled space between.

"Though partitions may be hung from the ceiling, the cost is usually too great and they are usually floor mounted. Flush partitions are preferred, and they should not extend to the wall or to the floor.

"Walls should be of ceramic tile from floor to ceiling, if funds are available. Industrial rooms and some of those for stores are built with brick tile. In any case, they should have a cove base, and the floor should be of colored tile. The ceiling should be white Keen's plaster.

"Wall-hung fixtures are much easier to maintain. Seats should have an open front and no cover. Flush valves should be foot-operated and have an anti-siphon feature. Hand basins should have pop-up waste, and the supplies should be self-closing.

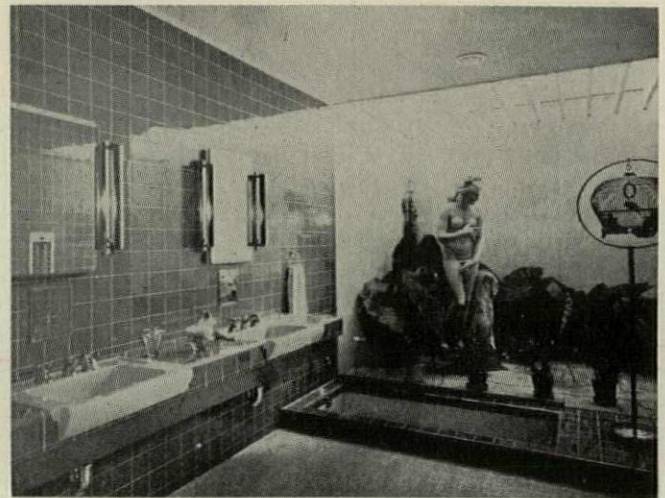
"In women's washrooms it is most important not to place mirrors above hand basins, because of the tendency for delay, the accumulation of hair in traps, and the loss of articles into the basins. Wherever installed, mirrors should have a shelf beneath. Metal waste containers should be provided.

"Electric hand-driers are recommended. In a large installation a central soap dispensing system, with stainless steel, iron or brass pipe, not copper, and concealed tank, is desirable.

"Floor drains should be provided along the line of the water closet partitions (if budget permits) so they will not be stepped upon, and they should have brass removable strainers.

"General illumination of about ten foot-candles is reasonably satisfactory, but 20 foot-candles are needed over the mirrors in women's washrooms.

"Mechanical ventilation is generally desirable, and we like ten air changes per hour."



14

## ARCHITECTURE

Real self-expression rarely is accomplished so magnificently as in the design of this washroom in South America (14), but the normal possibilities are not really so small as most US installations would indicate. Stock fixtures can be installed as in this washroom by the office of Kenneth Franzheim (18, 19) to give a gleaming precision to this room type.

The usual materials in public washrooms, for good maintenance reasons are tile, terrazzo, marble, metal, glass, porcelain and plastic laminates. But if a washroom is well ventilated and there is no steam condition, other materials can be introduced. A case in point: the bathroom in furniture-maker George Nakashima's showroom in New Hope, Penn. (20).

Two examples where public washrooms have really become architecture are Henry Klumb's separate washroom building for a vocational high school in Puerto Rico (26, 27), and Ed Barnes's shower and toilet house (15, 16) for the Fresh Air Fund Camp at Fishkill, N.Y.

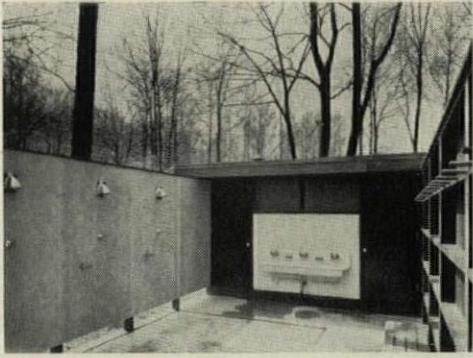
Ketchum, Gina & Sharp specified a neat combination water fountain and sink in their Hollow Tree Elementary School in Darien, Conn. (22). A space-saving hospital washbasin (17) was designed for the North Shore Hospital by Maria Bergson & Associates (Isadore and Zachary Rosenfeld, architects). Few examples of the stark formal washroom match that shown in (25). Architects Harrison & Abramovitz, in a typical washroom in the Mellon-US Steel building at 525 William Penn Place in Pennsylvania, provide another good example of detailing of well-selected stock components (21). Wyatt C. Hedrick made the most of rich marble partitions in a washroom of the Shamrock Hotel in Houston (24). The value of high lighting is emphasized in the large washroom (23).

26





15



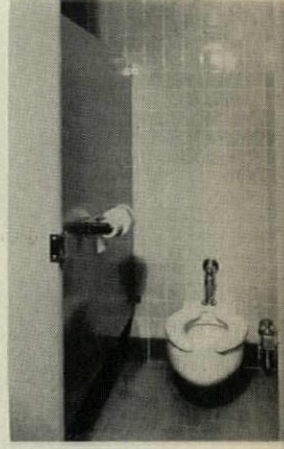
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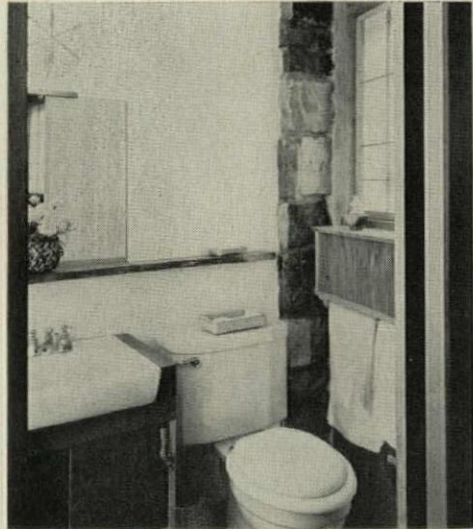
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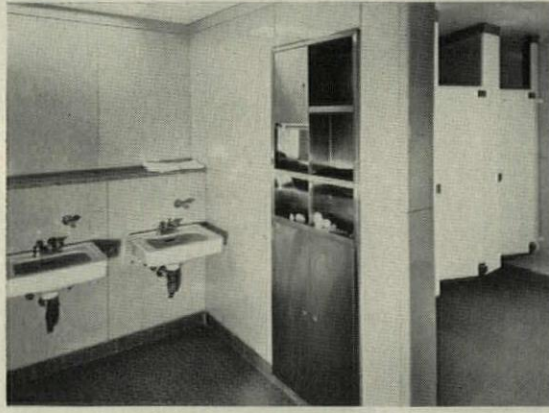
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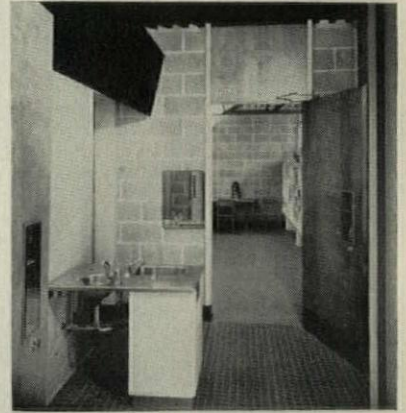
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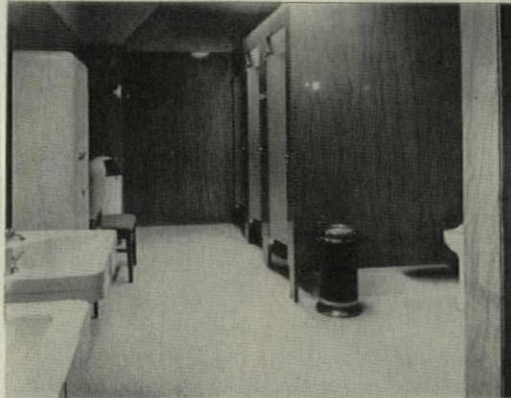
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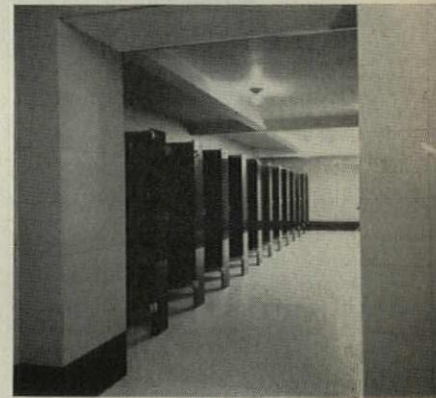
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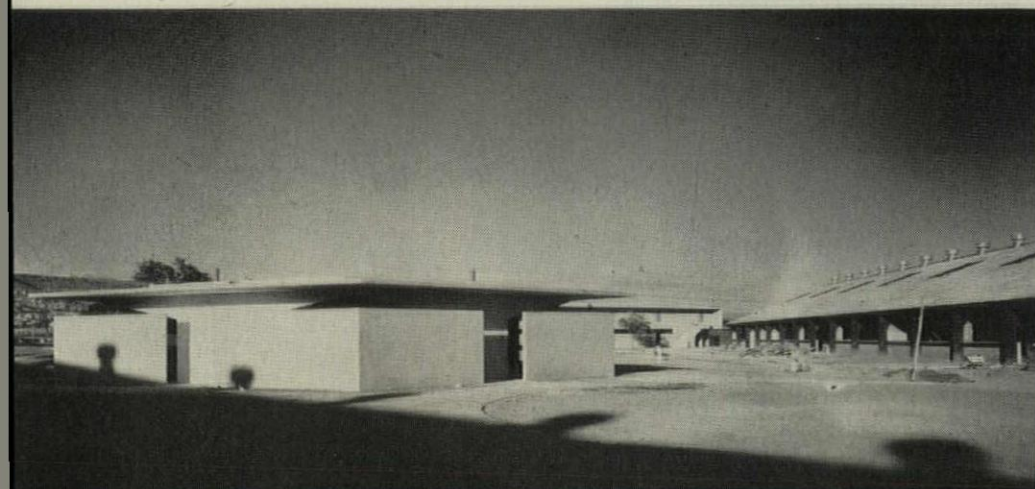


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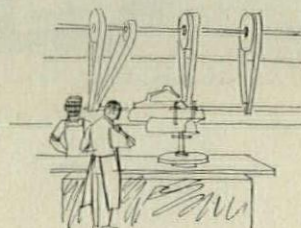


Photos: Walter Daran (p. 138); Eric Schaal—LIFE (1); Dmitri Kessel—LIFE (2); Plumbing Fixture Manufacturers Assn. (3, 4, 7, 12, 23); Joseph E. Sunner (6); Woodallen Industrial Photographers (8, 18, 19); Adams Studio (9); Edward Saxe Studio (10); Sanymetal Products Co. Inc. (11); Ben Schnall (15, 16, 17, 21); © Ezra Stoller (20, 22, 26, 27); Pittsburgh Plate Glass Co. (25).





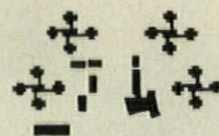
OBSERVATORY



INDUSTRY



SOILS LABORATORY



SCHOOL CAMPUS



RADIO STATION



DEPT. OF PUBLIC WORKS

**Hypothetical community** (similar to Elmira, N.Y., left) is used by plan's authors to illustrate a few of the principal community resources proposed for student contract services. Authors call their hypothetical city "Random Falls."



An overhaul of secondary education has long been overdue.

Here, timed to precede the great approaching surge of high school building, is the "Random Falls idea" for remaking high-schooling

## TOMORROW'S HIGH SCHOOL

Elementary education had its revolution in the thirties and forties, a revolution that has visibly shaped every elementary school built in the past decade.

Now it is the high school's turn.

Tackling the formidable problem of re-shaping secondary education, Archibald B. Shaw, school superintendent in Scarsdale, N.Y., and Architect John Lyon Reid\* have arrived at a scheme that is actually more significant than a proposal. It is reasonable to think of their scheme—or more likely, something approaching it—as a *forecast*, because it is based on what has already begun to happen, and already works, in bits and pieces in several dozen communities, from Santa Barbara, Calif., to East Harlem in New York City. Among educators, the scheme is known as the Random Falls idea, from the tag Shaw and Reid gave to the hypothetical town where the bits and pieces are assembled into a complete program.

What Shaw and Reid propose is a high school which literally uses the whole community as its plant, and a great many citizens in the community as its part-time teachers. In return, the community would put to constructive purposes some of the fabulous energy and idealism of adolescence, now pretty much frustrated and wasted. Shaw points out that at present, the family and community typically put up (often grudgingly) with adolescents, instead of needing them, a deeply demoralizing situation and a new one in man's history. But paradoxically, while there is little place for US adolescents in the serious work of the world, a vast amount of work—especially in community betterment—remains undone because there is no one to do it. (For more on this, see editorial, "Delinquents into Builders," AF, Nov. '55.)

The high school student in the Shaw-Reid plan combines his academic education with a planned apprenticeship. But instead of being narrowly apprenticed to one trade or vocation, he gets what amounts to an apprenticeship in adult life and in social and work responsibilities.

The apprenticeship device is a short-term contract made between the school

and student on one hand, and on the other an employer—who might be the school itself, any public or community agency (as day nursery, church, hospital, library, park service, election board) or a participating private employer.

Each student would make a variety of contracts during his high school years, including vocational service, social service and civic service; and each of these services would also be planned for variety. For instance, the vocational contracts would begin with service of a few weeks of full-time work, along with regular workers, at unskilled jobs, to soak in the mores of the world of work; would go on to serious prevocational or preprofessional exploration and skills; and would conclude, for some, with an actual start at a career during the final year.

How to do all this and cover the orthodox educational requirements too? Regard schooling as a full-time job, says Shaw. "The traditional high school program demands about 2,400 hours of classtime over a four-year period. Most youths who graduate have invested perhaps another 600 hours, for a total of 3,000. At the same time, adults are putting in 1,800 to 2,000 hours each year on their jobs, 7 to 8,000 in the four years, at 40 hours per week with time off for holidays and vacations. Simple arithmetic shows that if, over four years, the student devotes 3,000 hours to acquiring information and skills now planned in the traditional high school, an equal amount of time is available for service, recreation and all other activity, well within the 40-hour work week!" At present many adolescents use that extra time for random part-time jobs, scouting, sports; others dissipate it. "None of the healthy activities would be lost to students," says Shaw.

Doubling supervised schooling time in effect means increase in staff, says Shaw. "And it would be a futile proposal if a substantial contribution were not also made through volunteer and part-time persons, with many people in the community becoming out-of-school teachers." Staff shortage is likely to be the main brake on the scheme. In Benjamin Franklin High School in East Harlem, for instance, the principal reports there is

anything but a dearth of appropriate community work for students, and no dearth of student zeal to do it; only lack of enough staff (at good enough pay) to supervise.

A sample Shaw-Reid program for a boy who fills his contracts well might include:

First year: five periods of two weeks each devoted to full time unskilled work as a shipping department helper, packer, office boy, parks tree planter and construction helper (an entire class of 25-30 students would work out contracts at the same time but usually not in the same place); 31 weeks in school; sports, crafts, scout work and nature study on the side; a seven-week summer job as camp helper; two weeks' vacation.

Second year: four weeks as a carpenter's helper (possibly working on equipment for the school itself—see p. 148); two blocks of two weeks each with the community recreation council, two weeks as a school gardener; 33 weeks in school; summer job as a laborer; two weeks' vacation.

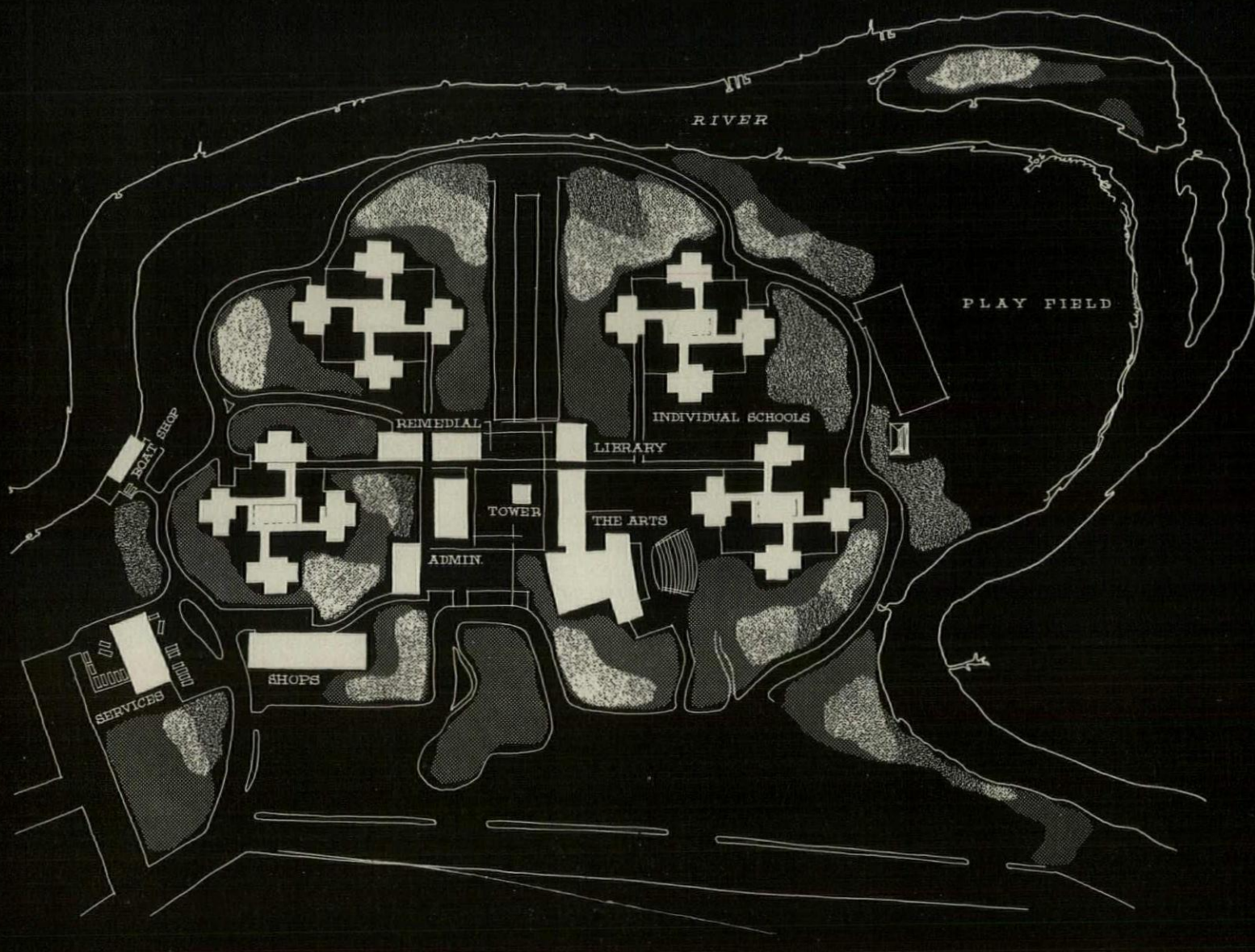
Third year (the boy has decided to become a teacher): six weeks as a teacher's aide, eight weeks as nursery school helper, 29 weeks in school along with eight weeks of part-time at park work; summer job in visual aids for the state education department; two weeks' vacation.

Fourth year: contracts for paid and volunteer teacher's aid running concurrently with much of his in-class year; advisory work with the youth council and board of education; special study for a year's work he hopes to get with Point-4 foreign aid before college; and, as usual, recreation, hobbies and sports on the side.

A program set up like this *could* be a mess of uncoordinated activity and hop-skip-jump study. It would not work unless the student had more continuity of guidance and teaching than he gets in high school at present. So the proposed school plant by Reid is designed to accommodate a secure four-year "home base" anchorage for the student where he can get counsel. It is also designed to operate well during the time a high school is evolving a "community partnership" program and is still running along fairly traditional lines. The plan is shown overleaf.

\* Assisted by a group of 25 educators and 15 architects, under sponsorship of *School Executive*.





School plant, including four school-within-a-school clusters

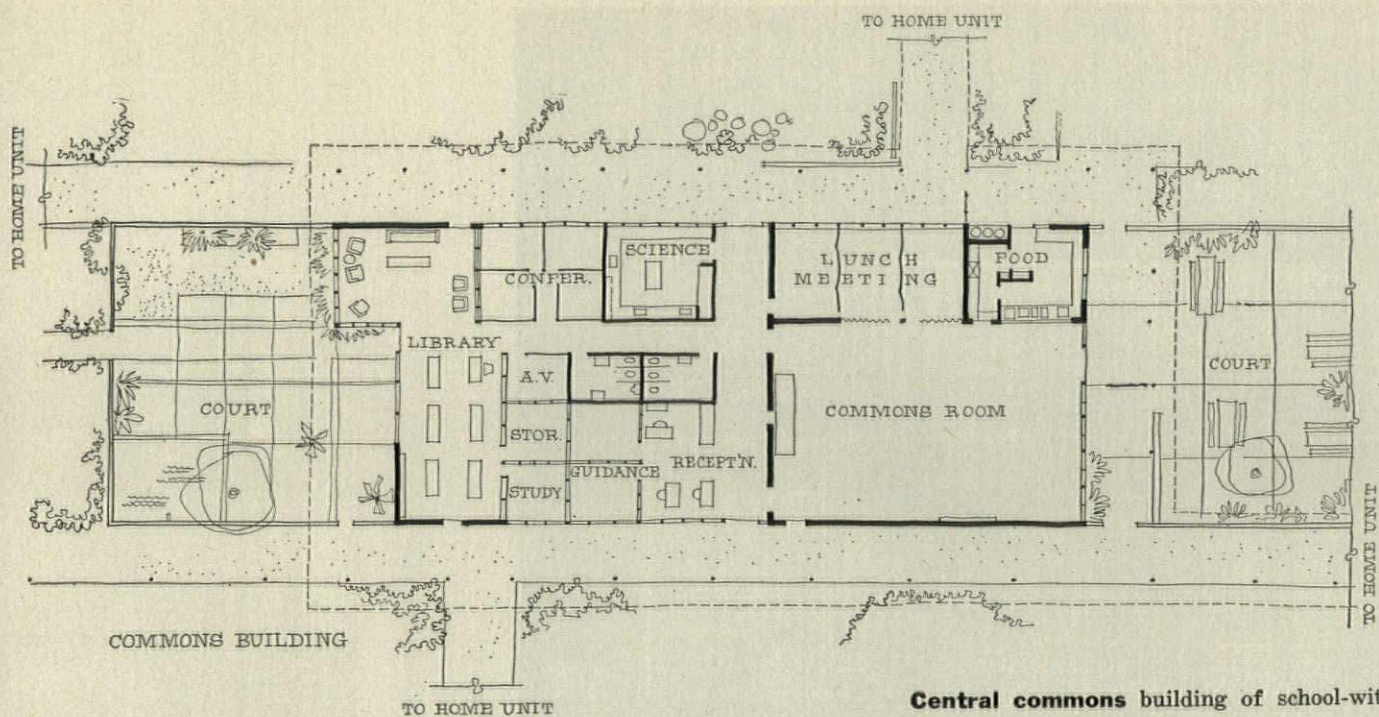
## THE SCHOOL PLANT

Basic unit of the school plant is a 300-student school-within-a-school cluster, consisting of four "home" units and a commons building. In each home unit are three 25-pupil classes at one age level; each cluster includes four age levels, so that although the enrollment of the school-within-a-school is held to 300, it embraces a total high school cross-section. (To compare with other school-within-a-school schemes, see AF, Oct. '55.) The plant would have as many such clusters as needed, all using jointly special facilities such as theater, shops, remedial and testing center, administration, etc.

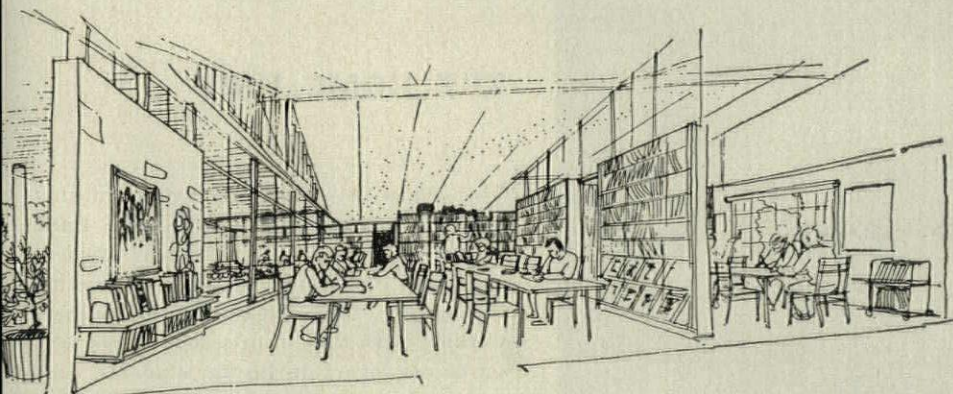
Describing the home units and their commons, Reid says: "We believe the cluster buildings should not be carried any further than completion of the structure and finish of structural walls. The students themselves are expected to plan and construct all partitions, storage cabinets and work equipment. These are expected to change from time to time. This project, by its nature, requires users to add the things which bring the plant to life."

The plan and sketch of the commons building (opp. p.) shows one possible "transitory" arrangement. The home unit is shown in its virgin state.

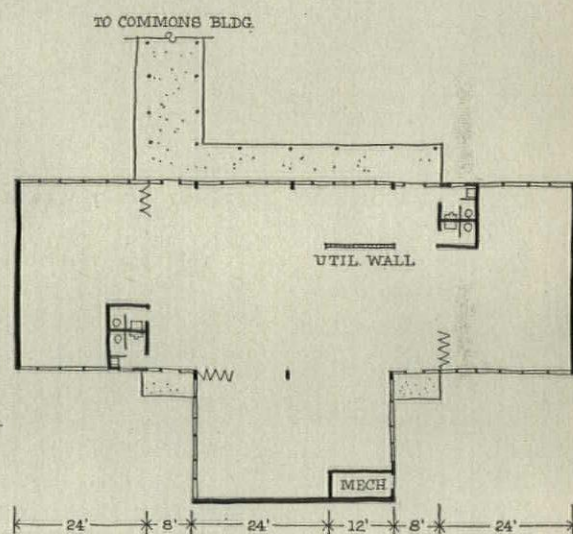




Central commons building of school-within-a-school

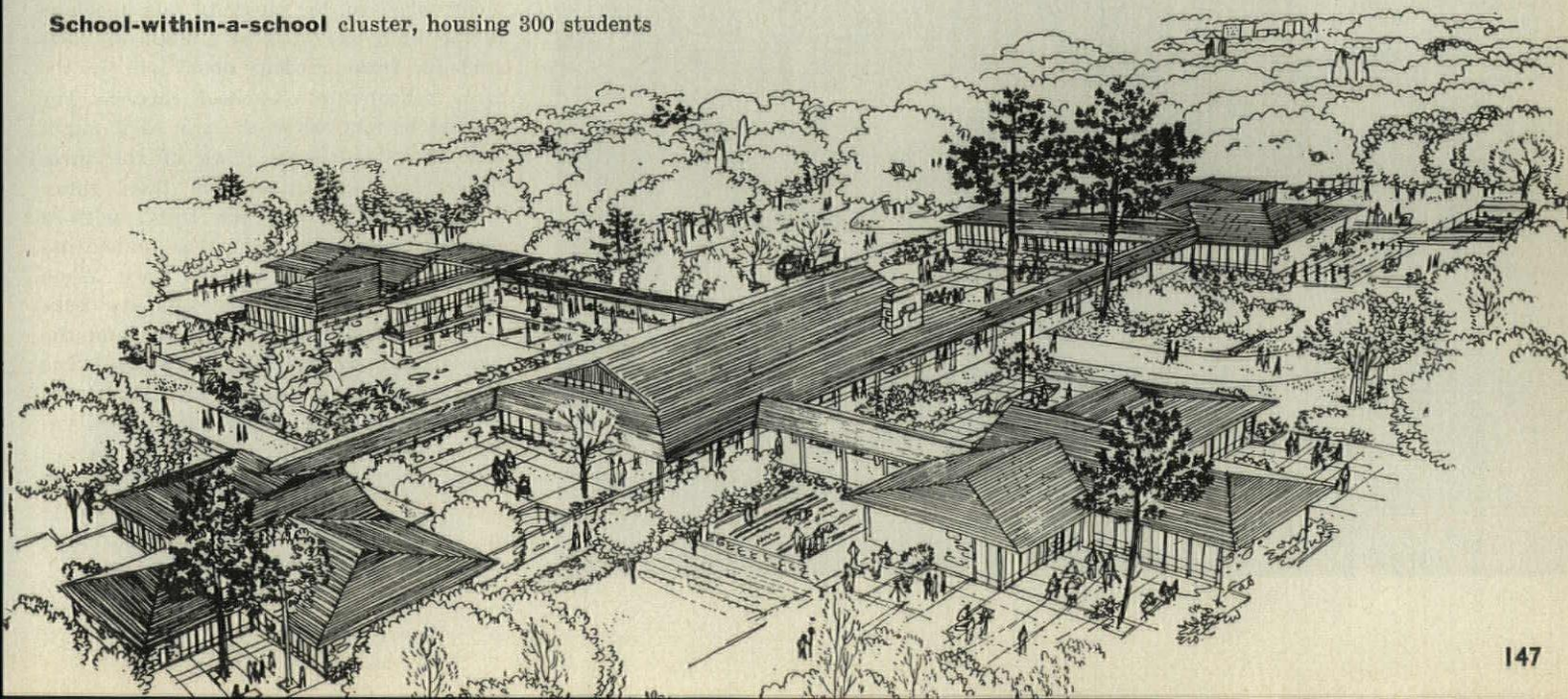


Library in commons building

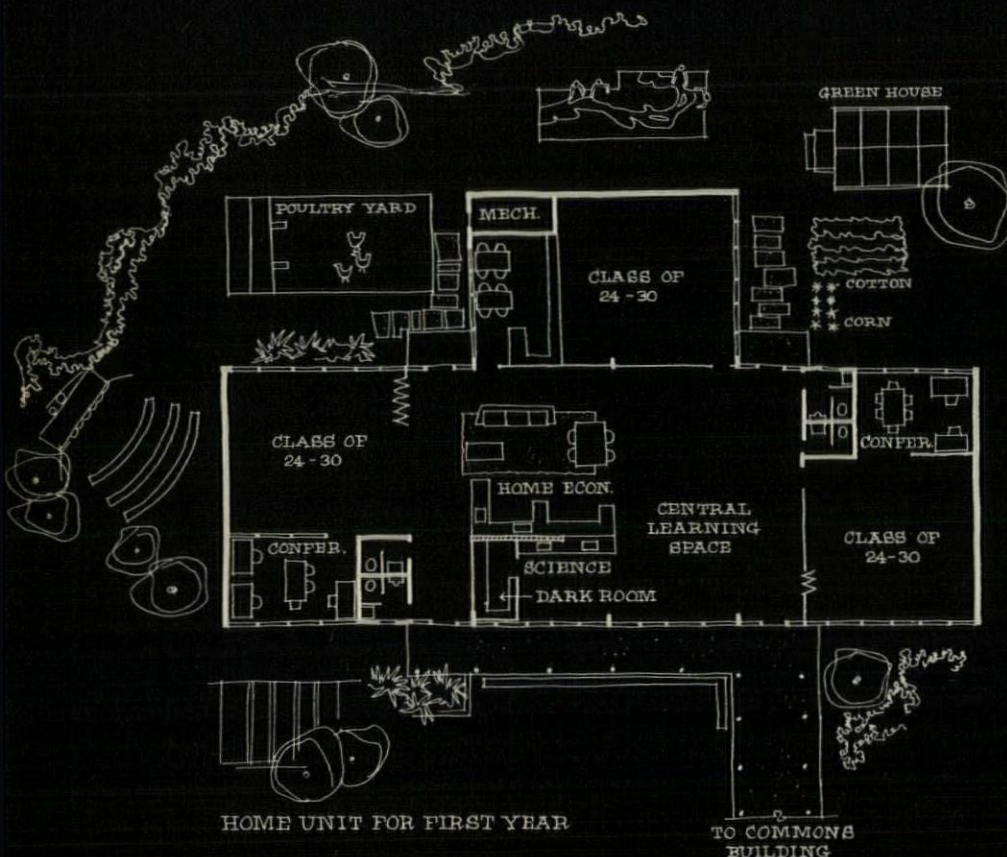


Home unit for 75 students

School-within-a-school cluster, housing 300 students



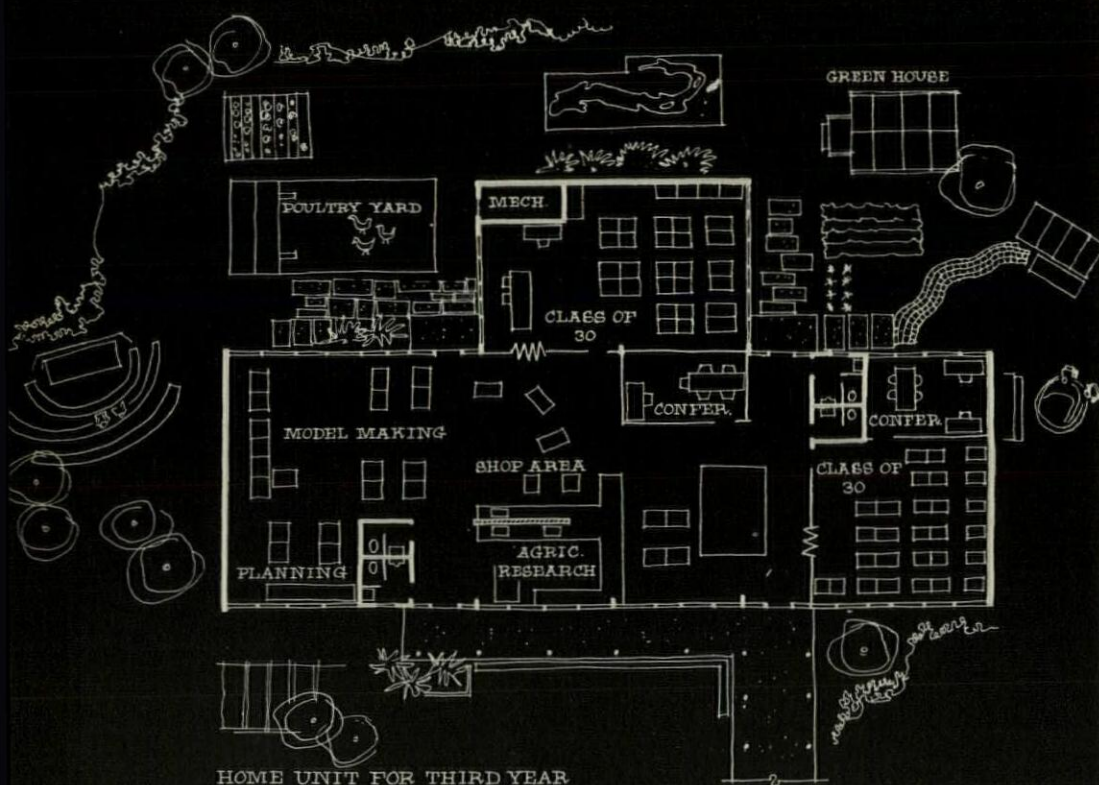




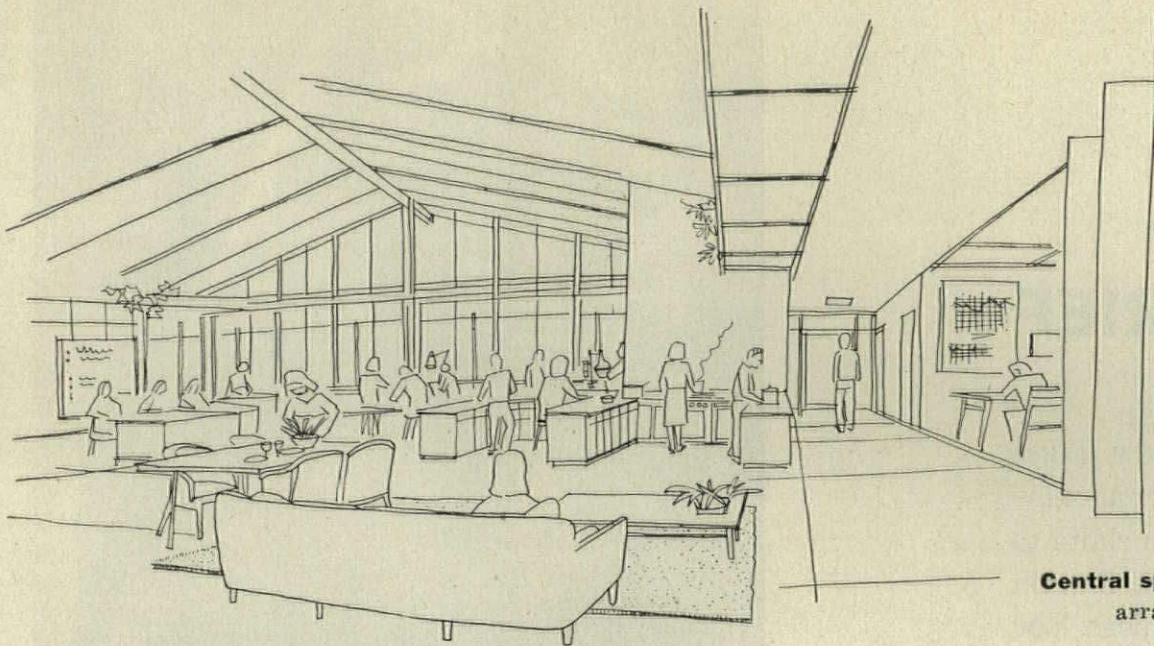
## THE HOME UNIT

The student's anchorage during all his high school years is the home unit. Each 25-student class, with its own teacher-guidance counselor, remains an entity throughout those years. The teacher, working with the out-of-school people who act as employers during the students' contracts, prepares the 25 students for their contracts and follows up their progress. The three teachers in a home unit also share among them responsibility for the common learnings of their 75 students.

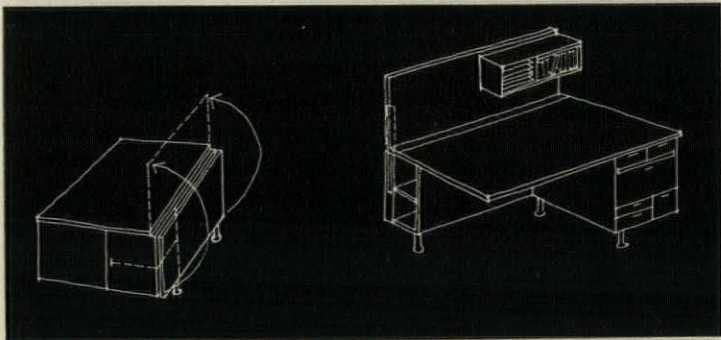
Since the students do not shift about from department to department for their common learnings, the home unit itself makes the necessary adaptations. The plan at top shows a sample first-year arrangement, planned by students and teachers in the unit, executed by a class of older students from another home unit in the same school-within-a-school cluster. The plan at bottom shows the unit as it might look the third year. Two of the three classes have partitioned off their wings for the time being; the third, with a space-consuming project, has joined its room to the central learnings space. When any class is away on contracts, its desks can be pushed back for storage and the space used by remaining classes. The central learnings space is the same facility that educators and architects are variously calling "Room A," "resources laboratory," "learnings laboratory" (AF, Oct. '55). Reid's version here is unusually flexible, practical and simple. Assisting Reid on design was Robert F. Olwell.



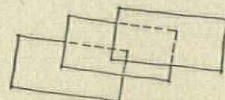
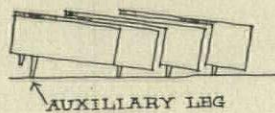
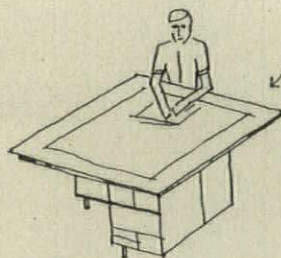
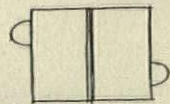
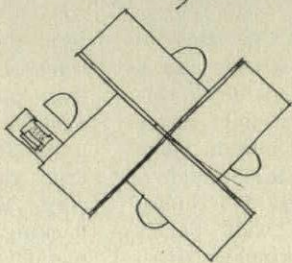
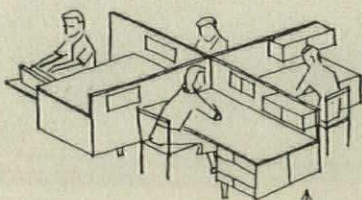




**Central space** for common learnings,  
arranged as in first year plan



**Desk unit** is the student's "office" throughout his high school years. With the hanging book-box detached and hinged divider dropped, it serves as project table or nests for storage.

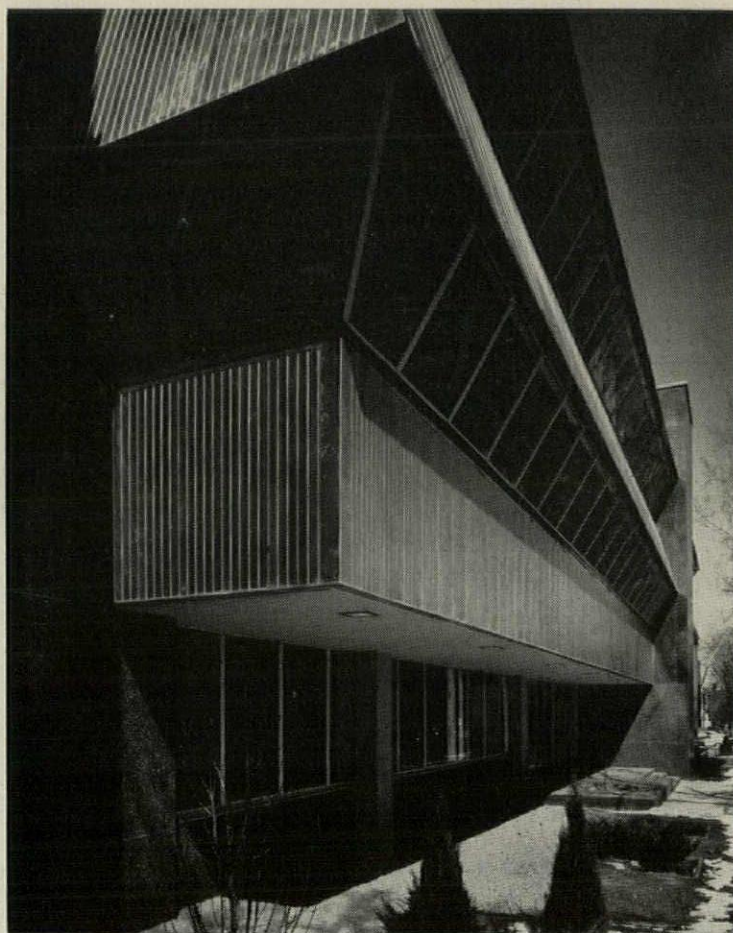
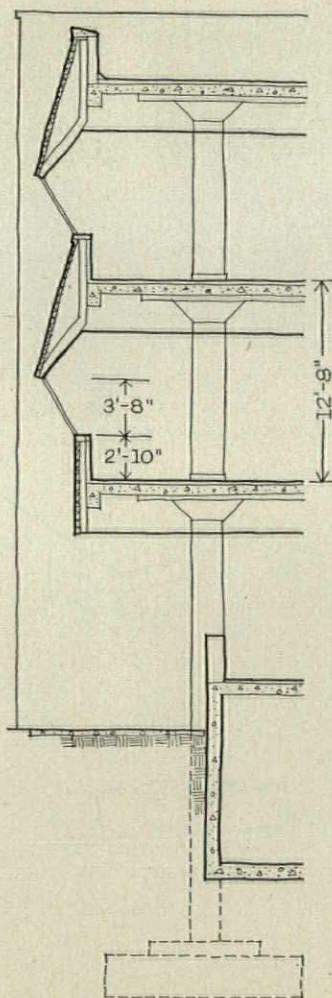




# BUILDINGS

## IN BRIEF

In this department FORUM takes an around-the-map look at new buildings, each with some claim to design excellence or a contribution to the proving ground of ideas. The department has only one aim: to keep FORUM's busy readers briefed on designs and ideas that might otherwise be lost in today's surge of construction



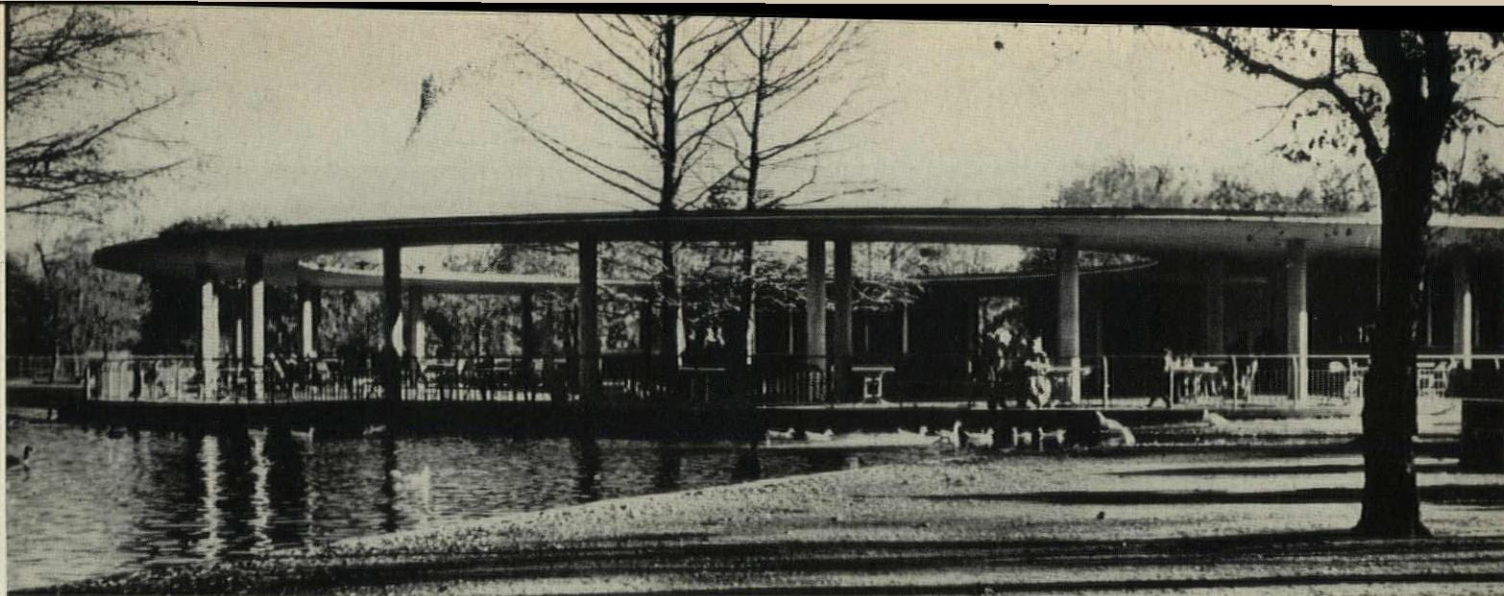
WINTER FRATHER—DENVER

### HOW A DENVER OFFICE MADE SHADE

Slanted against the sun—its rays pierce the windows at a 31° angle—the outside of this Denver office building shows an ingenious attempt to make shade where nature couldn't. Architect James S. Sudler used aluminum wall panels and fixed-frame windows, tilted both in the upper stories. The result: a rare integration of sun control into structural walls. Designed for Shell Oil Co.'s Denver area headquar-

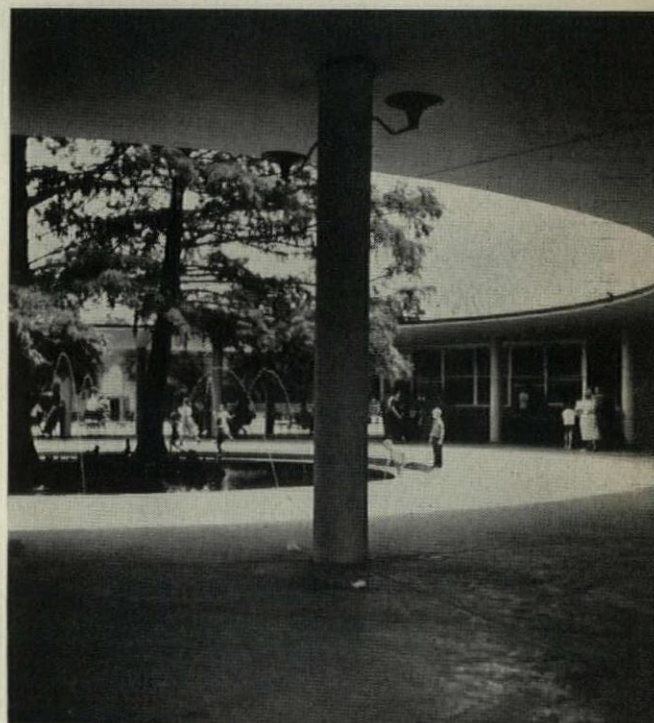
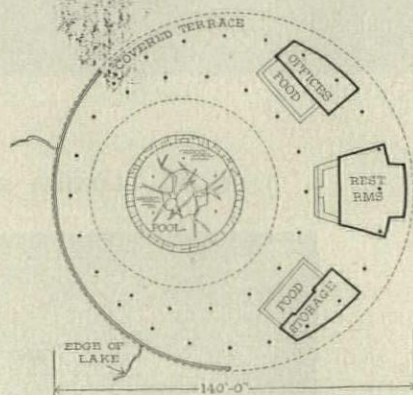
ters, the building is fully air conditioned, allows a flexible floor plan inside tied to a 4' modular grid. (Support columns for the reinforced concrete slabs are 28' apart each way.) Sudler skipped masonry backing for his upper-story metal walls, used cast-in-place terrazzo for the lobby floor. Cost for the three floors and basement: \$857,618, or \$11.95 a sq. ft., not including contractor's fees.





### NEW FOR THE ZOO: CONCESSIONS IN A CIRCLE

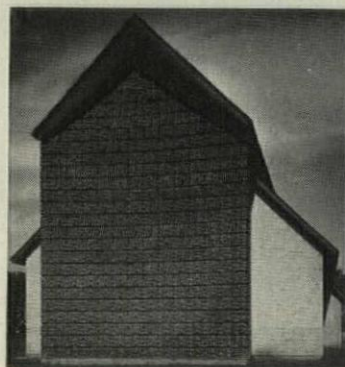
One of the happiest buildings to turn up in a US zoo in many a year, the new concession center for Houston's Zoological Gardens suggests nothing so much as the care-free whirl of a carousel. Irving R. Klein & Associates designed it around two lovely old cypress trees standing in their own moat near the shore of a small lake. Three buildings, grouped at one end, take care of the concession stands, toilet facilities, and an office for the zoo's director. The roof ring circles the entire site to give perimeter shelter. The three buildings are faced with brick, the rest of the structure is unadorned concrete. Total cost, including walks, came to \$133,580.



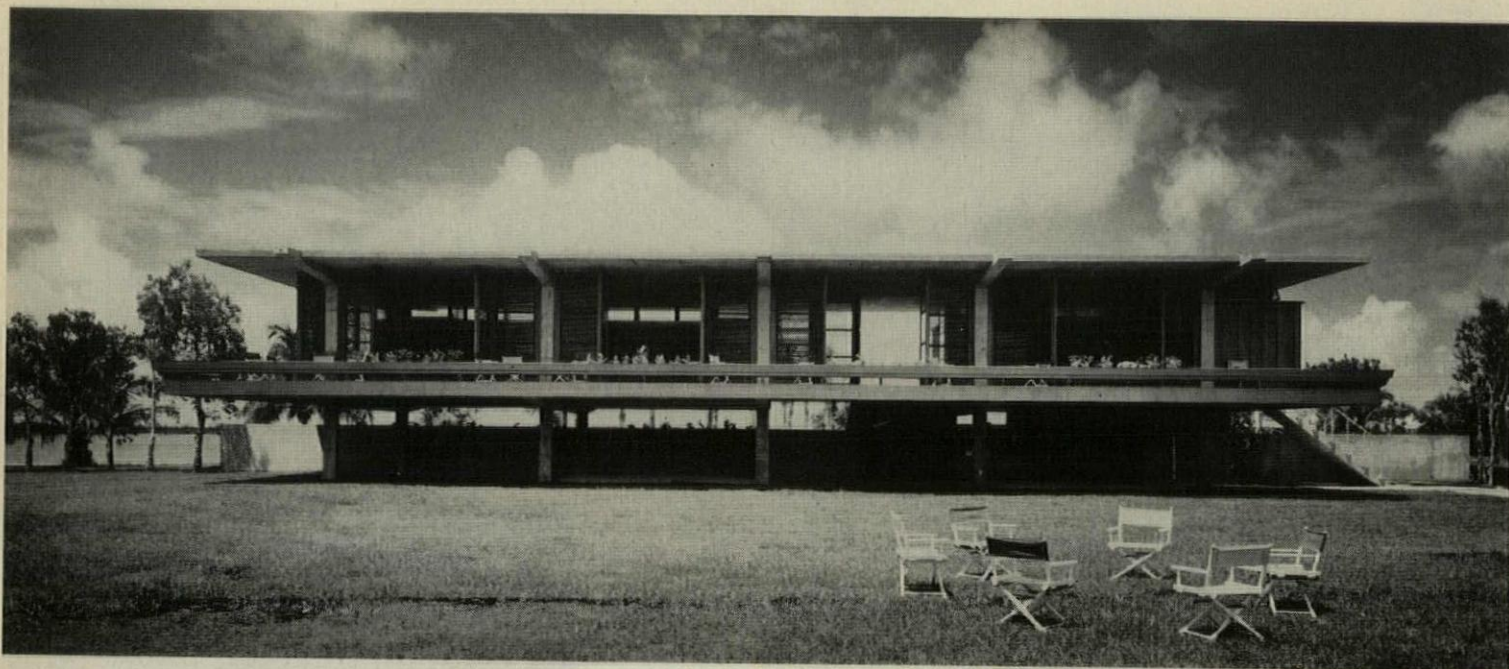
### SPLIT LEVEL HELPS SAVE A CHURCH BUDGET

Budgeted for \$60,000, St. Giles Presbyterian Church in Peterborough, Ontario, had to provide seats for 400 people, plus a Sunday school and auxiliary rooms. Architects Blackwell, Craig & Zeidler made ends meet—finished cost of the building was \$60,889—with a compact split-level design. The nave of the church, running the full width of the building to the shedlike outer walls, is only a half flight above ground. The Sunday school is 4' below surface. Light enters through the glass east wall. The slender south wall (photo, left) is curved against the wind.

PHOTOS (BELOW): THE ROY STUDIO







### IN THE FLORIDA SUN—A YACHTSMAN'S HAVEN



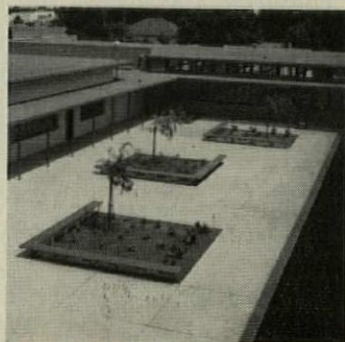
PHOTOS (ABOVE): © EZRA STOLLER



For Architect Alfred Parker, the design of Florida's Bal Harbour Club was, he says, "a simple problem. My clients wanted a club for \$60,000 that they could grow into. I gave them one—with one floor finished and one not so complete—the ground level." Parker, who makes his handsome end result sound misleadingly simple, perched the club up high—"any height in our flat land is an asset"—ramped the entrance drive halfway to it. Cypress plank (low maintenance) is used for inside and outside walls. Cost: \$65,782.



### ART ON A ROOF WAVES TO THE AIR

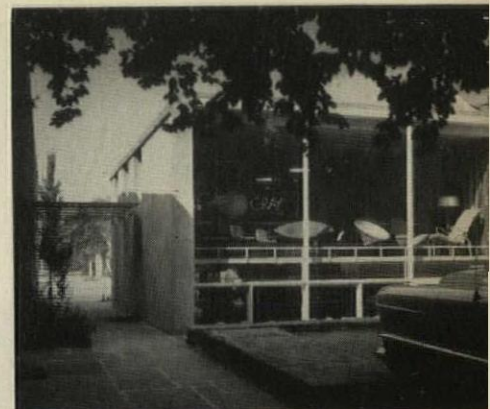


You have to fly to see it—this little tip-of-hat by Eastman Kodak to the air age (picture, far left). George Harris did the abstract roof pattern, filled it in with varicolored gravel—red, gray, white—to complete the wave to the world above. The roof, part of Eastman's new processing laboratory at Palo Alto, Calif., is simply one of the niceties that Architects Ward & Bolles took time for in their over-all design. Another, more earthbound: a 118' x 48' garden court (left) between office space, cafeteria, and the plant.





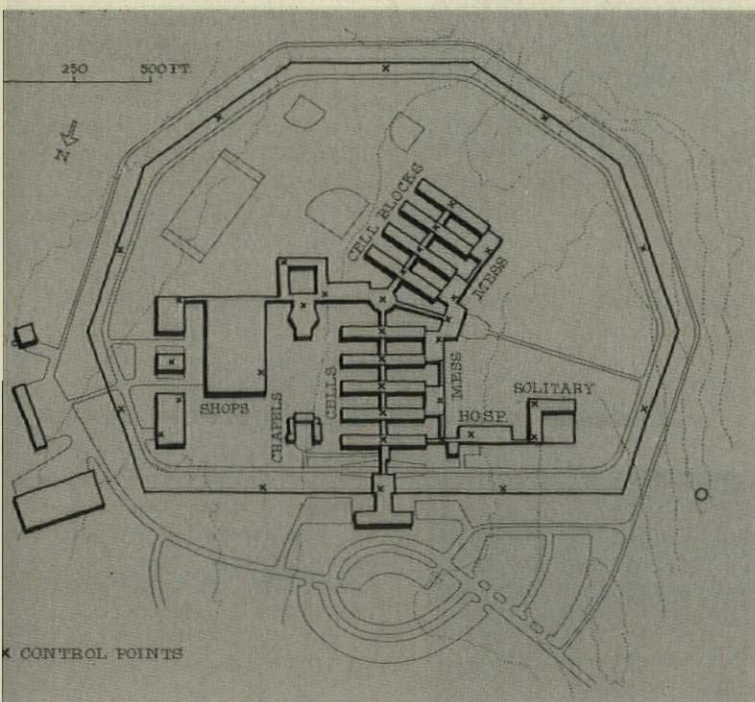
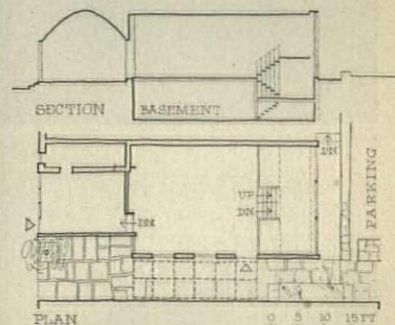
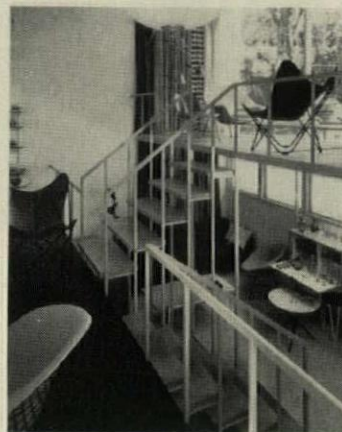
PHOTOS: EDMUND B. GILCHRIST JR.



## FENCED IN, A LITTLE STORE DESIGNS FOR SPACE

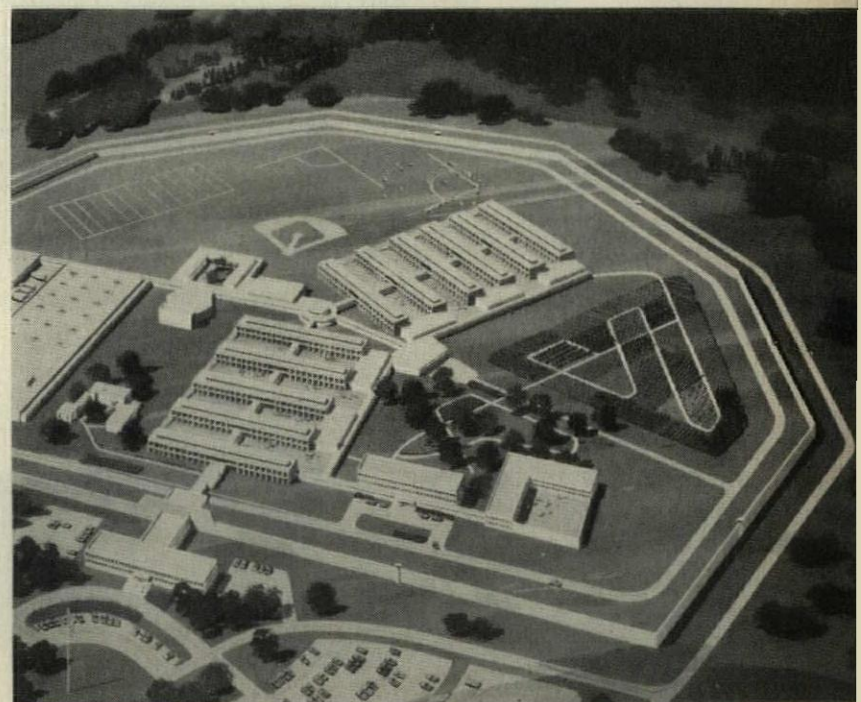
This little Philadelphia store—a near-classic in how hard a good design can work a square foot of floor space—actually had to be built in two stages. First came a completely new building, behind the one on the street. Then, the two were joined together to make one walk-through unit. Architect G. Holmes Perkins, who designed the shop for his wife's Gray Associates (retail fur-

niture), took the rear of the store, butting against a cooperative parking lot, for an all-glass showcase. Its main innovation: a balcony, 4' above the regular floor, that brings merchandise to eye level, allows display inside of 8' lengths of material, as well as furniture groupings in the half level below. Perkins left the exterior of the front building much as it was.



## CONNECTICUT PRISON: A SECURITY MATTER

Prisons being what they are, Sherwood, Mills & Smith had to think about security first when they tackled the design of the new Connecticut State Prison at Enfield. What they came up with shows in the plan above—an unusual ap-



proach to cell block control (heavy lines on the drawing indicate the controlled interior circulation, the black dots the main guard positions). Each cell block, straddling the "pole" corridor, has a security station at its center point—a spot where guards can see into each half of the cell block and

along the pole, as well. At the core of this network, where the two poles join, is the main internal control point. Each pair of cell blocks has its own mess hall, with a separate circulation system so that the prisoners are always in small groups. The prison will house 1,200, cost \$16.5 million.





PHIL OLSEN



### WITH REMODELING, A BOTTLER SHOWS OFF

Like most soft drink bottlers, James Vernor Co. admits to an urge to show people how it concocts what it hopes they will pour down their throats. Partly for show, Vernor bought the old Detroit building in the picture at lower left, had Harley, Ellington & Day, Inc., transform it into the clean-lined frontpiece above. In the remodeling, the architects did relatively little to a one-story rear section of the building, which now holds most of Vernor's operations. But they completely scrapped the two-story portion at the front and rebuilt. On the ground floor of this new section—behind full-height plate glass windows—they installed the bottling line, other processing equipment. The second floor, air conditioned and sound conditioned, they gave over to executive offices. Materials used: reinforced concrete frames; exterior panels of porcelain-enameled metal, enameled tempered glass, and an actinic glass vision strip, all set in stainless steel with drips and vents. The architects figure over-all remodeling costs came to about \$5 a sq. ft.

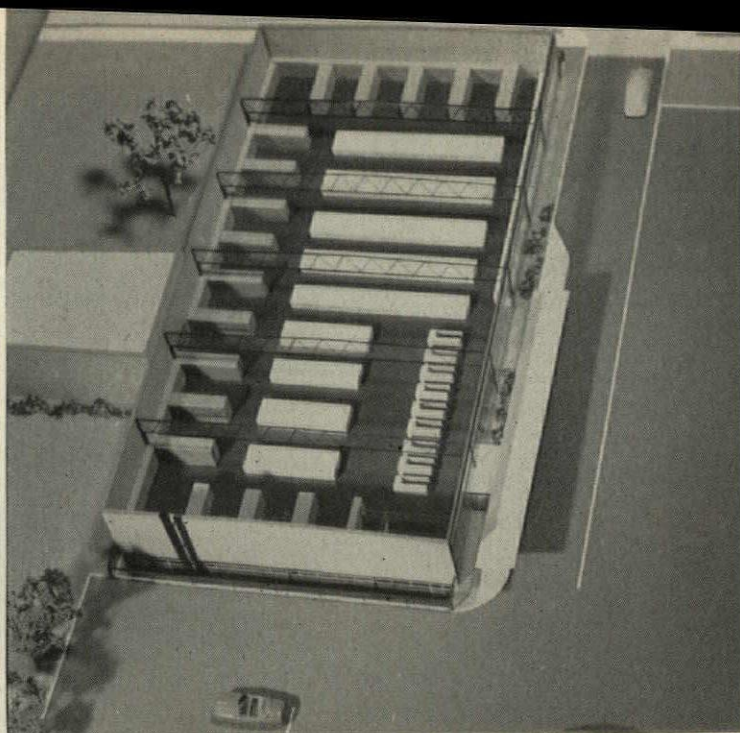
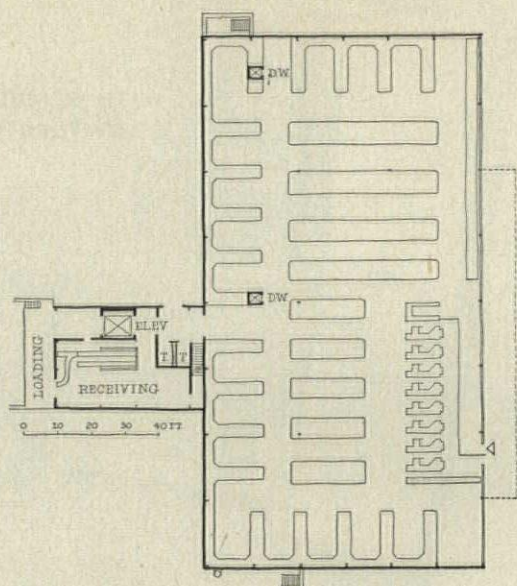
### CHANGE OF STYLE FOR A SHOPPING CENTER

CORTLAND V. D. HUBBARD



The Penn Fruit Store in Bala Cynwyd Shopping Center near Philadelphia had to be distinctively different from the 20-odd others that Architects Thalheimer & Weitz had done for the company. Main reason: the site. Downgrade from the rest of the center, it just about ruled out, esthetically, the sort of high-arch roof used in the other stores. Dropping the old pattern, the architects came up with the highly successful variation at left. Built with exposed steel arches, the building has a low roof, a clear span of 130'. An all-glass wall faces the street. Cost: \$680,000, including air conditioning and parking lot.





## NEW SUPERMARKET PLAN: GROCERY ALCOVES

Within the food industry, this new Shore's Supermarket at East Providence, R. I., has already won hard-headed appraisals as "a marketing pace-setter." The big reason: its so-called alcove concept of merchandising. Worked out by the owners and Architects Eshbach, Pullinger, Stevens &

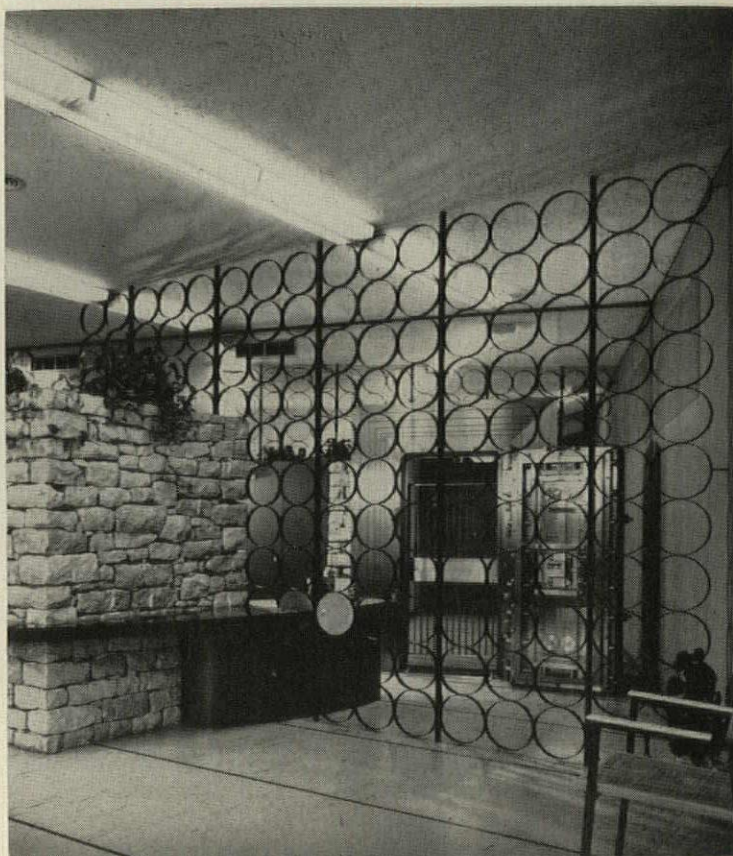
Bruder, this technique scraps the old system of island shelving and banks of groceries along the walls. In its place, it sets up three-sided bays around the perimeter, groups the stock by departments. Perishables are moved to tables at the center of the floor. With 21 of the alcoves

in the new store, Shore's figures it has gained 30% more aisle space, has cut down immeasurably on congestion, has worked in 10% more room for goods. The cost for 32,700 sq. ft. of space—close to 14,000 of it on the sales floor—came to \$295,000, or \$9.05 a sq. ft. excluding land.

## A BANK USES LOOPHOLES TO SHIELD A VAULT

Architect William Beckett, his eye, perhaps, on cartwheeling silver dollars, spun this imaginative screen to separate the vault area from the rest of his remodeling of the Blue Hills Bank of Commerce in Kansas City, Mo. Beckett felt the bank "too small, too personal a thing" to stand up to the usual vault barricade. His screen of loops, painted black, kept the open feeling he

wanted, yet effectively drew the line between vault and the rest of the bank. The rings, grouped horizontally in threes, are steel,  $1\frac{1}{2}$ " x  $\frac{1}{8}$ ". The verticals, also in steel, run from floor to ceiling and are  $1\frac{1}{2}$ " x  $\frac{3}{8}$ ". Beckett made a door an integral part of the screen, had the entire unit fabricated off the job. He used the same loop idea in the bank railings.



PHOTOS (RIGHT & BELOW): JULIUS SHULMAN





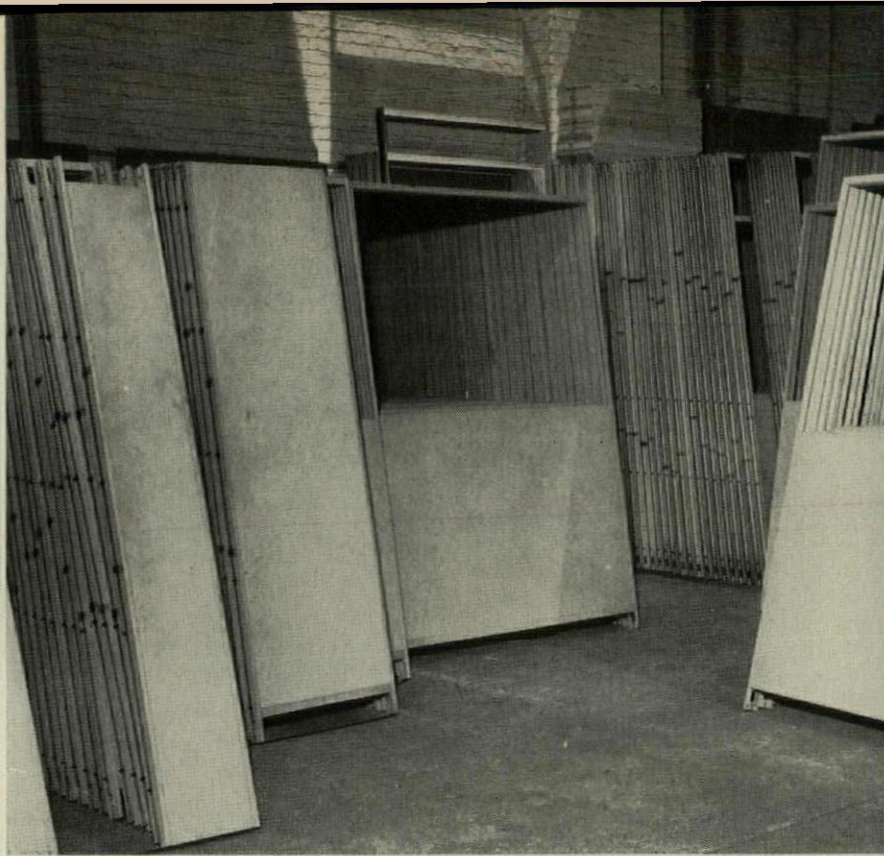
# TECHNOLOGY

*Expansion psychology sparks  
use of movable partitions (below)*

*Prize-winning curtain walls  
from Alcoa contest (p. 160)*

*More flexibility is added to  
high velocity air conditioning (p. 162)*

*Technical notes (p. 164)*



## TRENDS IN PREFAB PARTITIONS

*Highly developed for office use, prefabricated panels are now working their way into schools and hospitals*

The increasing use of movable partitions is a result of the prevailing mood of business and industry in the US today. That mood is one of optimism and a buoyant flexibility.

The optimism concerns the probability of future growth. Most companies foresee for themselves a steady growth and a need for more space. At the same time prudence and experience warn the businessman that while his company may grow, he can't be sure that any particular department within his company will grow, or which of the company's activities will grow fastest. Indeed, he knows that some

hitherto undiscovered product or process is apt to drastically alter the structure and space requirements of the company. The business community looks forward to this, and in most cases, welcomes it. The company management is usually determined to be alert and ready to move into the area of greatest profit. And they want this mental readiness to jump with the gun reflected in the physical environment created by their buildings and offices. The watchword of business is: Prepare now for future expansion.

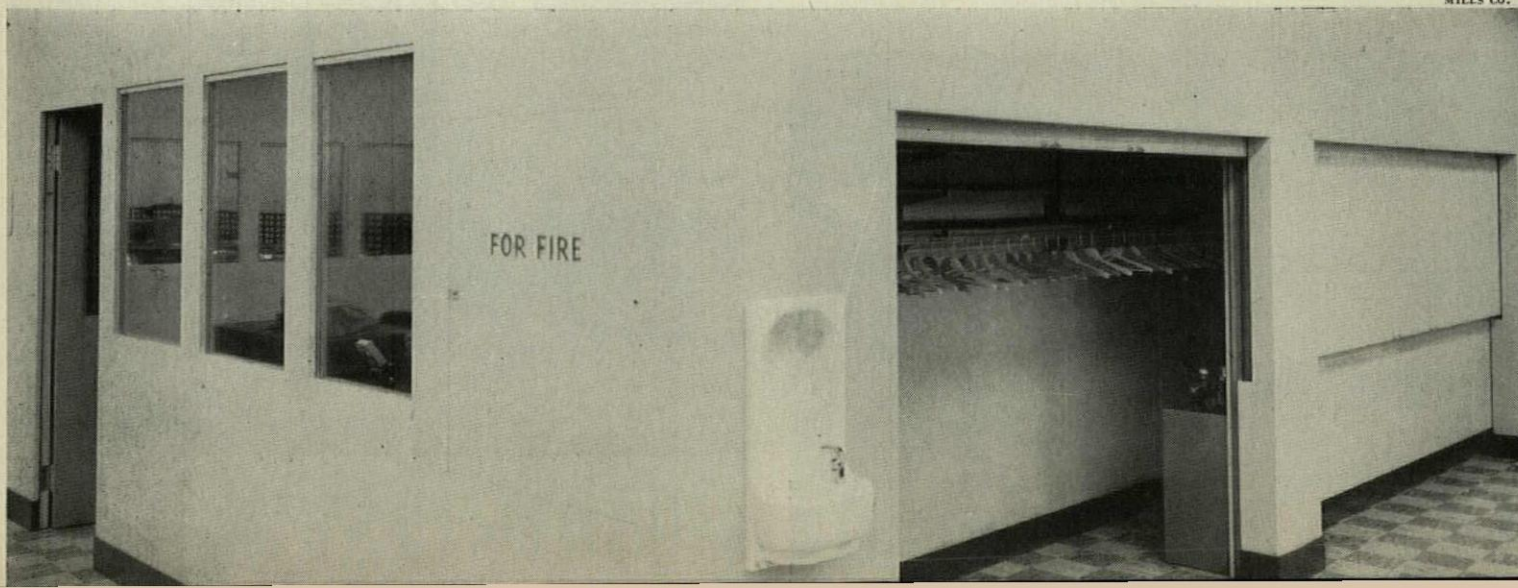
But it is not only business which is crying out for more flexibility. In a changing world, the rest of the community responds by urging that it too not be corseted by immobile walls. Schools and hospitals, for instance, want to be able to change in-

teriors to fit new needs, new problems, new methods.

One answer to this demand for more easily expandable space is the movable partition. It has come a long way from the old wooden rail and the glazed wood partition (a thing of Victorian beauty, faintly reminiscent of a paneled library) to the present sleek steel, aluminum, plastic and wood modular movables. But, it still has a long way to go to meet all the objections architects and builders raise against them.

**New fields.** The bulk of today's flexible partitions go into their traditional field, the office building. But new uses for them are being found in two major areas and some minor areas of construction.

Up to 1953, it took a bold, pioneering



MILLS CO.





E. J. BOYLE INC.

**STACKED STOCK** of prefab panels promises quick erection of movable wall; without careful planning special panels may be needed.

architect and an independently minded school board to accept the idea of movable partitions in schools. But, thanks to a few such intrepid spirits, whose work was kept under close scrutiny, the use of space dividers which can be changed without major alteration is gaining ground in the schools. The ideal is a school which can be made anew each year to fit new methods and new groups. Not the least pressure for flexibility comes from the new school function of teaching adults as well as children. And if educators ever come to the 11-month school year now being discussed, the need for easy alteration will be even more pressing.

The movable partition has another characteristic, which, combined with flexibility, has given it a strong foothold in hospital

construction as well as in other kinds of buildings: ease of maintenance. The factory finished, baked on enamels and other permanent finishes end the usual periodic painting. Also such partitions are easily cleaned, an important point in hospitals. The ease with which the partitions can be moved permits wards to be made into rooms and rooms combined into wards whenever necessary. More and more hospitals are being planned with demountables both in the administrative and the nursing areas.

One of the objections to a prefabricated wall is that it does not harmonize with the fixed perimeter walls of the building. To meet this objection, some manufacturers are making prefab metal wall facings which match or harmonize with their partitions. These panels are installed over the unfinished perimeter walls with the same quick fastening methods used in partition assembly. This speeds construction, permits early occupancy, lowers maintenance, and offers ready access to the services, mechanical and electrical, behind the wall facings.

Another recent development is the refinement of the concept of movability to include the even more mobile less-than-

**INTERCHANGEABLE PANELS** of wood, metal and glass fit into frame of this partition. Designers: Michael Saphier & Assoc.

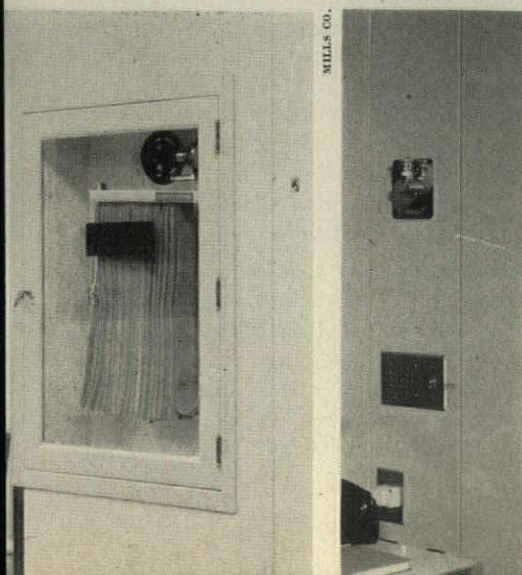


J. ALEX LANGLEY; E. J. BOYLE INC.

ceiling-height partition. Sometimes such partitions are made absolutely necessary by the system of air conditioning or by the nature of the business. Banks, for instance, like to keep "open door" operations for both psychological and physical reasons. Other spaces are often too small to be chopped into enclosed smaller working areas, but still require some degree of privacy. Many of these low partitions are flimsy affairs affording more uneasiness than comfort, and are sight but not sound private. However, some new types are quite sturdy. Refinements such as dry glazing and small anchor angles for the floor make them, while still far from an ideal solution, at least a practical one.

Most manufacturers (and architects) have been made painfully aware of the fallacy of trying to sound-isolate a room without extending the partition, or wall, up to the solid ceiling. (Merely touching the hung ceiling will not stop sound transmission.) They are now building them of suitable heights and with extensions which can pierce the hanging ceiling and go to the solid underside of the floor above.

Despite the fact that flexible partitions are better looking and mechanically more perfect (almost all of them are wondrous



MILLS CO.

HEDRICH-BLESSING; E. F. HAUSERMAN

**APPURTENANCES** can easily be installed with special prefab convenience panels. (Left to right): fire cabinet, wall-hung drinking fountain, cloakroom, glass-paneled fire hose cabinet, hospital nurses' call station.





EDWARD PEARSON

**LESS-THAN-CEILING** height partitions give sight but not sound privacy. They do not interfere with air conditioning; are more easily moved than full-height partitions.

simple to erect) a number of unsolved problems and shortcomings exist.

**The cost problem.** The chief problem is cost. The initial cost of such partitions is almost invariably higher than the cost of a fixed wall. Depending on which types of movable and fixed partitions are compared, the difference can be as high as 75% or as low as 8%.

However, this cost differential is narrowing under two diametrically opposed tendencies. On the one hand, manufacturing efficiency and design are reducing the cost of the manufactured partition; on the other, the cost of building a fixed partition is rising.

Nor are the partition-makers content to wait for time to close the gap. They say that the very first time a flexible partition is moved, it will more than retrieve the extra first cost. (Costs are usually cut in half in a move.) They also stress the speed of erection, and the subsequent quick occupancy. Moreover, they claim that ease of maintenance alone will slowly recover the extra cost even if the movable wall is never moved.

**Partition economics.** Some of the recent studies and statistics have tended to back up the manufacturers' claims of long-run economy in the use of movable partitions. Comparing a movable partition which costs about \$27 per lin. ft. with an average fixed partition which costs about \$17.50 per lin. ft., here are some of the findings:

- ▶ Maintenance for movable wall, 30¢ per year; for other types of construction, \$1.80 (three-year painting cycle).

- ▶ Changing a movable partition, \$7.22 per lin. ft. (at a change rate of 5% of the total footage per year for 20 years); for

conventional construction, \$32.40, including demolition.

Thus the user of the movable partitions saves \$35.68 over the 20-year period. In fact, the user saves the difference in initial cost in the first four years, and at all times has the flexibility permitting rapid change without excessive interruption of his business. The same study showed that movable partitions could be erected 20 times as fast as fixed ones.

Another recent study\* of movable steel partitions shows the following basic costs of installation:

- ▶ 3" insulated 10' high, \$3.15 per sq. ft.
- ▶ 2½" insulated 10' high, \$3.05 per sq. ft.
- ▶ ¾" panel type 10' high, \$2.30 per sq. ft.
- ▶ Single thickness steel panels, plain design, 10' high, \$1.75 per sq. ft.

To these basic costs must be added: doors, \$70 each; tie-ins to walls, \$15 per tie-in; extras such as, louvers, transoms, cabinets, etc.; and glazing, from \$1.00 per lin. ft. for double-strength glass to \$3.00 for plate glass.

**The fire problem.** Despite the many claims to the contrary, movable partitions have yet to achieve rated fire protection. Few, if any, can stand up under a one-hour fire test in which cold water is applied to the hot partition. Consequently many codes still require a fixed permanent fire wall between two tenants on the same floor around elevator shafts and public corridors. At least one manufacturer has a partition which it claims can meet the fire tests, but this wall sacrifices so many of the desirable characters of the movable partition (among them slenderness) that it

\*Source: E. H. Boeckh & Associates

seems to be more in the class of a prefabricated permanent wall.

**Special problems.** The demon phrase to the architect and builder specifying prefabricated partitions is "special conditions." It covers the simple but annoying fact that virtually no movable partition can be installed using 100% stock panels from the manufacturers catalogue. Invariably some percentage, from a mere 10% to a heartbreaking 50%, must be almost hand-tooled to meet the conditions of the job. Variations in ceiling heights, room lengths, columns and pilasters force the use of high cost handmade panels into otherwise straight-line work.

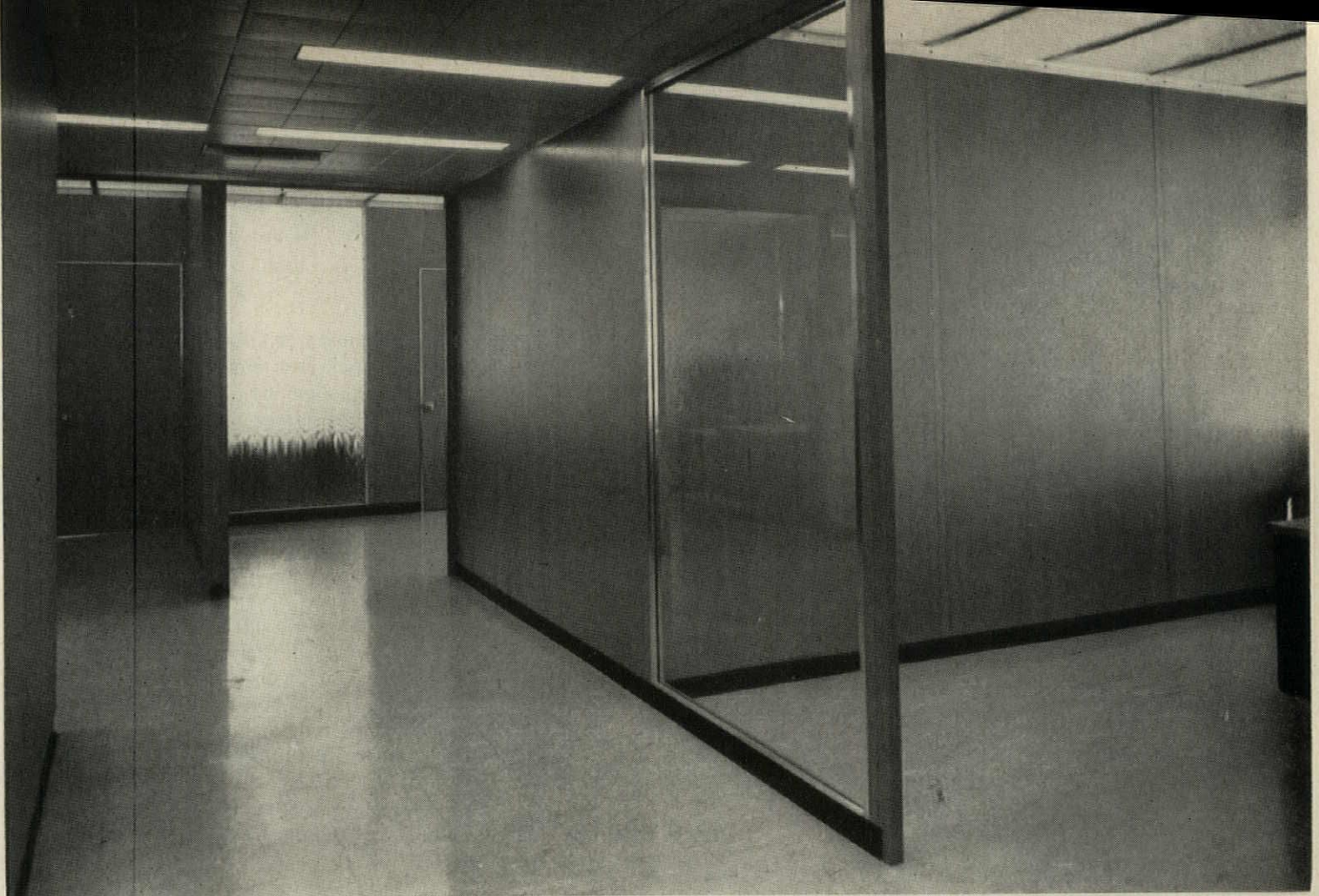
The manufacturers, however, are not content to bear alone the onus of this situation. With very little urging they cry aloud their complaints: architects don't stick to a module; engineers design for too much deflection in floors; builders don't build vertical walls, level floors and squared-up rooms.

**Other problems.** Without the expensive solution of wall facings, it is still quite difficult to integrate a flexible partition with fixed walls. Another problem, as yet unsolved, is how to pierce a luminous ceiling, or any panel ceiling for that matter, without an obtrusive joint. And ceiling modules rarely match the modules of the prefabricated partitions.

**Advantages.** As a defense against these complaints, manufacturers point to the many advantages built-in to the prefabricated partition:

- ▶ The ease, speed and economy of panel rearrangement when changing space requirements dictate revised layouts. In most





INTERSTATE PHOTOGRAPHER; US PLYWOOD

WOOD AND GLASS panels at Ford Motor's office building show that warm, beautiful movable partitions can be made of many materials, in this case, plywood. Architect: Skidmore, Owings & Merrill.

cases the changeover is accomplished without the muss and mess involved in ordinary demolition and construction, thus permitting the space to be used as work goes on.

- ▶ The slender—2" + thickness—against the 5" for the ordinary fixed wall.
- ▶ The easy maintenance of a factory finished panel.
- ▶ The almost unlimited choice of materials and finishes.
- ▶ The ease with which many accessory furniture pieces can be selected to integrate with the walls. This is especially true of hospital and school buildings.
- ▶ The speed and simplicity of erection, making possible early occupancy.
- ▶ The easy accessibility of built-in electrical raceways, some of which provide for high and low tension wires for internal telephone and dictating equipment.
- ▶ The considerable weight advantage of up to one-fourth the weight of comparable fixed walls.
- ▶ The availability of many special panels for wall appurtenances and accessories, such as: doors and window openings, transoms and transom operators, louvers, wickets, grills, counters, cabinets, book cases, dutch doors, sliding doors, access doors, chalk boards, tack boards, drinking fountain alcoves, fire hose cabinets, etc. (photos p. 156, 157).

E. J. BOYLE



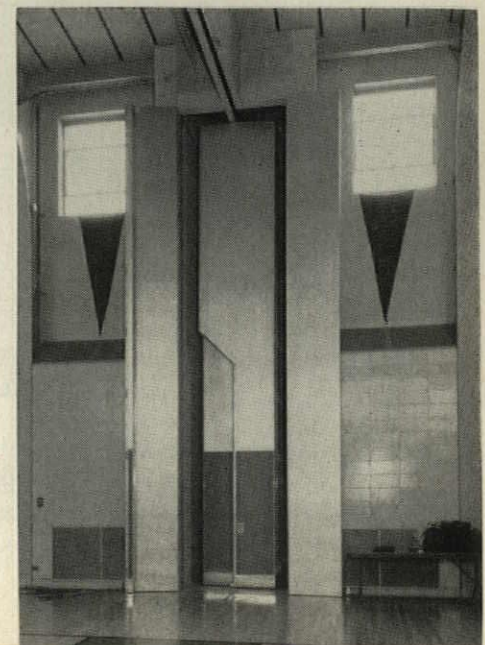
CONTOURING effect is achieved by setting panels at slight angles to one another. Beside being a more interesting wall, it shows freedom allowed by panels. Designers: Michael Saphier & Assoc.

FOLDING PARTITION is used to divide this gymnasium in two to separate boys and girls, or age groups, when necessary. Architect: Childs & Smith, Chicago.



E. J. ANDERSON; RICHARDS-WILCOX CO.

SEPARATING the boys from the girls by means of this space divider also means dividing the waters in this Detroit swimming pool. Architect: McGrath & Dohmen.



RICHARDS-WILCOX CO.



## PRIZE WINNING CURTAIN WALLS

*New textures and colors and new shading techniques are favored by jury in Alcoa's design competition*

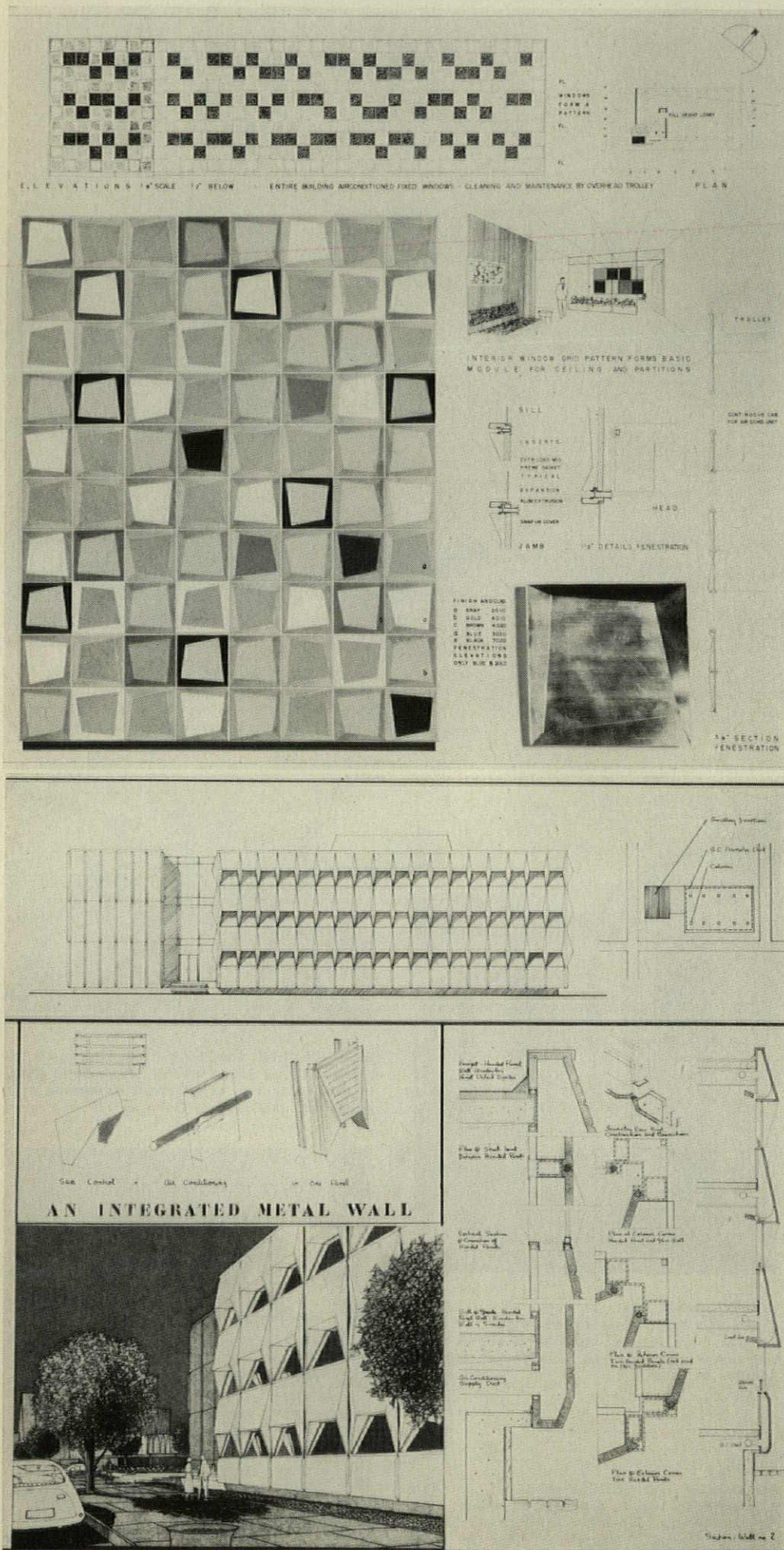
In January 295 designers went to work on the problem of how best to sheath a building in aluminum. The stimulus: \$25,000 in prizes offered by the Aluminum Co. of America and the National Assn. of Architectural Metal Manufacturers.

Last month Alcoa unveiled the 18 winning designs picked by a jury of three leading architects: Max Abramovitz, Louis Skidmore and Sigurd Naess. The three top designs and three of the 15 which received honorable mention are shown on these pages. They prove that there is no excuse for the monotonous similarity of today's metal curtain walls—unless it be lack of imagination on the part of designers and fabricators. The winning designs explore with great enthusiasm the limitless possibilities for enlivening a metal building façade with variations in color and texture and in the decorative quality of functional sunshades.

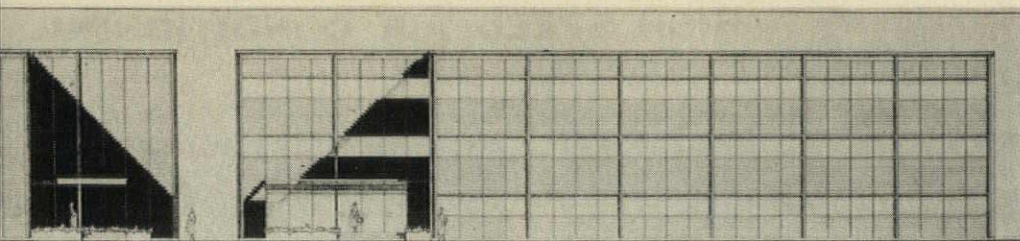
**FIRST PRIZE**, \$10,000, went to Alfred Clauss for his three-dimensional mosaic wall. Clauss approached the problem with the idea that today's curtain wall designs, with their vertical and horizontal bands, are mostly imitations of the first ones built. He felt that only collaboration between architect and artist could take full advantage of aluminum's color and pattern possibilities and create a wall of distinction. His square panels of aluminum are stamped in one abstract pattern but are finished in various colors. Panels are interchangeable with fixed sash.

Clauss is a 50-year-old Philadelphia architect, partner in the firm of Bellante & Clauss and a winner of numerous design competitions. Jean Francksen, a professional artist on his staff, assisted in preparing his winning design.

**SECOND PRIZE**, \$5,000, was won by George W. Qualls and William E. Cox, also Philadelphia architects. Their design integrates the building's mechanical system within the curtain wall panels, which are given unusual depth to increase their rigidity and to control the sun horizontally and vertically. In a sense, the building is a structure sheathed with external ductwork. A primary duct system around the perimeter of the building delivers hot or cold air through the folded panels into every room. The deeply formed aluminum panels shade three sides of the sloping trapezoid shaped windows.

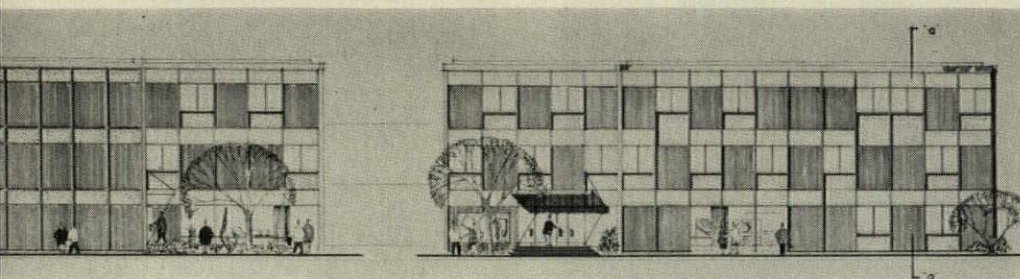
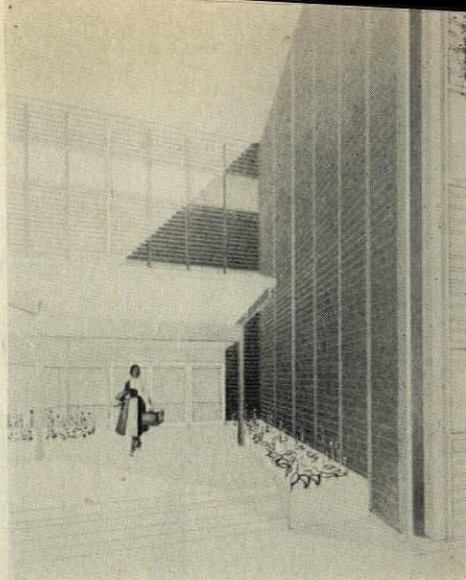




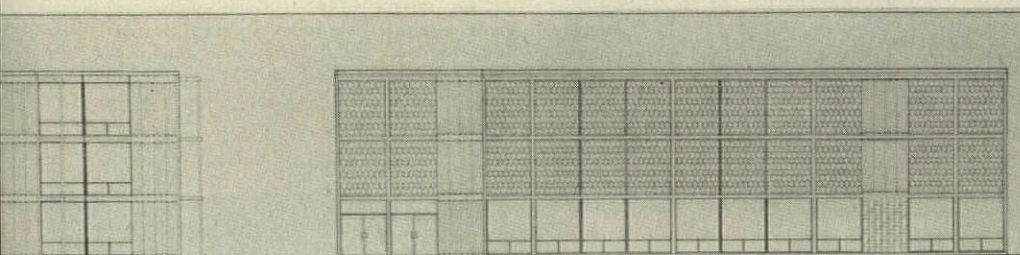
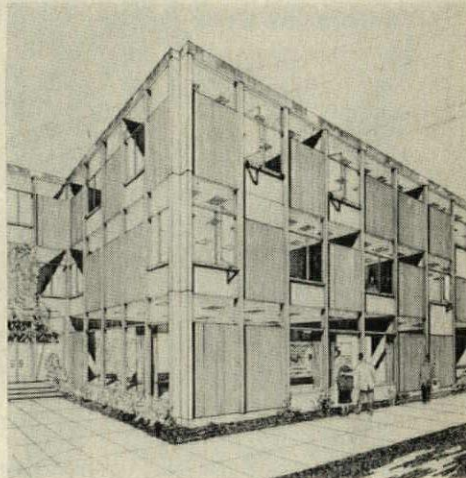


**THIRD PRIZE, \$2,500,** was awarded Robert P. Darlington, an instructor-student at the University of Illinois. His design is based on the theory that a building skin should help control the structure much as a human skin controls the body. Darlington believes a wall should be designed to

soak up solar heat and either dispel it or transfer it into the building, according to the season. In his design aluminum fins that carry a refrigerant and work like a refrigerator are angled to prevent the sun from falling directly on the translucent plastic wall behind them.

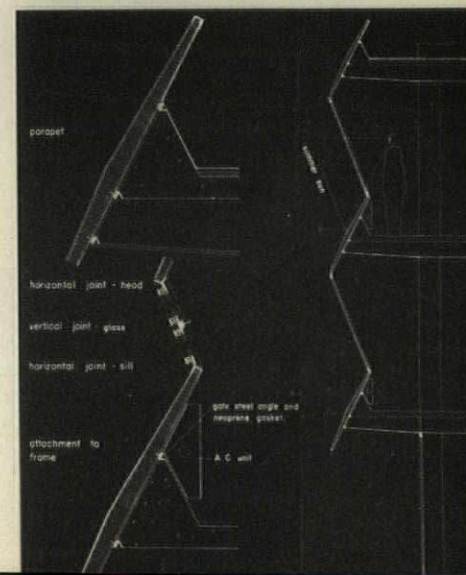
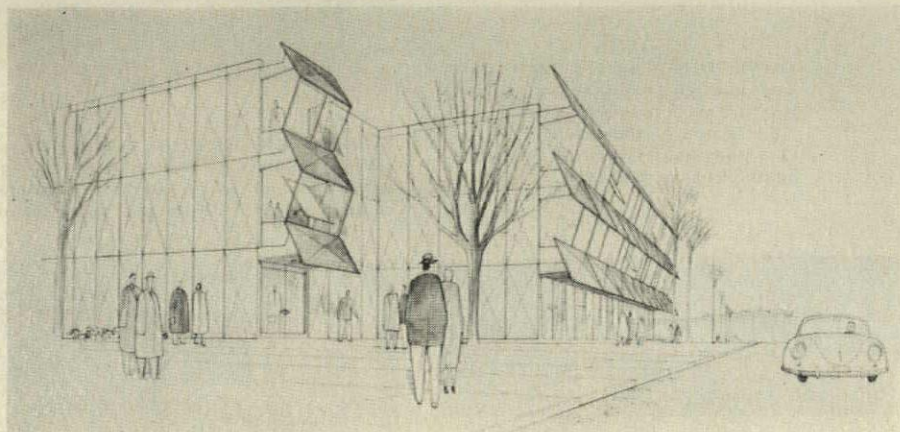
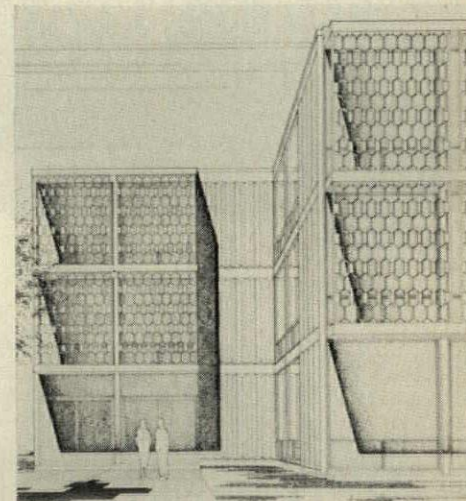


**HONORABLE MENTION, \$500,** was made to E. H. Paul for an interestingly informal wall pattern created with large ribbed aluminum panels, two sizes of "3110 finish" aluminum panels and four different sizes and kinds of sash.



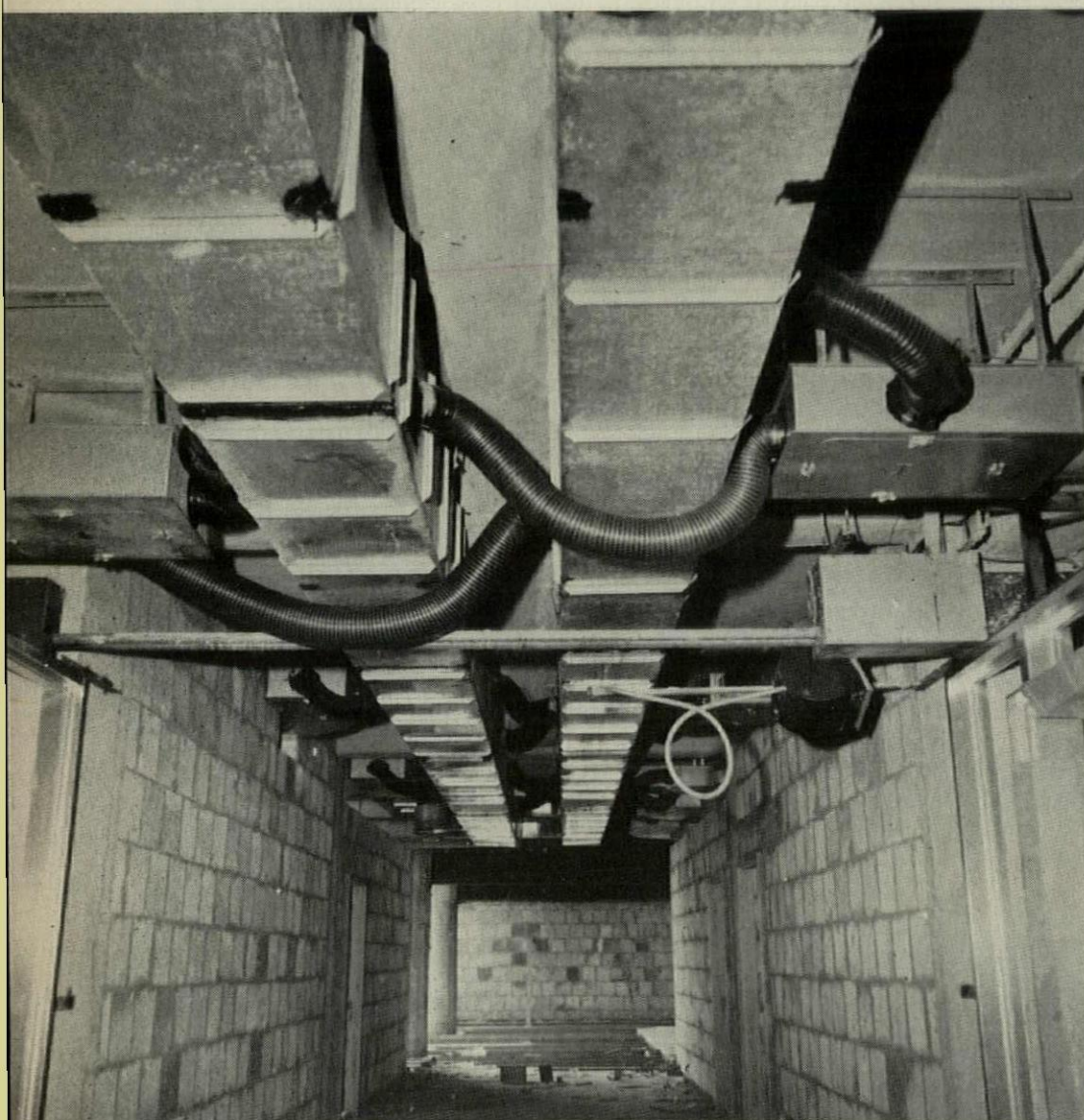
**HONORABLE MENTION, \$500,** to Wendell H. Lovett, recognizes his unusual curtain wall design. Insulated aluminum panels are applied conventionally on the southwest walls, but are tilted upward into the sun on the southwest walls to act as sunshades. Windows are tilted downward.

**HONORABLE MENTION, \$500,** was given Robert Snyder Associates for their aluminum "solar curtain"—a hexagonal grid about 6" deep and hung about 3' outside the double glazed walls.

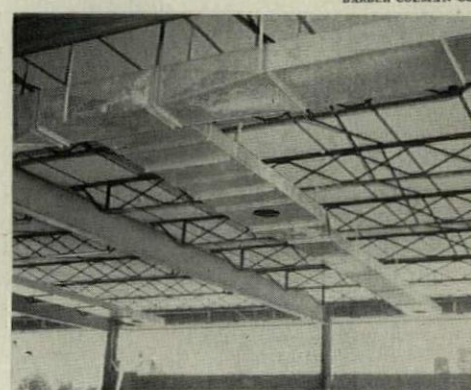




# HIGH SPEED AIR CONDITIONING

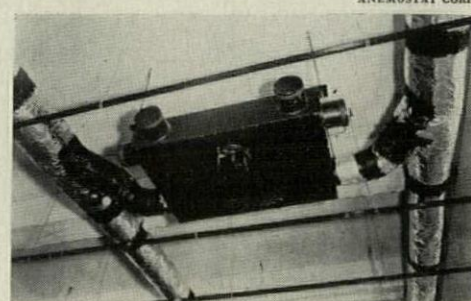


BUENSOD-STACEY



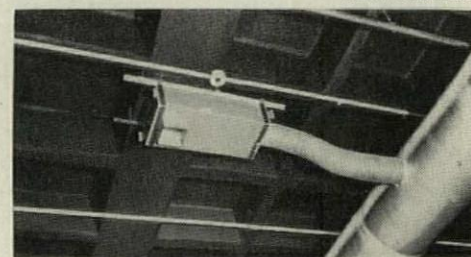
BARBER COLMAN CO.

SINGLE DUCT high-velocity system of this type contains an integral air valve and sound attenuating unit within the ductwork.



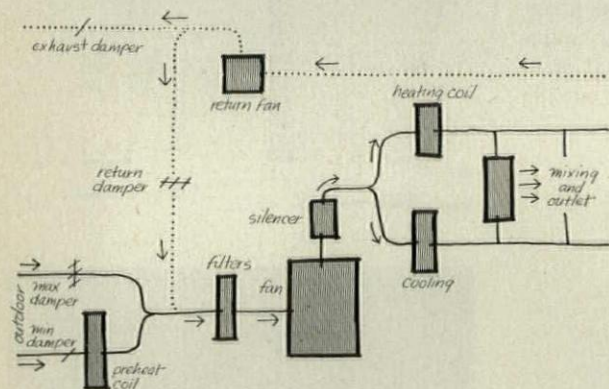
ANEMOSTAT CORP.

DUAL DUCT high velocity system is shown here with an "octopus" mixing and attenuating box. Four outlets (shown capped) for flexible hose connected diffusers are available.



BARBER COLMAN CO.

ATTENUATOR BOX, which can take round or square diffusers, has a possible range of location limited only by length and arc of the flexible connecting hose.



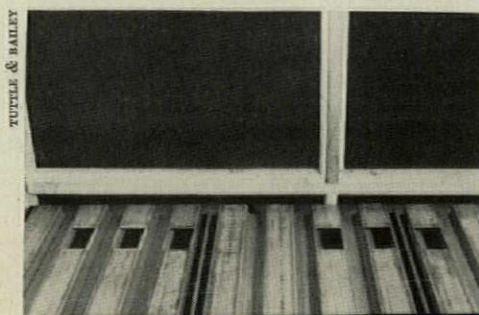
COLD AND WARM air ducts with flexible connections to mixing boxes supply offices on left and right. Air comes from vertical ducts from central fan room.

DUAL DUCT system (left) with face and by-pass dampers can send mixture of air around cooling coil. This is one of the simplest set-ups of a dual duct system, having pre-heater but no precooler.

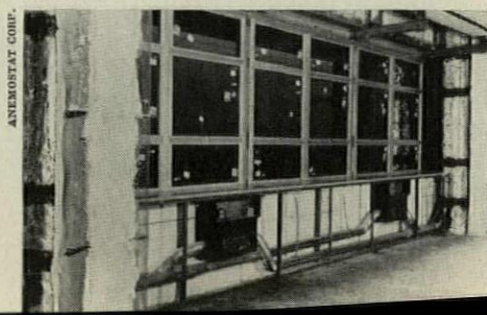
PERIMETER DISTRIBUTION is shown in the three installations below. Left to right: low window stool with slotted diffusers; steel cellular ducts; sill-height mixer-attenuators.



BUENSOD-STACEY



TUTTLE & BAILEY



ANEMOSTAT CORP.



## *Smaller ducts and quieter outlets are broadening the market for high velocity systems*

Because it solves many problems of space and installation, high velocity or high pressure air conditioning is steadily gaining ground.

In its simplest terms, a high velocity system is one in which the duct velocity and static pressure are so high that special pressure and acoustical control is required before the air may be introduced into a room without disturbing the occupants. This applies to any system in which the static pressure at the outlets exceeds 3.5" water gage; or in which the duct velocities are above 2,000' per min.

The air in such a system is distributed either by single duct from a central mixing box or by dual ducts. In the dual duct systems, the air is delivered by two parallel ducts—one for hot air, the other cold air—to a mixing and sound attenuating box, then through a diffuser into the room.

The high velocity system is far from perfect and far from the cheapest in first cost, but it has many advantages to offset its shortcomings. On the debit side is the fact that as the speed of air goes up, so does the frictional resistance to air flow and so does the noise level. On the credit side are these important advantages:

- ▶ High speeds permit a substantial reduction in the size of ducts and space allotted to them. Air moving through a duct at 4,500' per min. requires only one-third the space of air at 1,500' per min.

- ▶ In most systems only one equipment room is needed, eliminating secondary and booster stations.

- ▶ Space and ductwork reductions are usually reflected in lower floor-to-floor heights and lower construction costs. In one case, a 21-story building was reduced 31' in height by using high velocity air; in another, a Los Angeles hotel was built to 13 stories while keeping within ordinary 12-story height limits.

- ▶ The system can be easily and delicately adjusted through a wide range of temperatures by individual room controls. The thermostatic control is usually located in the mixing and attenuator box. Moreover, this temperature range is available at all seasons without complicated changeover.

- ▶ Factory made and calibrated sound attenuators offer a high degree of acoustical control—any sound level, suitable to the occupancy of the space is available.

- ▶ Central station, all-air systems with flexible diffuser ducts are very adaptable and may be adjusted to a radically rearranged building interior. Without altering main trunk ducts the flexible ducts and diffusers

may be moved around to provide air conditioning to new areas, to concentrate on some areas or to be subdivided if the area is split up into smaller offices or spaces.

**New developments.** In step with the growing acceptance of high velocity or high pressure\* air conditioning, manufacturers have developed some new equipment. Among the newest is combination of a single temperature controlled mixing box (and sound attenuator) with two or more satellite diffusers attached to it by flexible hose. Although the combination offers somewhat less exact control over conditioning than a series of individually controlled mixers and diffusers, there is a substantial savings on controls. If the diffusers are made modular with the ceiling panels they may be shifted without major alterations.

Another recent advance is a means of controlling a bank of diffusers using an "averaging thermostat" in the return air duct—again saving on the number of controls. This zoning system is also rather less sensitive to demand, but it can be combined with standard attenuator-diffuser boxes serving single rooms, thus combining both individual and zone control.

Manufacturers have been steadily improving the air diffusers which are essential to the air distribution in high velocity systems. Diffusers are now available in many shapes ranging from full round to linear and with many patterns of air throw from concentrated to wide spread.

The speed limit of high velocity air has not been reached. As design demands it, velocities (and pressures) have been increased. The only result has been that formerly "high" criteria—4,000' per min. and 6" w.g. at diffusers—have been reclassified "medium" by some engineers.

**Case study.** The new eight-story office building of the United Services Automobile Assn., a San Antonio insurance company, is a convincing case study for high velocity air conditioning. Plan flexibility was essential to meet the needs of an expanding company. There was no assurance that any given area would remain in its original usage. Any space, such as a low occupancy file room, might be transformed into a high occupancy general office area. It was essential that the flexibility of the air-conditioning system match the flexibility of the architectural planning.

At first, a single duct system was considered, but since such a system would

not provide the desired flexibility, a dual duct system was decided upon at a cost increase of about 7%. With dual duct any area could be subdivided and be served by an individually controlled mixing unit.

In sizing ducts, a maximum air velocity of 4,500' per minute was maintained and advantage was taken of static regain. (A very important aid in designing high velocity systems, static regain results from a decrease in the air velocity at the point where a branch duct connects with a main duct. The lowered air velocity at this point results in an increase of static pressure, thus the pressure drop throughout the system is kept relatively low.) The pressure drop in the ducts was limited to 1" w. g. per 100'. Cold air ducts were designed to deliver 100% of the total air; warm air ducts to deliver 75% of the total air.

**Floor cell ducts.** An interesting variation of the double duct system is planned for Chicago's 23-story Inland Steel building (AF, May '55). Since Inland wants to demonstrate the many applications of steel products, it will show how steel can be used to transmit conditioned air.

A cellular steel floor is being used as the form for a 4" concrete slab. The usual electrical and telephone services will run through some of the cells, but some of the remaining floor cells will be used as air-conditioning ducts. Heated and cooled air will be mixed in high velocity mixing boxes near the interior core of the building and fed through flexible tubing to header boots connected to the floor cells. The air will then travel the length of the floor slab and pass through other boots which upfeed it through the concrete floor to perimeter grills in a low window stool beneath the glass exterior walls (pictures opposite). Comfort will be controlled by a wall thermostat capable of sensing the combined radiant and convection effect and maintaining a room temperature within 1° of the design setting.

Interior zones of the building will be conditioned by a more conventional system of dual duct mixing boxes suspended in the hung ceiling.

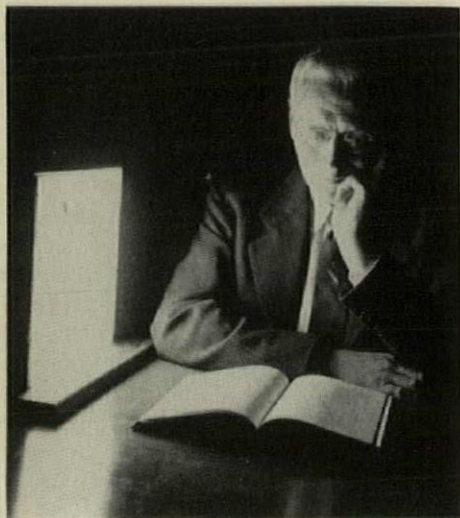
**Small buildings too.** Dual duct high velocity air conditioning is not limited to large buildings. The system can be applied to smaller buildings such as the Fairchild Executive Offices in Hagerstown, Md. (AF, March '56). Here a 56-ton system supplies 14,000 cu. ft. of conditioned air per min. to an 11,000 sq. ft. structure.

Some of the perimeter diffusers are in the baseboard window stool just under large glass areas in the cafeteria and other large public spaces. In each office, of which there are 18, a single mixing unit serves two sill-height slotted diffusers. Return air travels through louvers in each office door to return registers in the hall.

\*The terms are used interchangeably and indiscriminately. Since the primary purpose of the system is to reduce duct area and save space by increasing the velocity of the air, the term "high velocity" is probably the more appropriate. (The other term is derived from the fact that the flow of air at high velocities generally results in increased friction and higher static pressures in the duct. But the pressure is an undesirable if necessary evil.)



## TECHNICAL NOTES



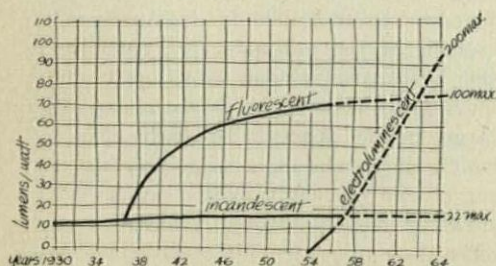
aluminum  
phosphor  
tin oxide  
glass

## SHEET OF LIGHT

*Phosphorized glass glows brighter than luminous ceilings*

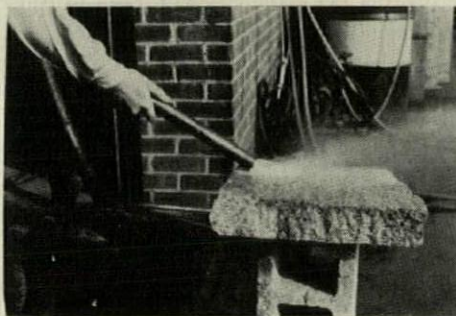
"Practical electroluminescence may not be around the corner but it's just over the hill," says Edward G. F. Arnott, research director at Westinghouse Lamp Div. where excellent progress is being made in stepping up the brightness of the architecturally significant light panel. Already marketed in similar form by Sylvania as dull glowing clock faces and TV screen frames, the illumination source has been brought up by Westinghouse to light levels half that of a bare fluorescent—but at very high frequencies. However, even at 240 v. 600 cycle (the current used in a few recent fluorescent installations), brightness is not far short of commercial luminous ceilings with plastic diffusers.

While the power problem is still complex, the panel itself could not be simpler. A sheet of glass is coated with tin oxide and phosphors embedded in dielectric plastic. Current brought to the conductive field directly activates the phosphors. Another glass layer can be sandwiched on the other side for illumination in two directions or an aluminum coat applied to reflect light through the glass face.



Freed from bulb and tubular shapes, electroluminescent panels can be made in a ceramic base, can take any shape and may be perforated for acoustical effects. They could be mounted as a grid of vertical lighting fins under a surface of sound absorbent material as a space-saving inversion of the conventional acoustical baffle luminous ceiling. A curious characteristic of electroluminescent cells that could be capitalized on is that certain phosphors reveal different colors at different frequencies; i.e., a panel made to glow white during the day could be turned green or blue for night light.

While all other light sources have reached points of most return, the efficiency curve for the new phosphor panel has not even begun to level off (see chart below). However, it is in building cubage (value: \$1.50 up per cu. ft.) not efficiency that electroluminescence can mean most to the construction industry. A fraction of an inch thick, it conceivably could lop 1' or more off each floor height in buildings planned for luminous ceilings.



## FLAME TEXTURED STONE

*New quick method textures granite for sculptured effects*

Obdurate granite has resisted all attempts to work it by easy methods. Only wire saws, and machine-driven hammers, have taken some of the burden from traditional slow, patient chipping with chisel and hammer. Now Linde Air Products Co. has devised a new means of fashioning granite which yields novel and unusual effects.

The method is based on the use of a flame jetting from a blow pipe. The blow pipe can be mounted on an automatic traversing machine or operated manually. The flame is produced by oxygen-reinforced fuel gas (acetylene or propane) and water is used to control the heat of the flame. Another reason for using water (and Linde advocates its use in all thermal texturing applications) is that it permits successive passes of the flame without

heating up the granite.

The principle behind thermal texturing is not very new; spalling rock by heat was used by Neolithic man to shape axes and arrowheads. But the action of the blowpipe in thermal texturing, which spalls the stone in small controlled particles, is quite new.

Thermal texturing gives the granite a fresh appearance, with the imbedded quartz, feldspar, biotite, etc., alive and glinting.

Another advantage of flame texturing is that it can be used on thin slabs of granite (perhaps as thin as 1"), increasing the quarry yield and producing a new veneering material.

Thermal texturing costs are quite low, according to Linde, depending upon the surface desired and speed of operation. In one case fuel costs were estimated at 15¢ per sq. ft. and (with a 4" flame) 180 sq. ft. was covered in an hour.

## HIDDEN LOAD CAPACITY

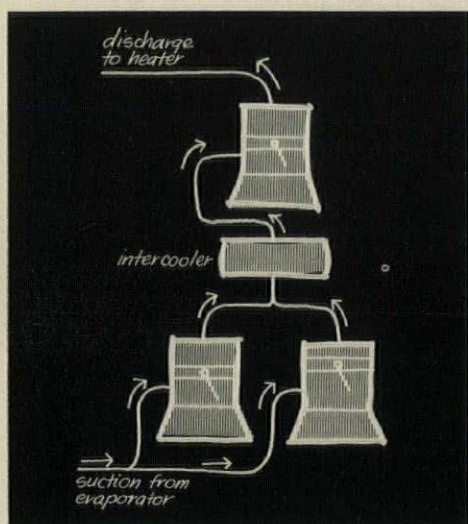
*Armour Research Foundation finds extra strength in existing structures*

The load carrying capacity of many existing structures is greatly underestimated because of a mistaken concept of structural theory, according to R. W. Sauer of Chicago's Armour Research Foundation.

The common assumption that one beam carries all of a concentrated load is highly questionable, Sauer believes. He assumes that there is a cooperative interaction of the floor decking with the rest of the structure and that girders and beams deflect proportionally with relation to one another. Basing his theories on the plastic stress theory of structures, he recommends that any analysis of the load carrying action consider the floor as an elastic foundation. This, he says, would more accurately portray the true state of stress in such an elastic system, and the resulting design would more effectively use the structural materials.

Putting his theory to work in studying a Chicago meat warehouse, he claims that he has in one year saved the owner seven times the cost of his study by discovering that heavier lift trucks could be safely used. During the investigation the engineers removed four joists from the floor and tested them in the Foundation's material testing laboratories. They found that the floors could safely support more weight than was previously considered advisable. The engineers believe that many other structures can be upgraded in the same way.





## COLD CLIMATE HEAT PUMP

*Staging compressors make heat pump more practical for the North*

A refrigeration technique used for years in ice cream and frozen food plants—compound compression—has been combined with the heat pump to heat a building with 0° F. winter air. Compound or two-stage compression means putting the compressors in series rather than parallel (see diagram), thereby enabling one compressor to further compress the already compressed refrigerant. Here is what this use of a two-stage compression cycle can do in heating (the cooling cycle, being no problem, can remain single stage):

- ▶ At 0° F. outside air, it provides 67% more heat than single stage systems.
- ▶ In producing 1,000 Btu, it uses 40% less power than single stage systems, and 50% less power than single stage plus resistance heater boosters.

The new system automatically heats or cools a building, depending on the climatic conditions. The compressors move from single stage compression into compound compression when the outside temperature drops below a certain point (usually about 30° F.).

The heat pump removes heat from 0° outside air by cooling this air to still lower temperatures as it passes over specially designed coils. The heat removed by the refrigerant is raised to a usable temperature (perhaps 110°) by the two-stage compression cycle.

During warm weather, the expansion, or cooling, of the refrigerant as it turns from liquid to gas, extracts heat from the water circulated through the refrigerant.

Two new buildings are presently using the new system: The Heironimus Department Store in Roanoke, Va., by Architect-

engineers Hayes, Seay, Mattern & Mattern, and the Philadelphia office building of Ballinger Co., architectural and engineering firm. The system was devised by Robert G. Werden, York Corp. engineer.

## COVERED FLOOR PANELS

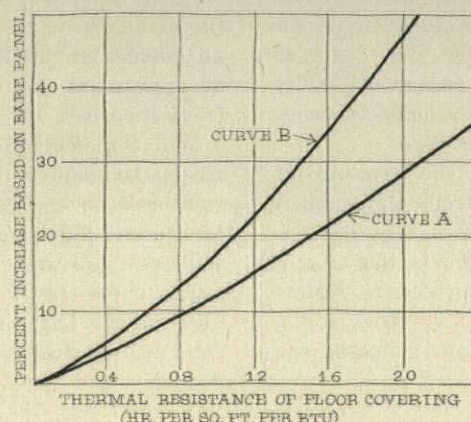
*How much more heat is needed for a covered floor panel?*

One of the problems the heating engineer has to contend with is the effect of floor coverings placed over hot-water radiant-heating panels.

The Floor Slab Laboratory of the University of Illinois studied the problem and came up with these conclusions (based on a hot-water panel system using  $\frac{3}{4}$ " welded steel pipe embedded in concrete floor slabs):

- ▶ Thermal resistance of the bare concrete panel was about 1.05. (Based on degrees Fahrenheit per inch of thickness of the slab and the number of Btu's per hour per sq. ft. put into the slab—in short, the reciprocal of thermal conductance.)
- ▶ Thermal resistance of combinations of carpeting and pad ranged from 0.40 for a rubber pad alone to 1.87 for a heavy carpet and 40 oz. jute pad.
- ▶ Thermal resistance of both asphalt tile and rubber tile was about 0.05. This is a negligible figure since any thermal resistance of less than 0.2 does not affect the performance of floor panel systems.
- ▶ While covering a floor panel with carpeting increases the required boiler size, it does not increase the seasonal fuel consumption (see graph).
- ▶ Zone controls over water temperature are necessary when carpeting is applied in some areas or zones and not in others. (This is needed to increase the temperature of water in carpeted areas.)

In the graph shown above, Curve A is the increase in total panel output resulting from use of floor coverings, and Curve B the increase in total heat input. The difference between curves A and B repre-



sents the effect of the floor coverings on heat storage within the panel.

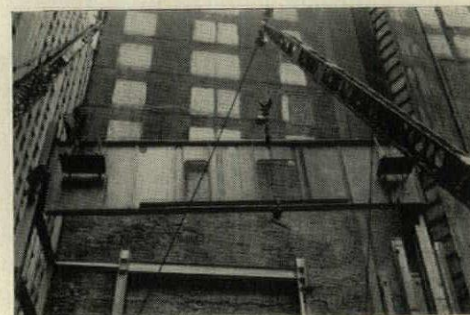
E. L. Sartain and W. S. Harris of the university made the study.

## BIG PLATE GIRDERS

*Future trading floor for stock exchange needs columnfree space*

The longest single-span plate girders ever used in a New York skyscraper were placed at the fifth-floor level of the 27-story office building at 20 Broad St. Ranging from 54' to 79' in length, the 18 girders are 151" deep—a full story height—and weigh from 39 to 57 tons each.

The large-span girders are necessary because the New York Stock Exchange next door expects to expand its trading



floor into the new building sometime in the future (the near future, if 3 million share days become common), and its trading floor must, of course, be free of columns. (Trading rules say members must walk, but stockbrokers are notoriously fast walkers). The 22 stories above the clear-space must be supported when the second-, third- and fourth-floor columns are removed to make way for the three-story-high trading room.

Although Vierendeel trusses were considered for the job, they were rejected as too expensive. The girders are designed with two major openings for corridors, and are placed parallel to one another to allow office space between them.

The girders will be bolted in place and the rest of the framing will be welded, making 20 Broad St. the tallest welded building in New York, and providing some noise relief during construction in the narrow canyons of lower Manhattan. The narrow streets, madding with traffic and pedestrians, also forced the contractor to erect the girders on four successive Saturdays and Sundays when, to all intents and purposes, the financial district is deserted.

Architects: Kahn & Jacobs-Sidney Goldstone; steel engineers and erectors: Lehigh Construction Co. (Charles Mayer, consultant); general contractor: George A. Fuller Co.



# for all concerned

## URBAN RENEWAL AT HOME

The recommendations of FORUM's April Round Table Report on Urban Renewal interested the press mostly because a group of highly responsible men had decided that urban renewal must be a steady, continuing, businesslike operation. Reports in leading newspapers like the *New York Times* and the *Christian Science Monitor* stressed the idea of a land bank of renewal sites in any larger city, and the idea that slum clearance must be divorced from any one plan for redevelopment and kept steadily going on its own account, so as to keep a reserve of cleared land always "in the bank."

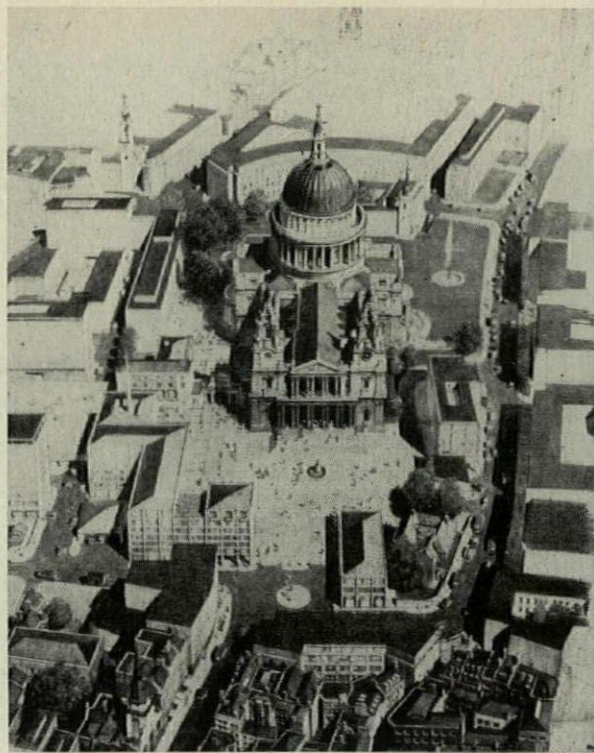
Which is good. For if one pounding theme came through from those days of talk it was that this country is going to have to change its thinking about urban renewal if the process is ever to work as it should. Nowadays, because slums are considered a social "disease" and a "disgrace," we make a habit of carrying the worst cases to the doctor for a single quick medicinal dose. The time has come to study not disease but what are the conditions of good health. Renewal just has to be a *continuing* process. By its very nature, the dynamic city must always have some worn-out or obsolete parts. If the public—which Heavens knows is ready to accept this replacement concept in its hard-goods buying—could only be brought to apply the same concept to the city around it, we could climb half the hill in one stride.

Yet let us not forget the two other major proposals of these statesmen of building. The first

was that urban renewal is "potentially the most profitable financial enterprise ever proposed to American cities." This too must soak into the mind of the American public. As long as people persist in looking at renewal as a semi-handout operation, with no more than a coughing engine to run it, then just that long we shall get the sputtering results we have had for the past seven years. The figures given at the Round Table were impressive, for it was calculated that on the land-bank basis a city like Washington could clear all its present slums in ten years and get its stake back again, as a city, by the end of a second decade, out of new tax values created. Meanwhile new construction would add up to \$300 million and rehabilitation to another \$80 million. At the same rate 180 cities of 100,000 or over could produce \$18 billion of new construction plus \$5 billion in rehabilitation.

The third major proposal was that the procedure must recognize regular business incentives. The three main points were to amend the onerous cost certification procedure in favor of renegotiation procedures; to raise the redeveloper's appraisal allowance in the mortgage to 10% of his over-all project cost, and to allow him to recoup his equity tax-free in reasonable time by standard procedures.

This, plus the removal of some sand from government machinery, is surely not too much to ask for setting in motion a steady procedure, restoring health to our cities and a big profit to all, including the taxpayer.



## ... AND ABROAD

This is not the only country in which great cities have a chance to clothe themselves in new dignity. London has long been concerned with restoring the bombed area around St. Paul's, which is about as important an area to them as the Washington Mall to us. In England too, the architects as a body have pretty well gone on record. The great weight of architectural authority favors Sir William Holford's scheme done for the Court of Common Council. It is in keeping with the tradition which belongs peculiarly to England and to London—of informal surroundings, arranged with greatest subtlety to set off a formal building. His sight lines allow the structure to be seen from all possible angles in all sorts of approaches and with ever fresh surprises.

Will Sir William Holford's scheme be adopted? It depends right now on energetic Minister Duncan Sandys of Housing and Local Government.

The opposition to the Holford scheme has come mostly from sources close to the Royal Academy and steeped in the

French tradition of the Beaux-Arts.

This raises some interesting speculations, because those who survive by a long time a mode of composition, a style, an approach they are tied to, rarely have power left to initiate vigorous action. They can only censor and oppose. The notion that their own idea could any longer be carried out as they once dreamt it is likely to be is, alas, a fond illusion. Any age acts by the correlated efforts of all sorts of forces that remain in delicate shifting balance and adjustment to one another. This includes architects, planners, even workmen. When an enthusiasm like the Beaux-Arts enthusiasm has once passed, it cannot well be revived by artificial respiration.

It is consequently wiser, on any large important project, to leave each age its own genius, especially when the outcome is first-class in its own terms.

Besides, the younger age is older in actual tradition. It really deserves its chance, and we wish it luck.

*Douglas Haskell*





## STONE and STAINLESS STEEL

### *Happy Lifetime Combination*

#### "INFO" for Architects and Builders

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

*Write for Details*

Address Dept. B-78

Here's an intriguing entrance design for a recently-built midwestern structure. Stone and stainless steel and glass . . . a planter that continues inside . . . two sweeping curves in opposed planes.

If there's any other material that can match the ageless, everlasting qualities of stone, it's *stainless steel*. Use it for its hardy, perennial beauty, that neither smoke, fumes nor weather can impair. Use it for its remarkable strength, greatest of all the structural metals. But above all,

use stainless steel because it wears so well and lasts so long that it's actually the most economical metal you *can* use . . . the least expensive in the long run.

Keep it in mind, too, that A-L Stainless Steel is versatile—you can employ it in your structures in everything from building hardware to an entire curtain wall design. • If we can help you with any data or engineering assistance, call on us. *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.*

WSW 6059

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**Allegheny Ludlum**

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## Cub fans get a boost with **SPEEDWALK\*** MOVING SIDEWALK

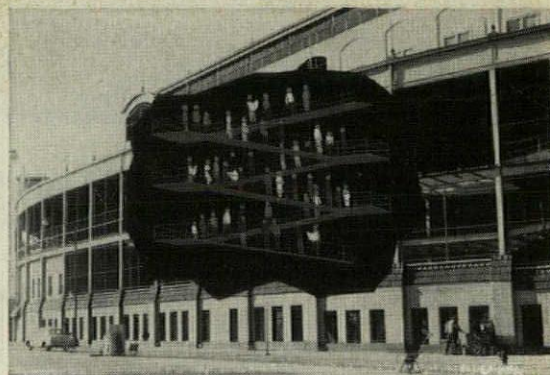
### PASSENGERS RIDE CONVEYOR BELT FROM GROUND LEVEL TO UPPER DECK

Before the end of the season rolls around at Wrigley Field, home of the Chicago Cubs, thousands of baseball fans will have experienced an effortless ride to grandstand and upper deck seats by means of a moving sidewalk. Starting with a flat moving surface at ground level, passengers rise a total of 60 feet, walking only a few short steps from one rising ramp to the next.

This is a SPEEDWALK\* passenger conveyor system, the first in any ball park, amphitheatre, or sports arena. It has been engineered, manufactured, and installed by the STEPHENS-ADAMSON MFG. CO. who have over fifty years experience in manufacturing and developing conveyor equipment.

A SPEEDWALK\* moving sidewalk is a belt conveyor, and S-A engineers know that the same principles which apply to moving materials by belt conveyor can also be applied to moving people. There is no safer, swifter, or lower cost method of transportation within a confined area. See it in action at Wrigley Field.

4 lower SPEEDWALK\* passenger conveyor belts have rated capacity of 10,800 passengers per hour. Upper level system handles 7,200 fans per hour.



The SPEEDWALK\* system is 400 feet in length on 8 slope runs. Centrally located controls operate conveyors in forward or reverse direction. Moving belt is completely unobstructed—no limited tread area to step on.

### GET A MOVE ON WITH SPEEDWALK\* PASSENGER CONVEYORS

SPEEDWALK\* SYSTEMS can be readily adapted to any mass transportation need over horizontal or inclined planes. A few of the areas where they can be used:

- bus, rail, or air terminals • shopping centers
- dept. stores • stadia



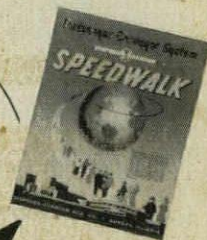
### STEPHENS-ADAMSON MFG. CO.

27 Ridgeway Ave., Aurora, Ill.—Los Angeles, Calif.—Belleville, Ontario.



"Help people get a move on with SPEEDWALK"

SEND FOR  
YOUR FREE  
BULLETIN ON  
SPEEDWALK  
SYSTEMS



\*Trade-Mark



# Rolling Steel Doors

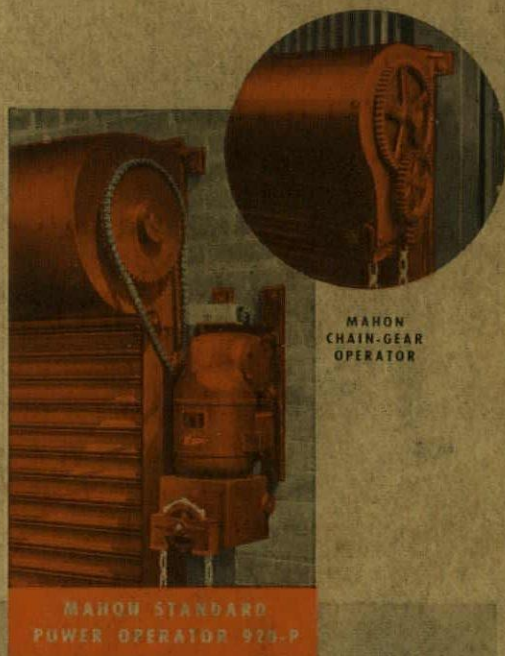
## Manually, Mechanically, or Electrically Operated

When you consider doors—either for new buildings or for replacement in old buildings—you will be most impressed with the numerous advantages of Rolling Steel Doors. No other type of door offers the important space-saving and time-saving advantages in every day operation . . . and no other type of door offers the positive protection against intrusion and fire. The vertical roll-up action of the rolling steel door occupies no usable space either inside or outside the door opening. There are no overhead tracks or other obstructions to interfere with crane handling adjacent to door openings—the door curtain is compactly rolled up flush with the lintel and safe from any possibility of damage while the door is open. Quick-opening, quick-closing Mahon Power Operated Rolling Steel Doors, with signal arrangements and remote push-button control stations, offer the ultimate in convenience and timesaving operation—particularly in shipping and transfer docks where a number of doors are involved. Rolling Steel Doors will serve you better in any type of opening . . . their all-metal construction gives you the permanence which assures a lifetime of trouble-free service. However, before you select a Rolling Steel Door, check Specifications carefully . . . you'll find extra-value features in Mahon doors—for instance, the galvanized material in the curtain slats is BONDERIZED and DIP-COATED with synthetic enamel which is baked on at 350° prior to roll-forming. You will find many other quality and design features in Mahon Rolling Steel Doors that add up to a greater over-all value. See Sweet's Files for information including Specifications, or write for Catalog G-56.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

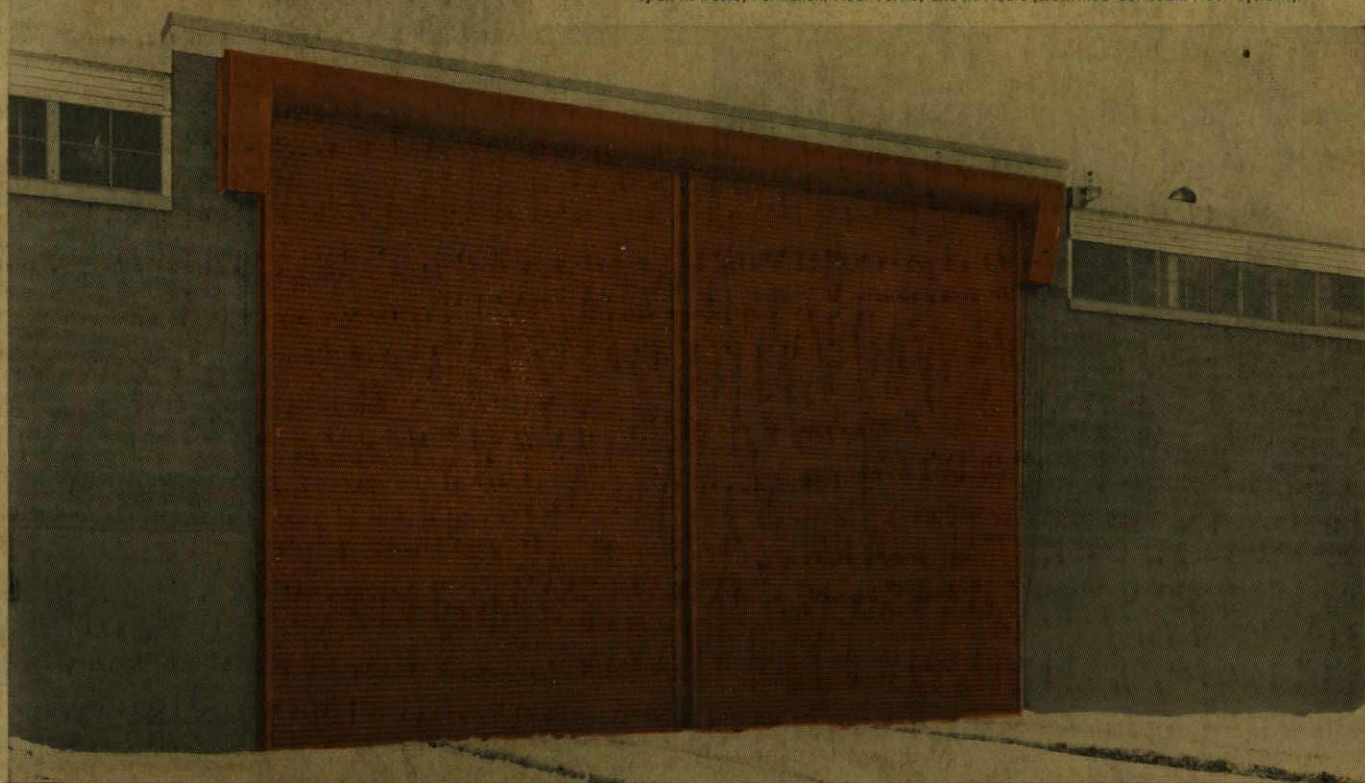
Sales-Engineering Offices in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Roof Decks and Long Span M-Decks; Permanent Floor Forms; and M-Floors (Electrified Cel-Beam Floor Systems).



MAHON  
CHAIN-GEAR  
OPERATOR

MAHON STANDARD  
POWER OPERATOR 925-P



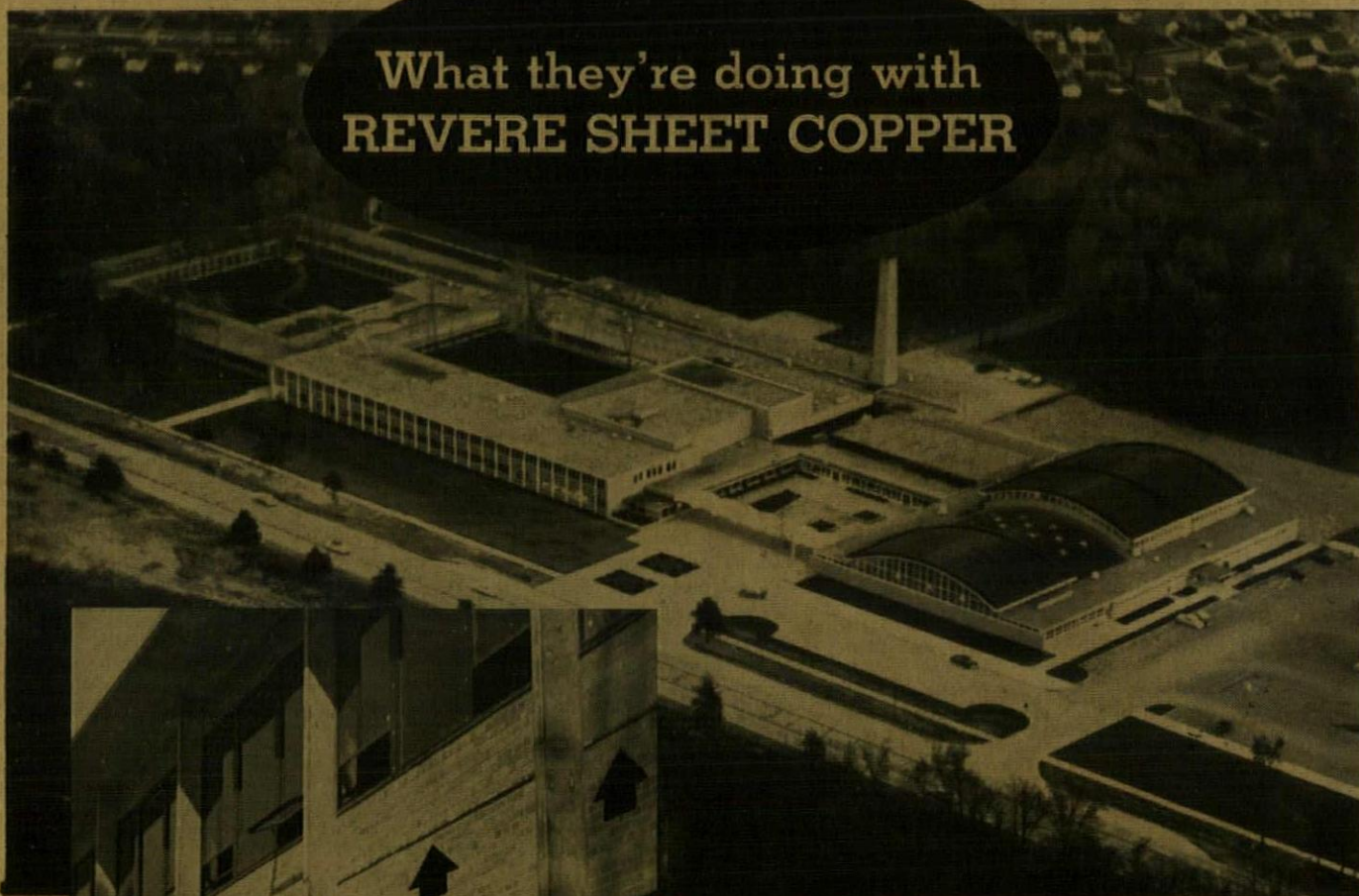
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Two Mahon Power Operated Rolling Steel Doors 16'-0" x 22'-4" installed in a double truck opening in Sutherland Paper Company's plant, Kalamazoo, Mich. Thirty-seven other Mahon Rolling Steel Doors are installed in various types of openings in this modern plant.

# MAHON



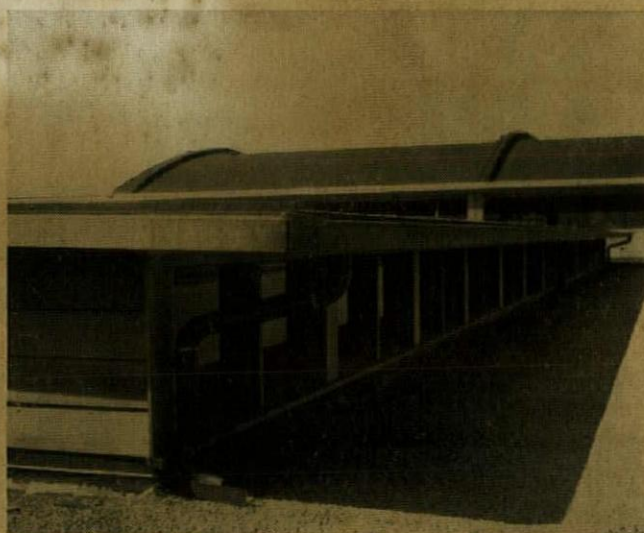
## What they're doing with REVERE SHEET COPPER



Architects: EBERLE M. SMITH ASSOCIATES, INC., Detroit, Mich.  
General Cont.: O. W. BURKE CO., Detroit, Mich.  
Sheet Metal Cont.: J. D. CANDLER ROOFING CO., Detroit, Mich.  
Revere Dist.: COPPER AND BRASS SALES, INC., Detroit, Mich.

Here is Revere-Keystone 2-Piece Cap Flashing shown installed between the windows, with receiver in place ready for the installation of the cap. A greenhouse conservatory will be attached to the main building at this point. After the conservatory roof has been completed and base flashing put into place the cap flashing will be inserted. This exclusive design permits masons and roofers to work without interference and makes installation of this factory-formed, 2-piece cap flashing simple and easy.

Approximately 15,000 lbs. of Revere Sheet Copper and 3,700' of Revere-Keystone 2-Piece Cap Flashing were used on this school. Here you see gutter, conductor, splash pan, gravel stop and Revere-Keystone 2-Piece Cap Flashing... all of Revere Copper.





# REVERE-KEYSTONE

## EASY-TO-PLACE

# 2-PIECE CAP FLASHING

used to protect against leaks in

## EDSEL FORD HIGH SCHOOL

Dearborn, Michigan

The Edsel Ford High School is a fine example of the use of Revere-Keystone 2-Piece Cap Flashing\* in modern construction.

The architects, EBERLE M. SMITH ASSOCIATES, INC., have for years been using their own detail of a 2-piece cap flashing, but after discussing the many advantages of the new Revere-Keystone 2-Piece Cap Flashing with them, and the sheet metal contractor, it was readily accepted to meet the flashing specifications.

### Here are some of its outstanding advantages:

**FREE WALL**—It provides the roofer with an unobstructed wall face for the placement of the base flashing. Receiver is laid in during construction of wall, while the insert is snapped in only after all roof and base flashing work is finished.

**STRAIGHT CLEAN LINE, PERMANENT GOOD LOOKS**—Factory-bent to precise dimensions. This, with the one-inch locking tongue, assures alignment of receiver slots, uniform appearance.

**PERFECT WEATHER-SEAL**—Factory-formed angles on the receiver and insert cause latter to hug the base flashing, weather-seal effectively. Water cannot blow up behind flashing.

**NON-LEAKING DAMLOCK**—Requires no soldering except for special conditions. The interlocking copper-to-copper overlap creates a dam which prevents longitudinal travel of water and drains seepage to the face of the wall.

**VERTICAL RECEIVER SLOT ON WALL FACE**—Position of vertical receiver slot on face of wall eliminates possibility of the receiver slot being crushed shut by weight of masonry.

**CAN BE DISASSEMBLED**—Insert can be removed with a simple tool and used again, with no loss of neatness or snugness, when the built-up base flashing or roofing have to be repaired.

Find out about this newest method of flashing neatly, quickly, safely, positively. Send for descriptive literature today! Write Advertising Department.

**FREE!** For group showing—Instructive 16 mm motion picture in sound and color—"SHEET METAL IN BUILDING CONSTRUCTION." A "must" for every Architect, Building Owner, Spec. Writer, Sheet Metal Contractor and Mechanic. Write Revere Advertising Department.

\* Patent No. 2,641,203

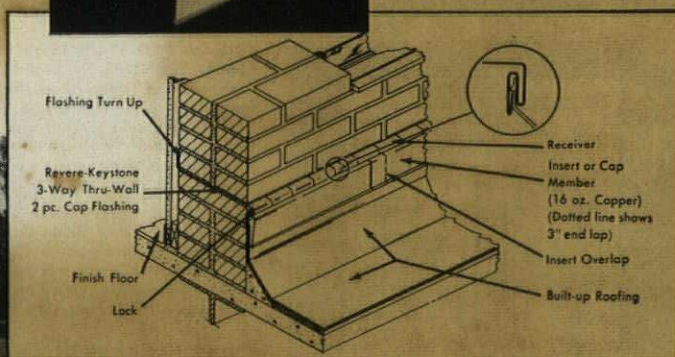
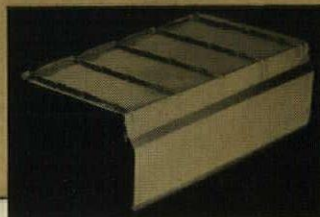
Other Pats. Pending

## REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

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Mills; Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y. Sales Offices in Principal Cities, Distributors Everywhere.



Above is detail of Revere-Keystone 2-Piece Cap Flashing showing combination receiver and Thru-Wall Flashing. Receiver is furnished in 49" lengths (48" layup), with 1" overlap in a locking tongue dam which assures proper alignment. A standard 4" flat copper receiver with 1/4" hook dam is also available.

Photo at left shows Revere-Keystone 2-Piece Cap Flashing installed at the Edsel Ford High School. Skylights in foreground also are flashed with Revere Copper.





# UNIQUE KITCHEN-CAFETERIA LAYOUT SERVES PRUDENTIAL EMPLOYEES

**ideas** from  
Blickman-Built  
food service  
installations

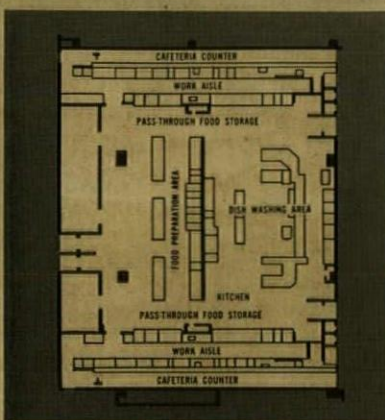


**Second installation for Prudential places kitchen between twin cafeteria counters and pass-through facilities**

- Originality of planning exemplifies this unusual food service installation in Prudential Insurance Company's Mid-America Home Office in Chicago. The kitchen is placed between two identical cafeteria counters. Fresh, appetizing food is prepared in the kitchen, and dispensed at the serving counters quickly and efficiently. Pass-through warmers and refrigerators, placed between kitchen and counters, keep adequate supplies of food in reserve. Long-lasting, sanitary stainless steel equipment is used throughout kitchen and cafeteria sections.

This is our second installation for Prudential within recent years. Efficiency of operation, economy of maintenance and high sanitation standards have characterized Blickman-Built equipment for almost three-quarters of a century. Consult us, if you too have a mass-feeding problem.

This illustrated folder gives more information about Blickman-Built food service installations. Send for your free copy today.



▲ **ONE OF TWO STAINLESS STEEL CAFETERIA COUNTERS** — Back-bar shows warmers and refrigerated storage cabinets with pilot lights and signalling alarms. Sealweld serving urns are connected through wall to water boiler and coffee-making urns.

◀ **LAYOUT OF EMPLOYEES' CAFETERIA** on-ground floor of Home Office building, showing arrangement of dual serving counters, kitchen and pass-through facilities. A serving pantry on the eighth floor was also Blickman-equipped.

▶ **FOOD PREPARATION AREA IN KITCHEN** showing island-type stainless steel cooks tables. Other equipment includes wall-mounted broiler, fryer and steamer tables, tilting kettles. Note Blickman-Built stainless steel hood.



**Blickman-Built**  
MASS FEEDING EQUIPMENT

*For Service Life Measured In Decades*

**S. BLICKMAN, INC. 5806 GREGORY AVE., WEEHAWKEN, N. J.**



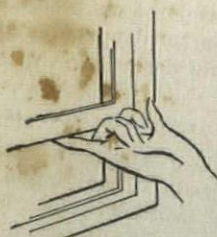
# Let's ✓ the FACTS

about

## DRAFTITE\*

THE EFFICIENT WEATHERSEAL

DraftTite is a wool pile seal for the metal window industry . . . produced by the world's largest manufacturer of weatherstrip and glass-run channel. With an annual output of millions of feet, we are equipped with production facilities and efficiencies that insure the lowest possible prices.



double hung

### EASY OPERATION ✓

When DraftTite is used as a seal, sliding windows operate quietly and easily. This is an important feature that has clinched many a window sale.



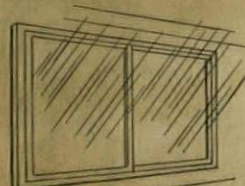
double hung

### BETTER INSULATION ✓

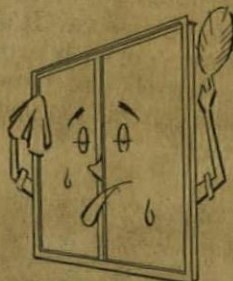
Repeated tests, by independent laboratories, prove that when DraftTite has been incorporated around the opening perimeters of the window, air infiltration is reduced two and one-half times more than the industry standards call for.

### WON'T LEAK ✓

Windows correctly engineered, and then sealed with DraftTite, have withstood hurricane water tests with amazing results. These actual tests produce a water velocity way beyond any recorded actual storm conditions.



horizontal



horizontal slider

### WON'T SWEAT ✓

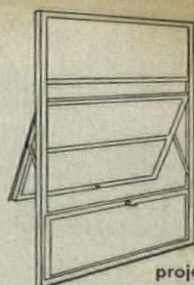
Since DraftTite insulates against metal-to-metal contact, heat transfer is reduced. This heat reduction cuts down condensation on metal surfaces.



casement

### WON'T STICK ✓

DraftTite will not stick or bind like plastic, spring steel or bronze compression seals. DraftTite also fills in voids on irregular surfaces.



projected-type window

### HIGHLY RECOMMENDED ✓

DraftTite, as a seal, has been used for many years on the most exacting architectural and monumental type windows. Our customers are the quality manufacturers of the window industry.

\*TRADEMARK

The Standard Products Company offers you the services of a superior Engineering Department. Write to us. We are always happy to consult with you and assist you with your weatherstripping problems.



## The Standard Products Co.

Building Products Division, P. O. Box 678, Lexington, Ky.



Illustrated are some of our many Standard Line DraftTite weatherstrip sections available for any metal window or door sealing problems.

Send for our  
Standard Line Channel  
and Weatherstrip  
Catalog



# STRONGEST FASTENATION

## at Hollywood and Vine...



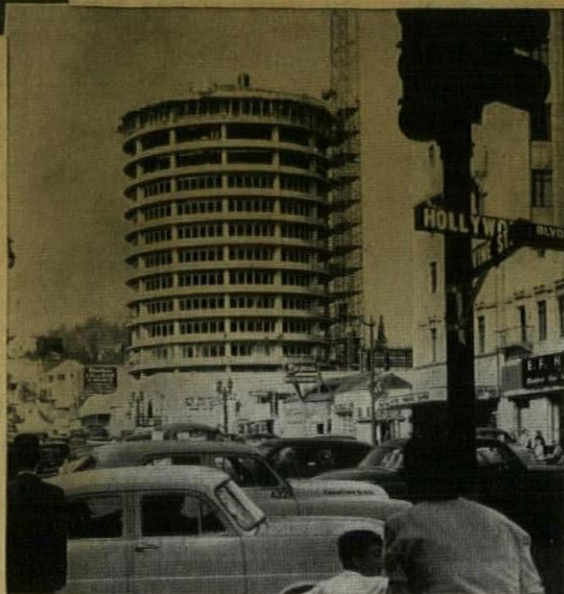
A dozen floors above the street, in America's new Tower of Music, this workman anchors steel channel as easily as squeezing a trigger—driving fasteners straight, deep and powerfully into solid concrete with the RAMSET® DUO-JOBMASTER.

### Complete flexibility with DUO-JOBMASTER

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

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

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



#### NEED A KILN GUN?

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

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

## Ramset Fastening System

WINCHESTER-WESTERN DIVISION  
OLIN MATHIESON CHEMICAL CORPORATION

12157-F BERE A ROAD

CLEVELAND 11, OHIO

## RESEARCH

### NEW YORK STATE RULE

Industrial Code Rule No. 7, which governs building construction in New York State for factories, places of public assembly, and mercantile establishments, has been amended and republished. It reflects a liberalization of the State Labor Department's requirements for exterior walls, a three-hour rating replacing the earlier four-hour rating. Suspended ceilings are in certain instances acceptable as protection for structural steel as opposed to complete encasement required formerly. The earlier supplement to Rule 7 of approved fire-resistance ratings of building components is now part of the new edition.

### FIRE ALARM THERMOSTATS

Automatic fire alarm thermostats are rated by Underwriters' Laboratories, Inc., according to their operation when installed on smooth ceilings. In practice, however, they must often be installed beneath open-joint construction. For this reason the Laboratories have carried out a study, sponsored by the National Board of Fire Underwriters, to determine the degree of obstruction to operation of these thermostats by open-joint construction when heat flows must be across the joists. The results are published by the National Board of Fire Underwriters.

### PLASTICS IN BUILDING

A program on "Plastics in Building" will be given by Massachusetts Institute of Technology from July 2 to 13. The theme will be plastics and their growing use in buildings as exemplified in the design and detailing of a small structure. Problems of acoustics, lighting, thermal controls and space arrangements will be considered as well as forms suitable for structural purposes and methods of structural design.

### TESTING BUILDING MATERIALS

The American Society for Testing Materials is starting a long-range program of methods of testing building constructions. The program will consider housing structures, code authorities' needs, completed structures, window assemblages, reinforced brick construction, vapor barriers and durability. The committee secretary is R. A. Biggs, Crucible Steel Company, Chrysler Building, New York 17, N.Y.

### SELECTION OF WINDOWS

The Building Research Advisory Board has completed a report entitled "Selection of Windows" for use by federal construction agencies. This is part of the work being done by BRAB Advisory Committee for the Federal Construction Council which will ultimately release this report and others in preparation.

*continued on p. 180*



**HOME OFFICE BUILDING**  
**MUTUAL BENEFIT LIFE INSURANCE CO. BUILDING, Newark, N. J.**  
**ARCHITECT:** *Eggers and Higgins, Architect*  
**CONTRACTOR:** *George A. Fuller Co.*



## KAWNEER METAL WALL *one responsibility from inception through installation*

**Other Kawneer metal wall jobs:**

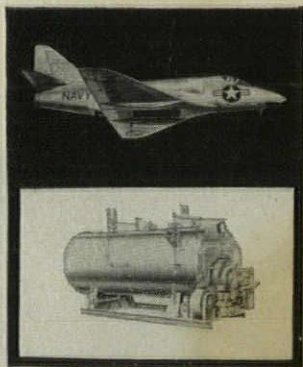
Tishman Buildings, Los Angeles  
 Equitable Life Building, San Francisco  
 Insurance Exchange Building  
 Oakland  
 Imperial Oil Co., Sarnia, Ontario  
 Newark Center Building, Newark  
 Kaiser Aluminum, Ravenswood, W. Va.

The new Mutual Benefit Life building in Newark, N. J., is another outstanding example of Kawneer Metal Wall. Years of creative engineering and production in the field of architectural metals has culminated in a new service for architects . . . a new concept in metal wall construction. This building is an expression of Kawneer's ability to engineer a curtain wall to fit this architect's individual design. Kawneer accepts the complete responsibility for engineering, manufacturing and installation. Special weather-tightness features, adequate provision for expansion and contraction, and tested prefabrication methods assure the architect and contractor of complete client satisfaction. For further information write: Metal Wall Department, Kawneer, Niles, Michigan.

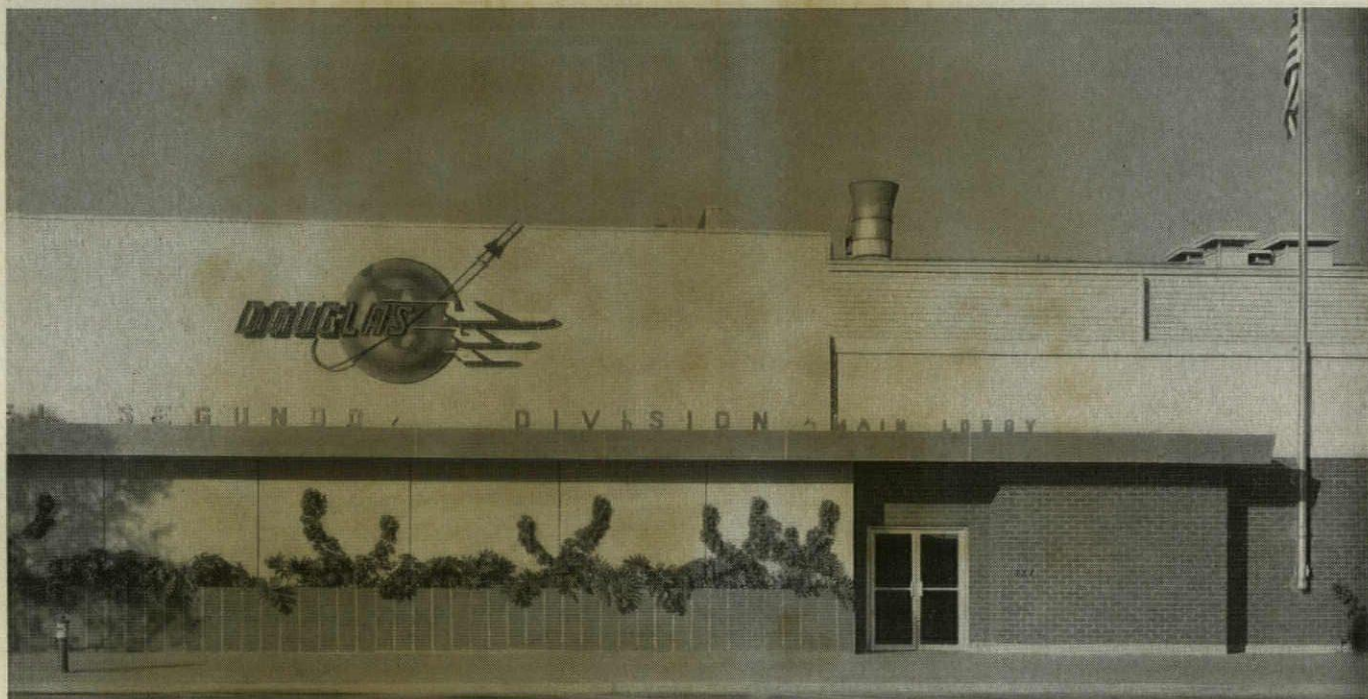
Write for folder  
 describing Kawneer  
 services and  
 metal wall jobs.







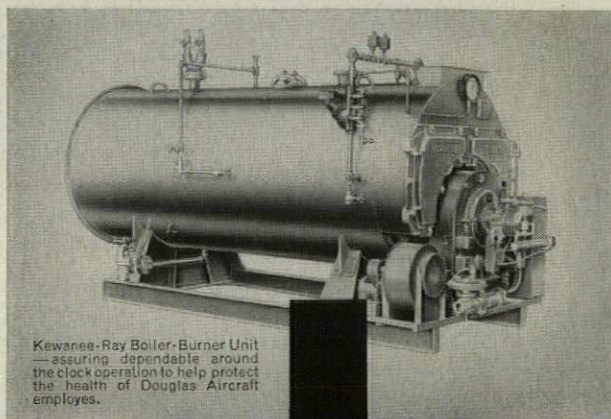
## ***Sisters under the skin . . . when it comes to "cruising speed"***



Douglas Aircraft Company, Inc. Division, El Segundo, California  
Architect & Engineer: Holmes & Narver, Inc., Los Angeles, Calif.  
Heating Contractor: E. Willardson, Inc., Los Angeles, Calif.

■ No one knows the importance of "cruising speed" operation in aircraft better than the Douglas Aircraft people. They know an airplane, to be efficient, to operate economically, to have longer life, must fly at "cruising speed." They know, too, there must be extra reserve power for take-off—for emergencies. So, when it came to boiler selection for the new A4D Skyhawk production facilities at their El Segundo, California Division, it was only natural they turned to Kewanee Reserve Plus Rated Boilers with 50% extra built-in power assuring "cruising speed" operation. For "cruising speed" means less strain—less wear. It means higher efficiency . . . it means lower maintenance and repair costs. Kewanee Boilers are rated on nominal capacity with reserve to take care of normal needs—meet emergencies of the present—fluctuating loads and future expansion. A boiler rated on maximum capacity, operating at constant top speed, requires more maintenance, constant attendance, and finer burner adjustment to maintain efficiency. So, choose Kewanee—for lower fuel and maintenance costs—more efficient "cruising speed" operation.

**KEWANEE BOILER DIVISION of AMERICAN-Standard**  
101 Franklin Street, Kewanee, Illinois



Kewanee-Ray Boiler-Burner Unit  
—assuring dependable around the clock operation to help protect the health of Douglas Aircraft employees.

**KEWANEE**

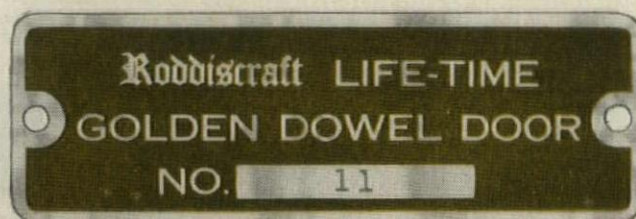
reserve plus rated

**KEWANEE  BOILERS**

*You can depend on Kewanee engineering*



*The greatest achievement in  
all-wood solid core doors...*



*Guaranteed in writing*  
for the life of the installation



**H**ere's the first all-wood, staved core door with a lifetime guarantee. It's backed by one of the world's major insurance companies. Owners are fully indemnified against warping, twisting, or manufacturing defects as outlined in standard door guarantee of the National Woodwork Manufacturers' Association. And Roddiscraft will pay the rehang and refinishing costs, of a reasonable nature, for any door found defective within the meaning of its guarantee. The Golden Dowel offers you all-wood

construction . . . stability of the staved core . . . the time-defying features of Roddiscraft's exclusive technique of TIME CONDITIONING. Add to this, fire resistance proved in tests by independent laboratories — and the "peacekeeping" average sound transmission loss of 31 decibels.

You'll recognize the Golden Dowel door by the distinctive golden serial plate above. Each bears a registered number which is recorded on the Certificate of Guarantee prior to installation.

**Write for copy of** our new door catalog. Or find complete specifications in Sweet's Architectural File. When in New York, visit the Roddiscraft Rockefeller Center Showroom, 620 Fifth Ave.

**Roddiscraft**

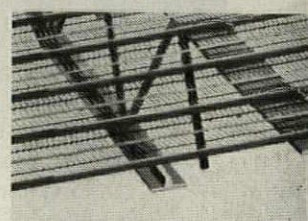
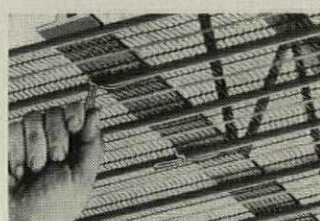
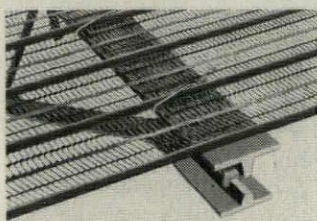
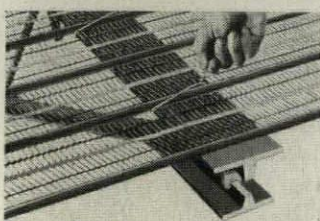
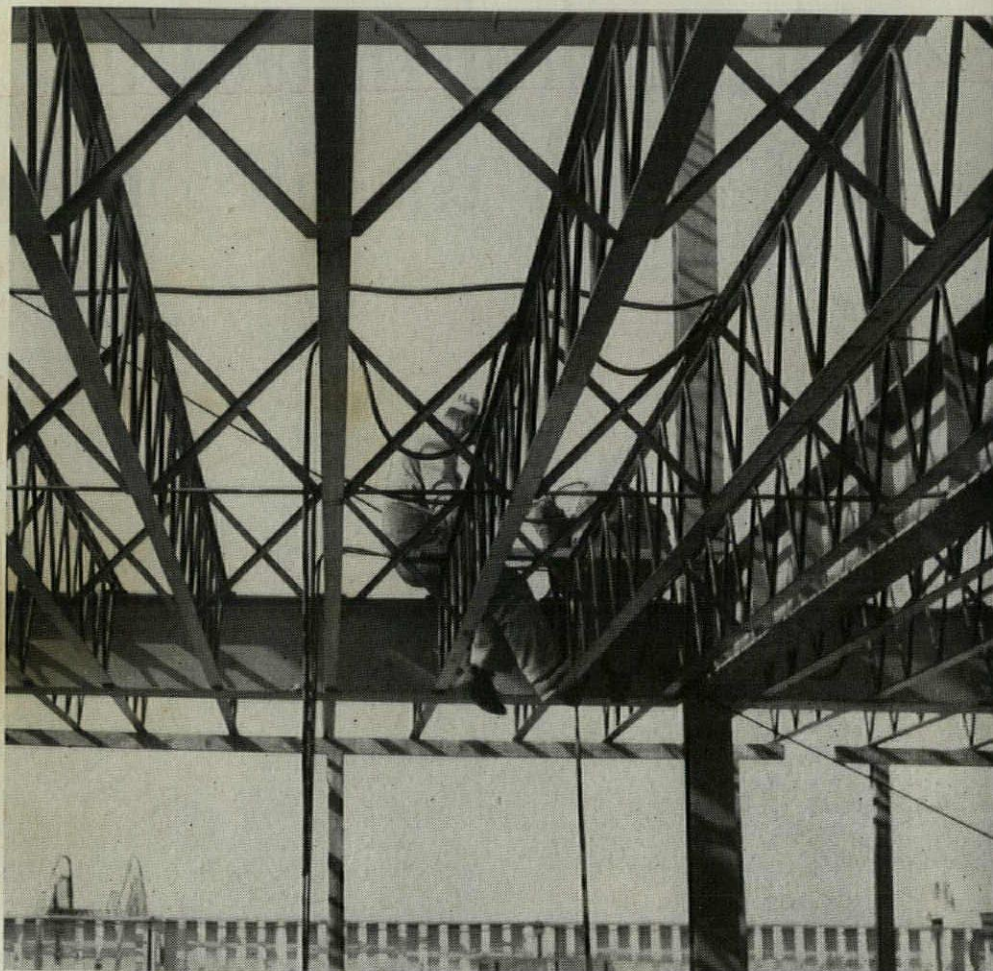
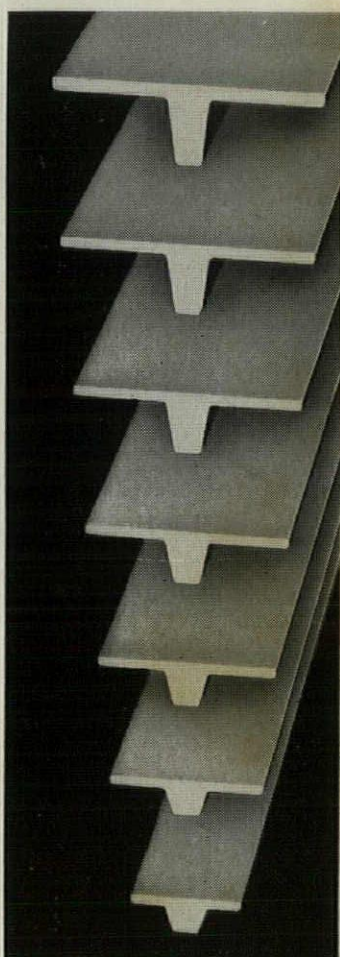
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Solid Core • Hollow Core • X-Ray • B Label Fire

RODDIS PLYWOOD CORPORATION, Marshfield, Wisconsin • Warehouses in principal cities



**in steel joist construction...**

# TRUSCON SOLID CHORD



**STRONG, FIRE-RESISTANT CONSTRUCTION** is provided by attaching Truscon metal lath directly to O-T or Clerespan Steel Joists as a base for plaster. Through the use of special lath clips, permanent fastening to top or bottom

chord is easy and quick . . . requires no special tools. When metal lath is used to support concrete top slab and plaster ceiling, a high degree of fire resistance results through the complete absence of combustible material.

# REPUBLIC



*World's Widest Range of Standard Steels*



# DESIGN PROVIDES GREATER LATERAL STRENGTH AND RIGIDITY

Steel joist construction is expanding to greater limits. To meet your requirements, Republic's Truscon® Steel Joist Division offers a complete series of solid, hot rolled, C-shaped chord members for use in O-T® (Shortspan) Open Truss Steel Joists.

These chord sections are scientifically designed to provide the proper width, depth and strength to match desired span and load. In addition, the greater flange width of these solid members provides both improved lateral stiffness and increased bearing area. Finally, both top and bottom chords are continuous from bearing to bearing, and webs are uniform in diameter. All components are joined by resistance welding to assure uniform strength and rigidity throughout each joist.

The Steel Joist Institute, of which Truscon is a member, has been contracted recently with an independent and nationally accredited Inspection Laboratory to perform periodic

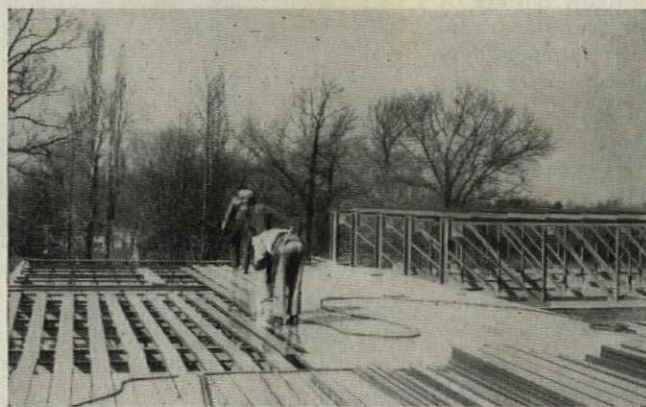
unscheduled inspections of joist fabrication at each plant of each member company. Inspections will be made for dimensional tolerance, panel spacing, eccentricity of joints and alignment of bearing members. Tests will be made to determine the quality of steel. Adding to this the established advantages of the Truscon Institute-approved steel joists, you are doubly assured of steel joist construction that will meet every conceivable requirement.

Floors of steel joist construction can be made fire, vermin and sound resistant through proper application of a reinforced concrete slab floor, plus a metal lath and plaster ceiling. In addition, this construction is ideally adapted to piping and conduit runs in any direction within the floor.

It will pay you to get complete details on Truscon O-T Open Truss Steel Joists with solid chord sections. Simply contact your local Truscon representative or mail the coupon for booklet E-290 today.



**FOR STRENGTH IN LONGER SPANS,** Truscon's Clerespan® Steel Joists are the ideal answer. Using this strong but light Warren type truss, floors up to 96 feet in width can be kept entirely free of intermediate supports. And this maximum span joist measures only 48 inches in depth . . . minimizing required wall height. Booklet E-290 contains a complete Standard Loading Table for Truscon Clerespan Steel Joists. Just mail the coupon for your copy.



**COMBINING STRENGTH WITH EASE OF INSTALLATION,** Truscon Ferrobord® Steeldeck is the ideal roofing to use with steel joist construction. Clipped or welded directly to the steel joists, large areas . . . flat, pitched or curved . . . can be roofed over quickly from the top. No scaffolding is required. Ferrobord comes in lengths long enough to span three or more purlins. Truscon's exclusive design is fully interlocking throughout each length to provide strong, tight joints.

# STEEL

*and Steel Products*

## REPUBLIC STEEL CORPORATION 3108 East 45th Street Cleveland 27, Ohio

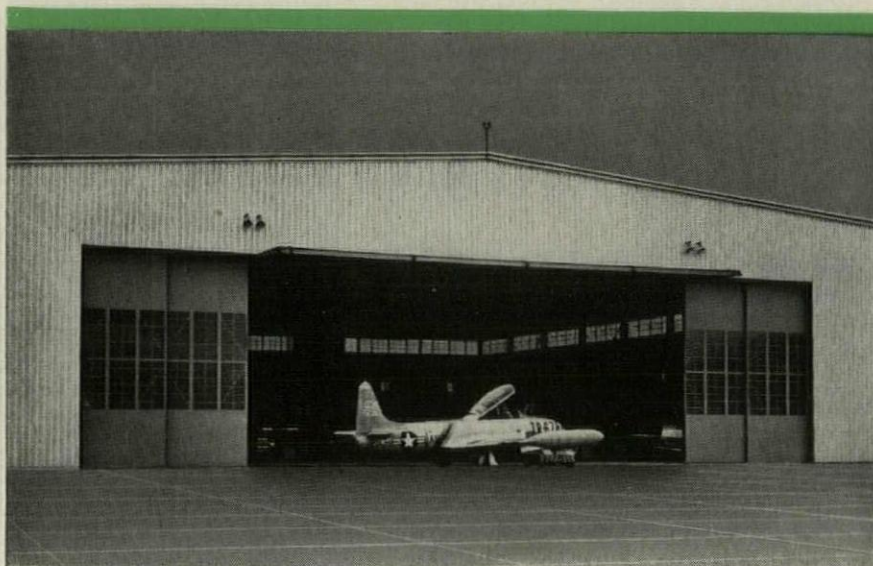
Please send me further information on the products checked below:

- ☐ O-T Steel Joists, Booklet E-290
- ☐ Clerespan Steel Joists
- ☐ Truscon Metal Lath
- ☐ Truscon Ferrobord Steeldeck

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

K-9922



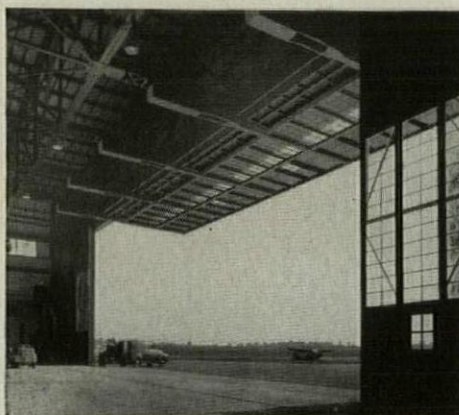


## Byrne Canopy Hangar Doors for 18 Air National Guard Hangars

Byrne Vertical Lift Canopy Doors meet every specification demanded by military standards for a door that is structurally sound, fast-acting, weather-tight, dependable, safe and economical in operation. In addition, they allow full use of all space in the enclosed floor area. In fact, by forming canopies they actually increase the effective working space.

These canopy doors can be made in sections for any width of opening and may be operated individually or simultaneously. They are motor operated, upward-acting with balanced suspension through cables which transmit dead loads to compact counterweights.

Byrne Doors, Inc., with over 25 years experience in the development and manufacture of doors for the aircraft industry, can meet any requirements for hangar doors. The complete line of Byrne hangar doors includes the Vertical Lift Canopy, the Type B Canopy for openings up to 120' wide by 30' high, the Type K Canopy for heights up to 55' with single sections up to 150' wide and the Motorized Slide Doors. For complete information on the Vertical Lift Canopy Doors or other types available, check Sweet's Catalog or write direct to Byrne Doors, Inc.



The above Air National Guard hangar has a Byrne Vertical Lift Canopy Door 78' wide by 33' high. The canopy door is flanked on both sides by two sliding doors 13' wide—which are used to admit planes larger than usual.

### CURRENT INSTALLATIONS:

Bangor, Maine  
Burlington, Vermont  
Reno, Nevada  
Wrightstown, N. J.  
Washington, D. C.  
Montgomery, Alabama  
Houston, Texas  
Springfield, Ohio  
Fort Smith, Arkansas  
Romulus, Michigan  
Niagara Falls, New York

## BYRNE doors, inc.

1603 E. 9 Mile Road, Ferndale, Detroit 20, Mich.

Dept. 1-16

101 Park Ave., New York 17, N.Y.  
Cafritz Bldg., Washington 6, D.C.  
Byrne Doors, Ltd., 61 Avenue Road, Toronto, Ont.

## RESEARCH *cont'd.*

### SAN FRANCISCO BUILDING CODE

San Francisco got a new performance-type building code in April. A five-member technical board of examiners has been appointed to test and approve materials, equipment and systems of assembly and to recommend annual amendments to keep the code up to date. The code is patterned after the Uniform Building Code prepared by the Pacific Coast Building Officials Conference.

### ASTM CONVENTION

A variety of subjects relating to research and testing of engineering materials will be discussed at the 59th annual meeting of the American Society for Testing Materials to be held at Chalfonte-Haddon Hall, Atlantic City, June 17-22, '56.

A total of 31 sessions are now scheduled beginning on Monday morning and continuing until Friday noon. Eight symposiums are scheduled on the following subjects: Specific Gravity of Bituminous Coated Aggregates, Ion-Exchange and Chromatography in Analytical Chemistry, Solder, pH Measurement, Tension Testing of Non-Metallic Materials, Steam Quality, Rheology, and In-Place Shear Testing of Foundation Soil by the Vane Method. In addition, sessions are scheduled at which individual papers will be given on the subjects of metals, concrete, fatigue, stainless steel, soils, and general testing.

The Society's 12th exhibit of testing and scientific apparatus and laboratory supplies will be an outstanding attraction. At this exhibit, held every other year, the latest in research and testing apparatus will be displayed by the country's leading manufacturers. Hundreds of items from small hand-manipulated instruments through electronic control devices and high temperature ovens to universal testing machines will be exhibited.

Important in the Society's activities are the large number of technical committee meetings which are scheduled. About 50 committees and their subcommittees will hold a total of about 500 meetings.

### MODERN MASONRY CONSTRUCTION

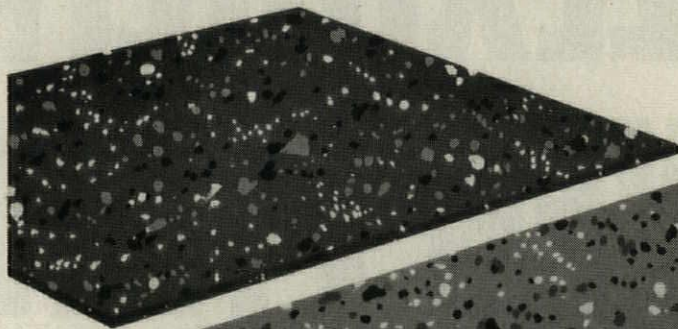
Modern masonry construction is the title of a research conference scheduled for Sept. 19 and 20 in Washington. The conference will be conducted by the Building Research Institute and sponsored by the Allied Masonry Council whose supporters are Structural Clay Products Institute, Building Stone Institute, Marble Institute of America, Mason Contractors Association of America, and Bricklayers, Masons and Plasterers International Union of America (AFL). The program will include architectural design, technology, research and technical developments, costs and maintenance and building-type analyses.



# new MOULFLEX Jubilee

## DECORATOR COLORS

"keyed" to match modern color trends



NOW—

your choice of

two MOULFLEX

patterns\*

MOULTILE has just added thirteen gay new decorator colors to the popular Moulflex Jubilee vinyl-asbestos line to keep pace with today's accent on more lively colors in decorating homes, institutions, and hospitals.

Designed by a famous color stylist, the new Jubilee Decorator Colors complement the bright, sparkling tones of the latest appliances, fixtures and wall coverings. They go well with any style of architecture. Made of durable vinyl-asbestos, Moulflex Jubilee Decorator Colors can be installed on, above or below grade. They resist dirt, grease and most chemicals and are therefore easily maintained. If you are looking for something strikingly new and *different* in floor tiles, be sure to see the new Jubilee Decorator Colors in economical Moulflex vinyl-asbestos. Mail coupon for samples.

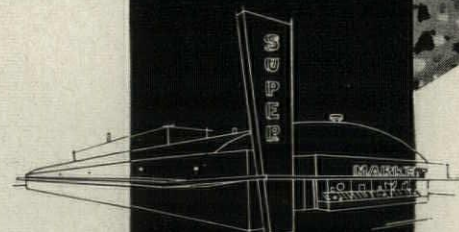
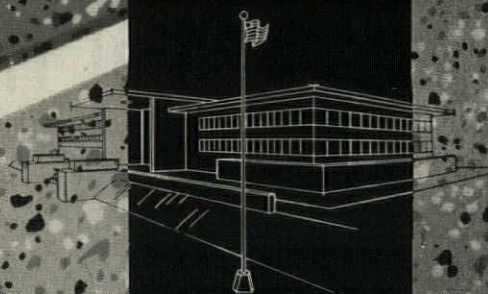
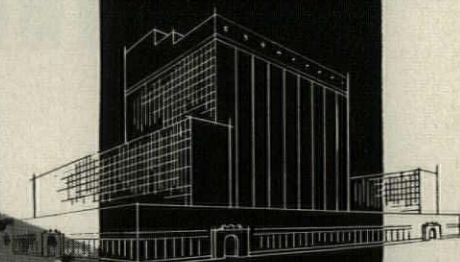
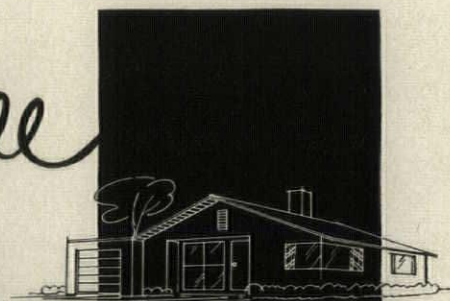
\*Jubilee Decorator Colors and regular Moulflex Jubilee Patterns.



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Please send me free samples of new MOULFLEX  
JUBILEE DECORATOR COLORS.

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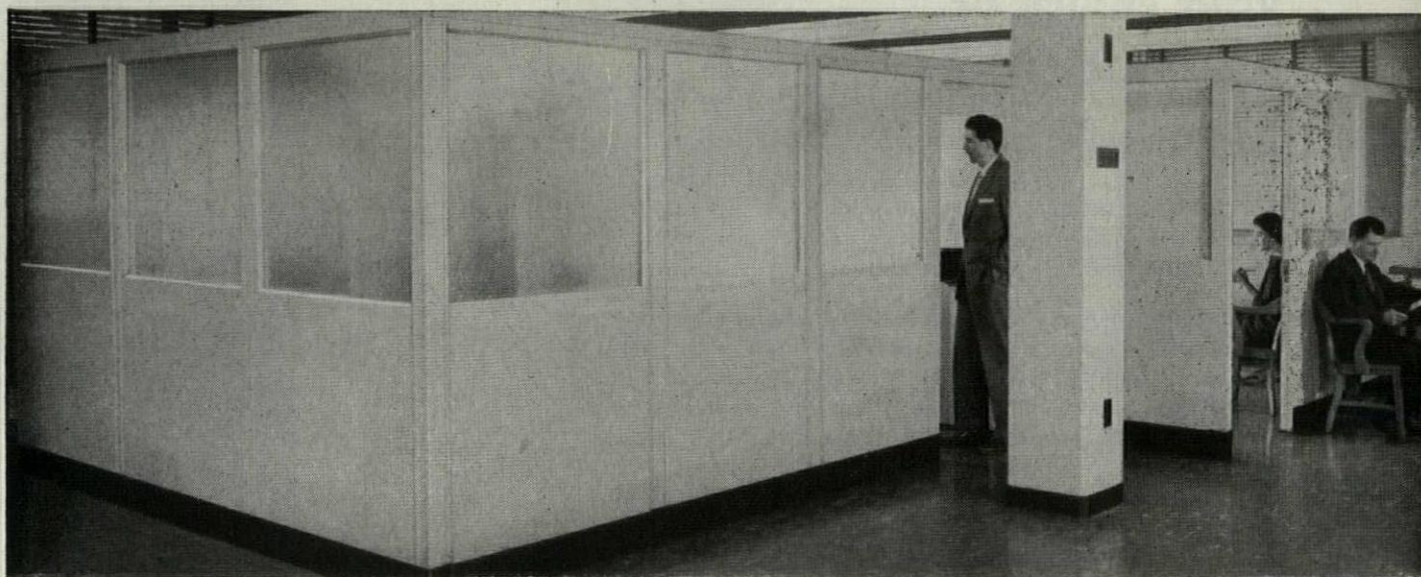
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# NEW DESIGN MORE FLEXIBILITY FEWER PARTS

VMP Royal Flush MOBILWALLS now offer snap-on



**FLUSH PANELS** of the RF line make styling clean and restful—simplify both design and maintenance. Installation is made in a few

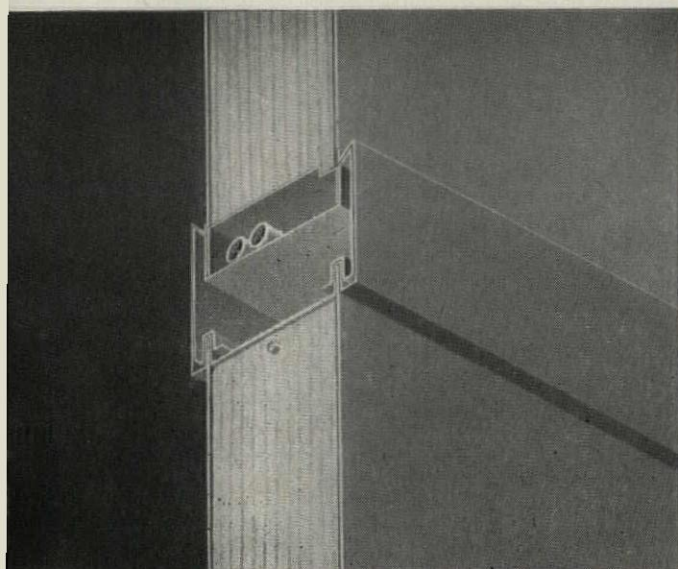
hours by trained local crews. Wherever installed, VMP MOBILWALLS make a major contribution to efficiency and attractiveness.

A new design of movable, metal office partitions—VMP's greatly improved RF ROYAL FLUSH MOBILWALLS—gives architects the opportunity to build-in dignity and simplicity, and to gain many added functional features. New-style RF partitioning blends and *interlocks* perfectly with previous VMP installations, presents no special detailing or erection problem.

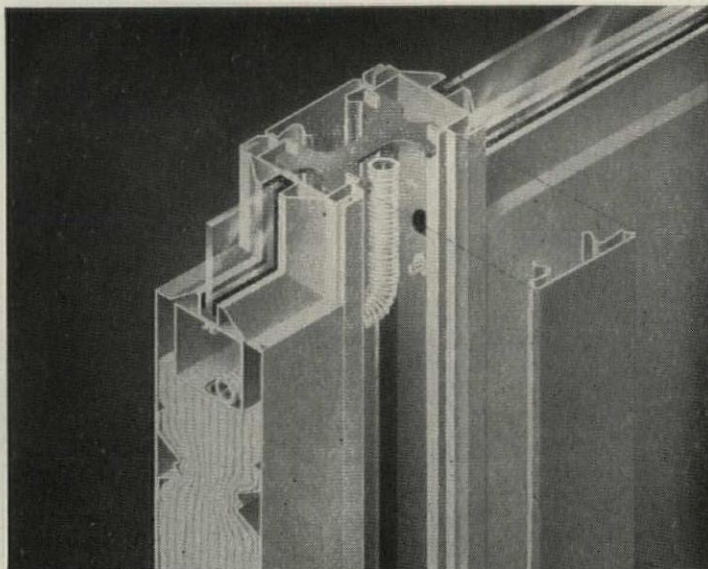
The high-style RF line has flush-surfaced, non-recessed panels; 3" thickness with new increased

rigidity and stability; extensive provisions for faster installation and wiring. Made in both all-steel and steel-and-glass combinations, RF MOBILWALLS can be matched to the client's color and texture selection. Like all VMP MOBILWALLS, RF metal surfaces are thoroughly cleaned and treated for superior resistance to corrosion, then primed, and color coated with baked enamel. They keep looking new—for years. Study the details, then talk to your VMP representative!



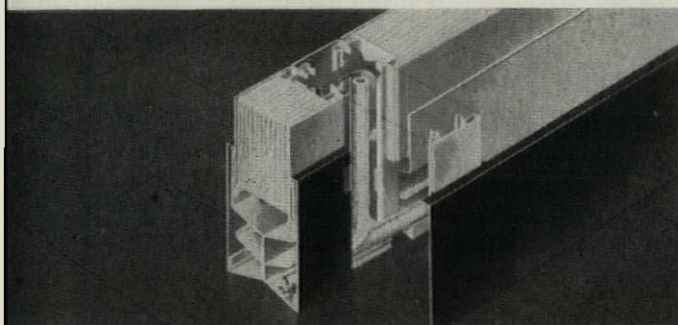


**SNAP-ON MOLDINGS AT CORNICE** are truly aligned to keep edges firm and even. They are modern, flush, and provide a hanger for pictures. The cornice thus formed is adaptable to receive mineral board or steel top filler. You are assured that the installation will be attractive and uniform, and the architect's work simplified.

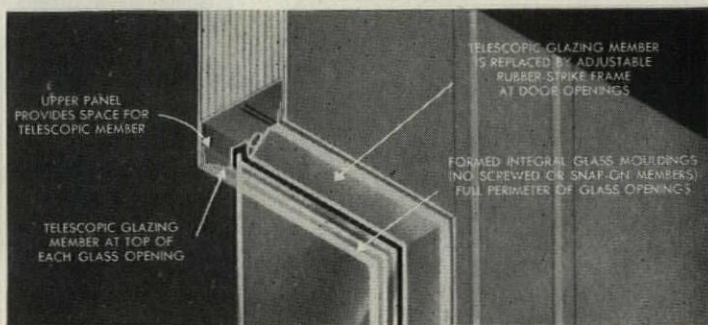


**EXTREMELY RIGID CONSTRUCTION**—New RF MOBILWALLS are factory assembled and functionally formed with vertical edge members extending from floor attachment to rigid cornice construction. Link plates provide a four-point field assembly for panel unit edges. No strength is sacrificed by slotting for clips or linkage members.

## cornices, improved wiring facilities, telescopic glazing



**EASY ACCESSIBILITY OF WIRING** is an added benefit when you use RF partitions. Wiring can be laid continuously through the bases and posts. Additional wiring facilities are available in the cornice, chair rail, transom rail... even through the panel itself. Wiring is accessible without tools. No exposed wiring—no dirt or delay.



**NEW VMP TELESCOPIC GLAZING** speeds insertion of glass. No extra parts to fumble with or lose—you just insert glass, then putty! Telescopic action of new VMP glazing channels hold member firmly in place. Both faces of unit are identical; exposed screw heads are eliminated. ALL VMP MOBILWALLS WILL HAVE THIS EXCLUSIVE FEATURE!

New VMP Partitioning Helps for Architects! ➔

**Virginia Metal Products, inc.**  
ORANGE, VIRGINIA  
Subsidiary of Chesapeake Industries, Inc.

Virginia Metal Products, Inc., Dept. AF-6, Orange, Virginia

- ☐ Have nearest VMP partitioning specialist see me.
- ☐ Send folder "Simplified Office-Area Planning with Ratio-Delay Studies and VMP MOBILWALLS" with manual.

Send VMP descriptive literature:

- ☐ MOBILWALLS in Hospitals
- ☐ MOBILWALLS in Schools
- ☐ New VMP MOBILWALL Jrs.
- ☐ VMP MOBIL-LAB-WALLS
- ☐ VMP MOBIL-FIRE-WALLS
- ☐ VMP Conveyor Systems
- ☐ VMP Library Shelving

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## The largest panels in the industry

J. A. Davies, Consoweld's Sales Manager, exhibits the Consoweld-exclusive 12-foot high-pressure plastic laminate panel, compared with the standard 10-foot size maximum for the rest of the industry.

Save Time and Labor  
With Exclusive  
New Extra Size

# CONSOWELD®

## 12-foot Plastic Laminate Panels in widths up to 51 inches

Consoweld—and only Consoweld—offers you jumbo-size panels up to 51 inches wide by 12 feet long. These panels make possible seamless, one-piece installations on counter tops up to 12 feet long, with extensions as wide as 51 inches.

These huge Consoweld panels cut time and labor costs. They reduce seams, butt joints, and seam-filling. On a 12-foot job there's no color-matching problem—it's all one single piece. You can do the largest kitchen job, and do it easily and economically, with Consoweld jumbo panels.

### In Two Thicknesses

These new panel sizes come in both Consoweld 6 and Consoweld 10—the extra-thick 1/10-inch plastic laminate that's designed especially for on-the-job installations for walls or counters, over less-than-perfect undersurfaces. Consoweld 10 is applied over sheathing-grade plywood, gypsum board, old plaster, even over masonry, with perfect results!

Consoweld's panels include all standard sizes, and more! Sizes go up to:

30 x 144 inches (patterns only)  
36 x 144 inches (in patterns, wood  
51 x 144 inches (grains and marbles)

The 51-inch-wide panel can be economically cut to two full 25½-inch widths. All these 12-foot panels can be cut to many other smaller standard sizes.

### It Pays to Use Consoweld

Consoweld offers you all these advantages: Complete line of merchandise, including Consoweld 6 and Consoweld 10, the extra-thick on-the-job material; jumbo 12-foot panels; Curvatop one-piece counter top; Twin-Trim matched mouldings; postforming material; adhesives.

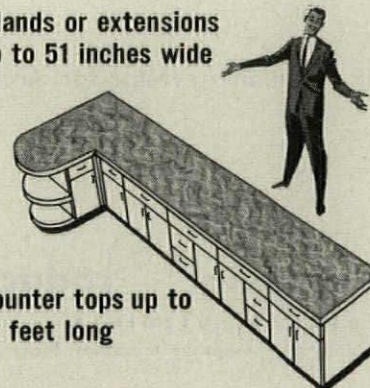
With Consoweld you can save money on almost any job for which plastic laminates are suitable, and do many more than with conventional laminates.

### Consoweld Is Color-Tuned

Consoweld offers a complete range of colors and patterns—preference-tested by Color Research Institute for consumer acceptance.

Ask your dealer to show you a copy of the new color guide book, "Color Magic with Consoweld." It provides a new, simple method for assuring color harmony. Complete with color charts, sample room illustrations, and color reproductions of harmonizing Consoweld patterns. \$1.75 a copy, from your dealer or direct from Consoweld.

### Islands or extensions up to 51 inches wide



Counter tops up to  
12 feet long

You can cut this entire counter out of Consoweld's jumbo panel and still have a good-sized 25½-inch-wide panel remaining.

Consoweld, Twin-Trim, and Curvatop are trademarks.

### MAIL THIS COUPON

CONSOWELD CORPORATION, Wisconsin Rapids, Wisconsin

- ☐ Send me free Architects Data File Folder.  
☐ Enclosed is \$1.75—send copy of Color Guide Book.

AF66

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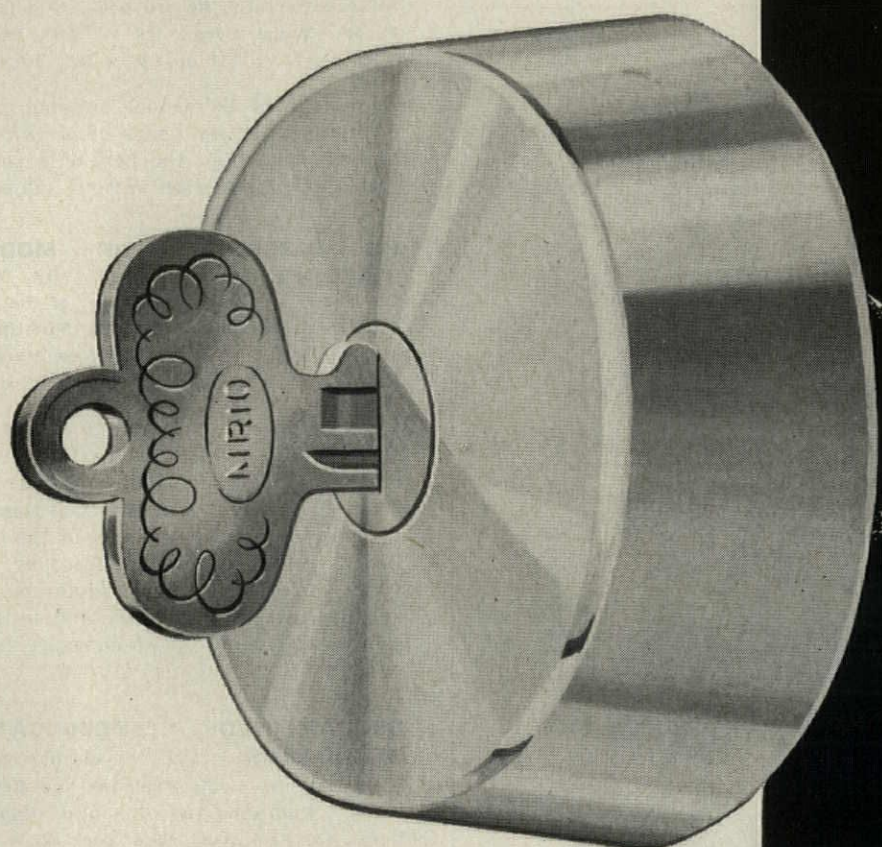
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For any hardware item — from door-pulls to wall ties, escutcheon plates to finish trim — no other metal can match Crucible stainless steel for both beauty and long-term economy. For its use is well justified, not by its beauty and strength alone, but by the care, cleaning and maintenance it saves... throughout its service life.

Call your Crucible representative for reference information... or for immediate help in selecting the stainless steel designed for your specific requirements. *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

**CRUCIBLE**

first name in special purpose steels

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**4**  
**ways**  
**you**  
**can**  
**look**  
**at**  
**hardware**  
**...of**  
**stainless**  
**steel**

**YOU NEVER POLISH IT**

Just once-over-lightly and it's as bright and clean as new... it can't rust, tarnish or stain.

**YOU NEVER REPLACE IT**

Can't wear out, chip or crack... in fact, the more it's used, the more attractive it gets. Needs little maintenance.

**COST IS IN LINE**

with that of any other metal of similar appearance and strength.

**BUILT AS YOU WANT IT**

Stainless steels are easy to work with—to bend, solder and weld... to form and machine.



## BOOKS

### AMERICAN ARCHITECTS DIRECTORY.

Edited by George S. Koyl. Published by R. R. Bowker Co., 62 W. 45th St., New York 36, N.Y. 723 pp. 8¾" x 11¼". \$20

This biographical directory of some 11,000 US architects is sponsored by the American Institute of Architects under the editorship of Dr. George S. Koyl, a Fellow of the Institute, Emeritus Professor of Architecture, and former Dean of the

School of Fine Arts at the University of Pennsylvania.

Information on all the members of the Institute and "on certain nonmembers deemed likely to be inquired about" is included. In each of the alphabetically arranged biographies contains the architect's home and business address, his outstanding architectural achievements, positions he has held, education, professional affiliations, etc. There is a geographical cross-index listing architects by cities and a valuable appendix which includes a series of articles on the Value of the Architect, the Selection of the Architect, Standards of Professional Practice and A Basic

Schedule of Architectural Services. There is also a list of documents published by the Institute for the convenience of the general public as well as the profession and the building industry.

Other features: a list of the member schools of the Association of Collegiate Schools of Architecture; names and addresses of deans and various administrative officers of instruction; names and addresses of secretaries of the boards of examiners of architects throughout the US and its territories as well as that of the secretary of the National Council of Architectural Registration boards.

### SCHOOLS FOR THE NEW NEEDS—EDUCATIONAL, SOCIAL, ECONOMIC.

An Architectural Record book. Published by F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 312 pp. 9" x 12". Illus. \$9.75

A reprint of 66 school building articles from the past six years of *Architectural Record* magazine—the best of a series of such reprint books on various subjects.

### US DIRECTORY OF MODULAR BUILDING MATERIALS.

By William Demarest, Modular Coordinator of the American Institute of Architects. Published by Modular Measure, AIA, 1735 New York Ave., N.W., Washington 6, D.C. 80 pp. 8½" x 11". \$1

This pamphlet is primarily a list by states of companies which make clay and concrete masonry units in modular sizes. There are several hundred such companies listed on 67 pp. The balance of the booklet lists 33 other companies (also by state) which make such other modular materials as flue lining, glass block and toilet and shower stalls and 60 which make modular windows.

### STREAMLINED SPECIFICATIONS STANDARDS.

Vol. II—Mechanical and Electrical. By Louis Axelbank and Ben John Small. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 494 pp. 8½" x 11½". \$10

This guide to organized specification writing is the second volume in the *Streamlined Specifications Standards* series. The specifications themselves are designed to suit the mechanical and electrical needs of any size or type of building, except small homes. Eight major sections cover the various trades; each section is broken down into six to 20 divisions according to systems or materials included in the trade; and the divisions, in turn, have numerous subdivisions. The specifications are streamlined; they are stripped of all excess verbiage and are written in language that is concise and easily understood.

### SUBSTRUCTURE ANALYSIS AND DESIGN.

By Paul Andersen. Published by The Ronald Press Co., 15 E. 26th St., New York 10, N.Y. 336 pp. 6¼" x 9¼". Illus. \$7

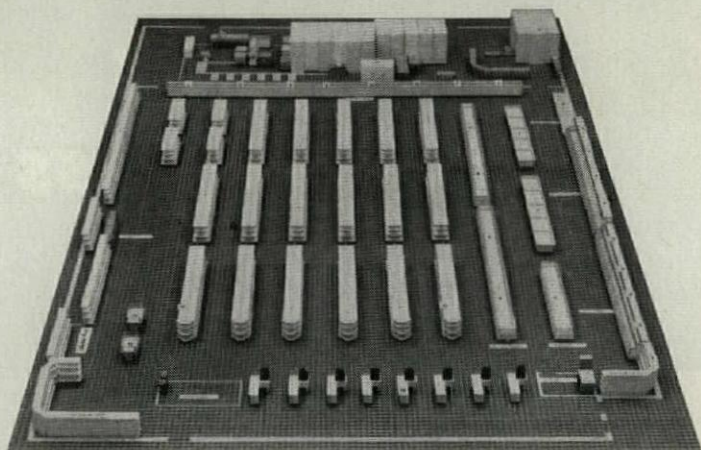
An up-to-date version of a pioneering text in the field of foundation engineering, this

*continued on p. 192*

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**first complete color system  
exclusively for supermarkets**



**...specialized assistance  
in supermarket planning**

Go right with color in the supermarket—use the **NEW TYLER-KETCHAM COLOR COMPATIBILITY SYSTEM** developed in consultation with Howard Ketcham, Inc., color experts. Covers Tyler equipment in color and its relation to walls, flooring, signs, the entire store interior! Flexible, simplified. Wide range of selections. Store-tested. Write Store Planning Dept. for complete details, today.

The Tyler Store Planning Department can help you take advantage of the very latest ideas in successful supermarket planning and operations. For prompt assistance, write Tyler today.

**NEW TYLER SALES-CASE LINE (Series Y)** for self-service Meat, Produce, Dairy, Ice Cream, Frozen Food Depts. Introduces new, low 33" merchandising height; many other new "Advanced Design" features that simplify, speed up installation; cut costs; boost profits! Send coupon for complete data.

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Canada: Tyler Refrigerators, 732 Spadina Ave., Toronto

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Rush information on Tyler ☐ Color Compatibility  
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No Need to Fell a Tree  
When the Home's Drainage System  
is *Permanent*

## CAST IRON SOIL PIPE

Every tree and shrub around this lovely home will be a source of satisfaction to its owners for years to come. But every tree will likewise be a growing menace to the home's drainage system, unless the soil pipe is permanent Cast Iron.

The smallest crack in pipe material or joint attracts a thirsty hair root seeking food and water. Soon roots grow until the pipe is clogged. That means calling the root reamer service—and sometimes digging up the lawn and garden or cutting down a tree that has taken years to grow.

Cast Iron Soil Pipe is impervious to root penetration. Packed with oakum, sealed with molten lead, its joints are permanently tight. Structurally strong, it cannot be fractured by earth settlement or heavy trucks or graders. These are two of the reasons why Cast Iron Soil Pipe is the *only* pipe approved by all building codes.

\* \* \* \* \*

Woodward Iron Company does not manufacture cast iron soil pipe but produces quality pig iron from which pipe is made by many of the nation's leading foundries.

**WOODWARD IRON COMPANY**  
WOODWARD, ALABAMA





# ANOTHER **RIXSON** FIRST!

## a floor type closer with Underwriters' Laboratories Approval

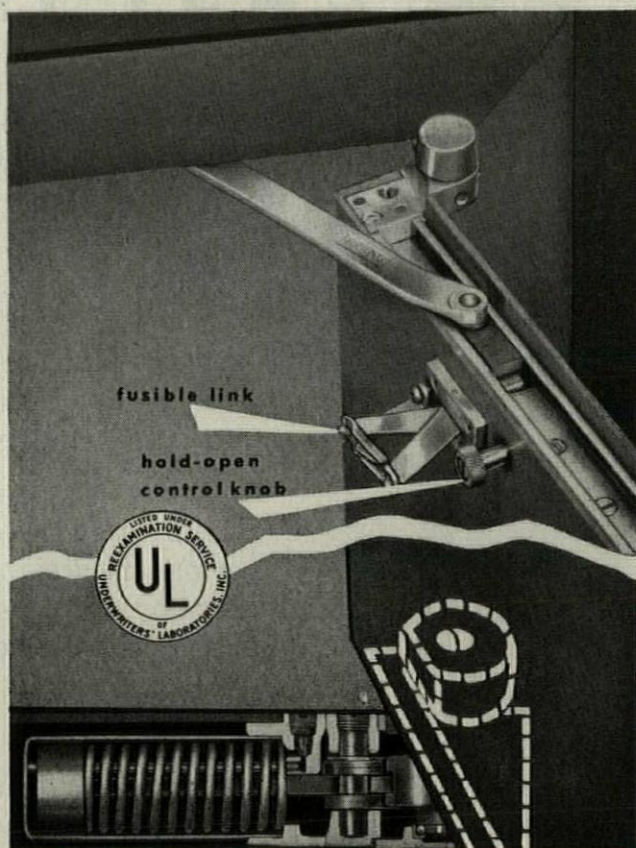
**RIXSON Uni-checks, N.H.O. (no hold open)**, the smooth functioning door closers that are installed in the rigid floor . . . have the approval of the Underwriters' Laboratories for fire doors, when furnished with a special iron ball bearing top pivot.

### **RIXSON UNI-CHECKS with no. 36 fusible link hold-open arm**

**ideal for interior fire doors**

The special U.L. approved RIXSON Uni-check can be supplied with a hold-open that also has Underwriters' Laboratories approval. The RIXSON no. 36 hold-open arm (illustrated) holds the door at 90°. In case of fire the fusible link releases at 160°F and the door closes automatically. A firm push will also close the door. The hold-open is easily engaged or disengaged by a turn of the control knob.

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**THE OSCAR C. **RIXSON** COMPANY**

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*glazed facing tile*

When Stark Glazed Facing Tile has been installed your clients see it only as a beautiful, maintenance saving ceramic finish.

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This double value puts Stark Glazed Facing Tile in heavy demand. To assure on-schedule delivery, specify colors, sizes and shapes as far in advance as possible, and urge your contractor to order early.



**REMEMBER "STARKy"**—the Facing Tile trade-mark that means top quality, backed by Stark's 50 years' of manufacturing experience.



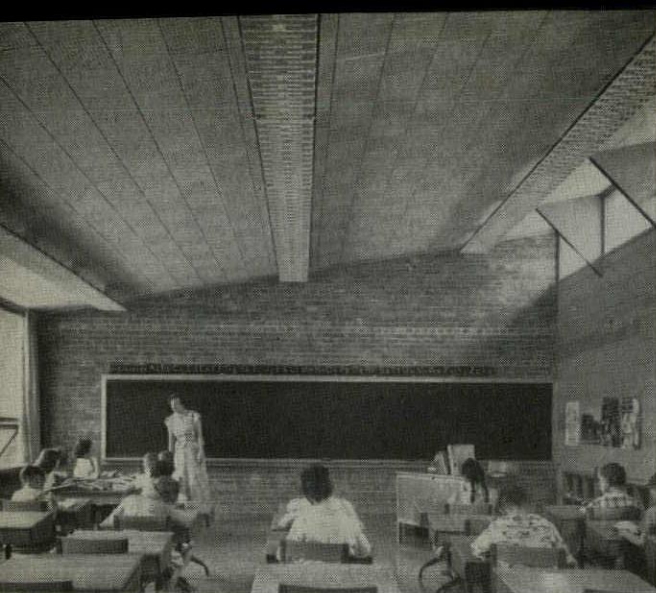
## STARK CERAMICS, INC.

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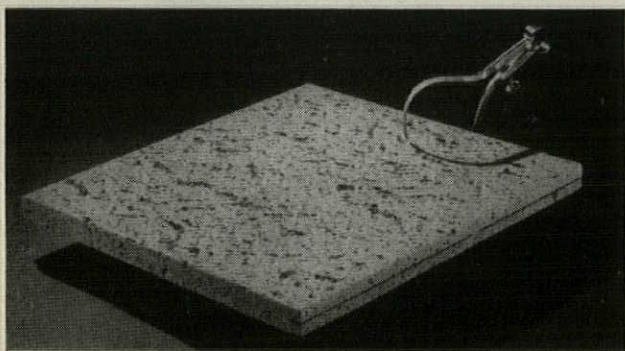






**FOR AN ECONOMICAL ACOUSTICAL CEILING** specify **AUDITONE\***, a lightweight, low-cost fiber acoustical tile available with a flame-resistant coating. Simple slotted or perforated designs complement any interior; provide high acoustical efficiency. Cleanable, bone-white finish is highly light-reflective.

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**ACCESSIBILITY AND EASY MAINTENANCE** are accomplished with **CORRUTONE** Metal Acoustical Panels, installed with the **E-Z-S** System. An exceptionally high acoustical efficiency of .85-.95 N.R.C. results. Panels, holding sound-absorbent mineral wool pads and resting on lower flanges of exposed **Z-Splines**, lift out for easy access to services concealed above the ceiling.



**BEAUTIFUL WAY TO QUIET A ROOM**, is with **MOTIF'D\*** **ACOUSTONE\*** mineral acoustical tile, made by a special, patented U. S. G. process. Shown here is the **Fantasy** pattern—just one of many original **MOTIF'D** design creations in highly efficient, incombustible



*Creative materials for creative architecture*

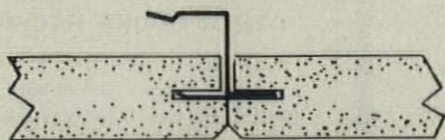
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## BOOKS *cont'd.*

book approaches substructure analysis from the viewpoint of the designer rather than that of the soil technician or the construction engineer.

**EUROPE'S REBORN CITIES.** By Leo Grebler. Published by Urban Land Institute, 1200 18th St., N.W., Washington 6, D.C. Technical Bulletin No. 28. 105 pp. 8 1/2" x 11". Illus. \$5

According to Urban Land Institute's Executive Director Max Wehrly, this report by Grebler "is the first comprehensive inventory and analysis since World War II of what is happening in the European free world in terms of city rebuilding; it provides an accurate and informative account of the varying approaches to urban development and redevelopment in the countries of Europe against which the inquisitive person, be he student or businessman, can contrast and compare similar problems in his own community; it provides the American visitor to Europe with an insight into the current history of city

building and the worldwide phenomenon of urban growth and development. But perhaps the most important reason for our interest in giving Dr. Grebler's study wide distribution is the clear testimony to the endurance of the city, and particularly the city center. In it is a message to those in the United States who question the continued existence of 'downtown,' as well as encouragement to the believer in the continued strength and soundness of the central city."

**THE NEW ARCHITECTURE AND THE BAUHAUS.** By Walter Gropius. Published by Charles T. Branford Co., 551 Boylston St., Boston 16, Mass. 112 pp. 5 3/4" x 8". Illus. \$3.50  
A new edition in English of an important work heretofore published only in German—an essay by one of the "form givers" of modern architecture.

### THE BRITISH NEW TOWNS POLICY.

By Lloyd Rodwin. Published by Harvard University Press, Cambridge, Mass. 252 pp. 6 1/2" x 10". Illus. \$7.50

Just after the end of World War II Britain adopted, in the form of the "new towns policy," the substance of Ebenezer Howard's ideas of building comprehensively planned garden communities. Its main goal was to decentralize London. Later other functions were added. Ten years have passed, and 15 new towns are underway. How well did this policy succeed? What problems have emerged? What are the prospects for the future? The time is ripe for a searching evaluation, and this book provides it.

Rodwin's focus is on the problems. But he also assesses the accomplishments and the ultimate significance of this unique effort to transform the contemporary urban environment. The author is associate professor of Land Economics in the Department of City and Regional Planning of the Massachusetts Institute of Technology.

### OTHER BOOKS RECEIVED

**EMPIRE IN WOOD.** A History of the Carpenters' Union. By Robert A. Christie. Published by the New York State School of Industrial and Labor Relations, Cornell University, Ithaca, N.Y. 356 pp. 6" x 9 1/4". Paper, \$4.50; cloth, \$5.50

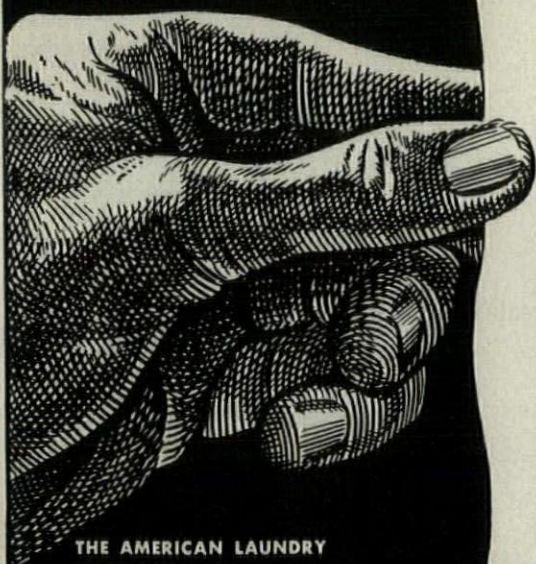
**STAINED GLASS OF THE MIDDLE AGES IN ENGLAND AND FRANCE.** By Hugh Arnold. Published by The MacMillan Co., 60 Fifth Ave., New York 11, N.Y. 269 pp. 7" x 9 1/2". Illus. \$8.50

**GOVERNOR TRYON AND HIS PALACE.** By Alonzo Thomas Dill. Published by University of North Carolina Press, Chapel Hill, N.C. 304 pp. 6 1/4" x 9 1/2". Illus. \$5

**ELEMENTARY PLANE SURVEYING.** Third edition. By Raymond E. Davis. Published by McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N.Y. 507 pp. 5 1/2" x 8 1/4". Illus. \$5.50

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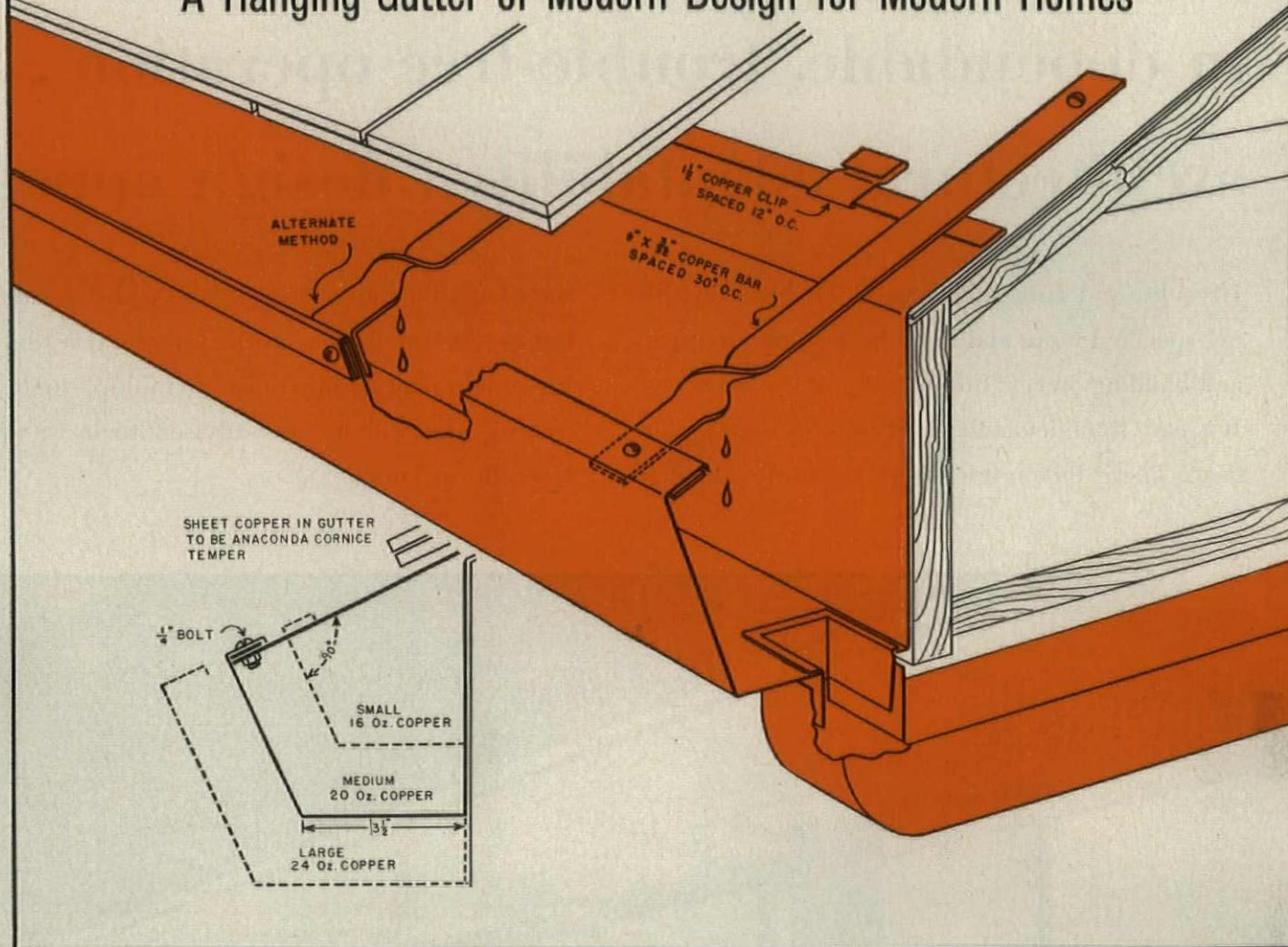
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## A Hanging Gutter of Modern Design for Modern Homes



Here's one way to make a hanging gutter match the clean, simple lines of modern house design

Contemporary house design calls for a new kind of hanging gutter. The drawing shows a copper gutter which can be easily formed on regular sheet metal shop equipment and has the straight lines and plain surfaces most suited to today's style of house design.

The gutter, being copper, can be set dead level and is installed tightly against the building or overhanging cornice. It is formed so that the apron has the same pitch as the roof and so that the outer edge is in line with the roof slope. If painted, it will appear to be an integral part of the house construction.

Note that two ways are suggested for forming the outer edge and reinforcing it with a copper bar. The gutter is supported by copper clips at the apron edge, and the outer edge of the gutter is held in line by copper bars; each bar is fastened to the roof at only one point. This method allows the gutter to move freely longitudinally during expansion and contraction of the metal. The inset detail shows copper sheet thickness recommended for three common sizes.

Copies of this drawing with suggested specifications are available on request. Ask for Modern Gutter Detail.

5627

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# *Pittsburgh Doors* are unexcelled in dependable, trouble-free operation . . . architectural adaptability...design appeal

Herculite and Tubelite Doors by Pittsburgh are being specified more and more by leading architects and building owners throughout the United States. It is easy to understand the reason for such preference. These Pittsburgh Doors are unsurpassed in

their handsome appearance, long and dependable life, ease of installation, and architectural flexibility. For single door installations, or multiple unit entrances, you will be well-advised to insist upon Herculite or Tubelite Doors.



**HERCULITE®**

The new San Diego Public Library, San Diego, California, has Herculite Doors installed to continue the feeling of open-vision which the Pittsburgh Polished Plate Glass floor-to-ceiling walls give this new building. Here there is a feeling of spaciousness and added dimension . . . an atmosphere of "airy light" that is in harmony with the character

of a library. Herculite is Polished Plate Glass subjected to a special tempering process which makes it four times stronger than ordinary glass of the same thickness. In this entrance, the Pittcomatic Hinge, "the nation's finest automatic door opener," also was included (see description of the Pittcomatic here). Architects: Johnson, Hatch & Wulff, San Diego, California.

*For detailed information on Pittsburgh Doors, see Sweet's Architectural File . . . Sections 16a and 16d . . . or write to Pittsburgh Plate Glass Company, Room 6245, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.*

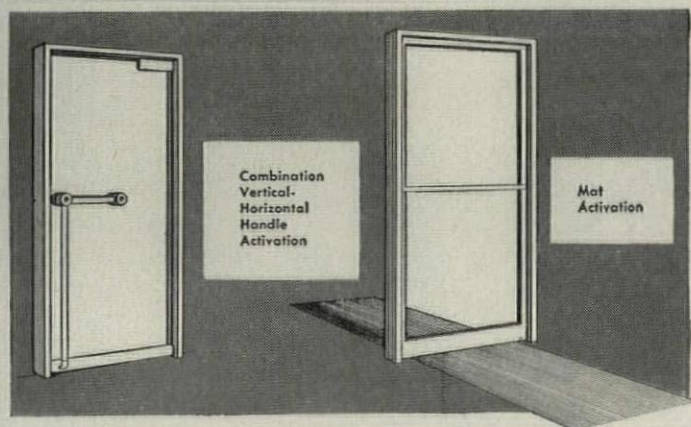




**TUBELITE®**

In this entrance of the Housing Development Corporation, Silver Spring, Maryland, Pittsburgh Tubelite Doors add a telling note to the general modern feeling of this building. Tubelite tubular frames and doors mark a distinct advance in hollow metal entrance design. Their clean, simple lines make them extremely adaptable to any type of con-

struction. Their unique interlocking construction assures utmost rigidity. This means that their true shape is held through long and rigorous use. What's more, with Tubelite frames, glazing is simple and quick. Here is the most value at the lowest possible cost. John A. d'Epagnier, A.I.A. Architect, Silver Spring, Maryland.



### **Doors open at a touch... with the PITTCOMATIC®!**

**HOW THE PITTCOMATIC OPERATES:** The power unit supplies smooth hydraulic power to the hinge under the door, through  $\frac{3}{8}$ " copper lines. In the *handle*—or *mat*—there is a 10-volt circuit which passes through the control box and activates the power unit. Adjustments provided in the control box and the hinge regulate the action of the door. Easy to install and maintain, the Pittcomatic is the *safest* automatic door opener to operate.

#### **TYPICAL PITTCOMATIC INSTALLATIONS**

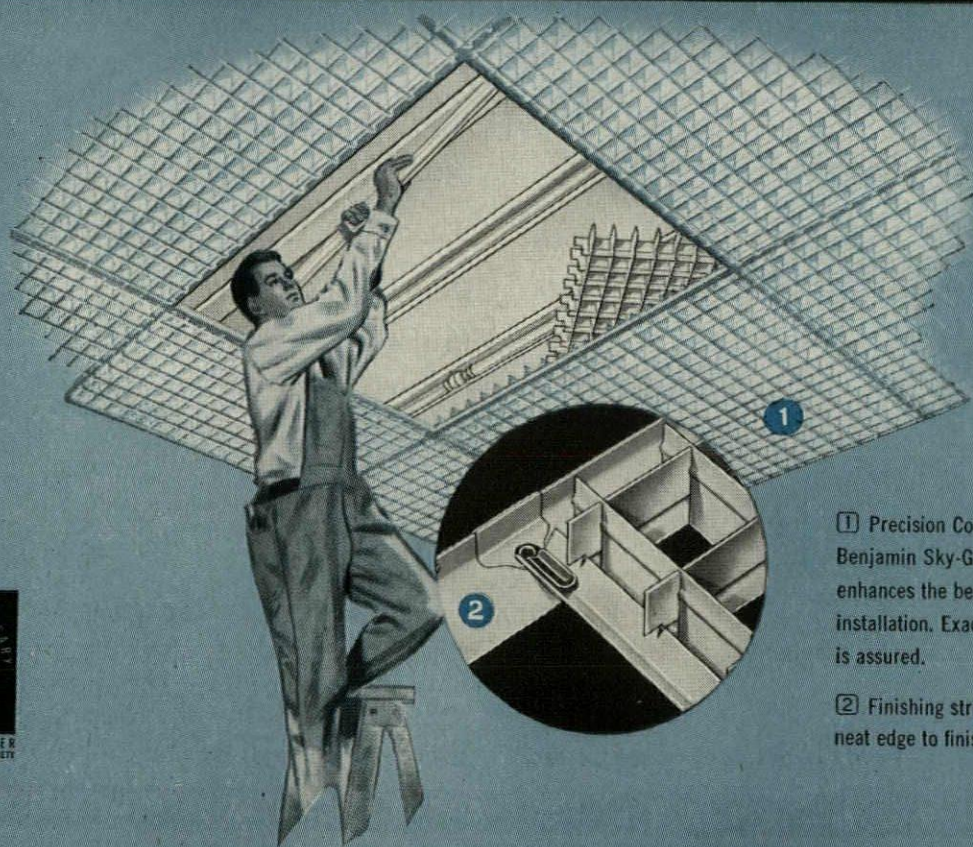
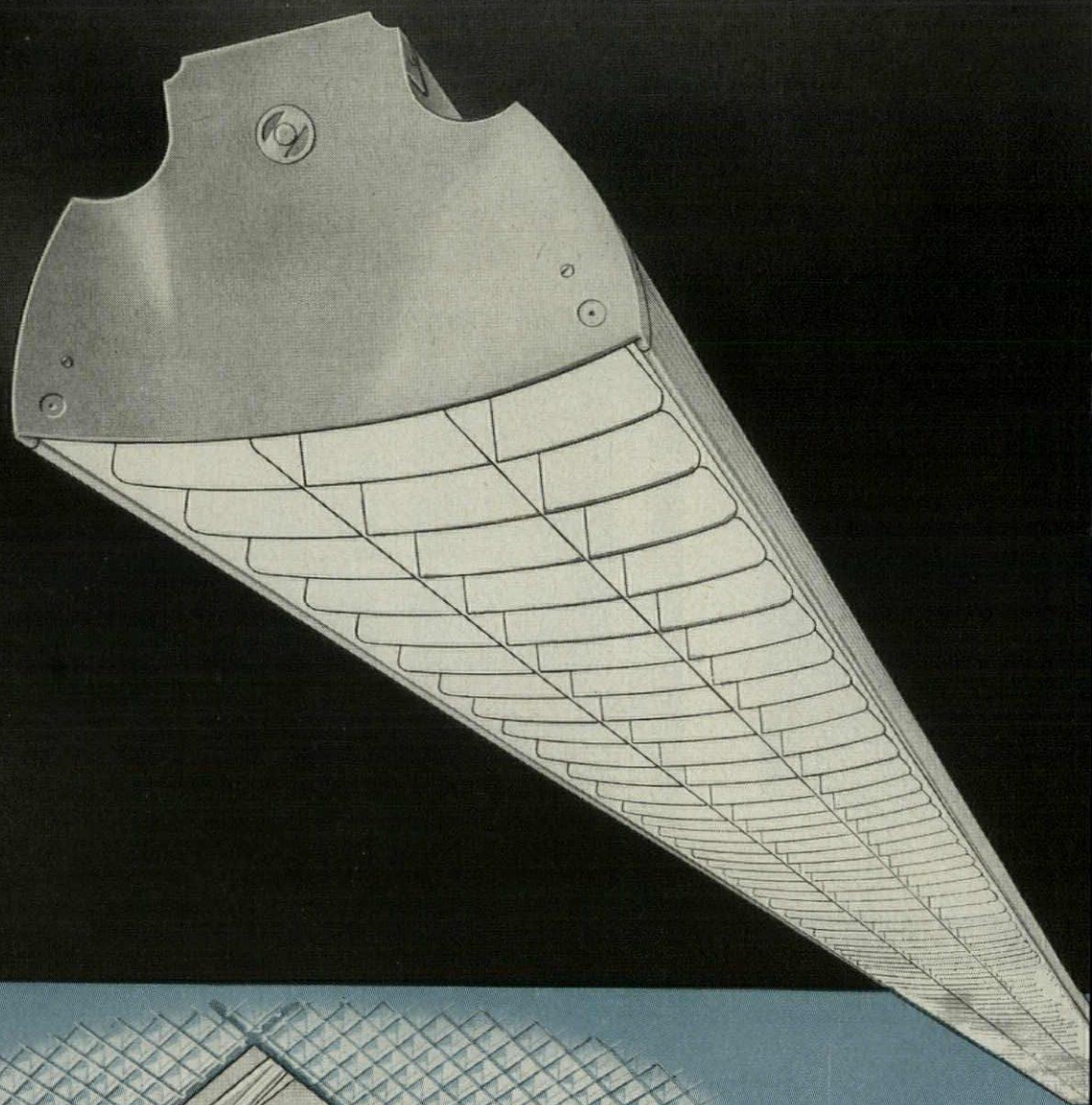


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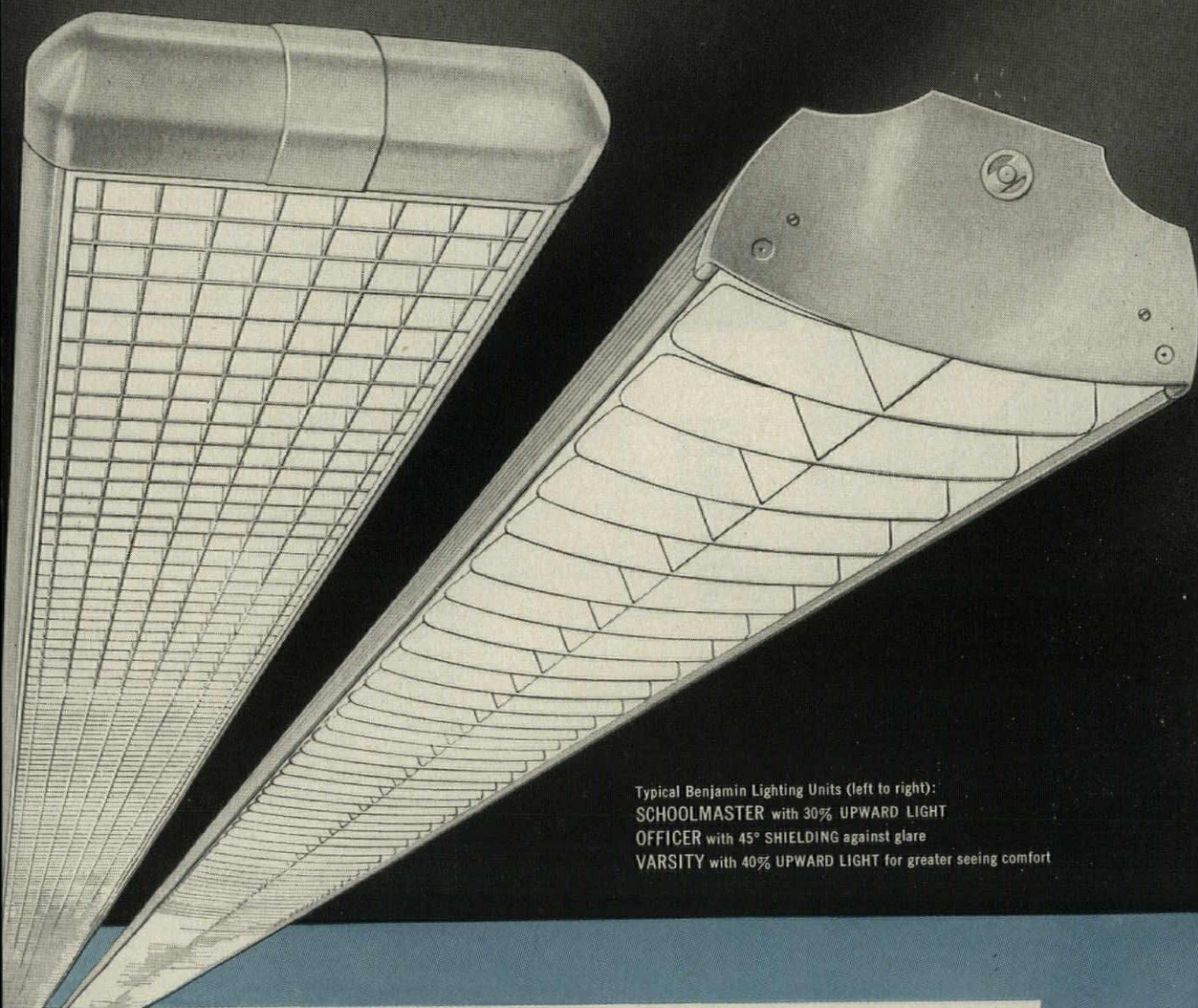


① Precision Construction of Benjamin Sky-Glo system also enhances the beauty of the installation. Exact fit of all sections is assured.

② Finishing strips provide a neat edge to finish off the job.







Typical Benjamin Lighting Units (left to right):  
**SCHOOLMASTER** with 30% UPWARD LIGHT  
**OFFICER** with 45° SHIELDING against glare  
**Varsity** with 40% UPWARD LIGHT for greater seeing comfort

## When all things are Considered, the Better Lighting choice is **BENJAMIN**

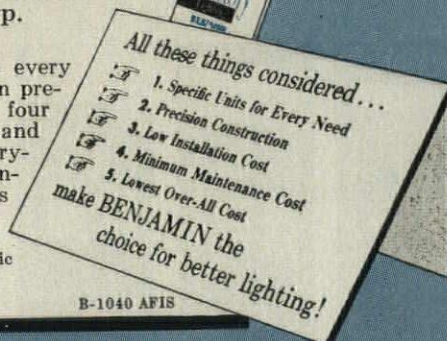
Compare Construction features like these; you get them all in the new Benjamin Lighting Units:

- **no fiddling with fancy louver hinges and catches:** Simple piano hinge and quick-action catches assure trouble-free opening and closing of louvers.
- **no "swing and sway" installations!** Benjamin precision construction assures accurate alignment of units . . . embossed channels for extra rigidity.
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- **no plastics problems!** Plastic louvers are precision-molded by a patented process—always fit, will not warp.

Scores of advantages like these in every Benjamin unit are proof of Benjamin precision construction. Add the other four major areas of Benjamin superiority, and you will agree with leading users everywhere that "when All things are considered, the Better Lighting choice is Benjamin!"

Send for one or more of these Free lighting booklets. Write: Benjamin Electric Mfg. Co., Dept. YY, Des Plaines, Ill.

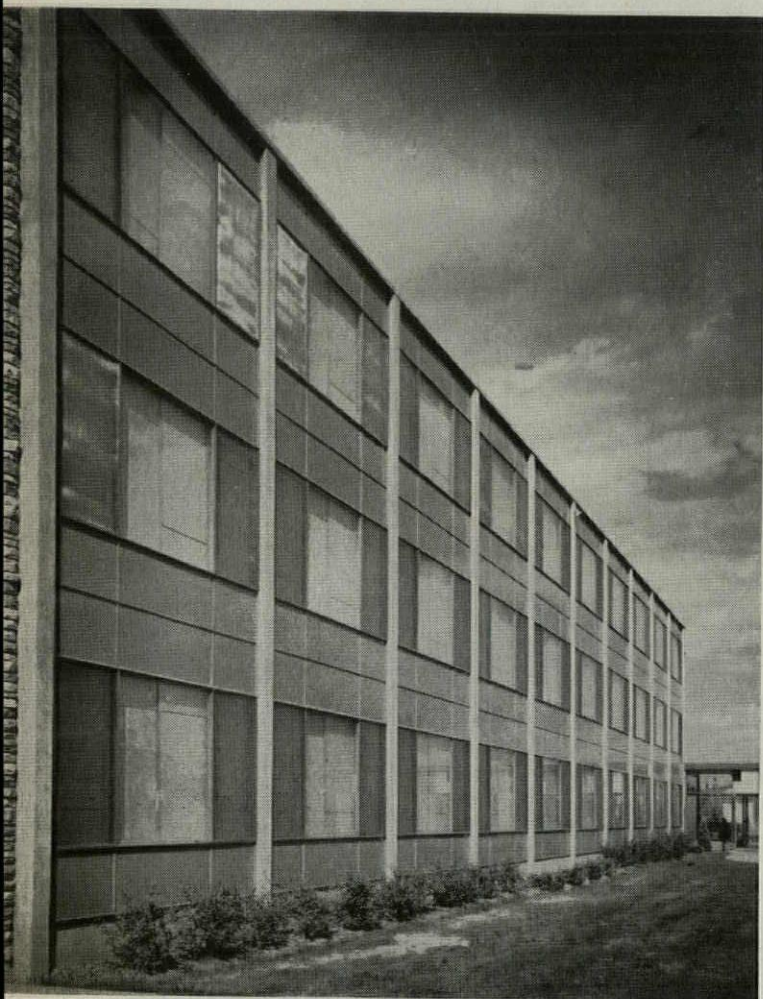


B-1040 AFIS

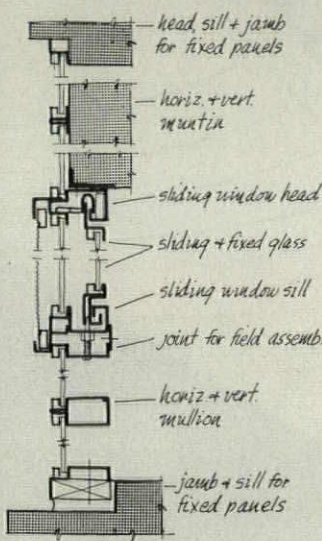
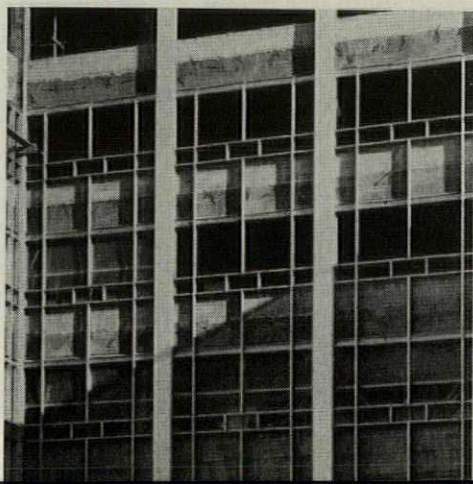
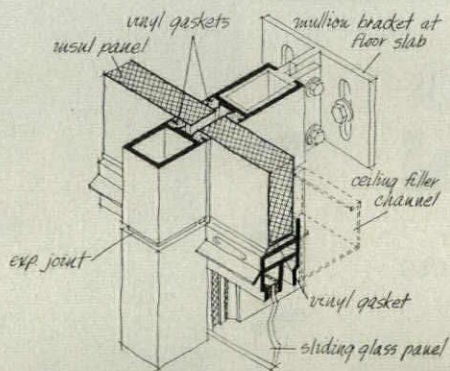
Benjamin Lighting Equipment is sold exclusively through Electrical Distributors.



# PRODUCTS



For more information use coupon, p. 258



## 1 CURTAIN WALLS with sliding sash take on varied spandrels

Several alert window manufacturers are seeing in buildings like the U.N. headquarters and Lever House that the curtain wall is not a far cry from fenestration. Two Californian concerns recently expanded their well-known horizontal sliding sash vertically into attractive, adaptable and weatherproof curtain wall systems. Steelbilt's prefab wall integrates opaque panels and glass in preassembled units that are tested before delivery for wind and rain resistance. Based on the company's top roller hung door the calkless curtain makes use of a patented rocker type glazing bead to hold both the glazing panels and the spandrel faces of almost any  $\frac{1}{4}$ " to  $\frac{1}{2}$ " thick material. The framing is weatherstripped with channels of stainless steel and mohair pile. While the steel wall system has been laboratory tested to withstand 100 mph, Steelbilt doors of the same type of construction bettered the record by meeting the 115 mph brunt of last year's East Coast hurricanes without leaking. Cost of Steelbilt curtain systems is about \$1.75 per sq. ft., not installed. At Colorado A & M dormitories (AF, April '56) less than 1,000 man-hours were used to erect 80 three-story 11' x 28' units which had been shipped knockdown in four parts.

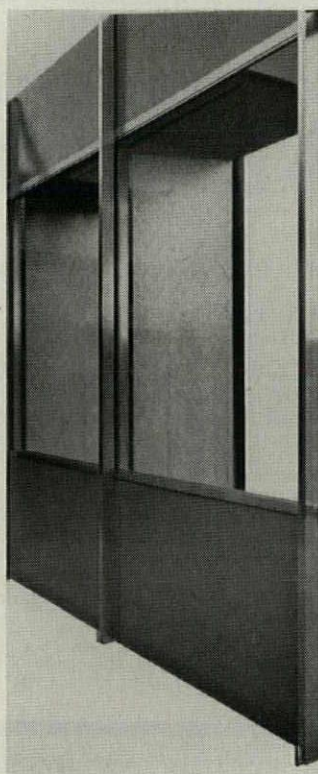
Manufacturer: Steelbilt, Inc.

## 2 SPLIT MULLIONS GRID surrounds glazing or insulated panels

Glide Windows Inc.'s trim *Gridwall* of interfitting aluminum extrusions is a sophisticated modification of the split rail fence. Its horizontal rails splice through the two-part mullions so that the space between the double mullion can accommodate any combination of insulated panel and removable glazing sash. Sliding in either direction on the grid rails, the sash can be cleaned easily from inside the building. Architecturally, *Gridwall's* split personality helps establish design continuity. Where insulated spandrels are used, only the inside half of the mullion has to be anchored to the top of the spandrel, spanning only from stool to head of the sash. The outside mullion half can be continuous with the over-all pattern still that of an unbroken grid with delicate  $1\frac{1}{2}$ " sight lines. Where ribbon windows are specified, both interior and exterior mullion sections are anchored to the top of the spandrel wall. As for weather stripping, mohair pile channels are spring clamped together the full sash height. Depending on filler panels and proportion of fenestration, *Gridwall* costs run from about \$4.40 to \$4.50 per sq. ft. including installation.

Manufacturer: Glide Windows, Inc.

continued on p. 204





## Child Scalds Self To Death In Tub

A 19 month old boy scalded himself to death Wednesday morning when his mother left him alone in the bathtub for a few minutes.

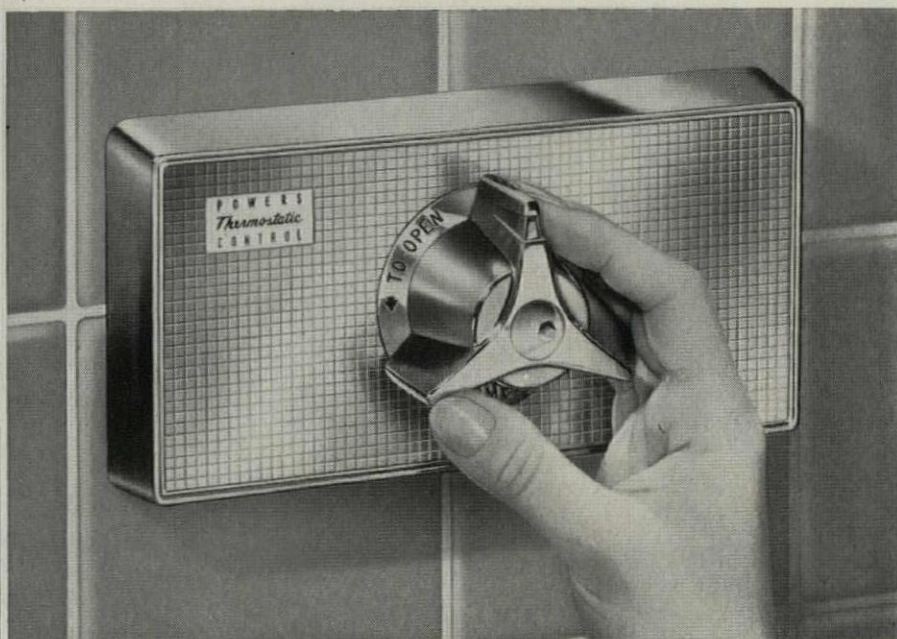
Dead was David Raddison of 173rd and Kedzie, Hazelcrest, son of Mr. and Mrs. Roland Raddison. His mother, Marylin, told police the child turned on the hot water during her absence. He was pronounced dead at the hospital.

## NUN IS SCALDED IN HOTEL SHOWER

Sister Ernestine, a Catholic nun for St. Mary's Hospital, Duluth, Minn., suffered second degree burns on her body to-day in a shower bath in her room at Hotel [redacted]. She was taken to St. John's Hospital where her condition was said to be serious.

The nun, here for the Catholic Hospital Association convention at Kiel Auditorium, told police the water became very hot so suddenly she could not reach the faucet to turn it off. She screamed, attracting the attention of her roommate, Sister Rita Marie, who turned the water off.

Without Thermostatic Control  
... tub and shower accidents

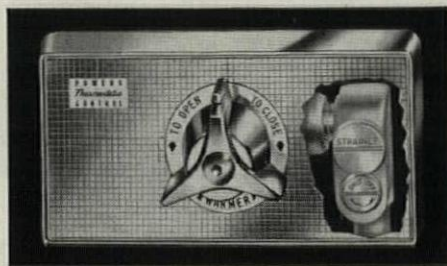
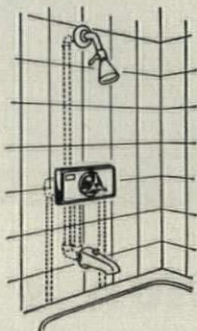


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New **Hydroguard®**

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Thermostatic SAFETY LIMIT Protects Children from Scalding



Don't Skimp on Safety in Bathrooms

Hydroguard prevents flow of water to tub or shower above 110°F. If cold water supply fails HYDROGUARD instantly and completely shuts off delivery to shower or tub.

Because its Thermostatic bathers can really enjoy worry-free bathing in perfect comfort in a HYDROGUARD shower. Temperature stays where you set it regardless of pressure

or temperature changes in water supply.

**Its More Convenient** — there's only ONE dial to turn. Note uncluttered simplicity of installation above. Powers Triple duty Strainer-Check-Stops concealed behind the HYDROGUARD cover, simplify piping and tile work. Walls are unmarred by protruding knobs or 2 to 4 valve handles. There's no confusion.

Only ONE Accident  
will cost many times  
more than a Hydroguard

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## A Sargent door closer installation is a guarantee of satisfaction!

You specify the Sargent Liquid Door Closer . . . and forget it! No complaints to worry about.

Why? Because of the special Sargent features:

- The double rack and pinion that permits universal application without changing parts.
- The helical coil spring with controlled tension that practically cannot break.
- The fact that the *standard* closers can be opened up to 180° . . . and that it offers a less critical adjustment with a *single* screw adjusting valve.

Basically, it all boils down to Sargent's years of experience in building quality into builders' hardware.

You *know* that you can specify a Sargent Liquid Door Closer . . . and always have a satisfied client.

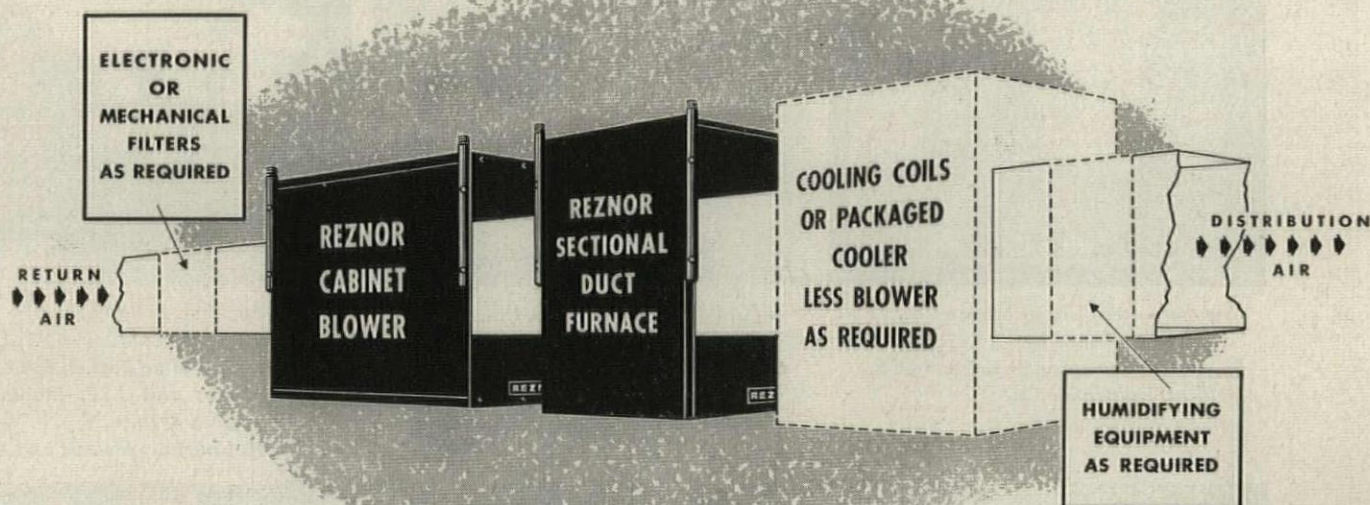
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## Sargent Builders' Hardware

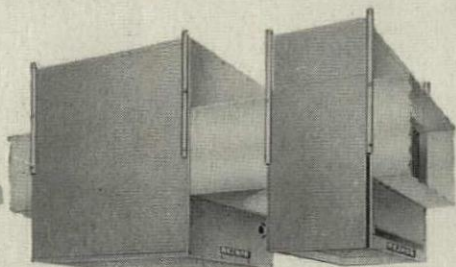


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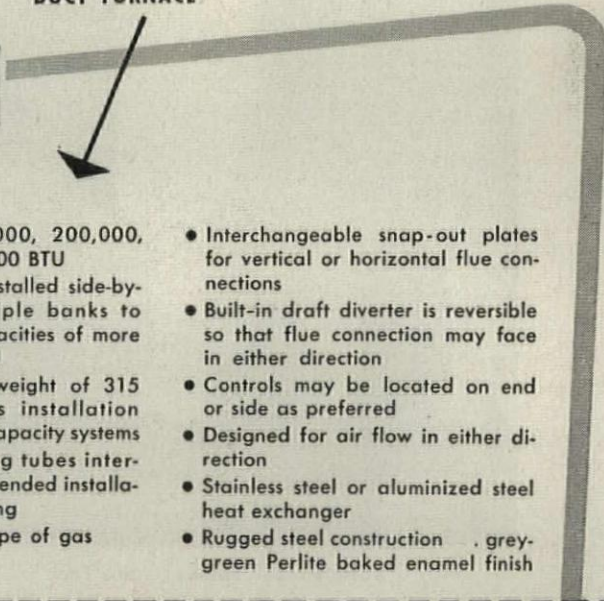


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- Four sizes—air deliveries range from 1000 to 8000 CFM
- Built-in filter racks
- Removable panels allow easy access to filters and drive
- Standard height on all duct flanges, matches that on furnaces, facilitates duct connections
- Each blower is exact match for one furnace section, as required for heating only
- Larger blower with by-pass duct easy to install where addition of cooling equipment necessitates large air deliveries

- Four sizes—150,000, 200,000, 250,000 and 300,000 BTU
- Sections may be installed side-by-side and in multiple banks to achieve system capacities of more than 2,500,000 BTU
- Maximum section weight of 315 pounds eliminates installation problems on large capacity systems
- Threaded mounting tubes interchangeable for suspended installation or base mounting
- For use with any type of gas

- Interchangeable snap-out plates for vertical or horizontal flue connections
- Built-in draft diverter is reversible so that flue connection may face in either direction
- Controls may be located on end or side as preferred
- Designed for air flow in either direction
- Stainless steel or aluminized steel heat exchanger
- Rugged steel construction . grey-green Perlite baked enamel finish

THERE IS NO "EQUIVALENT"  
FOR REZNOR GAS HEATERS



REZNOR MANUFACTURING CO., 40 Union Street, Mercer, Pa.  
Please send me bulletins giving complete specification information on  
Reznor sectional duct furnaces and cabinet blowers

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

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





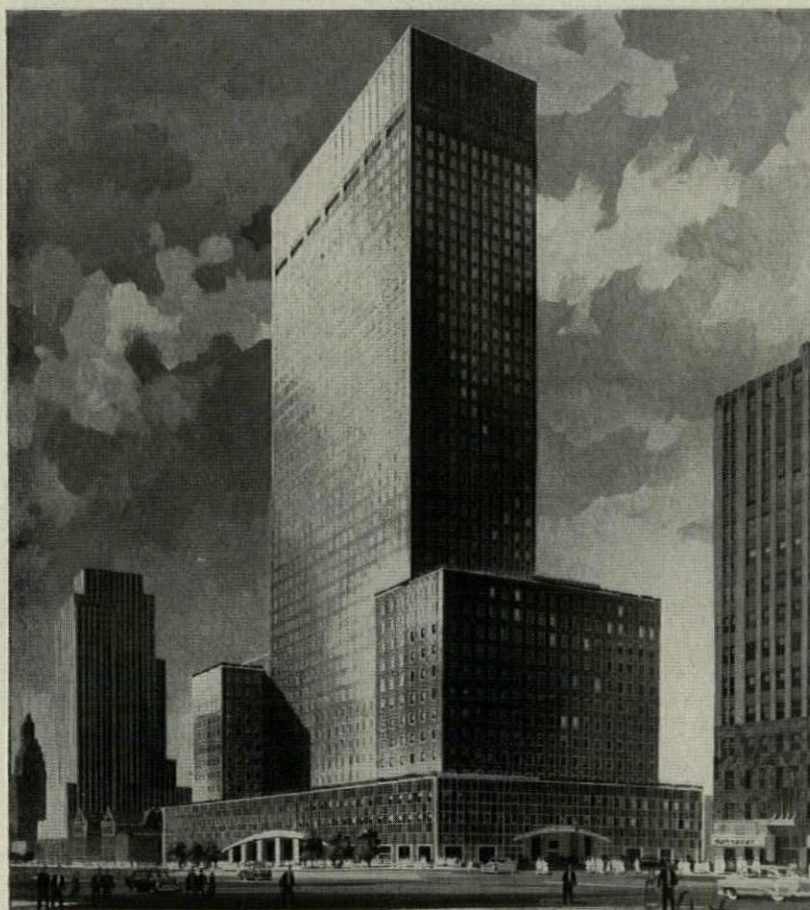
*Commonwealth Life Insurance Co.,  
Louisville, Kentucky  
Engineers: Stevenson Engineering Co.  
Fixtures: Holdenline Co.*



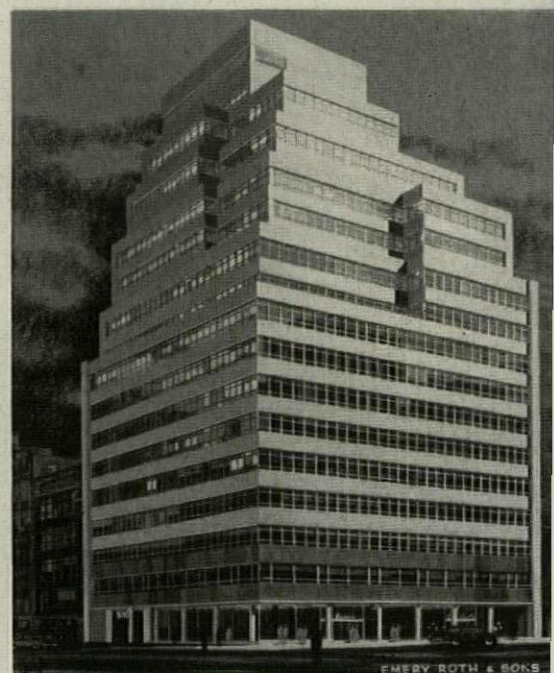
*McColl-Frontenac Oil Co. Ltd.,  
Montreal, Que.  
Architects: Barott, Marshall,  
Montgomery and Merrett  
Fixtures: Curtis Lighting of Canada*



*Police Facilities Building,  
Los Angeles, Calif.  
Architects: Welton Becket, F.A.I.A., and  
Associates and J. E. Stanton, A.I.A.,  
Associated Architects  
Fixtures: Columbia Electric and Mfg. Co.*

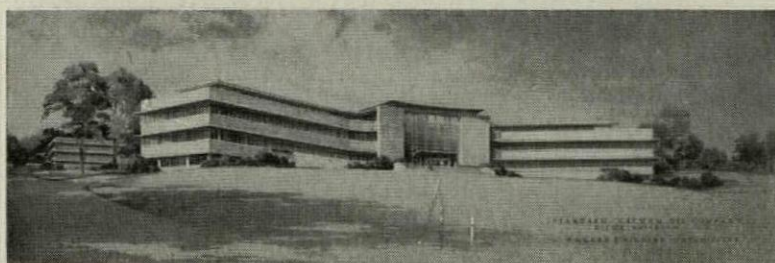


*Socony-Mobil Building, New York  
Owner: Galbreath Corporation  
Architects: Harrison & Abramovitz, John B. Peterkin  
Fixtures: Ruby-Philite Corp.*



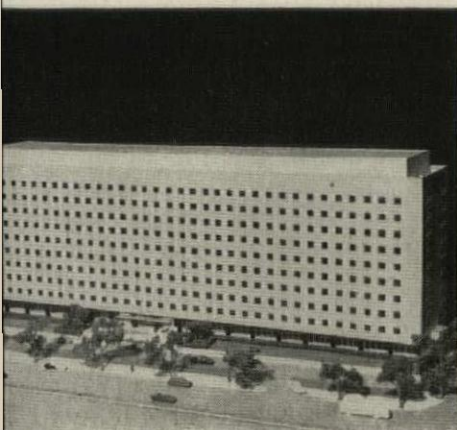
*Amoco Building, New York  
Architects: Emery Roth & Sons  
Fixtures: Eastern Lighting Products*

**All new... and**



*Standard Vacuum Building, Harrison, N. Y.  
Architects: Eggers and Higgins  
Fixtures: Fullerton Manufacturing Co.*

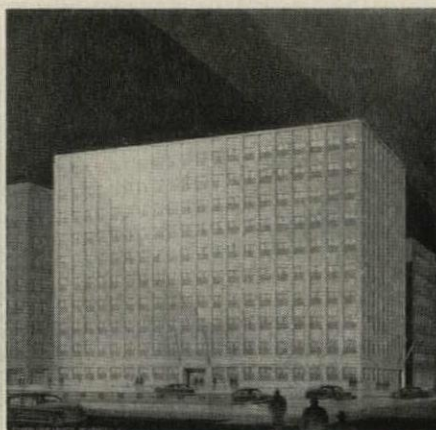




General State Authority  
Health and Welfare Building,  
Harrisburg, Pa.  
Architects: Lacy, Atherton & Davis  
Fixtures: Smithcraft Lighting



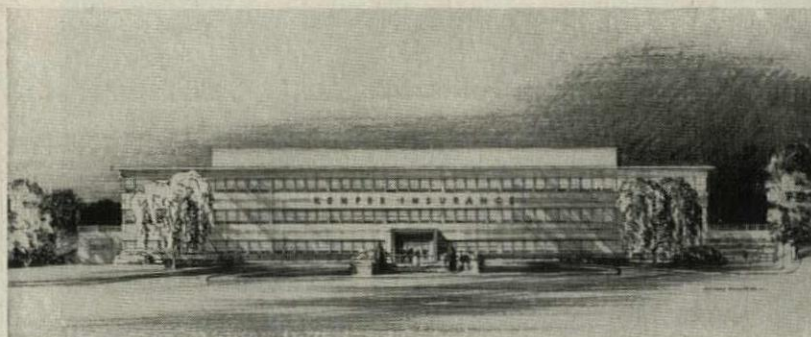
United States Rubber Co. Building  
Addition, New York  
Architects: Harrison & Abramovitz  
Fixtures: Globe Lighting Products Inc.



Sinclair Oil Building, Chicago  
Owner: John W. Galbreath & Co., Inc.  
Architects: Holabird & Root & Burgee  
Fixtures: Day-Brite Lighting Co.



City-County Building, Detroit  
Architects: Harley, Ellington & Davis Inc.  
Fixtures: Fullerton Manufacturing Co.



Kemper Insurance Co., Summit, N. J.  
Architects: Childs and Smith  
Fixtures: Day Brite Lighting Co.

Do you have your copy?  
"ARCHITECTS AND ENGINEERS HANDBOOK OF LIGHTING GLASSWARE"  
Corning Bulletin LS-43  
If not, send for your copy of this useful publication.

## All lighted with Corning Lightingware

These important new buildings represent modern solutions to an infinite number of problems — structural, aesthetic, and economic.

The solutions to a variety of *lighting* problems were found in Corning Engineered Lightingware.

Corning Lightingware is the product of continuing research in *light control*. It has given you in recent years the true light-source transmission of Corning Alba-Lite,

the directive lighting effects of Corning Fota-Lite, the new Pattern No. 70 low-brightness curved lens panel in lengths up to 48 inches.

We are pleased that architects and engineers like you are finding these results of our work useful in fulfilling clients' needs for lasting high levels of correct illumination.

Please tell us how we can be of more help to you.



**CORNING GLASS WORKS, CORNING, N. Y.**  
64-6 Crystal Street

*Corning means research in Glass*



## PRODUCTS *cont'd.*

For more information use coupon, p. 258



3

### **CERAMIC GLAZE** sprayed on concrete and cement board

A cold glaze for interior and exterior concrete walls, *Opalite* is a hydraulic setting compound which cures to a dense ceramic 24 hours after spraying. The new opaque coating developed in Germany and now being distributed in the US is composed of cements and silicates pigmented with nonfading metallic oxides. The reagent liquids which create the dense finish also form a bond with the surface they are applied to—cinder block cement-asbestos board, or entire concrete buildings. The 0.8 mm-thick tilelike glaze is impervious to moisture and resists most acids and alkalis. It has an estimated life of ten years and costs about 60 to 70¢ per sq. ft. for site applications. (On a production line basis glazing such products as cement block or board would cost considerably less.) A full range of prime and pastel colors is available and interesting multitone effects can be obtained by double sprays. A brush or roller coat of clear *Opalset* or *Opalseal* tops off the colored finish.

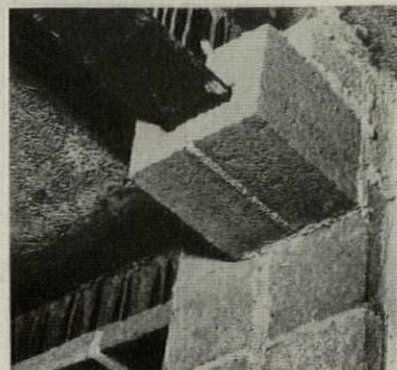
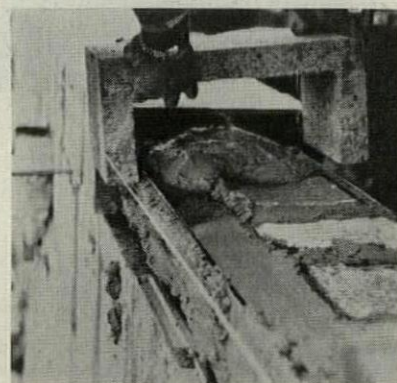
Distributor: Opalite, Inc.

4

### **CINDER BLOCK** fireproof and dress structural frame

Alfred Levitt, in his dollarwise Long Island apartment (AF, April '56) worked out a series of unique cinder block which could be used instead of the conventional formwork, concrete fireproofing and plaster finished walls. Now commercially available these *Levitt Shapes* stack up as

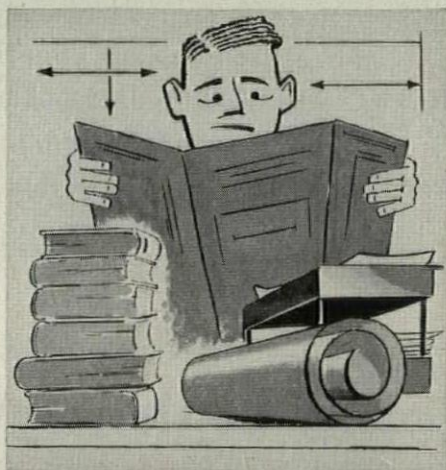
*Continued on p. 208*



# WADE

**HAS SOLVED THE *carrier-fitting* DIMENSIONAL PROBLEM.**

Exactly how much space do you need in order to install wall-hung closets? Perhaps the most annoying problem encountered in specifying off-the-floor installations has been the inadequate information available as to the exact space required. Wade's new carrier-fitting selection manual contains scale drawings of every typical installation, showing minimum possible and recommended pipe space requirements.



You can solve your dimension problems by writing Dept. C., Wade Mfg. Co., Elgin, Illinois for your copy.

**WADE**

*carrier-fittings*

**WADE MANUFACTURING CO.**

ELGIN, ILLINOIS





This sheet metal worker . . . like his fellow artisans around the country . . . is familiar with Monel Roofing Sheet. With Monel nickel-copper alloy, installation moves fast

and smoothly. And you can rely on roofing men to follow your specs to the letter. Just ask any roofing contractor how easy it is to work with Monel Roofing Sheet.

## New hotel uses Monel for long life and rugged wear

Flashings and other exposed metal work of the new Statler Hilton Hotel in Dallas, Texas, are made of Monel\* Roofing Sheet.

So are the big architectural louvers.

Why was this top quality nickel-copper alloy sheet chosen?

For a *number* of reasons! Monel is resistant to corrosion from salt air and industrial atmospheres. It is strong. It is tough. *Stronger* and *tougher*, in fact, than any other non-ferrous roofing metal.

It resists stresses, strains and wear. Has a low coefficient of expansion. Won't crack during extreme temperature changes.

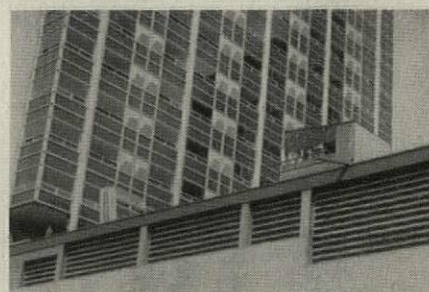
Because of this combination of properties, lighter gauges than commonly used can be specified. This means less cost per square foot in many instances.

Monel Roofing Sheet is also ideal for localities where dust, dirt or soot

are problems. It stands up against these gritty substances . . . resists corrosion caused by chemicals and fumes.

So figure on Monel when you take your base bids for schools, hotels, factories, office buildings, hospitals and other institutions. If you would like assistance on specific jobs call on us at any time.

And speaking of assistance, we believe that you'll find our booklet, "One Metal Roof", well worth sending for. It shows typical Monel nickel-copper alloy installations. Gives service records, and includes many building photographs. Write for a free copy today.



These louvers on the new Statler-Hilton in Dallas will serve for the life of the building. They're strong. They're corrosion-resistant. They're Monel.

Sheet Metal Contractor: Lydick Roofing Co., Dallas.

\*Registered Trademark



**The International Nickel Company, Inc.**

67 Wall Street

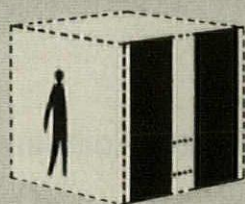
New York 5, N. Y.

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

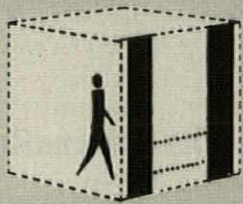




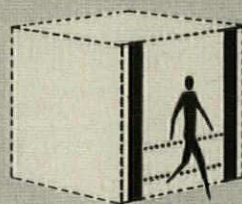
**HOW TRAFFIC SENTINEL WORKS WITH SINGLE PASSENGER (ALSO HANDLES 10-15 WITH EQUAL EASE)**



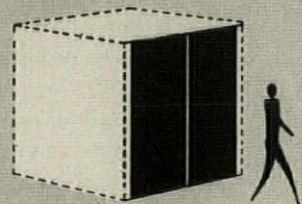
**1.** Car arrives



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

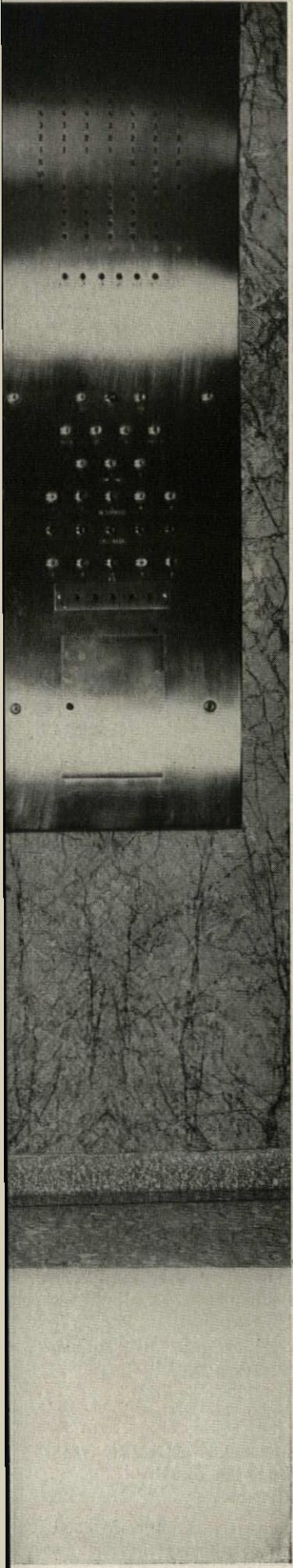


**3.** Passenger leaves car



**4.** Doors close almost  
immediately





## Tests prove Westinghouse Operatorless Elevator Doors with Traffic Sentinel once and for all end premature door closings

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

### THIS PROVES —

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

### HOW TRAFFIC SENTINEL WORKS

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

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

### OPERATES WITH 1 PERSON OR 15

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

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

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

### MORE ABOUT TRAFFIC SENTINEL?

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

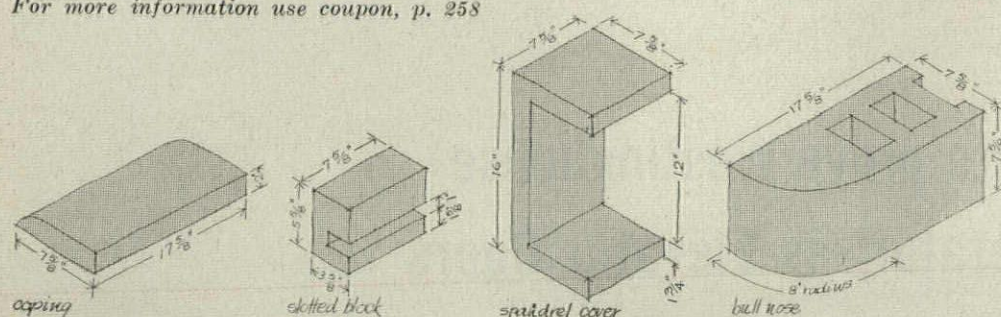
J-98703

**Westinghouse Elevators**  
YOU CAN BE SURE...IF IT'S **Westinghouse**



## PRODUCTS *cont'd.*

For more information use coupon, p. 258



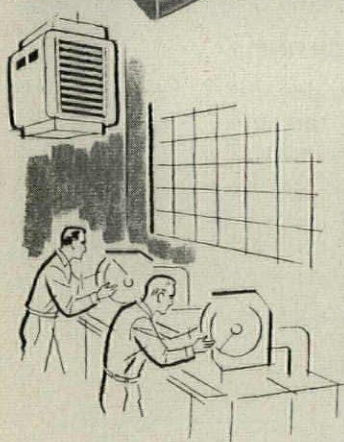
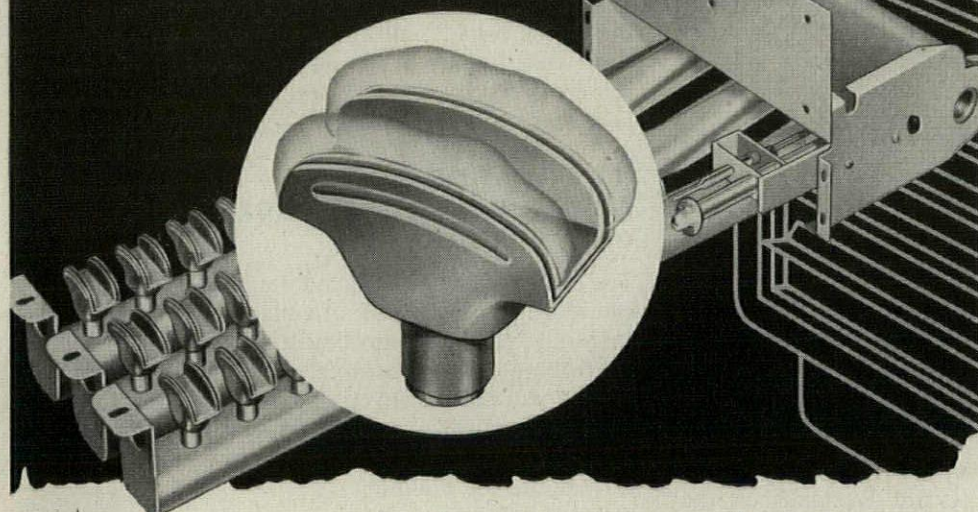
finished inside and outside walls. Their density is higher and texture smoother than regular cinder block. They have good nail-holding properties and can be painted. One of the units, solid except for a 1" slot, encases structural steel members, fulfilling most code insulation requirements as well as acting as the finished surface. Partition walls between apartments can be built of hollow cinder block slotted where they are intercepted by the framework. A U-shaped block encloses exterior spandrel beams or vertical columns. Prices of the new block run about 15¢ apiece for the solid slotted unit, 25¢ for the coping. The bull nose with 8" radius and spandrel cover are each 35¢. Standard shape hollow block are 25¢.

Manufacturer: Cincerte Corp.

## MODERN DESIGN!

### Eliminates Dead Weight!

Super-Efficient Humphrey Gas Burner is Light, Strong Formed Steel with DUAL-FLAME heads of Stainless Steel



Humphrey "Series A" Gas Unit Heaters are lighter, stronger, more durable and more efficient, due to this exclusive Humphrey Gas Burner.

Ordinarily, burners are made of thick cast iron — satisfactory for small heaters but excessively heavy in ceiling-suspended unit heaters.

Humphrey solved this weight problem by making their burner of light, strong formed steel. The exclusive "Dual-Flame" heads are stainless steel — efficient, self-cleaning, and highly resistant both to heat and corrosion.

This great Humphrey Gas Burner is one of many quality features that make Humphrey Unit Heaters first choice of those who want the best in service and dependability.

**GENERAL GAS LIGHT COMPANY**  
Kalamazoo, Michigan

Automatic Gas

# Humphrey UNIT HEATERS

5

### PLASTIC PANELS are pressure formed of new resin

The first panel fabricator to make use of Rohm and Haas's acrylic-modified resin *Paraplex*, International Molded Plastics can boast in its new exposure-tested *Structoglas A* greater strength and weatherability and color stability than translucent sheet of straight polyester. Because International has been forming its standard material under pressure—the technique required for best results with the new resin—*Structoglas A* is no higher in price than its regular sheet: about 89¢ to 95¢ per sq. ft.

The glare reducing panels are made in several colors and are serviceable for outdoor use in rough climates as skylights, window glazing and fencing as well as decorative interior screens. Besides the acrylic, which accounts for 20% of the resin, *Structoglas A* contains a filtering agent which is said to cut off a high percentage of hot infrared.

Manufacturer: Structoglas Div., International Molded Plastics, Inc.

6

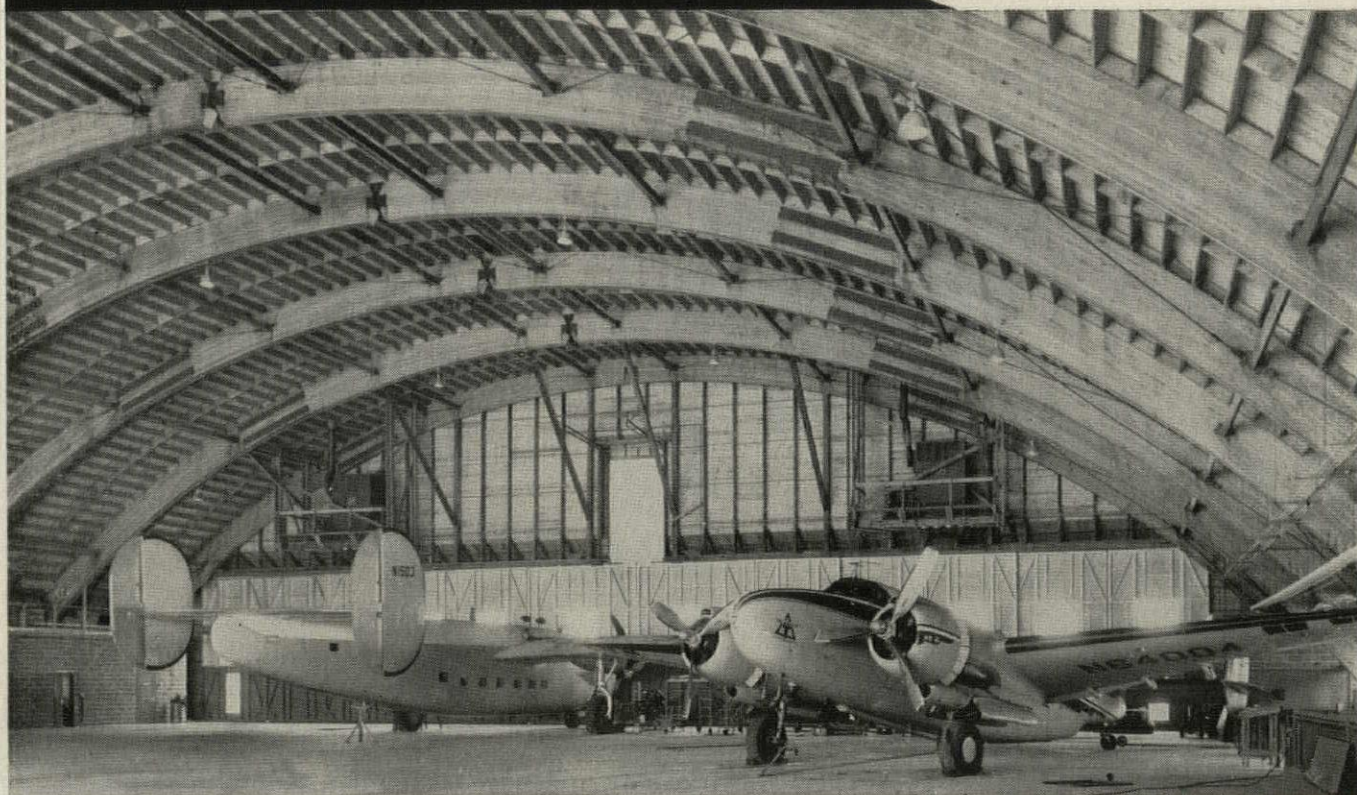
### STOCK ACRYLIC SHEETS are embedded with exotic flora and fabric

One of the prettiest see-through materials, acrylic, by its thermoplastic nature, defies lamination with other materials. Wasco

*continued on p. 212*



Aircraft hangar of Continental Can Company, Morristown, N. J. Engineers and contractors: Wigton-Abbott Corporation, Plainfield, N. J. Span of arches, 180'; height at center, 44'-9".



# SPACE

...to park a plane

## framed by glulam timber arches by Timber Structures, Inc.

Inside this hangar is room for large commercial airliners, with more than enough space left over for service and repair operations.

As frequently happens in structures which require huge areas of post-free space, arches by Timber Structures, Inc. proved most practical for the framing.

Readily available, permanently strong, dimensionally stable and strongly resistant to destruction by fire, the arches provide fast construction and moderate costs which give utmost overall economy.

Comprehensive data on timber arches and other structural members is contained in the brochure, "Modern Construction". If you do not have a copy, see your nearest Timber Structures representative, or write us for one.

## TIMBER STRUCTURES, INC.

P. O. BOX 3782-B, PORTLAND 8, OREGON

**TIMBER STRUCTURES, INC.  
OF CALIFORNIA**

Richmond • Beverly Hills  
Sacramento

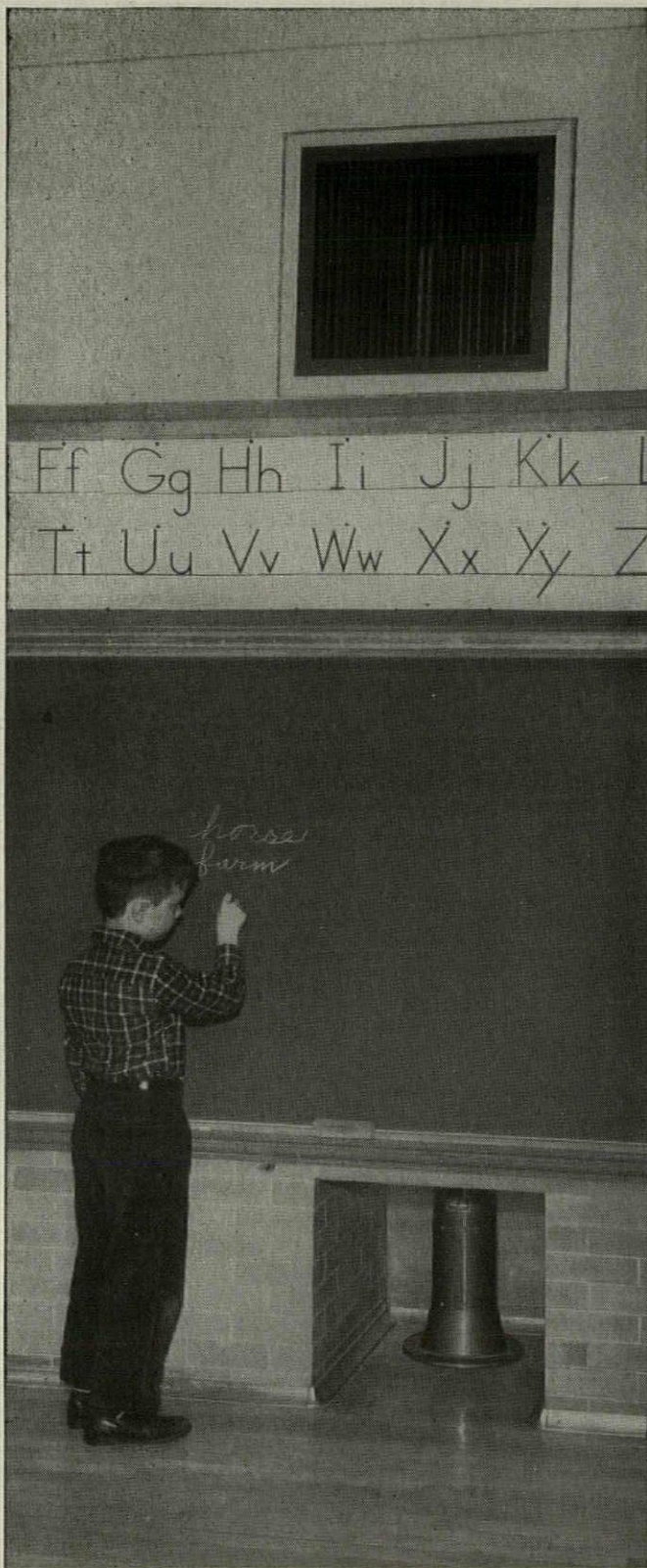


Offices in Ramsey, N. J.; Rochester, N. Y.; Boston; West Hartford; Columbus; Charlotte; Chicago; Centerline, Mich.; Kansas City; Kirkwood, Mo.; Wichita; Minneapolis; Des Moines; Memphis; Dallas; Houston; Birmingham; Seattle; Spokane; Denver.

Local Representatives throughout the United States and Canada



# How new heating and ventilating system



*Dunham VARI-AIR Unit, concealed in mixing flue behind blackboard, mixes fresh and recirculated air—silently diffuses it to classroom through overhead grille.*

**Dunham VARI-AIR**  
designed to help the  
“hard pressed” budget...  
and save valuable  
floor space

**S**CHOOL construction costs can't go anywhere but down when Dunham VARI-AIR heats and ventilates classrooms. This new and simple system satisfies all health and comfort standards... does it at a cost that meets with the full approval of any school board member.

In addition to healthful and silent heating and ventilating, VARI-AIR puts school air conditioning within easy financial reach of school construction budgets... should it be desired. This optional use of VARI-AIR can be economically provided for at the time the system is installed.

## Offers Numerous Advantages

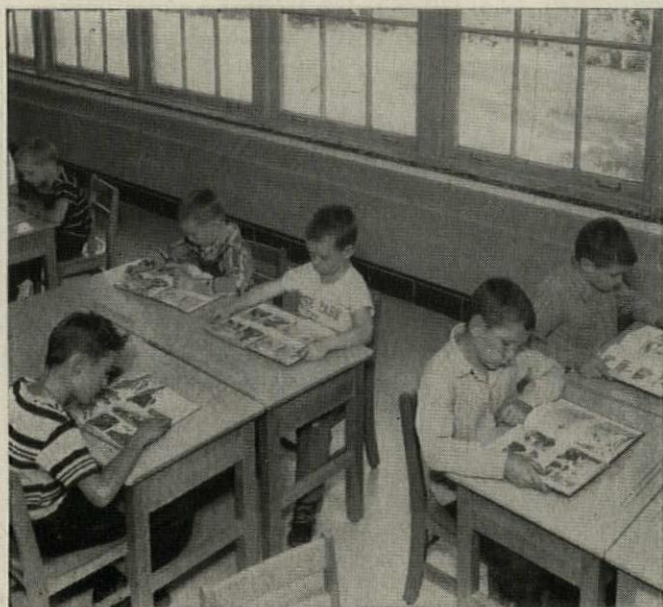
**Lower Costs:** Dunham VARI-AIR eliminates need for in-the-room cabinet ventilators... provides greater savings in classroom heating construction costs. Total absence of complex controls saves both first and maintenance costs.

**Minimum Temperature Variations:** Dunham's centralized temperature control system holds room temperatures within prescribed limits by automatically compensating for weather change and heat loss.

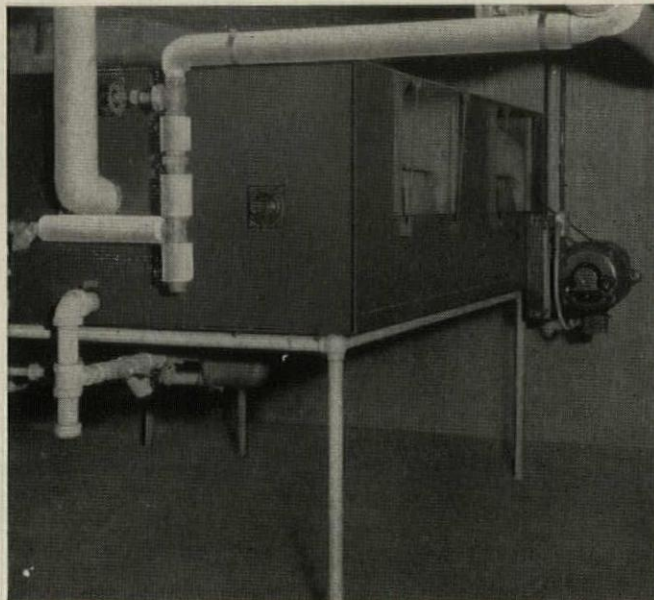
**Space Saver:** No floor space in classroom is given over to either heating or ventilating with a Dunham VARI-AIR system.



# cuts schoolroom construction costs



*Dunham Finned-Pipe Radiation* runs along outside walls, under windows to eliminate chilling downdrafts, save premium classroom floor space.



*Dunham Heating and Ventilating Unit* pulls in outside fresh air and tempers, filters and discharges it through a tunnel or ceiling plenum to VARI-AIR Units.

## How VARI-AIR Operates

Only three primary parts to the system. VARI-AIR Units are concealed in wall space, mix fresh and recirculated air and diffuse it into classrooms.

**Heating and Ventilating Unit**—generally one to the entire system—pulls in fresh outside air, tempers, filters and discharges it through a tunnel or ceiling plenum to the VARI-AIR Unit.

**Radiation** — Dunham THERMO VECTOR® “along-the-wall” radiation saves floor space and provides all necessary heat whether used with steam or hot water.

For complete information, contact any Dunham Representative or mail the coupon.

# DUNHAM®

### HEATING & COOLING EQUIPMENT

RADIATION • CONTROLS • UNIT HEATERS • PUMPS • SPECIALTIES

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



*Dunham VARI-VAC® Temperature Controls* provide centralized, one-man operating station for all system settings and remote control readings. This electronic “brain” enables system to save up to 40% on fuel.

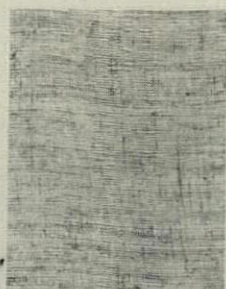
C. A. DUNHAM COMPANY  
Dept. AF-6, 400 W. Madison Street  
Chicago 6, Illinois  
Please send VARI-AIR literature.

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



## PRODUCTS *cont'd.*

For more information use coupon, p. 258



Products, experimenting with decorative panels for its prefab *Showerwall* tub enclosure, worked up a chemical embedment process which rivals costly handset acrylic panels in looks and fiber-reinforced laminates in price. The firm is now mass producing the delicate leaf, fern and cloth embedments in flat 1/10" thick panels as well as corrugated sheet. Maximum panel size of *Acrylite* with natural embedments is 23" x 35". Cloth textures come up to 3' x 6'. Price per sq. ft. is \$1.25 except with metallic fabric, which is \$1.50.

Manufacturer: Wasco Products, Inc.

# Prevent Leaks ...in curtain walls

Tremco research, aided by representatives of leading glass manufacturers, has developed new glazing and sealing techniques for curtain wall construction.

You'll find these new specifications important to insure leak-free installations. Ask your Tremco Man for a copy of "NEW PRODUCTS AND METHODS FOR NEW GLAZING AND SEALING PROBLEMS," or write: The Tremco Manufacturing Company, 8701 Kinsman Road, Cleveland 4, Ohio, or The Tremco Manufacturing Company (Canada) Limited, Leaside, Toronto, Ontario.

"When you specify a Tremco product — you specify a Tremco service!"

# TREMCO

PRODUCTS AND METHODS FOR BUILDING  
MAINTENANCE & CONSTRUCTION



7

### PLASTIC CALK will not stain wood, masonry or metal

Keeping its workable consistency through freezing or torrid weather, *Armstrong PD17* calking makes a lasting water and airtight joining for such different materials as aluminum, slate, brick and fiberboard. Forming an elastic skin soon after



it is applied, the nonstaining and non-corrosive polymerized plastic compound can be painted almost immediately. It easily absorbs the usual structural shifts and has three times the shrinkage resistance required in federal specifications. *PD17* is available in 1/10 gal. cartridges at 50¢ each and in bulk. A 5-gal. can costs \$1.55.

Manufacturer: Armstrong Cork Co.

8

### HAND POWERED TOOL drives fasteners into steel and concrete

Capitalizing on the juvenile magician's trick of piercing a coin with a needle (by first driving it through a cork), *Ramset* has engineered a tool to support simple fastening pins so they can be hand-hammered into concrete, brick or steel. This *Shure-Set* is adaptable to more than 100 light fastening jobs which do not need the gunlike force of powder-actuated tools but cannot be tackled with plain nail and hammer. Without setting any toggle bolts, expansion shields or doing any star drill-

continued on p. 218



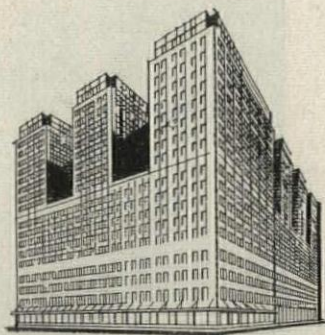
## Washrooms of another notable building finished in Carrara® Glass

Many leading American architects make Carrara Glass first choice for washroom walls and partitions of important buildings. There are good reasons for this preference.

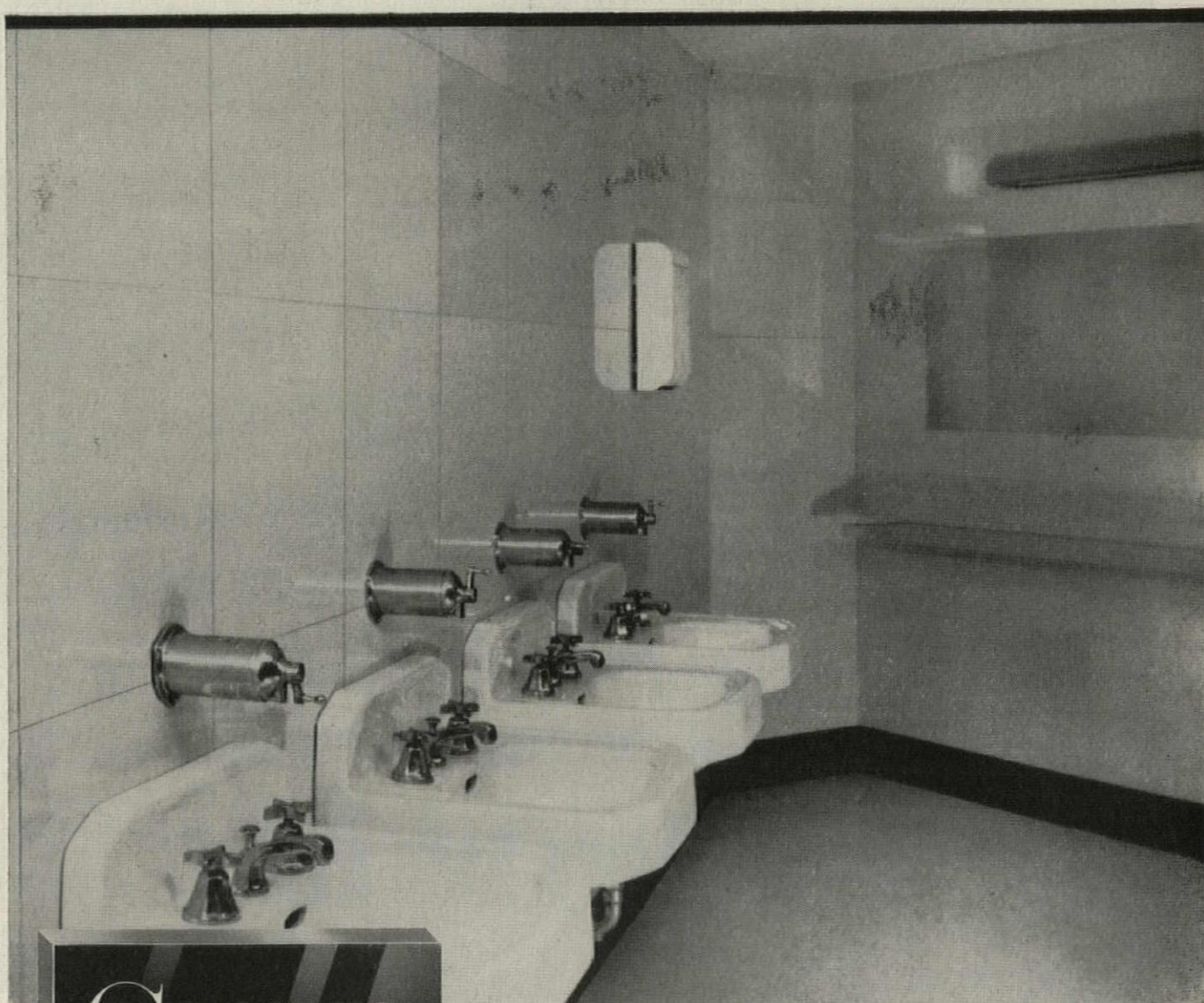
Carrara is a truly beautiful material. Its smooth, even surface is mechanically ground and polished to a gleaming, lustrous finish that will not craze, crack, stain or fade, even after years of service.

Carrara is all pure glass with a uniform homogeneous structure that is virtually impervious to attack by water, steam, acids or cleaning compounds, and that will not absorb odors.

Carrara is easy to take care of. No expensive, time-consuming maintenance is required. An occasional wiping with a damp cloth keeps Carrara clean and sparkling.



**Midland Building**, located in Cleveland, Ohio, was designed by Architects Garfield, Harris, Robinson & Schafer, of Cleveland.



**Carrara**  
*...the quality  
structural glass*

For more information on Carrara Structural Glass just write to Pittsburgh Plate Glass Company, Room 6177, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

**PITTSBURGH PLATE GLASS COMPANY**

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



## REYNOLDS ALUMINUM IN MODERN ARCHITECTURE



# REYNOLDS



## *The Vaughn Building, Dallas, Texas*

### **Owner**

The Spartan National Life Insurance Co.,  
Jack C. Vaughn, President

### **Architect-Engineer**

Wyatt C. Hedrick, Dallas

### **General Contractor**

The Henry C. Beck Co., Dallas

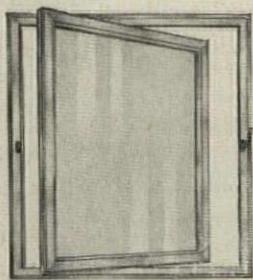
### **Integrated Wall System Fabricator-Erector**

Texlite, Inc., Dallas

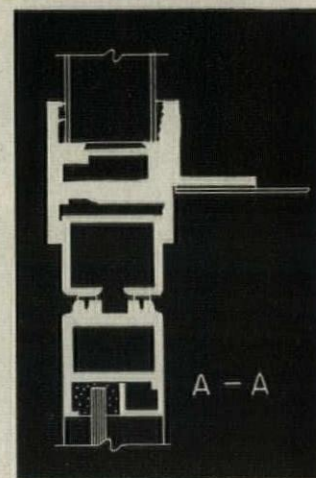
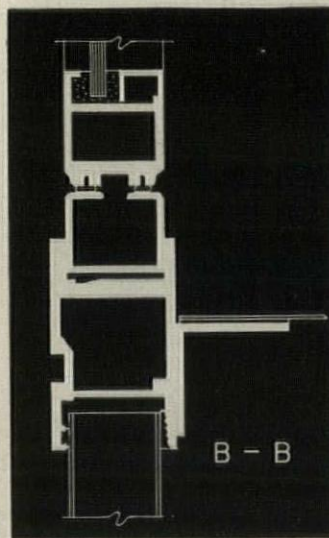
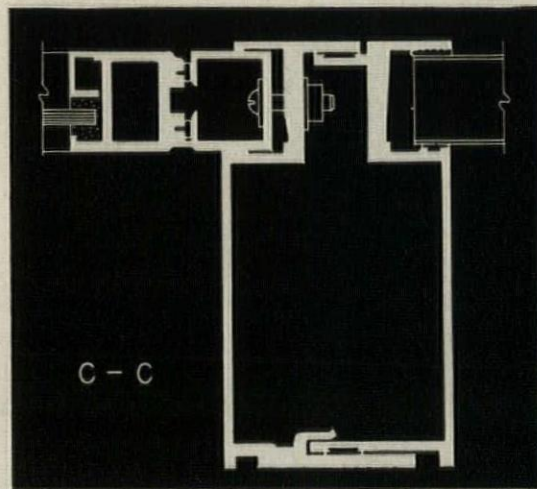
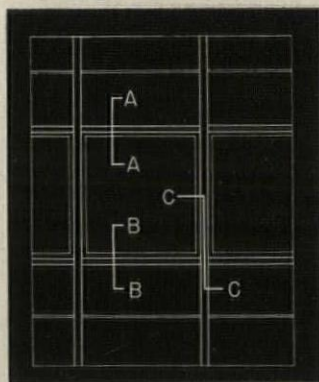
**Reynolds Aluminum Applications in this Building**  
Windows • Vertical Mullions • Fins (anodized gold)

### **REYNOLDS ALUMINUM SERVICE TO ARCHITECTS**

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



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



See "FRONTIER," Reynolds great dramatic series, Sundays, NBC-TV Network.

# ALUMINUM





This warehouse contains over 100,000 sq. ft. Albert C. Martin & Associates, architect and engineer, Lindgren & Swinerton, contractor.

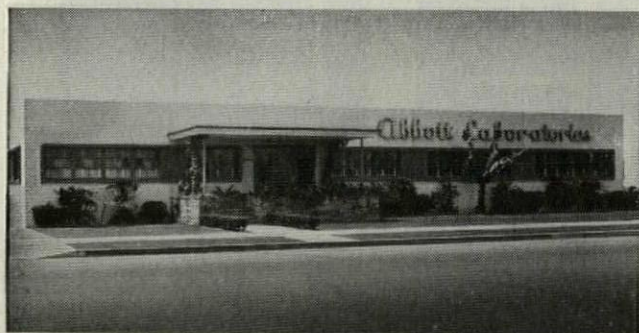
## Attractive Commercial and Industrial Buildings

easily achieved with

## TILT-UP CONSTRUCTION



Buttress & McClellan, Inc., architect, engineer and contractor.



William P. Neil Co., engineer and contractor.

These four concrete tilt-up buildings, designed and built by Los Angeles firms, are part of an industrial development in Vernon, Calif. They show how tilt-up walls can be combined with interesting architectural details to create distinctive, modern styling.

In the General Electric warehouse, windows are shaded by concrete canopies. The square pattern in the Mallinckrodt building was formed by wood strips placed in the form before casting. Tilt-up construction details in the Abbott Laboratories are masked by colored window trim and stone planters. The bold Sylvania name stands out against a large plain wall.

In all cases the uniform color and texture in the concrete panels furnish an excellent background for company names and trademarks.



The Austin Co., architect, engineer and contractor.

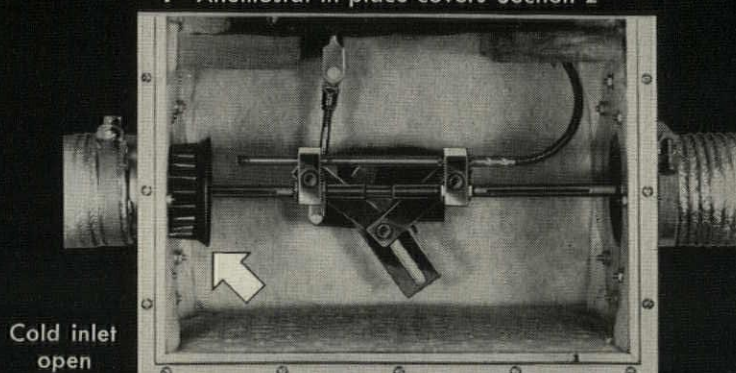
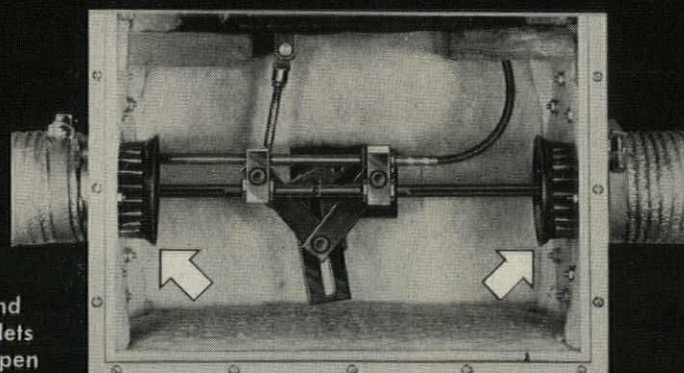
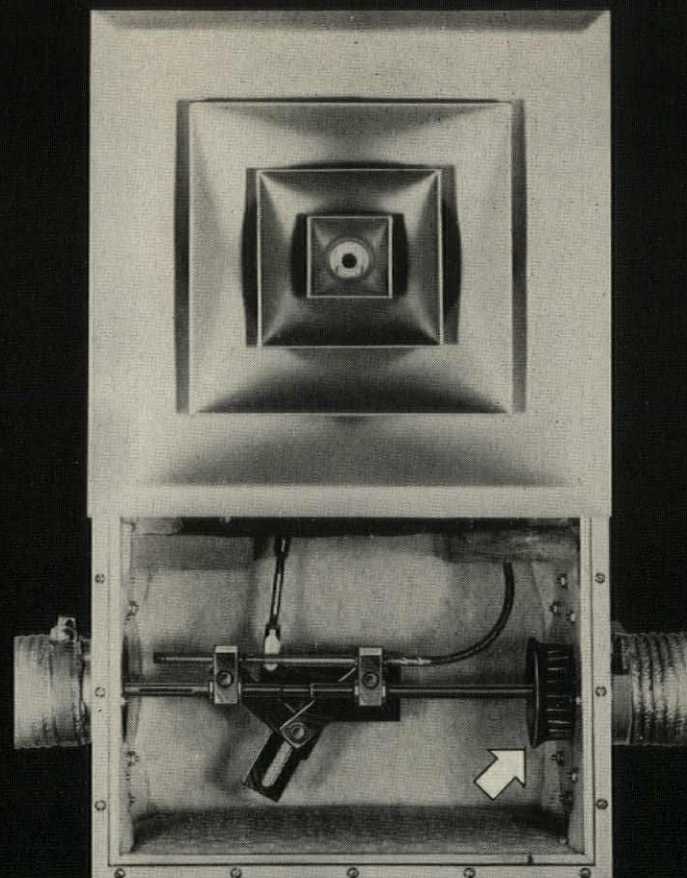
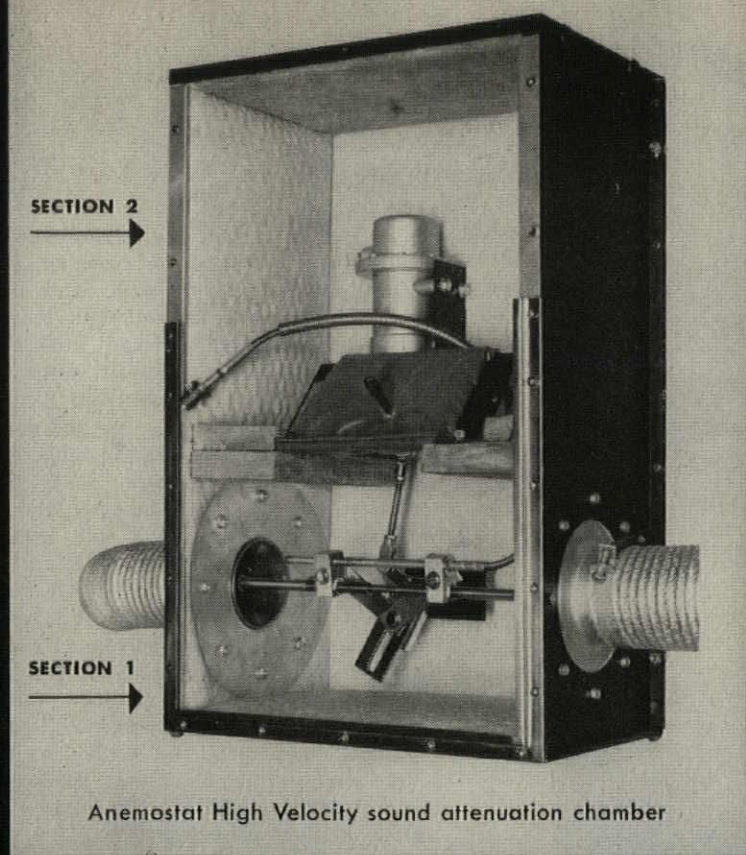
For more information about tilt-up design and construction write for free illustrated literature. It is distributed only in United States and Canada.

## PORTLAND CEMENT ASSOCIATION

Dept. 6-7, 33 W. Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work





## How to mix and diffuse high velocity air automatically

The Anemostat High Velocity sound attenuation chamber is divided into two sections. Both hot and cold air from the main risers enter Section 1, which is an acoustically lined blending chamber, in which the volumes of air are controlled by the Anemostat serrated rocket-socket valves. When the thermostat is set, the rocket-socket valves move slowly back and forth, thereby adjusting the volume of air supplied through the hot and cold inlets. The velocity of the air which enters Section 1, at from 3500 to 6000 fpm, is automatically reduced by expansion.

As the blended air meets the temperature

requirements of the thermostat, it passes through a baffle arrangement into the acoustically lined Section 2 of the chamber, further reducing the db rating of the air.

The air then passes through the Anemostat Air Diffusers, where the aspiration effect causes mixing of room and supply air within the diffuser, resulting in further temperature equalization. The diffuser then delivers to the occupants of the room draft-free air at the desired temperature.

The Anemostat All-Air High Velocity distribution system offers other important advantages. It can be used with smaller

than conventional ducts. It can be installed faster and at less cost. It requires no coils, thus eliminating leakage, clogging and odors. Furthermore, Anemostat round, square and straightline diffusers with high velocity units blend into a wide variety of architectural designs.

Write for 1956 New Products Bulletin and Selection Manual 50 to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.

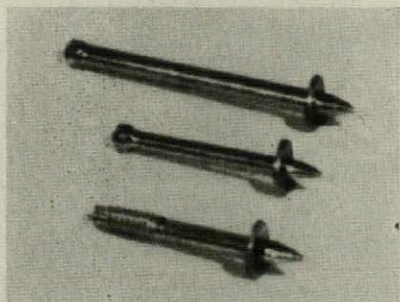
Anemostat: The Pioneer of All-Air High Velocity Systems





## PRODUCTS *cont'd.*

For more information use coupon, p. 258

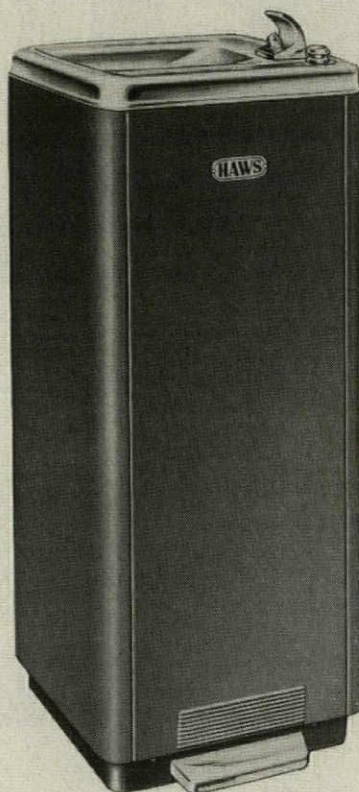


distinctive...  
reliable...

**HAWS**

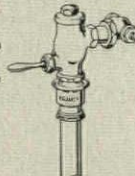
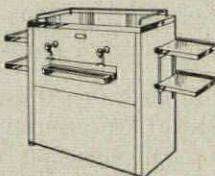
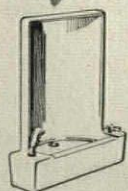
### ELECTRIC WATER COOLERS!

Add beauty and convenience to your interior plan! Specify HAWS Coolers—designed in smooth, functional lines that complement today's architecture—with custom-styled cabinets, lifetime stainless steel tops, chrome trim. They are ideal for school, office, restaurant or cafeteria, commercial, industrial and institutional application.



**No complex planning** is necessary! HAWS Electric Water Coolers merely require an electric outlet, water source and drain. There are many models for many needs...bubbler faucets, bottle cooler types, fill-glass faucets...all with HAWS complete sanitation features.

HAWS also features complete lines of drinking fountains and Emergency Eye-Wash Fountains...also **KRAMER Flush Valves** for every make plumbing fixture that requires an automatic closing valve.



For full information and specifications,  
see the HAWS Catalog. Write today!

**HAWS**

**DRINKING FAUCET CO.**

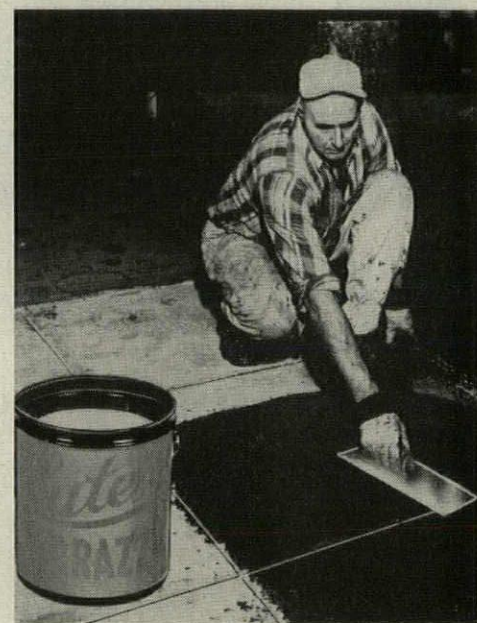
1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

ing, a carpenter can use a *Shure-Set* to attach furring strips to masonry, hang metal shelves, anchor table and booth fixtures to terrazzo. Armed with the new tool, a hammer and moderate muscle, an electrician can secure conduit straps and boxes, fixture switch boxes and fixtures. Lathers can attach wall ties and corner beads. The tool is also handy in decorating and maintenance work. It is safer and more precise than a hammer and nail yet takes less effort. A single hammer blow seats the special fastener in the stone or metal surface. A hand guard protects fingers, and the leveling plate shields the surface from misaimed swings and the used from flying splinters. (The plate can be detached for setting fasteners in corners and other awkward spots.)

Packed in a metal kit with long and short collars, stud holders and drive rods, the tool sells for \$27.95. There are two groups of fasteners: drive pins, \$2.25 to \$12.25 per 100, and threaded studs, \$7.50 to \$10.50. One man can place as many as 150 fasteners in one hour.

In a comparative study of application costs, electric conduits were fastened to concrete with 100 *Shure-Set* fasteners for \$9.95 and with conventional anchors, \$23.50.

Manufacturer: Ramset Fastening System.



9

**BOUNCY TERRAZZO** can be  
troweled  $\frac{1}{2}$ " thick over  
wood or concrete

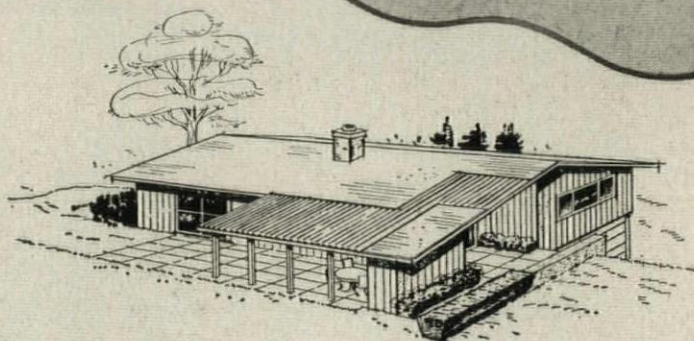
Camp's *Latex Terrazzo* adds to the always popular, pretty but unyielding surfacing a new dimension—resilience. A quiet, comfortable and waterproof floor topper for a busy bus terminal or sleek salon, the monolithic material is made up on the job of regular terrazzo matrix mixed with the

*continued on p. 224*



## What's happening in polyester construction

FOR INFORMATION on fire-resistant Filon panels, write Filon Plastics Corporation, 2051 East Maple Ave., El Segundo, Calif. We do not make the panels—just the HETRON resin that imparts flame resistance.



## Newest fire-resistant panel, made with HETRON®

*helps you meet code requirements for schools, factories, hospitals*

Here's the newest way to get the permanence and good looks of reinforced polyester, plus built-in fire protection.

Shatterproof, weather-resistant, lightweight polyester panels like these have Underwriters' listing and label showing you the flame spread rating. Flame spread is only 55 to 75—as compared with 100 for untreated red oak.

### Speeds up approval

This label provides the specific data most code people need before they can approve reinforced polyester sheet in coded areas—including use in schools, factories, hospitals, and commercial buildings. The fire rating ends guesswork and uncertainty—gives you a sound basis for specifying this material.

The panels are made by Filon Plastics Corporation and distributed nationally. Filon fire-retardant panels do not support combustion. They will burn only at the point where a hot flame is directly

applied. As soon as the flame source is removed, they extinguish themselves.

You can get these panels in a wide range of colors, corrugations, weights, in many sizes to 42" x 12'. They are reinforced with fibrous glass and nylon, for extra strength. Colors are keyed for high, medium, and low light transmission.

### Weather-stabilized

Filon panels are made with HETRON, a Hooker polyester resin. Like all properly formulated HETRON-based panels, these are weather-stable—can be used under

the same outdoor conditions as light-stabilized non-fire-resistant panels.

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

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

**DUREZ PLASTICS DIVISION**

**HOOKER ELECTROCHEMICAL COMPANY**

3806 Walck Road, North Tonawanda, N. Y.



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







**Pan Dee Restaurant, Chicago, Ill.** Note how this 5-unit Wondabar using standard Virden fixtures complements the modern decor of this restaurant. Here is dramatic emphasis and soft, easy lighting at a fraction of the cost of custom-made fixtures.



## now! decorative lighting using stock lighting fixtures

Here's the practical answer to your commercial lighting problem. It's the new Wondabar by Virden. Now you can have smart, dramatic lighting at a most economical cost. For the Wondabar uses *standard* lighting fixtures. It opens up an entirely new range of effects, makes possible decorative lighting formerly possible only with expensive, custom-designed fixtures.

You can choose, from Virden's wide selection, the fixture design that best fits your decor. You can use modern, contemporary, or period—gain almost any

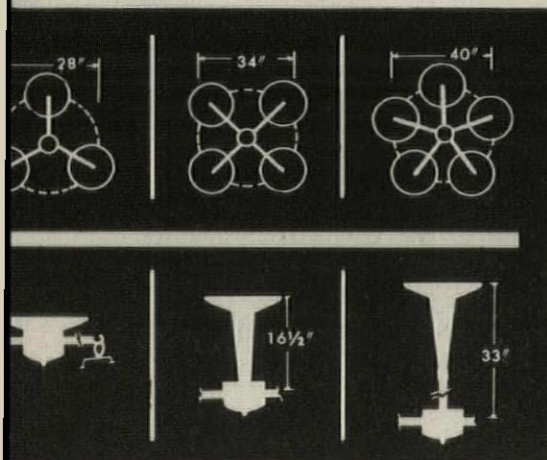
decorative and functional effect that you desire.

Installation is economical, too! In most cases, the Wondabar can be installed quickly and easily to the present fixture outlet—without rewiring or expensive and time-consuming remodeling.

Your nearby Virden distributor has full details. Ask him about the Wondabar. He'll be glad to show you how versatile it is, how it can give you the dramatic, effective lighting you want, at a most economical cost. Or write John C. Virden Co., Dept. AF-6, 6103 Longfellow Avenue, Cleveland 3, Ohio.



decorative lighting by **virden**



Wondabar kits are available in 3, 4 or 5 arm spreads, for use with any standard loop-equipped fixture. Almost any length ceiling drop is available. Finish is dove grey.

**The Wallace Company, Poughkeepsie, N. Y.** Warm, even lighting from smart, modern fixtures gives this furniture department an entirely new look—at a cost far below custom-made fixtures.

**H. Weber Sons & Co., Zanesville, Ohio.** Light to enhance fabrics; fixtures to create the buying mood; that's the twin advantage the Wondabar brought this store.





## ***MODNAR is a new floor design development that makes special decorative effects possible!***

Modnar\* is plank-shaped—24" long by 4" wide. Comes in four beautiful decorator tones: Driftwood . . . Oak . . . Walnut . . . and Maple.

No matter where you specify this plank tile, you'll find these neutral shades blend in perfectly with your design plans. And it will give your client floors that perform with a minimum of fuss and bother.

### **All for the price of asphalt tile!**

Floors that can "take" it, too. The colors, and veining, go completely through the tile. Modnar is formulated to meet the rigid requirements of Federal Specification SS-T-306b for Asphalt Tile.

Specify it throughout a building. In the basement or top floor, over wood sub-floors or concrete slabs.

Modnar is a Tile-Tex exclusive. Call in your Tile-Tex Contractor. He has the right tiles and the right adhesives for the job. He is listed in your classified telephone book. Or write us.



Modnar is quickly and economically installed. There is practically no waste, for less than full-size planks add to the random effect.

**THE TILE-TEX DIVISION, THE FLINTKOTE COMPANY**  
1234 McKinley Avenue, Chicago Heights, Illinois

*In the 11 Western states:* Pioneer Division, The Flintkote Company, P. O. Box 2218, Terminal Annex, Los Angeles, Calif.

*In Canada:* The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto.

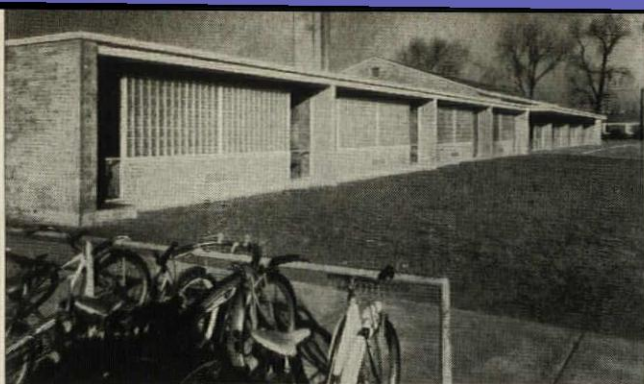
\*Reg. U. S. Pat. Off.



## **TILE-TEX... Colorful Floors of Lasting Beauty**

Manufacturers of Asphalt, Vinyl-Asbestos, and Greaseproof Floor Tiles in Marbleized, Terrazzo-type, and Cork-like Patterns.





At Southwest Elementary School, Evergreen Park, Ill., learning is easier because Owens-Illinois Glass Block eliminate the excessive glare and harsh contrasts that strain young eyes. Glass block direct daylight upward, diffuse it throughout classrooms all day long.

A sky screen of  
**Owens-Illinois Glass Block**  
 provides  
*better light*  
 to protect precious sight



Architect: Bryant and Walchi, Chicago, Ill.  
 Contractor: Mercury Builders, Chicago, Ill.

EVERGREEN PARK's beautiful Southwest Elementary School is but one of hundreds of new schools from coast to coast that are utilizing the outstanding advantages of Owens-Illinois Glass Block. For example:

Glass block practically eliminate

maintenance costs . . . won't rust or rot like ordinary window sash . . . eliminate painting and old-fashioned window shades . . . are difficult to break. Heating and lighting costs are greatly reduced because glass block insulate and daylight so efficiently.

If you are planning to remodel your school or erect a new one, be sure to investigate the important benefits offered by Owens-Illinois Glass Block. For complete information, write Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-6, Toledo 1, Ohio.

OWENS-ILLINOIS GLASS BLOCK  
 AN **®** PRODUCT

**OWENS-ILLINOIS**  
 GENERAL OFFICES • TOLEDO 1, OHIO

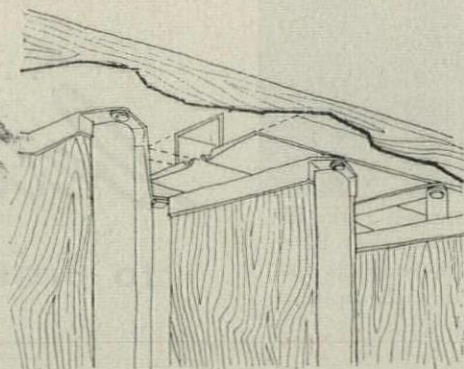


## PRODUCTS *cont'd.*

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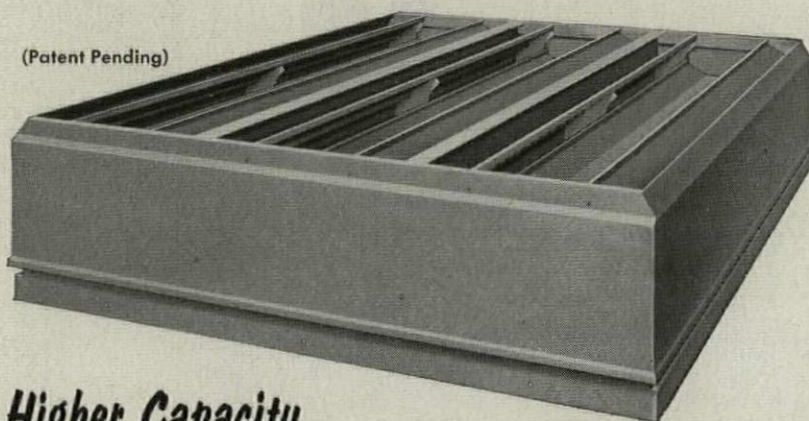
special latex liquid. It can be applied indoors or outdoors as thin as  $\frac{1}{2}$ " over wood or concrete, on stairs and wainscots as well as floors. It can be ground or sanded soon after troweling. Cost of the liquid to flooring contractors runs about \$4 a gal. In-place price is reported to be about the same as vinyl and rubber tile both of which it rivals in resiliency.

Manufacturer: Camp Co., Inc.



### Swartwout's New Contouramic Airmover® Roof Ventilator

(Patent Pending)



**Higher Capacity**  
**gravity ventilation now achieved with less**  
**bulk and weight . . . and at lower cost!**

You get fifteen years of research and scientific designing in this new Contouramic Airmover . . . and it shows up in the new size and shape . . . and a terrific boost in performance. It has automatic damper-opening in case of fire, too! Here is today's outstanding ventilator development.

Only 21½ inches high from the roof curb — nearly a foot lower — this new Airmover is lighter, easier to install, and absolutely wind-and-weather safe. Easier to clean and maintain. It's flexible as ever — single units for "spot" ventilation or single or double runs when you want your whole roof to breathe.

And contrary to today's trends, the cost is down! Write or wire for Form 3120 today.

The Swartwout Company, 18511 Euclid Avenue, Cleveland 12, Ohio

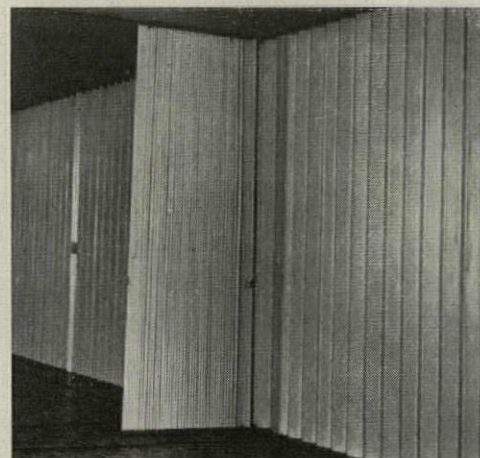
## Swartwout ROOF VENTILATORS AND VENTILATING LOUVERS

AUTRONIC PROCESS CONTROL EQUIPMENT

10

### FOLDING CLOSURES of wood with sealed seams are good sound barrier

There are no cracks for air or sound to get through between the 5"-wide solid wood slats in *Panelfold* area dividers. Practical for schoolrooms, restaurants and other commercial installations demanding flexible use of space with privacy, the folding wood partitions have continuous connectors of durable vinyl that help keep sound transmission loss down to 18.5 db; the addition of a sweep strip along the door bottom brings the rating still lower. *Panelfolds* are stocked in cedar in standard door widths in 6'-8" and 8' heights and can be furnished singly or in pairs, with matching cornice or without for flush track installation or with sliding jamb for a concealed pocket. They sell for about \$41 to \$48 F.O.B. plant and can be ordered with clear lacquer finish or in color. Units also are made to specification in the fancier hardwoods such as walnut, mahogany, ash and birch, in heights up to 14'. All size *Panelfolds* are supported



at top and glide on nylon wheels and brass bearings in an extruded aluminum track. A pantograph hinge of aluminum and stainless steel keeps the panels in line. No floor guide or bottom track is necessary. A room divider 12' wide and 8' high costs about \$250.

Manufacturer: Panelfold Doors, Inc.

11

### ETCHED REDWOOD made in tall panels for siding and stairwells

To adapt its *Malarkey Rusticwood* panels to school, motel and church construction, M & M is now producing the 4'-wide redwood plywood in 9' and 10' lengths in addition to the popular 8'. The rosy figured grain is wire-brushed to remove some of the soft surface wood, giving the panels a warm weathered look, and grooves are cut 4" o. c. for an emphatic vertical pattern. Bonded with waterproof phenolic, *Rusticwood* is especially suited for outdoor applications but it also makes

*continued on p. 230*





## NEPCODUCT

... THE UNDERFLOOR  
RACEWAY FOR ELECTRICAL  
FLEXIBILITY

# Anticipate electrical expansion ... Cut the cost of future changes now with NEPCODUCT

The time to plan for future alterations and expansion of electrical distribution is now—before the floors are in.

The system that assures these changes can be made conveniently and economically is Nepcoduct—the steel underfloor raceway that makes outlets available at the floor surface wherever and whenever the owner needs them.

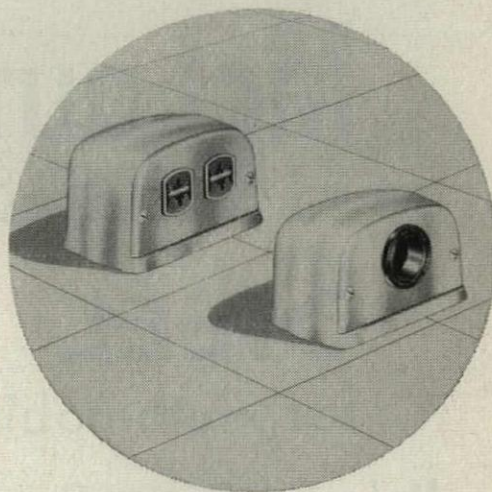
With Nepcoduct, future changes in electrical distribution can be made without routing concrete or cutting building structure—without interrupting business operations.

By specifying Nepcoduct, you assure quick, low cost installation in any type floor construction. Nepcoduct can be

used as a single, double or triple duct system to provide separate wiring facilities for light and power, inter-communication and telephone. To cut maintenance costs, electrical service is made easily accessible in one junction box through a common hand-hole opening.

To add to Nepcoduct convenience and economy, National Electric offers new service fittings that cut installation time with a simplified one-piece housing. Fittings are especially designed for distribution where modern desks and free-standing equipment restrict the height of service fittings.

Write today for information on Nepcoduct Electrical Raceway Systems.



*Listed by Underwriters' Laboratories, Inc.*

## National Electric Products

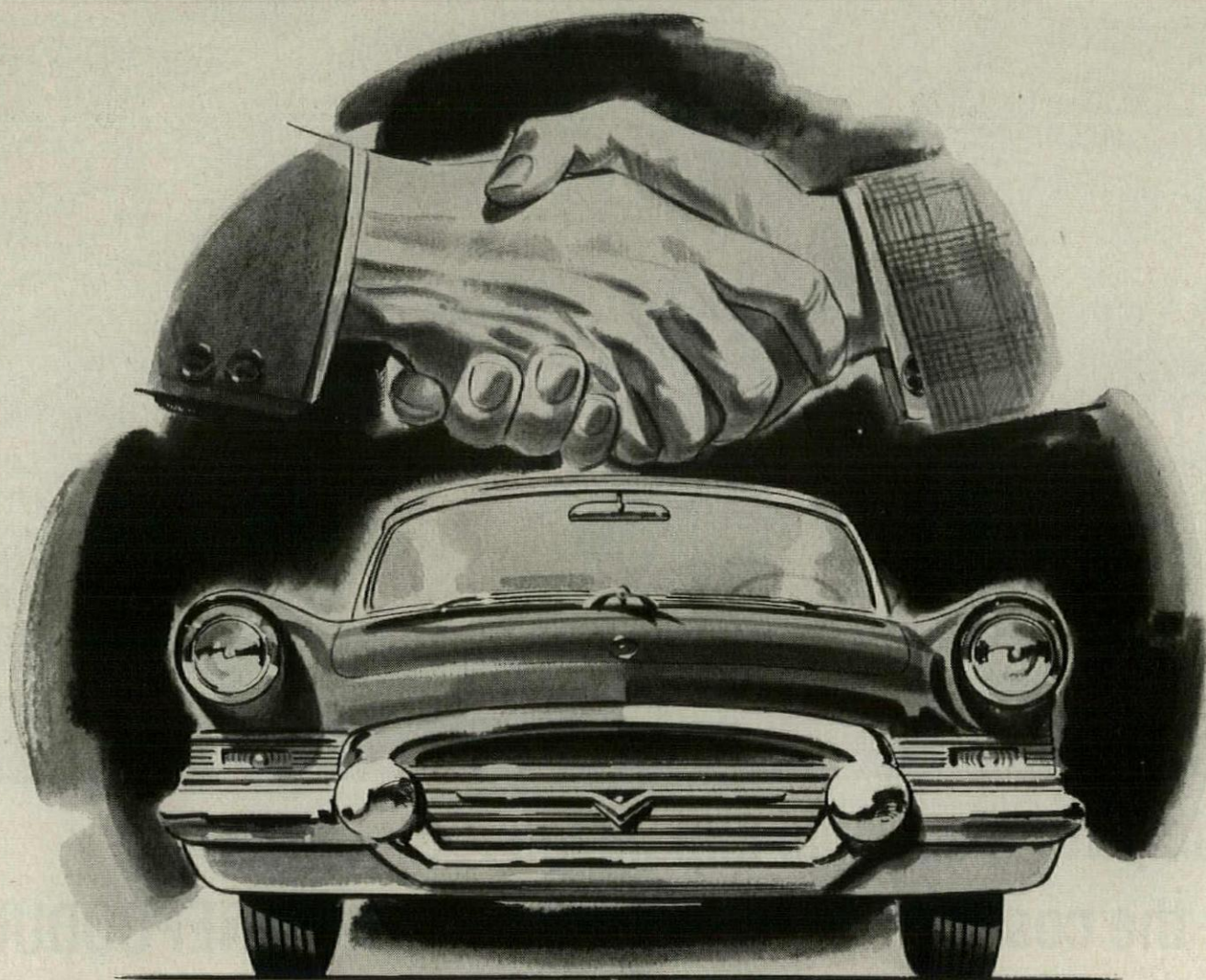
PITTSBURGH, PA. U.S.A.

3 Plants • 10 Warehouses • 36 Sales Offices





*in a new car — in a used car —*  
**STAINLESS STEEL**  
**Sells and Re-sells!**



**McLOUTH**  
**STAINLESS**  
**STEEL**  
for automobiles

The Stainless Steel trim, molding and vital parts that add style and beauty to a car, inside and out, are features that help make the sale.

Stainless Steel has wide customer acceptance. It's easy to clean and keep clean. It's a tough, solid metal that will not corrode or dent and stands up to gravel, ice, salt and water.

The finish never fades and parts are easy to replace. Stainless Steel lasts the life of the car. It *sells* in a new car and it *re-sells* in a used car.

**McLOUTH STEEL CORPORATION, Detroit, Michigan, Manufacturers of Stainless and Carbon Steels**



# a new treatment for ASPHALT TILE

Now You Can Specify Maximum  
"SLIP-RESISTANCE"  
without sacrificing Beauty and Wear



Gymnasium at Platte Valley Elementary School, St. Joseph, R.F.D., Mo., doubles as lunchroom during the noon hour. (Architects: Eckel and Aldrich, St. Joseph, Mo.)



Beautiful, fast-play gymnasium floor in Oakwood Junior High, Kalamazoo, Mich. (Architect: M. C. J. Billingham.)

**Super**  
**Hilco-Lustre**  
for MAXIMUM "Slip-Resistance"

*Climaxing years of research in Hillyard laboratories, this new "test tube" finish*

**Is formulated for asphalt tile, yet safe for all floors**

Will not soften, fade, darken or discolor any resilient flooring material.

**Gives complete surface protection**

Forms a hard, smooth, unbroken surface that repels dirt and grease, keeping them from grinding in. Protects floor against food fats, that otherwise would create an unsightly, slippery condition. No water spotting.

**Makes maintenance easy**

The hard, smooth surface makes sweeping fast and simple. Although non-slip, it is not tacky, will not catch and build up dirt.

**Provides extra economy**

The finish *stays*. After repeated washings, the rich velvety lustre buffs back easily. Eliminates frequent stripping and refinishing.

The perfect solution for special problems of multi-purpose rooms . . . *one* product which fulfills your requirements for safety, appearance and economy on every floor you plan. Meets requirements for "slip-resistance" in basketball and recreational areas. Ideal for corridors and offices where appearance as well as extra measure of safety underfoot is necessary.

The Hillyard Maintainer® nearest your job will follow through with "job Captain" service to insure proper application and finish beauty. The Hillyard Maintainer is "On Your Staff, Not Your Payroll"



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Please give me complete details and specifications suggested for the Super Hilco-Lustre treatment of Resilient floors.

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whatever you design  
or build...

**MACOMBER  
V-BEAMS**

extend your  
construction  
dollars

through the more  
economical support of  
spans to 48 feet!

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SEND FOR THE V-BEAM  
CATALOG TODAY.

## How to open doors to **CONTRACT AWARDING**



The man with the V-BEAM bid not only opens doors, he closes contracts.

He has a structural support for floors and roofs that is lighter, more economical and yet has an actual carrying capacity of over twice the published loadings.

Macomber V-BEAMS extend construction dollars, and their proof of performance has been recorded by the industry's most honored proving ground—The Pittsburgh Testing Laboratory.

**YOU CAN PROVE THE SOLID STRUCTURAL AND ECONOMIC VALUES OF V-BEAMS OVER ALL OTHER FLOOR AND ROOF SUPPORTS IN JUST ONE PROJECT WITHIN THE 48 FOOT SPAN RANGE.**



STANDARDIZED STEEL BUILDING PRODUCTS

# MACOMBER INCORPORATED

CANTON 1, OHIO

• ENGINEERING • FABRICATING AND ERECTING •

AVAILABLE  
STEEL JOISTS  
LONG SPANS  
BOWSTRING  
ROOF TRUSSES  
METAL DECK  
V-LOK STEEL  
FRAMING  
STRUCTURALS



# GLASS-FIBERED PLASTER

**Only Certain-teed  
gives you**



**WORKS CLEANER ... FASTER ... EASIER!**

Now Certain-teed gives plasterers an entirely new kind of fibered gypsum plaster that helps them give you better plastering jobs at no added cost!

Bestwall glass-fibered plaster is a new patented formulation employing textile glass filaments cut to a carefully controlled length best suited for plastering. Plasterers who have field-tested it report new, higher standards of performance and on-the-job workability. In down-to-earth plasterer's language, this means:

● **TIME SAVED**

... the glass fibers do not foul up mixer blades—or build up on the box, hoe or hod.

● **FASTER, EASIER PLASTERING**

... no "balling" of fibers with consequent grooving of plaster; less backtracking and smoothing are required.

● **MORE UNIFORM SURFACE**

... better base for finish coat.

● **BETTER KEYING**

... uniform distribution of individual filaments of carefully controlled lengths, with 30 to 40 times as many fibers as any other fibered plaster produces better keying on metal and perforated lath ... fewer plaster droppings.

Be sure to get complete details about the new Bestwall Gypsum Plaster. Write us today or call your Certain-teed salesman.



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Quality made Certain ... Satisfaction Guaranteed



**CERTAIN-TEED PRODUCTS CORPORATION**

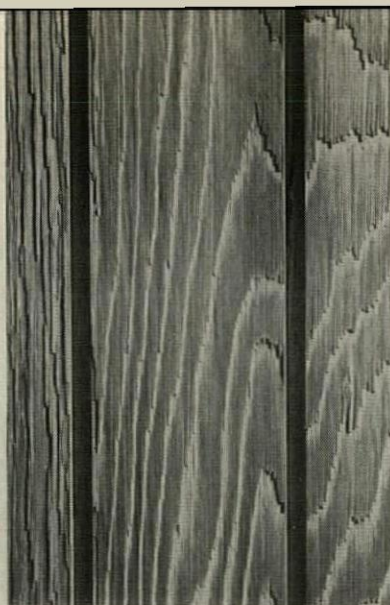
ARDMORE, PENNSYLVANIA  
EXPORT DEPARTMENT: 100 EAST 42ND ST., NEW YORK 17, N.Y.

ASPHALT ROOFING • SHINGLES • SIDING • ASBESTOS CEMENT SHINGLES  
GYPSUM PLASTER • LATH • WALLBOARD • SHEATHING • ROOF DECKS  
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PAINT PRODUCTS—ALKYD • LATEX • CASEIN • TEXTURE • PRIMER-SEALER



## PRODUCTS *cont'd.*

For more information use coupon, p. 258



an attractive unpieced wall for high ceilinged rooms and stairwells. Its edges shiplap so the joints are unnoticeable as well as weathertight. Redwood's nail splitting tendency is said to be overcome by the Rusticwood's cross plying; nails can be driven in safely up to  $\frac{3}{8}$ " from panel edges. Approximate retail price is 40¢ per sq. ft.

Manufacturer: M & M Wood Working Co.

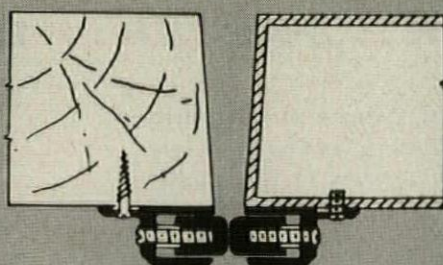
## MICHAELS Adjustable ASTRAGALS of Extruded Bronze!

... compensate for the expansion and contraction of doors, and close as nearly as possible a door of any type. Michaels Astragals are simple, practical, rugged, easily installed and adjusted ... help eliminate drafts and air currents ... keep out dirt and dust. They are available in several styles, two of which are illustrated here.

### TYPE "A"

#### Surface Astragal

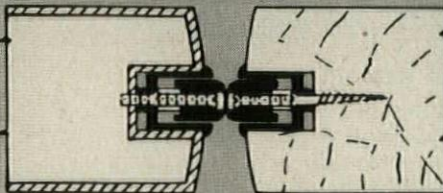
Applied to either wood or hollow metal doors ... or as a stop bead ... or at bottom of door.



### TYPE "E"

#### Mortise Astragal

Applied on bull-nose hollow metal or wood double-acting door ... or at bottom of door.



• Write for complete details and prices. Be sure to specify whether astragals are for wood or metal doors, and finish.

### OTHER MICHAELS PRODUCTS

|                             |                       |                       |
|-----------------------------|-----------------------|-----------------------|
| Bank Screens and Partitions | Revolving Doors       | Lamp Standards        |
| Welded Doors                | Stair Railings        | Marquees              |
| Store Fronts (special)      | Church Work (special) | Bronze Tablets        |
| Building Skins              | Candelabras           | MI-CO Parking Meters  |
| Spandrels                   | Name Plates           | Museum Trophy Cases   |
| Louvers                     | Letters               | Bronze Inurnment Urns |
| Windows (special)           | Check Desks           | Bronze Vases          |

Literature is available on all Michaels products

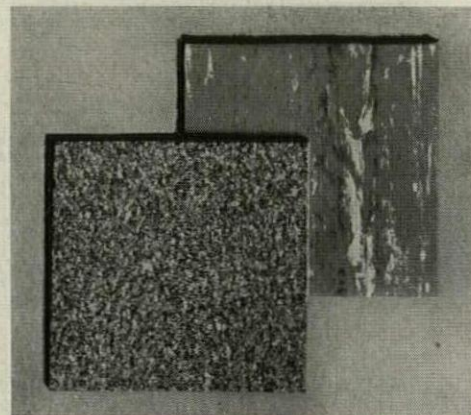
**THE MICHAELS ART BRONZE CO., INC.**  
P. O. BOX 668-F, COVINGTON, KENTUCKY

Since 1870 the name Michaels has been a symbol of exceptionally high quality

12

### VINYL FLOOR TILE carries its own underlayment

Two highly regarded flooring materials, vinyl and cork, are combined in *Super-cushion*. On topside, standard gauge vinyl tile provides a colorful, easy to maintain surface. Laminated beneath, the cork's natural springiness gives the floor additional comfort and improves the vinyl's ability to resist furniture imprints. The spongy underside also absorbs minor imperfections in the subfloor so they do not telegraph through the plastic, and cuts the noise level of clicking heels and plodding soles by about 80%—especially welcome in hospital corridors, schools and offices. Produced in a wide range of solid colors,



marble and terrazzo patterns in  $\frac{1}{8}$ " and  $\frac{1}{4}$ " over-all thicknesses, the resin-bonded laminate sells for about 75¢ to \$1.22 per sq. ft. plus installation. Labor involved is considerably less than required for putting down separate underlayment and tile top.

Manufacturer: Robbins Floor Products, Inc.

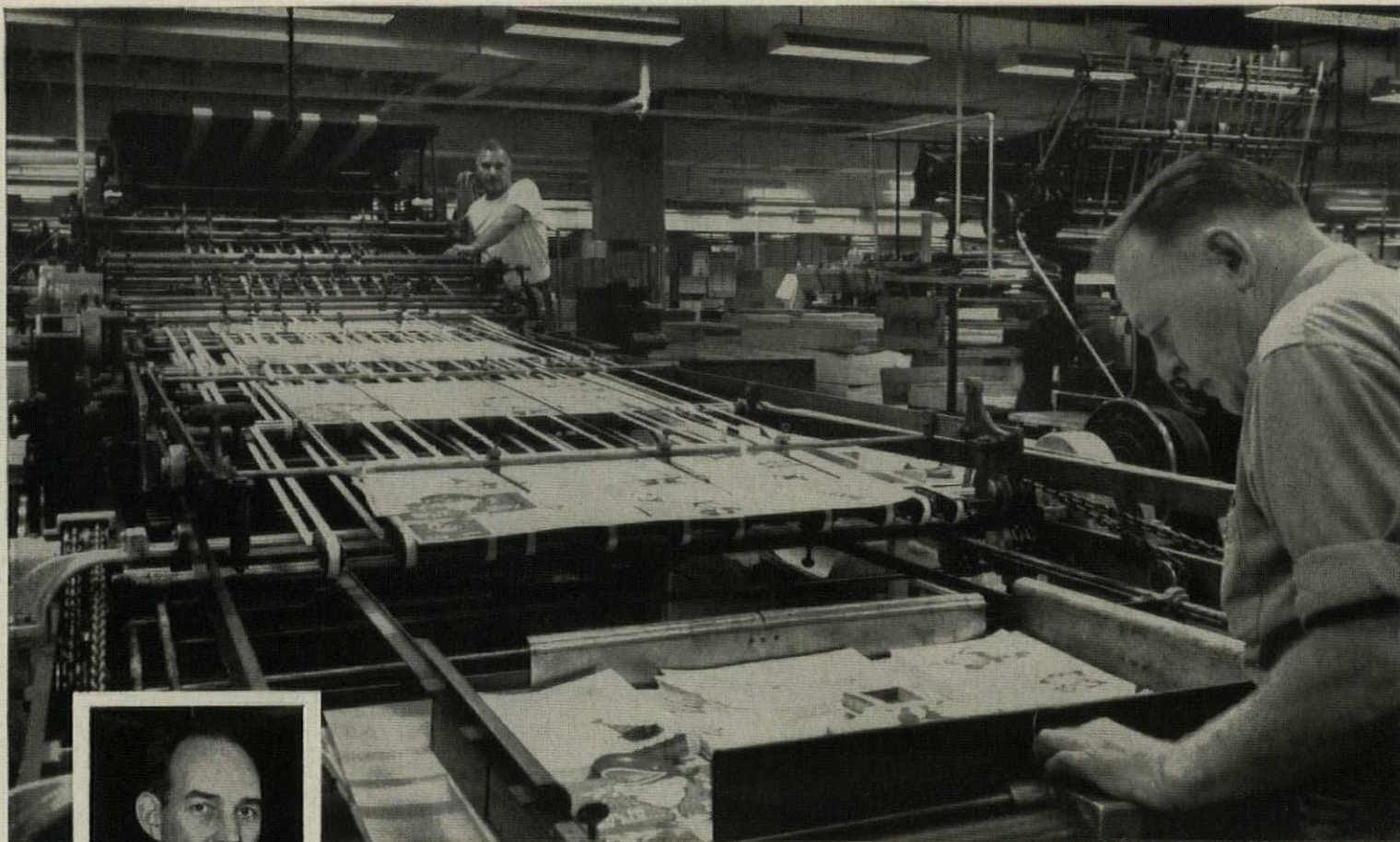
13

### UNIT VENTILATOR INTAKE designed for curtain-wall panels

Sensitive to architectural character as well as mechanical needs, Herman Nelson Products was the first to wince at the thick adapters required to fit its unit ventilators (photo p. 236) into the otherwise trim Grosse Point Country Day School (AF, Jan. '54). Soon after the building was completed a huddle of engineers and designers had devised an outdoor air

*continued on p. 236*





**"We licked a 50 year old moisture problem with FOAMGLAS roof and wall insulation"**

relates Joseph D. Bradley, Production Manager, Rust Craft Greeting Cards

"Thanks to FOAMGLAS roof and wall insulation, we've licked a moisture problem that plagued us for over 50 years," relates Mr. Joseph D. Bradley, Production Manager of Rust Craft, Dedham, Mass. Producing over 300 million quality greeting cards a year demands close control of moisture content in paper stock. Lack of it could cause damaging paper losses, waste skilled man-hours and machinery time.

Rust Craft's modern plant was finished in June, 1955. Mr. Bradley says: "We designed the paper storage and the paper and film processing sections around FOAMGLAS because it's moisture-proof. In those areas we must

maintain a precisely controlled temperature and humidity. These warm, moist conditions could ruin other insulations, but not FOAMGLAS. It has given us *dependable* insulating protection since installation, and we anticipate many more years of trouble-free performance.

"Since FOAMGLAS is strong and rigid, it required no structural reinforcement," states Mr. Bradley. "Because it's fireproof, we got added building protection."

You can get all these benefits and more when you insulate your buildings, piping or equipment with FOAMGLAS. See for yourself! Write us today for a free sample and directions for six simple

tests to prove that it's the ideal insulation for *your* needs. Address PITTSBURGH CORNING CORPORATION, Dept. D-66, One Gateway Center, Pittsburgh 22, Pa. (In Canada: 57 Bloor Street West, Toronto, Ontario).

**FOAMGLAS®**

**the cellular, stay-dry insulation**

Pittsburgh Corning also manufactures  
PC Glass Blocks

Try this test! Prove to yourself that FOAMGLAS will stay dry for years of trouble-free, constant insulating efficiency in your plant.



Aerial view of the modern Rust Craft plant, insulated with FOAMGLAS.  
Architects-Engineers: Graham, Anderson, Probst & White, Inc., Chicago, Ill.  
General Contractor: Aberthaw Construction Co., Boston, Mass.  
Roofing and Wall Panel Contractor: Atlantic Roofing Co., Boston, Mass.

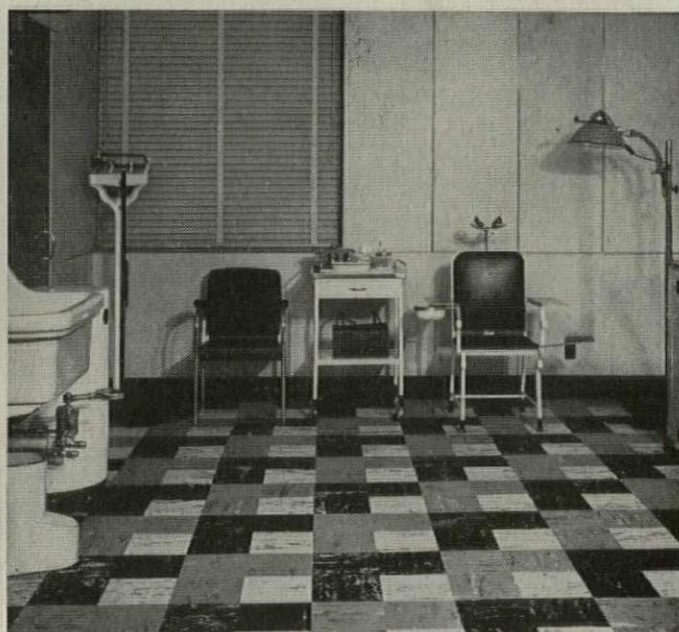




**This easy-to-care-for flooring saves up to 50% on maintenance costs!**



Heavy traffic in this Budd Company R. D. C. diesel-powered passenger car has little effect on the durable J-M Terraflex floor. A quick damp mopping will restore it to its first-day color beauty.



Terraflex is especially serviceable in hospitals. Commonly used mild acids and disinfectants do not affect it . . . its nonporous surface assures a high degree of sanitation with a minimum of care.

## Johns-Manville **TERRAFLEX** Vinyl Asbestos tile flooring . . . beautiful, colorful, incredibly durable!

**A**CTUAL ON-THE-JOB FIGURES show that Johns-Manville Terraflex® floor maintenance expense is reduced as much as 50%, when compared to the next most economically maintained resilient type flooring.

A quick damp mopping usually keeps Terraflex clean and bright . . . its nonporous surface requires no hard scrubbing . . . frequent waxing is eliminated. Despite heavy traffic service . . . spilled liquids and foods . . . abusive treatment,

Terraflex retains its sparkling, new appearance.

J-M Terraflex vinyl asbestos tile, available in 17 attractive marbleized colors, is the ideal flooring for restaurants, public areas, schools, hospitals . . . wherever reliable floor service, long-wearing beauty and maintenance economy must be combined.

For complete information about Terraflex vinyl asbestos floor tile, write Johns-Manville, Box 158, New York 16, N. Y.

See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

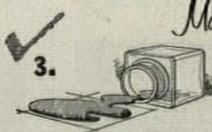
*Check these special TERRAFLEX advantages*



✓ 1.

*Lasts Longer*

Made of vinyl and asbestos, Terraflex will outwear any other type of resilient flooring of equal thickness.



✓ 3.

*Maximum Service*

Terraflex defies kitchen oils and greases . . . strong soaps will not dull its lustre.

*Easy to Clean*

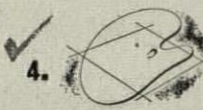
Dirt can't penetrate Terraflex's nonporous surface. A swish of a damp mop keeps it shining bright.



✓ 5.

*Greater Resilience*

Terraflex is flexible, provides comfort and quiet underfoot . . . resists indentation.



✓ 4.

*Wide Color Range*

Terraflex comes in 17 marbleized colors that go all the way through the tile—won't wear off or wash out.



**Johns-Manville**





"American

LUSTRACRYSTAL\* will substantially  
cut glass costs"

"And it meets  
all other requirements, too!"

#### AMERICAN PRODUCT LINE

American manufactures sheet glass with the least distortion and the greatest clarity, whiteness and luster.

**LUSTRAGLASS**—single and double strength for conventional glazing.

**LUSTRACRYSTAL**—economical heavy sheet glass for larger openings and many other applications.

\* MAX. SIZE—72" height x 120" width. Information on larger sizes available on request.

THICKNESS— $\frac{3}{16}$ ",  $\frac{7}{32}$ ",  $\frac{1}{4}$ ".

**LUSTRAWHITE**—a picture glass of exceptional clarity and flatness.

**LUSTRAGRAY**—for better television viewing; and special glazing.

**BULB EDGE GLASS**—for use as counter dividers, wind deflectors and shelves.

**THIN GLASS**—for microscope slides and covers. Extremely flat and true to tolerance.

**SUPRATEST**—a laminated safety glass.

**PANAL**—a fiberglass-reinforced plastic structural panel.

**WATCH OUR PRODUCT FAMILY GROW**

Economy-wise architects and builders, nationally, are specifying and using American Lustracrysal instead of costlier plate glass for many glazing applications. Builders following this practice have reported saving as much as 35% on glass costs.

Economy is only part of the Lustracrysal story. Greater strength, more resistance to wind pressure and impact, makes Lustracrysal a very dependable structural glass.

Lustracrysal provides unimpaired vision and is produced with a fire-finished luster that adds external beauty to modern structures.

Always specify and use AMERICAN for:

- True Economy
- Dependable Strength
- Crystal Transparency
- Lustrous Beauty

MODERN GLASS  
*Best at a Glance*  
... Use

  
**American**

AMERICAN WINDOW GLASS CO., PITTSBURGH, PA.

PLANTS: ARNOLD, PA. • ELLWOOD CITY, PA.  
JEANNETTE, PA. • OKMULGEE, OKLA.

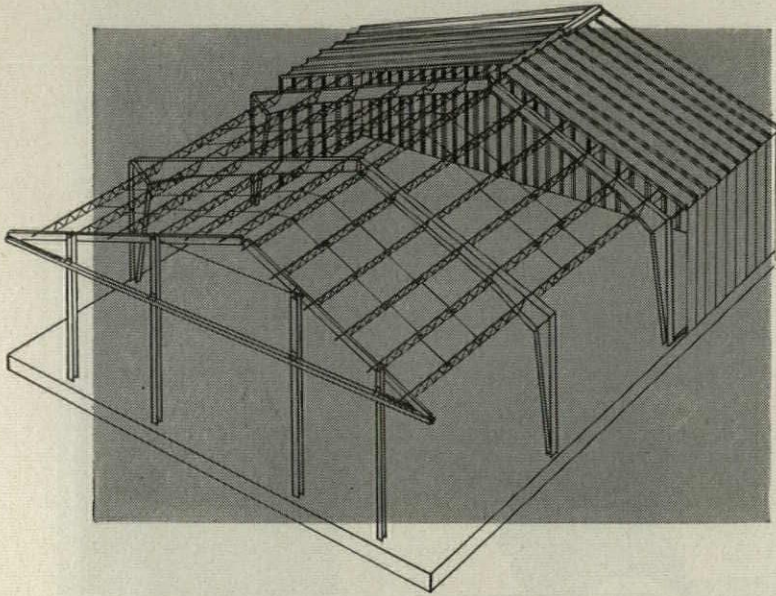
WSW 6089



## Use Armco Steel Buildings

to save preliminary design and engineering time

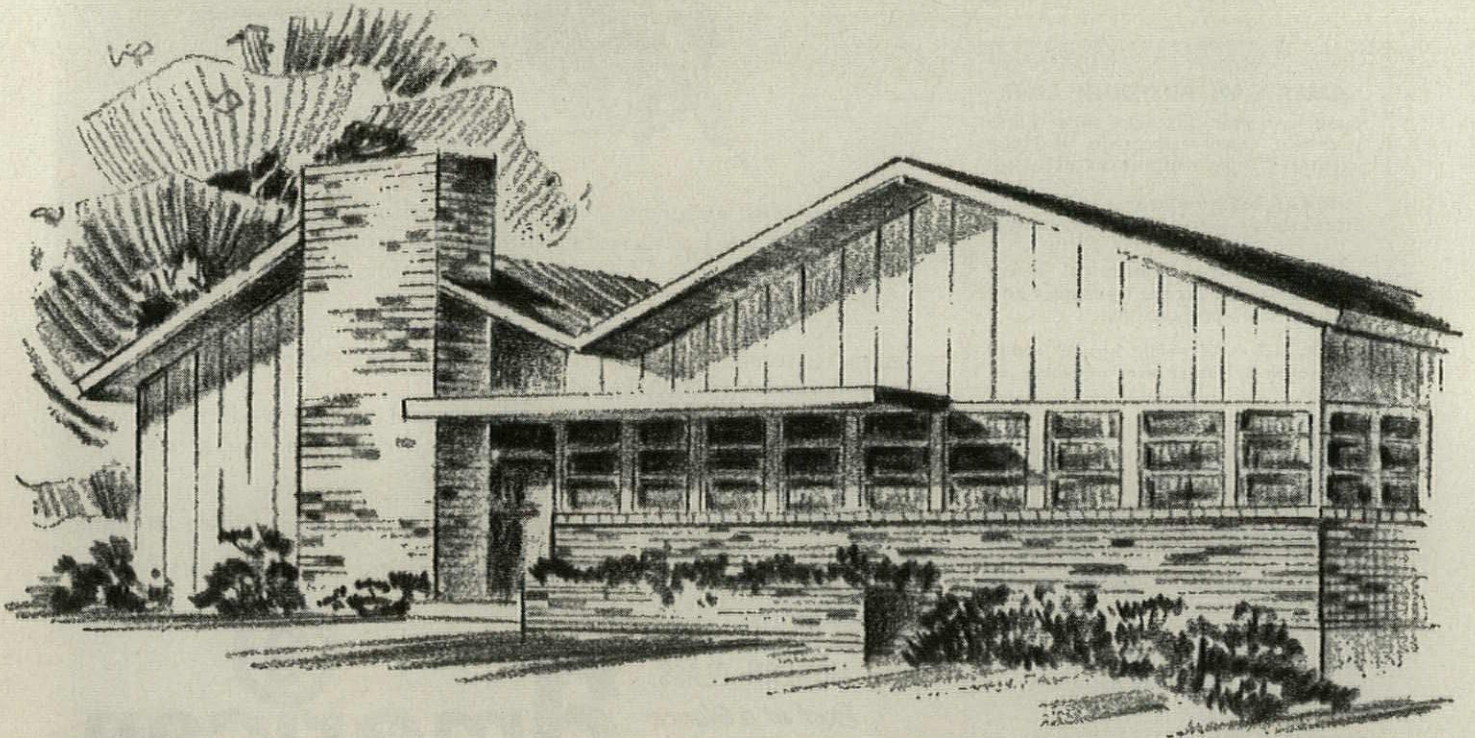
### Here's the Skeleton



The preliminary work is done for you when you specify a rigid frame Armco Steel Building. You get the convenience and economy of a factory-made structure—yet you still retain freedom of interior and exterior treatment that is so important to your client. Armco provides the base building—and you provide the design and treatment that makes it a store, office, school, church or plant.

Get authoritative data on Armco Steel Buildings now. You'll find a wide range of sizes and combinations that meets practically any floor area requirement. Clear-span widths range up to 60 feet. Write us. Armco Drainage & Metal Products, Inc., 5056 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

### ... and Here's What You Can Do With It



## Armco Steel Buildings

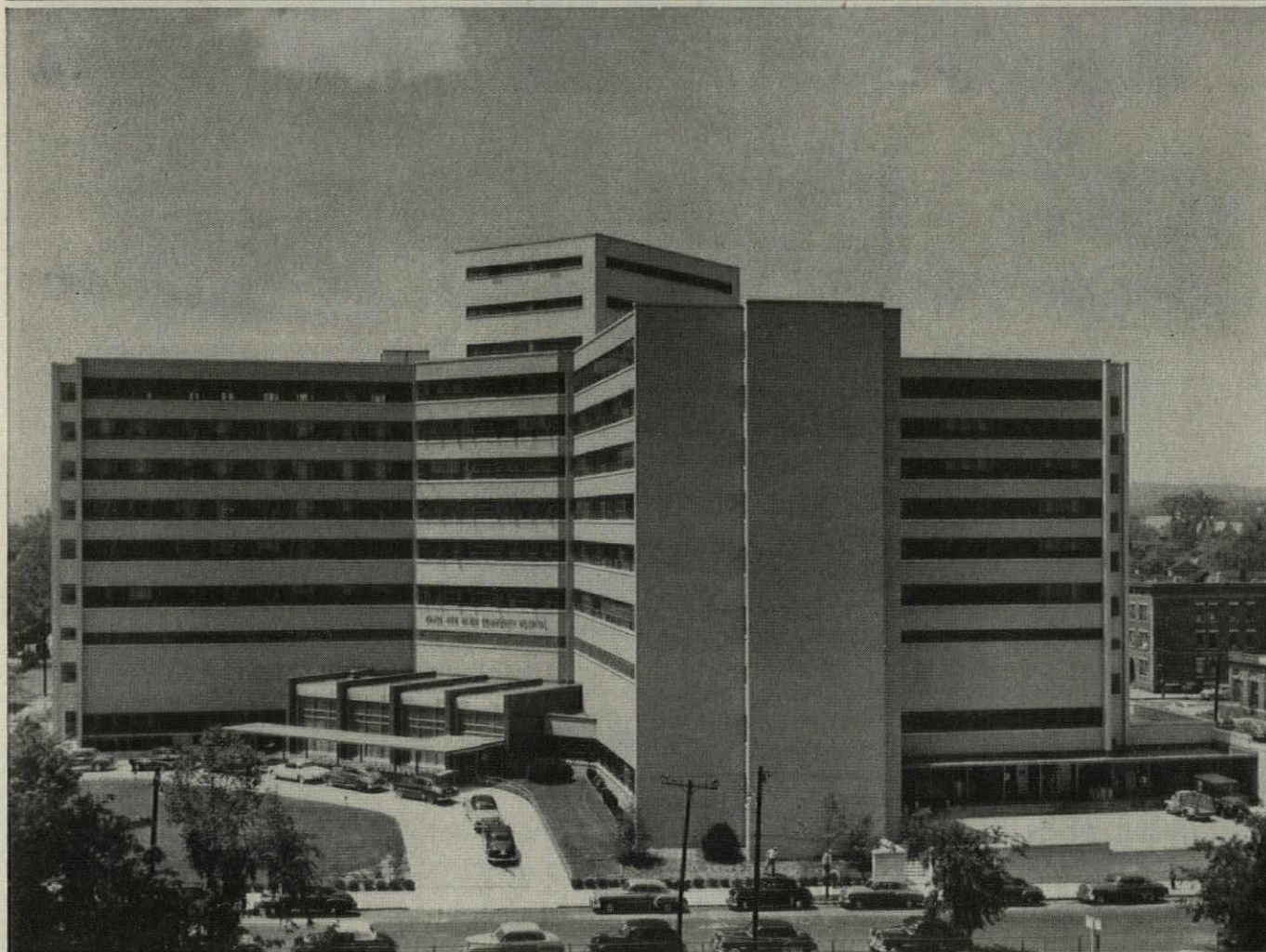


*Since*

# HOPE'S

*1818*

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH



*Memorial Unit—Grace-New Haven (Conn.) Community Hospital*

*Architect—Office of Douglas Orr; Contractor—The Dwight Building Company*

Here are HOPE'S CUSTOM STEEL WINDOWS in an unusual application, over 2300 units of casement, projected and fixed sash in unbroken window ribbons, uncluttered and pleasing to the eye.

Good planning has created rooms with the feeling of spaciousness and abundant, easily-controlled, natural light. This, draft-free ventilation and easy cleaning from within benefit the patients

and the hospital staff alike. Architects specify Hope's Custom Steel Windows to obtain the utmost freedom in planning and also to obtain superior quality for the owner.

Hope's extra strength and rigidity in structure and dependable mechanisms in operation offer durability that lasts the full life of the building with the least expense for maintenance.

*For Further Information, write for Bulletin 134AF*

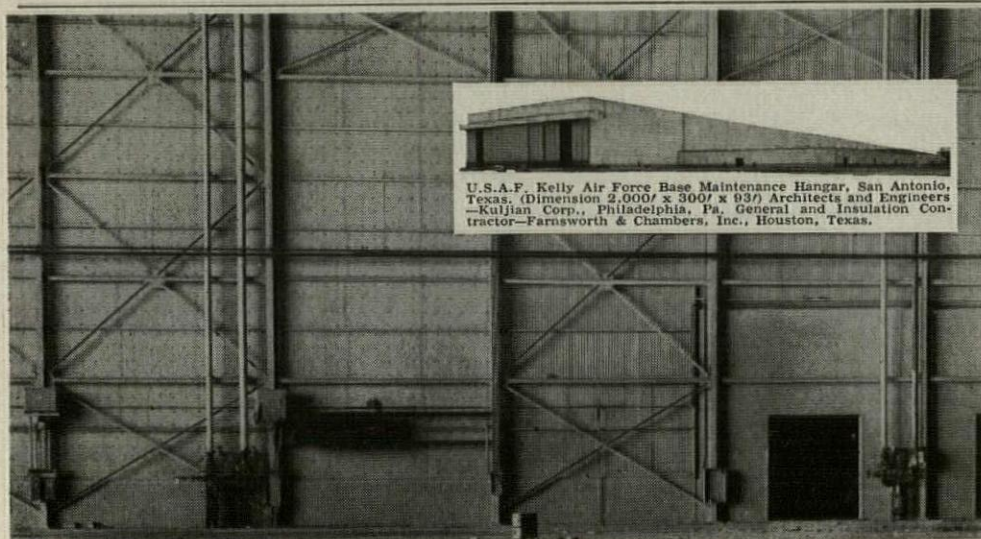
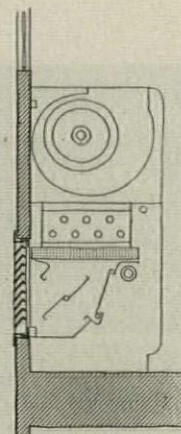
## HOPE'S WINDOWS, INC., Jamestown, N. Y.

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS



## PRODUCTS *cont'd.*

For more information use coupon, p. 253



U.S.A.F. Kelly Air Force Base Maintenance Hangar, San Antonio, Texas. (Dimension 2,000' x 300' x 93') Architects and Engineers—Kuljian Corp., Philadelphia, Pa. General and Insulation Contractor—Farnsworth & Chambers, Inc., Houston, Texas.

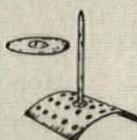
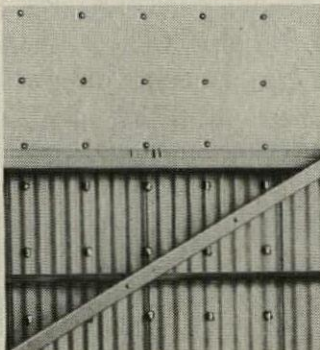
Wall section during application of Ultralite Insulation attached to inside of exterior walls with Miracle Surface Anchors and Miracle Adhesive.

## MIRACLE SURFACE ANCHORS BONDED WITH MIRACLE ADHESIVE—CUT TIME AND CONSTRUCTION COSTS AT **KELLY AIR FORCE BASE**

217,584 SA-4 Spindle Anchors and W-1 Washers Used to Permanently Bond Ultralite Insulation to Corrugated Asbestos Walls in Maintenance Hangar.

(PROGRESS VIEW) TOP SECTION:  
Ultralite Insulation attached to 4.2" Corrugated Asbestos Wall with Miracle SA-4 Spindle Anchors and Miracle Anchor Adhesive Type RT.

BOTTOM SECTION: SA-4 Miracle Spindle Anchors bonded to 4.2" Corrugated Asbestos Wall, ready for application of Ultralite Insulation.



**MIRACLE SA-4 CURVED SPINDLE ANCHORS** for corrugated surfaces, used in this application, are but one of a wide variety of Miracle

Surface Anchor shapes & sizes that reduce costs, speed construction.

**MIRACLE ANCHOR ADHESIVE, TYPE RT**, used in this installation, is completely waterproof. Features outstanding bonding strength to concrete, masonry, and metal. "Construction by Adhesion" originated by Miracle Adhesives Corp. covers the entire field of the building industry with a specific adhesive for each type of installation.

The use of Miracle Surface Anchors and Miracle Adhesives speed the installation of all types of insulation. Eliminates drilling and welding. In continuous operation, one man installs as many as 200 Miracle Anchors per hour, 1/5 to 1/3 of time required for mechanical anchorage, with far

less fatigue to workmen.

**YOURS ON REQUEST:** Valuable Miracle Surface Anchor Technical Bulletin complete with specifications and illustrations of the various types of anchors available. Write for your free copy of this informative bulletin.

## MIRACLE ADHESIVES CORPORATION

214 E. 53RD STREET, NEW YORK 22, NEW YORK

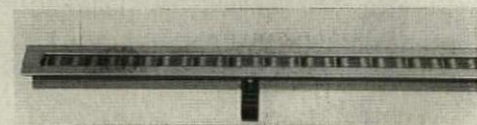
louver suited to the thin walls (photo above). Now the manufacturer has modified the intake to make it adaptable to any thickness of sandwich panel or wood frame wall. As part of the stock assembly, a 6" galvanized sleeve is cut to the right depth on the job and the louver itself is installed. Intakes are available in both aluminum and steel. The heating and ventilating system behind the louvers ranges between \$1.35 and \$1.70 per sq. ft. of building.

**Manufacturer:** Herman Nelson Unit Ventilator Products.

14

### STRIP DIFFUSER designed for continuous run under large glass areas

Engineered to combat the cold downdrafts that spill off expansive window areas, the *Uni Flo Model ST* air grills can be installed along perimeter floor ducts or over plenums built into sill cabinets. Complementing the manufacturer's line of electronic controls, deflectors and other equipment for air-conditioning layouts, the



continuous diffuser is suitable for heating, ventilating and cooling in commercial and institutional buildings. It is furnished in several finishes with grilles that deflect air either 5° or 15° toward the windows. Price of a 40' strip is \$75.

**Manufacturer:** Barber Colman Co.

15

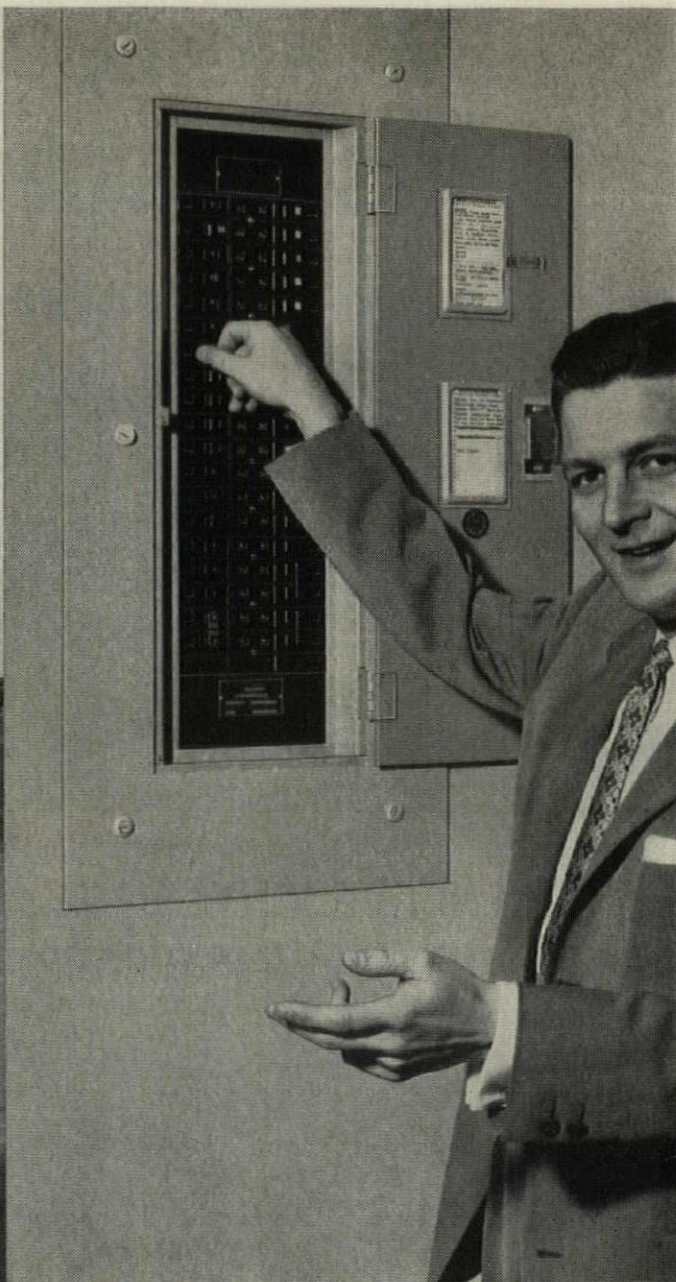
### GROOVED TUBE yields twice the brightness of other fluorescents

G.E. engineers have literally squeezed more light out of an 8' lamp. Developed for high bay factory lighting, outdoor floodlighting and highway illumination, the *Power Groove* produces 1,800 foot-candles—double the level of present "high output" units. It is formed with deep dimples along one side so that through most sections it is U shape. The con-

*continued on p. 240*



# This circuit breaker can pay for itself in 15 seconds



Snap! And the power is on again. It's that simple with a Westinghouse AB De-ion® circuit breaker. Unlike other protective devices, it quickly restores power with just a simple flick of the finger—no valuable time wasted looking for fuses, no fuse replacement costs, no need even to call a maintenance man. The trip position of the breaker handle quickly identifies the affected circuit.

Today's buildings—with a wide range of electrical equipment from fans to floodlights—require positive insurance against overloads and short circuits. And when overloaded circuits go dead and business stops

cold, that's when Westinghouse circuit breaker protection pays for itself many times over by restoring electrical service quickly, effortlessly—with practically no loss of valuable time.

When you consider circuit protection for today's buildings, it will pay you (and your clients) to specify Westinghouse AB circuit breakers. Your Westinghouse representative can offer you a complete range of circuit breakers for every application. Call him, or write to: Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pennsylvania.

J-30193

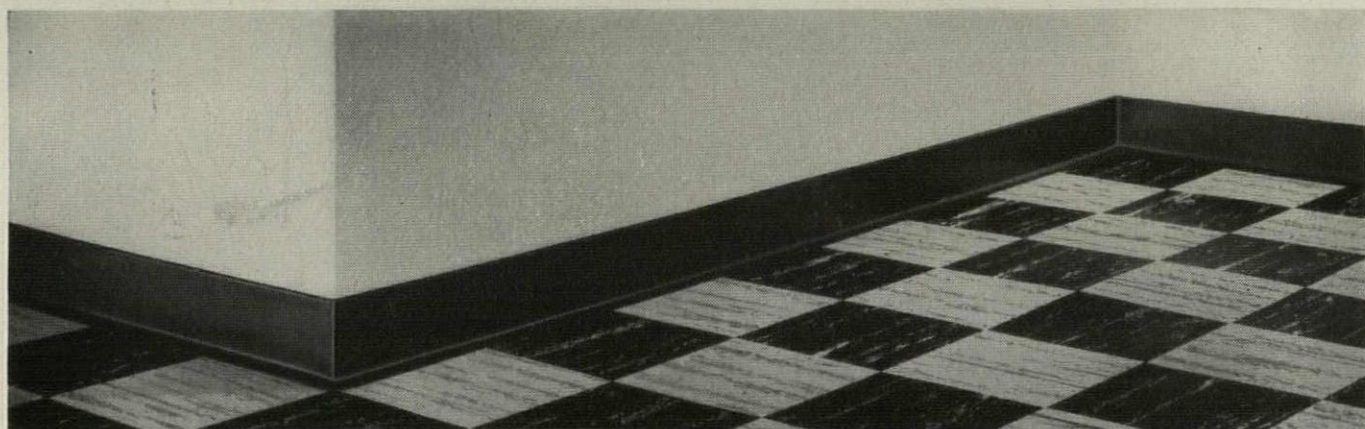
## **WATCH WESTINGHOUSE!**

WHERE **BIG** THINGS ARE HAPPENING FOR YOU

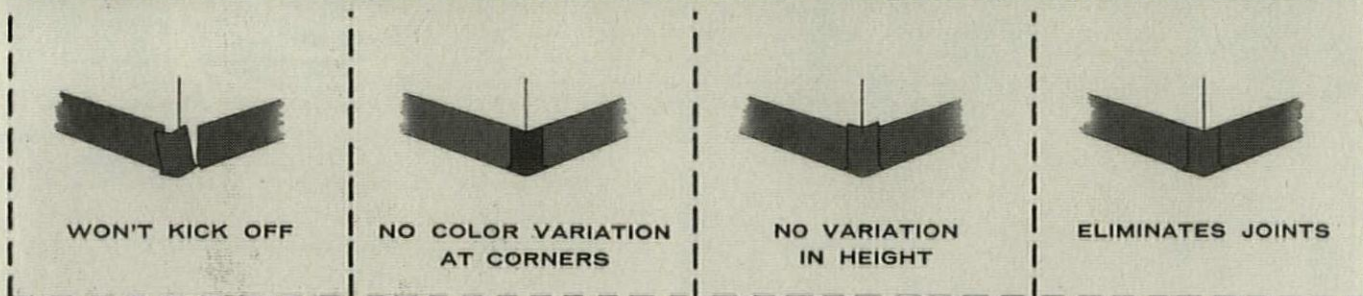


# NEW KENCOVE VINYL BASE INSTALLATION METHOD

Provides neater, better looking corners



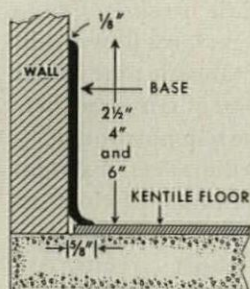
## KENCOVE VINYL BASE CORNERS GIVE YOU THESE ADVANTAGES OVER PRE-FABRICATED CORNERS SHOWN BELOW



New KenCove Vinyl Base installation method allows mechanics to mold corners right on the job. The cost is less than prefabricated corners with short 2" and 3" wings which do not allow adequate surface contact for the adhesive. 48" KenCove molded around inside or outside corners allows maximum contact surface. Rubber base cannot be molded without scoring which weakens it, and its factory-made corners seldom fit the irregular and off-plumb corner sizes found on the job. KenCove vinyl base resists scuffing, cleans easily, does not show mop marks.

**ASK FOR A FREE DEMONSTRATION** from your KENTILE Sales Representative. Contact any of the offices listed below:

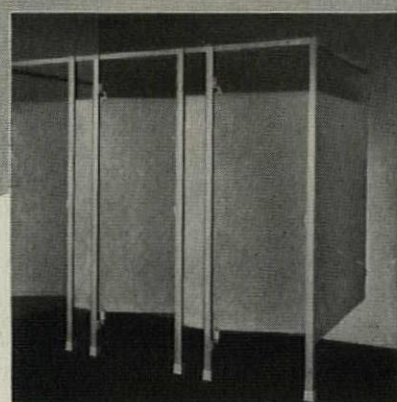
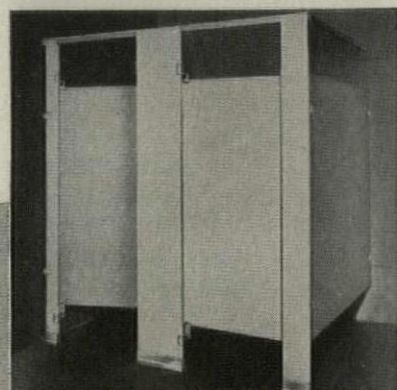
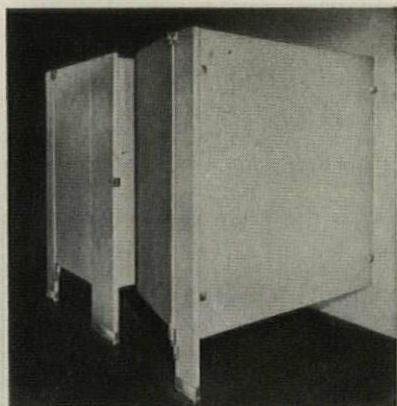
### KENCOVE SPECIFICATIONS



KenCove Vinyl Wall Base, as made by Kentile, Inc., top set type, ribbed back,  $\frac{1}{8}$ " thick, (2½" high) (4" high) (6" high), rounded top,  $\frac{5}{8}$ " wide at bottom; colors (Sumac Red) (Black) (Brown) (Gray) (Green). Inside and Outside Corners to be molded on the job from KenCove Wall Base. Adhesive: KenFast No. 2 Adhesive as made by Kentile, Inc. for base.

KENTILE, INC., 58 SECOND AVENUE, BROOKLYN 15, NEW YORK • 350 FIFTH AVENUE, NEW YORK 1, NEW YORK • 3 PENN CENTER PLAZA, PHILADELPHIA 2, PENNSYLVANIA • 1211 NBC BUILDING, CLEVELAND 14, OHIO • 900 PEACHTREE STREET N.E., ATLANTA 9, GEORGIA • 1016 CENTRAL STREET, KANSAS CITY 5, MISSOURI • 4532 SO. KOLIN AVENUE, CHICAGO 32, ILLINOIS • 4501 SANTA FE AVENUE, LOS ANGELES 58, CALIFORNIA





# Standard Stock

*in standard colors*

**for QUICK DELIVERY!**

*Elementary School sizes . . . with concealed hinges*

**Now . . . Nicholson Toilet Compartments  
are stocked in standard styles and  
colors for quick delivery "from stock."**

Modern production facilities, housed in a new 67,000 square-foot plant, are busy building up a standard-size stock of these three most popular styles. From ultra-modern to rugged utility designs, you can get the toilet compartments you need in a hurry.

You can specify better-built compartments . . . Nicholson compartments . . . and have them shipped *right away!* No waiting. No delay in completion of important contracts.

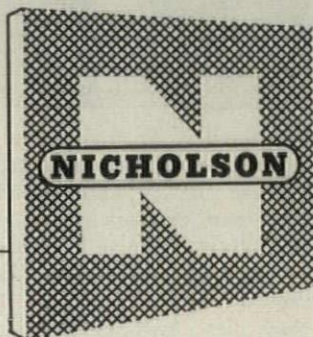
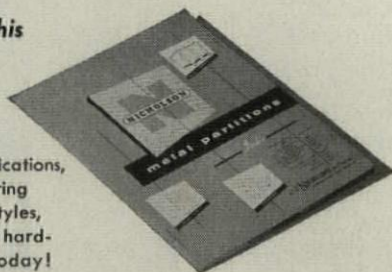
Specify Nicholson, for serviceability and service.

*Nicholson Toilet Compartments are immediately available in the following types . . . in standard colors:*

Type A—floor braced      Type AR—overhead braced  
Type B—flush style

**Specify right from this  
new Nicholson  
"tell-all"  
bulletin!**

Contains complete specifications, illustrations and engineering drawings . . . facilities, styles, construction, layouts and hardware. Send for a copy today!



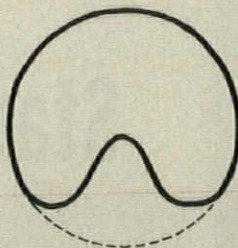
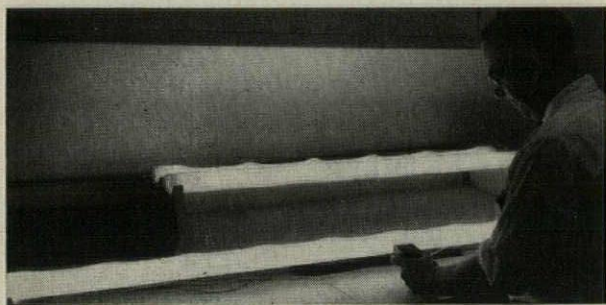
**W. H. NICHOLSON and Company**  
METAL PARTITIONS • TRAPS • VALVES • FLOATS

14 OREGON STREET, WILKES-BARRE, PA. • SALES AND ENGINEERING OFFICES IN 98 PRINCIPAL CITIES



## PRODUCTS *cont'd.*

For more information use coupon, p. 258.



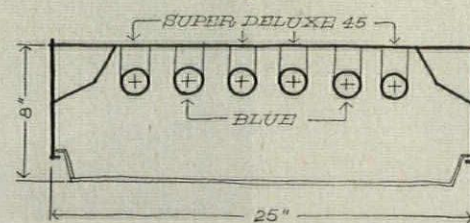
strictions increase the area of phosphor-coated surface without enlarging the diameter and convert more energy radiating back and forth the short distances into light. (In unpinched cylinders, a good portion of energy is absorbed by mercury vapor as it travels across the tube.) Contrary to the fluorescent rule-of-thumb "10 w. per foot," *Power Groove* tubes operate on 200 w. They cannot be substituted on present equipment. New rapid start ballasts have been developed and lamps are now in the hands of manufacturers who are designing fixtures to take them on. Marketing is planned for late fall.

Manufacturer: General Electric.

16

### FLUORESCENT LAMPS are grouped in fixtures to reveal full spectrum

Measured in millimicrons, daylight is a many splendored thing. But to the National Bureau of Standards—and so to anyone in industry concerned with color accuracy—it is the equivalent of north light entering a Washington D.C. skylight at 11 A.M. In the 381 *Color Matcher*, Duro Test has mounted four of its *Super Deluxe 45* lamps with two blues behind two 2'-square acrylic diffusers to give the 7,500° kelvin temperature prescribed by the Bureau at a comfortable, workable 75



foot-candles. An invaluable light source in printing shops, art studios, textile plants because of its excellent color rendition from blue through green, yellow and red, the fixture can also help restore confidence of store customers who want to see clothing and other goods in daylight before they buy. List price of the 49" x 25" model 381 is \$76.25.

Manufacturer: Duro Test Corp.

*continued on p. 246*

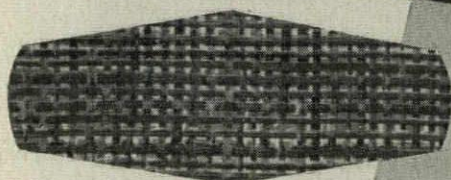


REPLACEMENT OR REFUND OF MONEY  
Guaranteed by  
Good Housekeeping  
IF NOT AS ADVERTISED THEREIN

...the very best  
in high pressure

### PLASTIC LAMINATES

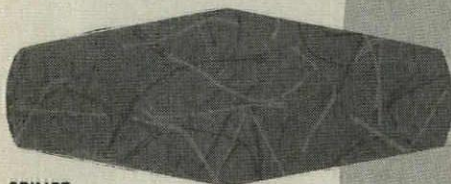
Farlite offers so many superior functional features for fabricating table tops . . . counter, desk, sink, bar and soda fountain tops . . . partitions and paneling . . . decorative interior treatments . . . a host of other applications. Its glass-smooth, non-porous surface is sanitary, easy to clean, permanently beautiful . . . resists heat and burning cigarettes . . . is not affected by alcohol, grease, fruit acids, mild cleaning solutions . . . will not chip or fade. Available in a wide range of more than 50 Farlite colors and patterns, including beautiful wood grains, in 1/16" thick sheets as well as complete warp-resistant tops and panels 13/16" and 1-1/4" thick . . . can also be made to your specifications. Write for descriptive folder and name of nearest distributor . . .



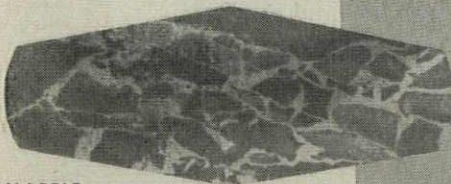
MALAYA



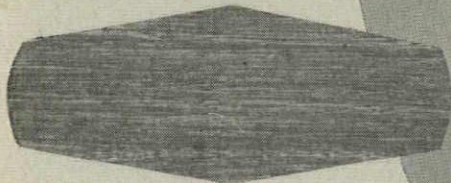
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PLASTICS DIVISION • FARLEY & LOETSCHER MFG. CO., DUBUQUE, IOWA





## Connections mean a lot to Miss Foster

*Yesterday's wiring can't supply adequate outlets for today's office equipment.*

Fortunately no secretary would ever end up in this unhappy state. But Miss Foster believes in graphic demonstrations when it comes to emphasizing the importance of electrical planning in office buildings. She knows that electrically operated equipment just doesn't fit into an office that lacks adequate power. Today, office planners prepare for the future by providing electrical availability to handle all foreseeable power demands of office equipment.

**If you're planning an office or commercial building** you can take care of the building's electrical future now with General Electric Q-Floor wiring. The system is installed with cellular steel subflooring so that every cell becomes a raceway. This means that electrical outlets can be installed in any given six-inch area of the floor to meet elec-

trical requirements as they grow or change. No costly alterations needed, no litter or disruption of office activity.

### **G-E SPECIALISTS CAN HELP YOUR PLANNING**

General Electric specialists have helped plan thousands of these cellular steel subfloor wiring systems. Every one of them is still electrically up-to-date. These same specialists are available to help you build an electrical future into the plans you're making today.

For more information on General Electric underfloor systems—Q-Floor, Fiberduct wiring, or the new two-level steel underfloor system—call your G-E Construction Materials District Office, or write Section C68-64, Construction Materials Div., General Electric Company, Bridgeport 2, Conn.

*Progress Is Our Most Important Product*

**GENERAL  ELECTRIC**





Simple open wood centering supports Ceco-Meyer Flange-Type Steelforms for waffle construction used in The Center, Omaha. Here a worker is readying steelforms to fill out a panel.



Waffle concrete joist construction is an ideal solution for buildings with wide column spacings and light floor loads. Savings are made in the formwork and in the elimination of ineffective concrete.



There's nothing better than reinforced concrete for permanence. With Ceco's Waffle Construction you can have permanence—plus longer spans and higher beam-free ceilings without increasing over-all building height.



Ceco Open-Web Steel Joists used as roof purlins, as illustrated here, comprise the lightest of all standard roof framing, allowing long spans and light beams, columns and footings. They can be erected summer or winter—and are non-combustible and non-shrinking.



## WAFFLE-TYPE PROVIDES

**CECO  
STEEL**

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE





Night view of The Center, Omaha's spanking new shopping center, showing one of the lower level parking entrances and store areas above. J. and G. Daverman Company, Grand Rapids, Michigan, architects. C. H. Leavell & Company, El Paso, Texas, general contractor. Harry D. Lane, El Paso, Texas, structural engineer.

## CONCRETE JOIST CONSTRUCTION

### "WIDE OPEN SPACES" ... CUTS COSTS 7%

#### CECO ENGINEERING TAKES "LAZY" CONCRETE

**OUT OF LONG SPANS...** Wide open spaces... that's the need in shopping centers... where the fewer the columns the more freely the merchandise moves. So in designing The Center—Omaha's newest shopping community—the architects J. and G. Daverman Company used Ceco-Meyer Steelform "Waffle" Construction to obtain long, rigid floor spans at reasonable cost. Comparison with other framing methods showed dollar savings of 7%. Non-working "lazy" concrete was eliminated by the open waffle areas

—yet this two-way joist system created maximum stiffness.

Further savings were made by using Ceco Open-Web Steel Joists for the roof and mezzanine. Ceco also supplied Steel Reinforcing Bars and Welded Wire Fabric, meeting exacting delivery schedules. Here's an example of how Ceco Coordinated-Engineering assures the best structure while saving money and speeding construction. Next time call Ceco for planning help.

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

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is Maintenance!"*



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**Airtemp AIR CONDITIONING IS CHRYSLER-  
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Yes, once the air conditioning installation is made, you and your clients want quiet, *trouble-free* operation from then on—with no complaints! And that's what Airtemp's Chrysler engineering assures. Here you have the pioneers in packaged air conditioning putting all their skill and knowledge into your installation. Here you have the advanced principles of engineering leadership at your command for advice, consultation and application.

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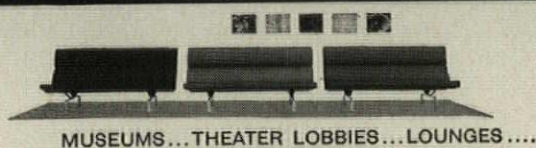
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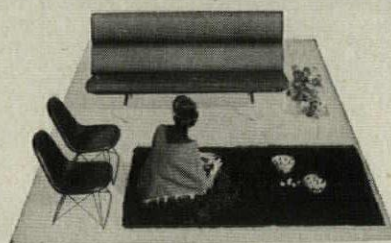
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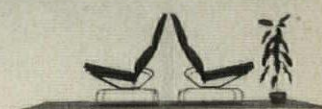
THEY BRING BRIGHTNESS AND HOSPITALITY TO AN OFFICE RECEPTION AREA...A MEDICAL WAITING ROOM.....



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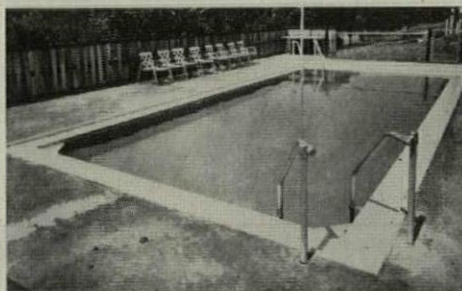
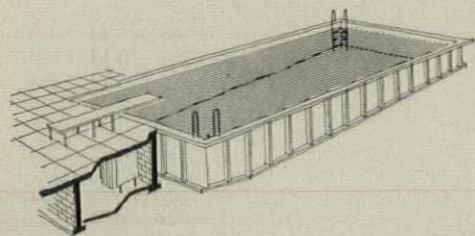
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TO LEARN ABOUT THIS SOFA AND/OR OTHER DESIGNS WE SUGGEST THAT YOU ORDER THE NEW HERMAN MILLER CATALOG (\$5.00)



## PRODUCTS *cont'd.*

For more information use coupon, p. 258



17

### **ALUMINUM POOLS** factory fabricated in sections; job welded

Delivered as a package complete with filters and chlorination equipment, Chester aluminum swimming pools are ready to be set in an excavation, welded together and connected to supply and drain lines. Models 32' x 16' up to 20' x 42' for clubs, motels and playgrounds are delivered in two lengthwise sections; larger commercial pools of any size or shape are made up in as big pieces as are practical for shipment.

Taking advantage of the aluminum's formability as well as its light weight and corrosion resistance, the pool is designed with 1'-wide ledge and covered scum gutter made up of special extruded shapes that act as a strengthening frame. The roll-out ledge helps swimmers pull themselves out of the water and also makes cleaning easier; to skim floating leaves, dixie cups and other matter from the surface the water level is raised until the stuff gets trapped in the gutter. Thick plates of aluminum alloy are used for pool sides, bottom and exterior vertical stiffeners. Two ladders are included with every stock pool in addition to the recirculating pipings, underwater lights and deck equipment. An optional feature is a telescoping metal pool cover operated by push button. Standard size pools run from about \$3,800 for 32' x 16', 3' to 8' deep, up to \$6,025 for a 42' x 20', 3' to 8' deep. *Manufacturer: Chester Products Co., Div. of Ranschoff, Inc.*



HIGH SCHOOL GYMNASIUM . . . MAYNARD, MINNESOTA  
Architects: Haarstick Lundgren & Associates, Inc. • St. Paul, Minn.

### **"UNUSUAL . . . ATTRACTIVE . . . LOW COST"**

"The unusual attractiveness and efficiency of this Maynard, Minnesota gymnasium is immediately apparent to the spectator. And to those who paid the bill—the low cost is more than gratifying. Compliments have been numerous."

Such is the report from Haarstick Lundgren & Associates, Inc., who were given the challenge of providing an attractive design with low cost. "Important credit," they said, "must be given Rilco Glued Laminated Wood Arches and the prompt cooperation of their representatives in helping us to meet the challenge."

Rilco Arches, Beams, Trusses and Rilco Deck will help you to achieve similar results in schools, churches and commercial buildings whether the design is traditional, modern or purely functional. Rilco engineers will gladly work with you at any time. Just write . . .



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18

### **MARINE FLOODLIGHT** throws 50' beam under water

The WS-8 Aqualux flood may not only go near the water but stay in to light up the swimming. Cased in bronze and sealed with neoprene, the unit is designed for long wet duty and little maintenance. To service or relamp, the assembled body and lens can be lifted from the fixed 1'-square frame and bought to the rim of the pool. A 15' length of *type S* cable stored in each unit's mounting recess makes it unnecessary to disconnect the lamp or, even less convenient, drain the pool. The new flood takes 250-, 300- or 500-w. lamps and is obtainable with clear or colored lenses. A single row can effectively illuminate a pool 50' wide. List price is \$150 per fixture.

*Manufacturer: Westinghouse Electric Corp.*

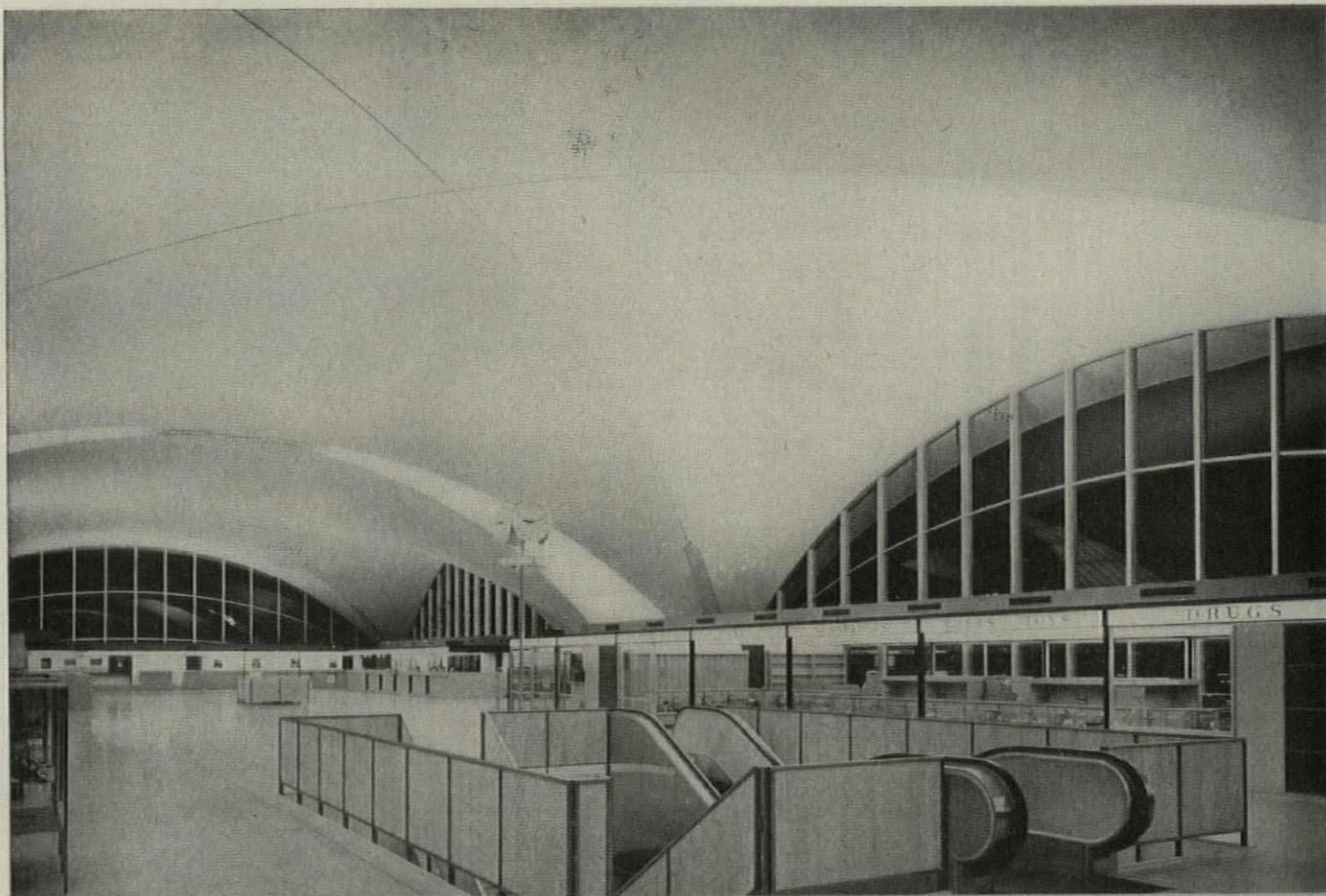
19

### **SLIDING DOOR LOCK** makes up for misaligned panels

Easily mounted after boring two holes, Adams 666 sliding door lock telescopes to fit doors 1 3/8" to 1 3/4" thick. Its round

*continued on p. 252*





## St. Louis Municipal Airport Terminal Building

Hellmuth, Yamasaki & Leinweber, Architects

Ferris & Hamig, Electrical Engineers

Roberts & Schaefer, Dome Consultants

- 110KW in color corrected mercury lamps, neatly concealed, produce this masterpiece of comfortable indirect light. Not an installation in America like it!...There are 100 Rambusch Field Representatives. One of them is near you and anxious to serve.

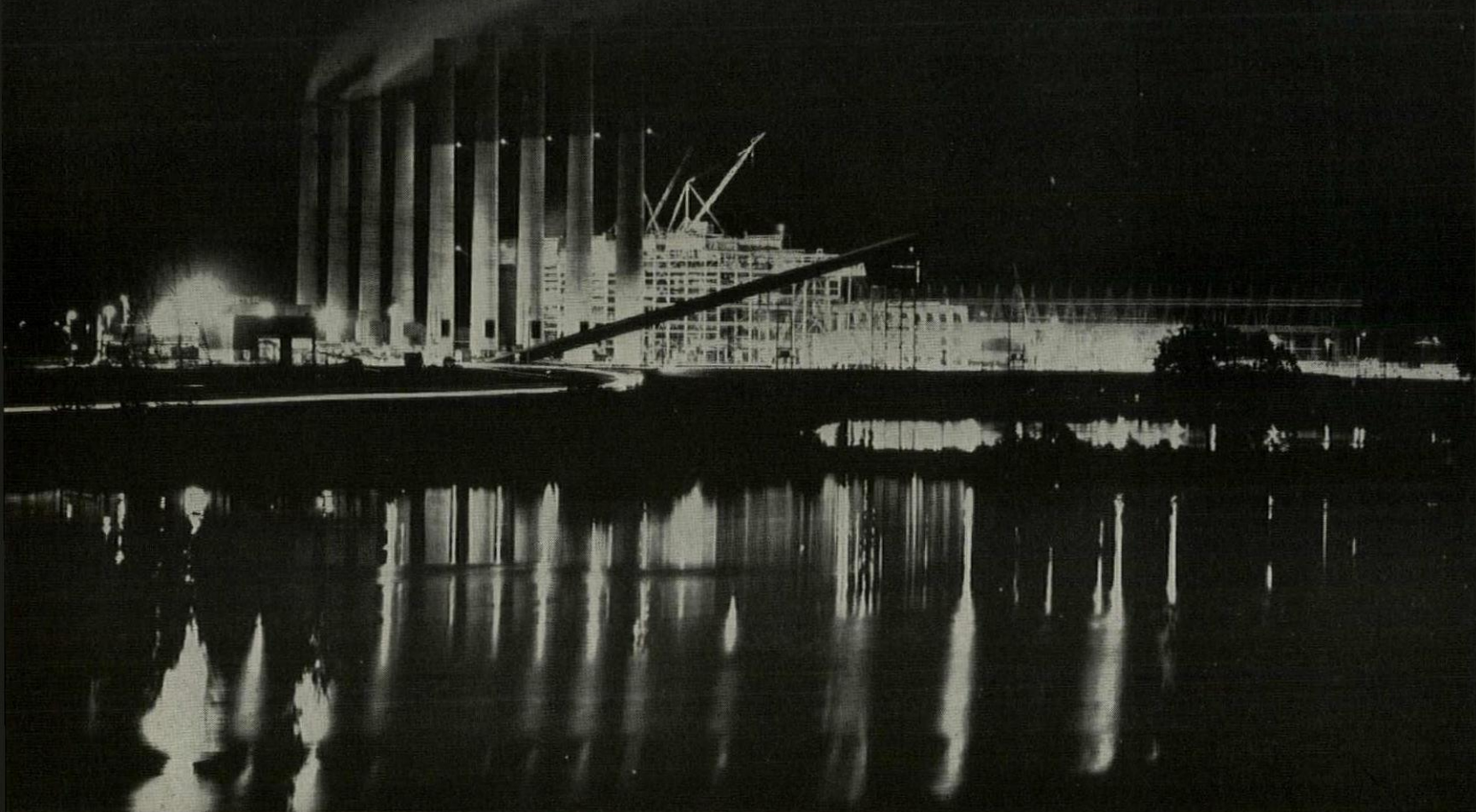
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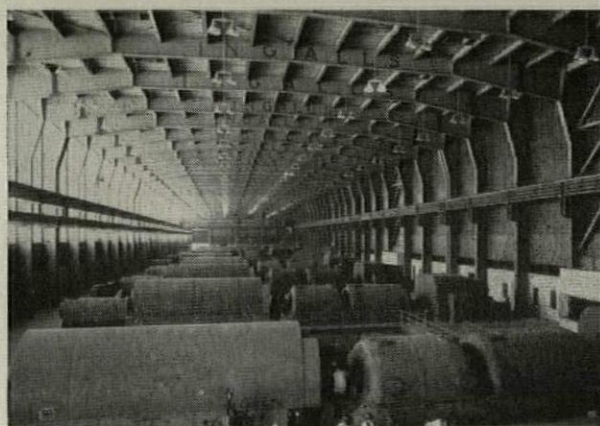
# INGALLS furnishes STEEL MUSCLES



## for the **WORLD'S LARGEST** **POWER PLANT**

This is the world's largest steam-electric plant, recently completed near Kingston, Tennessee, by the Tennessee Valley Authority. The entire plant has a capability of one million, six hundred thousand kilowatts — about fourteen times that of Norris Dam. With a generator room 895 by 115 feet, a boiler room 868 by 138 feet, and a shop and office area 200 by 205 feet, the main building of the nine unit structure is by itself tremendous; some idea of the whole plant's scope may be realized by considering the twenty two million man hours that went into planning, designing, construction, and secondary services.

**INGALLS**, specialist in steel for power plants, is genuinely proud of having been called upon to fabricate the structural steel used in the powerhouse proper for this monumental operation. It represents one more in a large series of power installations done by Ingalls in twenty two different states, throughout the North, South, East, and Southwest. Wide and intense practical knowledge makes Ingalls ready *now* to help you with both speed and true economy. Your inquiries will be promptly acknowledged.



View of turbine room in Ingalls-fabricated powerhouse; 7 units in operation; 150,000 kw units in foreground

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STEEL IS  
OUR BUSINESS**



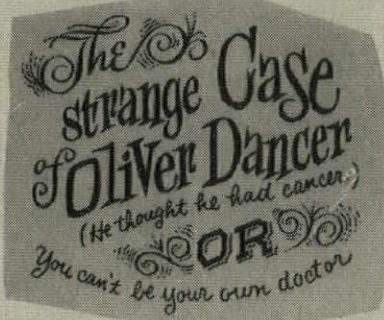
**THE INGALLS**

**IRON WORKS COMPANY**  
**BIRMINGHAM, ALABAMA**

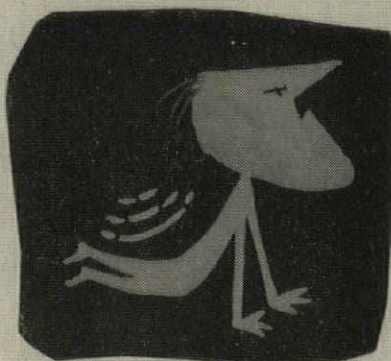
SALES OFFICES: New York, Chicago, Pittsburgh, Houston, Atlanta,  
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PLANTS: Birmingham, Ala.; Verona, Pa.; Pascagoula, Miss.;  
North Birmingham, Ala.; Decatur, Ala.

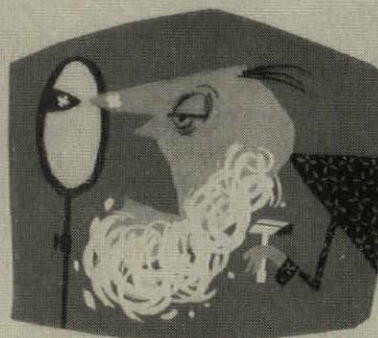




1. This is the story of an ordinary man . . . worked from 9:00 to 5:00 . . . raised hamsters in his spare time . . . steered clear of doctors.



2. Oliver did twenty push-ups every morning . . . took long bracing walks in the fresh air . . . made sparing use of condiments and stimulants.



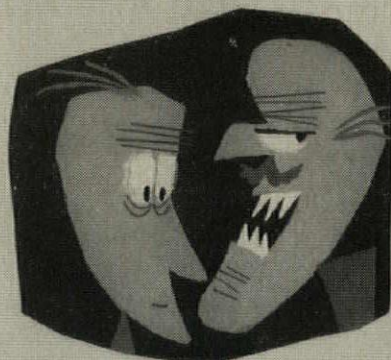
3. Then one day while he was shaving, he noticed a small lump. An icy hand reached out and clutched at his heart . . . This was it—CANCER!



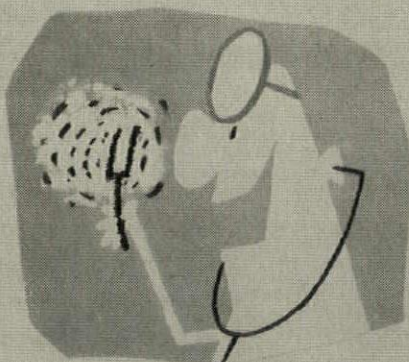
4. Overnight Oliver became a changed man. He gave his hamsters to a neighbor, bought a small harp and a booklet entitled "Harp-playing for Beginners."



5. Instead of taking long bracing walks, he tottered into his lawyer's office, cut two nephews out of his will and hastily added a couple of codicils.



6. His lawyer, a man of real intuition, knew that where there's a will there's a way, and firmly bullied Dancer into seeing a doctor.



7. A complete checkup showed he was in perfect health, except for a minor tone deafness that would preclude much skill with the harp.



8. Dancer was so overjoyed he promptly went home and made out a very large check to the American Cancer Society, and that's what you should do, too.

**AMERICAN CANCER SOCIETY**

Gentlemen:

I WANT TO HELP CONQUER CANCER

☐ Please send me free information about Cancer.

☐ Enclosed is my contribution of \$..... to the Cancer Crusade.

NAME.....

ADDRESS.....

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

9. (MAIL TO: CANCER, c/o your town's Postmaster.) Help others and help yourself. Fight Cancer with a checkup and a Check.





*Let it RAIN  
Let it BLOW*

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ARE THOROUGHLY **TESTED**  
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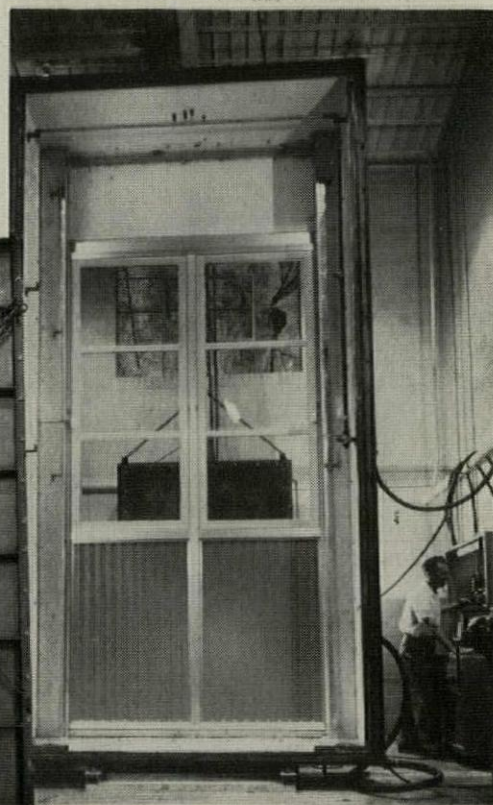
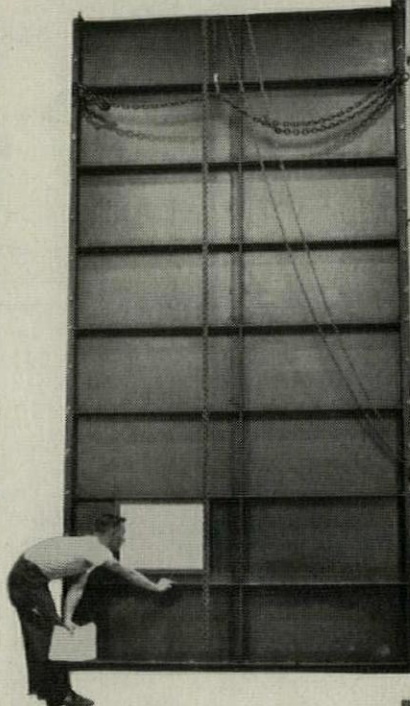
Flour City has excellent test facilities of its own to provide constant checks on product design. These tests are supplemented with tests by independent testing laboratories.

Flour City's two test cells, one to handle a 5'-0" x 7'-0" window, and the other to take up to 7'-6" x 15'-0" windows and panels are designed after those of the Pittsburgh Testing Laboratory. They can air-test with a static pressure equivalent to an excess of 100 m.p.h. wind pressure, and water-test with any pre-determined static air pressure by flowing a continuous film of water over windows and panels. This film is considerably more than would be occasioned by the hardest rainfall.

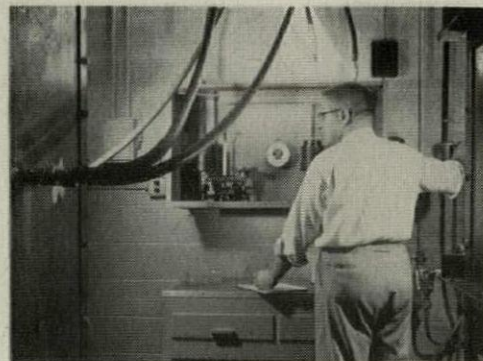
It is important to note that these pressures are constant and maximum which provides a greater test of water exclusion than normal rainfall would cause with intermittent winds.

*This is just one of many quality controls offered at Flour City to assure that you get the quality you expect for your client.*

*The* **FLOUR CITY** *Ornamental* **FC**  
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Flour City Test Cell with the cover removed and placed to the side and front to show the interior. The glazed opening in front of the cover enables operators to check test during operation.



Sensitive instruments record the test results.

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BUT ECONOMY IS IMPORTANT



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## JENKINS Fig.106-A

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BRONZE GLOBE VALVE  
150 lbs. Steam 300 lbs. O.W.G.  
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Jenkins Bros. originated this type of valve, and has always reasoned that the valve that has most of the work to do should have a liberal extra measure of dependability. The result is this Fig. 106-A.

It's easy to see why it is the champion of disc-equipped bronze globe valves. Every part, from heat-proof handwheel to pipe ends, reflects the design and construction skill of generations of Jenkins Valve specialists.

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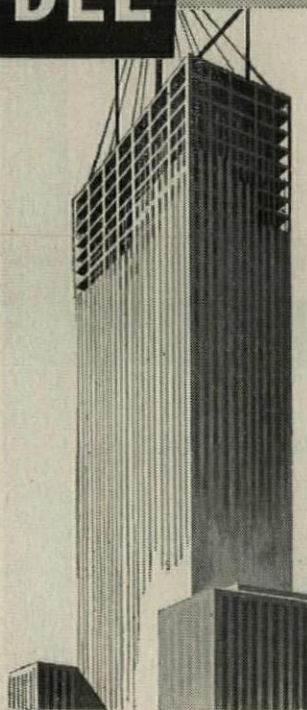


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**grips steel,  
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**provides tenacious,  
weathertight seal**

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Socony Mobil Building  
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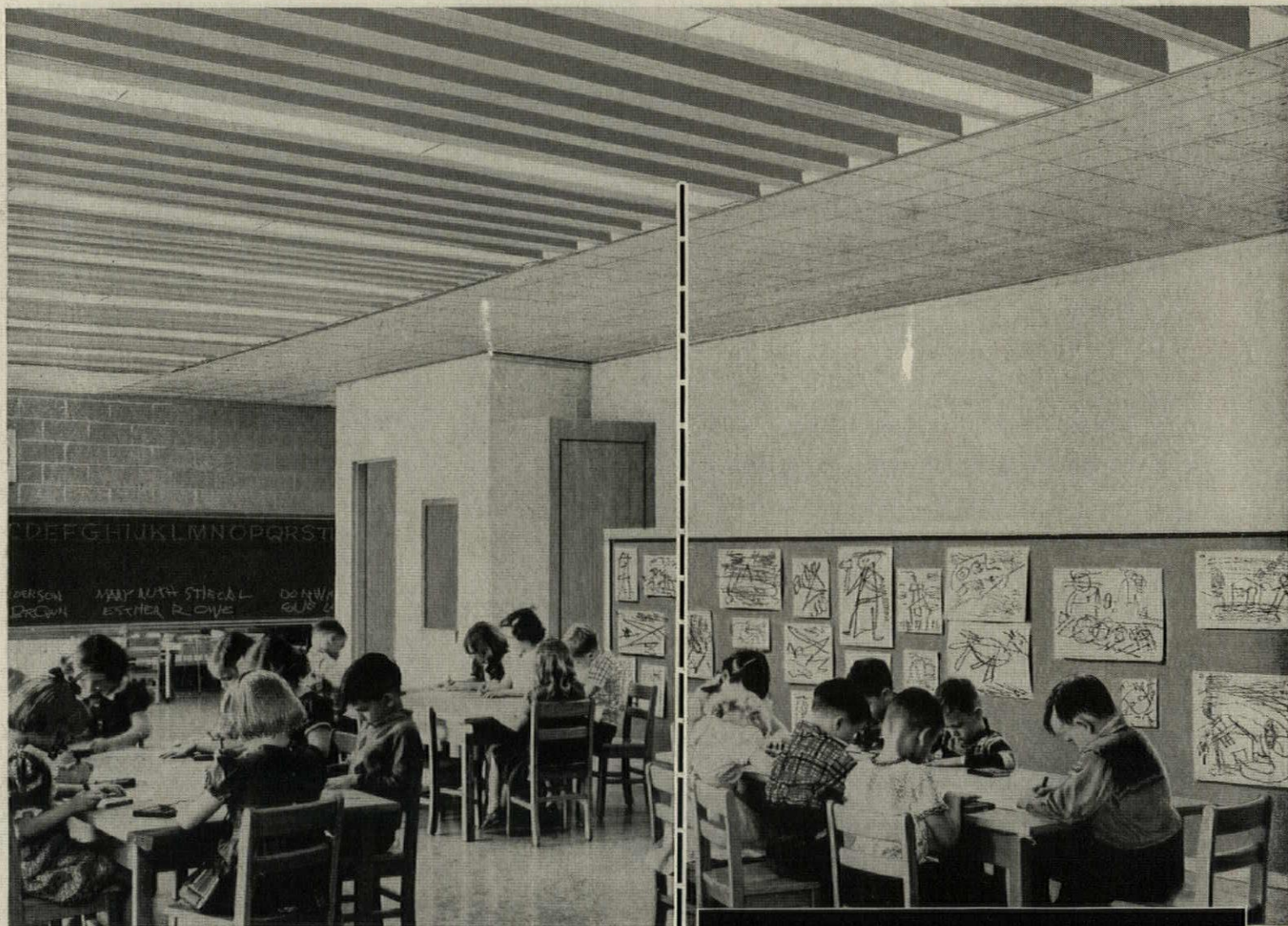
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# Robertson Long Span Q-Deck cuts cost 3 ways in School Construction

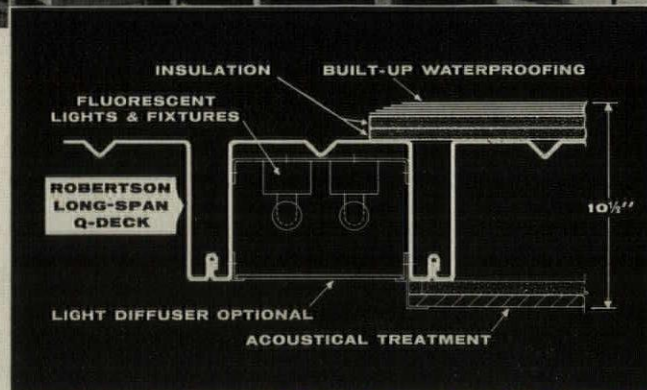


**1** Extra-strong Long Span Q-Deck is an ideal material for use in "reduced budget" school construction because it saves time and basic materials. Spans up to 32 feet completely cover classrooms and include corridors or outside cantilevered walkways thus reducing labor and structural steel.

**2** Long Span Q-Deck used as a ceiling possesses a measure of acoustical benefit, therefore only perimeter treatment of acoustical material becomes necessary as seen in the photograph. This again saves time and material.

**3** Flush lighting can be installed within the cells of Long Span Q-Deck to produce an extremely attractive, efficient, low-cost lighting system, as shown in the photograph and detail to the right. Use the coupon to write for further details on this remarkable deck—designed for multiple, money-saving benefits.

## ROBERTSON LONG SPAN Q-DECK



With this 3-way system, only 10½" of depth is required for the entire roof and ceiling section.

### H. H. Robertson Company

2403 Farmers Bank Building • Pittsburgh 22, Pennsylvania

In England—Robertson Thain Ltd., Ellesmere Port, Cheshire

In Canada—Robertson-Irwin Ltd., Hamilton, Ontario

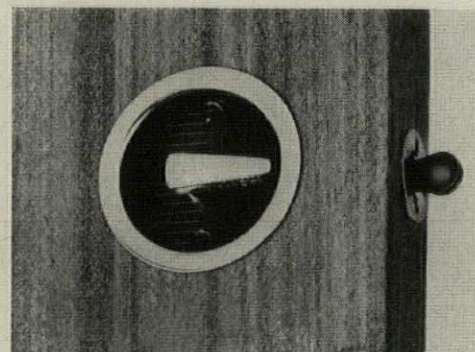
Please send additional information on Long Span Q-Deck.

|               |             |
|---------------|-------------|
| NAME _____    | TITLE _____ |
| COMPANY _____ |             |
| ADDRESS _____ | CITY _____  |



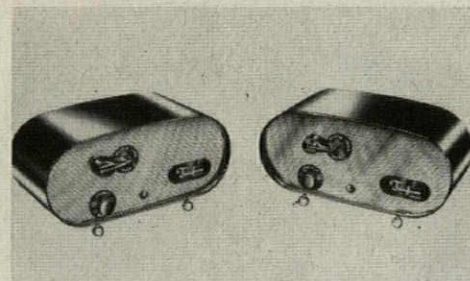
## PRODUCTS *cont'd.*

For more information use coupon, p. 258



concave strike directs the bolt into the strike hole for positive engagement even where doors are out of line as much as  $\frac{1}{2}$ ". Made of brass with a stainless steel bolt, the 666 has only two moving parts. It is available with interchangeable thumb turn, emergency or blank escutcheons for flush pulls at prices ranging from \$4.60 to \$6.40 a unit.

Manufacturer: Adams Rite Manufacturing Co.



20

### TWO STATION INTERCOM plugs into electric outlet

Operable a mile apart between buildings on the same power line, the *Fanfare* intercom makes a convenient low cost personal tie between factory and front office or doctor and receptionist. No wiring is needed for installation; the two stations are plugged into regular 110-v. or 220-v. outlet. Each talk-listen unit has a silencing control that eliminates power line interference. Finished in black and gold, the FW-20 lists at \$79.50; the FW-20D in brushed brass and white is \$84.50. Provision can be made for extra stations.

Manufacturer: Fanon Electric Co., Inc.

### PRODUCT NOTES

#### No-static fluorescent

A fluorescent tube that does not interfere with radio, TV and other communication devices have been developed by the Cold Cathode Lighting Corp. of New York.

#### Floating thermostat

A wireless thermostat that can be mounted anywhere on the wall—or even in a desk

*continued on p. 258*

How to do it with the

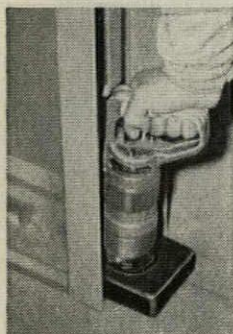
# REMINGTON STUD DRIVER

New cartridge-powered tool sets both  $\frac{1}{4}$ " and  $\frac{3}{8}$ " diameter studs in steel or concrete

With the Remington Stud Driver you can take on every stud-fastening job—light, medium and heavy-duty—and save time and money on each of them! Compact tool sets up to 6 studs per minute. Handles both  $\frac{1}{4}$ " and  $\frac{3}{8}$ " diameter studs, needs no outside power source. Shown below are three of many Stud Driver applications.



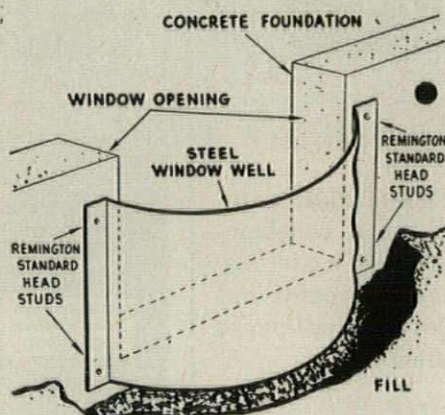
### Fastening door bucks to concrete floors and ceilings



Set door buck in place, plumbed and shimmed. Use Stud Driver with special guard to set floor anchor clips with Remington S-21 standard-head studs. Bend ceiling struts into position and secure with S-21 studs.

### Fastening wood to concrete

Place wood runners on chalk lines. Using standard guard or Remington GS-21, fasten 2 x 4 runners to the concrete floor or ceiling with Remington S-27 standard head studs.



### Installing cellar window wells

After the concrete forms are removed, position the steel window well and anchor it with the cartridge-powered Remington Stud Driver. Use four Remington S-21 standard-head studs. Compact Stud Driver easily fits into confined places and can be operated with one hand if necessary.

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**Remington**



Industrial Sales Division, Dept. A.F.-6  
Remington Arms Company, Bridgeport 2, Conn.  
Please send me my free copy of the booklet "How to Use the Remington Stud Driver Fastening Method."

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Firm.....

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





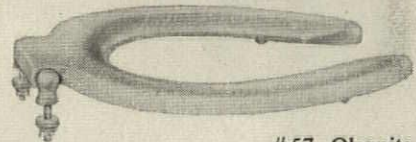
## FRANK LLOYD WRIGHT'S PRICE TOWER EQUIPPED THROUGHOUT WITH SOLID OLSONITE SEATS

### His First Skyscraper Alternates Offices and Apartments on 19 Floors

SELECTED FOR THE OFFICES, Solid Olsonite #10 White Shock-Proof Seats. Designed to last a lifetime of normal use, they are solid all the way through. Olsonite Seats will not crack, chip or peel.

SELECTED FOR THE APARTMENTS, Solid Olsonite #57 Crane Suntan Seats harmonize with the attractive bathroom design. Olsonite Seats keep their beauty—there is no exposed metal to rust or corrode.

#10 Olsonite Seats—available in black or white

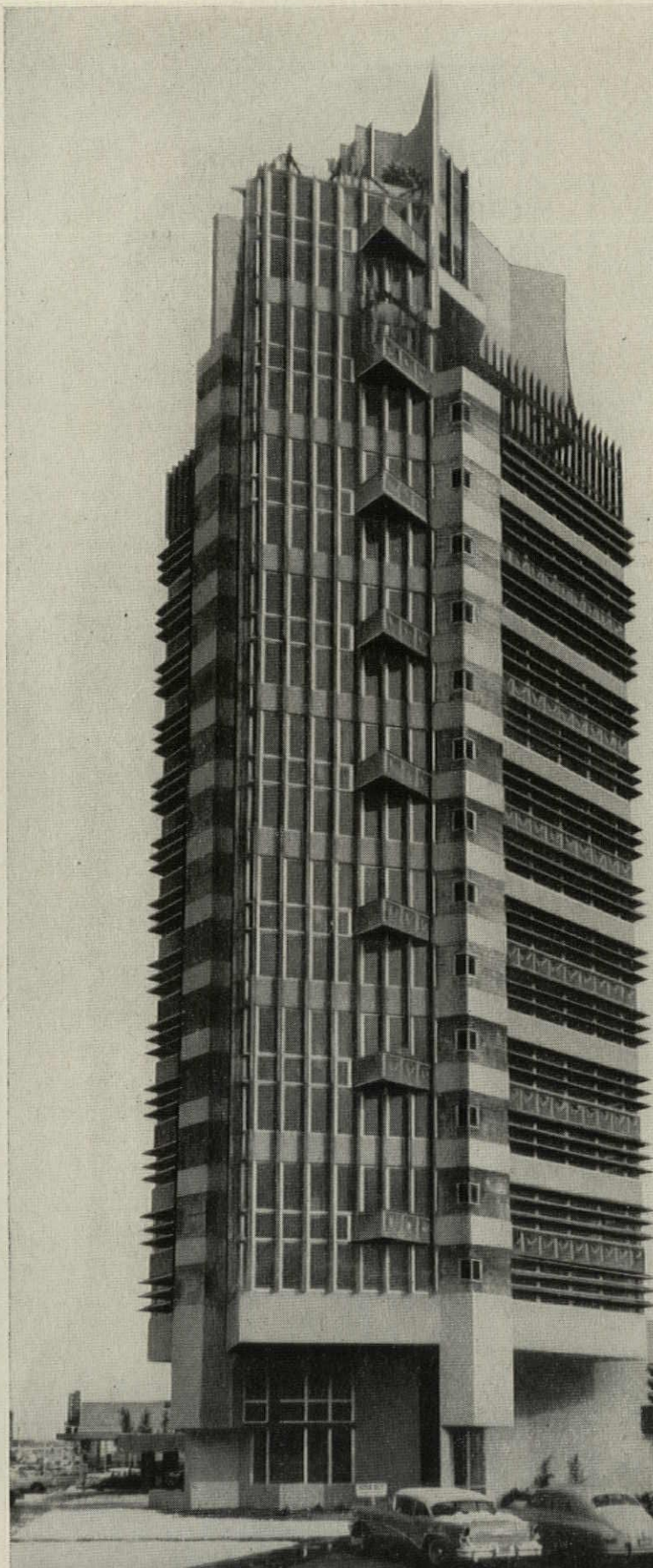


#57 Olsonite Seats—available in more than 35 colors, plain or pearl-escence

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A-5



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The integrity of a clean, attractive ceiling can be maintained unbroken when you work with Multi-Vent low velocity air diffusers.

Multi-Vent diffusers can be completely concealed. Nothing protrudes to create problems in symmetry or architectural effect.

This concealability provides still another advantage at a practical level: Partitions can be placed anywhere, and re-located at will with complete freedom. The Multi-Vent panels need not be moved, altered in any way, or even adjusted.

Multi-Vent introduces conditioned air through the perforations in standard acoustical ceiling pans, at low velocity. The air is gently diffused downward into the room. As a result, there is no "throw" or "blow" to bounce off partitions—which can actually bisect a Multi-Vent panel without affecting its function.

Write for detailed literature and name of representative in your area.

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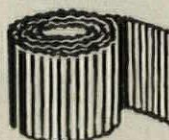
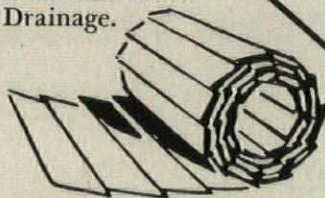
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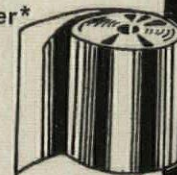
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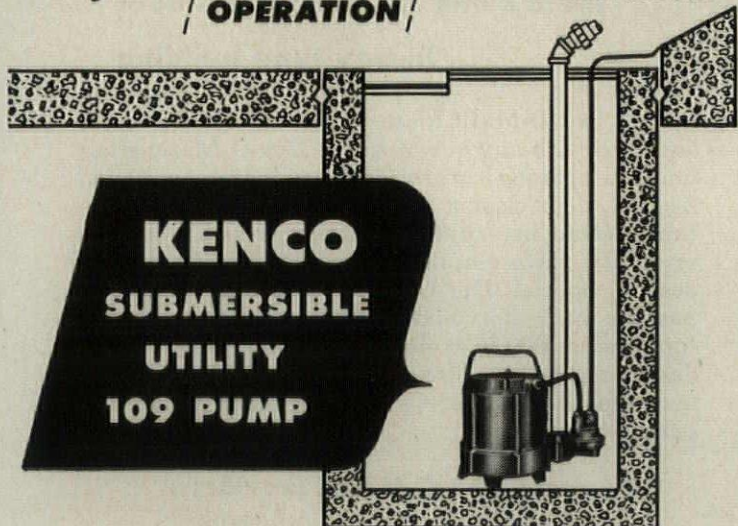
- Spandrels
- Window Heads
- Sill Flashing

\*Comparative prices of sheet CHINC and copper at time ad was prepared. Verification upon request.

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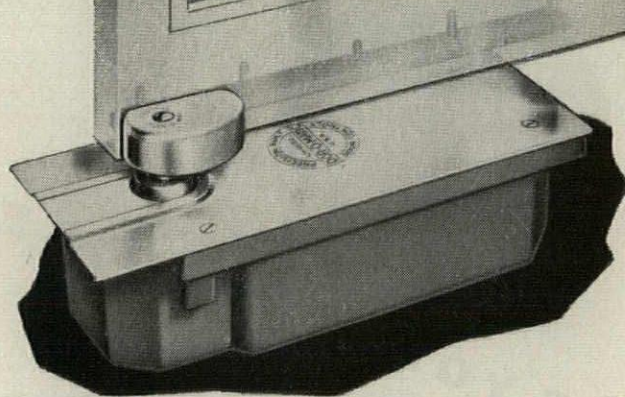


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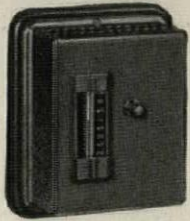
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To keep heating costs down and yet insure complete comfort when only a few rooms are occupied, Johnson engineered and installed a system of *Dual* Control that provides precision, waste-free operation of the multi-zone heating and ventilating unit and the hot water heating system. During periods of limited usage, only the *occupied* rooms are heated to normal comfort levels while lower, non-occupancy temperatures prevail elsewhere in the building.

Johnson *Dual* Control provides the finest in room by room temperature regulation. It offers the flexibility needed to solve all of the special comfort problems of modern religious buildings. At the same time, the exceptional economy features of Johnson *Dual* quickly

result in fuel savings sufficient to pay for the entire system!

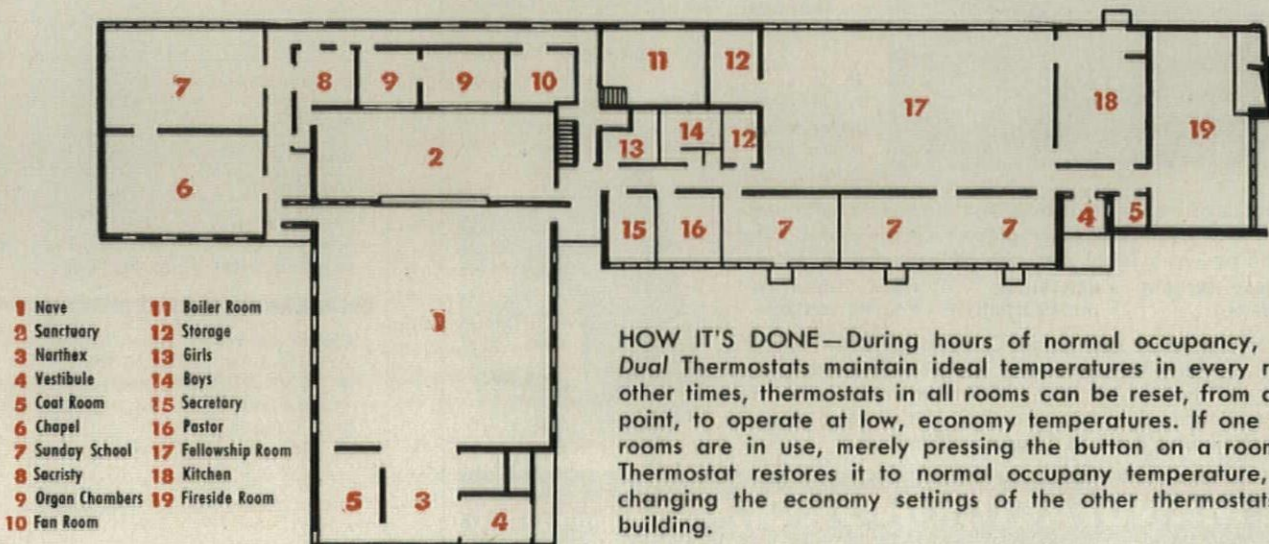
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\*First Congregational Church, Spencer, Iowa. Harold Spitznagel & Associates, architects and mechanical engineers, Sioux Falls, S. D.; Pitcher Plumbing & Heating, heating and ventilating contractor, Spencer, Iowa.

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## PRODUCTS cont'd.

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kneehole—has been developed experimentally by Minneapolis-Honeywell. Using radio signals to operate valves or position dampers, the transistor unit could make it practical to provide individual room heat control on remodeled office and apartment buildings without chopping into walls to install new wiring. The thermostat also uses a new kind of sensing element—thermistors, inert sensitive ceramic resist-

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For additional information on any product reviewed in this issue check the corresponding key number below and mail this coupon to

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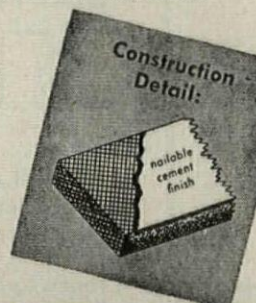
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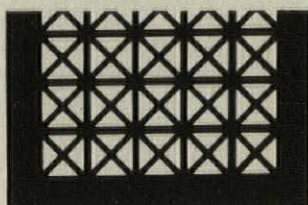
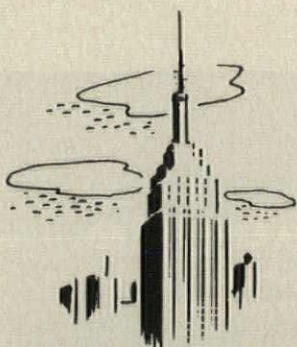
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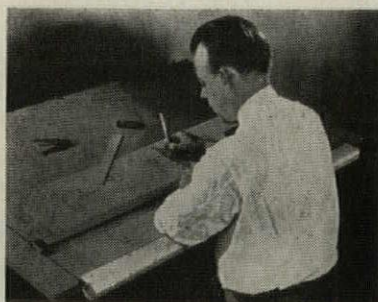
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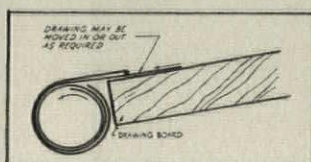
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## and this



Chicago Musical Instrument Co., Chicago, Ill.  
Architect: Friedman, Alschuler & Sincere  
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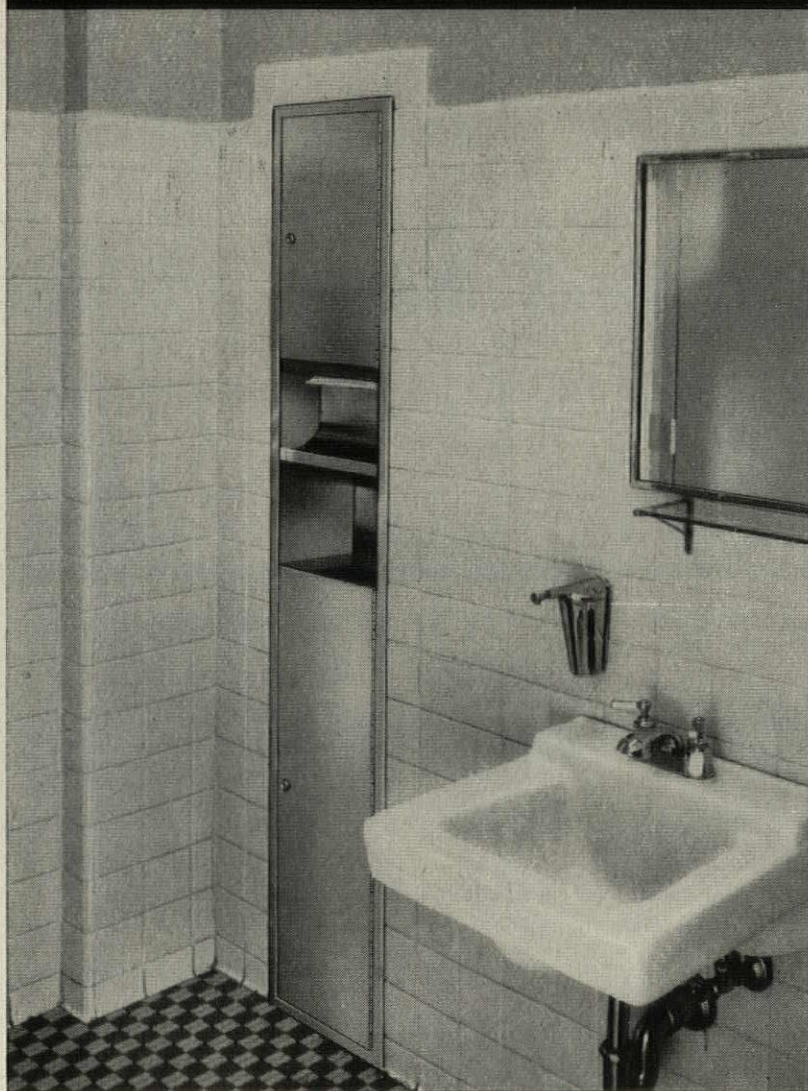
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Imposing new home  
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FOR COMPLETE INFORMATION on Nibroc Cabinets—wall, floor  
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\*Monsanto supplies melamine resins for decorative laminates sold under these trade names: Consoweld, Corlex, Decarlite, Farlite, Fibresin, Lamin-Art, Micarta, Nevamar, Panelyte, Pionite, Plastilight, Railite, Resilyte, Richelain, Textolite.

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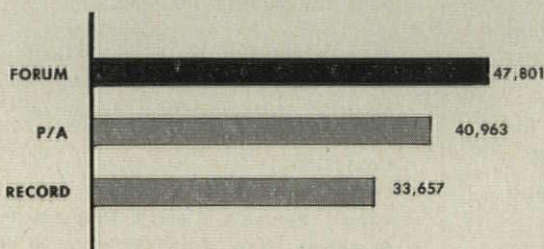
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## TECHNICAL PUBLICATIONS

### ADHESIVES

3M Engineering Data on Adhesives for Honeycomb Structures. Adhesives & Coatings Div., Minnesota Mining & Mfg. Co., 423 Piquette Ave., Detroit 2, Mich. 20 pp.

### DRAINS

Stainless Steel Roof Drainage Guide. Product Information Service, Armco Steel Corp., Middletown, Ohio. 4 pp.

### ELECTRICAL EQUIPMENT

Factors to Consider in the Selection of Automatic Transfer Switches. No. 596. Automatic Switch Co., 391 Lakeside Ave., Orange, N.J. 16 pp.

### FASTENERS

Application Data—Setlok Fastener. 3 bulletins. Nelson Stud Welding, Div. of Gregory Industries, Inc., Lorain, Ohio. 4 pp. each

Townsend Tuff-Tite Fasteners. Bul. TL-107. Townsend Co., Box 237-2, New Brighton, Pa.

### FIRE PREVENTION

Engineered Special Hazard Fire Protection.

"Automatic" Sprinkler Corp. of America, Youngstown, Ohio. 28 pp.

Fireproofing with Perlite. Perlite Institute, 45 W. 45th St., New York 36, N.Y. 8 pp.

Unsurpassed Protection. Bul. B-1500. Peerless Pump Div., Food Machinery and Chemical Corp., 37 Wall St., New York, N.Y. 36 pp.

### FLOOR COVERING

Armstrong Floors, Walls and Counter Tops. Armstrong Cork Co., Lancaster, Pa. 48 pp.

Deltex Rugs and Carpet. Armstrong Cork Co., Floor Div., Lancaster Pa. 18 pp.

What Goes with What? . . . those heavenly carpets by Lees. James Lees & Sons Co., Bridgeport, Pa. 24 pp. 25¢

### FLOORING

1956 Asphalt Tile Color Classification Chart. Asphalt Tile Institute, 101 Park Ave., New York 17, N.Y. 4 pp.

### FURNITURE AND FIXTURES

Folding Tables and Benches. Howe Folding Furniture, Inc., 1 Park Ave., New York 16, N.Y. 8 pp.

### HEATING AND AIR CONDITIONING

American Blower Axial Fans. Bul. B-1013. American Blower Corp., Detroit 32, Mich. 36 pp.

Dunham Baseboard Heating. No. 1231. C. A. Dunham Co., Dept. P, 400 W. Madison St., Chicago 6, Ill. 16 pp.

Flexi-Cool Units. Bul. C-1100-S105-P. Worthington Corp., Harrison, N.J. 4 pp.

Solving Modern Room Heat Distribution Problems with Shaw Panel Radiators. Shaw-Perkins Mfg. Co., 201 E. Carson St., Pittsburgh 19, Pa. 16 pp.

### INSULATION

Data File for Lumaskin Reflective Insulation and Moisture Barrier. Angier Corp., Framingham, Mass. 5 pp.

Glass Fiber Products—Heat Control and Sound Absorption. Libbey-Owens-Ford Glass Fibers Co., 1810 Madison Ave., Toledo 1, Ohio.

Insulating Plastic. Zonolite Co., 135 S. LaSalle St., Chicago, Ill. 4 pp.

Tectum Sidewall Insulation Panels. Tectum Div., Peoples Research and Mfg. Co., 154 S. Sixth St., Newark, Ohio. 4 pp.

### LIGHTING

Better Industrial Lighting with Mercury Vapor. Sylvania Electric Products Inc., 1740 Broadway, New York 19, N.Y. 12 pp.

Better Lighting for Bigger Sales in Hardware Stores. Sylvania Electric Products Inc., 1740 Broadway, New York 19, N.Y. 12 pp.

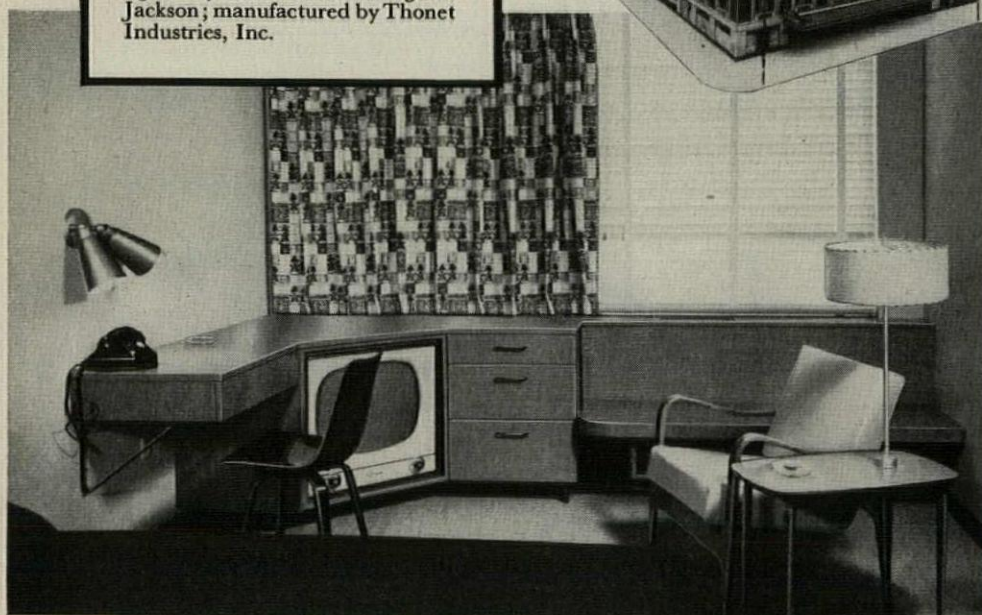
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*continued on p. 270*

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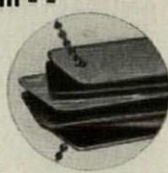


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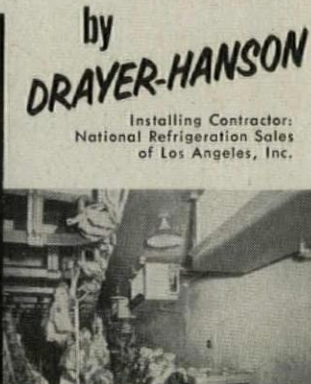
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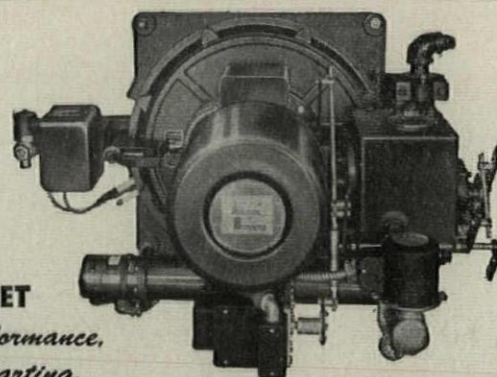
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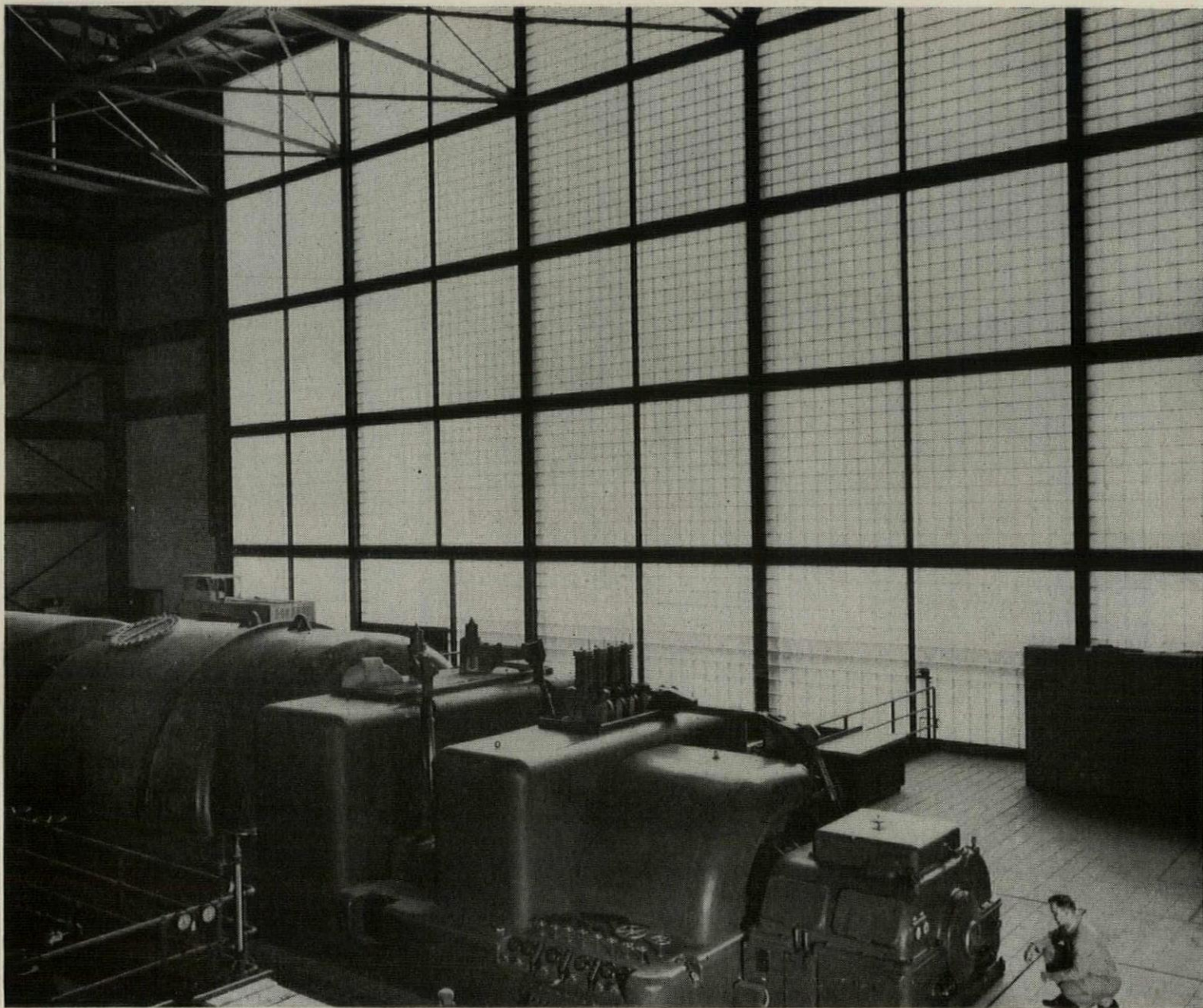
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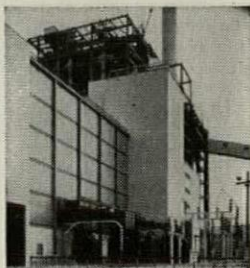
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\*Published—respectively—in the June, January and December, 1955, issues of Architectural FORUM.



# PRODUCTS *cont'd.*

William St., New York 38, N.Y. 8 pp.

Standard Specifications for Industrial Lighting Units. RLM Standards Institute, 326 W. Madison St., Chicago 6, Ill. 35 pp.

The 3-R's and Daylighting. Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa. 12 pp.

Why G-E Fluorescent Ballasts Are Your Best

Ballast Value. GEA-6249. General Electric Co., Schenectady 5, N.Y. 20 pp.

## MAINTENANCE

Floor Maintenance Manual. 2nd Ed. Revised. Trade Press Publishing Co., 410 E. Michigan St., Milwaukee, Wis. 184 pp. \$2

Carboline Neoprene W in Corrosive Atmospheres for General Plant Maintenance. Carboline Co., 331 Thornton Ave., St. Louis 19, Mo. 4 pp.

## METAL LATHING AND FURRING

Specifications for Metal Lathing and Furring. Metal Lath Manufacturers Assn., Engineers

Bldg., Cleveland 14, Ohio. 20 pp.

## ORGANS

Architectural Data on Pipe Organ Requirements. Schantz Organ Co., Orrville, Ohio

## PANELING

The Original Translucent Fiberglass Building Panel. Brochure RC 356. Alsynite Co. of America, 4654 DeSoto St., San Diego 9, Calif. 4 pp.

## PIPES

Plastic Jiffy-Joint Clay Pipe. Cannelton Sewer Pipe Co., Cannelton, Ind. 4 pp.

Orangeburg Root-proof or Perforated Pipe and Fittings. Cat. No. 307. Orangeburg Mfg. Co., Inc., Orangeburg, N.Y. 8 pp.

## PLAYGROUND EQUIPMENT

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## PUMPS

Verti-Line Package-Pumps. Layne & Bowler Pump Co., 2943 Vail Ave., Los Angeles 22, Calif. 4 pp.

## REFUSE DISPOSAL

Incinerator Design Standards. Bul. S. Incinerator Institute of America, 420 Lexington Ave., New York 17, N.Y. 7 pp.

## SCHOOL EQUIPMENT

Metalab Classroom Equipment. Cat. 56-CE. Metalab Equipment Co., 214 Duffy Ave., Hicksville, N.Y. 8 pp.

## SOUND CONTROL

Tectum for Sound Control Ceilings. Tectum Div., Peoples Research and Mfg. Co., 156 S. Sixth St., Newark, Ohio. 4 pp.

## STONEMWORK

Stone Estimating Data. The Finger Lakes Stone Co., Inc., Ithaca, N.Y.

## TILE

Spartan Ceramic Tile Catalogue. The Sparta Ceramic Co., E. Sparta, Ohio.

## VERTICAL TRANSPORTATION

Otis Autotronic without Attendant Elevators. Otis Elevator Co., 260 11th Ave., New York 1, N.Y. 24 pp.

## WEATHERSTRIPPING

How to Get the Greatest benefit from Your Metal Weatherstrip. Weatherstrip Research Institute, Box 101, Riverside, Ill. 4 pp.

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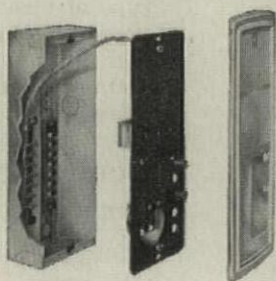


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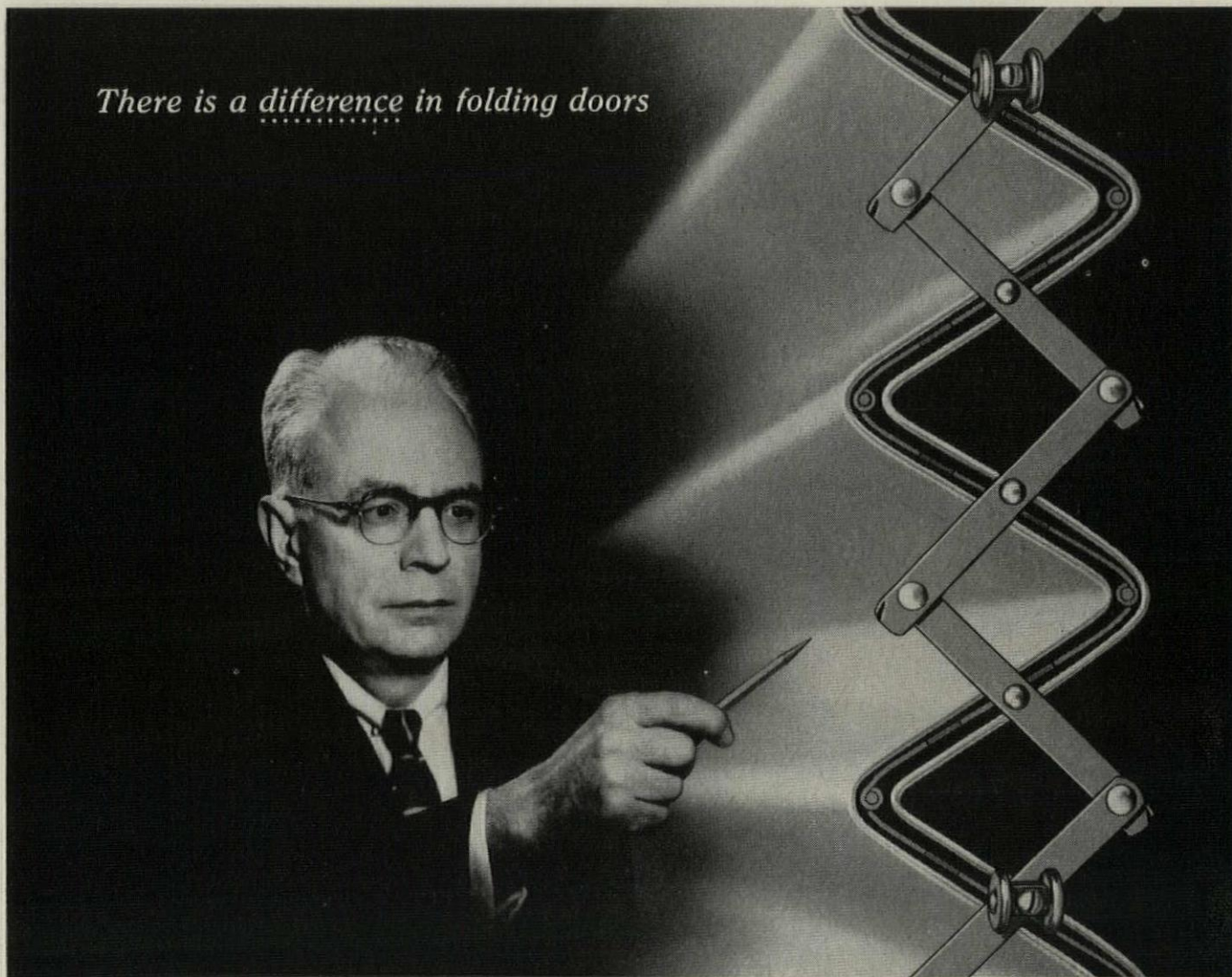
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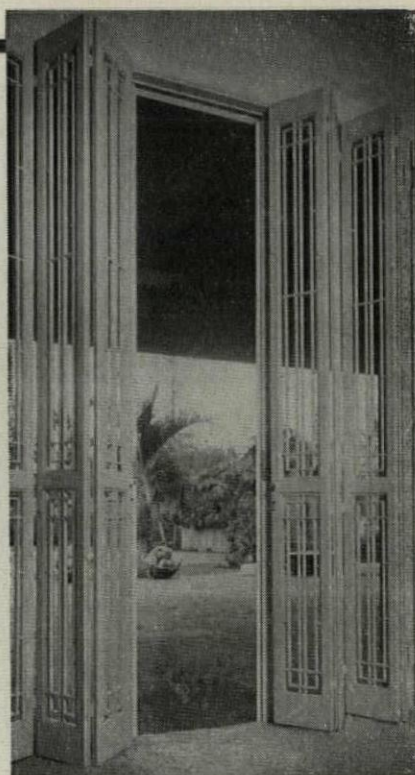
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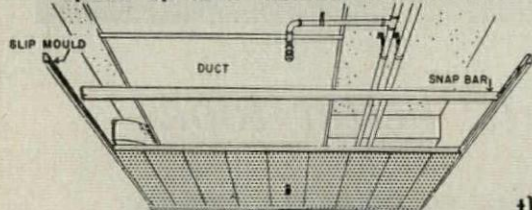
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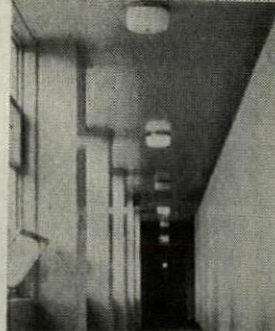
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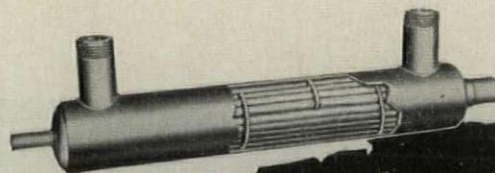
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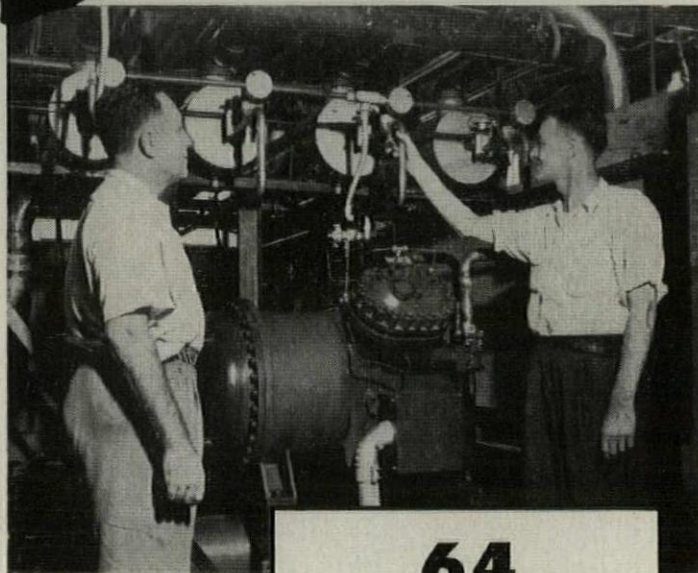
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for  
**120 Tons**  
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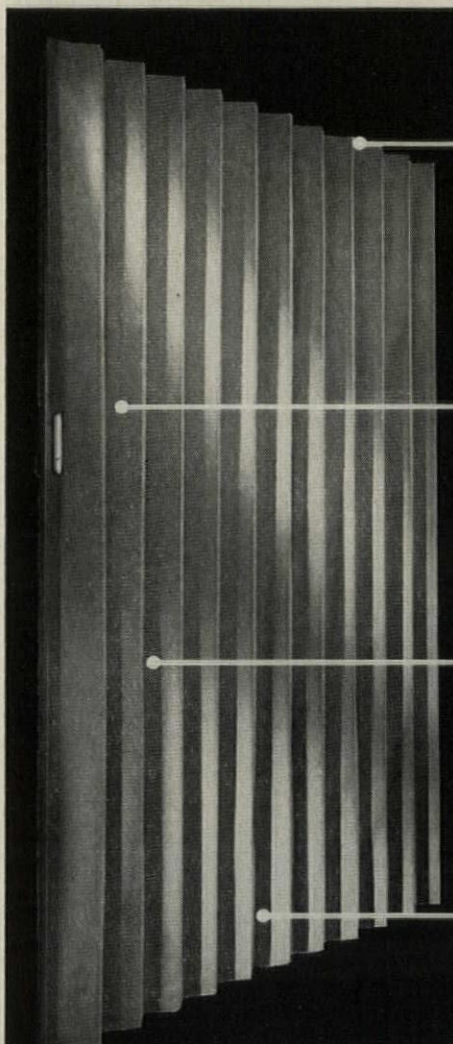
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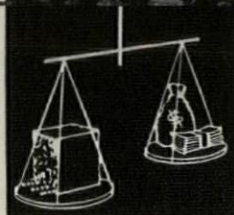
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### lowers costs

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design for the new  
Mt. Sinai Hospital*

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# For Your Fact File!

## COMPARATIVE REFRIGERANT CHARACTERISTICS OF **genetrons**<sup>®</sup> AND OTHER BASIC REFRIGERANTS

(PERFORMANCE BASED ON 5°F EVAPORATOR TEMPERATURE AND 86°F CONDENSER TEMPERATURE)

|  | genetron<br>11                       | genetron<br>12                   | genetron<br>141                    | genetron<br>226                               | Carrene<br>7  | Methyl<br>Chloride | Ammonia         | Sulfur<br>Dioxide |
|--|--------------------------------------|----------------------------------|------------------------------------|---|---------------|--------------------|-----------------|-------------------|
|  | Trichloro-<br>monofluoro-<br>methane | Dichloro-<br>difluoro<br>methane | Monochloro-<br>difluoro<br>methane | Trichloro-<br>trifluoro-<br>ethane            |               |                    |                 |                   |
| Chemical Formulae  | CCl <sub>3</sub> F                   | CCl <sub>2</sub> F <sub>2</sub>  | CHClF <sub>2</sub>                 | C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub> | Note 1        | CH <sub>3</sub> Cl | NH <sub>3</sub> | SO <sub>2</sub>   |
| Molecular Weight   | 137.4                                | 120.9                            | 86.5                               | 187.4   | 99.3          | 50.5               | 17.0            | 64.1              |
| Boiling Pt. (°F) at 1 Atmosphere Pressure  | 74.7                                 | -21.6                            | -41.4                              | 117.6   | -28.0         | -10.8              | -28.0           | 14.0              |
| Evaporator Pressure at 5°F (p.s.i.g.)  | 24.0*                                | 11.8                             | 28.3                               | 27.9*   | 16.4          | 6.5                | 19.6            | 5.9*              |
| Condensing Pressure at 86°F (p.s.i.g.)   | 3.6                                  | 93.2                             | 159.8                              | 13.9*   | 113.4         | 80.0               | 154.5           | 51.8              |
| Freezing Point (°F) at 1 Atmosphere Pressure   | -168                                 | -252                             | -256                               | -31   | -254          | -144               | -108            | -104              |
| Critical Temperature (°F)  | 388                                  | 233                              | 205                                | 417   | 221           | 289                | 271             | 315               |
| Critical Pressure (p.s.i. absolute)  | 635                                  | 582                              | 716                                | 495   | 631           | 969                | 1657            | 1142              |
| Compressor Discharge Temperature (°F)  | 112                                  | 100                              | 131                                | 86  | 105           | 172                | 210             | 191               |
| Compression Ratio (86°F/5°F)   | 6.24                                 | 4.07                             | 4.06                               | 8.02  | 4.12          | 4.48               | 4.94            | 5.63              |
| Saturated Liquid Viscosity at 5°F (centipoises)  | 0.650                                | 0.328                            | 0.286                              | 1.200   | —             | 0.293              | 0.250           | 0.503             |
| Saturated Liquid Viscosity at 86°F (centipoises)   | 0.405                                | 0.251                            | 0.229                              | 0.619   | —             | 0.234              | 0.207           | 0.281             |
| Vapor Viscosity at 5°F & 1 Atmosphere Pressure (centipoises)                             | 0.0096                               | 0.0114                           | 0.0114                             | 0.0093†                                       | —             | 0.0095             | 0.0085          | 0.0111            |
| Vapor Viscosity at 86°F & 1 Atmosphere Pressure (centipoises)                            | 0.0111                               | 0.0127                           | 0.0131                             | 0.0105†                                       | —             | 0.0109             | 0.0102          | 0.0131            |
| Saturated Liquid Density at 5°F (lbs./cu.ft.)  | 97.88                                | 90.00                            | 83.34                              | 103.20  | 80.11         | 61.65              | 41.11           | 92.00             |
| Saturated Liquid Density at 86°F (lbs./cu.ft.)   | 91.38                                | 80.63                            | 73.36                              | 96.96   | 71.23         | 56.24              | 37.16           | 84.44             |
| Saturated Vapor Density at 5°F (lbs./cu.ft.)   | 0.0815                               | 0.6735                           | 0.8034                             | 0.0370  | 0.657         | 0.2237             | 0.1227          | 0.1558            |
| Saturated Vapor Density at 86°F (lbs./cu.ft.)  | 0.4461                               | 2.569                            | 3.213                              | 0.2569  | 2.598         | 0.9253             | 0.5643          | 0.8440            |
| Specific Volume of Saturated Vapor at 5°F (cu.ft./lb.)                                   | 12.27                                | 1.49                             | 1.25                               | 27.04   | 1.52          | 4.47               | 8.15            | 6.42              |
| Latent Heat of Vaporization at 5°F (B.t.u./lb.)  | 84.0                                 | 69.5                             | 93.6                               | 70.6  | —             | 180.7              | 565.0           | 169.4             |
| Net Refrig. Effect of Liquid (86°F/5°F) (B.t.u./lb.)                                     | 67.5                                 | 51.1                             | 69.3                               | 53.7  | 61.1          | 150.2              | 474.4           | 141.4             |
| Specific Heat of Liquid at 86°F (B.t.u./lb. °F)  | 0.21                                 | 0.24                             | 0.34                               | 0.22  | —             | 0.39               | 1.14            | 0.39              |
| Specific Heat of Vapor at Constant Pressure of 1 Atmosphere & 86°F (B.t.u./lb. °F)       | 0.13                                 | 0.15                             | 0.15                               | 0.15  | —             | 0.24               | 0.51            | 0.15              |
| Specific Heat Ratio at 86°F & 1 Atm. (k=Cp/Cv)   | 1.14                                 | 1.14                             | 1.18                               | 1.09  | —             | 1.20               | 1.32            | 1.29              |
| Coefficient of Performance   | 5.09                                 | 4.70                             | 4.66                               | 4.92  | 4.61          | 4.90               | 4.76            | 4.87              |
| Horsepower/Ton Refrigeration   | 0.927                                | 1.002                            | 1.011                              | 0.960   | 1.022         | 0.962              | 0.989           | 0.968             |
| Refrigerant Circulated/Ton Refrig. (lbs./min.)   | 2.96                                 | 3.92                             | 2.89                               | 3.73  | 3.27          | 1.33               | 0.422           | 1.41              |
| Liquid Circulated/Ton Refrig. (cu.in./min.)  | 56.0                                 | 83.9                             | 68.0                               | 66.5  | 79.3          | 40.9               | 19.6            | 28.9              |
| Compressor Displacement/Ton Refrig. (c.f.m.)   | 36.32                                | 5.81                             | 3.60                               | 100.76  | 4.97          | 5.95               | 3.44            | 9.09              |
| Thermal Conductivity of Saturated Liquid at 32°F (B.t.u./ft. <sup>2</sup> hr. °F)        | 0.0680                               | 0.0559                           | 0.0704                             | 0.0576  | —             | 0.103              | 0.29            | 0.122             |
| Thermal Conductivity of Saturated Liquid at 86°F (B.t.u./ft. <sup>2</sup> hr. °F)        | 0.0609                               | 0.0492                           | 0.0595                             | 0.0521  | —             | 0.089              | 0.29            | 0.111             |
| Thermal Conductivity of Vapor at 32°F & 1 Atm. Pressure (B.t.u./ft. <sup>2</sup> hr. °F) | 0.0045                               | 0.0048                           | 0.0060                             | 0.0038†                                       | —             | 0.0053             | 0.0128          | 0.0050            |
| Thermal Conductivity of Vapor at 86°F & 1 Atm. Pressure (B.t.u./ft. <sup>2</sup> hr. °F) | 0.0048                               | 0.0056                           | 0.0068                             | 0.0045†                                       | —             | 0.0065             | 0.0145          | 0.0056            |
| Stability (Toxic Decomposition Products)   | Yes                                  | Yes                              | Yes                                | Yes   | Yes           | Yes                | No              | Yes               |
| Toxicity (Underwriters' Laboratories Group No.)  | 5A                                   | 6                                | 5A                                 | 4-5   | 5A            | 4                  | 2               | 1                 |
| Flammability   | None                                 | None                             | None                               | None  | None          | Yes                | Yes             | None              |
| Relative Dielectric Strength of Vapor (compared with Ethyl Chloride as Unity)            | 3.00                                 | 2.40                             | 1.31                               | 2.60  | —             | 1.06               | 0.82            | 1.90              |
| Odor   | Ethereal                             | Ethereal                         | Ethereal                           | Ethereal                                      | Ether.        | Ether.             | Acrid           | Acrid             |
| Type of Compressor in Which Usually Used   | Gen.                                 | All                              | Rec-Rot                            | Gen.  | Rec-Rot       | All                | All             | Rec.              |
| Evaporator Temperature Range, °F   | -20<br>to 50                         | -100<br>to 50                    | -125<br>to 50                      | -25<br>to 50                                  | -100<br>to 50 | -80<br>to 50       | -90<br>to 20    | -60<br>to 50      |
| Water Sol. in Liq. Refrig. at 32°F (gms./100 gms. Refrig.)                               | 0.0036                               | 0.0026                           | 0.060                              | 0.0036  | —             | 0.026 at -10°F     | High            | High              |
| Water Sol. in Liq. Refrig. at 86°F (gms./100 gms. Refrig.)                               | 0.013                                | 0.012                            | 0.15                               | 0.013   | —             | —                  | High            | High              |
| Oil Solubility (Miscibility With Lubricating Oils)                                       | Yes                                  | Yes                              | Partial                            | Yes   | Yes           | Yes                | No              | No                |

\*Inches of mercury vacuum

†At. 0.1 atmosphere

‡At. 0.5 atmosphere

Note 1. Carrene 7 is an azeotropic mixture of Genetron 100(CH<sub>3</sub>CHF<sub>2</sub>) and Genetron 12(CCl<sub>2</sub>F<sub>2</sub>)

Genetron Super-Dry Refrigerants are available from Refrigeration Wholesalers throughout the country.



**GENERAL CHEMICAL DIVISION • ALLIED CHEMICAL & DYE CORPORATION**  
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# ● **INCONSPICUOUS APPEARANCE**



**plus  
Quiet  
Performance**

**For Example —**

**This Model No. 5215B:**

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

**Total Installed Height: 43¾ inches**

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

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

## **CAPACITIES:**

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

Belt Drive: 3,000 - 65,000 CFM  
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Export Office: 306 Paul Bldg., Utica, New York  
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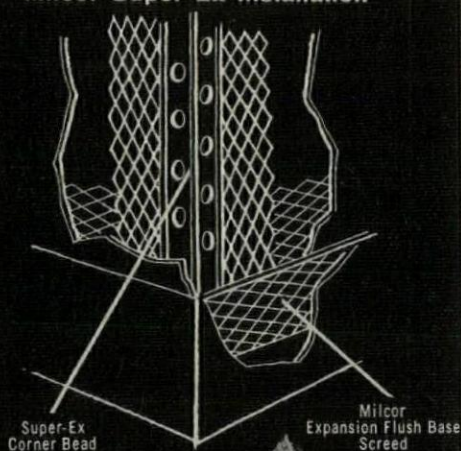
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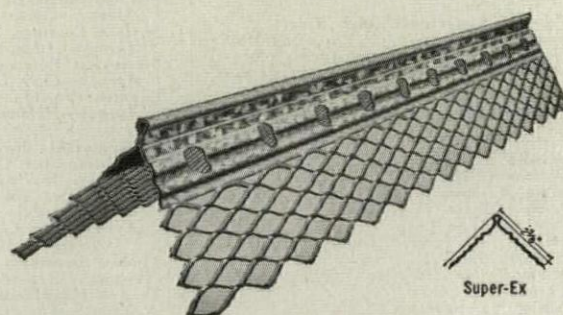
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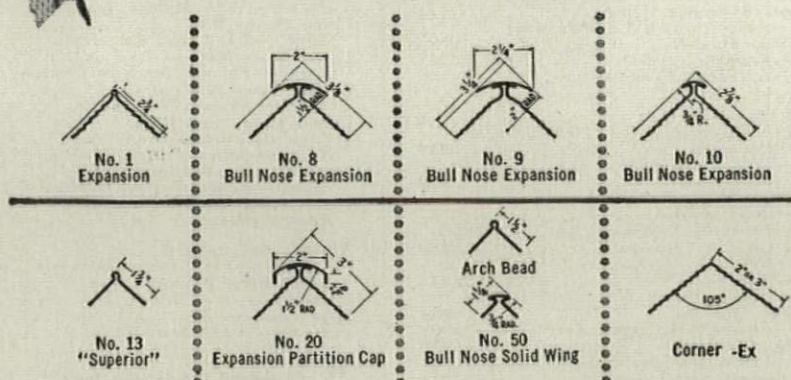
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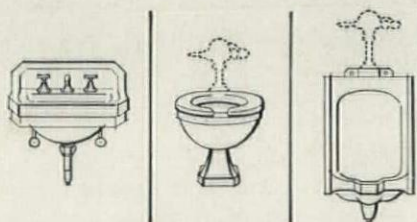
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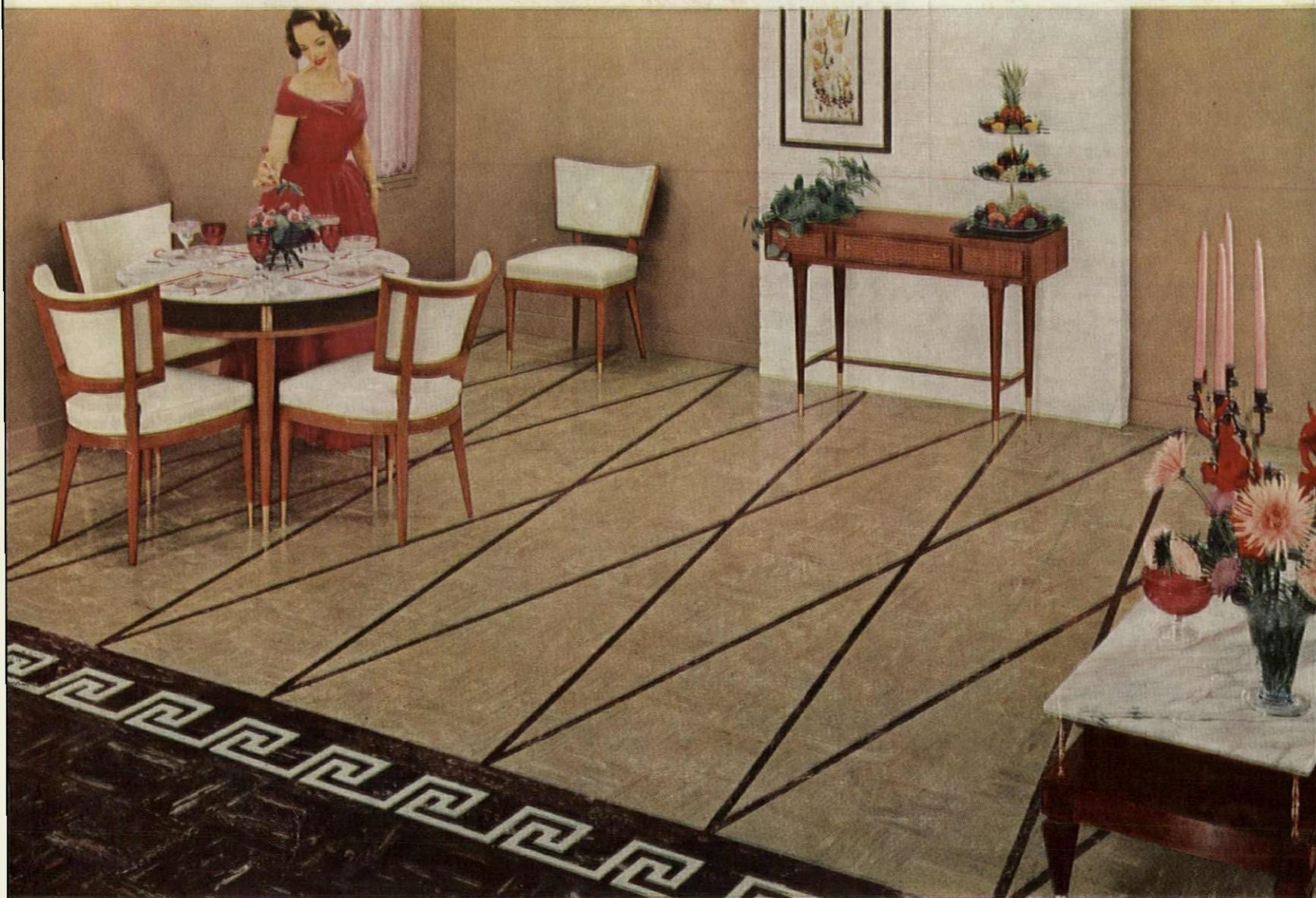
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